
THE CLIMATE CHANGE ADVISORY COMMITTEE WILL HOLD THIS MEETING
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AGENDA

5:00: CALL MEETING TO ORDER/ROLL CALL/ACCEPT OF MODIFY AGENDA/CONFLICT OF INTEREST
DISCLOSURE

5:05: APPROVE FEBRUARY 24TH MINUTES

5:10: PUBLIC COMMENT

5:20: CLIMATE ACTION PLAN (CITY STAFF COMMENTS ATTACHED)

- STATUS OF CITY STAFF REVIEW
- OUTSTANDING ISSUES
- PUBLIC COMMENT
- NEXT STEPS

5:50: POLICE/COURT BUILDING: REQUEST FOR CCAC INPUT (PRESENTATION ATTACHED)

COUNCIL REQUEST: COUNCIL DIRECTED THE CITY MANAGER TO COMPLETE DESIGN AND ADVERTISING FOR CONSTRUCTION BIDS WITHOUT PURSUING LEED CERTIFICATION FOR THE PROJECT. COUNCIL REFERRED TO THE CCAC CONSIDERATION OF THE COUNCIL MAKING A COMMITMENT TO SEEK A LOCAL OFFSET OF THE AMOUNT OF CARBON THAT WOULD HAVE POTENTIALLY BEEN ELIMINATED OVER TIME IF THE COUNCIL EXPENDED THE RESOURCES TO PURSUE LEED CERTIFICATION FOR THAT FACILITY. THE COUNCIL DISCUSSED A DIFFERENCE OF APPROXIMATELY 64 METRIC TONS BETWEEN THE FACILITY AS DESIGNED CURRENTLY VERSUS A FACILITY THAT WOULD ACHIEVE LEED CERTIFICATION.

- DISCUSSION
- RECOMMENDATION

6:30: CLIMATE CHANGE ADAPTATION CERTIFICATION TOOL (TOOL DESCRIPTION ATTACHED)

- PRESENTATION OF TOOL
- DISCUSSION ON USE OF TOOL
- RECOMMENDATION

6:50: UPDATES

- PSE (SUMMARY ATTACHED)
- NEW MEMBER
- CO-CHAIR

7:00: ADJOURN

MATERIALS

1. FEBRUARY MINUTES
2. CLIMATE ACTION PLAN CITY STAFF COMMENTS
3. PRESENTATION TO COUNCIL ON POLICE/COURT STATION
4. CLIMATE CHANGE ADAPTATION CERTIFICATION TOOL
5. SUMMARY OF PSE MEETING

CLIMATE CHANGE ADVISORY COMMITTEE

Regular Meeting

Monday, February 24, 2020, 6:30-8:30 PM

Bainbridge Island City Hall

MINUTES

Present: Committee members Jens Boemer, Derik Broekhoff, Michael Cox, Lara Hansen, Gary Lagerloef, Julie Matthews, David McCaughey, Nora Ferm Nickum, Deborah Rudnick; Council Liaisons Joe Deets and Kirsten Hytopoulos

City staff: Ellen Schroer, Deputy City Manager

Public/guests/observers: Gloria Saylor, Rick Freeman

1. The meeting was called to order at 6:30 pm.
 - Conflict of interest disclosure: Jens reiterated his disclosure (see past meeting minutes).
2. Minutes from the previous meeting (January 27, 2020) were approved.
3. Public comment
 - Gloria Saylor said keep up the good work!
4. Updates
 - Climate Emergency Resolution
 - This resolution is another way to bring attention to the issue. It is also a good precursor to the Climate Action Plan.
 - The Committee voted to send the edited draft resolution to the Council.
 - Debrief on the Feb. 3 Joint Study Session (UAC and CCAC with Puget Sound Energy).
Proposed next steps:
 1. A subset of CCAC members and Council members meet with PSE to discuss the possibility of using Green Power funds for on-island projects (and better understand the barriers).
 2. Work with PSE to establish a robust Energy Conservation and Demand Response Program on Bainbridge Island.
 3. Explore battery storage strategies for the Island including how to ensure the 12 emergency hubs have power during emergencies.
 4. Ask about potential for PSE programs to assist homeowners in installing EV charging stations and solar for homes.
 5. Other follow-up questions for PSE (see list in the agenda packet).
5. Climate Action Plan (CAP) discussion included:
 - We will go to Council with our draft CAP goals, targets, and strategies first, in order to provide a broad vision and get feedback. We hope to get on the agenda for the March 17 Council Study Session. We would then follow up with the specific CAP actions at a later date.
 - It is important to get City staff input on what it will take to implement recommended CAP strategies and actions (an assessment of possible costs and impacts). At the same time, we noted that the City Council can make policy decisions to make things more feasible for City staff to implement.
 - We began to discuss when and how to engage the public on the draft CAP, and how to

maximize public buy-in. This will require further discussion.

- There is a desire to get the CAP done and avoid unnecessary delays so that we can get to implementation.
 - Discussion of the analysis of path to get to 90% GHG reductions by 2040. Derik, Mike, and Jens will continue to work on this.
 - Discussion of draft rankings of actions. CCAC members will complete their rankings by Feb. 28.
 - Discussion of individual actions document. All CCAC members will review sections relevant to their chapters and make edits and additions (by March 10).
6. Other business – upcoming events:
 - March 5 – Motherload movie.
 - March 23 – Climate change talk.
 7. Next CCAC meeting: Wednesday, March 18, 6:30-8:30 pm.
 8. The meeting was adjourned at 8:34 pm.

Co-Chair

Date

Draft Climate Action Plan

A Plan for Mitigating and Adapting to
Climate Change on Bainbridge Island

June 3rd, 2020



A Letter from Mayor

Table of Contents

Executive Summary	7
ES.1. Why do we Need a Climate Action Plan?	7
ES.2. What are the Anticipated Climate Change Impacts on Bainbridge Island?	7
ES.3. Bainbridge Island’s Greenhouse Gas (GHG) Emissions Inventory.....	8
ES.4. Development of the Climate Action Plan.....	10
ES.5. Climate Action Plan Goals	10
ES.6. Goals, Targets and Priority Actions	12
ES.7. Individual Actions.....	21
ES.8. Implementation and Future Updates.....	22
Section 1: Introduction	24
1.1. Why develop a Climate Action Plan?	25
1.2. Federal, State, and Local Climate Policy	26
1.3. Bainbridge Island Climate Impact Assessment	27
1.5. Results from Community Survey and Workshops	34
1.6. Goals for Climate Action Plan	37
1.7. Challenges with Addressing Climate Change on Bainbridge Island	37
1.8. Organization of the CAP	39
1.9. Prioritizing Actions	40
Section 2: Greenhouse Gas Emissions Inventory	42
2.1. Inventory Approaches and Methodology	42
2.2. Inventory Results	44
2.3. GHG Inventory Conclusions	50
2.4. Goals/Targets	50
2.5. Challenges	51
2.6. Current Actions	51
2.7. Strategies/Actions	51
2.8. Reductions Needed to Meet 2045 Reduction Goals.....	52
Section 3: Energy	56
3.1. Goals/Targets	56
3.2. Challenges	57
3.3. Current Actions	57
3.4. Strategies/Actions.....	58
Section 4: Transportation	62
4.1. Goals/Targets	62
4.2. Challenges	63
4.3. Current Actions	64
4.4. Strategies/Actions.....	65
Section 5: Buildings	70
5.1. Goals/Targets	70
5.2. Challenges	71
5.3. Current Actions	71
5.4. Strategies/Actions.....	72
Section 6: The Natural Environment	76

6.1. Goals/Targets	76
6.2. Challenges	77
6.3. Current Actions	78
6.4. Strategies/Actions	78
Section 7: Waste	85
7.1. Goals/Targets	85
7.2. Challenges	86
7.3. Current Actions	86
7.4. Strategies/Actions	88
Section 8: Community Engagement	92
8.1. Goals/Targets	92
8.2. Challenges	93
8.3. Current Actions	93
8.4. Strategies/Actions	94
Section 9: Implementation	98
9.1. Kickstarting Implementation	98
9.2. Leadership	98
9.3. Equity	99
9.4. Accountability, Reporting, and Future Updates	99
9.5. Funding	100
Section 10: Individual Actions - What can we each do to make a difference?	103
10.1. Participate in Community Climate Action	103
10.2. Reduce Individual Energy Use	103
10.3. Reduce My Waste	103
10.4. Reduce Individual Water Use and Take Steps to Protect Our Natural Resources	104
10.5. Reduce Personal Vehicle Travel	104
10.6. Reduce Your Vulnerability to Climate Change and Create a Climate Savvy Community	105
Appendix A: Priority Action Matrix	106
Appendix B: Background Information for Path Forward Graphs	127
Appendix C: Comments from Community Workshops	128
Appendix D: Footnotes	145

Figures

Figure 1.1 Regional Projections for Changes in Temperature and Precipitation	28
Figure 1.2 Projected Difference in Precipitation by Season for the Pacific Northwest Based on Six Climate Scenarios	29
Figure 1.3 Wildfire Hazards as Identified in the Bainbridge Island Hazard Identification and Vulnerability Assessment	30
Figure 1.4 Hedley Spit, Lynwood Center and Eagle Harbor with a Projected Sea Level Rise	31
Figure 1.5 Projected Vegetation Changes for Bainbridge Island Based on MC1 Models of A2 SRES Emission Scenarios	32
Figure 1.6 Knowledge of Climate Change Impacts on Bainbridge Island	35

Figure 1.7 Importance of Taking Action on Climate Change 35
 Figure 1.8 Concern about Climate Impacts 36
 Figure 1.9 Taking Action on Climate Change..... 36

Figure 2.1 Conceptual Relationship Among Community, Municipal and Consumption-Based Inventories for Bainbridge Island 43
 Figure 2.2 Per Capita GHG Emissions Comparison 45
 Figure 2.3 Bainbridge Island Community Wide Emissions in 2014 (Total = 214,425 MTCO₂e)..... 46
 Figure 2.4 Bainbridge Island Community Emission Trends by Year and Source 47
 Figure 2.5 Bainbridge Island City Operations GHG Emissions in 2014 (Total = 22.067 MTCO₂e) 48
 Figure 2.6 Bainbridge Island City Operations Emission Trends by Year and Source..... 48
 Figure 2.7 Consumption-Based Emissions per Bainbridge Island Household 49
 Figure 2.8 Reductions in GHG Emissions Needed to Meet Targets 53

Tables

Table 1.1 Demographics of Respondents to Community Climate Survey..... 34

Acronyms

- BARN - Bainbridge Artisan Resources Network
- BD – Bainbridge Disposal
- BIFP – Bainbridge Island Fire and Police
- BILT – Bainbridge Island Land Trust
- BIMA - Bainbridge Island Museum of Art
- BIMPRD - Bainbridge Island Metro Park and Recreation District
- BIPF – Bainbridge Island Park Foundation
- BISD – Bainbridge Island School District
- BIZW – Bainbridge Island Zero Waste
- CAP – Climate Action Plan
- CETA - Clean Energy Transformation Act
- CH₄ - Methane
- CCAC - Climate Change Advisory Committee
- COBI – City of Bainbridge Island
- CTR – Commute Trip Reduction
- EV – Electric Vehicle
- FOTF – Friends of the Farm
- GHGs – Greenhouse Gas Emissions
- IWTP – Island-Wide Transportation Plan
- LEED - Leadership in Energy and Environmental Design
- MTCO₂e - Metric Tons of Carbon Dioxide Equivalents
- MW - Megawatt
- N₂O - Nitrous Oxide
- NOAA – National Oceanic and Atmospheric Administration
- PSE – Puget Sound Energy

PSRC - Puget Sound Regional Council

PV - Photovoltaic

SLR – Sea Level Rise

WSF – Washington State Ferries

WWTP - Wastewater Treatment Plant

Acknowledgements

This is the first Climate Action Plan ever prepared for Bainbridge Island and required the effort of many people in our community. Thanks to all those who assisted in this process.

Climate Change Advisory Committee (Former and Present)

David McCaughey, Deborah Rudnick, Derik Broekhoff, Gary Lagerloef, James Rufo-Hill, Jane Siberstein, Jens Boemer, Julie Matthews, Lara Hansen, Michelle McClure, Nora Ferm Nickum, Michael Cox, Joe Deets (City Council Liaison), Kirsten Hytopoulos (City Council Liaison), and Kol Medina (City Council Liaison).

COBI Staff (more to follow once we engage with staff)

Ellen Schroer, Kristen Drew, Morgan Smith, and Roz Lassoff.

Other Contributors

Barb Zimmer, Bobbie Morgan, Brian Anderson, Claire Page, David Reynolds-Gooch, Erika Shriner, Fran Korten, Gloria Sayler, Herb Hethcote, Jane Lindley, Jane Rein, Kevin Thomas, Leslie Marshall, Mike Kelly, Oona Bill, Rick Freeman, Sandy Spears, Stephanie Rose, Steve Johnson, Susan Loftus, Ted Freeman Larson and Ted Jones.

Additional thanks to the 450 people that responded to the Climate Survey, the 150 people that attended our Community Workshops, and those that attended the CCAC monthly meetings.

Cascadia Consulting Group

Andrea Martin

Britain Richardson

Executive Summary

The climate is changing. We know this and we need to take action now. It is urgent that we dramatically reduce our greenhouse gas (GHG) emissions and make our community more resilient to this change.

In 2016, the City of Bainbridge Island (COBI) incorporated climate change into its updated Comprehensive Plan. The Comprehensive Plan has seven guiding principles, with #7 specifically related to climate change: *Reduce greenhouse gas emissions and increase the Island's climate resilience.*

The City Council established the Climate Change Advisory Committee (CCAC) in the fall of 2017. 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. In 2019, the City Council tasked the CCAC to develop a Climate Action Plan (CAP) for the Island.

ES.1. Why do we Need a Climate Action Plan?

The CAP is a comprehensive roadmap that outlines the specific activities that COBI and the community can undertake to reduce GHG emissions and increase our resilience to the changes that are occurring now and which will intensify in the future. The CAP supports City policies already in place, including the Comprehensive Plan, Shoreline Master Plan, and Critical Areas Ordinance, and provides guidance on how principles and objectives that are outlined in those programs can be implemented to mitigate and adapt to the impacts of climate change on Bainbridge Island.

ES.2. What are the Anticipated Climate Change Impacts on Bainbridge Island?

Table ES.1 shows the projected changes and associated impacts from climate change for Bainbridge Island. The climate change impacts relevant to Bainbridge Island include: rising sea levels, extreme weather, increasing temperatures, changes in vegetation, hydrologic changes, and ocean acidification.

Table ES.1 Projected Changes and Associated Impacts from Climate Change

Area	Impacts
Rising Sea Levels	<ul style="list-style-type: none">● Damage to City assets such as roads● Damage to private property● Erosion and salt water intrusion
Extreme Weather Events	<ul style="list-style-type: none">● Increased flooding of roads and private property● Potential for slope instability and erosion● Increase in power outages
Increasing Temperatures	<ul style="list-style-type: none">● Increased risk of heat-related illness● Increase in drought conditions● Changes in disease vectors
Vegetation Change	<ul style="list-style-type: none">● Transition from a maritime to temperate evergreen leaf forest● Summer water stress will decrease tree growth and increase fire risk

Commented [PB1]: Separate these two items since they are distinct and have different implications

Area	Impacts
	<ul style="list-style-type: none"> • Changes in pest distribution and type of pest
Hydrologic Changes	<ul style="list-style-type: none"> • Changes to surface and groundwater availability and timing • Changes to extent of stream discharge • Drought stress on vegetation
Ocean Acidification	<ul style="list-style-type: none"> • Decreased pH in ocean waters • Damage to marine organisms such as oysters • Economic damage to shellfish industry

ES.3. Bainbridge Island’s Greenhouse Gas (GHG) Emissions Inventory

COBI completed a GHG emissions inventory in October 2019 that quantified GHG emissions produced by the Bainbridge Island community (the community inventory) and COBI operations (the municipal inventory). Figure ES.1 provides the Community GHG emissions for 2014, the baseline year for evaluating progress over time in reducing GHG emissions.

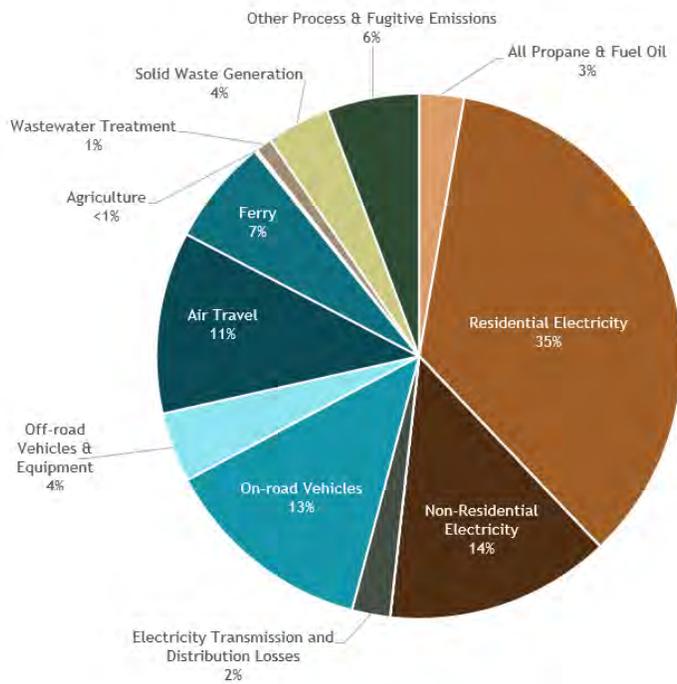
The inventory accounts for human-caused emissions of the most prominent and typical GHG emissions for communities: carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). To account for the differences in potency among these gases, all emissions are calculated and reported in units of metric tons of carbon dioxide equivalent (MTCO₂e). Bainbridge Island’s estimated total community emissions for 2014 were 214,425 MTCO₂e or 9.3 MTCO₂e per person.

The per-capita estimate is consistent with that of Kitsap County (9.9 MTCO₂e), lower than per-capita estimates for the US, Washington State, King County, and Bellevue. However, Bainbridge Island’s estimated per-capita emissions are almost twice those of Seattle and Tacoma.

Commented [CB2]: Cascadia was hesitant with this comparison. Methods used to calculate other jurisdictions GHG may vary substantially.

Figure ES.1 Bainbridge Island Community Emissions in 2014

Bainbridge Island Community Emissions by Source, 2014 (MTCO₂e)
Total = 214,425 MTCO₂e



On Bainbridge Island, the majority of GHG emissions come from residential and commercial electrical use (51%). Transportation contributes about 35% of GHG emissions with other sources contributing about 14%.

As COBI and the community take action to reduce GHG emissions, these inventories will serve as tools for tracking progress and making improvements along the way.

ES.4. Development of the Climate Action Plan

The CCAC and COBI gathered community input on what we should do to reduce GHG emissions and prepare our Island for the impacts from climate change. Community engagement activities included:

- An on-line survey taken by over 450 community members.
- Two community meetings attended by over 150 people.
- Monthly Climate Change Advisory Committee meetings open to the public to provide input.



ES.5. Climate Action Plan Goals

The CAP has three goals (see inset): one for mitigation, one for adaptation, and one for community engagement. The CAP identifies actions designed to achieve those goals. It will be important to conduct periodic updates to the GHG emission inventory to determine progress in meeting these goals.

Figure ES.2 provides the GHG emission reductions needed to achieve the mitigation goal by 2045. The potential reductions are grouped into four areas of actions that need to occur to meet the 2045 mitigation goal.

1. State Policy

In 2019, the Washington State legislature passed the Clean Energy Transformation Act (CETA)¹ requiring the State's electrical supply to be free of coal by 2025, carbon neutral² by 2030 and 100% carbon-free by 2045. They also passed legislation that requires the phase-out of hydrofluorocarbons.³ In addition, the ferries from Bainbridge Island to Seattle will be able to run on 100% electric power as of 2022. These actions will contribute about 60% of the 90% GHG reductions needed to meet the 2045 mitigation goals.

2. Bainbridge Island Climate Action Policies

These actions are related to specific actions such as: allowing propane in new developments; adopting a green building code), reducing vehicle miles traveled, and reduce amount of waste landfilled. These actions will contribute another about 10% of GHG reductions or with State policies about 70% of the 90% of GHG reductions needed to meet the 2045 mitigation goals.

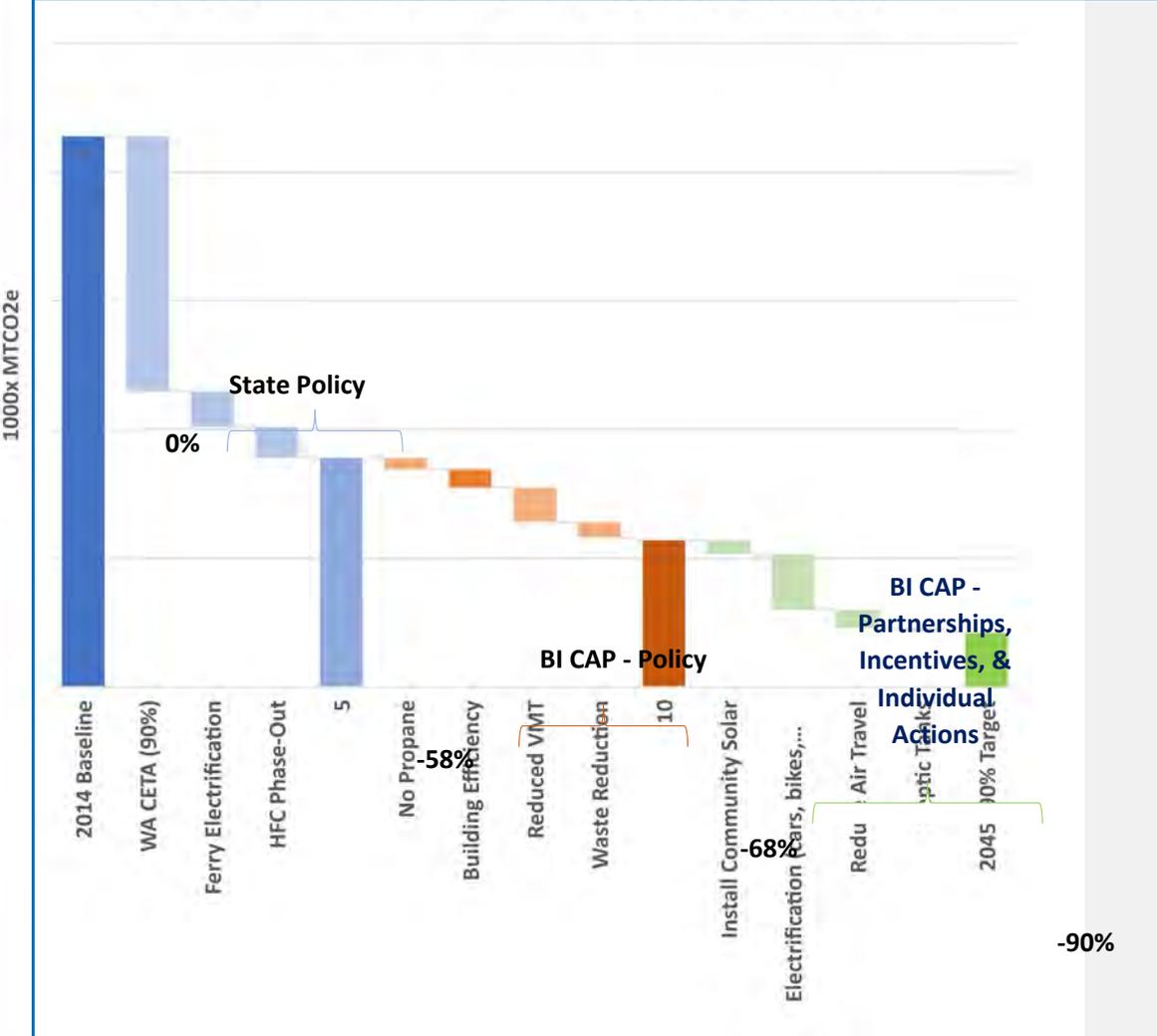
BI Climate Action Plan Goals

Mitigation: Reduce greenhouse gas emissions by 90% by 2045 compared to 2014 levels with interim milestones of 25% reduction by 2025 and 60% by 2035 compared to 2014 levels.

Adaptation: Bainbridge Island is climate savvy, and can withstand the impacts of climate change.

Community Engagement: COBI inspires community action and partners with local and regional organizations to take meaningful climate change mitigation and adaptation actions.

Figure ES2: Bainbridge Island GHG Reduction Breakdown



ES.6. Goals, Targets and Priority Actions

The CAP includes over 170 recommended actions to reduce GHG emissions and prepare our community from the impacts of climate change. In order to provide a manageable number of recommended actions for decision-making, the CCAC identified actions as either “priority actions” or “other actions”. The priority actions were determined based on a ranking process that include five criteria.

- **Mitigation or adaptation:** Potential for the action to reduce GHG emissions (mitigation) and/or potential for the action to reduce vulnerability to effects of climate change (adaptation).
- **Implementable:** The action is both technically and logistically feasible and has been implemented in other jurisdictions.
- **Duration of benefits:** The length of time over which the benefits of the action will persist.
- **Equity:** The action will contribute to or support social justice, equity, diversity and inclusion within our community.
- **Co-benefits:** The action will produce co-benefits (e.g., air pollution reduction; economic opportunities; improved transit; preserve natural resources).

Based on the ranking process the CCAC identified about 75 priority actions. These priority actions are for:

1. The GHG emissions inventory;
2. The six focus areas in the CAP (Energy, Transportation, Buildings, Waste, Forests, Natural Environment, and Community Engagement); and
3. The implementation of the CAP.

Commented [N3]: ‘Forests’ no longer a section

GHG Inventory Goals, Targets and Priority Actions

One of the first steps in developing the CAP was to complete a comprehensive GHG emissions inventory.⁴ The inventory described the amount of GHG emissions produced by the Bainbridge Island community and COBI operations in various sectors (e.g., transportation, energy, and waste). As COBI and the community act to reduce GHG emissions, such inventories must be periodically updated to monitor progress and make improvements in the methodology along the way.

Goals	Targets	Priority Actions
A. Implement a GHG emission tracking plan to monitor the CAP GHG emissions reduction goals	<p>By 2021, select software that can be used to obtain community-wide data for the next GHG emissions inventory.</p> <p>By 2022, complete a new GHG emissions inventory, followed by an inventory in 2026 and every 5 years thereafter.</p>	<ul style="list-style-type: none"> • COBI will work with the CCAC to improve the accuracy and site-specificity of data for GHG emission categories that are currently based on regional models (particularly vehicles and air travel) • COBI will complete the next GHG emissions inventory by 2022 for the year 2021. Complete the next GHG emissions inventory for the year 2025 by 2026 and then complete a GHG

Goals	Targets	Priority Actions
		emissions inventory every 5 years thereafter.
B. Re-evaluate the forest sequestration analysis.	By 2022, complete a new forest sequestration analysis for the Island using the same method in the original GHG emissions inventory, and prepare a plan to reanalyze the forest sequestration analysis periodically using alternate methods for verification.	<ul style="list-style-type: none"> COBI, working with the CCAC, will approach academic institutions for assistance to plan more rigorous analysis methods, including ground-truthing of tree inventories. Collaborations may include student apprenticeships, student thesis research opportunities, or collaborative research grant proposals. Consider also joint studies with BILT.

Energy Goals, Targets, and Priority Actions

Energy use is the largest source of emissions in our municipality and our community. The greenhouse gas emissions inventory for Bainbridge Island indicates that about 53% of the community's GHG emissions come from electricity generation.

Goals	Targets	Priority Actions
A. Increase energy conservation and efficiency throughout the built environment, including customer-owned generation, across all energy sectors	By 2023, COBI has established a Green Energy and Building Fund to assist with conversions and efficiency upgrades, with a focus on low-income housing.	<ul style="list-style-type: none"> All COBI projects adopt requirements to use high-performance retrofit technologies, whenever feasible. Create a matrix of incentives within the permitting process for building owners to increase energy efficiency in their projects. Work with PSE and partnering entities such as Housing Resource Board (HRB) to increase access to energy conservation and efficiency programs, focusing on below-average-income households and nonprofit organizations. Create a Green Building and Energy Fund, similar to the funds collected from the PSE Solar Choice and Green Power programs that can provide incentives to building owners and residents to increase electrification conversions and battery storage.
B. Eliminate carbon-based energy sources from all energy sectors.	By 2021, COBI adopts policies that prohibit new propane and heating oil as the primary sources of heating and cooling in new buildings.	<ul style="list-style-type: none"> Work collaboratively with PSE, via the PSE Franchise agreement update and other mechanisms, to move towards a 100% carbon-free electrical supply, preferably sooner than the Washington State mandated goals. Develop incentive programs to increase adoption of renewable energy and passive photovoltaic (PV) solar or other technologies.

Goals	Targets	Priority Actions
	By 2040, all of Bainbridge Island's sources of electricity are carbon-free.	<ul style="list-style-type: none"> • Adopt a policy that prohibits propane and heating oil as an energy source for new buildings, and develop incentives to replace propane use as a primary heating source for existing buildings. • Develop and hold trainings/workshops for Island and neighboring communities' builders, contractors, architects and homeowners that can help Bainbridge Island to implement the fuel-switch from carbon-based to electrification of the building stock.
C. Create energy self-sufficiency for emergency preparedness and increase energy infrastructure reliability and resilience in light of the changing climate.	By 2023, half of the emergency hubs have installed 6-20kW solar arrays and storage for resilience.	<ul style="list-style-type: none"> • Work with PSE to develop a local program to encourage homeowners, businesses, and other entities like BISS, BIMPRD, and BIFP to acquire customer-owned generation like roof-top solar and small wind turbines. • Research and develop microgrids for community emergency preparedness centers in partnership with PSE and Bainbridge Prepares. • Work with partners (e.g., PSE) to determine the feasibility of developing large-scale neighborhood microgrids with customer-based storage or utility-scale storage, or a combined heat and power biodigester sited adjacent to the community pool.

Commented [AL4]: Most of the hub locations are private facilities (churches) on the island. The City can't require them to install solar arrays on their property. If we do offer to fund and install them, then we would also have to look into modifying their MOUs.

Transportation Goals, Targets, and Priority Actions

Motorized transportation and air travel account for about 33% of Bainbridge Island's GHG emissions. Motorized vehicles also contribute to localized air pollution and can impact public and environmental health and safety. Increasing the use of alternative modes of transportation, including walking, biking, and public transit, can help alleviate these impacts.

Goals	Targets	Priority Actions
A. Reduce motorized vehicle miles traveled (VMT)⁵ per capita	By 2030, reduce VMT per capita by 25% (currently 3,000), and by 50% by 2045. To support this goal, at a minimum: <ul style="list-style-type: none"> • By 2030, increase the mode share⁶ of active transportation (biking and walking) to 25%, and to 50% by 2045. 	<ul style="list-style-type: none"> • Through the Sustainable Transportation Planning Process and other means, develop an ambitious plan to create networks of pathways required to achieve a substantial mode shift to biking and walking, including separated or protected biking and walking lanes. • Increase City staff time or hire a consultant to enhance the City's capacity to identify and apply for sources of funding (such as federal grants for Safe Routes to Schools and public private partnerships for the needed infrastructure). • Explicitly consider climate change mitigation (e.g., greenhouse gas reductions) when evaluating options as the City develops its Sustainable Transportation plan. • Require incorporation of non-motorized transportation options into all new development, e.g., by including sidewalks

Commented [ME5]: This action may or may not produce the desired results. Intervention studies suggest that changing the built environment could encourage a modal shift from car travel towards active travel, however little is known about the patterns of changes in travel behavior.

Goals	Targets	Priority Actions
	<ul style="list-style-type: none"> By 2030, increase the mode share of public transit⁷ to 5% (currently 2%) and to 10% by 2045. 	<ul style="list-style-type: none"> or pedestrian trails linked to existing and planned trail/sidewalk networks; incorporating bicycle lanes and trails; etc. Require all new development to accommodate non-motorized and public transit transportation options (including incorporation of bus shelters and other amenities). In consultation with Kitsap Transit, develop a robust marketing/outreach/educational program to inform island residents and those who traverse the Island from outside about public transit options, including park and rides. Work with BISD on measures to discourage private-vehicle drop-offs and pick-ups, encourage car-pooling, biking and walking and promote greater use of school buses.
B. Reduce GHG emissions from motorized transportation, including through electrification of all modes (on-road, off-road, and ferries) and encourage reduction in air travel.	<p>By 2030, transition the COBI's fleet to 75% electric vehicles and the remainder to biofuels.</p> <p>By 2045, 80% of registered vehicles on Bainbridge Island will be either electric vehicles or plug-in hybrid electric vehicles.</p>	<ul style="list-style-type: none"> Transition COBI's fleets to primarily electric vehicles and using biofuels where electric vehicles are not an option and encourage other Bainbridge Island taxing districts to also develop a plan. Require that all new development be EV charge-ready and that multifamily units include EV charging infrastructure. Install additional charging stations in commercial centers, including Island Village, Coppertop, Lynwood Center. Coordinate with Washington State Ferries, PSE, and other entities as necessary to evaluate the need for, and feasibility of, establishing charging infrastructure on the Island to service ferries. Adopt a city-wide anti-idling ordinance that includes an enforcement component and work with the WSF and State Patrol to reduce idling at the ferry parking lots. Work with partners (e.g., Climate Action Bainbridge and Puget Sound Clean Air Agency) to provide public information on benefits of reducing air travel and seek opportunities to help our community support and maintain the digital infrastructure it needs to enable more virtual meetings.

Commented [ME6]: Requirements for new development vary depending on the type of development. Requirements very limited for single-family residences.

Commented [CB7]: Would need retrofit incentives to encourage electric charging stations in private parking lots

Buildings Goals, Targets and Priority Actions

The energy used to heat, light, and power buildings and other workspaces is a major source of GHG emissions. Building-related emissions are the state's fastest growing source of GHG and account for 27% of the carbon pollution in Washington.⁸

Additional environmental impacts from buildings include: stormwater runoff; loss and fragmentation of natural areas and wildlife habitat; increased use of limited resources including groundwater; and burdens on existing landfill space, particularly from construction and demolition debris. In addition, changes in the climate such as sea level rise, flooding and slope stability may increase the vulnerability of the Island's housing stock.⁹

Goals	Targets	Priority Actions
<p>A. Reduce GHG emissions from all municipal, commercial, industrial and residential buildings.¹⁰</p>	<p>By 2023, COBI has adopted green building standards and practices for all new municipal, residential, commercial, and industrial buildings, including affordable housing and all remodels and additions¹¹ of a certain size.</p> <p>By 2023, COBI will establish a Green Energy and Building Fund.</p> <p>By 2030, COBI will require all existing residential, commercial, industrial and municipal buildings to be all electric.</p>	<ul style="list-style-type: none"> ● Green Building Task Force provides recommendations on mandatory green building practices and standards for all new municipal, commercial, industrial and residential building and all remodels and additions of a certain size.¹² ● Prohibit propane and heating oil as the primary energy source for heating and cooling in all new and renovated municipal, commercial, industrial, and residential buildings. ● Require all buildings apply the Climate Change Adaptation Certification, or similar tool, to identify and avoid climate risks. ● Provide incentives for existing buildings to replace propane and heating oil use as a primary heating and cooling source. ● Work with PSE to: 1) raise awareness about existing rebate and assistance programs that will increase access to energy conservation and efficiency programs, focusing on below-average-income households and nonprofit organizations;¹³ 2) explore creating new incentive/rebate programs; and 3) develop a local program to encourage homeowners that have sufficient potential to acquire customer-owned generation like roof-top solar and small wind turbines. ● Establish a fund to assist in energy audits for residential home projects, including affordable housing, using the “no net increase” requirement and other energy conservation measures including providing financial incentives for existing building owners to transition from combustion equipment to all electric buildings.
<p>B. Establish procedures to ensure buildings and infrastructure are resilient to climate change impacts (e.g., higher precipitation, sea level rise, wildfire risk and temperatures).</p>	<p>By 2022, COBI will complete an analysis, develop a plan, and design a process for regularly updating the plan to ensure all City owned assets will be protected from sea level rise over the next 50 years.</p> <p>By 2023, COBI will complete an analysis, conduct public outreach</p>	<ul style="list-style-type: none"> ● As recommended by the 2019 CCAC Report on Sea Level Rise: 1) conduct a systematic, high-resolution analysis of exposure of City assets to sea level rise; 2) create a prioritized list for addressing assets at high risk of sea level rise; and 3) integrate sea level rise analysis into all City planning to identify and avoid or minimize risk to planned infrastructure and development. ● COBI integrates sea-level rise analysis into all City permitting to help applicants identify and avoid or minimize risk to planned infrastructure and development from sea level rise or other climate impacts.

Commented [CB8]: Green Team could help implement energy saving strategies with staff and have already started to compare energy use by facility.in 2019 and 2020.

Goals	Targets	Priority Actions
	activities, and identify those properties at highest risk from sea level rise impacts over the next 50 years.	<ul style="list-style-type: none"> COBI hosts community workshops on climate impacts, how they might impact buildings, and how to prepare buildings for these impacts.

Natural Environment Goals, Targets and Priority Actions

Our actions today will affect the future of our Island’s natural resources under a changing climate. COBI’s Comprehensive Plan identifies the importance of continuing to protect our open spaces and environmentally sensitive areas. Climate change will bring both directional change and uncertainty to many of these resources. Therefore, the goals, policies and approaches that COBI and other landowners and managers use to protect and sustain these landscapes will also need to shift in order to maintain their effectiveness under these new conditions.

Goals	Targets	Priority Actions
A. Steward Bainbridge Island’s natural resources to function as healthy, resilient ecosystems that can continue to serve multiple ecological functions including providing habitat, maintaining the hydrologic cycle and storing carbon in the face of the added stresses of climate change.	By 2021, COBI is using the Climate Change Adaptation Certification (or other similar tool) to evaluate land acquisition and development decisions to ensure decisions are climate informed.	<ul style="list-style-type: none"> Develop and adopt a comprehensive strategy for addressing invasive species on City lands to reduce these significant stressors on forested ecosystems. Evaluate all COBI land acquisition and development decisions using the Climate Change Adaptation Certification¹⁴ (or other similar tool) to ensure decisions are climate informed. Work with COBI arborist and partnering community groups, as appropriate, to create a preferred list of tree and plant species expected to be favored by climate change
	By 2025, COBI will develop a comprehensive plan to control and reduce invasive plant species across Bainbridge Island in partnership with relevant stakeholders.	projections for use in City planning and restoration efforts. This list can also be used to advise local landowners and be applied to climate savvy development.
	By 2025, COBI will adopt a forest management plan that incorporates adaptation to climate change risk factors including wildfire and drought and pathogens, and will work collaboratively with all stakeholders that manage forest resources to establish consistency in priorities and planning for climate change impacts on forests across jurisdictions and ownership.	<ul style="list-style-type: none"> Conduct an assessment of stocking densities on COBI owned lands and evaluate forest health improvements and wildfire risk reduction. Ensure that COBI policies prioritize wildfire risk reduction in proximity to homes and infrastructure while prioritizing retention of wildlife habitat values in areas farther from

Commented [N9]: Should mention increase in canopy cover as a significant goal. This would align with current city goals.

Commented [N10]: Seem to be unaware of the Community Forest Management Plan which was adopted in 2017.

Commented [N11]: COBI owns very little forest land, what is owned is largely parks (including street ends) and ROW. Some acreage owned at the head of eagle harbor. So maybe not the best utility to be had from such an assessment.

Commented [AL12]: COBI/CCAC also needs to coordinate with BIFD on their wildfire risk reduction program

Commented [N13]: May conflict with canopy coverage goals found in CFMP

Goals	Targets	Priority Actions
		homes and infrastructure, and strengthen wildfire risk-reduction design guidelines for Island construction (residential and business).
B. Protect and maintain the integrity of our Island's surface and groundwater resources in the face of climate change.	By 2023, COBI will adopt a Groundwater Management Plan that accounts for climate change in its projections, policies, and guidance.	<ul style="list-style-type: none"> ● Incentivize and maximize opportunities for incorporating water conservation features in Green Design and Building Codes (see Buildings Section Goal A). ● Continue a robust surface water monitoring program that can identify trends in streamflow and water quality to inform adaptive management to protect stream health and integrate into monitoring climate change-sensitive parameters as appropriate. ● Complete and implement COBI's Groundwater Management Plan, including incorporation of expected changes to groundwater inputs and outputs under climate change.
C. Steward our Island's shorelines to allow for resilience in the face of climate impacts including sea level rise.	By 2025, COBI will integrate into its Shoreline Master Program approaches to address and adapt to the impacts of sea level rise on the natural resources of our shorelines, and will work collaboratively with all stakeholders that manage shoreline resources to establish consistency in priorities and planning for sea level rise across jurisdictions and ownership.	<ul style="list-style-type: none"> ● Ensure that planning for sea level rise is explicitly incorporated into the Shoreline Master Plan, including incorporating capacity for inundation and change to natural shoreline features, such as planting for shifting vegetative communities, infrastructure movement or abandonment to adapt to habitat loss at shoreline.
D. Support an agricultural system that prioritizes climate change resilience, local food production, and ecosystem services including soil carbon storage and water management.	<p>By 2023, COBI will require manure management for all permitted agricultural activities.</p> <p>By 2023, agricultural uses will be incorporated into groundwater planning via the Groundwater Management Plan (see goal B).</p>	<ul style="list-style-type: none"> ● Pursue COBI policies that facilitate local agricultural opportunities (e.g., agricultural zoning, tax structure). ● Integrate water budget targets (see Strategy C2) into agricultural land use permitting and planning.

Commented [N14]: Does this type of design conflict with other community values that bring us closer in to nature?

Commented [CB15]: Need to find other avenues for completing if we continue the hiring freeze, including hydrogeologist position.

Commented [N17]: Is this a major issue?, are there large scale animal agriculture farms on the island that mishandle manure?

Commented [N16]: Tread carefully when implementing changes to agricultural regulation as it is very sensitive to additional costs of operation.

Waste Goals, Targets and Priority Actions

The consumption and disposal of material goods contribute significantly to GHG emissions. The 2019 Bainbridge Island GHG emissions inventory indicated that about 3% of current greenhouse gases are from wastewater treatment and 4% are from solid waste generation. There was an approximate 11% increase in community GHG emissions specifically from solid waste between 2014 and 2018, and an 8% increase in wastewater treatment emissions over the same time period.

Goals	Targets	Priority Actions
A. Reduce Island residential, commercial, and industrial waste generation.	<p>By 2021, COBI’s approved sustainable procurement plan¹⁵ is applied across all departments for 100% of purchases.</p> <p>By 2021, COBI establishes policies to substantially reduce the use of single-use disposable food serviceware by Island businesses.</p>	<ul style="list-style-type: none"> • Centralize purchasing within COBI to increase adherence to COBI’s sustainable procurement policy. • Adopt an ordinance to reduce the use of single-use plastic food serviceware, including utensils and take-out containers, by all Island food service establishments. • Educate the community about ways to reduce food waste and promote opportunities for viable food to get to those who need it, including food banks and neighborhood giving.
B. Increase diversion of waste from the landfill	<p>By 2023, regular commercial compost services are established and consistently used.</p> <p>By 2025, COBI develops a requirement for the diversion of all food waste from the landfill.</p>	<ul style="list-style-type: none"> • Work with Bainbridge Disposal (BD) to offer curbside compost pickup for all commercial facilities as a weekly service. • Require that all commercial entities participate in recycling, and once established, in the green waste program. • Require, and where appropriate provide incentives for, the reduction, collection and diversion of construction and demolition waste.
C. Optimize collection and disposal systems to minimize GHG emissions	<p>By 2030, Bainbridge has a closed-loop system for its green and agricultural waste, such that organic materials are recycled and reused on the Island to the maximum extent practicable.</p>	<ul style="list-style-type: none"> • Evaluate and support opportunities to build infrastructure for on-island or more local processing of green waste.
D. Ensure that any new waste-related infrastructure, such as transfer stations or composting facilities, are not sited in current or future hazard areas.		<ul style="list-style-type: none"> • Apply the Climate Change Adaptation Certification to any new waste-related infrastructure projects.

Commented [CB18]: Green Team can support this if given the authority to do so. The Team could review purchasing list annually.

Community Engagement Goals, Targets and Priority Actions

Community engagement and community buy-in is essential to effectively implement actions throughout the CAP and to achieve the overarching mitigation and adaptation goals. The community should be provided with information on the observed and projected impacts of climate change and on actions that can be taken to adapt to those changes.

While action by COBI, and other organizations such as BISD and BIMPRD, are important, individual actions can also make a large difference in meeting our goals for reducing GHG emissions Island-wide and successfully adapting to the coming changes. Finally, we need to incorporate climate change in our discussions about how to prepare our Island for emergencies.

Goals	Targets	Priority Actions
A. Increase the Bainbridge community's awareness and knowledge about current and future climate change related impacts and ways to reduce those impacts.	By 2021, a majority of the Bainbridge community has ready access to current climate change information, is aware of climate change issues, and understands what COBI and what they as individuals can do about it.	<ul style="list-style-type: none"> • Develop a dedicated climate change webpage on the City's website including links to climate mitigation/adaptation resources on the CCAC website and make the CAP widely available in on-line and in print formats. • Include a climate change tip of the [month] as a regular feature in the COBI Connects newsletter.
B. Inspire action across the community and partner with local and regional organizations to take meaningful climate change mitigation and adaptation actions.	By 2021, COBI and committees like the CCAC meet regularly with other advisory committees, community groups and have established relationships with other jurisdictions to share, support and exchange climate change information and strategies.	<ul style="list-style-type: none"> • Declare a climate emergency and be a regional leader in recognizing the important role that municipal governments can play in taking action to respond to climate change. • Work cooperatively with other jurisdictions in Kitsap and King Counties (e.g., Poulsbo, Silverdale, Kingston, Bremerton, Seattle) to find regional solutions including mitigation and adaptation actions that would benefit from economies of scale or the sharing of lessons learned. • Host workshops with hands-on demonstrations for community members to learn how to take <u>specific actions</u>. • Host events for <u>community project(s)</u> to bring people together to work towards mitigation and adaptation.
C. Empower and prepare COBI, Bainbridge Island residents, and Bainbridge Island	By 2022, COBI's existing authority, budget and capacity is sufficient to address and respond to	<ul style="list-style-type: none"> • In coordination with the COBI attorney, review existing laws, regulations and policies and revise as needed by asking the following sorts of questions.

Goals	Targets	Priority Actions
businesses for climate impacts and emergencies.	climate change related issues. By 2022, COBI will have incorporated climate change into its emergency preparedness programs.	<ul style="list-style-type: none"> ○ Are they adequate to require, or at least encourage, GHG emission reductions from City regulated or endorsed activities as well as from individual activities? ○ Do they provide sufficient authority/flexibility to respond to impacts and emergencies? ○ Are recommended mitigations/adaptations actions allowed? • Hire a COBI Climate Mitigation/Adaptation Officer to coordinate activities between and among the various city offices, inspect for compliance with climate related code compliance, and serve as a City staff liaison with the CCAC. • Include Climate Change related expenditures in the City budget for education, code compliance, mitigation and adaptation action items identified in the CAP. See Implementation Section 9.5 Funding for general discussion of funding needs. • Establish community centers for recharging generators, cell phones during outages, and providing emergency food/water.

Commented [AL19]: We are working on establishing 12 emergency hubs across the island. They will all have limited emergency food and water but I don't know what would need to be put in place to recharge generators. Most generators are either gas or dual fuel gas/propane. We don't have the ability to store extra gas or propane at this time.

ES.7. Individual Actions

In addition to the actions identified above, the City is responsible for implementing, there are numerous actions individuals can take to reduce their GHG emissions and prepare our Island for current and future climate impacts. These actions fall into six categories:

- Participate in Community Climate Action
- Reduce Individual Energy Use
- Reduce My Waste
- Reduce Individual Water Use
- Reduce Personal Vehicle Use
- Reduce Your Vulnerability to Climate Change.

Section 10: Individual Actions – What Can We Do to Make a Difference, identifies several examples of actions that individuals throughout our community can take.

ES.8. Implementation and Future Updates

The Bainbridge Island City Council will be responsible for oversight and making policy decisions to support implementation of the CAP. COBI staff will integrate CAP goals and strategies into City operations and decision-making and report back on progress.

Achievement of the climate goals will require that COBI staff, community members, business leaders, and institutions all take action. COBI staff will work to support community members in taking climate action and involve residents in implementation decisions.

Because climate change most negatively affects vulnerable communities, implementation of the CAP should advance equity while addressing climate change. COBI staff will work to establish partnerships with underserved communities, build capacity for climate leadership across the community, and involve diverse community voices from the start of any program. The priority actions for Implementation are contained in Table ES.3.

Table ES.3: Priority Actions: Implementation

Area	Priority Actions
Initiate Implementation	<ul style="list-style-type: none">• Confirm COBI staff person to liaise with the CCAC until a dedicated Climate Change Mitigation/Adaptation Officer is hired. See Section 8 Community Engagement Action 8.C.1.b.• Identify a COBI staff person in each department who will provide information to the City staff liaison (Climate Change Officer) identified above. This person will provide department-specific information on timelines for completing actions and report on progress on CAP actions led by that department.
Equity	<ul style="list-style-type: none">• Consider and minimize the potential for unintended and/or inequitable impacts from each action prior to implementation.
Accountability, Reporting, and Future Updates	<ul style="list-style-type: none">• Produce a CAP progress report every year that includes a review of actions undertaken during the year and additional actions needed to meet the CAP goals for reducing GHG emissions and preparing the Island for climate impacts.• Update the CAP every five years.
Funding	<ul style="list-style-type: none">• Develop cost estimates for the highest priority CAP actions and staffing requirements and list potential funding sources (in year 1).• Include a description in the City Manager’s proposed budget of existing and proposed projects that relate to CAP strategies and actions. See Section 8 Community Engagement Action 8.C.1.c.

The 2020 CAP represents the beginning of an ongoing and iterative conversation between COBI and the community it serves. COBI will work with the community, local partners, and technical experts to update the CAP every three to five years, so that we can respond to changing circumstances and learn from implementation challenges and successes. The next GHG emissions inventory will be completed by 2022 for the year 2021. The GHG emissions inventory after that will be completed by 2026 for the year 2025 and then they will be completed every 5 years.

Section 1: Introduction



Section 1: Introduction

We are in a climate crisis of our own making to which we must respond. Climate change will impact Bainbridge Island in multiple ways, including sea level rise resulting in loss of land (including homes, roads and habitat) and altered precipitation patterns resulting in less groundwater recharge, increased potential for wildfire, and changes in vegetation.¹⁶

The urgency to substantially reduce our greenhouse gas (GHG) emissions and make our community more resilient to climate change requires that we take significant action now. Waiting puts our community, economy and our children's future in peril.

A 2018 report from the Intergovernmental Panel on Climate Change¹⁷ stated that to keep global temperatures below 1.5°C compared to pre-industrial levels will require net zero global carbon emissions by approximately 2050. This conclusion is also supported by the 4th National Climate Assessment¹⁸ and many other scientific publications^{19,20} and entities.

In 2016 the City of Bainbridge Island (COBI) demonstrated its concern for climate change when it incorporated climate change into the updated Bainbridge Island Comprehensive Plan.²¹ The Comprehensive Plan has seven guiding principles, one of which explicitly addresses climate change (see side bar).

In 2017 COBI again showed its commitment to address climate change when it established the Climate Change Advisory Committee (CCAC), with a mandate to provide the City with recommendations for a Climate Action Plan.

In developing the Climate Action Plan (CAP), the CCAC followed the five milestones approach suggested by ICLEI²², a global organization which has been working for more than 20 years to assist local governments in reducing their greenhouse gas emissions and preparing communities for the impacts of climate change.

The five milestones below offer a systematic approach to dealing with climate change. The specific actions the City has taken, or intends to take, for each milestone are summarized below.

BI 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, economic shifts).

- **Milestone 1:** A GHG emissions inventory was completed by Cascadia Consulting Group for COBI. The inventory covered emissions from City operations and from the Community as a whole. A summary of the results is included in Section 2.

- **Milestone 2:** The CCAC recommended a reduction target for GHGs emissions. The target 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 COBI staff. The CAP includes a number of goals necessary to meet the reduction targets. The specific strategies and actions needed to meet the goals are discussed in Sections 3-8.

- **Milestone 4:** The next step is to implement the actions identified in the CAP. This is discussed in Section 9.

- **Milestone 5:** The evaluation and monitoring of progress is critical to ensure the actions identified are effective in reducing GHG emissions and preparing the Island for the impacts of climate change.

- [\[Suggestion: Add a short description about how the process needs to repeat/iterate on a regular cycle to adaptively manage our efforts. If needed, see Puget Sound Partnership Action Agenda for an example.\]](#)



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1.1. Why develop a Climate Action Plan?

The CAP is a comprehensive roadmap that outlines the specific activities that COBI and the community can undertake to reduce GHG emissions and increase our resilience to the climate changes that are occurring now and will intensify in the future.

The CAP considers both mitigation and adaptation strategies and actions. **Mitigation** responses reduce GHG emissions, while **adaptation** responses increase resilience and/or decrease

vulnerability. Combined, these two approaches create a comprehensive, integrated strategy for addressing climate change.²³

Mitigation can be achieved through approaches such as more sustainable development, higher-density development, fewer vehicle miles traveled, more use of non-motorized transportation, more electric vehicles, green building standards, and renewable energy sourcing.

Adaptation addresses the effects of climate change, including sea level rise, altered precipitation pattern with related flood and drought, and increased temperatures. Approaches include low-impact development; climate certified zoning, permitting and procurement; and climate-savvy hazard mitigation.

Commented [PB20]: Add: Retreat of buildings and infrastructure from rising seas

1.2. Federal, State, and Local Climate Policy

In June 2013, President Obama presented a Federal Climate Action Plan setting forth a plan and policies to cut carbon emissions, prepare for climate change impacts, and lead international climate protection efforts.²⁴

In December 2015, all but two countries (who have since joined) in the world signed on to the Paris Climate Agreement to limit global warming to less than 2° C (3.6° F) above pre-industrial levels. They also agreed to stop the rise of greenhouse gas emissions as quickly as possible, with an aspiration to limit warming to 1.5° C (2.7° F).

On June 1, 2017, President Trump initiated the process to remove the United States federal government from the Paris Climate Agreement and is seeking to nullify the obligation to contribute aid to less developed countries. When this change takes effect in 2020, the U.S. will be the only world government not participating in the Paris Agreement as the original two holdouts, Syria and Nicaragua, subsequently joined in November 2017.

Responding to President Trump’s announcement, dozens of cities - including Bainbridge Island - states, and U.S. corporations joined the “We Are Still In”²⁵ campaign, declaring their continued commitment to meeting the reduction goals of the Paris Agreement.

Commented [PB21]: Reference resolution or whatever official action was taken.

Currently, the Federal government is not taking an active role in climate change issues. Given the lack of federal action, many city and state governments along with a number of 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 GHG emissions. They mandated GHG reductions from energy generation, put in place incentives for electric cars, provided resources to electrify the State’s ferry fleet, required higher efficiency standards for appliances, and mandated a phase out of the very potent greenhouse gases, hydrofluorocarbons.²⁶

In 2016 the City of Bainbridge Island incorporated climate change into the Comprehensive Plan. The City Council has also passed several resolutions in support of climate change actions. And in 2017, the City Council established the CCAC.²⁷ The CCAC was established to serve as a technical and planning advisory committee to the City Council, city manager, and COBI staff on issues related to climate change. The Council requested that the CCAC develop a Climate Action Plan (CAP) for the Island.²⁸

The development of the CAP is an important milestone on the path to reducing GHG emissions and preparing our Island for the effects of climate change. However, the real work starts now: **implementation ~~for~~ of the CAP recommendations.**

Implementation will require the City to make difficult decisions on priorities and identify the funding and/or staffing for the critical actions. Success will also depend on Bainbridge community involvement and individuals' taking meaningful personal action to respond to this climate crisis.

The CAP is intended to be a living document, modified over time to adapt to the City's and community's changing conditions. The many contributors to this document hope the CAP can provide clear guidance in helping Bainbridge Island do its part in combating climate change.

BI: Recent Climate Related City resolutions, policies 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 ([Ordinance 2017-01](#))~~6-##~~

1.3. Bainbridge Island Climate Impact Assessment

The effects of climate change relevant to Bainbridge Island can be categorized in terms of six impact areas: temperature, precipitation/extreme weather, sea level rise, vegetation change, ocean acidification and slope stability.

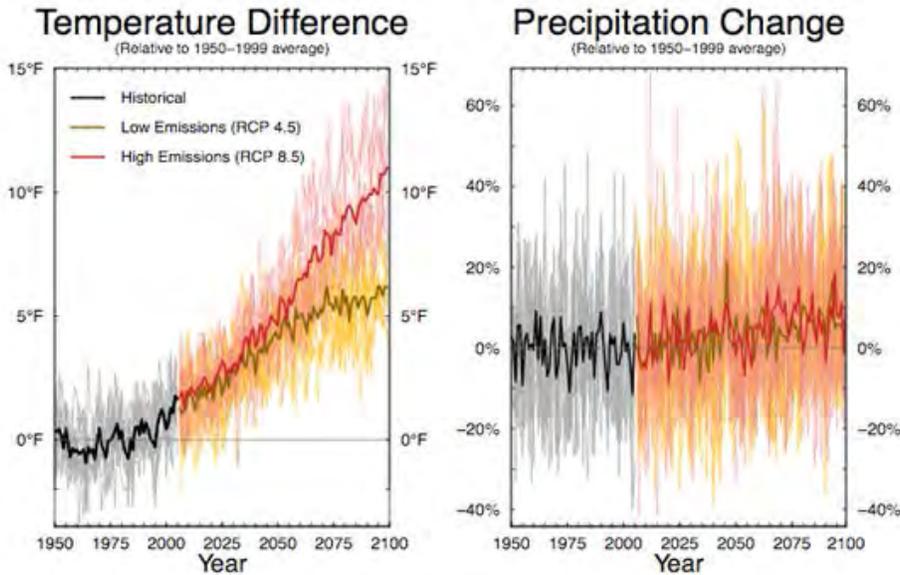
Temperature

Our climate has warmed over the past century and temperatures are expected to continue to increase over the 21st century.²⁹ We had already experienced **1.3° F** of warming by 2014 and the frost-free season has lengthened by 30 days. The projections are represented in Figure 1.1 as historical temperature and then two potential future trends based on either Low Emission (RCP 4.5) or High Emissions (RCP 8.5) scenarios.

RCP stands for 'Representative Concentration Pathway'.³⁰ RCPs were used in the latest IPCC report to make projections of how human activities will affect concentrations of greenhouse gases in the atmosphere and the resulting increase in temperatures. The four RCPs range from very high (RCP 8.5) through to very low (RCP 2.6) future concentrations. The numerical values of the RCPs (2.6, 4.5, 6.0, and 8.5) refer to the concentrations in 2100.

Commented [PB22]: Suggestion: Always state temperatures in both F & C, so the reader can use F to compare to what they know and use C to compare with the Paris Accord goals.

Figure 1.1 Regional Projections for Changes in Temperature and Precipitation³¹



Between now and mid-century, average annual air temperatures are projected to increase between 4- and 5.5-degrees F, with even greater warming projected in the years thereafter. This warming, unlike warming observed to date, which has not yet substantially affected spring temperatures, will affect all seasons, with the greatest increase in summer months.

Increasing temperatures can affect our human demand for water and will increase the water requirements of Island vegetation (natural systems, agriculture and landscaping). Increasing temperatures will also affect our terrestrial, freshwater and marine ecosystems. And this will increase the likelihood of heat-related illness and diminished air quality and add thermal stress to the list of factors degrading local infrastructure such as roads and bridges.

Precipitation/Extreme Weather

There has not been a long-term change in regional precipitation. However, there has been a “modest increase” in heavy rainfall events. Going forward, year-to-year variation is expected to be the dominant factor in precipitation for all seasons except summer, which is expected to see declining precipitation³² (Figure 1.2). Additionally, extreme winter precipitation events are expected to be more intense (+22%) and more frequent extreme winter precipitation events (seven events per year, up from two events per year historically) are expected.

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Commented [PB24]: This sentence is a bit complex. Consider splitting into two simpler sentences to make sure these points are very clear.

Commented [PB25]: This is related to human health, right? If so, add something to that effect to clarify.

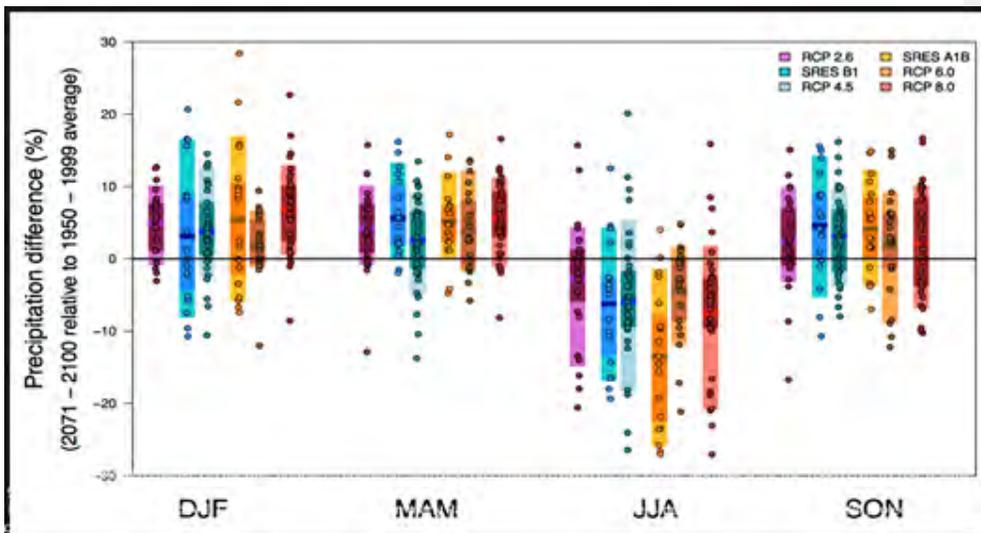
Commented [PB26]: Consider splitting this into multiple sentences for clarity since it is covering a wide range of different topics.

Commented [PB27]: Consider reviewing/ revising to improve clarity and plain talk.

Commented [PB28]: This is only referring to total perception (as both rain and snow) correct? If so, consider clarifying that so the difference between total and seasonality become more clear.

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Figure 1.2 Projected Difference in Precipitation by Season for the Pacific Northwest Based on Six Climate Scenarios³³

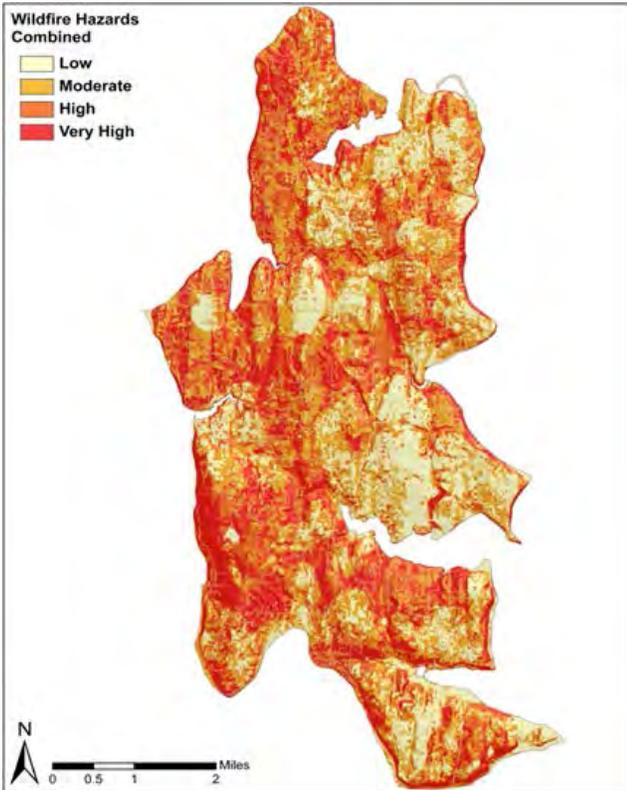


Increasingly intense winter precipitation events have significant implications for all things affected by episodic flooding, including homes, businesses and critical infrastructure as well as marine and terrestrial species and their habitats. For example, increasing numbers of extreme weather events may overwhelm stormwater infrastructure that was designed to handle lower peak flows. Intense precipitation also negatively affects groundwater recharge rates (faster-moving water has less time to infiltrate) and surface water quality (more intense rainfall picks up more contaminants, nutrients and sediments).

Declining precipitation during the summer, already our dry season, may result in decreased groundwater recharge rates as well, which may not be offset by more intense winter precipitation when more water runs off into the Sound. Decreased precipitation will also change the types of vegetation that can thrive on our Island. The mix of increased temperatures, water-stressed vegetation and above ground power lines (which are the majority of our transmission and distribution lines on Bainbridge Island) may increase our fire hazard as experienced in California, which has had catastrophic fires over the past several years.

The wildfire risk map in Figure 1.3 was created in 2010 based on an assessment and ranking of spatial hazards, proximity to hydrants, and past occurrence of vegetation fires, which partly relates to annual precipitation and weather. The hazard shown is based on past conditions. Climate changes on top of this can result in increased occurrences or intensity of wildfires in some areas.³⁴

Figure 1.3 Wildfire Hazards as Identified in the Bainbridge Island Hazard Identification and Vulnerability Assessment



Commented [N30]: I think including this graphic without context is misleading. Hazard is very different from risk. A **hazard** is something that can cause harm. A **risk** is the chance, high or low, that any **hazard** will actually cause somebody harm. This graph appears to show us at great risk for a massive fire, when in fact it shows that if a fire were to happen it could potentially be catastrophic. This graph would have looked very similar in 1899 I imagine.

Sea Level Rise

Central Puget Sound waters have risen by more than 6 inches during the past century.³⁵ Continued warming is expected to accelerate rising sea levels over the next century and beyond. The most likely projections (i.e., central estimates) indicate that relative to 2000 average sea level during the period 1991-2009, Bainbridge Island will experience additional sea level rise of:

- 56 inches by 2030;
- 12 inches by 2060;
- 28 inches by 2100: and
- 40-46 inches by 2150.³⁶

Projections vary widely according to different emissions scenarios and other factors, but again, each of the above amounts are almost certain to eventually occur.

Commented [PB31]: By more than 8 inches (0.68 feet between 1899-2019) at the Seattle tide station according to NOAA (https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=9447130)

Commented [PB32]: Footnote: RCP 8.5, 50% probability of exceedance

Commented [PB33]: 0.4 feet = 4.8 inches
Using CIG visualization tool for Eagle Harbor with RCP 8.5 & 50% prob.

Commented [PB34]: Consider using 2050 because the rest of the increments in this series are by 50 and 2050 is a commonly referenced number in climate change reporting because it is mid-century.

0.8 feet by 2050 = 9.6 inches
Using CIG visualization tool for Eagle Harbor with RCP 8.5 & 50% prob.

Commented [PB35]: 3.8 feet = 45.6 inches
Using CIG visualization tool for Eagle Harbor with RCP 8.5 & 50% prob.

A limited number of public assets, primarily related to sewer service in and around Eagle Harbor and some low-lying streets, have already experienced or will soon experience inundation from sea level rise, especially during king tides.³⁷ Other vulnerable assets include Washington State Ferries terminal and maintenance facilities, the Wyckoff Superfund site, Fay Bainbridge Park, and to a lesser extent, the Winslow Wastewater Treatment Plant.

The most significant impact will be to private property owners around the island, many of whom currently experience occasional nuisance flooding³⁸.

By the middle of this century, many waterfront residences will face severe flooding, and in some cases, permanent inundation. Areas most exposed High risk areas include Hedley Spit/Point Monroe, Manitou Beach, and Schel Chelb Estuary/Point White Drive (see Figure 1.4). Other vulnerable assets include Washington State Ferries terminal and maintenance facilities, the Wyckoff Superfund site, Fay Bainbridge Park, and to a lesser extent, the Winslow Wastewater Treatment Plant. Accelerated bluff erosion will threaten high-bank properties and many septic systems island-wide. Increased saltwater intrusion will stress ground water resources, terrestrial ecosystems marine riparian vegetation, and low laying septic systems near the shoreline.

Figure 1.4 Hedley Spit/Point Monroe, Lynwood Center and Eagle Harbor with a Projected Sea Level Rise³⁹



Commented [PB36]: Some coastal habitats will also be among the most significant impacts, such as:

- Coastal wetlands/marshes (coastal squeeze)
- Accretion beaches
- Forage fish spawning areas
- Shellfish (from ocean acidification)

Commented [PB37]: Need to reference the year of this projection. Is it comparable with the CIG model?

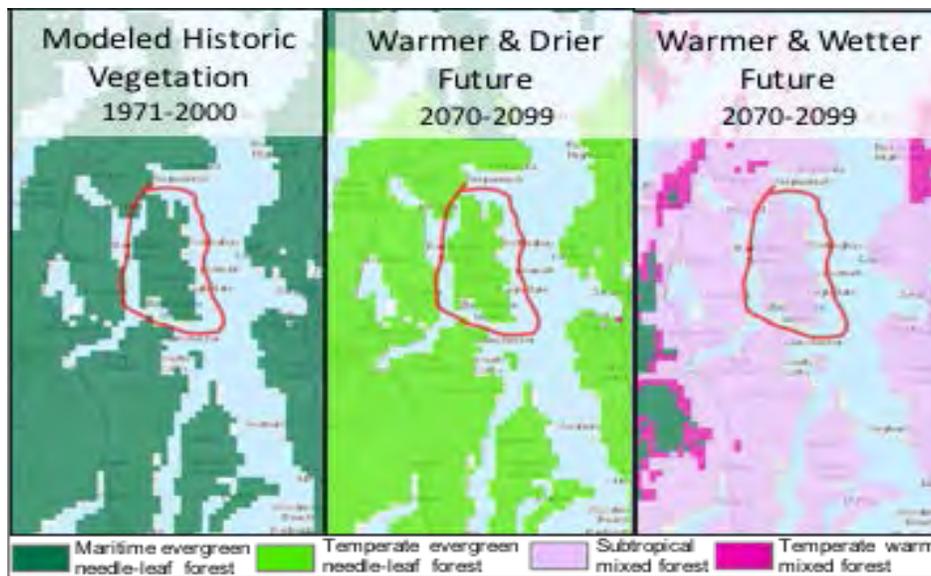
Vegetation Changes

Changes in our local climate (e.g., increasing temperatures, decreasing summer precipitation) will affect local vegetation — forests, other natural habitat, horticulture and agriculture. Forest distribution is projected to reduce Douglas fir in the Puget Sound region by mid-century, with possible expansions of western hemlock, white bark pine and western red cedar across the Pacific Northwest.⁴⁰

Commented [PB38]: Mention carbon sequestration?

Commented [CB39]: The latest information I have is that red cedar habitat will be contracting.

Figure 1.5 Projected Vegetation Changes for Bainbridge Island Based on MC1 Models of A2 SRES Emission Scenarios⁴¹



Commented [N40]: This is not established. Current science sees more of a habitat shift northward. Currently we are seeing die offs and this will be followed up by colonization from the same species but representing a cohort better adapted to warmer conditions from the southerly parts of the species' range. This also does not take into account increased pest and disease pressure. Additionally the citation needs to be updated.

Commented [N41]: I am concerned about the inclusion of this map when the science has not been established and there is still great debate concerning the future of PNW vegetative communities. Many other less dramatic models exist. If we cant make our argument without resorting to extreme models we shouldn't be making it. All the resulting discussion is a bit speculative.

I think the dramatic differences in the future scenarios in this graphic shows how little we understand what may happen.

Currently Bainbridge Island has a maritime evergreen needle leaf forest; climate change is projected to result in transition to temperate evergreen needle leaf forest or subtropical mixed forest. The change from a maritime to temperate or subtropical forest will depend on the changes in temperature and precipitation in our area. If it is warmer and drier then the type of forest is projected to transition to a temperate forest. However, if it is warmer and wetter than a more subtropical mixed forest is projected.

Summer water stress will decrease tree growth and increase fire risk. These changing conditions (e.g. climatological, heat and water stressed plants) are also likely to cause changes in pests. Therefore, although the length of our growing season may increase, more extreme stressful conditions (heat, drought, flooding) coupled with pest pressure from new species and altered seasonality may adversely affect agriculture, landscaping, forests, and associated wildlife.

Local marine habitat will also see changes in flora and fauna. Issues of particular concern include increasing magnitude and frequency of harmful algal blooms. Algal blooms can adversely affect shellfish, finfish, submerged aquatic vegetation (e.g. eelgrass), marine food webs, and air quality, due to increasing temperature and altered pH, and diminished dissolved oxygen (hypoxia) in the water column as a result of warmer temperatures.⁴²

Ocean Acidification

As carbon dioxide levels increase in the atmosphere, more carbon dioxide is absorbed by the world's oceans, resulting in ocean acidification. This phenomenon is reflected in Puget Sound. Measurable declines in pH have already occurred and are expected to continue.⁴³

The impacts of ocean acidification on Puget Sound may be further compounded by changes in circulation and salinity due to several factors: changing runoff (heavy precipitation, declining snowpack); increasing water temperatures; and declining oxygen (hypoxia). These impacts have implications for activities that affect or rely on water quality, including aquaculture and municipal sewage discharge compliance. Our understanding of the ramifications of ocean acidification is just beginning, with new revelations being made regularly.

COBI will need to monitor this issue in order to plan and respond effectively. In addition to staying up to date on the emerging science and management practices in relation to ocean acidification, we can also find out what is happening locally by using the closest ocean acidification monitoring buoy to Bainbridge Island, located in Dabob Bay⁴⁴. This site provides a local picture of how ocean conditions are changing and may help inform local decisions, such as marine resource management, aquaculture planning and permitting, and runoff and discharge issues.

Slope Stability

Climate change produces several conditions likely to affect slope stability. It increases soil saturation due to altered precipitation intensity and timing; changes the vegetation that holds slopes together, due to altered precipitation and increased temperatures; increases erosion, due to sea level rise and altered precipitation; and undermines hillsides, due to sea level rise and flooding.

The changes in slope stability make it necessary to consider how planning, conservation and development may need to be modified. According to the most recent building exposure risk analysis, Bainbridge Island has 177 buildings, valued at \$55 million, located within geological hazardous areas. This should be a significant concern for local planners.⁴⁵

Since slope instability can threaten public and private infrastructure, natural resources, and endanger lives, stability must be understood and properly evaluated prior to any local permitting. The current tools provided by the Washington Department of Ecology are intended to guide these sorts of regional land use decisions, although in most cases these tools do not incorporate climate change concerns. However, localities can and should apply their own knowledge of changing precipitation and sea level rise to shoreline slope stability mapping products.

Commented [PB42]: Mention blue carbon?

Commented [PB43]: I would caution against using Hood Canal data since estuarine circulation is different there than the central Puget Sound basin.

Commented [PB44]: I suggest striking this paragraph since the other sections in the impact assessment section do not have similar content about what should be done.

Commented [PB45]: I suggest striking this since the other sections in the impact assessment section do not have similar content about what should be done.

Commented [PB46]: I suggest striking this paragraph since the other sections in the impact assessment section do not have similar content about what should be done.

1.5. Results from Community Survey and Workshops

As part of developing the CAP, the CCAC conducted a survey to help inform the CCAC on Bainbridge Island residents' existing knowledge of 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 planning the workshops and developing the CAP.

Commented [PB47]: How was it conducted? Random dial phone calls, website, grocery store, email, etc.

There were 443 responses to the survey. Respondents were generally older, female, from the Central part of the Island and have no children at home (Table 1.1).

Commented [PB48]: Can you report the response rate?

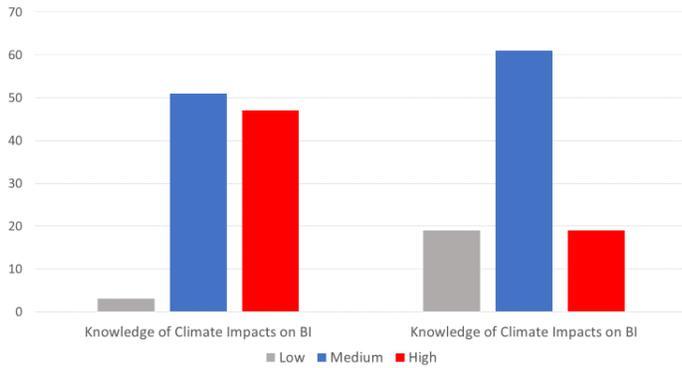
Table 1.1 Demographics of Respondents to Community Climate Survey

	Survey	Bainbridge ⁴⁶
Age:		
Under 18	<1%	27%
18-24	1%	4%
25-44	16%	24%
45-64	40%	34%
>64	43%	13%
Gender		
Female	59%	51%
Male	35%	49%
Other	6%	Not reported
Area of Island		
North	24%	Each ward is required to be in proportion to the population and to be as nearly equal in population as possible in accordance with RCW 29.70.100(4).
Central	47%	
South	27%	
Children at Home		
Yes	31%	37%
No	69%	63%

Commented [JS49]: The demographic information in this section will be updated after the 2020 Census numbers are finalized, but using the most recent ACS survey for Bainbridge Island 2014-2018 the age breakdown is off, for instance, that ACS dataset has about twice as many residents 65 and older. I think we should use the 2014-2018 ACS data instead of the 2010 Census data for the community numbers in this table.
<https://www.psrc.org/american-community-survey-2014-2018-five-year-estimates>

Figure 1.6 Knowledge of Climate Change Impacts on Bainbridge Island

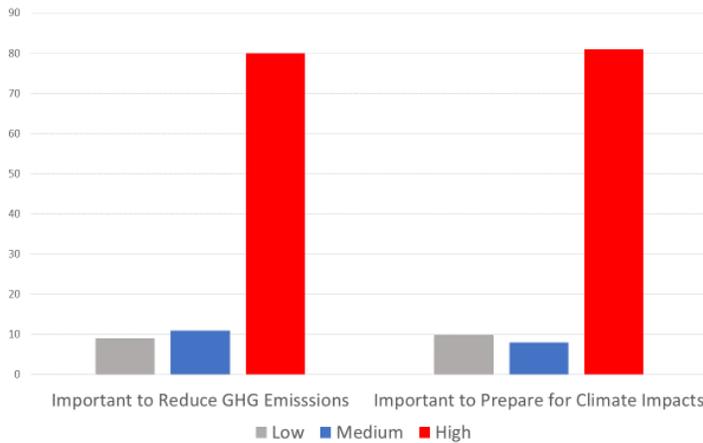
Commented [PB50]: Are the x-axis categories mislabeled? The current labels are the same but the data is different.



The majority of respondents stated they have a high or medium knowledge about climate change and the impacts to Bainbridge Island (Figure 1.6). In addition, most respondents believe it is important to reduce greenhouse gas emissions and prepare the Island for climate impacts (Figure 1.7).

Figure 1.7 Importance of Taking Action on Climate Change

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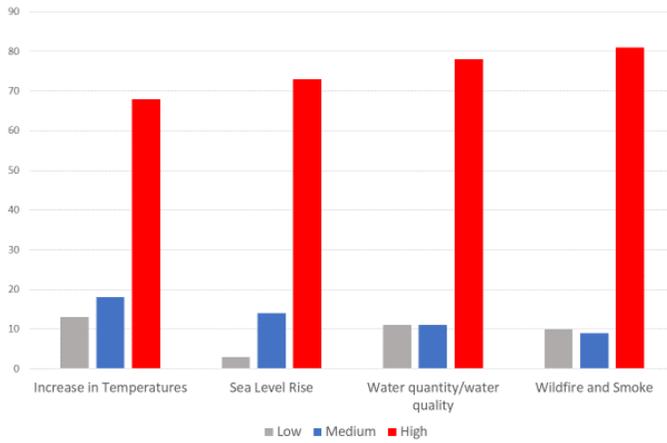


Over 70% of respondents were either extremely or very concerned about all the impacts described in the survey (Figure 1.8). Issues that ranked highest in terms of level of concern were wildfire risk, ocean acidification, sea level rise, and water quality and quantity.

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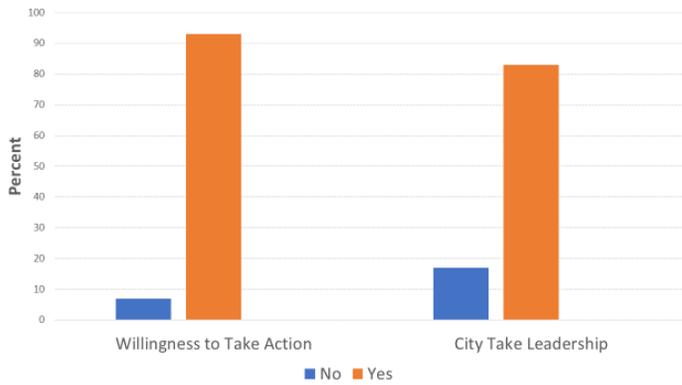
Figure 1.8 Concern about Climate Impacts

Commented [PB53]: "Increase in Temps" not included in the paragraph above.



The vast majority of respondents are willing to take action on climate change and believe COBI should take a leadership role in addressing climate change (Figure 1.10).

Figure 1.9 Taking Action on Climate Change



In addition to the survey, the CCAC hosted two Community Workshops in 2019 (Saturday December 7th and Wednesday December 11th) with over 150 people in attendance. The purpose of the workshops was to provide participants with the opportunity to learn about the climate impacts to Bainbridge Island and provide input to the CAP.



Participants were provided with an introduction to the CCAC's objectives and the current state of knowledge about climate change impacts, focused on impacts to our region. Participants then broke out into hour-long working sessions to brainstorm ideas for each of the major sectors of the CAP (e.g., energy, transportation, and buildings). CCAC members led each breakout group and a volunteer was assigned to each group to take notes. Ideas from each breakout group were compiled and written up into formalized notes and, as appropriate, the CCAC incorporated many of these into the CAP.



1.6. Goals for Climate Action Plan

This plan provides the guidance needed for COBI to achieve three goals:

- Reduce Bainbridge Island's contribution to climate change by reducing our GHG emissions (mitigation).
- Increase our Island's resilience to climate change impacts (adaptation).
- Engage the community to make climate change actions equitable.

1.7. Challenges with Addressing Climate Change on Bainbridge Island

We Have a Complex Ecosystem

Bainbridge Island is an ecologically diverse island shaped by its pre-glacial, glacial and post-glacial ~~ecological~~ history, as well as its more recent

BI Climate Action Plan Goals

Mitigation: By 2045 Bainbridge Island will reduce its greenhouse gas emissions by 90% compared to 2014 levels with interim goals of reducing greenhouse gases by 25% by 2025 and 60% by 2035 compared to 2014 levels.

Adaptation: Bainbridge Island citizens are 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: COBI inspires action across the community and partners with local and regional organizations to take meaningful climate change mitigation and adaptation actions.

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human influences. Overlaying climate change on these already complex systems is a challenge to the stewardship of the health of our natural resources and landscapes.

The Majority of our Shoreline is Developed

Bainbridge contains 53 miles of ~~heterogeneous-diverse~~ shoreline with a wide variety of ~~historic and current~~ human ~~and ecological~~ uses, ~~ecological functions, and ecosystem-wide processes~~. Approximately half of the shoreline of Bainbridge Island has some form of ~~human-made~~ shoreline armoring, and the vast majority of the shoreline is developed to some extent for human use. Managing the shoreline for human use as well as ecological health is a challenge even without the added ~~layer-impacts~~ of climate change. ~~The added impacts~~ such as sea level rise, habitat loss, erosion, slope stability, risk to infrastructure, ocean acidification, and changes to the shoreline vegetative community ~~make management even more challenging~~.

Commented [PB54]: Using language consistent with SMP

Water Resources will be Stressed

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 the ground. Human development has already substantially altered groundwater resources. Such development has changed the permeability of ~~our surfaces~~ ~~the ground,~~ and runoff patterns, and resulted in groundwater from multiple Island aquifers being withdrawn in some cases at rates greater than those of replenishment.

Climate change will layer additional stressors on our groundwater resources. These stressors include, but are not limited to: increased runoff and decreased recharge due to more extreme precipitation events; dryer summer periods, which will particularly stress shallow groundwater sources; warmer temperatures, which will result in increased water demand; and sea level rise, which will increase the possibility of saltwater intrusion into our sea level aquifers.

Forest Management is Complex

Bainbridge Island's forests ~~communities~~ have a ~~substantive-significant~~ history of human modification. Harvesting for ~~the early~~ timber and shipbuilding ~~industries~~ resulted in much of the Island being deforested. This was followed by agricultural activities that cleared and plowed areas of land for decades, many of which have been reseeded or reclaimed by young forests. Bainbridge's forested lands are currently a patchwork of private and public ownership, ~~and including~~ ~~stewarded ownership~~ by the City, the Bainbridge Island Parks District (BIPD), and the Bainbridge Island Land Trust (BILT).

Commented [PB55]: Mention carbon sequestration?

Commented [PB56]: Also IslandWood

Finding a clear path towards managing lands under such a wide variety of ownership is no small task, especially in the face of climate change impacts that include increased wildfire risk, risk of forest pathogens, and changes in forest community composition. Managing forest health will require significantly increased cooperation, stewardship, outreach and education to ensure that our vegetated communities continue to provide their essential ecological functions: a diverse and healthy natural habitat; stormwater regulation; aquifer recharge; local climate moderation; and air quality, as well as aesthetic and recreational functions.

Agricultural Lands will be Stressed

The native Salish peoples and later European-immigrant arrivals have had a long, rich tradition of harvest and agriculture on and around the Island, including 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. Climate change can be expected to influence and challenge fundamental aspects of agricultural systems including water availability, growing seasons, invasive plants and pests, and soil health.

Commented [CB57]: 'non-native' or similar to include people of Asian origin

1.8 Organization of the CAP

The CAP builds upon the Island's Comprehensive Plan, the Bainbridge Island Climate Impact Assessment⁴⁷ developed for the Comprehensive Plan (summarized above), a greenhouse gas emissions inventory (summarized in section 2)⁴⁸, and community input. This document is organized as follows:

Section 2 summarizes the results of the greenhouse gas emissions inventory conducted by Cascadia Consulting Group for COBI.

Sections 3 through 8 provide the specific goals, targets, strategies, and actions around six focus areas:

- Energy (Section 3).
- Transportation (Section 4).
- Buildings (Section 5).
- Natural Environment (Section 6).
- Waste (Section 7).
- Community Engagement (Section 8).

The following information is provided for each focus area:

- Goals and targets
- Challenges to meeting those goals
- Current actions by COBI and the Community to achieve those goals
- Strategies, prioritized actions, and other actions COBI and the Community need to take to meet those goals
- For each prioritized action the following is included (Appendix A provides the information described below for each of the priority actions):

- COBI lead department or staff
- Level of effort by COBI to complete
- CCAC role, if any
- Potential partners
- Timeframe for completion
- Milestones for each action

Section 9 provides a roadmap of needed actions for implementing the CAP. This final section details the steps COBI and the Community need to take to ensure successful CAP implementation, which in turn will create a climate savvy Bainbridge Island. Section 10 provides a list of individual actions residents can take to reduce their GHG emissions and prepare for the impacts of climate change.

1.9. Prioritizing Actions

The CCAC decided that it was important to prioritize the recommended actions to facilitate the review of the CAP by COBI staff and the City Council. The CCAC identified each action as a high, medium, or low priority. Ranks were determined based on five criteria:

- 1. Mitigation or adaptation:** Potential for the action to reduce GHG emissions (mitigation) and/or potential for the action to reduce vulnerability to effects of climate change (adaptation).
- 2. Implementable:** The action is both technically and logistically feasible and has been implemented in other jurisdictions.
- 3. Duration of benefits:** The length of time over which the benefits of the action will persist.
- 4. Equity:** The action will contribute to or support social justice, equity, diversity and inclusion within our community.
- 5. Co-benefits:** The action will produce co-benefits (e.g., air pollution reduction; economic opportunities; improved transit; preserve natural resources).

Each action was evaluated as having a high potential (5 points), medium potential (3 points) or low potential (0 or 1 point) for achieving the stated criteria. The points for each action were then totaled. These values were used to assist in determining the highest priority actions. The CCAC acknowledges that the ranking of the actions is subjective. However, given the more than 170 recommended actions, we believe that providing priority rankings can be helpful in decision-making.

Commented [PB58]: Suggest rephrasing.

It sounds something like an expert elicitation process was used, which has subjectivity, but is not “subjective” in the way a typical reader may interpret this statement as “arbitrary”.

Section 2: GHG Inventory

Bainbridge Island
Greenhouse Gas
Emissions Inventory



Section 2: Greenhouse Gas Emissions Inventory

One of the first steps in developing the CAP was to complete a comprehensive GHG emissions inventory.⁴⁹ The inventory described the amount of GHG emissions produced by the Bainbridge Island community and COBI operations in various sectors (e.g., transportation, energy, and waste). As COBI and the community act to reduce GHG emissions, such inventories must be periodically updated to monitor progress and make improvements in the methodology along the way.

This section of the CAP summarizes the key findings of the initial GHG emissions inventory and outlines the CAP goals, targets, strategies and actions to monitor GHG emissions as the community works toward our stated reduction goals.

2.1. Inventory Approaches and Methodology

The final GHG emissions inventory report was issued October 2019. It evaluated the years 2014 and 2018. Cascadia Consulting Inc. developed three inventories for COBI (see Figure 2.1):

- A **community inventory** that estimated GHG emissions produced by the activities of the Bainbridge Island community, including residents and businesses.
- A **municipal inventory** that estimated the GHG emissions produced by COBI operations, including from the operation of municipal buildings and facilities, transportation, solid waste, wastewater, and refrigerant leakage.
- A **consumption-based inventory** that estimated GHG emissions associated with the consumption of food, goods, and services within the community, regardless of their origin. This includes emissions associated with the production of goods manufactured in other locations but consumed by Bainbridge Island residents, visitors, or businesses.

Figure 2.1 Conceptual Relationship Among Community, Municipal and Consumption-Based Inventories for Bainbridge Island



Inventory Methodology

The inventory accounts for human-caused emissions of the most prominent and typical greenhouse gases for communities: carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). To account for the differences in potency among these gases, all emissions are calculated and reported in units of metric tons of carbon dioxide equivalent (MTCO₂e). The inventories were conducted using widely accepted tools and protocols, including the *Local Government Operations Protocol* and *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*.⁵⁰

GHG emissions are inventoried by multiplying annual activity data (e.g. electricity consumption) by emission factors (GHG emissions produced per kWh of electricity). Data was obtained from City staff and local documentation such as Puget Sound Energy's (PSE) billing records, records from local wastewater treatment facilities, and municipal fleet vehicle fuel use records.

For the community inventory, key data sources included electricity consumption from PSE, modeling outputs for vehicle miles traveled by fuel type from Puget Sound Regional Council

(PSRC) tonnage records from Bainbridge Disposal and estimates of agricultural landowners and acreage from the Kitsap County Conservation District. Where local data were not available, downscaled national data sources such as from the Federal Transit Administration, U.S. Census Bureau, and the U.S. Department of Agriculture were used.

The activities and sectors included in GHG emission inventories are often classified into three “scopes,” which represent relative levels of control over an emissions source:

- **Scope 1** emission sources include those directly caused by an organization’s actions, such as from owned equipment and facilities the organization owns.⁵¹
- **Scope 2** emissions are those indirectly associated with purchased electricity, steam, heating, or cooling.
- **Scope 3** includes all other indirect emissions that are not covered in Scope 2.

The community and municipal inventories for Bainbridge Island included emissions sources from all three scopes. The inventories included all sources required by the consulted protocols and additional sources, as relevant.

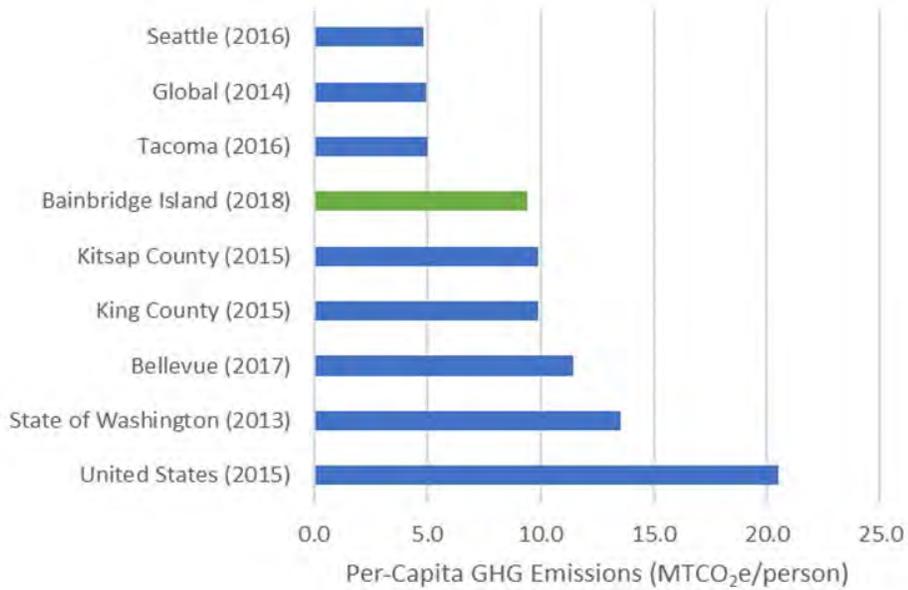
The inventories cover two representative years, **2014** and **2018**. 2018 was the most recent year with the most comprehensive, consistent, and relevant information on community GHG emissions. For a comparison year, 2014 had no major differences in organizational structure or infrastructure from 2018, and all the needed data was available and derived using methodologies consistent with 2018.

2.2. Inventory Results

Community Emissions

The Bainbridge Island community emitted about 214,425 MTCO₂e in 2014 (9.3 MTCO₂e per Bainbridge Island resident) and 233,998 MTCO₂e in 2018 (9.4 MTCO₂e per Bainbridge Island resident). A high-level comparison suggests that this per-capita estimate is consistent with that of Kitsap County (9.9 MTCO₂e per person), and lower than per-capita estimates for the U.S., Washington State, King County, and Bellevue. However, Bainbridge Island’s estimated per-capita emissions are almost twice those of Seattle and Tacoma (Figure 2.2).

Figure 2.2 Per Capita GHG Emissions Comparison ⁵²

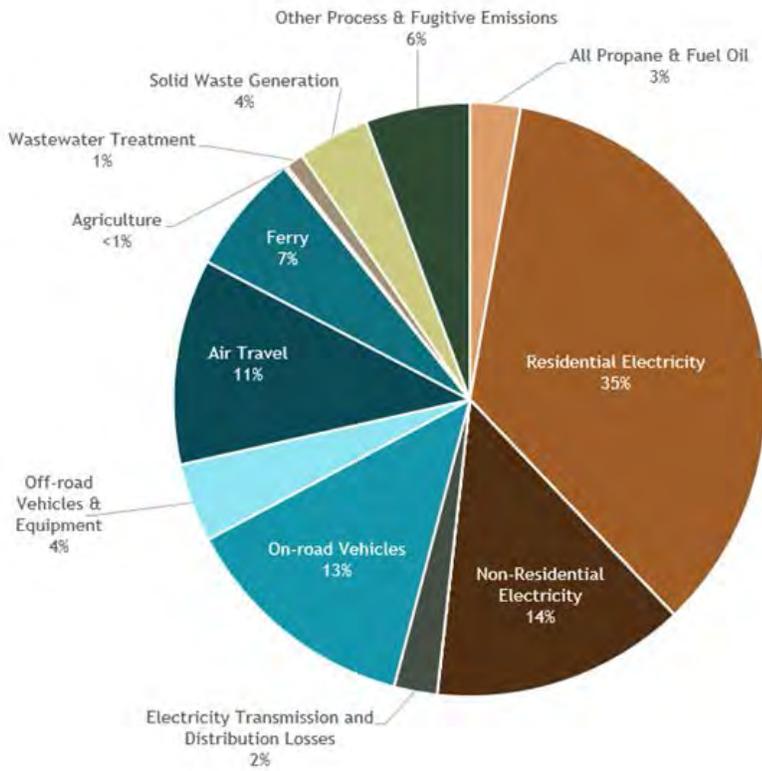


Commented [JS59]: The clarify, this uses the community based model numbers only, and doesn't include the consumption inventory estimate per capita.

The majority of Bainbridge Island community emissions stems from consumption of electricity in homes and commercial buildings (about 53%). Transportation makes up another one-third (about 34%) and other sources like solid waste generation and refrigerant loss accounting for another 11% (Figure 2.3).

Figure 2.3 Bainbridge Island Community Wide Emissions in 2014 (Total = 214,425 MTCO₂e)

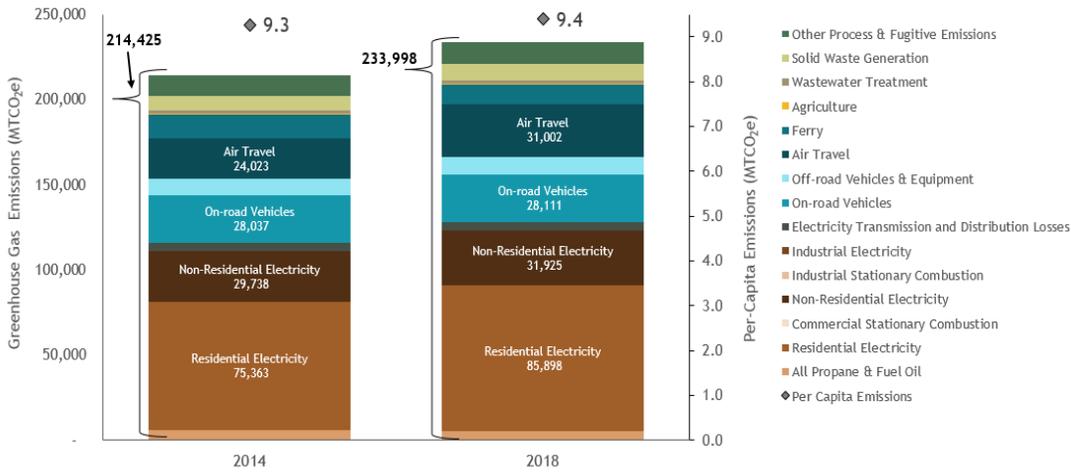
Commented [PB60]: Replace with graphic from GHG Inventory fact sheet, which is easier to read.
https://www.bainbridgewa.gov/DocumentCenter/View/12812/BainbridgeGHGFactSheet3_11-22-19



Overall, communitywide emissions have increased by 9% since 2014 (Figure 2.4). The largest increases were from air travel (23% increase), residential electricity (12% increase), and non-residential electricity (7%). Per-capita emissions, however, only increased 1% over that period.

Figure 2.4 Bainbridge Island Community Emission Trends by Year and Source

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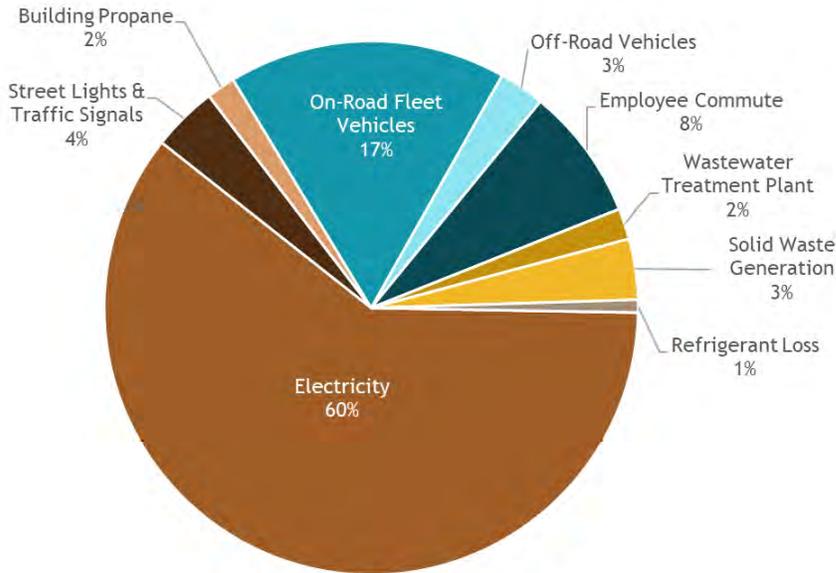
City Government Emissions

Emissions from COBI activities—which make up about 1% of the total community emissions—increased 11% from 2014 to 2018 (2067 to 2291 MTCO₂e). Major emissions sources included facility electricity consumption (60%) and on-road fleet vehicles (17%) (see Figure 2.5).

Emissions from municipal facility electricity and on-road fleet vehicles increased 14% and 7%, respectively. Just four facilities accounted for 80% of all facility electricity use in 2018: Bainbridge Island Wastewater Treatment Plant (WWTP), City Hall, Fletcher Bay Well Field, and Bainbridge Island Public Works Operations and Maintenance Yard. Streetlights and traffic signal improvements were among the largest emission reductions.

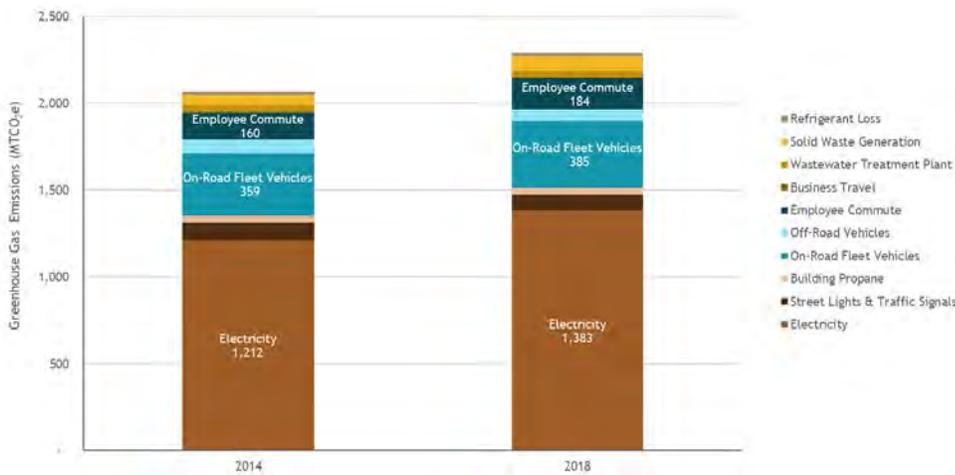
Commented [CB62]: Not sure that COBI upgraded traffic signals or are responsible for thier electricity consumption.

Figure 2.5 Bainbridge Island City Operations GHG Emissions in 2014 (Total = 22.067 MTCO₂e)



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https://www.bainbridgewa.gov/DocumentCenter/View/12812/BainbridgeGHGFactSheet3_11-22-19

Figure 2.6 Bainbridge Island City Operations Emission Trends by Year and Source



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Consumption-based Emissions

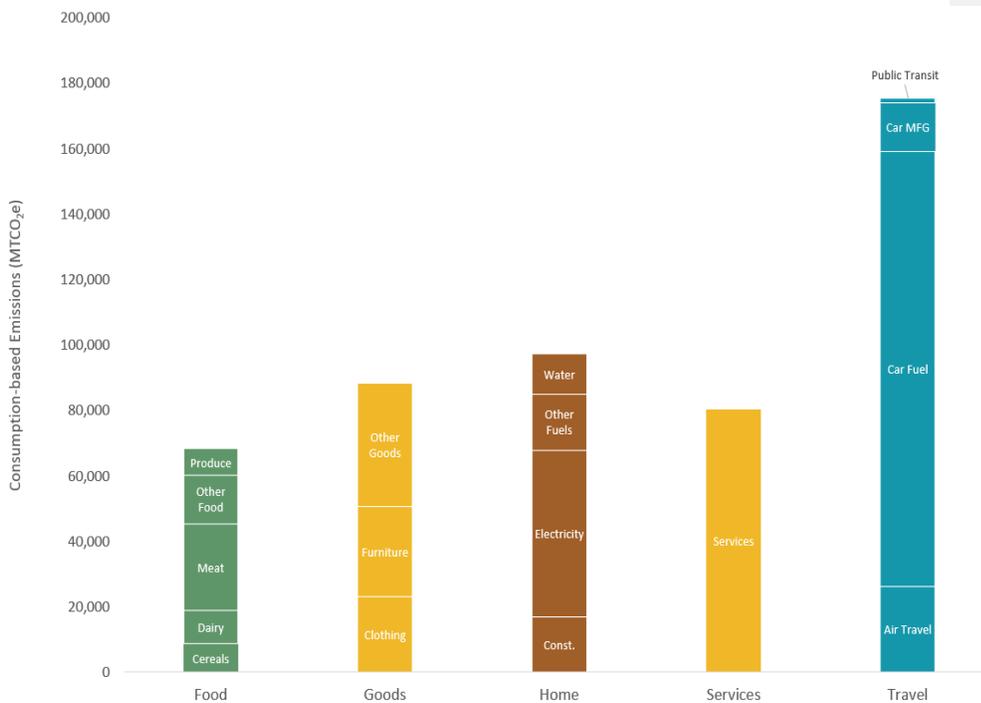
The purchasing decisions we make impact the environment. Some types of foods and materials, such as meat and furniture, can carry a significant GHG emissions burden. For example, meat and dairy cows emit methane—a potent GHG. Residents in Bainbridge Island who consume beef contribute to the emissions from these cows—even if the cows are raised outside the island.

Results from a household-based economic modeling tool suggest that purchasing behaviors of the average Bainbridge Island household contributes 52 MTCO₂e a year (see figure 2.7).⁵³ There were an estimated 9,404 and 9,798 households on Bainbridge Island in 2014 and 2018, respectively, indicating that total consumption-based emissions from all households on Bainbridge Island could have reached approximately 510,000 MTCO₂e in 2018. Major drivers include the purchase of meat, furniture, clothing, home energy, and travel-related expenses such as car fuel and air travel.

Commented [JS65]: Should the Total BI GHG Generated number be the sum of the City, community and consumption-based emissions? So is the Consumption-based emissions accounted for in the total and therefore will be counted as part of monitoring and GHG reduction goals? Especially if total consumption-based GHG emissions is higher than community emissions?

Figure 2.7 Consumption-Based Emissions per Bainbridge Island Household

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2.3. GHG Inventory Conclusions

The GHG emissions inventory provides an informative starting point for the community's current GHG emissions status. Key findings are:

1. More than half of the community GHG emissions are from fossil fuel emissions by the Island's sole energy provider, PSE. The contribution from electrical generation will decline in the future in line with the requirements of the Washington State Clean Energy Transformation Act (CETA) targets (see Section 1), although there are actions the City can take to support and even accelerate this transition (See Section 3).
2. On-road motor vehicle transportation and air travel together accounted for another 25% of community emissions. Reducing air travel and motor vehicle emissions will require both actions at state levels and private citizen action. The air travel and motor vehicle transportation sectors analysis relied on regional models. Future inventories will need to take into account locally tracked data, if possible. Population increase will inevitably add to these emissions and it must be taken into account.
3. Emissions from ferry travel (7%) should be reduced in the future because all of the Bainbridge ferries are scheduled to transition to diesel-electric by 2022.
4. The contributions from hydrofluorocarbons (~6%) will be reduced as the State of Washington phases out their use over the next several years.
5. The report indicates that community emissions increased 9% from 2014 to 2018 while per-capita emissions increased only 1%.

The initial GHG emissions inventory provides the basis for **an informed foundation** for taking climate action. The inventory identifies the sectors at both community and municipal operation scales that contribute the largest relative amounts of GHG emissions. Regular inventories will continue to be needed and incorporate into future decision-making. This will be critical for evaluating progress toward emissions reductions targets and for identifying cost-saving opportunities.

2.4. Goals/Targets

A. Implement a GHG emission tracking plan to monitor the CAP GHG emissions reduction goals.

- By 2021, select software that can be used to obtain community-wide data for the next GHG emissions inventory.
- By 2022, complete a new GHG emissions inventory, followed by an inventory in 2026 and every 5 years thereafter.

Commented [JS67]: Should this statement be accompanied by reference ore reinforce City goals to focus new growth in centers, where there is better access to transit, as a way to mitigate for population increase? If the connection isn't made, then the CAP reduction goals may be used by some to advocate for a "no more growth, or people" public policy, even if some of "new residents" could be employees that already work on the Island.

Commented [CB68R67]: Good question

Commented [PB69]: Can we develop estimates for GHG reductions as we develop/refine policies and programs so we can:

- make informed choices when adopting policies/programs
- measure their performance against their expected performance (as well as the overall goals)
- inform adaptive management in the future.

Commented [JS70]: City budget will need to fund software, and future inventory, training

Commented [CB71]: Other than Clear Path by ICLEI?

Commented [CB72R71]: To obtain a more accurate community GHG inventory. In tandem with Clear Path for validation.

B. Re-evaluate the forest sequestration analysis.

- By 2022, complete a new forest sequestration analysis for the Island using the same method in the original GHG emissions inventory, and prepare a plan to reanalyze the forest sequestration analysis periodically using alternate methods for verification.

Commented [JS73]: NOTE: The first forest sequestration did not use City produced data on canopy, and the City's lidar information about City Canopy had a different amount of existing canopy, and I remember thinking that I thought the City's canopy data would be more accurate than the source that the consultant used. Gretchen Brown in IT helped to manage integrating the LiDar data into City GIS.

2.5. Challenges

- **Community Engagement:** Sufficient community engagement is needed to provide statistically reliable GHG emissions inventory results.
- **City Training:** The City received some training from Cascadia to continue inventories using the same methods in the GHG emissions inventory. Additional training is needed.
- **Conducting Valid Surveys:** Conducting voluntary community-wide surveys is challenging to avoid selection biases and to get a statistically valid sampling of participants.
- **Developing Metrics:** Measuring the reduction in GHG emissions from a specific action is challenging as the data many times are not available. One option may be to fine tune the local tool. This is important to getting accurate metrics for CAP action responses among the resident behavior.

Commented [CB74R73]: Its hard to break away from old methodologies if you are looking at it for comparison purposes

2.6. Current Actions

- **Carbon Footprint Calculators:** Several groups are using different software to calculate their organizations carbon footprint such as *Taming Bigfoot*⁵⁴, *CoolClimate*⁵⁵ and *Energy Star*.⁵⁶
- **Bainbridge High School:** CCAC members are working with Eagle Harbor High School to develop curriculum that will enable students to conduct individual and district GHG inventories.

Commented [JS75]: NOTE: related to City permits, there are fields that could be added to SmartGov (and existing fields in smartgov that need to be more consistently filled out) to keep track of size of building, and green building certification, and for our solar permits, maybe estimated KW generated.

Commented [JS76]: Would the CCAC want to recommend one calculator to suggest for the community to use?

Commented [CB77]: Or EN-ROADS per Gary Lagerloef CCAC

2.7. Strategies/Actions

Goal A: Implement a GHG emission tracking plan to monitor the CAP GHG emissions reduction goals

Strategy A.1. Refine the software tool used for the 2019 GHG emissions Inventory (i.e., Clearpath).⁵⁷

Priority Action(s)

- 2.A.1.a COBI will work with the CCAC to improve the accuracy and site-specificity of data for GHG emission categories that are currently based on regional models (particularly vehicles and air travel).

Other Action(s):

- 2. A.1.b. COBI will work with the CCAC to customize the tool as needed to distinguish electric vehicle (EV) from gasoline/diesel-powered motor vehicle use and other criteria.
- 2.A.1.c COBI will work with the CCAC to develop a protocol for measuring uncertainty.

- 2.A.2.d. COBI will work with the CCAC to conduct validation and verification assessments of any future updates to regional consumption-based models.

Strategy A.2. Complete updates to the GHG inventory.

Priority Action(s)

- 2.A.2.a. COBI will complete the next GHG emissions inventory by 2022 for the year 2021. Complete the next GHG emissions inventory for the year 2025 by 2026 and then complete a GHG emissions inventory every 5 years thereafter.

Goal B: Re-evaluate the forest sequestration analysis

Strategy B.1. Explore more rigorous analysis methods, including ground-truthing tree inventories and soil sequestration analysis.

Priority Action(s)

- 2.B.1.a. COBI, working with the CCAC, will approach academic institutions for assistance to plan more rigorous analysis methods, including ground-truthing of tree inventories. Collaborations may include student apprenticeships, student thesis research opportunities, or collaborative research grant proposals. Consider also joint studies with BILT.

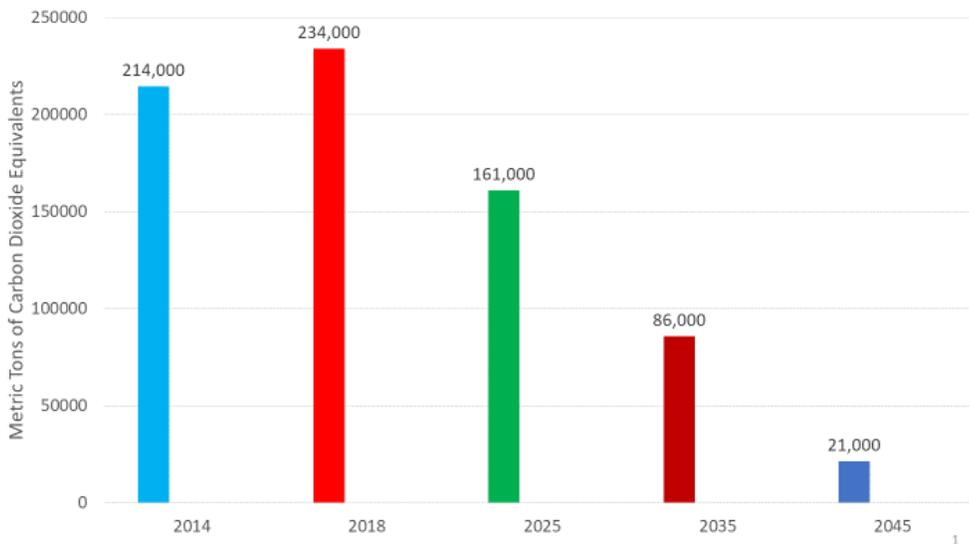
Other Action(s)

- 2.B.1.b. COBI, working with the CCAC and academic and local environmental and agricultural organizations, will explore expanding the forest sequestration analysis to include carbon sequestration from agricultural lands, shorelines, open meadows and parks.

2.8. Reductions Needed to Meet 2045 Reduction Goals

As discussed in Section 1, the CAP establishes a mitigation goal of reducing GHG emissions by 90% by 2045 compared to 2014 levels, with interim goals of 25% by 2025 and 60% by 2035 compared to 2014 GHG emission levels. Figure 2.8 shows the GHG emission reductions needed in order to meet those targets.

Figure 2.8 Reductions in GHG Emissions Needed to Meet Targets



Commented [PB78]: x-axis labels are out of alignment and appear to be evenly spaced instead of spaced based on a timeline. I think the curve should look more like this to reflect the delay in implementation from the last GHG inventory. Perhaps the interim target years should be shifted out.

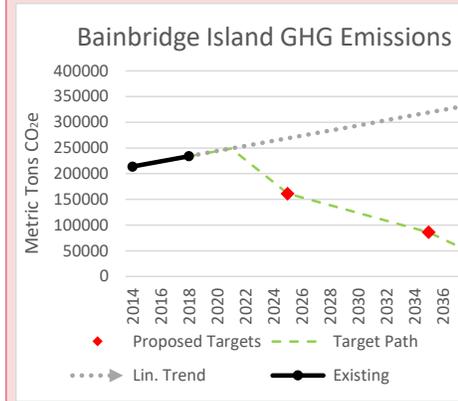


Figure 2.8 illustrates the large reductions needed in GHG emissions to meet the targets. Figure 2.9 illustrates the potential reductions in GHG emissions from different areas of action. There are four areas where reductions will take place as described below. For each of these areas, the CCAC used the best available information and also made some best professional judgements on what might occur in the future.

State Policy

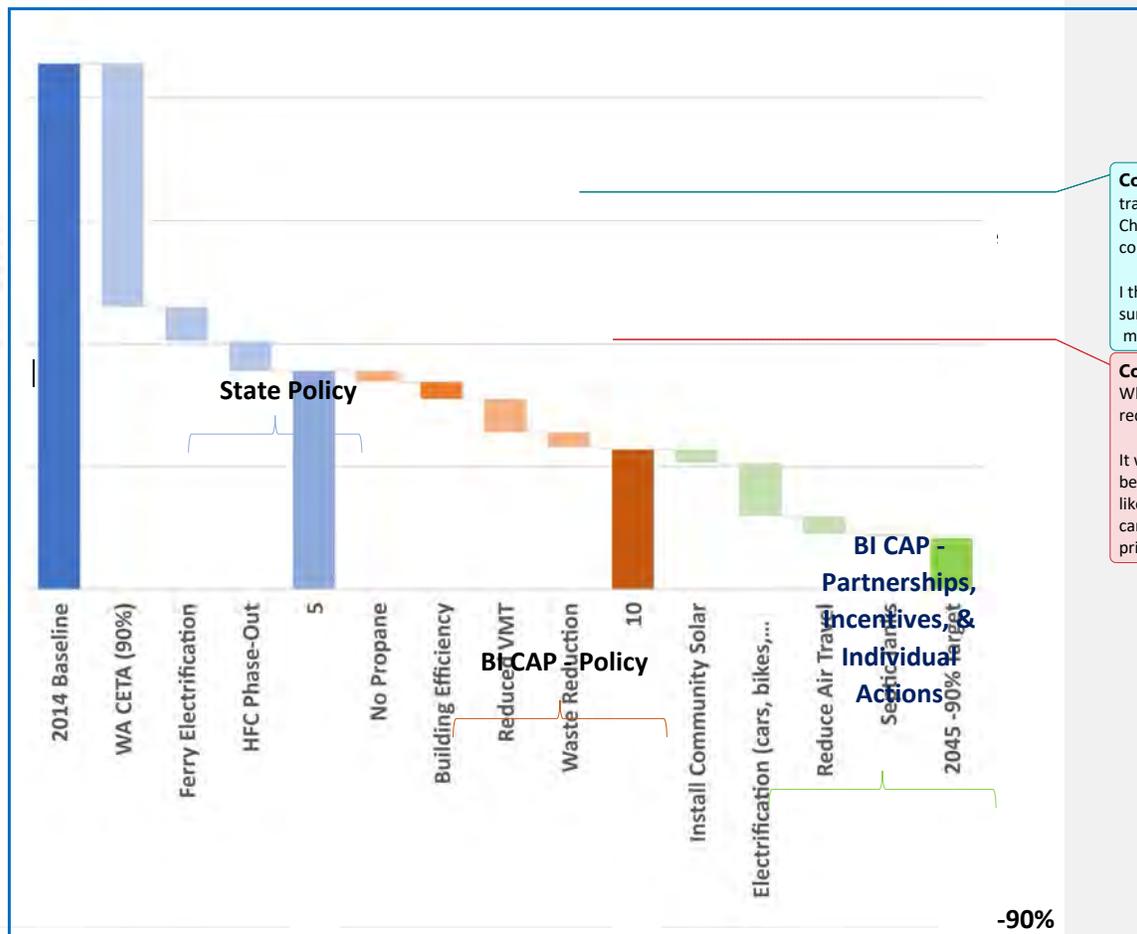
In 2019, the Washington State legislature passed the Clean Energy Transformation Act (CETA)⁵⁸ requiring the State’s electrical supply to be free of coal by 2025, carbon neutral⁵⁹ by 2030 and 100% carbon-free by 2045. They also passed legislation that requires the phase-out of hydrofluorocarbons.⁶⁰ In addition, the ferries from Bainbridge Island to Seattle will be able to run on 100% electric power as of 2022. These actions will contribute about 60% of the 90% GHG reductions needed to meet the 2045 mitigation goals.

Bainbridge Island Climate Action Policies

These actions are related to specific actions such as: allowing propane in new developments; adopting a green building code), reducing vehicle miles traveled, and reduce amount of waste landfilled. These actions will contribute ~~another~~ about another 10% of GHG reductions.

In total, or with State and local policies will contribute about 70% of the 90% of GHG reductions needed to meet the 2045 mitigation goals.

1000x MTCO2e



Commented [JS79]: Should the ongoing sustainable transportation study be mentioned here? Also, Code Changes likely needed to promote (or not inhibit) community solar permitting.

I think "State Policy" should be retitled "state actions". Not sure what the column "5" means.

Commented [PB80]: Figure needs revisions for clarity. What are the "5" and "10" categories? Label the % reduction for each bar.

It would be really cool if this (or in a different graph) could be sequenced over time, so we could see how each area is likely to contribute toward the interim goals. That way we can see if the interim goals are feasible and/or what to prioritize when in order to meet the interim goals.

-90%

-90%

Section 3: Energy



Section 3: Energy

Energy use is the largest source of emissions ~~in our municipality and our community~~. The greenhouse gas emissions inventory for Bainbridge Island indicates that about 53% of the community's GHG emissions come from electricity generation. In Washington State electricity generation contributes about 20% of the State's greenhouse gases.⁶¹ Bainbridge Island's GHG emissions from electricity generation are higher than the State average because PSE, the Island's electricity provider has an energy mix containing over 56% fossil fuels.⁶²

The Washington State legislature passed a bill in the 2019 legislative session⁶³ requiring the State's electrical supply to be free of coal by 2025, carbon neutral⁶⁴ by 2030 and 100% carbon-free by 2045. Across the U.S., over 90 cities, more than ten counties and two states have adopted 100% clean energy goals. Six cities in the U.S.--Aspen, Colorado; Burlington, Vermont; Georgetown, Texas; Greensburg, Kansas; Rock Port, Missouri; and Kodiak Island, Alaska--have already hit their targets.⁶⁵

Bainbridge Island should strive to achieve 100% clean, renewable energy, and should evaluate timelines to achieve this goal sooner than 2045 in order to do our part to keep global temperatures below 1.5 degrees Celsius compared to pre-industrial levels.

3.1. Goals/Targets

A. Increase energy conservation and efficiency throughout the built environment, including customer-owned generation, across all energy sectors (electricity, and heating and cooling).

- By 2023, COBI has established a Green Energy and Building Fund to assist with conversions and efficiency upgrades, with a focus on low-income housing.

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

- By 2021, COBI adopts policies that prohibit new propane and heating oil as the primary sources of heating and cooling in new buildings.
- By 2040, all of Bainbridge Island's sources of electricity are carbon-free.

C. Create energy self-sufficiency for emergency preparedness and increase energy infrastructure reliability and resilience in light of the changing climate.

BI Comprehensive Plan: Energy

EN 10.9: Maintain and improve Island air quality, by promoting the development of carbon free infrastructure.

EN 12.6: Promote energy conservation measures by all government entities.

EN12.7: Promote the installation of residential solar panels and the adoption of other energy saving technologies such as LED lights, heat pumps, and insulation.

U.14.1: Develop a plan together with the electric service providers to undertake energy efficiency improvements and other alterations of electric utility facilities to provide capacity for future growth.

U14.5: Encourage the electric service providers and electricity users to use carbon neutral electricity generation, local electricity generation and innovative technologies such as solar power.

U14.7: New taxpayer-funded buildings shall use carbon-neutral energy for heating, cooling and operational use.

U14.9: Explore ways to obtain 100% green electricity including investing in new renewable energy projects.

Commented [PB81]: Other applicable Comp Plan policies:

- Goal CF-4: Public facilities constructed on Bainbridge Island meet appropriate safety, construction, energy conservation, durability and sustainability standards.
- Policy CF 4.4: Require public facilities to incorporate energy generation when and where possible.

Commented [JS82]: Do we want to somehow incentivize folks that use propane or heating oil to cease their use and convert?

Commented [PB83R82]: Also wood stoves

Commented [PB84]: How is this possible if PSE is not required to provide us with carbon-free power until 2045?

- By 2023, half of the Bainbridge Prepares disaster hubs have installed 6-20kW solar arrays and storage for resilience.

3.2. Challenges

- **Energy efficiency of existing building stock is unknown:** While many buildings around the Island are energy-efficient (e.g., Grow Community and individually green-built homes) the overall energy efficiency of the Island building stock is unknown.
- **Lack of understanding of non-electric fuel sources:** Although the primary form of energy use on Bainbridge Island is electricity, there are an unknown but likely substantial number of other sources used for heating homes and powering appliances including: wood-burning stoves; propane generators, furnaces, fireplaces and appliances; and fuel oil in older units.
- **Emergency preparedness:** Bainbridge Island is susceptible to significant weather and natural disasters such as **flooding** and wildfires as a result of climate change. The emergency preparedness and infrastructure resilience of the Island needs significant additional investment and coordination.

Commented [PB85]: Flooding is very localized on BI, so maybe some nuance is needed here.

3.3. Current Actions

- **City Hall's community solar system:** City Hall has a system that generates more than 71 kilowatts of energy with a solar system composed of 297 panels. This is the largest solar system on the Island. The City Hall system had investments from 25 local islanders totaling \$450,000.
- **Energy Efficiency improvements:** Recent energy efficiency improvements were made to the Wastewater Treatment Plant (WWTP) operations.⁶⁶
- **PSE Franchises Agreement:** COBI's current franchise with PSE took effect on April 23, 2007, and will expire on April 23, 2022, unless extended. The work to renew an electric utility franchise agreement is typically a multi-year effort that incorporates legal requirements, economic aspects, and community priorities. Prior to the pandemic, COBI workplans anticipated that tasks related to this negotiation would begin in Q1-2020 and continue throughout 2020 and into 2021 as needed.
- **Community PSE's Green Power program:** PSE's voluntary renewable electric energy programs include: Solar Choice, Green Power, and Customer Connected Solar.⁶⁷
- **Solar at Sakai:** The Solar for Sakai school project, installed in 2009, has 30-solar panels with a 5.1-kilowatt array.
- **Green buildings:** There are several buildings on the Island that were constructed using a Green Building Certification Program (e.g., Living Building Challenge or Leadership in Energy and Environmental Design (LEED)⁶⁸) such as the Grow Community, [Ericksen Urban Cottages](#), Heron Hall, Bainbridge Artisan Resource Network (BARN), and Bainbridge Island Museum of Art (BIMA).
- **PSE biodigester pilot project:** A biodigester pilot project was started with the Harbor Public House (the Pub) and PSE as a proof of concept.
- **PSE proposals for improving reliability:** PSE's proposal to increase reliability by undergrounding overhead lines in risk corridors⁶⁹ and by a proposed tripling of: a) new

Commented [JS86]: This HDDP project on the corner of Ericksen and Knechtal reached LEED Platinum.

transmission infrastructure (including a link between the Murden Cove and Winslow substations); b) a new 3.3-megawatt (MW) battery energy storage system; and c) targeted conservation, demand response tools, and customer-owned generation.⁷⁰

3.4. Strategies/Actions

Goal A. Increase energy conservation and efficiency throughout the built environment, including customer-owned generation, across all energy sectors (electricity, heating and cooling).

Strategy A.1. Promote energy efficiency through existing and potential newly funded City programs.

Priority Action(s)

- 3.A.1.a. All COBI projects (e.g., Police Station, WWTP improvements) adopt requirements to use high-performance retrofit technologies, whenever feasible (e.g., variable frequency drives in HVAC systems, heat recovery systems, and dedicated outdoor air systems).
- 3.A.1.b. Create a matrix of incentives within the permitting process for building owners to increase energy efficiency in their projects (e.g., expedited processing and reduce or waive permitting or inspection fees).
- 3.A.1.c. Work with PSE and partnering entities such as Housing Resource Board (HRB) to increase access to energy conservation and efficiency programs, focusing on below-average-income households and nonprofit organizations.⁷¹

Other Actions

- 3.A.1.d. Encourage, and assist when possible, other taxing entities (e.g., BISD, BIMPRD, and BIFP) to adopt requirements to use high-performance retrofit technologies in all their projects.

Strategy A.2. Establish programs that provide assistance to increase the energy efficiency of buildings.

Priority Action(s)

- 3.A.2.a. Create a Green Building and Energy Fund, similar to the funds collected from the PSE Solar Choice and Green Power programs that can provide incentives to building owners and residents to increase electrification conversions and battery storage.

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

Strategy B.1. Partner with energy providers and local businesses on programs that will reduce carbon-based energy sources.

Commented [PB87]: Is this just the “existing” built environment?

Commented [PB88]: At least some on Council seem to prefer mandates instead of incentives.

Commented [JS89]: Partner with banks for low-interest loans like during Re-power Bainbridge, which apparently wasn't used much... but with State and federal incentives for adding solar ending (or ended) this may be a better time for this kind of partnership

Commented [PB90]: Where does the revenue for this program come from? If not a new revenue source, what would be defunded?

One option, impact fees on new construction based on its carbon footprint (square footage, # parking spaces, distance from transit or Winslow, etc).

Carbon mitigation donation payments could be collected with vehicle licensing (like state park donation).

Priority Action(s)

- 3.B.1.a. Work collaboratively with PSE, via the PSE Franchise agreement update and other mechanisms, to move towards a 100% carbon-free electrical supply, preferably sooner than the Washington State mandated goals.
- 3.B.1.b. Develop incentive programs to increase adoption of renewable energy and passive photovoltaic (PV) solar or other technologies.
- 3.B.1.c. Adopt a policy that prohibits propane and heating oil as an energy source for new buildings, and develop incentives to replace propane use as a primary heating source for existing buildings.

Commented [PB91]: What would 5-years earlier cost the community? What is the opportunity cost?

Commented [PB92]: At least some on Council seem to prefer mandates instead of incentives.

Commented [JS93R92]: Maybe mandates for new development, but incentives to retrofit existing development?

Commented [PB94]: At least some on Council seem to prefer mandates instead of incentives.

Commented [PB95]: Also heating oil and wood?

Commented [PB96]: Aren't there also for-profit companies that lease rooftops for solar?

Other Action(s)

- 3.B.1.d. Explore opportunities to work with PSE and local banks/credit unions to create local renewable energy projects, such as community solar, urban wind power, and other forms of generation and storage.

Strategy B.2. Partner with neighboring municipal and tribal communities on programs that will reduce GHG emissions.

Commented [PB97]: Don't want to exclude rural/unincorporated Kitsap communities either.

Priority Action(s)

- 3.B.2.a. Develop and hold trainings/workshops for Island and neighboring communities' builders, contractors, architects and homeowners that can help Bainbridge Island to implement the fuel-switch from carbon-based to electrification of the building stock.

Commented [PB98]: This types of knowledge exchanges will also benefit the greater Kitsap area like described in the next action.

Other Action(s)

- 3.B.2.b. Collaborate with neighboring and tribal communities to learn from each other on programs to reduce GHG emissions.

Commented [PB99]: Don't want to exclude rural/unincorporated Kitsap communities either.

Goal C. Create energy self-sufficiency for emergency preparedness and increase energy infrastructure reliability and resilience in light of changing climate.

Strategy C.1. Create microgrids for critical infrastructure throughout the community.⁷²

Commented [PB100]: May need to provide a little context about what a microgrid is since this is not an everyday term.

Priority Action(s)

- 3.C.1.a. Work with PSE to develop a local program to encourage homeowners, businesses, and other entities like BISD, BIMPRD, and BIFP to acquire customer-owned generation like roof-top solar and small wind turbines.
- 3.C.1.b. Research and develop microgrids for community disaster hubs (City Hall, Seniors Center, Bainbridge Island School District (BISD), Island Wood) in partnership with PSE and Bainbridge Prepares.⁷³ See also Section 8 Community Engagement Action 8.C.2.a.

Other Action(s)

- 3.C.1.c. Investigate partnerships with adjacent communities to COBI (Poulsbo, Suquamish, Kitsap, Brownsville, Manchester, Silverdale) to coordinate and utilize similar technologies and information sharing.

Commented [PB101]: How is this different from 3.B.2.b?

Commented [PB102]: Why these small communities? What about Kingston, Bremerton, and Port Orchard or even Gig Harbor and Port Townsend?

Strategy C.2. Create large-scale neighborhood microgrids with distributed energy resources.

Priority Action(s)

- 3.C.2.a. Work with partners (e.g., PSE) to determine the feasibility of developing large-scale neighborhood microgrids with customer-based storage or utility-scale storage, or a combined heat and power biodigester sited adjacent to the community pool.

Section 4: Transportation



Section 4: Transportation

Motorized transportation and air travel account for about one-third of Bainbridge Island's GHG emissions. Motorized vehicles also contribute to localized air pollution and can impact public and environmental health and safety. Increasing the use of alternative modes of transportation, including walking, biking, and public transit, can help alleviate these impacts.

Greater use of electric vehicles can reduce local pollution along with overall GHG emissions, especially as our grid moves toward cleaner energy sources. Greater housing density when sustainably located, together with greater availability of electric vehicle (EV) charging and public transit infrastructure, could facilitate all of these shifts towards a more sustainable community. Finally, COBI may be able to facilitate adoption of infrastructure to help electrify ferry travel, and take steps to educate the community about the impacts of air travel.

4.1. Goals/Targets

A. Reduce motorized vehicle miles traveled (VMT)⁷⁴ per capita

- By 2030, reduce VMT per capita by 25% (currently 3,000), and by 50% by 2045. To support this goal, at a minimum:
 - By 2030, increase the mode share⁷⁵ of active transportation (biking and walking) to 25%, and to 50% by 2045.
 - By 2030, increase the mode share of public transit⁷⁶ to 5% (currently 2%) and to 10% by 2045.

B. Reduce GHG emissions from motorized transportation, including through electrification of all modes (on-road, off-road, and ferries) and encourage reduction of air travel.

- By 2030, transition the COBI's fleet to 75% electric vehicles and the remainder to biofuels.
- By 2045, 80% of registered vehicles on Bainbridge Island will be either electric vehicles or plug-in hybrid electric vehicles.

BI Comprehensive Plan: Transportation

EN 12.2: Facilitate the improvement and convenience of low carbon mass transit and increased carsharing, cycling, walking and the development of alternative vehicle infrastructure (e.g., charging stations) to reduce greenhouse gas emissions.

TR 3.4: Support WSF and other providers to create and incorporate best practices into ferry service that reduce greenhouse gas emissions and vulnerability of ferry transit from climate change.

TR 7.2: Develop a master plan for the SR 305 corridor as a green and scenic highway balancing the objectives of maintaining its character, and providing safe visibility. Incorporate best practices into highway improvements that reduce greenhouse gas emissions and transit vulnerabilities from climate change.

TR 12.2: Develop transportation plans and programs that reduce travel demand, improve traffic flow and consider the impact to air quality including reducing greenhouse gas emissions.

Commented [PB103]: Does this include electric vehicle motors or just combustion engines? Should be clarified in this section

4.2. Challenges

- **Barriers to increasing cycling and walking:**

Experience in other communities and countries shows that safe, convenient and attractive networks of cycling and walking pathways for all ages and abilities is required to significantly increase biking and walking. Such networks must include separated or protected bike lanes. Bainbridge Island currently lacks such networks.

- **Historical development patterns:**

Walking and bicycling are easiest within compact, mixed-use neighborhoods that actively accommodate these modes through well-designed roads, trails, and other pedestrian- and cycling-specific infrastructure. This mode of development may conflict in some cases with residents' preferences and with extant infrastructure. Outside of core areas, the majority of Island residences are spread out and separate from commercial destinations, which presents barriers to walking and biking to accomplish many activities.

- **Constraints to using public transit:**

A combination of physical, cost, and behavioral barriers can inhibit the availability and use of public transit. Increased service, along with transit-oriented development, could help overcome these barriers to some degree.

- **Barriers to electric modes of transport:**

Although electric vehicles are increasingly popular, there are still cost, physical and psychological barriers to widespread adoption. Providing adequate charging infrastructure, along with greater education and outreach, can help reduce these barriers. Alternative transportation modes – like e-bikes and scooters – can be promoted through measures to encourage non-motorized travel.

- **Island geography:**

Bainbridge Island has lower average vehicle-miles traveled per capita than other communities in Washington and the rest of the country. This could be simply because we have fewer road miles to drive on (e.g., compared to Seattle), and the vast majority of trips on the island are under 5 miles. It likely also reflects the fact that a greater share of resident vehicle-miles occurs outside community boundaries (e.g., shopping trips and other engagements that are off island). Thus, a significant component of travel emissions may be occurring in other jurisdictions, which may limit the community's leverage over them.

- **Air travel emissions:**

The GHG emissions inventory indicated that air travel constitutes 13% of our GHG emissions. Actions to address air travel emissions are generally beyond the reach of any individual city. However, there are actions COBI can take to help reduce air travel by Bainbridge Island residents and COBI employees. COBI can encourage employees and residents to reduce air travel by using technology that makes virtual meetings more effective and affordable. COBI in partnership with others could develop an online tool to

Other-Cities-Related Targets from Other Locations

Vehicle Miles Traveled (VMT)

- Washington State: Reduce VMT by 30% by 2035 and 50% by 2050.
- Los Angeles, CA: Reduce VMT by at least 13% by 2025; 39% by 2035; and 45% by 2050.
- Minneapolis, MN: Reduce motorized VMT by 40% by 2040

Mode Share

- Vancouver BC: Their goal of 50% of trips by motor vehicle by 2020 was reached ahead of schedule. Current goal is 33% of all trips by motor vehicle by 2040.
- Portland, OR: In 2008, 66% of trips were drive alone. By 2030, aim to achieve 30% of trips be drive alone.
- Orlando, FL: Goal is to achieve less than

Commented [PB104]: Must be well linked from residential areas to employment, school, and shopping. Likely requires integrated land use and transportation planning to really see high level utilization and MVT reduction over the long-run.

Commented [ME105]: Making private vehicle use more expensive or inconvenient, or other disincentives to driving, is also essential to compelling a modal shift

Commented [CB106]: ...currently has an assortment of disconnected off road trails in need of enhancement and connections.

Commented [PB107]: TOD in the Central Puget Sound typically means mid-rise buildings. Is that what was envisioned when this was written?

Commented [JS108R107]: I think that this makes the point that the discussion about increasing housing density and building heights supports climate GHG reduction goals AND sustainable transportation goals.... That all three of these topics are connected.

Commented [PB109]: Speaking as an EV owner, home-based charging on the island would serve the vast majority of the need. Public chargers would serve tourists and walk-on ferry commuters who drive more than 20-30 miles one-way to park at/near the ferry.

Commented [JS110]: Does this mean "... limit the community's leverage over them".

Commented [JS111]: Do we want to address air travel for pleasure? Or just business?

Commented [JS112]: COBI staff don't do much flying for work (not zero, but not much)...but this could include reaching out to the Chamber of Commerce and outreach to home based business owners about how to reduce the GHG from their own business travel.

Commented [PB113]: Is high-speed internet available everywhere on the island? If not, then KPUD and private internet providers have a role to play.

Commented [PB114]: Could B&O tax return be used to collect relevant information on business travel and use of alternative technologies? B&O mailings could be used to target information to businesses.

Additionally, could the State adopt an air-travel reduction program like businesses have to have a commute trip reduction program.

help businesses and individuals calculate the emissions impact of air travel so they can better manage both emissions and the cost of travel

4.3. Current Actions

Municipal

- **City's Green Team:** COBI has multiple policies and incentives in place to encourage employees to reduce their single occupancy driving miles. These include:
 - The Commute Trip Reduction (CTR) program: if employees of COBI get to work without a single occupancy vehicle trip more than 60% of the time, they receive \$50 a month.
 - The Scoot Car: a Kitsap transit program that allows employees to use a car from City Hall for free during the day.
 - Employees receive may use City ORCA cards for city business to encourage busing and light rail trips.
 - For the past few years COBI's Green Team has promoted Bike-to-Work day for employees and intends to continue this promotion.
- **State code requirements:** State code requires electric transition for municipalities: RCW 43.19.648 directs municipalities to transition "to the extent practicable, to satisfy 100% of their fuel usage for operating publicly-owned vehicles, vessels and construction equipment from electricity or biofuel, effective June 1, 2018."⁷⁷
- **Island-wide transportation plan:** In 2017, COBI adopted an Island-wide transportation plan (IWTP)⁷⁸ that has non-motorized elements (see Chapter 6) which the City can implement and thereby address some of these goals.
- **Sustainable transportation initiative:** COBI is working on a sustainable transportation plan and has hired a consultant to advise the City on potential options along with forming a Sustainable Transportation Task Force. This plan is expected to set higher targets than the 2017 IWTP, recognizing the need to reduce greenhouse gases.

Community

- **Community outreach:** The Climate and Energy Forum, a collaborative of Bainbridge community environmental groups, has hosted multiple events over the past few years addressing impacts of gas vehicles and the opportunities for electrification and reduced motor vehicle use.
- **Bainbridge Greenways:** Bainbridge Greenways is a coalition of community groups promoting and advocating sustainable transportation modes on the Island, particularly safe biking and walking for all ages and abilities. In 2018, this group (then called the Bainbridge Mobility Alliance) conducted an extensive survey of the community regarding non-motorized transportation opportunities, in which they found that Islanders felt our biking and walking infrastructure is generally unsafe.⁷⁹
- **Kitsap Transit:** On Bainbridge Island, Kitsap Transit is working with the state on the expansion of the Day Road Park & Ride to add capacity. At this time, there are 122 stalls of leased park and ride space on the Island; the expansion of Day Road could add between 75-

Commented [CB115]: CTR and the Scoot car don't fall under the Green team's purview. But we could help encourage them in the future. Telecommuting is also a huge new topic to discuss for GHG reductions.

90 new stalls. Just off the island at the Clearwater Casino, Kitsap Transit has leased 96 stalls to gather commuters prior to driving on the Island.

- **Electric bus:** For the past year, Kitsap Transit has been operating a 40-foot, 100% electric bus in its fleet as a pilot program to evaluate the technology and is planning on a second electric bus.
- **Clean diesel buses:** For the last five years, Kitsap Transit has been retiring older diesel ACCESS buses, replacing them with cleaner, propane-powered small buses which can reduce black carbon and also contribute to improved air quality.
- **Transit infrastructure:** Kitsap Transit is currently preparing a study on infrastructure requirements so that the conversion to electric buses is planned and it has the infrastructure in place to support an electric fleet.
- **Washington State Ferries (WSF):** WSF is planning to transition the three boats servicing Bainbridge Island to hybrid boats (diesel/electric) that can run on 100% electric power by 2022.

4.4. Strategies/Actions

Goal A. Reduce motorized vehicle miles traveled per capita

Strategy A.1: Develop interconnected networks of safe, convenient, and attractive biking and walking pathways for use by people of all ages and abilities to significantly increase non-motorized transportation on the Island.

Priority Action(s)

- 4.A.1.a. Through the Sustainable Transportation Planning Process and other means, develop an ambitious plan to create networks of pathways required to achieve a substantial mode shift to biking and walking, including separated or protected biking and walking lanes.⁸⁰
- 4.A.1.b Increase COBI staff time or hire a consultant to enhance COBI's capacity to identify and apply for sources of funding (such as federal grants for Safe Routes to Schools and public private partnerships for the needed infrastructure).
- 4.A.1.c Explicitly consider climate change mitigation (e.g., greenhouse gas reductions) when evaluating options as COBI develops its Sustainable Transportation plan.

Other Action(s)

- 4.A.1.d Explicitly consider non-motorized transportation options in all appropriate Capital Improvement Plans.
- 4.A.1.e Work with BSD and BIMPRD to increase the Island's network of separated or protected routes for walking and biking.
- 4.A.1.f Work with BSD to offer incentives for commuting to school and activities by bicycle or non-motorized alternatives.
- 4.A.1.g Develop policies to support usage of electric bikes (charging infrastructure, subsidies for purchase for low-income residents).

Commented [ME116]: No strategy for driving disincentives?

Commented [JS117]: Does this goal apply just to residents (per capita) or also to employees who work on the Island, but live off Island

Commented [ME118]: allow for potential increases of

Commented [ES119]: To actually implement a program like this, likely would partner with a community agency that offers income-based services.

- 4.A.1.h Develop a complete sidewalk system along with improved safety features to encourage walking.
- 4.A.1.i. Encourage government, businesses and multi-family dwellings to provide safe spaces to park bikes for their customers, employees, and residents.

Commented [ME120]: Some residents equate sidewalks with “urban” development and not in character with a desired “rural” aesthetic. How to reconcile?

Commented [JS121]: We already have a bike parking requirement in our code for commercial and multifamily projects, but we could review to see if it should be increased. Same with planning for EV charging spaces.

Strategy A.2: Promote mixed use development that enables greater use of non-motorized transportation options and prioritize transit-oriented new development.

Commented [JS122]: Do you want to say “Multifamily housing” or “High-density housing” in addition to “Mixed use development”...

Priority Action(s)

- 4.A.2.a Require incorporation of non-motorized transportation options into all new development, e.g., by including sidewalks or pedestrian trails linked to existing and planned trail/sidewalk networks; incorporating bicycle lanes and trails; etc.
- 4.A.2.b Require all new development to accommodate non-motorized and public transit transportation options (including incorporation of bus shelters and other amenities).

Commented [ME123]: This suggests more intense development of Island Centers to discourage driving into Winslow for some goods and services. If true, should state that.

Commented [JS124]: Let’s confirm with Paul Nylund in Development Engineering about whether the language in the code is strong enough to ALWAYS require the NM improvement, because this action is already done, at least to a certain extent.... For nonmotorized improvements that are identified in a plan... but whether or not enough facilities are identified on the IWTP plan, I think that is the questions

Other Action(s)

- 4.A.2.c Require land use planning that explicitly incorporates walking and bicycling networks, promotes greater density, and optimizes space to minimize the distance people have to travel by car.
- 4.A.2.d Consider Developer Mitigation Fees to generate revenue to expand non-motorized transportation on the Island.
- 4.A.2.e Use COBI budgets and other sources to provide significant funding for non-motorized transportation options throughout the Island (e.g., pedestrian and bicycling infrastructure, pathways, bicycle parking, etc.) in existing and new development).
- 4.A.2.f Provide education and outreach to developers and contractors on incorporating non-motorized transportation options in development, including targeted training to Island and neighboring communities’ architects, landscape architects, builders, and related construction professionals.
- 4.A.2.g Prohibit further expansion of parking and/or charge for parking at Island commercial centers to encourage greater use of biking, walking, and public transportation.

Commented [PB125]: Including efficient interconnectedness between developments? The biking/walking network needs to be easier to use than the vehicle network.

Commented [JS126]: Same comment as above, we have this in code, referencing the IWTP, so if IWTP needs updating to expand where facilities are required?

Commented [JS127]: We have a Transportation Impact Fee already, but I am not sure if it can be used for NM projects. I think it is supposed to be used for projects that increase capacity. We need to check with PW.

Commented [ES128]: Are there examples of this type of fee in Washington that you can point me to?

Strategy A.3. Work with Kitsap Transit to encourage the use of existing transit and expanding service on the Island.

Commented [PB129]: Does this include parking for EVs? Much of the island’s existing housing stock is not walk/bike/transit friendly and likely never will be, so vehicles will still be a necessity for those residents so there needs to be enough parking.

Priority Action(s)

- 4.A.3.a In consultation with Kitsap Transit, develop a robust marketing/outreach/educational program to inform island residents and those who traverse the Island from outside about public transit options, including park and rides (including, for example, information for island visitors on bus/transit routes & options).

Commented [PB130]: Probably can’t require private landowners to charge for parking. Could likely require them to have a certain % of EV-only (with or without charging stations) and bike parking.

Other Action(s)

- 4.A.3.b Work with Kitsap Transit to expand on-island transit service, with greater frequency and coverage, including service on Sundays and during evenings and increase the number of electric buses in the Kitsap Transit fleet.

Commented [JS131]: We can review where commercial parking is permitted use.

- 4.A.3.c Work with Kitsap Transit to expand options and service for people commuting to work on the Island and to the ferry from off island.
- 4.A.3.d Work with WSF to provide incentives for people to use a bike for traveling to and from the ferry (e.g., expanding the bike barn, surface-level bike racks (especially important for electric bikes), and provide better space on the ferry).
- 4.A.3.e Evaluate increasing the price of parking at the ferry to encourage people to take public transportation, bike or walk.

Strategy A.4. Encourage greater use of school buses and carpooling for student transportation.

Priority Action(s)

- 4.A.4.a Work with BISD on measures to discourage private-vehicle drop-offs and pick-ups, encourage car-pooling, biking and walking and promote greater use of school buses.

Other Action(s)

- 4.A.4.b Work with BISD to develop an anti-idling program.
- 4.A.4.c Work with BISD to explore options beyond biking and walking for helping move students to and from after-school activities, such as partnerships with BI Ride or other entities that could help reduce single student transportation.
- 4.A.4.d Work with BISD to offer incentives to students for carpooling or riding the bus to/from school.

Goal B. Reduce emissions from motorized transportation, including through electrification of all modes (on-road, off-road, and ferries) and encourage reduction in air travel.

Strategy B.1: Convert COBI vehicle fleet to electric or biofuels and encourage other Bainbridge Island taxing districts (i.e., BISD, BIMPRD, and BIFDP) to convert their fleets to electric or biofuels.

Priority Action(s)

- 4.B.1.a Transition COBI's fleets to primarily electric vehicles and using biofuels where electric vehicles are not an option and encourage other Bainbridge Island taxing districts to also develop a plan.

Other Action(s)

- 4.B.1.b Install charging infrastructure across municipal locations (City Hall, Public Works, Police Department) and encourage the installation at the BISD Bus Barn.
- 4.B.1.c Require justification for COBI to purchase a conventional vehicle.

Strategy B.2: Develop infrastructure to support electric vehicles and off-road transportation.

Priority Action(s)

- 4.B.2.a Require that all new development be EV charge-ready and that multifamily units and commercial development include EV charging infrastructure.

Commented [PB132]: This is now going to be a challenge with COVID-19.

Commented [PB133]: This is now going to be a challenge with COVID-19.

Commented [JS134]: Just to note that BISD staff are on the Sustainable Transportation Effort Steering Committee, and pre-COVID, this was a priority for the BSD...

Commented [PB135]: Is this for private vehicles or school buses?

Commented [PB136]: This is now going to be a challenge with COVID-19.

Commented [PB137]: This is now going to be a challenge with COVID-19.

Commented [ME138]: What about new technologies in personal electric transport? See examples like the X-1 Bike, Schaeffler Biohybrid, or Carver tri-wheel scooter.

Commented [JS139]: This is already in the code when creating more 25 or more parking spaces... but can be improved.

Commented [PB140]: As well as relevant renovation projects

Commented [PB141]: Consider secure private storage (i.e. individual bike lockers or communal bike cages) for E-bikes while charging and facilities to maintain bikes on premises.

- 4.B.2.b Install additional charging stations in commercial centers, including Island Village, Coppertop, Lynwood Center.

Other Action(s)

- 4.B.2.c Explore municipal grants and public-private partnerships, such as working with PSE, to develop grants for EV infrastructure adoption.
- 4.B.2.d Work with PSE to facilitate and promote adoption of charging infrastructure.

Strategy B.3: Support, as needed, efforts to electrify ferry vessels.

Priority Action(s)

- 4.B.3.a Coordinate with Washington State Ferries, PSE, and other entities as necessary to evaluate the need for, and feasibility of, establishing charging infrastructure on the Island to service ferries.

Other Action(s)

- 4.B.3.b Facilitate the development of ferry charging stations (and accompanying power transmission and distribution infrastructure) as needed.

Commented [PB142]: What is the difference between this and 4.B.3.a?

Strategy B.4: Encourage reduced vehicle GHG emissions and improved fuel economy.

Commented [ME143]: Another Priority Action: Promote sustainable travel choices through positive marketing and personal stories

Priority Action(s)

- 4.C.4.a Adopt a city-wide anti-idling ordinance that includes an enforcement component and work with the WSF and State Patrol to reduce idling at the ferry parking lots.

Strategy B.5: Encourage reduction of air travel by COBI staff and local residents.

Priority Action(s)

- 4.C.5.a Work with partners (e.g., Climate Action Bainbridge and Puget Sound Clean Air Agency) to provide public information on benefits of reducing air travel and seek opportunities to help our community support and maintain the digital infrastructure it needs to enable more virtual meetings.

Commented [PB144]: Develop?

Section 5: Buildings



Section 5: Buildings

The energy to heat, light, and power buildings and other workspaces is a major source of GHG emissions. Building-related emissions are the state's fastest growing source of GHG emissions and account for 27% of the carbon pollution in Washington.⁸¹

Additional environmental impacts from buildings include: stormwater runoff; loss and fragmentation of natural areas and wildlife habitat; increased use of limited resources including groundwater; and burdens on existing landfill space, particularly from construction and demolition debris. In addition, changes in the results of climate change such as sea level rise, and flooding and slope stability may increase the vulnerability of the Island's housing stock.

Green building techniques, coupled with upgrades, proper maintenance and efficiency improvements for existing buildings, can help reduce these impacts. It will also be important to provide incentives and resources to assist low income households in making the necessary changes to reduce their carbon footprint.

5.1. Goals/Targets

A. Reduce GHG emissions from all municipal, commercial, industrial and residential buildings.⁸²

- By 2023, COBI has adopted green building standards and practices for all new municipal, residential, commercial, and industrial buildings, including affordable housing and all remodels and additions⁸³ of a certain size.
- By 2023, COBI will have established a Green Energy and Building Fund.
- By 2030, COBI will require all existing residential, commercial, industrial and municipal buildings to be all electric.

B. Establish procedures to ensure buildings and infrastructure are resilient to climate change impacts (e.g., higher precipitation, sea level rise, wildfire risk and temperatures).

- By 2022, COBI will complete an analysis, develop a plan, and design a process for regularly updating the plan to ensure all City owned assets will be protected from sea level rise over the next 50 years.
- By 2023, COBI will complete an analysis, conduct public outreach activities, and identify those properties at highest risk from sea level rise impacts over the next 50 years.

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.

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.

Commented [PB145]: General formatting comment: use numbers instead of bullets here so it is easier to cross-reference to specific strategies below

Commented [ES146]: Does this mean that all heating and stoves will be solely electric?

Commented [PB147]: This timeline should sync with the 2025 timeframe for SMP update.

Commented [PB148]: Protection from sea level rise is also relative to the nature of the infrastructure. Some infrastructure (i.e. parks) might be designed to be periodically inundated (e.g. king tides) and therefore the word "protection" may not be the best word here. I would suggest "resilient"

Commented [PB149]: Shouldn't this be the anticipated lifespan of the infrastructure? Some might have shorter lifespans and other may be longer.

Commented [PB150]: This timeline should sync with the 2025 timeframe for SMP update.

5.2. Challenges

- **Lack of familiarity with green building programs:** Many residents and builders lack familiarity with green building programs and certification approaches. This makes it harder to adopt and incorporate green building practices. Also, city staff involved in planning, building and public works lack of familiarity with green building codes and what they can accomplish.
- **Lack of information on the cost-effectiveness of green building programs:** There is a lack of information on the cost effectiveness of adopting green building standards. This makes it difficult to convince developers, builders and homeowners to adopt green building practices. It also provides challenges for municipalities looking to justify the programs.
- **Need to include life-cycle costs:** Sometimes, there is a higher upfront cost for green building and this is viewed as a lost cost instead of an investment. More information on and integration of, the life-cycle costs for a project is needed during the planning and permitting process⁸⁴ and for the maintenance and operation of the buildings.
- **More information on green building materials:** There is a lack of familiarity ~~from~~ among developers, contractors, builders and homeowners about green materials used in green building and the demolition and recycling of materials.

5.3. Current Actions

Municipal

- **Comprehensive Plan:** The Comprehensive Plan highlights the need to develop and implement green building strategies.
- **Green building task force:** COBI initiated a process for developing a green building code and formed a green building task force to provide recommendations to the City on the direction for green building on the Island.
- **City Green Team:** COBI has a Green Team that is working to implement green practices for municipal purchasing and internal operations such as waste diversion and energy conservation actions.
- **Community Solar:** COBI enabled a community-funded solar project to be installed on the roof of City Hall in 2012.

Community

- **Green building certified buildings:** Several buildings on Bainbridge Island are certified as LEED Gold⁸⁵ or better, and some are part of the Living Building Challenge.⁸⁶
- **PSE services:** PSE provides free home energy audits and rebates for retrofits to cleaner/more efficient energy systems.⁸⁷

5.4. Strategies/Actions

Goal A: Reduce GHG emissions from all municipal, commercial, industrial and residential buildings.

Strategy A.1: Adopt green building practices and standards for all new municipal, commercial, industrial and residential buildings and all remodels and additions of a certain size.

Priority Action(s)

- 5.A.1.a. Green Building Task Force provides recommendations on mandatory green building practices and standards for all new municipal, commercial, industrial and residential building and all remodels and additions of a certain size.⁸⁸
- 5.A.1.b. Prohibit propane and heating oil as the primary energy source for heating and cooling in all new and renovated municipal, commercial, industrial, and residential buildings.
- 5.A.1.c. Require all buildings apply the Climate Change Adaptation Certification, or similar tool, to identify and avoid climate risks.

Other Action(s)

- 5.A.1.d. Require a life cycle cost/benefit analysis for all new and renovated municipal buildings that includes a greenhouse gas analysis.
- 5.A.1.e. Establish a Green Building team within the City that consists of staff from building, planning and public works that would be responsible for overseeing the implementation of any green building code and work with developers, contractors and others who are interested in pursuing green building.
- 5.A.1.f. Join the Regional Code Collaborative to leverage economies of scale in developing and updating green codes.⁸⁹
- 5.A.2.g. Work with the Affordable Housing Task Force and the Green Building Task Force to develop guidelines for green affordable housing and provide green design assistance for affordable housing projects.
- 5.A.2.h. Explore using Washington State's Evergreen Sustainable Development Program for the development of green affordable housing.
- 5.A.2.i. Ensure that water-dependent permits include plans for future water conditions.

Strategy A.2. Establish or expand programs to assist building owners in reducing GHG emissions, energy use and water consumption.

Priority Action(s)

- 5.A.2.a. Provide incentives for existing buildings to replace propane and heating oil use as a primary heating and cooling source.
- 5.A.2.b. Work with PSE to: 1) raise awareness about existing rebate and assistance programs that will increase access to energy conservation and efficiency programs, focusing on below-average-income households and nonprofit organizations;⁹⁰ 2) explore creating new incentive/rebate programs; and 3) develop a local program to encourage homeowners

Commented [PB151]: This section has a lot of mandatory/required language which seems to conflict with the incentive/voluntary language in the energy section.

Commented [PB152]: This should be stated exactly as above. As in "by YEAR..."

Commented [ES153]: Does this refer only to new buildings and remodels? If so, add language to make that clear, and maybe add something about "as part of the permitting process" at the end.

Commented [PB154R153]: Agree. What is the level of burden/work imposed on applicants for this certification? Is there a quick exemption process before someone has to complete a longer form? What is expectation for staff to review this for accuracy? Where would this be required by code? Is this an appendix to SEPA – many projects are SEPA exempt.

Commented [PB155]: Does this have to be done individually or can there be some programmatic process for this? What is expected here as far as permit review and code requirements – is it satisfactory that they handed in a piece of paper with some cost/benefit on it or are staff expected to review this for accuracy?

Commented [PB156]: If green building is mandatory, then everyone involved in building permit review will need to be proficient, not just a certain team of staff.

Commented [PB157]: This conflicts with the mandatory/required language in this section.

Commented [ES158]: Not currently active

Commented [PB159]: Does this mean SLR? If so, should be stated directly.

Commented [ES160]: Also wood stoves?

Commented [PB161R160]: agree

Commented [PB162]: Is this a typical term used for housing assistance programs? If not, probably should consider using consistent terminology so there is alignment across programs and determining qualifications is easier.

that have sufficient potential to acquire customer-owned generation like roof-top solar and small wind turbines.

Other Action(s)

- 5.A.2.c. Develop training and outreach programs to provide technical assistance to developers, contractors, architects, landscape architects, city employees, and homeowners on green building that includes the cost/benefit to occupants of green building, use of reused and recycled materials, and the health benefits from green buildings to occupants.
- 5.A.2.d. Work with the BISD, BIMPD, and BIFDP to ensure any new buildings are built to the highest green building standards.
- 5.A.2.e. Host a community workshop with other communities of comparable environmental and socio-economic characteristics to learn from their green building programs.

Strategy A.3 Establish a Green Energy and Building Fund (applicable to energy section).

Priority Action(s)

- 5.A.3.a. Establish a fund to assist in energy audits for residential home projects, including affordable housing, using the “no net increase” requirement and other energy conservation measures including providing financial incentives for existing building owners to transition from combustion equipment to all electric buildings.

Other Action(s)

- 5.A.3.b. Apply for grants and subsidies for energy efficiency improvements for low-income residents to mitigate equity concerns.

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

Strategy B.1: Identify and mitigate city assets at risk due to sea level rise.

Priority Action(s)

- 5.B.1.a. As recommended by the 2019 CCAC Report on Sea Level Rise: 1) conduct a systematic, high-resolution analysis of exposure of City assets to sea level rise; 2) create a prioritized list for addressing assets at high risk of sea level rise; and 3) integrate sea level rise analysis into all City planning to identify and avoid or minimize risk to planned infrastructure and development.

Other Action(s)

- 5.B.1.b. Create a tiered strategy for assets at longer-term risk (beyond 2030 but within infrastructure lifespan) and identify solutions for their management (e.g., roadways that are expected in the coming decades to be sufficiently flooded that they will not be functional for motorized transit.)

Commented [PB163]: Is the highest standard really necessary? Is this consistent with the cost/benefit analysis discussed above?

Commented [PB164]: The energy section discusses this type of activity with neighboring communities, why is this different?

Commented [PB165]: Include the content in one section and cross-reference if necessary. The energy section and this section have different content.

Commented [PB166]: What is meant by “no net increase”?

Commented [ES167]: Does this mean that the City would apply on behalf of low-income residents?

Commented [PB168]: The risk profile for different assets will be different. It seems like we also need to identify acceptable risk profiles for classes of assets. For example, emergency infrastructure should be resilient to SLR projects under RCP8.5 with something like a 1% probability of exceedance whereas a passive use park could have a very high probability of exceedance. Other assets would fall somewhere in between.

Commented [PB169]: How is this different from the priority above? Seems like it is part of “2) Create a prioritized list...”

Strategy B.2. Assist property owners in identifying risks to existing and planned infrastructure from sea level rise and other climate change impacts.

Priority Action(s)

- 5.B.2.a. COBI integrates sea-level rise analysis into all City permitting to help applicants identify and avoid or minimize risk to planned infrastructure and development from sea level rise or other climate impacts.
- 5.B.2.b COBI hosts community workshops on climate impacts, how they might impact buildings, and how to prepare buildings for these impacts.

Other Action(s)

- 5.B.2.c. Conduct a high-resolution analysis of all shoreline properties to inform landowners of exposure to sea level rise over the coming years and decades, and make this information widely available for property owners to use in decision-making.
- 5.B.2.d. Conduct similar analysis for other climate change impacts (e.g., higher precipitation and increased temperatures).

Commented [PB170]: Also VERY important to address existing structures and land uses.

Commented [PB171]: This seems like a valuable thing to do, but needs to be caveated to avoid liability risk related to decreased property values. Would there be a way for landowners to seek corrections or record something like a SLR survey/certificate for their property as a way to provide site-specific information that might refute the City analysis?

Commented [PB172]: Risk information should be paired with possible solutions and regulatory requirements so landowners have guidance regarding realistic future pathways. Risk information alone is likely to overwhelm.

Commented [PB173]: Similar comment as above

Section 6: Natural Environment



Section 6: The Natural Environment

Our actions today will affect the future of our Island's natural resources as the climate changes. COBI's Comprehensive Plan identifies the importance of continuing to protect our open spaces and environmentally sensitive areas, while affirming that climate change will bring both directional change and uncertainty to many of these resources. Therefore, the goals, policies and approaches that COBI and other landowners and managers use to protect and sustain these landscapes will also need to shift in order to maintain their effectiveness under these new conditions.

6.1. Goals/Targets

A. Steward Bainbridge Island's natural resources to function as healthy, resilient ecosystems that can continue to serve multiple ecological functions including providing habitat, maintaining the hydrologic cycle and storing carbon in the face of the added stresses of climate change.

- By 2021, COBI is using the Climate Change Adaptation Certification (or other similar tool) to evaluate land acquisition and development decisions to ensure decisions are climate informed.
- By 2025, COBI will develop a comprehensive plan to control and reduce invasive plant species across Bainbridge Island in partnership with relevant stakeholders.
- By 2025, COBI will adopt a forest management plan that incorporates adaptation to climate change risk factors including wildfire and drought and pathogens, and will work collaboratively with all stakeholders that manage forest resources to establish consistency in priorities and planning for climate change impacts on forests across jurisdictions and ownership.

B. Protect and maintain the integrity of our Island's surface and groundwater resources in the face of climate change.

- By 2023, COBI will adopt a Groundwater Management Plan that accounts for climate change in its projections, policies, and guidance.

C. Steward our Island's shorelines to allow for resilience in the face of climate impacts including sea level rise.

- By 2025, COBI will integrate into its Shoreline Master Program approaches to address and adapt to the impacts of sea level rise on the natural resources of our shorelines, and will

BI Comprehensive Plan: Natural Environment

EN 1.1: A primary goal of the Comprehensive Plan is protecting the Island's natural environment; land use decisions implement this goal.

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 1.5: 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 5.10: Consider climate change and its impacts in all decisions related to wildlife, fish resources and natural systems.

Commented [N174]: I have concerns over how we tie any observed impact in our landscape to climate change. since human activity impacts the natural environment in a myriad of ways we want to be sure we prescribe the right fix for the problems we are facing. I think it is important that our response is discrete from other environmental regulations to avoid using Climate Change as a catch all. There are climate change impacts that need to be addressed but I think they should be seen as separate from, for example, pollution or land degradation.

Commented [N175]: This section represents a massive addition to PCD work loads to draft and administer all the required code changes necessitated by the suggestions in this section.

Commented [PB176]: Consider plain talking this.

Commented [N177]: Compare and align with Community Forest Management Plan (CFMP) adopted in 2017

Commented [PB178]: I agree with this timeframe since we won't have time and resources to address much regarding climate change in the current periodic update due in June 2021 although I would like to consider flooding risk in the periodic review. Will likely need consultant support for the larger 2025 effort, which I hope builds on the nearshore assessment model.

work collaboratively with all stakeholders that manage shoreline resources to establish consistency in priorities and planning for sea level rise across jurisdictions and ownership.

D. Support an agricultural system that prioritizes climate change resilience, local food production, and ecosystem services including soil carbon storage and water management.

- By 2023, COBI will require manure management for all permitted agricultural activities.
- By 2023, agricultural uses will be incorporated into groundwater planning via the Groundwater Management Plan (see goal B).

6.2. Challenges

- **No one-size-fits-all approach:** The complexity of our Island's ecology, human history, and geomorphology means that there is no one-size-fits-all approach to climate mitigation and adaptation. Different systems and areas of the Island will require site-specific decision making.
- **Complex forest management history:** Bainbridge has a complex history of forest management, including major deforestation events and a current patchwork of suburban-rural interface and, in some areas, little to no management of dense secondary regrowth. These factors present wildfire and disease risks that are likely to increase under climate change.
- **High level of shoreline modification:** Adaptation to sea level rise is complicated by a high degree of human shoreline modification, as well as significant financial and emotional investments in properties and infrastructure.
- **Low adaptive capacity for streams and wetlands:** Many of our Island's small streams and wetlands are already seasonal in nature, subject to extremes of dry and wet, and have little buffering capacity to withstand additional stresses such as longer periods of drought, more extreme runoff, and/or increasing input of nutrients or pollutants.
- **Sole source aquifer:** Bainbridge Island is a sole source aquifer community, with the vast majority of its groundwater coming from precipitation that falls on the surface of the island, some of which infiltrates the ground. Our stewardship of this limited resource is likely to be further stressed by lower rates of aquifer recharge expected under climate change along with increasing demand for water with increasing temperatures.
- **Potential saltwater intrusion:** Sea level rise can be expected to increase the possibility of saltwater intrusion into our sea-level aquifer, with repercussions for homeowners who obtain their water from those areas. Septic systems will be impacted, diminishing their function and increasing release of nutrients and pathogens into surrounding water and soils. Septic systems, such as on Point Monroe, are already threatened by seawater intrusion.
- **Balance agriculture with growth:** Bainbridge has a rich agricultural history with community and municipal commitments to agriculture that are complicated by high property values and development pressures. Our community faces difficult choices in how to maintain agricultural values in balance with these competing pressures. We can expect climate change to add challenges to our agricultural activities in several ways including new pests and pathogens, altered water availability, increased water demand and diminished soil health.

Commented [N179]: Potentially not a major issue at this time, there are very limited animal ag farms on the island. None of which would be considered large. The actual implementation of policies like this can actually diminish the share of small local farms in our food economy if written without flexibility

Commented [PB180R179]: Shouldn't the conservation district actually implement anything like this?

Commented [N181]: This is the same challenge just differently stated.

Commented [PB182R181]: agree

Commented [PB183]: Replacing water sources will be easier than replacing individual/community sewer treatment in shoreline areas.

Commented [N184]: We should be doing everything we can to provide local food and products if possible. This adds resiliency and reduces food miles. We should be careful to not add more costs to new and small farms since these are the exact players we need to decentralize and harden our food system on the island.

Commented [PB185R184]: Local Ag is good, but it will always be a niche land use on BI because of the pressures listed here and in the comments. So I wonder how much of a priority it is compared to other things, like shorelines, aquifer recharge, and forests.

Commented [PB186]: Also small lot sizes and fragmented ownership. Probably also the lack of adequate Ag support services.

Commented [CB187]: And due to the high value we put on tree retention.

6.3. Current Actions

Municipal

- **Updated Comprehensive Plan:** COBI's Comprehensive Plan is a powerful, ~~extant~~ guide for addressing climate change mitigation and adaptation in our open spaces and ecosystems (see inset boxes in Strategies highlighting this guidance).
- **Developing Groundwater Management Plan Under Development:** COBI is currently creating a comprehensive groundwater management plan that can lay the foundation for monitoring and adapting groundwater management under climate change.

BI Comprehensive Plan: Forests

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 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-14: 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.

EN-18: 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.

Commented [N188]: In 2017 we adopted the Community Forest Management Plan which sets canopy coverage and management goals

Commented [PB189]: Beginning a periodic review of the SMP, which I hope will address flooding due to SLR, but that hasn't been decided yet.

Current actions also include:

- COBI is using SLR to design a culvert replacement at the head of Eagle Harbor.
- COBI is moving sewer lines out of intertidal areas in Eagle Harbor.

Commented [CB190]: ETAC has done some preliminary work, but COBI staff has not been directed to work on the plan. Hiring a Hydrogeologist has been paused.

Commented [CB191]: Previous estimates indicate this would take 2-3 years to complete and cost \$300,000. In order to craft a worthy plan many stakeholders need to be at the table. I anticipate 1/4-1/2 of my time being dedicated to supporting the plan manager.

Community

- **Stakeholders already considering climate change:** The Bainbridge Island Metropolitan Parks and Recreation District (BIMPRD), and Bainbridge Island Land Trust (BILT) are two of the largest owners and managers on open spaces of the island, each managing approximately 1500 acres of land. Both entities recognize the importance and risks of climate change to their holdings. 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.
- **Many groups active on Island:** Bainbridge Island is very fortunate to have a wide range of groups⁹¹ committed to education and active stewardship that are and will be essential to our ability to mitigate and adapt our natural resource management for climate change. For example, both BILT and BIMPRD have active volunteer and paid teen programs that help with invasive species removal, native planting, monitoring and other activities to build the health and resilience of our ecosystems in the face of climate change.

6.4. Strategies/Actions

Goal A. Steward Bainbridge Island's natural resources to function as healthy, resilient ecosystems that can continue to provide multiple ecological functions including providing habitat, maintaining the hydrologic cycle, and storing carbon in the face of the added stresses of climate change.

Strategy A.1. Steward Bainbridge Island’s natural areas using the best available scientific knowledge about local ecology and climate change.

Priority Action(s)

- 6.A.1.a. Develop and adopt a comprehensive strategy for addressing invasive species on City lands to reduce these significant stressors on forested ecosystems.
- 6.A.1.b. Evaluate all COBI land acquisition and development decisions using the Climate Change Adaptation Certification⁹² (or other similar tool) to ensure decisions are climate informed.

Other Action(s)

- 6.A.1.c. Ensure that the City is using the most appropriate, relevant and recent data and information about natural resources, climate change and other associated parameters in decision-making.⁹³ If data sources are missing, identify how to obtain needed information.
- 6.A.1.d. Partner with community organizations to leverage additional data sources and monitoring efforts that contribute to well informed natural resource management. For example, update mapping resources of key wildlife habitat in interior forest cores and connective networks.
- 6.A.1.e. Incorporate ecological services contributed by forested landscapes into COBI land use decisions and permitting.
- 6.A.1.f. Maintain commitments to Integrated Pest Management approaches that prioritize the reduction or elimination of pesticide use on City-owned lands, and collaborate with partners to increase outreach and education to residents about reducing pesticide use.
- 6.A.1.g. Contract with or add a wildlife biologist or ecologist to COBI staff who is knowledgeable about climate change and would apply that knowledge and relevant tools to proactively manage natural resources and be a resource for staff and the community.

Strategy A.2. Proactively manage Bainbridge forests for anticipated vegetational composition shifts expected under climate change.

Priority Action(s)

- 6.A.2.a. Work with COBI arborist and partnering community groups, as appropriate, to create a preferred list of tree and plant species expected to be favored by climate change projections for use in City planning and restoration efforts. This list can also be used to advise local landowners and be applied to climate savvy development.

Other Action(s)

- 6.A.2.b. Collaborate with community groups to proactively foster climate savvy forest management through information sharing and partnering on education, outreach and stewardship.
- 6.A.2.c. Investigate and integrate best practices for soil and biomass carbon storage into COBI and other stakeholders’ forest management plans.

Commented [PB192]: A1 & A2 seem limited to forests but there are additional natural areas that should be addressed, such as coastal wetlands which need upland areas to migrate as sea levels rise as well as marine and freshwater riparian areas which can be disconnected from forests

Commented [AH193]: 6.A.1.a would be easy to implement, and does not seem like it would require a code amendment. For City-owned properties in shoreline jurisdiction, may want to consider a programmatic shoreli...

Commented [PB194R193]: PCD is starting to work with BIMPD on a pilot programmatic permit for invasive

Commented [AH195R193]: As a follow up to my own comment, there is no permit requirement for invasive

Commented [PB196]: Kitsap noxious weed board will be a critical partner. They teamed up with the City to contro...

Commented [PB197]: Clarify: development on city lands or city review of private development?

Commented [PB198]: Code updates are likely needed to require CC-based considerations in any permitting process.

Commented [PB199]: Shouldn't this be a priority action since this info is needed in advance of developing any cod...

Commented [AH200]: It seems like updating maps should be tied to a specific requirement (in the code or

Commented [PB201R200]: Agree. We need a clearly implantable map which would have to be tied to Comp Pl...

Commented [AH202R200]: It sounds like this action is really getting at resources available to the City and

Commented [AH203]: 6.A.1.e could be incorporated into BIMC through code updates (e.g. upcoming updates to

Commented [N204R203]: This is already a valued resource in our stormwater and CAO code. ARPA does

Commented [PB205R203]: This needs to expanded beyond just forested landscapes. This could be a huge

Commented [AH206R203]: After our conversation today, 7/1, I'm wondering if this could be stated a bit

Commented [PB207]: Alternative term from the SMP is ecosystem functions and ecosystem-wide processes.

Commented [PB208]: Tie this to increased pest risk, otherwise this sounds like it is not connected to CC.

Commented [PB209]: Add training for staff since CC knowledge will related to so many day-to-day activities th...

Commented [N210]: Reword to reflect the uncertainty of the conclusions made herein (replace 'anticipated' with

Commented [N211]: Forest growth is not usually a huge carbon sequestration tool as massive amounts of

Strategy A.3. Mitigate wildfire and forest disease risk through proactive forest management.

Priority Action(s)

- 6.A.3.a. Conduct an assessment of stocking densities on COBI owned lands and evaluate forest health improvements and wildfire risk reduction.
- 6.A.3.b. Ensure that COBI policies prioritize wildfire risk reduction in proximity to homes and infrastructure while prioritizing retention of wildlife habitat values in areas farther from homes and infrastructure, and strengthen wildfire risk-reduction design guidelines for Island construction (residential and business).

Commented [PB212]: Is there a time frame for when this needs to be done?

Commented [AH213]: 6.A.3.b could be further integrated into the BIMC. In particular, review new subdivision standards (17.12) and 16.18 for opportunities to integrate wildfire risk reduction. Amending subdivision standards would inevitably become a complex undertaking.

Other Action(s)

- 6.A.3.c. Work with partnering agencies, including the Bainbridge Island Fire Department, to help communicate to private land owners techniques and resources for reducing wildfire risk while maintaining forest health and wildlife habitat values.
- 6.A.3.d. Work with public agencies (e.g., Kitsap Transit, BIMPRD) and utilities (PSE) to design and maintain infrastructure and land use to reduce wildfire risk.
- 6.A.3.e. Prioritize the control and elimination of early-successional invasive species such as scotch broom that are known to have additional wildfire risk (flammability).
- 6.A.3.f. Work with community organizations including BIMPRD and BILT to proactively identify, treat and contain plant pathogens, as well as invasive species.

Commented [N214]: Could conflict with stated canopy coverage goals in the Community Forest MGMT Plan. Many wildfire defensible zones state a radius of 100 feet should be cleared. This could represent the majority of trees on many parcels.

Commented [PB215R214]: Agree. Also building setbacks from critical area buffers are typically less than recommended defensible space around homes setting up inherent conflicts between management goals. Building setbacks from critical area buffers and shoreline buffers would need to increase.

Commented [PB216]: And protecting critical areas and their buffers.

Commented [N217]: Lets not limit ourselves. Holly is also quite flammable when green and wouldn't be considered early-successional

Goal B. Protect and maintain the integrity of our Island's surface and groundwater resources in the face of climate change.

Strategy B.1. Maximize protections for intact hydrologic processes including aquifer recharge and stormwater runoff.

Priority Action(s)

- 6.B.1.a. Incentivize and maximize opportunities for incorporating water conservation features in Green Design and Building Codes (see Buildings Section Goal A).
- 6.B.1.b. Continue a robust surface water monitoring program that can identify trends in streamflow and water quality to inform adaptive management to protect stream health and integrate into monitoring climate change-sensitive parameters as appropriate.

BI Comprehensive Plan: Water Resources

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.

Commented [PB218]: Plan needs to address groundwater-surface water interactions. Stream baseflow comes from groundwater. Streams and wetlands need to be resilient to increased flooding, which will rely on more natural precipitation interception (forests), storage (wetlands and man made). Stormwater codes likely need to change to address more intense rainfall patterns.

Upland discharge or infiltration of tertiary sewer effluent might be an action that should be added to this plan.

Commented [PB219]: Some on Council are more supportive of mandatory requirements over incentives.

Other Action(s)

- 6.B.1.c. Prioritize enforcement of the Critical Areas Ordinance to maintain the integrity of streams, wetlands and their buffers.

Commented [AH220]: High level of complexity/difficulty, due to limited staff resources. E.g. monitoring of critical areas after development could be greatly improve, but takes a large amount of staff time and effort.

Commented [PB221R220]: Agree. Improved field demarcation of these areas could help. City could use WDFW high resolution and change detection GIS data on a landscape scale to detect impacts.

- 6.B.1.d. Prioritize the restoration of wetlands that have been degraded by historic use, clearing, hydrologic alteration and/or invasive plants.
- 6.B.1.e. Create and implement policies and incentives that protect water resources not addressed by ~~extant~~ existing policies, such as the protection of headwater wetlands that are too small for Critical Areas Ordinance designation but which are critical to the hydrologic cycle.
- 6.B.1.f. Protect water rights for natural systems, assessing hydrological human/nature conflict potential as part of land use planning, including evaluation of projected water scarcity and over abundance.
- 6.B.1.g. Partner with community organizations such as Sustainable Bainbridge, Washington State University Extension, and BLT to conduct education and outreach with the public about their role in protecting hydrologic processes given the realities of climate change via protecting intact functioning streams and wetlands, as well as incorporating rain gardens and other low impact development techniques into their properties.

Strategy B.2. Identify and implement targets that will balance aquifer discharge and recharge, incorporating climate change projections.

Priority Action(s)

- 6.B.2.a. Complete and implement COBI’s Groundwater Management Plan, including incorporation of expected changes to groundwater inputs and outputs under climate change.

Other Action(s)

- 6.B.2.b. Work collaboratively with the Utility Advisory Committee and all Island drinking water systems on ways to meet sustainable yield targets, including outreach and communication about water conservation.

Goal C. Steward our Island’s shorelines to allow for resilience in the face of climate impacts including sea level rise.⁹⁴

Strategy C.1. Incorporate sea level rise and other ocean climate impacts (e.g., ocean acidification) into the shoreline master program and other shoreline management planning decisions.

Priority Action(s)

- 6.C.1.a. Ensure that planning for sea level rise is explicitly incorporated into the Shoreline Master Plan, including incorporating capacity for inundation and change to natural shoreline features, such as planting for shifting vegetative communities, infrastructure movement or abandonment to adapt to habitat loss at shoreline.

Other Action(s)

- 6.C.1.b. Ensure that ecosystem concerns are included in any plans for potential transitions to open space or living shorelines for properties that will be inundated by sea level rise or

Commented [AH222]: This seems complex, especially for wetlands on private property. City could consider implementing a program to purchase properties with degraded wetlands from private property owners. Also complex, expensive.

Commented [CB223R222]: I wetland mitigation bank could be one way to achieve this ‘action’. Though complex and lengthy to setup.

Commented [PB224R222]: Agreed. Protection is always the easier path. Restoration needs to be guided by a good landscape analysis and prioritization process. A local funding stream is also necessary to support an ongoing program and provide grant match. Many large river watersheds are recognizing the eventual needs for human-built storage to augment natural systems.

Commented [CB225]: I believe the current CAO protects all wetlands regardless of size.

Commented [AH226R225]: That is correct.

Commented [IN227]: Undeveloped lots have well rights

Commented [PB228R227]: These are exempt wells. The current water resource planning process is supposed to mitigate for withdrawals, but the mitigation does not need to be in the same surface watershed, so impacts to BI small watersheds could possibly occur.

Expanded connections to public water systems could be an approach, but comes with cost. Scope could be focused to areas where withdrawals are thought to be a more likely impact on surface flows.

Commented [AH229]: Partnering with outside community organizations for outreach/education seems like it would be doable with an additional person on COBI staff, at least from a PCD perspective. Or perhaps this is something that PW is already working on or available to take on. Seems less complex than some of the other action items.

Commented [PB230]: Which it sounds like are expected to diminish over time. May want to make that more explicit.

Commented [PB231]: SMPs will have limited effect on OA and don’t manage many activities that are affected by OA. OA really is a regional issue and would be best addressed by state and national programs.

Commented [AH232]: Complex, but perhaps can be addressed during the upcoming SMP periodic review. Ma ...

Commented [PB233R232]: Periodic Review is due by June 2021, so we won’t have enough time to address much, but I hope to address increased flooding risk from SLR ...

Commented [PB234]: Need more guidance about timeframes for doing this. ...

degraded by coastal erosion and/or slope instability. Begin community conversations regarding our desired outcomes related to sea level rise, coastal erosion and slope instability (see Buildings Section Goal B for other actions).

- 6.C.1.c. Implement a monitoring program for tracking shoreline erosion and slope stability around the Island that can be used to inform planning decisions and resources, including changes and updates to geologically hazardous areas.
- 6.C.1.d. When creating local rules or making land use or management decisions that can impact nearshore water quality (e.g., nutrient, particulate, or chemical run-off) evaluate acceptable levels of these stresses by including the added stresses of climate change currently present and anticipated (e.g., increasing water temperature, reduced dissolved oxygen, ocean acidification, altered precipitation).
- 6.C.1.e. Work with Island stakeholders responsible for management of shoreline natural resources to collaboratively identify and integrate sea level rise changes into planning for shoreline resources.
- 6.C.1.f. Partner with community organizations such as Puget Sound Restoration Fund and Bainbridge Beach Naturalists to monitor local effects of ocean acidification on shellfish resources.

Goal D. Support an agricultural system that prioritizes climate change resilient, local food production and ecosystem services, including soil carbon storage and water management.

Strategy D.1. Maximize opportunities for agricultural practices that mitigate climate change, including lower energy intensive practices, carbon storage, aquifer recharge, and smaller foodsheds.⁹⁵

Priority Action(s)

- 6.D.1.a. Pursue COBI policies that facilitate local agricultural opportunities (e.g., agricultural zoning, tax structure).
- 6.D.1.b. Integrate water budget targets (see Strategy C2) into agricultural land use permitting and planning.

BI Comprehensive Plan: Agriculture

EN15.9: Work with the Conservation District and nonprofits to encourage farming that accounts for changing Island conditions with regard to hydrology, temperature and other climatologically influenced factors.

EN15.10: Improve public information and creating new programs to promote agriculture while advocating for farming practices that protect water quality and quantity.

Other Action(s)

- 6.D.1.c. Work collaboratively with community groups including Friends of the Farm, Master Gardeners, and Kitsap Conservation District to identify and promote agricultural policies that increase carbon storage (e.g., soil sequestration) and hydrologic integrity, and reduce emissions including permaculture and reduced energy inputs (e.g., fertilizer, fossil fuels).
- 6.D.1.d. Work with partnering entities to promote and facilitate the adoption of non-traditional agricultural opportunities (e.g., community gardens, urban agriculture, vertical agriculture) to promote local food production throughout the community.
- 6.D.1.e. Support opportunities for energy production co-located with agricultural activities (e.g., biodigestion, solar projects).
- 6.D.1.f. Ensure that water-dependent permits include plans for future water conditions.

Commented [PB235]: Regional guidance is in development. This is a very complex issue and will require significant resources. Properties will become squeezed and acquisitions may be necessary. Likely need state or federal funds to really deal with this issue.

Commented [AH236]: Technically complex, and also complicated in terms coming up with certain thresholds that relate to different land use decisions. Would require significant staff time and would benefit from outside help (e.g consultant or other agency) as well.

Commented [PB237R236]: Agree. Ecology's oblique aerial photo program would be helpful here, but we would likely need more frequent flights (last flight was in 2016). Ecology could expand its efforts to also include the identification of erosion/slide areas and risk assessment.

Commented [PB238]: This is not just a shoreline issues, this is a watershed issue, so needs to be broader in scope. Also needs to be based on data, are current levels from BI too high? If not, then no action needed except periodic monitoring.

Commented [PB239]: BILT, BIMPRD.

Commented [N240]: With the intent to allow what new activities that are currently restricted? To alleviate what city administered costs?

Commented [PB241]: I don't know exactly what this entails but sounds like we might be getting into Dept of Ecology jurisdiction here.

Commented [N242]: We should recognize that a vast majority of the island and island farms are privately owned. To make this most effective we need to bring in the smaller farms as well.

Commented [PB243R242]: Shouldn't this be led by the Conservation District and implemented through farm management plans? If regulatory changes need to be made (i.e. mandatory farm management plans), shouldn't that be done by the state conservation commission and legislature?

Commented [N244]: Public food forest

Commented [PB245]: What are these?

- 6.D.1.g. Collaborate with Public Farmland partners and resource agencies (e.g., Kitsap Conservation District) to ensure water conservation efforts are integrated into public farmland management.
- 6.D.1.h. Work with partnering organizations including the Kitsap Conservation District to bring resources for water conservation to private and other community farming efforts.

Strategy D.2. Improve manure management to reduce emissions associated with livestock waste and fertilizer delivery.

Priority Action(s)

- 6.D.2.a. Require manure management for all permitted agricultural activities.

Other Action(s)

- 6.D.2.b. Work collaboratively with Kitsap Conservation District to offer technical resources to livestock owners for manure management. Consider development of a memorandum of understanding and funding to support additional manure management efforts.
- 6.D.2.c. Work with community groups and other entities to identify additional opportunities for manure management (e.g., community composting systems, digesters, or other resources that reduce manure emissions).

Commented [PB246]: See note above regarding

Commented [CB247]: This could be useful but agricultural activities are not usually permitted by the city, they are simply allowed. Centralized composting may be the only way to reduce emissions.

Commented [N248]: Consider relaxing or exempting this type of development from some portions of our process (ARPA)

Commented [CB249]: COBI already has an ILA with KCD. We could re-visit it and discuss ways to bring more farms into the fold.

Commented [CB250R249]: We don't usually spend all the budget for this contract. The difficult part is connecting with landowners.

Commented [AH251]: FYI, PCD currently is working with an applicant who is attempting to develop a composting facility for stable waste. BIMC currently not favorable to composting or waste management systems, which are only conditionally allowed in one residential zoning district.

Commented [AH252R251]: Despite the support for such goals within the Comp Plan.

Section 7: Waste



Section 7: Waste

The consumption and disposal of material goods contribute significantly to GHG emissions. The 2019 Bainbridge Island GHG emissions inventory indicated that about 3% of current greenhouse gases are from wastewater treatment and 4% are from solid waste generation.

There was an approximate 11% increase in community GHG emissions specifically from solid waste between 2014 and 2018, and an 8% increase in wastewater treatment emissions over the same time period. In addition, the consumption-based inventory indicated that our purchasing decisions result in an estimated 52 metric tons of carbon dioxide equivalents per year per household, confirming that consumption is a significant contributor to emissions.

The choices we make about the food we eat, our driving habits and vehicle selections, consumer purchases, and the type of housing we choose, all have a large impact on GHG emissions. The waste and disposal of materials during and at the end of these consumption choices can be a substantive component of those emissions.

There has arguably never been more urgency around the need to reduce our collective waste footprint. Reasons for the urgency include:

- 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 wasted along the entire pathway from producer to consumer.
- The substantive impacts of single-use plastics on their production, landfilling and improper release into our environment.

7.1. Goals/Targets

A. Reduce Island residential, commercial, and industrial waste generation.

- By 2021, COBI's approved sustainable procurement plan⁹⁶ is applied across all departments for 100% of purchases.
- By 2021, COBI establishes policies to substantially reduce the use of single-use disposable food serveware by Island businesses.

B. Increase diversion of waste from the landfill

- By 2023, regular commercial compost services are established and consistently used.
- By 2025, COBI develops a requirement for the diversion of all food waste from the landfill.

BI Comprehensive Plan: Waste Sections

E.C.3.3: Encourage local enterprises to participate in programs such as Kitsap County Waste Wise and Green Community Initiative.

E.C.3.4: Encourage public sector solid waste reduction, reuse and recycling.

E.C. 3.5: Encourage existing and new businesses to become part of a linked cooperative whereby the by-products and waste of one enterprise become the raw materials of another

E.C. 3.6: Create opportunities to foster green technology and industries, such as energy, waste, and information technology, which have the potential to create local, family wage jobs in our community.

Commented [JS253]: Could there be another bullet about overpackaging... kind of implied with single-use plastic, but nonrecyclable packing is a giant problem.

C. Optimize collection and disposal systems to minimize GHG emissions

- By 2030, Bainbridge has a closed-loop system for its green and agricultural waste, such that organic materials are recycled and reused on Island to the maximum extent practicable.

D. Ensure that any new waste-related infrastructure, such as transfer stations or composting facilities, are not sited in current or future hazard areas.

7.2. Challenges

- **Lack of markets:** Un-recyclable packaging and overabundance of disposable plastics is a massive, global problem. The US recycling market is facing severe challenges in terms of tightened restrictions on what is accepted overseas. This causes real strains on waste management. Domestically, we are not prepared for the flood of materials that do not have places to go. These large issues translate to direct impacts on our local community. These impacts include a glut of non-recyclable, fossil-fuel based materials, increases in recycling costs, and reduction in what materials can be accepted for recycling locally.
- **Location:** 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 be landfilled in eastern Oregon, which represents a large carbon footprint in terms of both transportation and landfilling.
- **Lack of composting facilities:** The vast majority of our green waste is trucked off Island to Belfair in Mason County. We do not currently capture for composting an unknown, but likely substantial, portion of our green waste (particularly food and compostable materials) that is generated from residential, commercial and agricultural activities.
- **Lack of infrastructure:** Infrastructure barriers need to be overcome to address these issues: for example, no current commercial food waste service is provided for businesses, and narrow access points in some commercial areas (especially downtown) create obstacles to additional waste bins and pickup service.
- **Lack of understanding:** The public does not have a clear understanding of the different types of compostable materials, such as plant-based plastics and packaging alternatives, and which can be accepted by Island composting services. Some “compostable” packaging is compostable by commercial facilities in King County but not in Kitsap County.

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 landfills, divert more waste to compost, and reduce the transportation footprint of green waste.

7.3. Current Actions

Municipal

- **Sustainable Procurement Plan:** COBI has an approved sustainable procurement plan, which states that staff should buy sustainable alternatives if the price is comparable.

- **Staff in place:** COBI has oversight staff in each department to check on internal composting and recycling within the facility.

Community

- **Bainbridge Disposal (BD) Yard Waste Service:** The public has an option to purchase residential curbside recycling and/or yard waste services through BD. The latter allows for composting of both green and food waste.
- **BISD:** 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 recycling waste streams including for plastic film, Styrofoam, markers and more; and 3-bin compost/recycle/landfill with educational programs and monitoring at multiple campuses.
- **Bainbridge Island Zero Waste (BIZW):** BIZW is a program of the nonprofit organization Sustainable Bainbridge. Its website⁹⁷ provides many resources to guide local waste reduction, reuse and recycling. Its volunteers undertake a wide variety of efforts including, but not limited to, education and waste sorting at major community events, Styrofoam recycling events twice a year at Bay Hay and Feed, and a lending library of reusable dinnerware and other items available for free to the public.
- **Buy Nothing Bainbridge:** This, and other similar groups on social media such as “Free on the Rock,” disseminate free items throughout the community from individuals who want to dispose of an item to individuals who want the item. These groups likely keep thousands of items circulating in the local economy and prolong their life out of the landfill. As such they contribute to community waste reduction.
- **The Bainbridge Island Rotary Auction and Rummage sale:** The Rotary Auction can reasonably be called one of the largest reuse and recycling events on the Island, not only because of all the materials that are resold for reuse, but also because the Rotary Green Team works tirelessly to reduce and divert literally tons of landfill waste through proper recycling and through partnerships with dozens of nonprofits to take materials that might otherwise go to the landfill.
- **Kitsap County:** 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 Kitsap Solid Waste and Bainbridge Disposal (BD) give out, although this past year BD created their own fliers for the transfer station and commercial recycling.
 - EnviroStars green business program.
 - Outreach materials for BIZW as requested, including fliers, corrugated posters, compost buckets, bags.
 - A "What Do I Do with It?" web page with recycling and reuse information (<http://recycle.kitsapgov.com/Pages/Home.aspx>).
 - A Kitsap County Recycling and Garbage News email newsletter.
 - The Kitsap County Solid Waste Advisory Committee. Diane Landry of BIZW is currently the City's representative and as such serves as a liaison for our community to that entity.

- A resource and waste reduction specialist who will come speak to any Island group, and has spoken at multiple City and nonprofit events.

7.4. Strategies/Actions

Goal A. Reduce Island residential, commercial, and industrial waste generation

Strategy A.1. Promote sustainable consumption within COBI operations.

Priority Action(s)

- 7.A.1.a. Centralize purchasing within COBI to increase adherence to COBI’s sustainable procurement policy.

Other Action(s)

- 7.A.1.b. Install hydration stations in all municipal facilities to allow refills of reusable water bottles.
- 7.A.1.c. Require an annual audit of the COBI sustainable procurement policy to ensure compliance.

Strategy A.2 Promote sustainable consumption in the community.

Priority Action(s)

- 7.A.2.a. Adopt an ordinance to reduce the use of single-use plastic food serviceware, including utensils and take-out containers, by all Island food service establishments.

Other Action(s)

- 7.A.2.b. Support efforts to make hydration stations available throughout the community including parks.
- 7.A.2.c. Consider a COBI small grants program to support BIZW and similar efforts to provide community services that reduce the use of single-use plastics (e.g., through lending libraries, consumer education, etc.).
- 7.A.2.d. Work with partnering organizations to identify opportunities for providing space for the implementation of sustainability events and programs (e.g., fix-it fairs and lending libraries).
- 7.A.2.e. Support continuing efforts by BIRD to reduce disposable materials throughout the school district.
- 7.A.2.f. Consider creating a forum or platform whereby local businesses can share their ideas and problem-solve issues related to sustainable consumption (e.g., reducing packaging, increasing waste diversion, reducing single-use items, sourcing materials more sustainably).

Commented [AH254]: The Green Team could be tasked with helping address the actions associated with Strategy A.1.

Commented [ES255]: Could be modeled on the Neighborhood Matching Grants program

Commented [ES256]: Are there comparable efforts at other jurisdictions – Parks? Library? Fire?

Strategy A.3. Reduce food waste by both commercial entities and residents.

Priority Action(s)

- 7.A.3.a. Educate the community about ways to reduce food waste and promote opportunities for viable food to get to those who need it, including food banks and neighborhood giving.

Other Action(s)

- 7.A.3.b. Work with partnering organizations such as Kitsap Harvest to increase collection of excess fresh food (i.e., gleaned, or harvesting excess or unwanted crops for distribution to those in need) at private and public farmlands.
- 7.A.3.c. Provide small grants to BIZW to partner with community/youth/sports groups that can volunteer to do waste diversion efforts at community events.
- 7.A.3.d. Urge WSF to renew on-ferry composting service and provide good signage.

Goal B. Increase diversion of waste from the landfill

Strategy B.1 Expand municipal, residential and commercial recycling and composting participation.

Priority Action(s)

- 7.B.1.a. Work with Bainbridge Disposal (BD) to offer curbside compost pickup for all commercial facilities as a weekly service.
- 7.B.1.b. Require that all commercial entities participate in recycling and, once established, in the green waste program.

Other Action(s)

- 7.B.1.c. Consistently pair and provide clear signage for all compost and recycling bins in all meeting rooms in COBI facilities.
- 7.B.1.d. Evaluate the adoption of a program to require community-wide diversion of organic waste from the landfill.
- 7.B.1.e. Facilitate and support education and outreach to consumers about green waste options and what materials are acceptable for composting.
- 7.B.1.f. Recognize/award businesses that are taking voluntary and meaningful steps to reduce their waste (e.g., composting).
- 7.B.1.g. Encourage businesses to receive green certification from their respective certifying organizations (e.g., Green Circle Salons, Green Restaurant Association, etc.).
- 7.B.1.h. Work with BD to add specialized recycling streams at the Transfer Station (e.g., expanded polystyrene—aka Styrofoam).
- 7.B.1.i. Support state policies that decrease/eliminate the use of non-sustainable, non-recyclable packaging materials such as Styrofoam and single-use plastics.
- 7.B.1.j. Require that organizers and vendors of festivals, sporting events, and official gatherings on the Island provide and fund composting and recycling services for their events to maximize waste diversion from landfills. This can be done through language in permit

forms for special events. Fund oversight and enforcement of waste diversion at City-permitted events.

Strategy B.2 Increase the collection and diversion of construction, renovation, and demolition waste.

Priority Action(s)

- 7.B.2.a. Require, and where appropriate provide incentives for, the reduction, collection and diversion of construction and demolition waste.

Commented [AH257]: I wonder if there is opportunity for this as a part of the Green Building code work that is currently being done...

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

Strategy C.1 Reduce GHG emissions associated with off-island transportation of green waste.

Priority Action(s)

- 7.C.1.a. Evaluate and support opportunities to build infrastructure for on-island or more local processing of green waste.

Commented [AH258]: Complex, but do-able as a part of an update to BIMC 18.09. Currently the BIMC does not accommodate on-island waste management facilities.

Goal D: Ensure that any new waste-related infrastructure, such as transfer stations and composting facilities, are is-not sited in current or future hazard areas.

Strategy D.1 Consider projected climate change impacts and explicitly factor these projections into site selection for waste-related infrastructure.

Priority Action(s)

- 7.D.1.a. Apply the Climate Change Adaptation Certification⁹⁸ to any new waste-related infrastructure projects.

Commented [AH259R258]: Would the City be building this infrastructure, or supporting others who are? How can the City support opportunities - are you thinking of things like expedited permit review? Offering funding? Waiving fees? Or making green-waste treatment allowed outright in the code, so it is easier to get a permit? I think the wording could be clarified here. E.g. "Evaluate opportunities to better accommodate on-island treatment of green waste."

Section 8: Community Engagement



Section 8: Community Engagement

Community engagement and community buy-in is essential to effectively implement actions throughout the CAP and to achieve the overarching mitigation and adaptation goals. The starting point is providing the community with information on the observed and projected impacts from climate change and then provide information on how we as an Island can adapt to those changes.

While action by COBI and other organizations such as BISD and BIMPRD, are important, individual actions can also make a large difference in meeting our goals for reducing GHG emissions Island-wide and successfully adapting to the coming changes. Finally, we need to incorporate climate change in our discussions about how to prepare our Island for emergencies.

8.1. Goals/Targets

A. Increase the Bainbridge community's awareness and knowledge about current and future climate change related impacts and ways to reduce those impacts.

- By 2021, a majority of the Bainbridge community has ready access to current climate change information, is aware of climate change issues, and understands what COBI and what they as individuals can do about it.

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

- By 2021, COBI and committees like the CCAC meet regularly with other advisory committees, community groups and have established relationships with other jurisdictions to share, support and exchange climate change information and strategies.

C. Empower and prepare COBI, Bainbridge Island residents, and Bainbridge Island businesses for climate impacts and emergencies.

BI Comprehensive Plan: Community Engagement

EC7.8: Support and make Bainbridge Island a model community for climate change preparedness and sustainability practices to ensure long-term viability while attracting and protecting visitors, businesses, and residents.

EN1.8: Consider the potential impacts of climate change and its impacts in all decisions related to natural systems and environmental quality.

EN5.10: Consider climate change and its impacts in all decisions related to wildlife, fish resources, and natural systems.

EN7.1: Consider the implications of sea level rise in all relevant decision-making by using regional sea level rise projections and shoreline instability maps.

EN7.2: Coordinate with Tribal, Federal, State and local agencies to address issues related to sea level rise.

EN12.1: Support and implement climate pledges and commitments undertaken by the City and other multi-jurisdictional efforts to reduce GHG emissions, address climate change, sea level risk, ocean acidification, and other impacts of changing global conditions.

EN12.3: Strive for reduced GHG emissions by, among other actions, integrating climate change into the City planning process, including land use and transportation planning and management, and making climate change considerations and meeting GHG emission reduction goals a component of city decision-making.

EN12.5: Support the development of a public education program which informs all citizens on the methods and progress for meeting the Island's GHG emission goals, and ways citizens can assist in reaching the reduction goals.

Commented [NS260]: Extremely valuable goal. I think due to some of the challenges stated below COBI needs to do its best to stick to established science and try and stay away from projections and models.

- By 2022, COBI’s existing authority, budget and capacity is sufficient to address and respond to climate change related issues.
- By 2022, COBI will have incorporated climate change into its emergency preparedness programs.

8.2. Challenges

- **Results of actions are not readily apparent:** Addressing climate change impacts and preparing for mitigation or adaptation often requires nonspecific long-range effort without immediate results.
- **Skepticism:** Some people are skeptical that climate change needs to be addressed.
- **Perceived futility:** Some people do not feel that their individual actions can really make a difference given the scale of the climate crisis.
- **Inadequate funding:** Lack of City funding to support CCAC efforts – materials for outreach, dedicated staff support etc.
- **Coordination with outside entities required:** Addressing climate change in a meaningful way requires coordination and support from entities outside of the City’s control (e.g. WSF, PSE, Washington Department of Transportation). To an extent, it also is dependent on the state and national level conversations about climate action.

Commented [NS261]: The wording gives the impression that the city does not want to fund the efforts of the CCAC. Maybe “Lack of Budget Capacity”

8.3. Current Actions

Municipal

- **Several resolutions or ordinances are already on the books:** The City has taken a number of actions that support climate change over the past several years such as National Drive Electric Week 2019 (Proclamation); supporting Green New Deal (Resolution 2019-14); endorsing Clean Air Energy Initiative 1631 (Resolution 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); and integrating climate change into the 2016 Comprehensive Plan.
- **New plans are in the works:** COBI has formed a Green Building Task Force and a Sustainable Transportation Task Force. These task forces will consider ways to encourage or require GHG emission reductions and recognize the role that buildings and transportation related GHG emissions play in impacting climate change.

Community

- **Existing community groups:** There are a number of existing community groups which acknowledge the need to address climate change (e.g. Climate Action Bainbridge, Sustainable Bainbridge, Citizens Climate Lobby, and Indivisible) along with faith-based organizations and nonprofits such as the BILT, Friends of the Farm (FOTF) and Bainbridge Island Parks Foundation (BIPF).
- **Public entities recognize climate crisis:** Other public entities on Bainbridge Island are starting to recognize and take actions related to climate change (e.g. BIMPRD)

Commented [ES262]: Could you include examples? I don’t believe BILT, FOTF or BIPF would be considered faith-based.

- **Ongoing educational opportunities:** Existing groups provide regular educational forums such as the Climate and Energy Forum and Movies that Matter.

8.4. Strategies/Actions

Goal A: Increase the Bainbridge community’s awareness and knowledge about current and future climate change related impacts and ways to reduce those impacts.

Strategy A.1. Provide easily accessible educational materials/information throughout the community about climate change.

Priority Action(s)

- 8.A.1.a. Develop a dedicated climate change webpage on the City’s website including links to climate mitigation/adaptation resources on the CCAC website and make the CAP widely available in on-line and in print formats (copies at the library along with GHG inventory, Sea Level Rise analysis and Bainbridge Island Climate Impact Assessment).

Other Action(s)

- 8.A.1.b. Convene semi-annual events to communicate what City and City committees are doing on climate change.
- 8.A.1.c. Actively support educational forums and opportunities provided by other community groups.
- 8.A.1.d. Create a tool for use in the evaluation of vulnerability of COBI and non-COBI assets; evaluate COBI assets for vulnerability to climate change starting with a sea level rise assessment; and hold community discussions around vulnerability of COBI and non-COBI sites from climate change and incorporate vulnerability evaluations into COBI decision-making for all projects. See Section 6, Strategy C.1.

Strategy A.2. Increase community knowledge of actions that individuals can take to reduce their GHG emissions and prepare for current and future climate impacts.

Priority Action(s)

- 8.A.2.a. Include a climate change tip of the [month] as a regular feature in the COBI Connects newsletter.

Other Action(s)

- 8.A.2.b. Hold neighborhood meetings to discuss climate change impacts and what individuals can do.
- 8.A.2.c. Create Bainbridge Island Climate Change Week in conjunction with Earth Month.

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

Commented [NS263]: We want to make sure the information we share is explained well with context especially with concern to graphics. Since the public will gravitate towards colorful graphics shared in this text and future productions we need to evaluate how well graphics display their data and to what extent can they be misinterpreted or lead to unqualified conclusions. (i.e. wildfire graphic on page 30.)

Commented [KD264]: This is a great idea - who will update and maintain? You could also create a Notify Me list for climate change topics.

Commented [ES265]: Perhaps articulate scale of event(s) to help with estimating budget.

Commented [KD266]: I think you should consider digital/online education in addition to in-person forums due to the current pandemic (plus, it allows people to view the information when time allows). Also, if you’re creating videos/online activities, those can easily be shared among the various agencies/organizations on the island.

Commented [ES267]: Is there an example of such a tool in use in another jurisdiction in our region? Or another part of the country?

Commented [ES268]: I’d suggest dividing this item into two.

Commented [KD269]: I like the idea of a “tip of the month” but we do not often have the space in COBI Connects to dedicate a topic every month. It would be more realistic to do a “tip of the month” in the City Manager’s Report and social media (and add to COBI Connects as space allows)...

Commented [KD270]: Could this somehow be linked in coordination with “Map Your Neighborhood” groups?

Commented [NS271]: make sure that anything information/ value/ framework we provide at these meetings is equitably available to the island

Commented [NS272]: Arbor day ties in as well which we already have a celebration for, but could stand some additional beef.

Strategy B.1. COBI partners with local and regional organizations on mitigation and adaptation actions.

Priority Action(s)

- 8.B.1.a. Declare a climate emergency and be a regional leader in recognizing the important role that municipal governments can play in taking action to respond to climate change.
- 8.B.1.b. Work cooperatively with other jurisdictions in Kitsap and King Counties (e.g., Poulsbo, Silverdale, Kingston, Bremerton, Seattle) to find regional solutions including mitigation and adaptation actions that would benefit from economies of scale or the sharing of lessons learned.

Commented [ES273]: The City has an articulated vision of being a regional leader in emergency preparedness. This section could suggest an action to make a similar policy statement for climate change.

Commented [ES274]: I suggest dividing this into two actions.

Commented [NS275]: This is almost a section unto itself. I think this will prove to be the magic ingredient in achieving any measurable changes in GHG emissions regionally.

Other Action(s)

- 8.B.1.c. Encourage increased coordination/collaboration with other City Advisory Committees and Bainbridge Island taxing entities.
- 8.B.1.d. Partner with BISD to conduct regular updates to the GHG emissions inventory using their developed high school curriculum and access to ICLEI resources via a memorandum of understanding with the City.
- 8.B.1.e. Work collaboratively with and actively support work by existing community groups to disseminate information (Climate Action Bainbridge, Sustainable Bainbridge, Citizens Climate Lobby, Indivisible, BILT, FOTF, Bainbridge Island Woman’s club, BIPF and faith-based organizations).

Commented [ES276]: Should be more specific about what fits into this statement.

Strategy B.2. COBI inspires Bainbridge community members to take meaningful individual action.

Priority Action(s)

- 8.B.2.a. Host workshops with hands-on demonstrations for community members to learn how to take specific actions (e.g., building a rain barrel, dehydrate food as part of emergency preparedness, build and use compost bin, use an electric bike, construct a rain garden, assemble an emergency kit, install less resource intensive landscaping).
- 8.B.2.b. Host events for community project(s) to bring people together to work towards mitigation and adaptation (e.g., building a community rain garden, working on a trail, making signs for bike/pedestrian routes, pulling ivy, planting climate resilient plants, and constructing community pea patch).

Commented [KD277]: Similar to comments above – consider videos or online activities as part of this (something that allows people to review/learn when their time allows).

Commented [NS278]: It is my understanding that COBI has generally shied away from engaging community volunteers to restore or work on city property. Maybe examining this policy could provide some opportunity for active engagement.

Commented [CB279]: Love this idea. Could be relatively low cost to implement with in-kind donations, complexity could be low or high depending on location. Ordway, Sakai or Gideon park could be good options.

Goal C. Empower and prepare COBI, Bainbridge Island residents, and Bainbridge Island businesses for climate impacts and emergencies.

Strategy C.1. Ensure the City is empowered and has the necessary authority and capability/capacity to plan and implement actions to mitigate and adapt to climate change impacts.

Priority Action(s)

- 8.C.1.a. In coordination with the COBI attorney, review existing laws, regulations and policies and revise as needed by asking the following sorts of questions.

- Are they adequate to require, or at least encourage, GHG emission reductions from City regulated or endorsed activities as well as from individual activities?
- Do they provide sufficient authority/flexibility to respond to impacts and emergencies?
- Are recommended mitigations/adaptations actions allowed?
- 8.C.1.b. Hire a COBI Climate Mitigation/Adaptation Officer to coordinate activities between and among the various city offices, inspect for compliance with climate related code compliance, and serve as a City staff liaison with the CCAC.
- 8.C.1.c. Include Climate Change related expenditures in the City budget for education, code compliance, mitigation and adaptation action items identified in the CAP. See Implementation Section 9.5 Funding for general discussion of funding needs.

Commented [NS280]: This will be a needed position, perhaps some volunteer coordinator responsibilities as well or maybe that's a different position altogether.

Strategy C.2. Establish programs or networks to ensure COBI, businesses, and residents are prepared to effectively adapt to climate change impacts and emergencies.

Priority Action(s)

- 8.C.2.a. Establish community centers for recharging generators, cell phones during outages, and providing emergency food/water.

Commented [NS281]: Work with BIFD and Bainbridge Prepares

Other Action(s)

- 8.C.2.b. Incorporate climate change into COBI emergency preparedness programs. COBI works with the Emergency Preparedness group, the CCAC and others to develop materials on the climate change impacts to include in their emergency preparedness outreach. Include potential climate change impact scenarios, key climate change data and sea level rise examples as part of the annual emergency preparedness exercise and workshops.
- 8.C.2.c. Help develop and support food resilience networks.
- 8.C.2.d. Work with PSE and others to develop neighborhood microgrids with local generation and storage. See Section 3 (Energy) Action 3.C.2.a.

Commented [AL282]: We can work to incorporate climate change information into our Map Your Neighborhood program and into our general emergency preparedness programming.

Commented [AL283]: In partnership with Bainbridge Prepares, we have a team working on food resilience

Commented [KD284]: There are many great ideas for community engagement in this plan. As I am sure with many of these items, community engagement for the Climate Action Plan could be a full-time job!

I think (in most cases) it will be key to partner with other Bainbridge agencies and organizations so that we're combining resources and not "reinventing the wheel"...

Also, I think it would be a great idea to lead at least one campaign/event that offers people an incentive or motivates them to try something new (one of the firms that interviewed to help with the Sustainable Transportation Plan community engagement led a successful campaign for King County Metro offering gift cards to incentivize people to take public transportation and reduce drive-alone trips, etc.)...

Section 9: Implementation



Section 9: Implementation

This section describes the steps that need to be taken to ensure that the CAP is successfully implemented and that the community is regularly informed about progress toward achieving the CAP goals. It is critical that COBI tracks progress in achieving the CAP goals, with the help of the CCAC, and modifies those actions as needed over time if needed. It is especially important to provide transparency and accountability to move our island forward in reducing GHG emissions and preparing for current and future climate change impacts.

9.1. Kickstarting Implementation

In the first year after CAP adoption, COBI needs to 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, COBI will implement the following actions related to kick-starting implementation.

Strategy A.1. Initiating implementation

Priority Action(s)

- 9.A.1.a Confirm COBI staff person to liaise with the CCAC until a dedicated Climate Change Mitigation/Adaptation Officer is hired. See Section 8 Community Engagement Action 8.C.1.b.
- 9.A.1.b Identify a COBI staff person in each department who will provide information to the City staff liaison (Climate Change Officer) identified in Action 9.A.1.a. This person will provide department-specific information on timelines for completing actions and report on progress on CAP actions led by that department.

9.2. Leadership

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

The Bainbridge Island City Council is responsible for the oversight of implementing the 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:

- Advising on methods for monitoring and tracking progress towards meeting CAP goals.
- Making recommendations to the Council on policies that further the goals of the CAP.
- Reviewing COBI's brief annual CAP progress report each year and considering new recommendations to the Council.
- Supporting—and in some cases leading—public engagement efforts.

Commented [JS285]: I think that each action in the CAP should be categorized by how it is implemented in one or more ways (budget, new program, code change, community partnership, City outreach, etc.).

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.

9.3. 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. They 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.

Commented [JS286]: I think that this section could be amended to make clear that employees on the Island (who live off Island) are part of the Island community, whether or not residents know that the checker at T&C that they talk to all the time doesn’t live on the Island.

Strategy B.1. Consistently consider equity in CAP implementation and engagement efforts.

Priority Action(s)

- 9.B.1.a. Consider and minimize the potential for unintended and/or unequitable impacts from each action prior to implementation.

9.4. Accountability, Reporting, and Future Updates

COBI will update the municipal GHG emissions inventory annually and community GHG emissions inventory approximately every three years and no less frequently than once every five years.

At this time, we expect to complete updated municipal and community GHG emissions inventories in 2022, 2026, 2031, 2036, 2041, and 2046, which will allow us to analyze emissions in our target years (2025, 2035, 2045) to determine if we are meeting our targets.

The hope is that the greenhouse gas inventories can be done through a partnership with BISD and the involvement of local high school students. Alternatively, COBI could hire consultants.

The CCAC will work with COBI to produce a brief CAP progress report every year. This report will summarize the progress of each CAP 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 COBI’s website, and will be presented at a City Council session open to the public.

COBI will work with the CCAC, community members, and the Council to update the CAP every five years. This process will include updating the GHG emissions 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.
Strategy C.1 Update information and plans on a regular basis.

Priority Actions

- 9.C.1.a. Produce a CAP progress report every year that includes a review of actions undertaken during the year and additional actions needed to meet the CAP goals for reducing GHG emissions and preparing the Island for climate impacts.
- 9.C.1.b. Update the CAP every five years.

9.5. Funding

Some of the strategies and actions in this CAP can be done with existing COBI staff and resources while 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 COBI’s budget, external grants, and new revenue sources. The annual COBI budget must signal and support the City’s commitment to climate action. The table below summarizes ideas from the recent publication *Playbook 1.0: How Cities Are Paying for Climate Resilience*.⁹⁹ Not all the actions can be implemented immediately. The CAP identifies the highest-priority actions and the Council and COBI 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 COBI operations; these savings could be allocated to a fund for reinvestment into other mitigation and adaptation actions.

Playbook 1.0 ideas for financing (Plastrik, Coffee & Cleveland, 2019)

- **Generate Local Revenue.** Produce revenue for government climate-resilience public infrastructure by taxing local property owners and charging utility ratepayers.
- **Impose Land-Use Costs.** Adopt land-use and building regulations and policies that place undetermined future resilience-building costs on property owners and developers, rather than on government.
- **Embed Resilience Standards into Future Infrastructure Investments.** Ensure that all future capital spending for public infrastructure will be designed to strengthen climate resilience as much as possible.
- **Leverage Development Opportunities.** Link resilience-building projects with real estate development opportunities to generate public-private partnerships that invest in both public infrastructure and private development.
- **Tap State Government.** Mine existing state programs, or seek to modify them, to obtain funds for local climate-resilience efforts.
- **Pursue Equity in Resilience.** Factor social and economic equity into funding and financing actions by serving economic development, housing, and other needs while investing in climate resilience.

Commented [PB287]: Action reporting and GHG emission inventory are bookends to a monitoring program. The details of adaptive management are best addressed somewhere in between these bookends based on evaluating the effectiveness of an action/program (or closely related cluster of actions/programs) toward a particular target or goal. This is time consuming and requires objectivity. The Puget Sound Partnership is the best example I know of in Puget Sound attempting to do this for wicked-type problems. Some ways to make this more feasible would be to:

- Focus on the priority actions, which I assume are those considered to have the most significant impact on the relevant target/goal.
- Distribute the evaluation effort by tackling a certain number each year.
- Identify appropriate timeframes for this level of evaluation that is likely to be the most meaningful based on the frequency/volume of activity or the consequence of the actions/program.

However it gets done, it should intentionally feed into the 5-year CAP update. And of course, if urgent corrections are needed, those should be addressed immediately and not wait for a full adaptive management cycle.

Commented [KD288]: How much money in funding are they proposing for the community engagement efforts (I don’t see a dollar amount here or in the priority action matrix)?

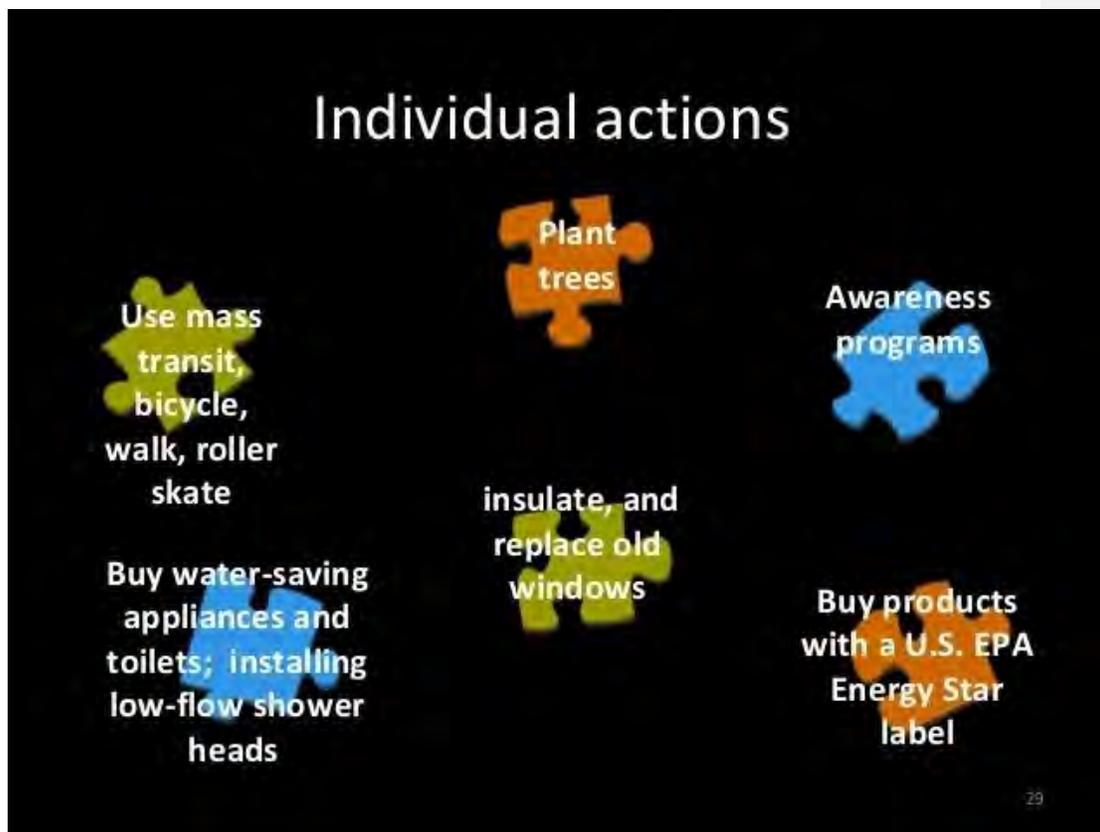
Commented [ES289R288]: City staff will take the lead in costing the various proposals, with input from the CCAC.

Strategy D.1 Identify costs and funding opportunities for CAP implementation.

Priority Actions

- 9.D.1.a. Develop cost estimates for the highest priority CAP actions and staffing requirements and list potential funding sources (in year 1).
- 9.D.1.b. Include a description in the City Manager’s proposed budget of existing and proposed projects that relate to CAP strategies and actions. See Section 8 Community Engagement Action 8.C.1.c.

Section 10: Individual Actions



Section 10: Individual Actions - What can we each do to make a difference?

10.1. Participate in Community Climate Action

- Attend community discussions, forums and events about climate change.
- Let City Council members know that addressing climate change is imperative and articulate what you think should be prioritized.
- Vote for candidates and issues that help address climate change.
- Talk with neighbors about climate resilience and emissions reductions.
- Start conversations in your schools, faith groups, and community groups about climate action.
- Support implementation of the updated Comprehensive Plan's climate smart elements.
- Attend community meetings (e.g., governmental, community group, homeowners' associations) and ask climate questions to better understand and act on the vulnerabilities and responsibilities of our community in relation to climate change.
- Support climate curriculum in our schools so we can become knowledgeable citizens about the issue of climate change--its problems and solutions.

10.2. Reduce Individual Energy Use

- Get an energy audit to find ways to increase energy efficiency at home and at work. Learn about rebates. Call PSE Energy Advisor at 1 800 562-1483.
- Install energy conserving appliances and fixtures, such as on-demand tankless water heaters, higher energy efficiency Energy Star appliances, and LED light bulbs.
- Install energy efficient electric heat pumps, water heaters, dryers, stoves and more.
- Voice support for City policies and proposed code changes that reduce greenhouse gas emissions and help reduce climate change risks.
- Install solar power and storage at your home or business.
- Replace a wood-burning fireplace with an efficient electric system (such as a heat pump).
- Install alternatives to air conditioning when renovating your home or business.
- Use energy efficient lights (including holiday lights) and reduce the amount of time they are on.
- Use local, sustainable, carbon neutral building materials where possible.
- When purchasing, remodeling or building a home or commercial building, choose a smaller building footprint.
- Use a clothes line instead of a dryer.
- Improve insulation in your house or business.

10.3. Reduce My Waste

- Reduce your food waste.
- Reduce your meat and dairy consumption and choose more locally produced foods to reduce your climate impact.
- Compost waste in your backyard or use Bainbridge Disposal compost pick-up service.
- Review and follow Bainbridge Disposal guidelines for what is recyclable, and use that information to guide packaging choices when possible.

- Fix things that are broken instead of buying new. Fix-it-Fairs are coming to Kitsap County!
- Use the Hazardous Products Center and bulky item pick-up programs to properly dispose of old refrigerators, e-waste, and air-conditioning units. Go to <https://www.kitsapgov.com/pw/Pages/HHWFacility.aspx> for more information.
- Talk with a contractor about alternatives to traditional building demolition, such as relocation, deconstruction, and salvage.
- Buy used, borrow or reuse instead of buying new. Use organizations such as Bainbridge freecycle, BI Online Yard Sale, Buy Nothing Bainbridge, Rotary Auction, The Bainbridge Library of Things (coming soon!)
- Support efforts to reduce and limit single-use disposable plastics.
- Bring your own coffee cups, containers (for bulk foods and produce) and grocery bags.
- Select options with less packaging, then reuse packaging and wrapping paper.

10.4. Reduce Individual Water Use and Take Steps to Protect Our Natural Resources

- Conduct a water audit at your home, and replace inefficient toilets and fixtures.
- Reduce your household's water use.
- Consider efficient alternatives to traditional water heaters, such as electric heat pump or solar thermal hot water heaters.
- Install a rain barrel or cistern to harvest rainwater for outdoor use.
- Explore grey water reuse/recapture.
- Use local sustainable building materials.
- When landscaping, select low impact, water efficient, native plants.
- Avoid creating impermeable surfaces around your house.
- Support City policies that encourage creative solutions to water conservation, such as a green building code that allows for greywater reuse or alternatives to traditional sewerage.

10.5. Reduce Personal Vehicle Travel

- Increase the number of trips you make by mass transit, carpooling, walking, or biking.
- Reduce the number of airplane flights by utilizing telecommuting technologies and take direct flights as takeoff and landing utilize the most fuel.
- If a traditional bike is not appropriate for you, use an electric bike instead of a car for your commute.
- Organize a "walking school-bus" to walk a group of kids to school, seek out carpools for getting to after-school activities, discourage parent drop off and pickup, and encourage high school students to use the school bus, bike or walk.
- Delay or forgo your next purchase of a new vehicle, if it's possible to get more life out of your current car; or stop using one.
- When you decide to make a vehicle purchase, select the best fuel efficiency with an electric or hybrid vehicle.
- Support centrally located development that creates vibrant, higher density, mixed-use areas to reduce the need for driving.

- Make commuting by bike or walking a part of your regular routine, and have flashlights, reflective gear, and raingear handy.
- Shop locally and support local businesses to reduce your transportation footprint.

10.6. Reduce Your Vulnerability to Climate Change and Create a Climate Savvy Community

- Employ FireWise and other fire protection measures around your home and business.
- Landscape and design your property for drier summers and wetter winters.
- Plant a garden, and/or encourage the creation of community gardens on public and private lands including school campuses, City lands, and church properties.
- Evaluate all projects (development, business design, property acquisition) with a Climate Change Adaptation Checklist to understand and reduce your risk.
- Use passive heating and cooling to ensure functionality, reduce energy costs and eliminate greenhouse gas emissions.
- Read the Bainbridge Island Climate Impact Assessment to learn more about how to reduce your risk of specific climate stresses for specific areas of interest such as how sea level rise might impact your property.

Appendix A: Priority Action Matrix

Appendix A

The matrices in Appendix A provide details on each of the priority actions identified by the CCAC for each of the sections of the CAP. The details for each of the priorities will change over time and these matrices will be modified over time. There is no Appendix A.1 as we wanted the numbering for the appendix to match with the section number.

Appendix A.2: Greenhouse Gas Inventory Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
2.A.1.a	COBI will work with the CCAC to improve the accuracy and site-specificity of data for GHG emission categories that are currently based on regional models (particularly vehicles and air travel).	TBD	Staff time and possible funding for consultant	Support and review	University of Washington.	Short-term	2020: Identify possible avenues to collect more local data for next inventory. 2021: Start any more local data collection.
2.A.2.a	COBI will complete the next GHG emissions inventory by 2022 for the year 2021. Complete the next GHG emissions inventory for the year 2025 by 2026 and then complete a GHG emissions inventory every 5 years thereafter.	TBD	Staff time and possible funding for consultant	Support and review	BISD	Medium-term	2020: Work with BISD on their efforts to collect data. 2021: Begin next GHG inventory.
2.B.1.a	COBI, working with the CCAC, will approach academic institutions for assistance to plan more rigorous analysis methods, including ground-truthing of tree inventories. Collaborations may include student apprenticeships, student thesis research opportunities, or collaborative research grant proposals. Consider also joint studies with BILT.	TBD	Staff time and possible funding for consultant	Support and review	BILT, BIMPD, University of Washington.	Long-term	2021: Discuss possible strategies at CCAC meetings. 2022: Engage with other partners on conducting analysis.

Appendix A.3: Energy Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
3.A.1.a	Adopt requirements to use high-performance retrofit technologies in all COBI projects (e.g., Police Station, WWTP improvements) where cost-effective (e.g., variable frequency drives in HVAC systems, heat recovery systems, and dedicated outdoor air systems).	PW/PDC	Climate Crisis Proclamation WSU Energy Program - Consortium	TBD	Shift Zero	2020	2021: Council accepted terms
3.A.1.b	Create a matrix of incentives for building owners within the permitting process to increase energy efficiency in their projects (e.g., expedited processing, floor-to-area bonus, and reduce or waive permitting or inspection fees).	PDC/Green Building Comm	B103, B105	Co-lead	Green Building Comm/ Shift Zero	2021	2021: Council adopted
3.A.1.c	Work with PSE and partnering entities such as Housing Resource Board (HRB) to increase access to energy conservation and efficiency programs, focusing on below-average-income households and nonprofit organizations	Joe Levan/Chris W. (PW)/ Green Building Comm		facilitator	Shift Zero	2020	2021: Council adopted
3.A.2.a	Create a Green Building and Energy Fund, similar to the funds collected from the PSE Solar Choice and Green Power programs, that can provide incentives to building owners and residents to increase electrification conversions and battery storage.	Joe Levan/Community Dev.	Portland Fund , Minneapolis	facilitator, committee position	Creation of nine-person grant committee to build the grantmaking program and	2021	2020: Development of committee and eligibility and scoring criteria

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
					fund clean energy community benefits projects		
3.B.1.a	Work collaboratively with PSE, via the PSE Franchise agreement update and other mechanisms, to move towards a 100% carbon-free electrical supply, preferably sooner than the Washington State mandated goals.	Joe Levan/ Morgan Smith	Minneapolis Experience	Partner		2020 -2022	2021: Begin to compile relevant options/approaches
3.B.1.b	Develop incentive programs to increase adoption of renewable energy and passive photovoltaic (PV) solar or other technologies.	PDC	crosswalk other programs in US	Lead	PSE	2020-2021	2021 Q1: Develop comprehensive list of state and local programs
3.B.1.c	Adopt a policy that prohibits propane and heating oil as an energy source for new buildings, and develop incentives to replace propane use as a primary heating source for existing buildings.	PDC	B103 B105	Observer	Shift Zero	2020	2021: Council adopted
3.B.2.a	Develop and hold trainings/workshops for Island and neighboring communities' builders, contractors, architects, and homeowners that can help Bainbridge Island to implement the fuel-switch from carbon-based to electrification of the building stock.	PDC/ Communications	ASHRAE SCL WA State CETA	Lead	Green Building Comm	2021	2020: Green Building Task Force 2021: Ready to rollout

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
3.C.1.a	Work with PSE to develop a local program to encourage homeowners, businesses, and other entities like BISD, BIMPRD, and BIFP to acquire customer-owned generation like roof-top solar and small wind turbines.	Morgan Smith (Council Support)	in coordination with 3.B.1.b WSU Energy Program	Lead	PSE	2021	TBD
3.C.1.b	Research and develop microgrids for community Bainbridge Disaster Hubs (City Hall, Seniors Center, Bainbridge Island School District (BISD), Island Wood) in partnership with PSE and Bainbridge Prepares	Anna Lesage	WSU Energy Program	Facilitator	Bainbridge Prepares	2022	2025: Half of the hubs resilient
3.C.2.a	Work with partners (e.g., PSE) to determine the feasibility of developing large-scale neighborhood microgrids with customer-based storage or utility-scale energy storage, or a combined heat and power biodigester sited adjacent to the community pool.	PDC/Communications	IDEA UW WSU	Lead	UW WSU Dept of Commerce	2022-2024	2030: Strong examples established and documented

Commented [AL290]: Typo – Anne not Anna

Appendix A.4: Transportation Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
4.A.1.a	Through the Sustainable Transportation Planning Process and other means, develop an ambitious plan to create networks of pathways required to achieve a substantial mode shift to biking and walking, including separated or protected biking and walking lanes	Planning and Public Works if any City projects		Attend STTF meetings	Bainbridge Greenways, Squeaky wheels	Short-term	2021: Work with STTF to develop plan
4.A.1.b	Increase City staff time or hire a consultant to enhance the City's capacity to identify and apply for sources of funding (such as federal grants for Safe Routes to Schools and public private partnerships for the needed infrastructure).	Finance & Admin	Will need to discuss with COBI staff			Ongoing	2021: Identify sources of funds for position and advertise.
4.A.1.c	Explicitly consider climate change mitigation (e.g., greenhouse gas reductions) when evaluating options as the City develops its Sustainable Transportation plan.	Planning		Attend STTF meetings		Ongoing	2021: Ensure climate change is considered as part of STTF.
4.A.2.a	Require incorporation of non-motorized transportation options into all new development, e.g., by	Council, Planning	Will need to discuss with COBI staff	Provide expertise when requested		Short-term	2022: Incorporate non-motorized requirements in to permitting process.

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
	including sidewalks or pedestrian trails linked to existing and planned trail/sidewalk networks; incorporating bicycle lanes and trails; etc.						
4.A.2.b	Require all new development to accommodate non-motorized and public transit transportation options (including incorporation of bus shelters and other amenities).	Council, Planning		Provide expertise when requested		Short-term	
4.A.3.a	In consultation with Kitsap Transit, develop a robust marketing/outreach/educational program to inform island residents and those who traverse the Island from outside about public transit options, including park and rides (including, for example, information for island visitors on bus/transit routes & options).	Community outreach coordinator	Will need to discuss with COBI staff	Participate in community workshops	Kitsap Transit	Ongoing	2021: Work with Kitsap Transit to develop plan.
4.A.4.a	Work with BISD on measures to discourage private-vehicle drop-offs and pick-ups, encourage car-pooling, biking and walking and promote greater use of school buses.	Community outreach coordinator		Support City in discussion with BISD	BISD, Climate Action Bainbridge	Short-term	2021: Develop plan with BISD

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
4.B.1.a	Transition COBI's fleets to primarily electric vehicles and using biofuels where electric vehicles are not an option and encourage other Bainbridge Island taxing districts to also develop a plan.	Public Works	Will need to discuss with COBI staff	Provide expertise when requested		Long-term	2022: Develop long-term strategy for transitioning to all electric fleet.
4.B.2.a	Require that all new development be EV charge-ready and that multifamily units include EV charging infrastructure.	Council, Planning		Provide expertise when requested	PSE	Short-term	2022: Establish requirements in permitting for EV charging stations.
4.B.2.b	Install additional charging stations in commercial centers, including Island Village, Coppertop, Lynwood Center.	Public Works	Will need to discuss with COBI staff		PSE	Medium-term	2022: Work with PSE and others to add charging stations.
4.B.3.a	Coordinate with Washington State Ferries, PSE, and other entities as necessary to evaluate the need for, and feasibility of, establishing charging infrastructure on the Island to service ferries.	Public Works?	Will need to discuss with COBI staff	Provide expertise when requested	WSF	Long-term	2022: Develop plan with WSF to ensure infrastructure for charging ferries.
4.C.4.a	Adopt a city-wide anti-idling ordinance that includes an enforcement component and work with the WSF and State Patrol to reduce idling at the ferry parking lots.	Council		Support development of anti-idling ordinance,	WSF, State Patrol, BISD and Climate Action Bainbridge	Short-term	2021: Develop ordinance for city-wide anti-idling. 2022: Develop ordinance with WSF for ferries.

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
4.C.5.a	Work with partners (e.g., Climate Action Bainbridge and Puget Sound Clean Air Agency) to provide public information on benefits of reducing air travel and seek opportunities to help our community support and maintain the digital infrastructure it needs to enable more virtual meetings.	Community outreach coordinator	Will need to discuss with COBI staff	Participate in community workshops	Climate Action Bainbridge and Sustainable Bainbridge	Ongoing	2021: Hold a forum on air travel in collaboration with the Climate and Energy Forum.

Appendix A.5: Buildings Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones or Targets
5.A.1.a	Green Building Task Force (GBTF) provides recommendations on mandatory green building practices and standards for all new municipal, commercial, industrial, and residential building and all remodels and additions of a certain size ¹⁰⁰ .	Planning and Public Works if any City projects.	Will need to discuss with COBI staff	Attend GBTF meetings.	Planning Commission, Design Review Board, Affordable Housing Task Force, Housing Resource Board and GBTF	Long-term	2020: Recommendations from GBTF 2022: Adopted Green building standards for all buildings.
5.A.1.b	Prohibit propane and heating oil as the primary energy source for heating and cooling in all new and renovated buildings.	Planning	Same as above.	Attend GBTF and work with COBI staff.	Same as above	Long-term	2023: All new buildings all electric 2030: All existing buildings all electric
5.A.1.c	Require all buildings to apply the Climate Change Adaptation Certification to identify and avoid climate risks.	Planning	Same as above.	Attend GBTF and work with COBI staff	Same as above	Long-term	2023: Apply tool to all building projects
5.A.2.a	Provide incentives for existing buildings to replace propane and heating oil use as a primary heating and cooling source.	Planning	Same as above.	Work with COBI staff.	Same as above	Long-term	2023: Program developed.
5.A.2.b	Work with PSE to: 1) raise awareness about existing programs; 2) explore creating new programs; and 3) develop a program to encourage homeowners to acquire customer-owned generation.	TBD	Marketing and outreach from COBI	Work with PSE and COBI	PSE	Long-term	2020: Establish new programs and raise awareness of existing programs.

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones or Targets
5.A.3.a	Establish Green Building and Energy fund to assist residential home owners to conserve energy.	TBD	Need to discuss with COBI staff	Work with different COBI departments	PSE, Housing Resource Board, Kitsap County, others	Long-term	2023: Fund established.
5.B.1.a	Determine exposure of City assets to sea level rise and integrate into all COBI planning.	GIS, Planning and Public Works	Need to discuss with COBI staff	Provide expertise when requested	University of Washington, local experts.	Short-term	2022: Complete an analysis and developed plans of all COBI assets and risk from sea level rise
5.B.2.a	COBI integrates sea-level rise analysis into all City permitting to help applicants identify and avoid or minimize risk to planned infrastructure and development from sea level rise or other climate impacts.	GIS, Planning and Public Works	Need to discuss with COBI staff	Provided expertise when requested.	Local citizen groups.	Short-term	2023: Complete an analysis of vulnerable properties and hold community workshops.
5.B.2.a	COBI hosts community workshops on climate impacts, how they might impact buildings, and how to prepare buildings for these impacts.	Community outreach coordinator and Planning.	Need to discuss with COBI staff	Participate in community workshops.	Local citizen groups.	Short-term	2022: Complete first workshops.

Appendix A.6: Natural Environment Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
6.A.1.a	Develop and adopt a comprehensive strategy for addressing invasive species on City lands to reduce these significant stressors on forested ecosystems.		GIS MOUs with appropriate agencies	Advisory	BILT, BIMPRD, Invasive Weed Collective ¹	By 2025 and ongoing implementation	-Partners identified -Comprehensive strategy adopted with targets for eradication and control -Mapping implemented
6.A.1.b	Evaluate all COBI land acquisition and development decisions using the Climate Change Adaptation Certification (or other similar tool) to ensure decisions are climate informed.		CCAC tool	Advisory	EcoAdapt	2021	-At time of inventory updates, conduct permit and development review to evaluate compliance
6.A.2.a	Work with COBI arborist and partnering community groups, as appropriate, to create a preferred list of tree and plant species expected to be favored by climate change projections for use in City planning and restoration efforts. This list can also be used to advise local landowners and be applied to climate savvy development.	City Arborist	Marketing and dissemination of completed list	Advisory	BILT, BIMPRD, Sustainable Bainbridge	2021	-Completed list that is updated at regular intervals -List is available on City website, from partnering organizations, and as a brochure
6.A.3.a	Conduct an assessment of stocking densities on COBI owned lands and evaluate forest health improvements and wildfire risk reduction.	City Arborist	Professional contractor may be needed		BIFD, BIMPRD, BILT	2025	-All City owned lands have been assessed and plans for management established and funded

¹ New multi-organizational group that includes Sustainable Bainbridge, Parks Foundation and others is just getting underway

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
6.A.3.b	Ensure that COBI policies prioritize wildfire risk reduction in proximity to homes and infrastructure while prioritizing retention of wildlife habitat values in areas farther from homes and infrastructure, and strengthen wildfire risk-reduction design guidelines for Island construction (residential and business).				BIFD	2022	-Code review and update to ensure design guidelines are up to date and strengthened to reduce wildfire risk
6.B.1.a	Incentivize and maximize opportunities for incorporation of water conservation features in Green Design and Building Codes (see Buildings Section Goal A).				Green Building Task Force	2022	-Code review and update to ensure design guidelines are up to date and strengthened to identify water conservation opportunities
6.B.1.b	Continue a robust surface water monitoring program that can identify trends in streamflow and water quality to inform adaptive management to protect stream health and integrate climate change-sensitive parameters as appropriate into monitoring.	Water Resources Program			ETAC	Ongoing	
6.B.2.a	Complete and implement the COBI's Groundwater Management Plan, including incorporation of expected changes to groundwater inputs	Water Resources Program			ETAC	2021	-Completed GW management plan has been adopted by the City

Commented [CB291]: With the loss of the Water Resource Specialist, I would benefit from more ETAC review/recommendation.

Commented [CB292]: start in 2021, finish in 2023

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
	and outputs under climate change.						
6.C.1.a	Ensure that planning for sea level rise is explicitly incorporated into the Shoreline Master Plan, including incorporating capacity for inundation and change to natural shoreline features, such as planting for shifting vegetative communities, infrastructure movement or abandonment to adapt to habitat loss at shoreline.	Planning staff		Advisory	ETAC	To match next SMP update scheduled by COBI	
6.D.1.a	Pursue COBI policies that facilitate local agricultural opportunities (e.g., agricultural zoning, tax structure).	Planning staff			Friends of the Farm, Sound Food	2022	-Code review and update to ensure design guidelines are up to date and strengthened to support agricultural activities
6.D.1.b	Integrate water budget targets (see Strategy C2) into agricultural land use permitting and planning.	Planning staff			Friend of the Farms, Sound Food	2022	
6.E.2.a	Require manure management for all permitted agricultural activities.				Kitsap Conservation District, Friends of the Farms	2021	-Manure management is written in to City Code

Appendix A.7: Waste Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
7.A.1.a	Centralize purchasing within COBI to increase consistent adherence to COBI's sustainable procurement policy.	COBI Green team	Will need to discuss with COBI staff	Advisory	BIZW	Short-term	2020: Clear communication to all staff about importance of adhering to sustainable procurement policy 2021: Purchasing centralized 2022: Review of compliance with sustainable procurement policy
7.A.2.a	Adopt an ordinance to reduce the use of single-use plastic food serviceware, including utensils and take-out containers, by all Island food service establishments.	City Council		Provide feedback on draft ordinance	BIZW	Short-term	2020: Adopt ordinance 2021: Ordinance takes effect
7.A.3.a	Educate the community about ways to reduce food waste and promote opportunities for viable food to get to those who need it, including food banks and neighborhood giving.		Funding for outreach materials	Support outreach efforts	BIZW	Short-term	
7.B.1.a	Work with BD to offer curbside compost pickup for all commercial facilities as a weekly service.				BD, Chamber of Commerce	Short-term	2020: Formal discussions with BD 2021: Support BD in developing a plan for service offering
7.B.1.b	Require that all commercial entities participate in the green waste	City Council			BD, Chamber of Commerce	Long-term	2022 or within 3 months after service

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
	program once established and participate in recycling.						established: Ordinance passed
7.B.2.a	Require, and where appropriate provide incentives for, the reduction, collection and diversion of construction and demolition waste.	City Council			BD, BIZW		
7.C.1.a	Evaluate and support opportunities to build infrastructure for on-island or more local processing of green waste.	Planning?		Assist in identifying potential opportunities and evaluating for mitigation and adaptation impacts	Private entities and BD	Long-term	2025: Location for infrastructure up and running.
7.D.1.a	Apply the Climate Change Adaptation Certification ² to any new waste-related infrastructure projects.	Public Works?	Minimal staff time	Available to advise City staff on Certification process, as needed	EcoAdapt	Short-term	2020: Certification applied to any new waste-related infrastructure projects

² <https://www.cakex.org/tools/climate-change-adaptation-certification-tool>

Appendix A.8: Community Engagement Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
8.A.1.a	8.A.1.a. Develop a dedicated climate change webpage on the City's website including links to climate mitigation/adaptation resources on the CCAC website and make the CAP widely available in on-line and in print formats.	TBD		Help provide content	Library, High School for distribution	Short-term	Within one month of CAP approval
8.A.2.a	Include a climate change tip of the [month] as a regular feature in the COBI Connects newsletter.	TBD		Help provide content		Short-term and ongoing	Begin late 2020
8.B.1.a	Declare a climate emergency and be a regional leader in recognizing the important role that municipal governments can play in taking action to respond to climate change.	City Council		Helped draft			*might be complete before CAP is final
8.B.1.b	Work cooperatively with other jurisdictions in Kitsap and King Counties (e.g., Poulsbo, Silverdale, Kingston, Bremerton, Seattle) to find regional solutions including mitigation and adaptation actions that would benefit from economies of scale or the sharing of lessons learned.	TBD		Provide expertise/advice when requested	Representatives from Kitsap and King Counties and Poulsbo, Silverdale, Kingston, Bremerton, Seattle	Short-term and ongoing	Initiate in 2021
8.B.2.a	Host workshops with hands-on demonstrations for community members to learn how to take <u>specific actions</u> (e.g., building a rain barrel, dehydrate food as part of	TBD	Funding for outreach, staff time and materials	Provide expertise when requested,	Local citizen groups	Short-term	Begin early 2021

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
	emergency preparedness, build and use compost bin, use an electric bike, construct a rain garden, assemble an emergency kit, install less resource intensive landscaping).			support outreach efforts			
8.B.2.b	Host events for <u>community project(s)</u> to bring people together to work towards mitigation and adaptation (e.g., building a community rain garden, working on a trail, making signs for bike/pedestrian routes, pulling ivy, planting climate resilient plants, and constructing community pea patch).	TBD	Funding for outreach staff time and materials	Provide expertise when requested, support outreach efforts	Local Citizen groups	Short-term	Begin early 2021
8.C.1.a	In coordination with the COBI attorney, review existing laws, regulations and policies and revise as needed by asking the following sorts of questions. <ul style="list-style-type: none"> • Are they adequate to require, or at least encourage, GHG emission reductions from City regulated or endorsed activities as well as from individual activities? • Do they provide sufficient authority/flexibility to respond to impacts and emergencies? • Are recommended mitigations/adaptations actions allowed? 	TBD and City Attorney		Provide expertise if requested		Short-term	Complete by Spring 2021

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
8.C.1.b	Hire a COBI Climate Mitigation/Adaptation Officer to coordinate activities between and among the various city offices, inspect for compliance with climate related code compliance, and serve as a City staff liaison with the CCAC.	City Manager				Short-term	Hire by end of 2020
8.C.1.c	Include Climate Change related expenditures in the City budget for education, code compliance, mitigation and adaptation action items identified in the CAP.	City Manager and Council				Ongoing	Include in 2021 budget if possible
8.C.2.a	Establish community centers for recharging generators, cell phones during outages, and providing emergency food/water.	TBD		Provide expertise/ support as requested	Bainbridge Prepares, PSE, BIFD	Long-term	2021

Appendix A.9: Implementation Priority Actions

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
9.A.1.a	Confirm COBI staff person to liaise with the CCAC until a dedicated Climate Change Mitigation/Adaptation Officer is hired. See Section 8, Action 8.C.1.b.	City Manager/Executive	5% of COBI staff person's time?	Liaise with staff person		2020	2020: Confirm climate liaison among current staff 2022: Climate change officer hired
9.A.1.b	Identify a COBI staff person in each department who will provide information to the City staff liaison (Climate Change Officer) identified in Action 9.A.1.a. This person will provide department-specific information on timelines for completing actions and report on progress on CAP actions led by that department.	Department heads	4 hours per quarter per department ?			2020	
9.B.1.a	Consider the potential for unintended and/or inequitable impacts from each action prior to implementation.		Staff time	Advisory		Ongoing	
9.C.1.a	Update the GHG emissions inventory every three to five years.		Minimal if partnering with BISD; \$10-20k every 3-5 years if hiring consultants	Advisory; assist with BISD partnership	BISD & high school students, or consultants	2022, 2026, and every 5 years thereafter	
9.C.1.b	Produce a CAP progress report every year that includes a review		Staff time	Advisory, review		2021 and every year thereafter	

Action #	Description	COBI Lead	Resources Needed	CCAC Role	Potential Partners	Timeframe	Milestones and Targets
	of actions undertaken during the year and additional actions needed to meet the CAP goals for reducing GHG emissions and preparing the Island for climate impacts.						
9.C.1.c	Update the CAP every five years.	Planning?	Staff time; potential consultant time if CCAC is not still active	Advise on additional strategies and actions, assuming CCAC still active in 2025; help gather community input	Community members, community organizations, island businesses	2025 and every 5 years thereafter	
9.D.1.a	Develop cost estimates for the highest priority CAP actions and staffing requirements and list potential funding sources (in year 1).	Finance and Administrative Services with input from other departments?	Staff time	Advisory		2020	
9.D.1.b	Include a description in the City Manager's proposed budget of existing and proposed projects that relate to CAP strategies and actions.	Executive Dept?		Advisory		2021 and every budget year thereafter	

Appendix B: Background Information for Path Forward Graphs

Appendix C: Comments from Community Workshops

3.1 Energy

First Session Dec 7 10-12 PM City Hall

Facilitator: David McCaughey Note Taker: Mike Kelly and Steve Johnson

Input from approximately 20 people and finally resulted in a smaller group of 5 people for a group discussion

Broad comments:

- What's the most common energy source used for electricity?
 - PSE is now 59% fossil fuels for their entire load
- Gary made a point that SB 5116 sets out to decarbonize our electric grid by 2025
- Wind generation on Bainbridge?
 - Joe Deets - not a good wind resource
- Joe low hanging fruit is using less energy - half to cut our individual usage in half
- Fewer outdoor lights
 - Eliminate Christmas lights or limit the time they can be on
- Should we be thinking about a specific direction for reducing energy consumption? Is there research out there?
- Solar Perovskites - alternative to silicon PV. Creates solar panels that are thinner
 - Better solar - only been on the market for a short term
- Local energy production - community solar projects like what Joe has done for Sakai and the roof of City Hall. Got a lot of roofs on BI
- If home energy is low efficiency - advice on how to improve them
- What does efficiency mean for individuals - how do you measure that? Where do people fit?
- What's the role of offsets until we can get to renewables?
- Measuring the electrical reduction - should you count the agreement signed in 2013 regarding shutting down Coalstrip?
- Have to not overestimate reductions that we did (Scope 1; e.g. city controls what fuel their vehicles used)
- Require solar on all new construction on the Island - for those where it doesn't work, require investment in others
- Schools have solar capacity - should they have to implement them?
- Residential - need more obvious EE incentives
- All public funded buildings should have a fossil fuel reduction plan - we've done schools, we've done fire stations but don't even follow what's in our comp plan today. Make them all geo-thermal or solar powered or something
- For grants awarded by the City -
- Other jurisdictions (Seattle, Tacoma) have lower emissions - they are 100% clean energy. Seattle City Light is all Hydro and we are not.
- Starting negotiations with PSE
- Costs could be a big incentive - still new tech solar panels will cost less, only pay once a year. Even if it looks cheaper initially - will be cheaper in the long run.
- More public education on solar.
- Efficiency first
- Aggregate demand - we're a well to do community - represent the fact that there are a lot of people who want solar, group purchase option?
- How do you get the word out - tell everyone how cost effective it is

- Schools should request solar from PSE (RFI Q4 2019)
- Micro grids
- Demand management technology deployed across the Island
- Criteria for measuring is not based on reducing the amount of electricity - with electrical ferries, electric cars - electric usage will go up
 - Want green power
 - Not necessarily reducing electricity but making it carbon neutral
- Library and schools and fire department need to be role models on energy usage. Even though beyond City jurisdiction
- Electrified BI Transit system that is on a regular schedule during the day as opposed to erratic service for commuters only.
 - Have certain hubs they would run out of - Lynwood, Bay Hay, Battlepoint. Do a shorter commute on your end, have a reliable pickup
- Ressurrect Repower Bainbridge concept of home energy audits

Breakout Session:

Goals

1. Energy efficiency first - before generating clean, reduce demand
 - a. Least expensive
 - b. Awareness is key
2. Decarbonize the energy you do generate
 - a. PSE will be doing this because of state mandate
 - b. Could we do it faster and not just rely on PSE
 - c. Also have diesel, gasoline, propane that PSE is not responsible for
3. Resilience
 - a. Brownouts, blackouts, subjection zone event, earthquake/fire
 - b. No have no power - have elderly, sick, ADA for one reason or another

Within each bucket - what are the various ideas?

- CA is doing a great job of forecasting what may happen
- 8 year draught here - even though trees look green could have a real wildfire risk
 - With PG&Es mandatory outages - need to look at undergrounding our wires to avoid sparks that trigger fires
 - Could run closer to road so could have shoulder / pedestrian
 - Cost is high - will take 10-15 years to do it - but cost of fires also very high
 - Opportunity with the new lines PSE is proposing for reliability
 - About half of the distribution system on BI is already underground
 - Could UTC require undergrounding so it is part of the base cost.
 - UTC would look at all the things they balance
 - Climate impacts are going to play a larger role in regulatory decisions
 - Local communities can set their own regulations for development - PSE infrastructure is a kind of development and some communities do require that. If those are the local rules, have to follow them.
 - Opportunities for BI to work with PSE to do undergrounding projects on existing wires with a cost-sharing arrangement. That's available to communities now.

- Evaluate all projects to see where it makes sense to put things underground.
- If we don't think people will allow tree cutting to make a section more reliable, might make the choice to underground or harden the existing overhead system
- PSE to provide real-time price feedback.
- PSE tested out a time of use rate schedule. What they learned is people didn't change behavior much. If anything, some people paid more. A lot more capability today to monitor and adjust.
- One of the proposals is to make available more demand side management from PSE. More opportunities to control how energy is used and when, recognizing that they need to be things that the consumer will tolerate.
 - Tiers for excessive users? Rates that are in place is what the commission is willing to accept
 - Internet of Things - all energy using devices become smart devices. Looking at marginal spot cost.
 - Will see newer applications try to drive how much energy is used when, not just how much it is costing but also to have a positive effect.
 - Is there a role for a larger utility system demand management system that would be effective at reducing overall usage?
 - Bringing in smart meters - a meter that could communicate two ways
 - One advantage is PSE knows for certain that your house has no power
 - Residents could take control back if needed
 - Mostly need more wires
 - Advanced metering infrastructure
 - Not just the meters but also the infrastructure for transmitting information between meters and the utility.
 - Receive points for using energy efficient measures - participating in demand management
- PR Idea - explain that the blackouts in CA are the crudest form of demand management. They are doing that because they have to. We don't want to get to that point on BI, so here's what we have to do now to avoid that....
- Term "battery" needs to be expanded to include all forms of energy storage (Thermal, Li batteries, Flow batteries (Vanadium))

3.1 ENERGY

Second Session Dec 11 6:30-8:30 PM BHS Library

Facilitator: David McCaughey Note Takers: Jane Lindley and Steve Johnson

Input from ~15 people and finally resulted in a smaller group of 5 people for a group discussion

Broad comments:

- Smart meters and Demand Management
- Carbon tax on all vehicles with MPG below 25 mpg
- Many "vacant homes" that are contributing to unnecessary kWh increases to the electric system, these are homes utilized as 2nd homes but have both lights and heating at high levels when vacant.

- All public buildings (schools, fire stations) to have solar PV (if properly sited and designed) and allow individuals to invest in these systems - community solar
- EV charging infrastructure for apartment buildings
- Encourage a "Home Share" program
- Better ventilation in homes - like heat exchangers
- Get an electric car with an inverter instead of a generator
- With increasing temps and lower H2O flows, be very scientific when analyzing dam removal (vs. emotional)
- Reduce tax-based energy emissions, increase income-based taxes
- Sidewalks
- Carbon tax increase on gasoline - to encourage conversion to electric
- Subsidize residential solar installs
- Group purchase of panels for residents to reduce capital costs
- Nuclear power - small scale plus in series
- Green Direct purchased for City operations
- Harnessing the heat released in the decomposition of organic matter?
- Develop solar infrastructure using Germany as a model
- Support for solar panels in the form of Community Solar (i.e. Harbor Square)
- Have community purchase programs to make it easier to purchase solar panels, batteries, electric cars and electric bikes
- Implementation of solar battery usage to phase out generators (charged during sunny months)
- Microgrids that would serve "Bainbridge Prepares" hub sites for warming/cooling sites
- Require smaller houses, demand public buildings follow State of WA standards (i.e. must be LEED)
- Bring back "Repower Bainbridge" with help from PSE
- Solar incentives
- Reduce fares on ferries for electric cars
- Harbor Square - Building Captains to implement warming/cooling center and community solar on roofs
 - Adaptive Load Management to allow for EV charging in similar buildings with common electrical infrastructure (condos, apartments)
- Contribute to a continental wide system of fast trains to reduce air travel
- Public Works projects - should encourage community sustainable development
- Lobby locally to be a test site/early adopter for electric driverless vehicle fleets
 - Proactively plan electric and parking infrastructure these vehicles
- Investing in Sea-power (tidal, current)
- Solar panels on every appropriate roof-top/site

3.2 Transportation

First Session 1: December 7th

Facilitator: Mike Cox Note takers: Bobbie Morgan and Fran Korten

There were six general categories of comments:

PK-Parking (especially for bikes)

I - Infrastructure (for safe walking, biking)

BC - Behavior Change (including incentives, enforcement, education)

PS - Partnerships (with various agencies and businesses)
PL - Planning (City code)
F - Fuels

PARKING

- Have secure biking option for Park and Ride sites
- Provide convenient, safe bike parking at all businesses and schools (free)
- Provide ground mounts for bike parking

INFRASTRUCTURE

- Make bus stops safer
- Make biking and walking safer for all ages
- Prioritize biking and pedestrian improvements that connect well-traveled locations
- Establish more developed, safe routes to school throughout the island
- Make it very clear where to pick up a bus (poor signage currently) and leverage ___ to be more than commute trips
- In prioritization for bike/walk infrastructure, note populations based on #'s that use this, monitor kids and children and safety
- Bike lanes themselves must be safer ones
- Keep rural look and feel of transportation system
- Make walking, cycling comfortable, convenient and safe (protected but still direct)
- Make biking safer, shoulders, off road trails, lower speed limits for cars
- Walk-bike safety need to be targeted (i.e., charge parents to drop off kids)
- Create mobility hubs at neighborhood service centers to connect "first and last mile"
- Trails are great if they can be direct
- People need safety and convenience

BEHAVIOR CHANGE

- Implement "library of things" to reduce off-island trips and reduce deliveries
- Enforce "no-idling", especially at ferry, schools, municipal vehicles
- Consider charging for on-street parking
- Establish a baseline for car use on island (count cars on roads)
- Incentivize E-V use on island
- Incentivize commuter trip reductions for employers (motivate)
- Create a website for ride-sharing and signed locations (a la San Juan Islands and Gulf Islands)
- Understand and educate parent about pick-up and drop-off kids at school (increased costs of driving to school)
- fund via impact fees (increase) on development
- Encourage hitch-hiking (on-line approval of participants)
- Localize our lives (in context of higher education, travel for pleasure, family visits, etc.)
- Incentivize bus use by making car use expensive
- Utilize social media to build momentum for change
- Engage youth in relevant games, etc.
- Promote carbon offsets
- Incentivize telecommuting

- Use Public Service Announcements and publicity to promote these ideas
- Establish targets (specific: reductions of individual car use, etc.)
- Use tokens as rewards for positive transportation (i.e., Kitsap Transit gives them out for 'frequent riders')
- Encourage community events to promote clean ways of transit
- Incentivize employees for their travel
- Help people carpool to large public events
- Support local merchants to minimize off island driving

PARTNERSHIPS

- Have BI Ride electric bus on regular schedule
- U-pass for island (bus, ferry, etc.) with monetary incentive to make this cheaper
- Incentivize walk-ons at ferry and mobility hubs at neighborhood service centers
- Try to get City of Seattle to have 1st Ave bus back in service
- Raise the fee for cars on ferry and reduce for walk-on and bike
- Find ways to bring back essential local businesses (i.e., co-op?)
- Use tokens as rewards for positive transportation choices (i.e. Kitsap Transit 'frequent rider')
- Increase public transportation on weekends and evenings
- Amazing: use electric vehicles
- Provide public transportation especially to ferry, esp. weekends and broader geographic locations
- Promise to pressure airlines to go electric
- Create a local electric airport
- Engage schools in bike-walk planning (there is \$!)
- Implement a 'library of things' to reduce off-island trips and deliveries
- Encourage smaller ferries for various trips
- Make bus stops safer (i.e., locations)
- Fund grant writer to fund expansion of bike-walk infrastructure
- Work with Kitsap County to expand E-V infrastructure
- BI Ride to Silverdale 3x week

PLANNING

- Put a climate lens on all transportation projects
- Clarify 'single use' vehicles miles traveled (per capita)
- Clarify alternatives to include walking and biking
- Make pedestrians the focus of goals to show paradigm shift
- Take away levels of service (infrastructure) for cars
- Reduce speed limits for cars
- 1st and last mile connections to transit (i.e. mobility on demand, some examples around the country)
- Find sources to expand funding for walk/bike projects
- Raise priority of walkability on city projects
- Increase parking fees at ferry and increase cost to take car on ferry
- Make this plan concrete with clear targets and dates for completion
- Research best practices for transit in small, rural communities
- Don't encourage multiple cars by allowing/requiring multiple parking spaces per household

(i.e., 3-car garages)

- Increase density in core to make transit more feasible
- Multi-modal LOS to fund improvements
- Prioritize pedestrians and cyclists in city street standards
- Integrate an equity lens in how we plan for transportation (what works for everyone not only those who can afford) Consider community assets, access, cost.
- Require EV charging for all new developments as well as bike parking and increased bike parking all over the island (i.e., schools, make it covered...)
- Public transportation requires 4,500 people/square mile (we are only 850/square mile), so we need to find out if people want to pay for what it would take?
- Be mindful that not all planning should be anti-car: self-driving electric cars will help.

FUELS

- Include various kinds of non-pollution fuels (i.e. biofuel, etc.

3.2 Transportation

Second Session: December 11th, BHS Library

Facilitator: Derik Broekhoff Note takers: Sandy Spears

Transportation ideas added by Julie-ideas given directly to her during the workshops

- Leverage non-motorized trails/sidewalks into or with one unified system
- Expand transit service during non-commuter times
- Start an electric bike ride share program

3.3 Buildings

First Session: Saturday December 7th: City Hall

Facilitator: Jens Boemer Note Taker: Brian Anderson and Sandy Spears

Suggestions climate mitigation and adaptation of buildings on Bainbridge Island

- In the BI carbon inventory, make estimates of energy consumption for BI more accurate.
- o People are concerned that our estimates based on state averages are not specific enough to BI

NEW BUILDINGS

- o Make sure the city uses transparent processes/best practices in determining any new building codes. They need to focus on resilience and sustainability.
- o Require Net Zero building standard for all new construction
 - Our code should encourage/require 'net zero energy homes' – homes that are so air-tight, well-insulated, and energy efficient that they produce as much renewable energy as they consume over the course of a year, leaving occupants with a net zero energy bill and a carbon-free home. Whole, integrated homes. Look at buildings as systems.
 - Build with 'Advanced Framing' (<https://www.energy.gov/energysaver/energy-efficient-home-design/advanced-house-framing>) 'Advanced house framing, sometimes called optimum value engineering (OVE), refers to framing techniques designed to reduce the amount of lumber used and

waste generated in the construction of a wood-framed house. These techniques boost energy efficiency by replacing lumber with insulation material while maintaining the structural integrity of the home.’

- Full lifecycle of materials taken into account.
- CA every new residence has to be net zero by January 1. Focus on building enclosure. Can’t have swiss cheese air sealing, more recycled materials less raw material, sustainable buildings, transparencies, how many carcinogens. Transparencies in materials.
- Living Building Challenge <https://living-future.org/lbc/>
 - o Solar ready homes.
 - o City could provide marketing support for building net zero energy homes.
 - o Encourage people to live in smaller homes. Discourage building larger homes.
 - o Use local building materials
 - o Use carbon neutral building materials
 - o Reduce use of cement/concrete in construction because of its very high carbon footprint.
 - o Permeable surfaces in surrounding areas
 - o Encourage non-flammable roofs due to increased fire risk from global heating in the future
 - o Don’t build near shorelines
 - o Capture rainwater
 - o Allow subdivision of existing extra-large houses into separate residences
 - o Preserve our forest cover. Discourage lawn installations. Encourage replacing disturbed construction sites with grass.

EXISTING BUILDINGS

- The city and/or private entities on Bainbridge, should apply for grants and subsidies for energy efficiency improvements for low-income residents
- The city could publicize best practices and tips for retrofitting homes to be more energy efficient
- City could fund energy audits for private residences
- encourage commercial buildings to self-benchmark their carbon footprints. Building owners can compare costs with other building owners through databases like this.
<https://www.energy.gov/eere/buildings/building-performance-database-bpd>
- Assess energy use and conservation for every household. Many households can’t/won’t afford such a service. Find a way to facilitate household level energy inventories as input for retrofit prioritization.
- Train workforce around efficiency skills.
- PACE financing of energy efficiency upgrades- means of financing energy efficiency upgrades, disaster resiliency improvements, water conservation measures, or renewable energy installations of residential, commercial, and industrial property owners.
- Try to get PSE to provide monetary incentives for rooftop solar, efficient water heating, & heat pumps.
- Remove those that are on shorelines.
- For energy efficiency renovations we voted on whether we would prefer prioritizing mandates vs. incentives. The vote was about 50-50. Some suggested with use both
- Ask people to disclose their energy bills during the sale/purchase of a home. Publish benchmarks for home efficiency for buyers to compare against.

BOTH NEW AND EXISTING

- o Rick Blumenthal said the BI can in fact set stricter energy efficiency guidelines than the state. (Rick is a former building contractor, RePower BI energy assessor, and seems to be all-around expert in building efficiency)
- o Encourage residents to use lighter colored roof surfaces when next replacing their roofs
- o Require new and retrofitted residences to be built electric vehicle ready
- o Require new and retrofitted residences to be built solar ready
- o Encourage use of a landscaping standard called SITES (<https://www.asla.org/sites/>). “The Sustainable SITES Initiative is a set of comprehensive, voluntary guidelines together with a rating system that assesses the sustainable design, construction, and maintenance of landscapes.”
- o Take equity and affordability into consideration in the plan.
 - Use grants to provide funds to support low income retrofits
 - City should provide an energy efficiency fund for low income residents
 - Investigate county and state as a source of funds
 - Hire professional grant writers and fund raisers to get money for this.
- Study the Bloomberg City Climate Action Playbook Brief (10/19) for ideas that have been implemented in major US cities. <https://data.bloomberglp.com/dotorg/sites/2/2019/10/American-Cities-Climate-Challenge-Climate-Action-Playbook.pdf>

NEIGHBORHOODS

- Implement Community Solar projects, use open space on the island for local solar power generation=
- Build more walkable infrastructure within the city
- Coordinate planning with neighboring jurisdictions
- Build more affordable housing on the island, have ambitious targets
- Building density
- Our plan should have targets relative to planning dates – not sure what this means other than possibly – have more interim targets.
- Encourage people to use less stuff ala ‘Library of Things’, which is ‘collections of things other than books that are being loaned like books, for no charge. A library of things can loan out kitchen appliances, tools, gardening equipment and seeds,[1] electronics,[2] toys and games, art,[3] science kits, craft supplies, musical instruments, recreational equipment, and more.’
 - Energy Star appliances
 - Encourage people to not rent storage spaces.
 - We need impact fees that reflect carbon generation (should be commensurate with what Poulsbo is doing).
- Break out energy efficiency targets by Residential, Commercial, and Industrial so we can have different target dates for each.

FUNDING

- o Kick off another energy Repower BI Program- federal grant program?
- o Involve non-profits and get grants
- o Better Bainbridge- TARP money was American Resource and Recovery ACT. ARRA funded weatherization programs. \$5 million grant. Pile of retrofits
- o PACE

3.3 Buildings

Second session Weds December 11, 2019

Facilitator: Mike Cox Note Taker: Herb Hethcote

Energy Conservation

- Start a new Repower Bainbridge energy audits program to encourage energy conservation (insulation etc.)
- Introduce plants inside buildings for better air quality, decoration, and calming
- Encourage thermal shades and drapes to reduce heat loss through windows
- Use batteries to store power for later use in a home or community
- Build solar farms in sunny areas such as eastern Washington to generate power for use on Bainbridge
- Encourage shared homes
- Explore building underground to take advantage of geothermal and energy efficiency
- Remodel large homes by pooling resources
- Is the new building at the High School being built green?
- Encourage geothermal heat pumps
- Use rooftop systems to heat liquids for heating homes and shower water
- Provide community resources for learning about energy efficient methods
- Encourage the use of clothes lines for drying clothes

Green Construction suggestions

- Provide incentives for building smaller homes
- Build a database for benchmarking an Energy Star Portfolio
- Have a depot of recyclable materials that can be reused by others
- Encourage places for recycling building materials
- Encourage use of low carbon materials (engineered wood, CLT, etc.)
- Promote simple ideas for energy efficient homes (smaller homes, lower ceilings, more insulation)
- Create a public list of builders who are good at renewable construction and remodeling
- Publish the environmental impacts of construction choices such as concrete patio vs. gravel or pavers
- Encourage geothermal designs for hot water and heating
- Utilize black-body radiation from sun to heat water and buildings

Added by Deb as this did not belong in ag/shoreline/forest but were relevant suggestions for this section:

- plant trees around athletic fields for shading/heat mitigation.
- educating property owners about use of low-impact lawn and landscape management like mulching over fertilizers, pesticides.
- Realtors should be required to disclose risks of flooding due to SLR and other exacerbated hazards associated with climate change
- No rebuilding in zones at high risk of inundation, hazard

City Code suggestions

- Stop granting waivers for buildings on steep slopes

- no rebuilding in areas of flooding (once and you are out) (flood insurance)
- expand vertically, not horizontally, “up, not out,” leaves more room for trees as carbon offsets
- require 100% passive design for all new structures
- require all new buildings to be in tune with the site and the environment
- require new homes to be built green (LEED etc.)
- require solar power on all new construction (residential, commercial, government)
- require all new construction to be carbon neutral
- require new buildings to be 100% electric (no propane) with induction cooking and limited connected load
- require better air tightness and heat recovery ventilation in buildings
- require garden spaces and walking paths in all new developments
- require trees cut on building sites to be used for construction lumber
- require energy efficient windows in new buildings
- require LED lighting in all public buildings
- create incentives and requirements for green construction and use of low carbon materials
- require new homes to have solar panels (or an investment in community solar projects)
- allow gray water plumbing and composting toilets in homes

Offer classes

- Offer classes for builders and contractors to learn green building techniques
- Offer classes for homeowners to learn to manage septic systems

Miscellaneous

- Bainbridge should install island wide car chargers to encourage electric cars
- Allow solar communities such as Grow to pool their excess power into community car chargers
- Put trees and vegetation on every story of a building as in Italian “tree buildings”

Building ideas added by Julie- ideas given directly to her during the workshops

- Partner with local roofing contractors to provide information to home owners about solar options whenever a roof is replaced or significantly repaired
- Require the orientation of new home and commercial building design to be able to accommodate or be consistent with the use of solar panels
- Create and make easily accessible lots of information about how and where to consider home solar panels
- Help home owners do less resource intensive landscaping- provide information and incentives (water, chemicals, native plants, resilience to climate change...)

3.5 Waste

First session Dec 7: City Hall

Facilitator: Nora Nickum Note taker: Barbara Zimmer

Waste reduction action ideas from 12/7 workshop

- Encourage people to bring own containers for takeout at restaurants
- Regulate take-out containers
- Zero packaging at stores, including grocery stores

- Biodegradable and compostable alternatives
- Create a place to do commercial composting of compostable plastics
- Put a fee on single-use plastics
- Eliminate bottles and cups
- Reduce packaging
- Contact companies to reduce packaging
- Use methane digesters at transfer station
- Animal and food wastes compost station - support ordinance and help identify site
- Work with Zero Waste group
- Fine people who put trash into compost or recycling bins
- Conserve water
- Mandate composting of food waste
- Restaurants/stores/events compost
- Adding climate change/sustainability/green practices as a factor in City grantmaking decisions
- Support state policies to decrease/ban Styrofoam, packaging, single-use plastics
- Develop single-stream waste sorting of all waste
- Encourage re-use stores for furniture, clothes, etc.
- Work with Friends of the Farm to offer classes on composting at home
- Make recycling simpler/clearer
- Increase community education on recycling, composting, etc.
- Encourage BI disposal to provide more accurate info on their website
- Educate raise community awareness on reducing water use
- Educate/promote knowledge of % of cost for packaging/transportation – carbon labeling on products
- Support/expand programs like lending library and fix-it fairs
- Create a fibershed for clothing/fabric to repurpose older clothing
- Support creation of local businesses that eliminate need for Amazon, office Depot, other big box stores. Bring back and use Paper Products shop, clothing for basics.
- Meet with local businesses to hear their hurdles and ideas, and encourage sharing ideas and lessons
- Fund/invest in a county/state plastic recycling industry
- Provide city space for things like lending libraries
- Funding for pickup of food waste from restaurants
- Involve local orgs and faith groups and encourage them to use zero waste resources like lending library
- Library of things for lending to individuals
- Urge WSF to renew on-ferry compost and make consistent with good signage
- Hydration stations at all parks to encourage use of reusable bottles
- More frequent opportunities to recycle Styrofoam
- Individual actions
 - Do comments on social media to urge companies to change
 - Patronize stores that have sustainable alternatives
 - Choose paper-wrapped products (or those with no packaging) rather than those with plastic packaging

- Buy local

Waste

Second session Dec 11, BHS Library

Facilitator: Lara Hansen Note taker: Oona Bill

Input from ~8 people who passed through and an additional sustained group of 6 who stayed for the discussion

Waste reduction action ideas from 12/11 workshop

- Have more “rotary auction” type events throughout the year
- Work with state, regional to minimize the amount of wasteful shipping (planes and trucks divert small orders of small items)
- Work with shops/grocery stores to reduce packaging to zero waste; no single use items and all of it should be recyclable
- Renegotiate Bainbridge Disposal to allow unlimited recycle drop offs.
- Have Amazon take their boxes back or use drop-off locker so that we don’t have to use boxes
- Tax Amazon for online shipping, shopping and consumption.
- Local Compost facility with biogas digester
- Tag items sold on Bainbridge Island with “Carbon Labeling”
- Create incentives for recycling our own trash
- Develop our own recycling plant so that we don’t have to ship waste elsewhere
- More sites on Bainbridge Island for home composting
- Have a lending library or a library of things
- Better education on recycling. For example, what our facilities accept and what waste they do not accept.
- Turn Waste into electricity
- Facilitate the use of reusable containers
- Encourage people to buy less new stuff
- Teach about safe composting
- “Repair Cafes”
- When developers or homeowners cut down trees, there should be a set location for all of the lumber to go and be re-used or buried to keep carbon from being oxidized.
- The community needs to be 100% responsible for its own waste (right now we are 0% responsible for the disposal of it)
- Requirements for compostable packaging in restaurants as well as grocery and retail stores.
- Encourage people to use their own containers for take-out food.
- Impress upon people that trash has costs that are not accounted for. Charge more for things that produce waste/trash and thereby incentivize people to reduce their consumption.
- Turn waste into building blocks for building
- Have restaurant composting
- Offer bi-weekly pick-up options for waste
- Division of material waste bins in public places sorted by color. The division of these materials should be in the following categories; glass, organic, paper, metal, general waste
- Ban all single use plastics on the island



- Eschew packaging
- Offer cooking classes that teach people how to use the food they buy
- Compost bins on Winslow
- Encourage grocery stores to purchase more bulk items
- Capture methane from landfills to use as fuel

Additional waste reduction ideas added by Julie- ideas provided directly to her

- Promote Zero Waste Bainbridge
- Develop a citizen guide for making climate smart choices on Bainbridge (based on science and facts- with specific reasons/explanation provided for why a particular choice is good)
- Provide more education/information about how to recycle properly

3.4 Forests, Agriculture, and Shorelines

First session Dec 7: City Hall

Facilitator: Deb Rudnick Note Taker: Stephanie Rose

input from ~10 people passing through and engaging in smaller group discussion

Second Session Dec 11: BHS

Facilitator Deb Rudnick Note-taker: Clair Paige

Input from approx. 8 people in dedicated group session- whole group stayed and engaged.

Broad comments:

- Consider using the word “manage” carefully. Nature can provide functions on its own without human “management”. A natural landscape is a more resilient one, one that can change over time.
- Land protection in relation to water resources protection and reduction of use can be mitigating.
- Are there carbon sequestration techniques we can bring to bear in land use policy and practice?
- The City could use a wildlife biologist on staff who could help respond to, address natural resource questions
- This isn’t and shouldn’t all be on the city- too much capacity, and to pay for- partnerships with community organizations needed
- Homeowners and citizens need more education on why natural resources are so important to climate change resilience. Egg, small wetlands.
- Population is an overarching driver of climate change- how do we address this as an Island? Population grows, impacts grow- as we saw in our greenhouse gas inventory.
- Need to protect limited water resources- more is needed on water conservation education.
- Create a strategy that property owners can participate in.
- Several comments spoke to lack of enforcement of extant city policies as a major issue for achieving objectives for both mitigation and adaptation. Eg, stop allowing waivers of setbacks on steep slopes;
- Recognize interconnectivity of sea level rise, water table, groundwater fluctuations, forest health, shoreline erosion, drowning of beaches and retreat of beachfront
- Help pollinators pollinate- important for all our natural systems and for agriculture
- Encourage and educate landowners about leaving wild areas wild

- Ban the selling of toxic products like Roundup

Forests and vegetation:

- Recognize the importance of the role of the landscape and natural vegetation in maintaining water quality and quantity in the face of climate change
- Provide a list of trees that will thrive in 2050-2100. Identify and educate about trees that may be of risk of near-term decline, like doug fir and cedar
- Leave city-owned open space open for serving ecosystem functions
- Maintain healthy forest ecosystems with a critical eye towards mitigating wildfire risk
- Need better systems for fighting forest fires- most of BI is on small wells, cannot handle water needs?
- Ecological services provided by forest should be considered in permitting, development process
- Concern about the impacts of herbicides and pesticides and their impacts on wildlife as a threat multiplier with climate change
- Thinking forward in terms of plant and tree selection, being proactive on pathogens and drought. Avoiding “flammable” species like scotch broom.
- What actions should the city take to reduce wildfire threat? One example- firework ban.
- Balancing firewise protection with protecting trees around the home.
- Develop incentives to improve forest management on island, particularly poorly managed, dense regrowth stands that are high fire risk and low health.
- A tree planting or other forest conservation requirement for all students? Graduation requirement?
- More trees along Winslow Way

Shorelines:

- Seriously consider that some shoreline may need to change/inundate rather than assuming we must armor/fight it
- What resources do we have in place to measure and monitor shoreline erosion rates?
- What are the legal constraints of the Shoreline Management Act on reacting to climate change?
- How do we compensate individuals when shoreline retreat becomes necessary?
- Start a shoreline structure buy-out program to abandon, remove structures at risk from SLR. Look to King County and Vashon programs that address this.
- Help with advising for shore-friendly methods- how do we get this information to homeowners? City website, other social media.
- Learn from other communities facing sea level rise
- Hard armoring is not a long-term solution in the face of inevitable SLR
- Question/limit/restrict industrial aquaculture as a threat multiplier to shorelines

Agriculture

- Involve farmers and gardeners in climate change solutions
- Increase local food production to decrease energy, carbon footprint of food being transported to the island: both commercial scale and personal
- Innovative thinking for small-scale agriculture that can localize food production- eg, crops on roofs?
- Better manure management to reduce emissions from this sector
- Give homeowners ideas of what they can do in their own gardens

- DO we understand our current amount of local food production- can and should we have quantitative goals? Work with Friends of Farms.
- Land uses including agriculture, horticulture, farming are vulnerable - zoning changes may be needed
- Biochar and other techniques for sequestering carbon in soils should be researched, incentivized
- Emphasize regenerative agriculture not only for commercial farms but also for pea patches and gardens
- Investigate biogas production for co-location with ag

Water Resources (was not explicitly called out in this section but there were many comments so I wanted to capture these):

- Promoting grey water systems
- Raingardens, LID should be emphasized, encouraged, incentivized. Maybe a community award/recognition for these extra steps taken?
- Classes on septic health
- Public and private well ownership: focus on conservation measures, incentives to conserve
- Continue prioritizing groundwater development plan

City actions- not topic specific

- The City should declare a climate emergency and take more immediate and meaningful action
- City needs to make more systemic, structural changes to the way it conducts business to address climate change
- Change city codes and regulations so that the City can require rather than just encourage emission reductions and adaptation measures
- City should focus more on environmental destruction component
- Incorporate climate change into emergency preparedness
- Recognize the Rights of Nature and ecological impacts of [city and individual] decisions rather than just the present-day fiscal considerations. Acknowledge it is not just all about people
- Include key climate change data and sea level rise examples as part of the annual emergency preparedness exercise

No Specific Topic/General

- Have a volunteer High School youth member on the CCAC- maybe a one-year term
- Water should be a separate focus area in the CAP rather than buried in among the others
- Start a CAP day event annually
- Partner with the Bainbridge Island Women's Club to spread information.
- Bring the heart aspect into the discussion
- Add "Web of Life" as a sixth focus area in the Plan
- Promote sense of community in addressing climate change issues- for example encourage involvement through community work projects like building a rain garden

Appendix D: Footnotes

Executive Summary

¹ Clean Energy Transformation Act, May 7th 2019. <https://www.commerce.wa.gov/growing-the-economy/energy/ceta/>

² “carbon neutral” is not the same as carbon free—this transitional goal allows for a mix of fuels including natural gas, and also allows for 20% of the portfolio to be addressed by a combination of taxes, energy credits, and innovation in new energy technologies to offset carbon in the utility’s portfolio.

³ Reducing GHG emissions from Hydrofluorocarbons. <https://app.leg.wa.gov/billssummary?BillNumber=1112&Year=2019&Initiative=false>

⁴ City of Bainbridge Island GHG Emissions Inventory. [Final Findings Report, Cascadia Consulting Group Inc. 2019](#)

⁵ Vehicle miles traveled per capita is calculated as the total annual miles of vehicle travel divided by the total population in a geographic region over a given period of time, typically a one-year period.

⁶ Mode share is a transportation term that describes the number of trips, or %age of travelers, using a particular type of transportation (car, transit, bicycling, walking).

⁷ Public transit is used to broadly mean services to encourage alternatives to single occupancy vehicles, and may include public-private partnerships and other solutions to offer more efficient transportation.

⁸ <https://www.governor.wa.gov/sites/default/files/documents/clean-buildings-policy-brief-bill-signing.pdf>

⁹Hansen, L., S. Justus Nordgran and E. Mielbrecht. 2016. Bainbridge Island Climate Impact Assessment. EcoAdapt, Bainbridge Island. <https://www.cakex.org/documents/bainbridge-island-climate-impact-assessment>

¹⁰ Municipal buildings include buildings used for government related activities such as city halls, libraries, police stations, and schools that are over 5000 square feet. Residential buildings include single family homes, apartments, and condominiums. Commercial buildings include office buildings, warehouses, and retail buildings.

Industrial buildings include buildings where products or materials are fabricated, assembled, or processed.

¹¹ The definition of what constitutes remodels or additions that would be required to adopt green building standards should be discussed by the Green Building Task Force. As an example, the City of Santa Cruz requires all remodels and additions with a combined square footage greater than 350 to utilize a checklist <http://www.cityofsantacruz.com/government/city-departments/planning-and-community-development/services/building-safety/green-building-program>

¹² Task Force shall consider at a minimum the following: 1) Upgrade building code to require “solar + storage readiness” of new buildings that have sufficient solar exposure including solar heating capacity; 2) Adopt a definition of what sized municipal projects and what residential and commercial remodels and additions would be required to adopt green building standards; 3) Amend the City’s land use and development codes to implement green building codes and adapt to climate impacts; 4) Change building code to include electric vehicle readiness; 5) Create “no net increase” water and energy standard to maximize water and energy efficiency and support improved water and energy efficiency of other projects such that there is no net increase Island-wide in water or energy use created by the new project; and 6) explore using low-carbon concrete and other low-carbon building materials.

¹³ Example of programs including: Real-time feedback on usage potentially leading to TOU (time of use) pilot program and Smart Meters and other forms of demand management (EVs, washing machines, hot water tanks, cooling).

¹⁴ <https://www.cakex.org/tools/climate-change-adaptation-certification-tool>

¹⁵<https://www.bainbridgewa.gov/DocumentCenter/View/6770/Procurement-Policy-Resolution-No-2019-10-?bidId=>. See section 4.5, Environmentally friendly purchasing.

Section 1: Introduction

¹⁶ Hansen, L., S. Justus Nordgran and E. Mielbrecht. 2016. Bainbridge Island Climate Impact Assessment. EcoAdapt, Bainbridge Island. <https://www.cakex.org/documents/bainbridge-island-climate-impact-assessment>

¹⁷ 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/>

¹⁸ Fourth National Climate Assessment. Volume 11: Impacts, Risks, and Adaptation in the United States. 2018. <https://nca2018.globalchange.gov/>

¹⁹ Mauger, G.S., J.H. Casola, H.A. Morgan, R.L. Strauch, B. Jones, B. Curry, T.M. Busch Isaksen, L. Whitely Binder, M.B. Krosby, and A.K. Snover. 2015. State of Knowledge: Climate Change in Puget Sound. Report prepared for the Puget Sound Partnership and the National Oceanic and Atmospheric Administration. Climate Impacts Group, University of Washington, Seattle. doi:10.7915/CIG93777D

²⁰ <http://nas-sites.org/climate-change/summary.html#XQPYt4hKi71>

²¹ Bainbridge Island Comprehensive Plan. <https://www.bainbridgewa.gov/162/Comprehensive-Plan>

²² <http://iclei.usa.org/programs/emissions-management/5-milestones>

²³ Central Puget Sound Regional Open Space Strategy 2015

<https://openspacepugetsound.org/sites/default/files/final-report/Regional-Open-Space-Strategy.pdf>

²⁴ <https://obamawhitehouse.archives.gov/president-obama-climate-action-plan>

²⁵ <https://www.wearestillin.com>

²⁶ <https://www.governor.wa.gov/issues/issues/energy-environment>

²⁷ <https://www.bainbridgewa.gov/922/Climate-Change-Advisory-Committee>

²⁸ https://www.bainbridgewa.gov/DocumentCenter/View/8183/Ord-2017_03--Ch-1519-Site-Assessment-Review?bidId=

²⁹ Supra note 3, p. 21

³⁰ What are the RCPs? <https://coastadapt.com.au/sites/default/files/infographics/15-117-NCCARFINFOGRAPHICS-01-UPLOADED-WEB%2827Feb%29.pdf>

³¹ Mauger, G.S., J.H. Casola, H.A. Morgan, R.L. Strauch, B. Jones, B. Curry, T.M. Busch Isaksen, L. Whitely Binder, M.B. Krosby, and A.K. Snover. 2015. State of Knowledge: Climate Change in Puget Sound. Report prepared for the Puget Sound Partnership and the National Oceanic and Atmospheric Administration. Climate Impacts Group, University of Washington, Seattle. doi:10.7915/CIG93777D

³² Id

³³ RCR 2.6, 4.5, 6.0 and 8.5 are explained above. The IPCC published a set of climate scenarios in 2000 for use in the Third Assessment Report (Special Report on Emissions Scenarios - SRES). The SRES scenarios were constructed to explore future developments in the global environment with special reference to the production of greenhouse gases and aerosol precursor emissions. <https://sedac.ciesin.columbia.edu/ddc/sres/>

³⁴ Bainbridge Island Fire Department and Western Washington University. 2012. Bainbridge Island Hazard Identification and Vulnerability Assessment.

³⁵ NOAA. 2019. Seattle, WA-Station ID: 9447130. Retrieved from <https://tidesandcurrents.noaa.gov/stationhome.html?id=9447130>

³⁶ Miller, I.M., H. Morgan, G. Mauger, T., Newton, R. Weldon, D. Schmidt, M. Welch and E. Grossman. 2018. Projected Sea Level Rise for Washington State – A 2018 Assessment. A collaboration of Washington Sea Grant,

³⁷ A king tide is the highest predicted high tide of the year at a coastal location. It is above the highest water level reached at high tide on an average day. King tides are a normal occurrence once or twice every year in coastal areas. <https://www.epa.gov/cre/king-tides-and-climate-change>

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³⁸ EPA. 2019. Climate Change Indicators: Coastal Flooding, Retrieved from <https://www.epa.gov/climate-indicators/climate-change-indicators-coastal-flooding>.

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³⁹ NOAA. 2015. Digital Coast Sea Level Rise and Coastal Flooding Impacts Viewer. <https://coast.noaa.gov/slr>.

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⁴⁰ Mauger, *supra* note 3, page 78.

⁴¹ Conservation Biology Institute. Databasin. <https://databasin.org>

⁴² Mauger, *supra* note 3, page 79.

⁴³ *Supra* note 3, p. 64

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⁴⁴ (Dabob NANOOS ORCA buoy <http://www.pmel.noaa.gov/co2/story/Dabob>)

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⁴⁵ Federal Emergency Management Agency. 2015. Risk Report. Prepared for Kitsap County, including the Cities of Bremerton, Bainbridge, Port Orchard, Poulsbo, the Port Gamble S’Klallam Indian Reservation, the Suquamish Tribe and unincorporated Kitsap County.

⁴⁶ Data from 2010 Census

⁴⁷ *Supra* note 1

⁴⁸ City of Bainbridge Island Greenhouse Gas Emissions Inventory, Final Findings Report, 2019, Cascadia Consulting Group Inc. <https://www.bainbridgewa.gov/922/Climate-Change-Advisory-Committee>

Section 2: GHG Emissions Inventory

⁴⁹ City of Bainbridge Island GHG Emissions Inventory. [Final Findings Report, Cascadia Consulting Group Inc. 2019](#)

⁵⁰ The Climate Registry. (2010). *Local Government Operations Protocol: For the quantification and reporting of greenhouse gas emissions inventories*.

⁵¹ Except direct carbon dioxide emissions from biogenic sources.

⁵² Other jurisdictions may use different data sets, methods, and years for their GHG emission inventories.

⁵³ As indicated from U.C. Berkeley’s *CoolClimate* Calculator. Outcomes from the consumption-based inventory analysis are presented at the per-household level because purchasing behavior is typically examined and analyzed at the household—not individual—level.

⁵⁴ *Taming Bigfoot* provides an easy interface with a carbon-footprint calculator designed to convert a number of common things you do to the amount of greenhouse gas they cause. The conversion factors used can be specified for specific local regions so the results apply to that specific region, rather than a broad average, as much as possible.

⁵⁵ CoolClimate Network. <https://coolclimate.berkeley.edu/>

⁵⁶ Energy Star Carbon Calculator. <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/understand-metrics/how>

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⁵⁷ ICLEI. Clearpath. <https://iclei.usa.org/clearpath/>

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⁵⁸ Clean Energy Transformation Act, May 7th 2019. <https://www.commerce.wa.gov/growing-the-economy/energy/ceta/>

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⁵⁹ “carbon neutral” is not the same as carbon free—this transitional goal allows for a mix of fuels including natural gas, and also allows for 20% of the portfolio to be addressed by a combination of taxes, energy credits, and innovation in new energy technologies to offset carbon in the utility’s portfolio.

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⁶⁰ Reducing GHG emissions from Hydrofluorocarbons. <https://app.leg.wa.gov/billssummary?BillNumber=1112&Year=2019&Initiative=false>

Section 3: Energy

⁶¹ Washington State Greenhouse Gas Emissions Inventory: 1990-2015. Report to the Legislature. December 2018. Publication No. 18-02-043. <https://fortress.wa.gov/ecy/publications/documents/1802043.pdf>

⁶² PSE: Our Diversified Electricity Supply. <https://www.pse.com/pages/energy-supply/electric-supply>

⁶³ Clean Energy Transformation Act, May 7th 2019. <https://www.commerce.wa.gov/growing-the-economy/energy/ceta/>

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⁶⁵ 100% Commitments in Cities, Counties, and States. Sierra Club Home Page. Accessed February 5th 2019. <https://www.sierraclub.org/ready-for-100/commitments>.

⁶⁶ https://www.bainbridgewa.gov/DocumentCenter/View/4949/COBI-General-Sewer-Plan-July-2015---TOC_Executive_Summary?bidId= page ES-15).

⁶⁷ For further details, visit <https://www.pse.com/green-options/Renewable-Energy-Programs/renewables-home>

⁶⁸ LEED (Leadership in Energy and Environmental Design) is an ecology-oriented building certification program run under the auspices of the U.S. Green Building Council (USGBC). Rating systems are available for new construction and major renovations as well as existing buildings. The four LEED certification level designations are Platinum, Gold, Silver and Certified. Regardless of the certification level achieved, all projects must meet mandated prerequisites and then choose from 110 available credit points to reach the desired certification level.

⁶⁹ For further details, visit <https://psebainbridge.com/current-projects>

⁷⁰ For further details, including PSE’s detailed needs assessment and solutions reports, visit <https://psebainbridge.participate.online/>

⁷¹ Examples of such programs include: 1) Real-time feedback on usage potentially leading to TOU (time of use) pilot program; 2) Smart Meters and other forms of demand management (electric vehicles, washing machines, hot water tanks, cooling); 3) customer-owned generation like roof-top solar to include assistance for condo associations to be supported in organizing projects; 4) Strong marketing campaign with local whitepapers of success; 5) A subsidized home energy efficiency retrofit program for low-income housing; and 6) Develop a tool kit and provide resources for homeowners to reduce energy use.

⁷² <https://www.energycentral.com/ec/achieving-resilience-through-renewables-driven-community-microgrids>

⁷³ <https://bainbridgeprepares.org/>

⁷⁴ Vehicle miles traveled per capita is calculated as the total annual miles of vehicle travel divided by the total population in a geographic region over a given period of time, typically a one-year period.

⁷⁵ Mode share is a transportation term that describes the number of trips, or %age of travelers, using a particular type of transportation (car, transit, bicycling, walking).

⁷⁶ Public transit is used to broadly mean services to encourage alternatives to single occupancy vehicles, and may include public-private partnerships and other solutions to offer more efficient transportation.

⁷⁷ <https://www.commerce.wa.gov/about-us/rulemaking/electric-vehicle-policies-and-laws/>

⁷⁸ <https://www.bainbridgewa.gov/708/Island-wide-Transportation-Plan-IWTP-Upd>

⁷⁹ <https://walkbikebainbridge.com/resources> .71% of respondents rated the biking environment on Bainbridge Island very or somewhat unsafe; and 48% rated the infrastructure for walking in the vicinity of their home as bad or very bad (though in-town got good ratings); 65% of parents of school-age kids said their kids would walk or bike to school more often if there were safe infrastructure between home and school.

⁸⁰ Data from other cities show that such networks must include separated or protected biking and walking lanes.

Section 4: Buildings

⁸¹ <https://www.governor.wa.gov/sites/default/files/documents/clean-buildings-policy-brief-bill-signing.pdf>

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⁸² Municipal buildings include buildings used for government related activities such as city halls, libraries, police stations, and schools that are over 5000 square feet. Residential buildings include single family homes, apartments, and condominiums. Commercial buildings include office buildings, warehouses, and retail buildings. Industrial buildings include buildings where products or materials are fabricated, assembled, or processed.

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⁸⁴ <https://aiaa.org/courses/power-zero-optimizing-value-next-generation-green>

⁸⁵ LEED (Leadership in Energy and Environmental Design) is an ecology-oriented building certification program run under the auspices of the U.S. Green Building Council (USGBC). Rating systems are available for new construction and major renovations as well as existing buildings. The four LEED certification level designations are Platinum, Gold, Silver and Certified. Regardless of the certification level achieved, all projects must meet mandated prerequisites and then choose from 110 available credit points to reach the desired certification level.

⁸⁶The Living Building Challenge is an international sustainable building certification program created in 2006 by the non-profit International Living Future Institute. <https://living-future.org/lbc/>

⁸⁷ <https://www.pse.com/rebates/home-energy-assessment>
<https://www.pse.com/rebates>

⁸⁸ Task Force shall consider at a minimum the following: 1) Upgrade building code to require “solar + storage readiness” of new buildings that have sufficient solar exposure including solar heating capacity; 2) Adopt a definition of what sized municipal projects and what residential and commercial remodels and additions would be required to adopt green building standards; 3) Amend the City’s land use and development codes to implement green building codes and adapt to climate impacts; 4) Change building code to include electric vehicle readiness; 5) Create “no net increase” water and energy standard to maximize water and energy efficiency and support improved water and energy efficiency of other projects such that there is no net increase Island-wide in water or energy use created by the new project; and 6) explore using low-carbon concrete and other low-carbon building materials.

⁸⁹ The Regional Code Collaborative built on the success of King County’s award-winning Sustainable Cities Program, a multi-jurisdictional group of planners and code officials from both within and outside of King County came together to leverage economies of scale in developing and updating green codes. <https://kingcounty.gov/~media/depts/dnpr/solid-waste/green-building/documents/regional-code-collaboration-white-paper.ashx?la=en>

⁹⁰ Example of programs including: Real-time feedback on usage potentially leading to TOU (time of use) pilot program and Smart Meters and other forms of demand management (EVs, washing machines, hot water tanks, cooling).

⁹¹ Additional community entities that are important partners include Master Gardeners, Fruit Club, Sustainable Bainbridge, Kitsap Conservation District, and Friends of the Farms. All of these groups are important partners that can help our community steward natural and agricultural resources under climate change.

Section 5: Natural Environment

⁹² <https://www.cakex.org/tools/climate-change-adaptation-certification-tool>

⁹³ Information such as, but not limited to: 1) Streams and wetlands data (e.g., Wild Fish Conservancy Stream Typing Data, Fish Culvert Passability data); 2) Bainbridge Island Climate Impact Assessment, Climate Change Adaptation Certification and other local source suggested climate data (e.g., sea level rise, precipitation, flooding, temperature, wildfire, slope stability) including mapping; 3) Tree health data; and 4) Ongoing surface and groundwater quality monitoring by the City’s Water Resources program and consultants.

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⁹⁴ This goal is focused on shoreline natural resources: shoreline infrastructure and buildings are addressed in other sections.

⁹⁵ A **foodshed** is the geographic area that produces the food for a given community. Local foodsheds can contribute to smaller carbon footprints by decreasing the distance over which food must travel from producer to consumer. Foodsheds can have ancillary benefits in terms of the quality and nutrient value of the food produced, as well as the freshness, which can cut down on food waste which is an additional contributor to greenhouse gas emissions.

Section 6: Waste

⁹⁶ <https://www.bainbridgewa.gov/DocumentCenter/View/6770/Procurement-Policy-Resolution-No-2019-10-?bidId=>, See section 4.5, Environmentally friendly purchasing.

⁹⁷ <http://www.sustainablebainbridge.org/bainbridge-island-zero-waste.aspx>

⁹⁸ <https://www.cakex.org/tools/climate-change-adaptation-certification-tool>

Section 8: Implementation

⁹⁹ Peter Plastrik, Joyce Coffee and John Cleveland, Innovation Network for Communities and Climate Resilience Consulting (July 2019).

Appendix

¹⁰⁰ Task Force shall consider at a minimum the following: 1) Upgrade building code to require “solar + storage readiness” of new buildings that have sufficient solar exposure including solar heating capacity; 2) Adopt a definition of what sized municipal projects and what residential and commercial remodels and additions would be required to adopt green building standards; 3) Amend the City’s land use and development codes to implement green building codes and adapt to climate impacts; 4) Change building code to include electric vehicle readiness; 5) Create “no net increase” water and energy standard to maximize water and energy efficiency and support improved water and energy efficiency of other projects such that there is no net increase Island-wide in water or energy use created by the new project; and 6) explore using low-carbon concrete and other low-carbon building materials.

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CITY OF
BAINBRIDGE
ISLAND

Police and Court Project

*Project Update and Investigation and Estimate for
LEED Silver certification*

June 2, 2020

Agenda

- Project Status Update
- LEED Silver Scorecard
- Cost estimates
- Carbon Footprint and Alternatives



Project Status Update

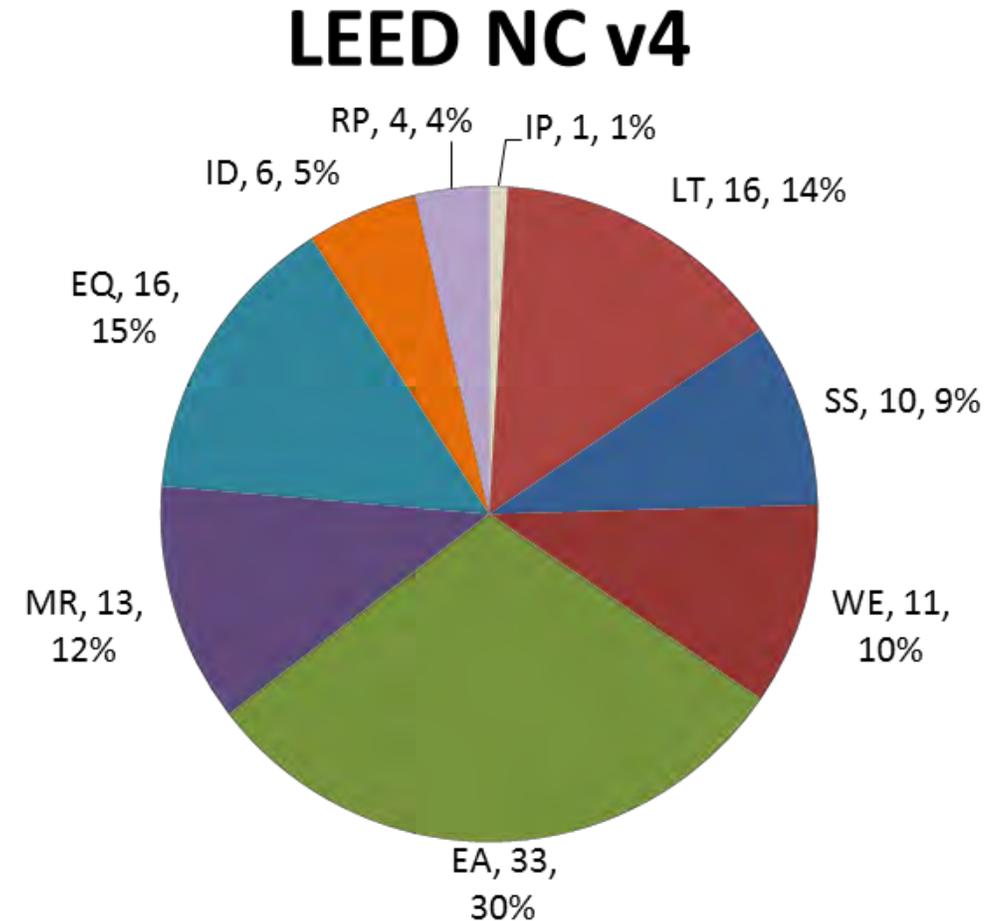
- Overall Project Budget \$20M
 - Building Purchase \$8.975M completed January
- Permitting and design in progress for conversion of existing building
- Ongoing Sustainability Discussions at City Council
 - October 2019
 - Council was presented with sustainable features of existing building increased standards for planned renovations.
 - Council directed Staff to work to achieve environmental efficiencies for the building without pursuing LEED certification.
 - December 2019
 - Council was presented with options for pursuing sustainable certification.
 - Directed staff to return with analysis for increasing the project budget by \$800,000 to achieve LEED Gold certification
 - January 2020
 - Council presentation on LEED Certification Process
 - Preliminary Analysis of Proposed Project and Options
 - Council directed City Manager to bring back a professional services agreement to hire a consultant to investigate LEED certification.

Project Next Steps

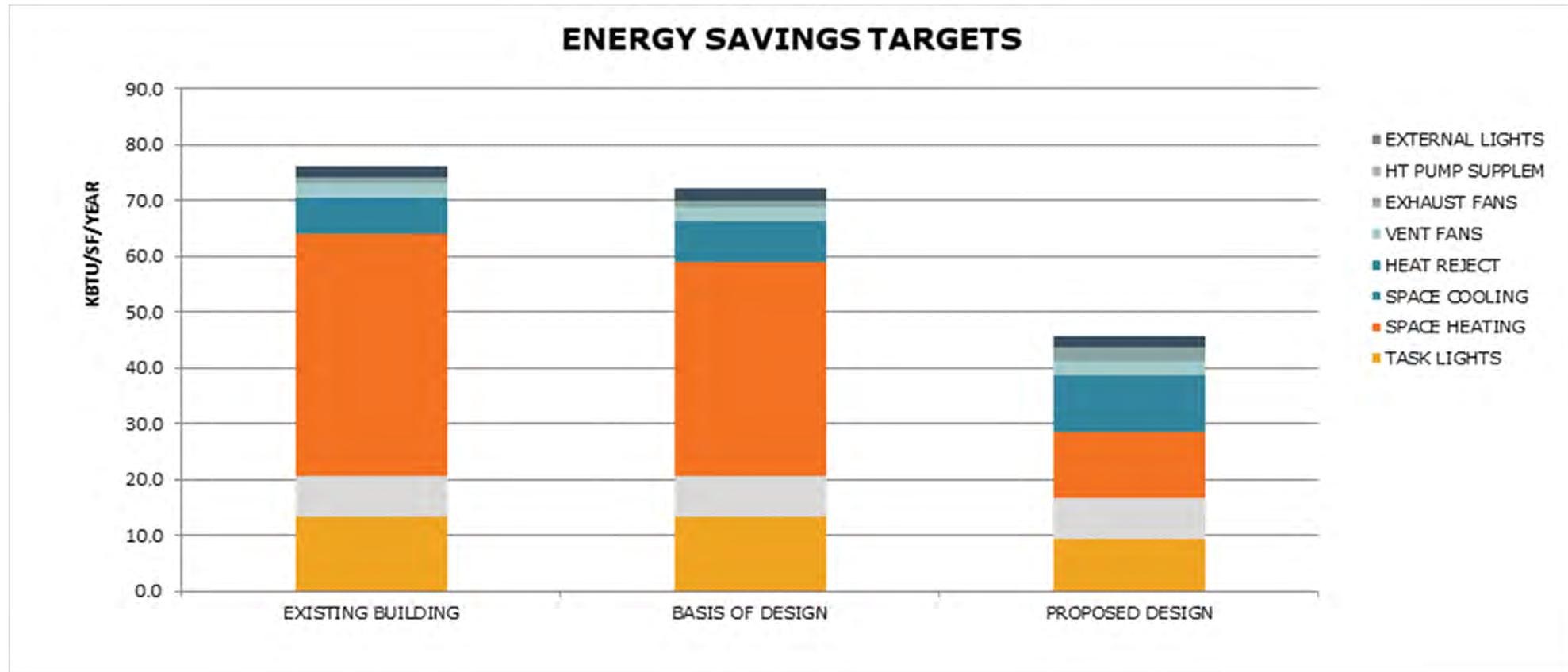
- Design Review Board approved project at May 18th meeting
- Complete Project Review with Planning Commission and Hearing Examiner
- Design Development
 - Finalize sustainability decision
 - Complete construction drawings
- Submit Building Permit Application
- Solicit Construction Bids
 - Bring contract to City Council for approval of award
- Projected construction period 12-18 months after award

What does it mean to 'go LEED'?

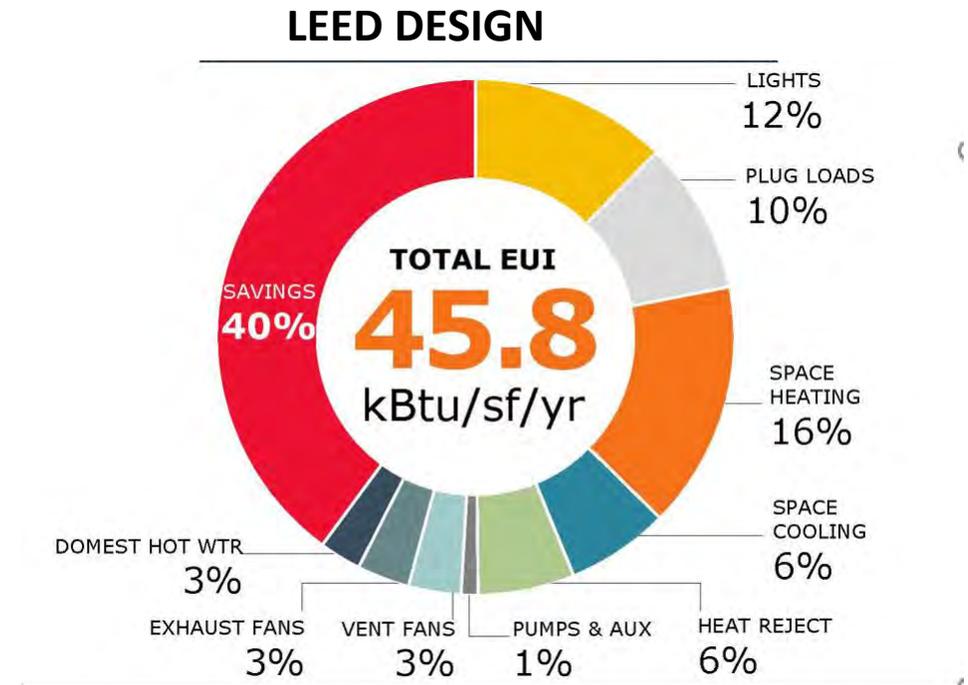
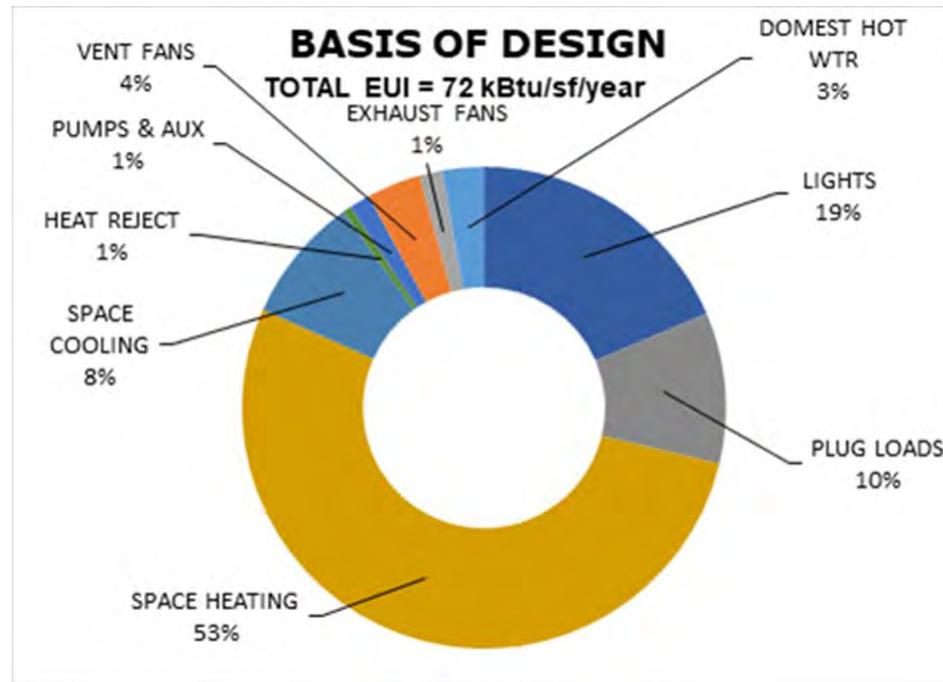
- New LEED v4 is a higher bar
- Must address energy efficiency
- Limitations with Harrison building
- Opportunities to address embodied carbon
- All categories require investment to achieve LEED certification



Energy Use Comparison



Energy Savings Comparison



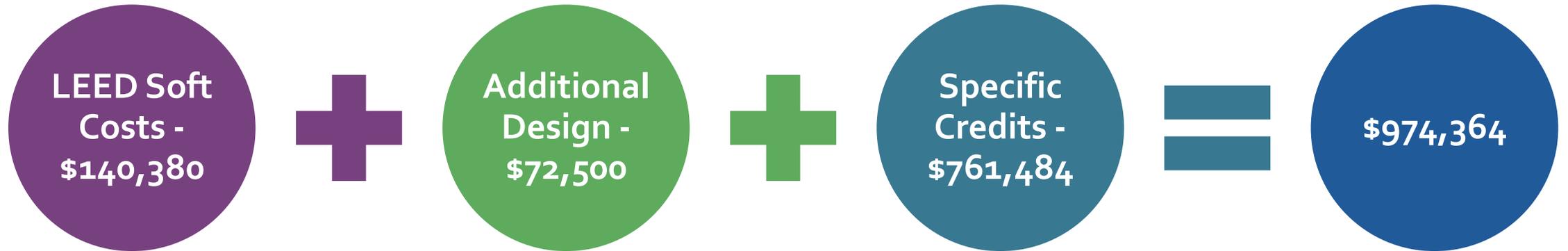
Required soft costs for LEED

Soft costs for LEED	
Registration, Certification, and Plaque	\$6,650
Fundamental Commissioning	\$30,000
Energy Modeling and related documentation	\$49,500
LEED Project Management	\$45,870
Other Consultant Documentation	\$8,360
Total	\$140,380
Additional design fees	\$72,500

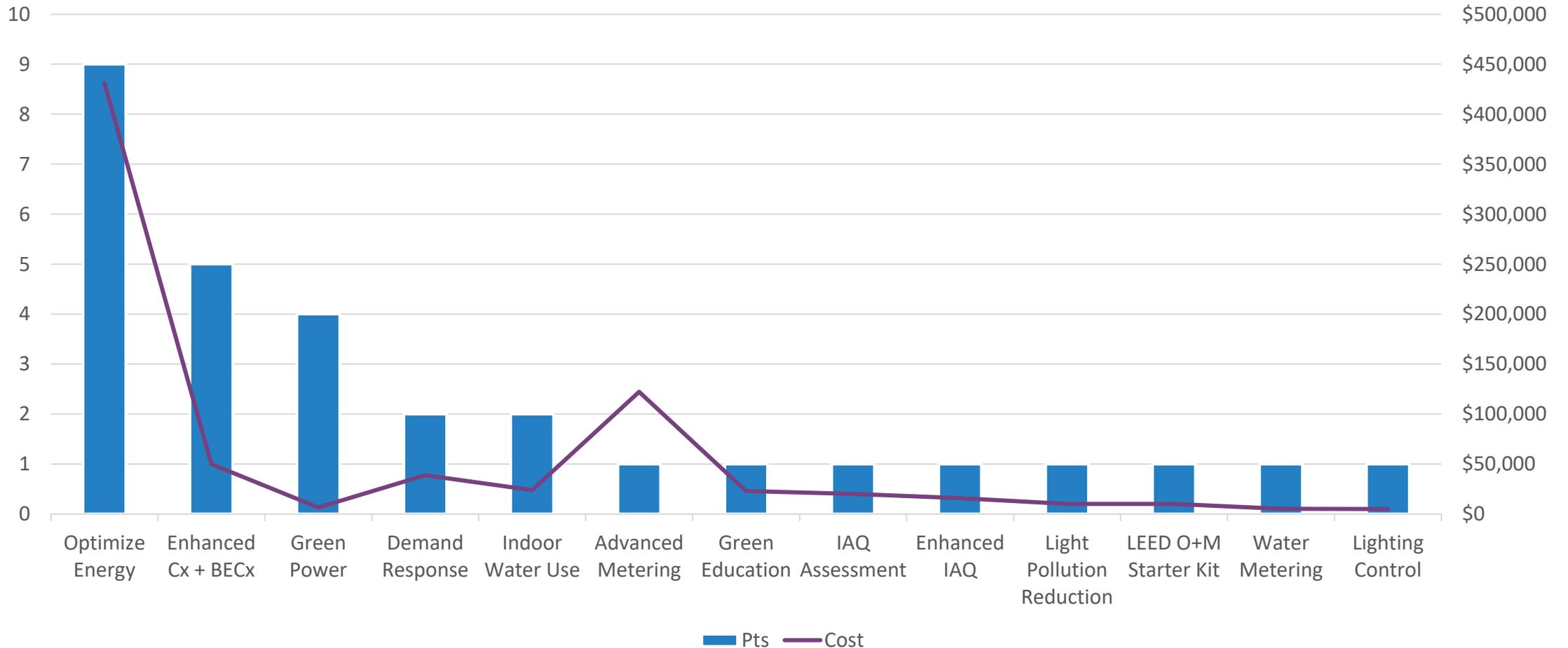
Additional costs for LEED credits to reach Silver

Likely, cost additive credits	Pts	Costs beyond current design
Light Pollution Reduction – replacing 5 fixture heads	1	\$10,085
Indoor Water Use Reduction - High efficiency fixtures	2	\$23,931
Water Metering	1	\$5,279
Enhanced Commissioning - Systems Commissioning	3	\$18,000
Enhanced Commissioning - Envelope Commissioning	2	\$31,900
Optimize Energy Performance - VRF (and Thermal Comfort)	9	\$431,118
Advanced Energy Metering	1	\$114,687
Demand Response	2	\$38,713
Green Power	4	\$6,500
Enhanced IAQ - CO2 Monitoring	1	\$15,873
IAQ Assessment	1	\$20,000
Interior Lighting - Lighting Control	1	\$5,000
Innovation - Green Building Education	1	\$23,000
Innovation - LEED O+M Starter Kit	1	\$10,000
Total	30	\$761,484

Total Cost Increase for LEED



Largest Investment and Points = Better performance



***Approximate Annual Electrical Cost Savings of \$12,300, or approximately \$246,000 over life of system**

Suite of LEED Benefits



Reduce Operational Carbon

- Optimize Energy Performance
- Enhanced System and Envelope Commissioning
- Advance Metering (Energy and Water)
- Demand Response/Grid Harmonization
- Indoor Water Use Reduction



Occupant wellbeing

- Thermal Comfort
- CO2 Monitoring
- IAQ Testing
- Lighting Control



Environmental Stewardship

- Indoor Water Use Reduction
- Light Pollution Reduction
- LEED O+M Starter Kit (Green Cleaning, Integrated Pest Management)
- Demand Response/Grid Harmonization

Carbon Footprint

	EUI	Annual Total (kBTU)	Annul Carbon (Lb-CO2e)	Annual Carbon (Metric Tons-CO2e)	15 Years
Basis of Design energy use	72.0	1319544	384,013	174	2610
Proposed LEED energy use	45.8	839377	244,275	110	1650
Difference	26.2	480167	139,738	64	960

Building Square Feet = 18327

PSE Grid carbon conversion factor = 993 lbs CO2e/MWh

According to the Union of Concerned Scientists – Average American contributes 14.6 Tons of CO2e per year

Alternatives to LEED

Install 120 kW photovoltaic system elsewhere on Bainbridge Island

- 8500 Square Feet
- At \$3 installed watt = \$360,000 installation cost
- Estimated generation of 139,200 kWh per year
- Offset ~ 64 Tons CO₂e/year



Alternatives to LEED

Purchase carbon off-sets

- Purchased at market rates
- Approximately \$56/ton
- Offset ~ 64 Tons CO₂e/year
- Annual cost approximately \$3584
- System lifetime estimated cost \$71,680



Existing Building Features

- Beneficial re-use of existing Medical Building Constructed in 2014
 - Limited changes planned to current building shell
 - Meets 2012 Washington State Energy Code
 - Insulation: Roof R-12 and R-38, Walls R-21
 - Doors and Windows: $U=0.37$
 - Roof reflectivity
 - Green Stormwater Infrastructure
 - Rain garden
 - Permeable pavement
 - Stormfilter system
 - Protection of existing wetland
 - Proximity to public transit and non-motorized facilities

Basis of Design for Interior Renovation

- Comply with 2015 Washington State Energy Code
 - Occupancy and daylight sensing lighting controls
 - Programmable controls
 - High-efficiency fixtures
- Indoor water use efficiency (ASHRAE Standard 189.1)
 - Low-flow fixtures
 - Potential reduction of water service due to reduced fixture count
- Efficient HVAC controls (ASHRAE Standard 90.1)
 - Programmable DDC controls
 - Occupancy and equipment runtime schedules
 - Temperature setpoint controls
 - Minimum outside air requirements

Remember the big picture

- Walking the talk
- Demonstration
- Support City goals
- Legacy
- Regional leadership
- Federal Gov't – GSA LEED Silver or Green Globes (2 globes)
- King County – LEED Platinum
- City of Seattle – LEED Gold
- City of Everett – LEED Silver
- City of Bellingham – LEED Silver
- Other cities with LEED requirements, incentives, programs – Shoreline, Renton, Mill creek, Issaquah...



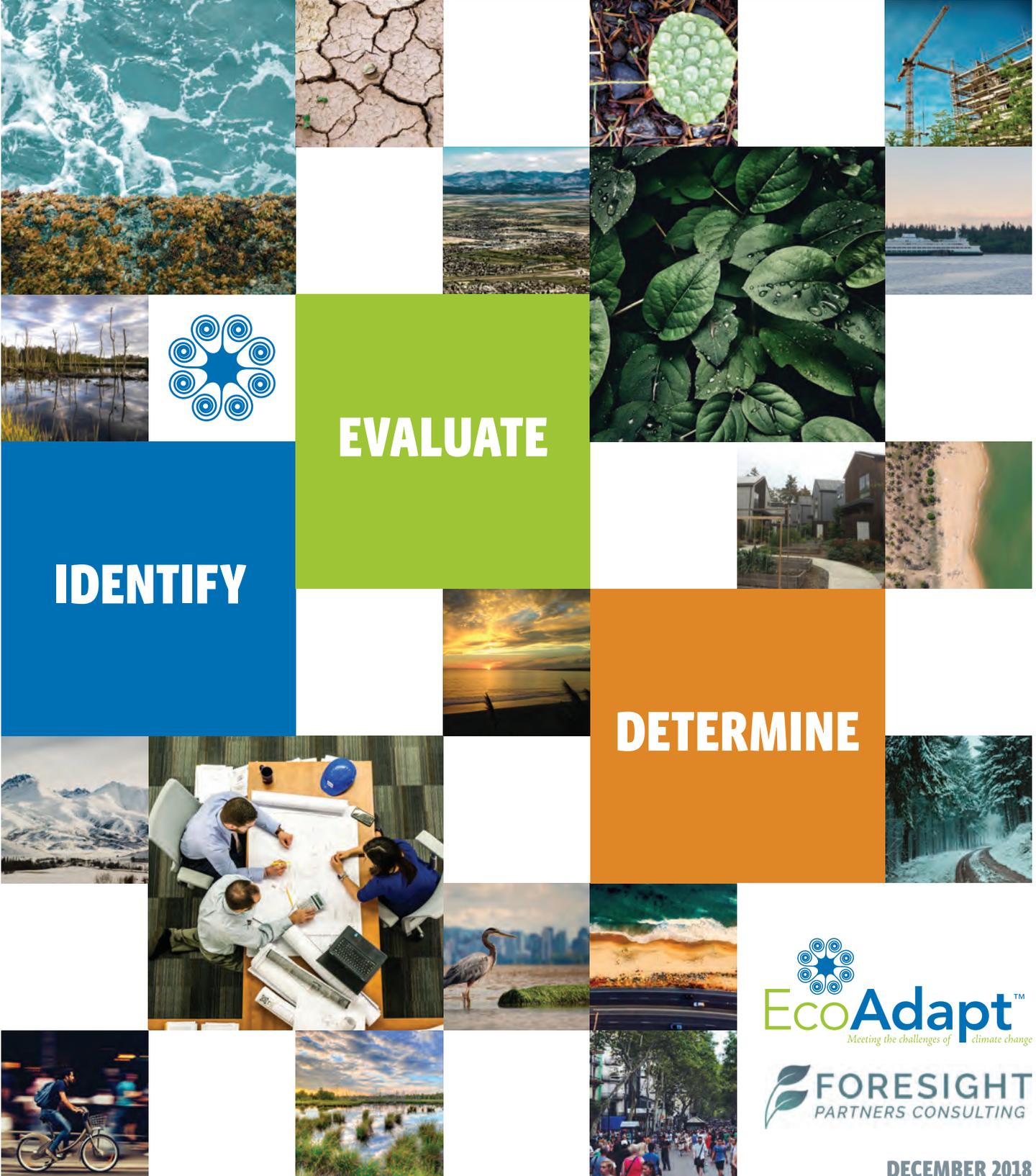
Thank you

Elizabeth Powers

Elizabeth@obrien360.com



Climate Change Adaptation Certification Tool: Moving communities from planning to implementation



EVALUATE

IDENTIFY

DETERMINE


EcoAdapt™
Meeting the challenges of climate change

 **FORESIGHT**
PARTNERS CONSULTING

DECEMBER 2018

Climate Change Adaptation Certification Tool

Climate change has implications for both the effectiveness and hazard potential of many of the projects undertaken by local and regional governments today. Failing to properly evaluate the potential vulnerability of any project prior to approval can lead to missed opportunities to improve design, optimize siting or avoid risk.

The **Climate Change Adaptation Certification (CCAC) Tool** is for use during regulatory or procedural review processes being carried out as a matter of regular, ongoing community business. It is recommended that the CCAC become embedded as a regulatory requirement; alternatively, the CCAC could be a discretionary review tool used to evaluate an idea and inform all parties of expected impacts from a changing climate on a project during its lifecycle. Potential liabilities associated with a course of action could be identified prior to permitting or funding, which should enable decision makers to drive climate savvy and sustainable choices.

Using the CCAC will enable community services, infrastructure, ecosystems (and thereby local economies) to better anticipate and respond to climate change impacts by protecting public funds from climate risk or future community exposure to risk under altered conditions.

What “project” should apply the CCAC?

The CCAC should be applied to any decision that uses public funds, has a life cycle of greater than five years and can impact public good. This includes, but is not limited to:

- Fiscal Expenditures
- Capital Planning
- Permitting
- Infrastructure Design and Siting

The objective of applying the CCAC to these decisions is to:

- Explicitly evaluate the implication of future conditions on project function and longevity
- Understand the long-term sustainability of a project at the funding or permitting phase
- Reduce community risk from actions today that become a liability under future conditions

Who should apply the CCAC?

The CCAC can be used by local government, elected officials, businesses and individuals to enable climate savvy decision making. The CCAC informs any proponent of a publicly funded capital project, fiscal decision or privately-funded development of the climate change risks faced by the project, and to guide them toward reducing that risk.

The CCAC process includes the following:

STEP 1: Identification of Climate Change Risk Factors

Completing this step will identify if climate change impacts could affect a project over its lifetime. Step 1 provides a series of impact indicators that steer a proponent to think about how eight anticipated change factors have the potential to affect a project area. If any indicator is marked as present, then the change factors could be relevant to a project’s long-term success. Therefore, it will have a “Yes” for that factor, requiring Step 2.

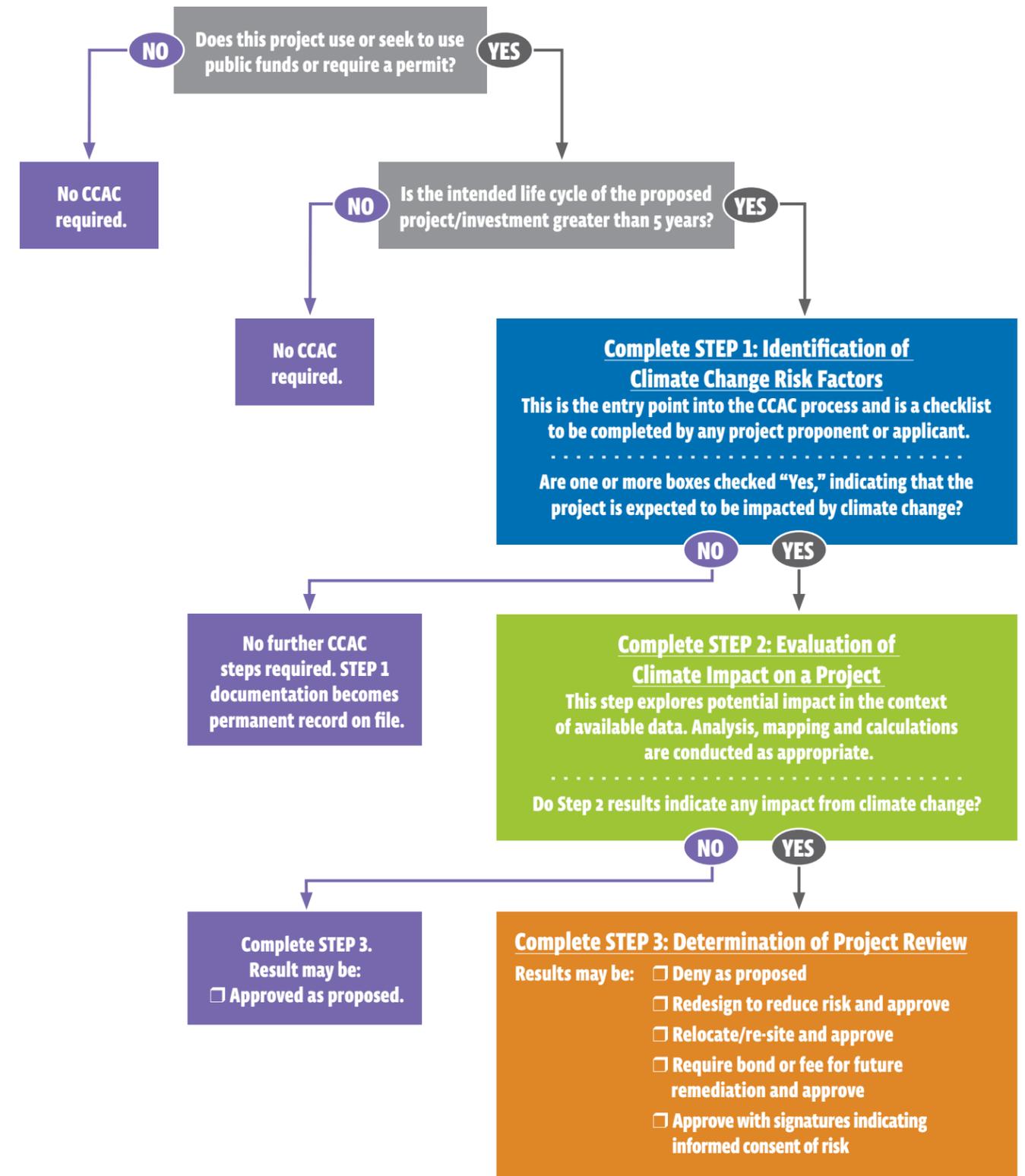
STEP 2: Evaluation of Climate Impact on a Project

If Step 1 detects likely impacts from climate change risks to a project area, then Step 2 asks a project proponent to dive deeper into existing climate data. Narratives, mapping and calculations will be sought to evaluate the project relative to future conditions and assess whether, as proposed, the project will involve (and should therefore avoid) future risk. Results of Step 2 are used by decision makers in Step 3 to inform a determination for the project.

STEP 3: Determination of Project Review

The CCAC review steps should allow a project to move forward only when it is expected to function sustainably over time; in other words, if it has avoided, minimized or mitigated future negative performance. A project should only proceed when awareness and accountability of risk is accepted. Thereby, a community will not be blindly on the hook for the costs to replace, retrofit, decommission or litigate responsibility for future damage, harm or poor project performance. Step 3 provides evidence that responsible parties are aware of climate change impacts and implication to the project they are either allowing or undertaking.

Climate Change Adaptation Certification (CCAC) Pathway to Climate Savvy Planning



STEP 1: Identification of Climate Change Risk Factors

STEP 1 will determine applicability of further CCAC review of a project. It should be completed by a project proponent with review by the appropriate project review authority.

Climate Change Risk Factors	<ul style="list-style-type: none"> Identify if the following issues could affect the project over its lifetime. Check all that apply. If one or more of these boxes is checked, check YES in Column 3. 	Climate Change Risk Identified For
PRECIPITATION Changing patterns will result in different and greater extremes, duration, and intensity.	My project or access to it: <ul style="list-style-type: none"> involves proper sizing of stormwater infrastructure to treat and accommodate run-off. involves diversion or impoundment of surface water. involves culverts, bridges, retaining walls or other structures within a riparian area to convey water or prevent flooding. relies on a predictable and reliable water supply. is within or near a mapped flood zone. is affected by nuisance, localized or chronic flooding that is known generally to occur, though not mapped. may be vulnerable to erosion or landslides. relies on a predictable, reliable, and affordable power supply and other utilities. is located within a Wildland-Urban Interface boundary or may be vulnerable to wildfire. relies on sanitary sewers or community/private septic systems. intersects with the multimodal transportation system. other possible effects of precipitation changes (attach information and explanation). 	PRECIPITATION <input type="checkbox"/> YES <input type="checkbox"/> NO
TEMPERATURE Changes will include more extremes and prolonged highs or lows.	My project or access to it: <ul style="list-style-type: none"> relies on a predictable and reliable water supply. may be vulnerable to wildfire. uses energy generated by fossil fuel combustion (on site or from a power utility). will have a maintenance budgets for repairs and replacements. relies on good air quality. intersects with the multimodal transportation system. involves habitat creation, restoration, or enhancement that relies on current temperature levels for successful implementation. other possible effects of temperature changes (attach information and explanation). 	TEMPERATURE <input type="checkbox"/> YES <input type="checkbox"/> NO
SEA LEVEL RISE Relative sea level changes will result in intermittent or permanent inundation.	My project or access to it: <ul style="list-style-type: none"> is located within the coastal zone. relies on a stable shoreline. is within or adjacent to a mapped flood zone. is within or may be affected by an area known to be vulnerable to flooding. involves dock or harbor infrastructure. relies on groundwater that may suffer from saltwater intrusion over time. requires healthy and properly functioning tidal marsh, estuaries, or other tidal ecosystems. relies on proper functioning of a sanitary sewer system regulated by the National Pollution Discharge Elimination System (NPDES). relies on a septic system that is within or near the coastal zone. intends to enhance tidal ecosystems. other possible effects of sea level rise (attach information and explanation). 	SEA LEVEL RISE <input type="checkbox"/> YES <input type="checkbox"/> NO

Climate Change Risk Factors	<ul style="list-style-type: none"> Identify if the following issues could affect the project over its lifetime. Check all that apply. If one or more of these boxes is checked, check YES in Column 3. 	Climate Change Risk Identified For
VEGETATION CHANGES Long-term temperature and precipitation changes will cause shifts in regional vegetation.	My project or access to it: <ul style="list-style-type: none"> could be affected by changes in vegetation. could be affected by changes to transportation corridor buffers and impacts to roadways (brush fires, deadfall, water flow, etc.). could be affected by increased fuel load and wildfire risk (e.g., potential for dead-wood and detritus as die-off occurs increasing the fuel load and risk for wildfires). has energy demands for heating and cooling that could increase if the percentage of tree-cover/canopy changes. other possible effects of vegetation changes (attach information and explanation). 	VEGETATION CHANGES <input type="checkbox"/> YES <input type="checkbox"/> NO
SLOPE STABILITY Sea level and precipitation changes compromise once stable slopes.	My project or access to it: <ul style="list-style-type: none"> relies on the integrity of nearby slopes. proposes development or investment on or near a slope. other possible effects of slope instability (attach information and explanation). 	SLOPE STABILITY <input type="checkbox"/> YES <input type="checkbox"/> NO
OCEAN ACIDIFICATION Changes in ocean pH will have implications on permitted discharge and ocean health.	My project or access to it: <ul style="list-style-type: none"> relies on sanitary sewer that is subject to a NPDES permit. relies on or affects shellfish within our local water. other possible effects of ocean acidification (attach information and explanation). 	OCEAN ACIDIFICATION <input type="checkbox"/> YES <input type="checkbox"/> NO
POPULATION CHANGES Climate migration and regional population changes may have local/regional implications.	My project or access to it: <ul style="list-style-type: none"> relies on a stable population. is designed and built to serve the current population. could be adversely affected if population were to increase or decrease in our region. could be affected by future climate migrants. other possible effects of population changes (attach information and explanation). 	POPULATION CHANGES <input type="checkbox"/> YES <input type="checkbox"/> NO
GREENHOUSE GAS EMISSIONS Mitigation of future greenhouse gas emissions and fossil fuel dependence are driven in part by local/regional permitting decisions.	My project or access to it: <ul style="list-style-type: none"> does not take cars off the road or decrease idling times. neither improves nor increases access to non-motorized transportation options. is dependent on fossil fuel and does not use renewable energy sources sufficient to cover demand. other possible effects of greenhouse gas emissions (attach information and explanation). 	GREENHOUSE GAS EMISSIONS <input type="checkbox"/> YES <input type="checkbox"/> NO

CHECK ALL YOUR "YES" FACTORS			
<input type="checkbox"/> PRECIPITATION	<input type="checkbox"/> SEA LEVEL RISE	<input type="checkbox"/> SLOPE STABILITY	<input type="checkbox"/> POPULATION CHANGES
<input type="checkbox"/> TEMPERATURE	<input type="checkbox"/> VEGETATION CHANGES	<input type="checkbox"/> OCEAN ACIDIFICATION	<input type="checkbox"/> GREENHOUSE GAS EMISSIONS
<ul style="list-style-type: none"> For each Climate Change Risk Factor that indicated "YES" to climate risk, evaluation of the project is now required. Proceed to STEP 2 and answer each Evaluation Question marked as Required. If you did not check any "YES" factors, no further CCAC steps are required. STEP 1 documentation becomes permanent record on file. 			

STEP 2: Evaluation Questions

G Evaluate project connection to multimodal transportation.

Provide a narrative review explaining how motorized and non-motorized transit will be influenced by your project. Will non-motorized and/or public transit be increased or supported by this project (e.g., creation of bike lanes, sidewalks, or non-motorized paths)? Will this project increase automotive miles driven or idle times?

RESULT:

- Project will facilitate multimodal transportation.
- Assessment indicates no accommodation of multimodal transit.
- Assessment indicates that multimodal transit could be accommodated by:

I Evaluate project connection to a healthy ocean environment.

Provide a narrative review explaining your project as it relates to:

- Marine discharge permits. Altered seawater pH may adversely affect compliance if discharge cannot be adjusted under these changing water chemistry conditions.
- Locally managed or harvested shellfish and whether the decline in shellfish populations affect your project or deem it unsustainable.
- Any other marine activities that affect or are affected by altered pH or related water chemistry changes.

RESULT:

- Project unaffected by changes in ocean chemistry.
- Assessment indicates climate change risk to project that cannot be avoided.
- Assessment indicates climate change risk to the project, but risk could be minimized by (explain here or in attachment):

H Evaluate project area susceptibility to wildfire.

1. Map your project's proximity to the Wildland Urban Interface and/or wildfire hazard areas. Overlay the following data layers on your project area:

- Regional or local GIS layers showing Wildfire Hazard Area or any available wildfire risk mapping

2. Provide a narrative review demonstrating your understanding of how long-term temperature and precipitation trend changes may cause shifts in vegetation and habitats affecting your project area's vulnerability to wildfire.

RESULT:

- Project unaffected by wildfire risk.
- Assessment indicates climate change risk to project that cannot be avoided.
- Assessment indicates climate change risk to the project, but risk could be minimized by (explain here or in attachment):

J Evaluate the connection between the project and local and regional population.

Provide a narrative review explaining how your project will function over time relative to population change. Will either increases or decreases (possibly due to climate migration) affect the long-term success of your project? Do your anticipated outcomes depend on certain local or regional population statistics?

RESULT:

- Project unaffected by population.
- Assessment indicates climate change risk to project that cannot be avoided.
- Assessment indicates climate change risk to the project, but risk could be minimized by (explain here or in attachment):

STEP 3: Determination of Project Review

STEP 2 results indicate climate change risk to the project during its expected life cycle. Complete STEP 3 to decide conditions of approval.

1. **Proponents assessment** of the proposed project under future conditions:

2. **Staff assessment** of the proposed project under future conditions (include reference to any existing local, regional, and state natural hazard vulnerability assessments, climate vulnerability assessments, and/or climate action plans):

3. **CCAC Determination:**

Project approved as proposed. Low risk from future climate conditions.

Project denied. High risk that cannot be minimized or avoided with project alterations.

Project redesigned to reduce risk and approved.

- Explain how risk was reduced due to the components of the redesign.

Project relocated/sited in alternate location and approved.

- Explain how risk was reduced because of this move. Explanation should include a review of new site to ensure vulnerabilities do not exist at the new location.

Project approved with conditions. Applicant required to assume responsibility for anticipated future remediation necessitated due to permitting/funding/approving this now despite the known vulnerabilities.

- Bond required in the amount of \$_____.
- Fee required in the amount of \$_____.
- Explain and document the expected remediation.

Project approved with informed consent regarding the risk.

- Describe the risk.

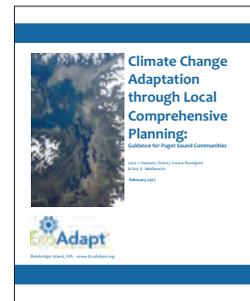
Project Review Authority
Name:
Date:

Project Proponent
Name:
Date:

Climate Change Adaptation Certification Resources and Acknowledgments

EcoAdapt and Foresight Partners Consulting developed the Climate Change Adaptation Certification project, process, and 3-Step Tool in order to advance nascent local conversations around climate change adaptation to tangible implementation actions. This work began in the Puget Sound region of Washington where they also developed guidance for anyone wanting to understand why and how to incorporate climate considerations into local Comprehensive Planning—addressing planning for both adaptation and mitigation. This guidance is also available:

Climate Change Adaptation through Local Comprehensive Planning: Guidance for Puget Sound Communities.
Hansen, L.J., S.J. Nordgren and E.E. Mielbrecht. 2017. EcoAdapt. Bainbridge Island, WA.
www.CAEx.org/documents/climate-change-adaptation-through-local-comprehensive-planning-guidance-puget-sound-communities



The Climate Change Adaptation Certification Tool was developed to support communities beyond planning—helping them implement their updated Comprehensive Plan. Using this 3-Step CCAC Tool for rapid implementation of climate savvy planning goals and policies will enable community services, infrastructure, ecosystems, and economies to better anticipate and respond to the effects of climate change.

We would like to thank Jennifer Sutton (City of Bainbridge Island), James Rufo Hill (Seattle Public Utilities) and James B. Hansen (California Fish and Wildlife) for their time and insight as reviewers of this tool and its applicability to planning processes across a variety of circumstance.

In order to make this product useful and used, the authors surveyed community adaptation efforts and interviewed local, regional, and state employees around the Puget Sound to identify regulatory or discretionary processes already in place where one could integrate climate change adaptation into permitting—something beyond planning goals and policies. We would also like to thank (in alphabetical order) all those who took the time to inform us through interviews, including Mike Burnham (Thurston Regional Planning Council), Eileen Canola (Snohomish County), Christy Carr (City of Bainbridge Island), Ryan Dicks (Pierce County), Lisa Dulude (Snohomish County), Gary Idleburg (Washington State Department of Commerce), Jennifer Lee (Puget Sound Partnership), Kelly McGourty (Puget Sound Regional Council), Tracy Morgenstern (City of Seattle), Phillip North (Tulalip Tribes), Allison Osterberg (Thurston County), Joyce Phillips (City of Olympia), Jennifer Pouliotte (Puget Sound Partnership), Carol Lee Roalkvam (Washington State Department of Transportation), Dara Salmon (Snohomish County), Joseph Tovar (Tovar Planning), Lara Whitely-Binder (King County), and Manuela Winter (Snohomish County).

Sample resource they shared included:

- Washington State Department of Transportation (WSDOT)—Guidance for Project-Level Climate Change Evaluations for NEPA and SEPA demonstrates how WSDOT should address climate change in its environmental documents/reviews
- King County—Sustainable Infrastructure ScoreCard used to meet the requirements of Seattle's Green Building and Sustainable Development Ordinance
- Seattle Public Utilities—Stage Gate process used internally by employees during project development
- Snohomish County's Puget Sound Initiative—Climate Change Decision Support Tool used by public works employees to consider climate change related impacts in their own project planning

This project was made possible by generous support from:



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EcoAdapt provides support, training, and assistance to make planning and management less vulnerable and more Climate Savvy. EcoAdapt, founded by a team of some of the earliest adaptation thinkers and practitioners in the field, has one goal—creating a robust future in the face of climate change. We bring together diverse players to reshape planning and management in response to rapid climate change. www.EcoAdapt.org



Foresight Partners Consulting works to build societies' capacity to proactively address the effects of a changing climate. We work with practitioners to help them incorporate climate change considerations into programs, planning, and decision-making processes. We specialize in comprehensive community planning for climate change · hazard mitigation planning · philanthropic program strategy development and portfolio review. www.ForesightOnline.org

February 3rd CCAC/UAC/PSE Meeting: Next Steps (March 7th, 2020)

The Bainbridge Island Climate Change Advisory Committee (CCAC) and Utility Advisory Committee (UAC) had a meeting with Puget Sound Energy (PSE) on Monday February 3rd. The purpose of the meeting was to discuss issues that are important for the Climate Change Advisory Committee (CCAC) to understand as they develop the Climate Action Plan (CAP) and for the UAC as do their work.

The meeting was attended by seven representatives from the CCAC, two representatives from the UAC, and six representatives from PSE. There were also three Bainbridge Island City Council members present. There was discussion on five topics with 10 minutes of opportunity for public comments. Based on the discussions at the meeting, we are proposing several next steps.

1. Meet in late-March to discuss the possibility of using Green Power funds for Island projects

- Several committee and City Council members expressed a desire to explore the possibility of using the funds that Islanders contribute to PSE's Green Power.
- In line with social equity requirements set forth in WA State's new Clean Energy Transformation Act (CETA), equity in these programs will be of importance to gain Island residents' support.

Next Steps/Timeline

- Convene an in-person meeting (or bay phone) with select CCAC members, City Council CCAC liaisons, and PSE representatives to discuss the potential barriers and opportunities.
- **A goal is to convene meeting for late-March on Bainbridge Island.**

2. Meet in early-April to explore battery storage strategies for the Island including how to ensure the 12 emergency hubs have power during emergencies.

- We discussed briefly the idea of "micro-grids" and touched on battery storage and PSE's plans to have up to 3 MW of power for peak loads and emergencies in batteries.
- We would like to explore the possibility of additional battery storage potential, possibly decentralized, and how this could work in conjunction with Bainbridge Island Prepares.

Next Steps/Timeline

- Meet in person in **early to mid-April** with CCAC members, Bainbridge Prepares personal, and PSE representatives to discuss battery storage technology and how we can work together to ensure the 12 emergency hubs have power generation capabilities.
- If it was deemed appropriate include some discussion at the mid-June public meeting.

3. Also, meet in early-April to discuss solar for homes and EV charging stations

- We talked briefly about these topics at meeting but we would like to explore these in more detail.
- We would like to learn about any programs where PSE can assist homeowners to obtain solar for their homes.
- We are also interested in exploring any programs where PSE could finance the installation of EV chargers.

Next Steps/Timeline

- Discuss at the same meeting discussed in item #2 above.
- We would discuss if it was possible to include this in the mid-June public meeting.

4. Public Meeting in Mid-June to discuss the PSE Energy Conservation and Demand Response Program on Bainbridge Island

- PSE has indicated they will be launching a new energy conservation and demand response program on Bainbridge Island.
- The goal is to decrease demand by 3.3 MW. This would require engaging a sizeable portion of the Community.
- We would like to work with PSE to prompt the program across the Island via our different organizations and partner with the City to meet the challenge of reducing demand.
- We would also like to explore the possibility of expanding the goal to decrease demand by a much greater amount to help with the CCAC climate action plan goal.

Next Steps/Timeline

- **Meet in mid to late-March via phone to organize the public meeting.**
- Hold the public meeting in mid-June.
- The purpose of the public meeting is to provide information to the Committees and public on the program and strategize how to prompt the program.

5. PSE Follow-up Questions

- Does PSE intend to continue and intensify their green power, solar choice, and local generation programs in the context of CETA to (partly) achieve CETA, or will these efforts continue as they are *in addition* to CETA?
- Do current UTC rules allow for IOUs to develop and administrate voluntary programs like the FIT or "donor models" for parts of their service territory?
- May CETA change any of these rules in the future?
- Would such voluntary program contribute to PSE's IRP or be in addition to it?
- What is the total PSE turnover for BI residents and businesses?
- What surcharge (in % on absolute \$\$) would be needed to provide meaningful financial incentives for local renewables generation on the island?
- How could this longer-term target impact PSE's shorter-term target to increase reliability by deployment of a centralized vs. decentralized battery solution?