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AGENDA

- 5:30 CALL MEETING TO ORDER/ROLL CALL/ACCEPT OF MODIFY AGENDA/CONFLICT OF INTEREST DISCLOSURE
- 5:35 APPROVE DECEMBER 16TH MINUTES
- 5:40 PUBLIC COMMENT
- 5:50 CCAC/UAC SUBGROUP REPORT ON PSE FRANCHISE AGREEMENT (ATTACHED)
- 6:10 WASTEWATER TREATMENT PLANT OVERFLOW (ATTACHED)
- REQUEST FROM CITY COUNCIL TO WORK WITH UAC TO ADDRESSING SEVERAL ISSUES RELATED TO WWTP OVERFLOW (FORM A SUBGROUP WITH UAC)
- 6:30 CLIMATE ACTION PLAN
- STATUS OF ROAD MAPS (ATTACHED)
- GREENHOUSE GAS INVENTORY
- COMPOSTING MESSAGE
- DOWNLOAD FROM JANUARY 13TH AND 23RD COMMUNITY MEETINGS
- 6:50 FEBRUARY 2ND CITY COUNCIL STUDY SESSION
- RECOMMENDATIONS ON POLICE/COURT BUILDING
- RECOMMENDATIONS ON PSE FRANCHISE AGREEMENT
- 2020 PROGRESS REPORT AND 2021 WORKPLAN (ATTACHED)
- 7:05 OTHER
- DOE CONNECTED COMMUNITY GRANT
- 7:30 ADJOURN

Materials

1. December minutes
2. CCAC/UAC Report on PSE Franchise Agreement
3. Memo from City on WWTP overflow
4. Status of Road Maps
5. 2020 Progress Report and 2021 Workplan

CLIMATE CHANGE ADVISORY COMMITTEE
Regular Meeting
Wednesday, December 16, 2020

Minutes

Present: Committee members Derik Broekhoff, Michael Cox, Julie Matthews, David McCaughey, Deborah Rudnick, Gary Lagerloef, Jens Boemer

Council Liaison: Joe Deets

City staff: Ron Logghe, temporary support in place of Ellen

Public/guests/observers: Andy Swayne, Kierra Phifer, PSE, Nichoas Shiach

The meeting was called to order at 5:33 pm.

No conflict of interest disclosures.

Minutes from the previous meeting (November 18, 2020) were moved to approve by Julie and seconded by David, approved by all.

Public Comment

Joe had to leave early and left us a message to go forth and conquer. No other comments.

Police/Court Building Discussion

Mike summarized the process to date regarding the City's request for us to evaluate potential offsets for the police building that would account for not pursuing LEED silver status (ca. 64MT per year; or, GBTF recommendations for green building standards per the recommendations). See attached document for recommendations of CCAC and GBTF. Gary asked whether the City hall roof purchase of the solar system could be part of this asset- but Mike and Derik reiterated the idea that the steps should be additive, not what is already happening. Joe added that the city made the conscious choice to buy the system; and that the RECs were not sold, so their retirement could not really be used as an additive offset. Mike also clarified that the GBTF will be more stringent than LEED silver, but we do not know at this point by how much; suggestion by Julie that we alter text to state whichever standard is more stringent should be applied. Derik asked to emphasize in document a robust commitment to low income energy conservation. Mike asked for approval, motion made by Gary and seconded by Derik, approved by all.

Climate Action Plan

- Status of Road Maps
 - o Ron let us know position was sent to HR and put in standard format, sent to PW and planning to get input and that's where it is now. Looks like it will go out for ad in the second quarter: April.
 - o Ron will get the description back to us after that review so we can have a look. Ron will find out what the length of the hiring process will be. Committee members pushed back to ask for moving up timing of ad date, because the sooner the better, recognizing the importance of walking through the process carefully.
 - o Ron has been speaking with staff about pilot project for certification checklist, currently being discussed. Mike reminded Ron that Lara and Stacey are happy to give a presentation to staff. Ron is trying to identify what staff would receive that.

- January 13th 5:30 to 7 and 23rd 10-11:30 Community Meetings. Council members, staff, and CCAC members, with committee presenting the plan. Ron spoke to Kristen and the info on the meetings will go out in the City manager letter, earlier than COBI connects. Deb cannot make the 23rd. Mike will check with Lara and Tim. Mike suggests opening by CC with emphasis on City championing the plan, then about a half hour for presentation, then open for questions, with one or two committee members presenting. Mike can draft a PPT for circulation.
- Bainbridge Community Broadcasting: early January to do a broadcast. Deb and David volunteered to help Mike.
- Deb is going to talk to the Senior Center week after next on the CAP.

CCAC/UAC Subgroup

Mike reviewed the draft joint recommendations from UAC/CCAC. Deb just wanted a little clarification around the balance of equity and recognizing practicalities in siting of local generation. Derik added a point about drawing out equity in energy conservation especially and about recognizing that energy supply is generalized and siting local generation in a specific spot may or may not feed back to specific individuals. Mike hopes to have a final version for the Feb meeting so we can send to council thereafter. Ron has some feedback from staff with corrections on the memo to get back to the subcommittee.

David suggested and group agreed to have a shorter meeting January 27 to address ongoing work and review of community workshops. Mike asked Rob to explore if we can get on the CC calendar in February for a 2021 workplan, the UAC/CCAC agreement, and the Police building memo.

Status of DOE Connected Communities Grant

<https://eere-exchange.energy.gov/Default.aspx#Foald9d24afcd-e292-4ea2-a4d3-d36e2b9dd9c7>

David and Jens touched on some potential project topics for this grant, with Bainbridge being something of a sandbox for some opportunities for additional investment and research around longer-term demand response, reliability, and related topics.

Draft Grants Report and Spreadsheet

Climate Action Bainbridge folks including Mike connected with Nick Shlach who is a friend of Mike's family to do a review of possible grant opportunities. Nick reviewed his process for identifying and prioritizing projects that could help with CAP implementation. Group talked about this being a good resource both for the City and for multiple Island stakeholders; discussed the idea that it might be worth considering consulting services to pursue grant opportunities.

Outreach to Schools and Parks

Mike has reached out to Parks department and Terry Lande responded. In January Mike, Deb and Lara will be meeting with Parks in January. School board members are interested but too much on plate this year.

Adjourn 7:24 pm

Co-Chair

Date

**Executive Summary:
Recommendations from the Climate Change and Utility Advisory
Committees' Subgroup on the PSE Franchise
(January 6th, 2021)**

Scientific evidence has shown that Earth's changing climate is an immediate and existential threat to humanity. The cause is our civilization's overproduction of greenhouse gases (GHG) that trap the Earth's heat. Bainbridge Island has committed to do its part to address this crisis by reducing our GHG emissions by 90 percent by 2045 compared to levels in 2014. Our inventory of the sources of these emission reveal that 53% percent are from our use of electricity¹.

Therefore, to achieve the goals of our Climate Action Plan (CAP), the City of Bainbridge Island (COBI) intends to work collaboratively with Puget Sound Energy (PSE). Such a partnership can help COBI meets its climate, energy, safety, reliability, and undergrounding goals and PSE to meet its mandated requirements under the Washington State Clean Energy and Transformation Act (CETA)².

In addition, the 2017 Bainbridge Island Comprehensive Plan³ included a Utilities - Electrical element that had a goal to **"ensure adequate, cost effective, reliable, and environmentally responsible electric service to the citizens of Bainbridge Island"**. The element also had nine policies that we believe are consistent with the recommendations in this report (see Appendix B).

The last PSE Franchise Agreement (Franchise Agreement) with COBI was a 15-year agreement begun in 2007 (Ordinance 2007-11)⁴. A

Vision: COBI and PSE will work collaboratively to support and achieve our respective goals for the benefit of Bainbridge Island residents, businesses and the broader community.

Principles: COBI and PSE will develop a Franchise Agreement and a parallel Partnership Agreement that:

- Protects public health and safety;
- Promotes collaboration;
- Advances equity;
- Provides accountability; and
- Is scalable.

Goals: COBI and PSE will work together to meet the following COBI goals:

- Reduce greenhouse gas emissions by 90 percent by 2045 compared to 2014 levels
- Achieve 100 percent carbon free electricity for Bainbridge Island by 2040
- Increase transparency on data related to reliability and bring Bainbridge Island's duration and frequency of interruptions up to PSE's system averages within 2-3 years.

¹ City of Bainbridge Island Greenhouse Gas Emissions Report. 2019. Final Findings Report. Cascadia Consulting Corp Inc. <https://www.bainbridgewa.gov/922/Climate-Change-Advisory-Committee>.

² CETA requires the State's electrical supply to be free of coal by 2025, carbon neutral by 2030 and 100% carbon-free by 2045.

³ Bainbridge Island Comprehensive Plan. 2017. <https://www.bainbridgewa.gov/162/Comprehensive-Plan>

⁴ AN ORDINANCE granting to Puget Sound Energy, a Washington public service company, and its successors and assigns, for a period of fifteen (15) years, the right, privilege, authority, consent and approval to set, erect, lay, construct, extend, support, attach, connect and stretch Facilities between, maintain, repair, replace, enlarge, operate and use Facilities in, upon, over, under, along, across and

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new Agreement is scheduled to be completed by the end of April 2022. The current Agreement includes no reference to GHG, climate change, energy efficiency, renewable energy, local energy generation, green building standards, transportation electrification, or reliability. It does address undergrounding of utility lines (see Appendix A).

Our subgroup has concluded that COBI and PSE must take three important initial steps in developing a new Franchise and Partnership Agreements:

- Identify a shared vision for success;
- Agree on a general set of principles to guide negotiations; and
- Develop a mutual understanding of our respective climate, energy, safety, reliability, and undergrounding goals.

The main report contains a more detailed description of the vision, principles, and goals.

Recommendations

As a first step, the Subgroup conducted research to learn how other cities have incorporated climate, energy, safety, reliability and undergrounding goals into their Franchise Agreements. A particularly useful resource was a study completed by the National Renewable Energy Lab (NREL) that surveyed over 3600 municipalities⁵ regarding their Franchise Agreements. Seventy-two of those municipalities were in Washington State with 25 cities in the PSE service area⁶.

Based on that research, we developed recommendations in several areas as summarized below. The main report includes a more detailed discussion of the research, findings, and recommendations. We believe the recommendations are consistent with the goals and policies in the Bainbridge Island Comprehensive Plan.

Recommendation #1: COBI and PSE develop a separate Partnership Agreement in parallel with the development of a new Franchise Agreement.

While some cities have incorporated specific climate, energy, safety, reliability and undergrounding goals in their Franchise Agreements, many others have used parallel Partnerships Agreements⁷.

through the Franchise Area for purposes of transmission, distribution and sale of electric energy for power, heat, light and any other purpose for which electric energy can be used.

⁵ Cook, Jeffrey; Grunwald, Bryn; Holm, Alison; and Aznar, Alexandra. 2020. Wait, cities can do what? Achieving city energy goals through Franchise Agreements. Energy Policy (144)(2020) 111619. National Renewable Energy Laboratory. The National Renewable Energy Lab specializes in renewable energy and energy efficiency research and development. NREL is a government-owned, contractor-operated facility, and is funded through the United States Department of Energy.

⁶ Anacortes, Bainbridge Island, Bellevue, Bellingham, Black Diamond, Bonney Lake, Bremerton, Buckley, Burien, Des Moines, Duvall, Kenmore, Kent, Issaquah, Lynden, Maple Valley, Mercer Island, Normandy Park, Puyallup, Renton, Sammamish, Sea-Tac, Snoqualmie, Tumwater, and Woodinville.

⁷ Bonugli, Celina; Duncan, Jake; Crandall, Kelly, and Etter-Wenzel, Cassandra. 2019. Utilizing City-Utility Partnership Agreements to Achieve Climate and Energy Goals. World Resources Institute. Working Paper.

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Partnership Agreements establish a working relationship between the City and a Utility to develop a workplan for achieving the City's goals. They also include a mechanism for administering the Partnership Agreement and establishing commitments from both parties to achieve those goals.

We recommend that COBI and PSE develop a Partnership Agreement in parallel with the Franchise Agreement. While this makes the process more complicated, it can help ensure COBI's climate, energy, safety, reliability, and undergrounding goals are achieved.

Recommendation #2: The Franchise Agreement and Partnership Agreements contain specific commitments from both PSE and COBI.

We believe it is important that both the Franchise and Partnership Agreements contain specific commitments to maintain accountability over the lifetime of the Agreements. The commitments must have timelines, specify how PSE and COBI will work together to meet those commitments, and spell out consequence of not meeting the commitments.

Table 1 provides a summary of the major commitments that we recommend be included in the Franchise and the Partnership Agreements. We believe these commitments are consistent with the goals and policies in the 2017 Comprehensive Plan.

Table 1: Proposed Commitments for the Franchise and Partnership Agreements

Area	Franchise Agreement	Partnership Agreement
Collaboration	PSE and COBI work collaboratively to achieve our shared goals for reducing environmental impacts, preparing for climate change, and increasing safety and reliability.	PSE and COBI work collaboratively to achieve our shared goals for reducing environmental impacts, preparing for climate change, and increasing safety and reliability.
Transparency	PSE commits to provide a semi-annual report and presentation to the City Council on their current and planned efforts to achieve the goals of the Franchise Agreement.	PSE commits to provide a semi-annual report and presentation to the City Council on their current and planned efforts to achieve the goals of the Partnership Agreement.
Demand Reduction		PSE and COBI establish specific commitments to reduce both total energy demand and peak energy demand.
Energy Supply	PSE commits to provide COBI with information needed to complete the Bainbridge Island GHG emissions inventory (e.g., annual average ratio	PSE and COBI work collaboratively to provide 100% carbon free electricity to Bainbridge Island by 2040, five years ahead of the CETA requirements.

September 2019. <https://wriorg.s3.amazonaws.com/s3fs-public/utilizing-city-utility-partnership-agreements-achieve-climate-energy-and-goals.pdf>.

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Area	Franchise Agreement	Partnership Agreement
	of CO2 emissions per KWH power/year) and other information related to GHG reductions as requested by COBI.	
Local Generation		PSE and COBI commit to explore generating carbon free electricity on Bainbridge Island especially for low income, affordable, and senior housing.
Green Building Fund		PSE and COBI commit to explore establishing a Green Energy and Building Fund.
Electrification of Transportation		PSE and COBI commit to develop the infrastructure needed for electric vehicles on Bainbridge Island. PSE and COBI coordinate with Washington State Ferries and other entities as necessary to evaluate the need for, and feasibility of, establishing charging infrastructure on the Island to service ferries.
Reliability	PSE commits to increase its transparency on reliability reporting and bring Bainbridge Island's SAIDI and SAIFI ⁸ numbers up to PSE's system averages.	PSE commits to post SAIDI and SAIFI comparisons to Kitsap County, the PSE service area, other major public private utilities in WA and IEEE or other industry standards. COBI commitments to facilitate discussion with the Community on improvements to the transmission, substations and other facilities on the island. PSE commits to post the status of projects completed, underway and planned to improve reliability by section and as a system. This should include "wired" and "non-wired" solutions such as battery storage and demand management. PSE commits to evaluating adding a specific amount of tree wire⁹ over the next 2-3 years.

⁸ The metrics that describe the duration and frequency of interruptions are known as the **System Average Interruption Duration Index** (SAIDI) and **System Average Interruption Frequency Index** (SAIFI).

⁹ Tree wire or covered open wire consists of the conductor (aluminum, aluminum alloy or ACSR) and the extruded covering (conductor shield, low density inner layer and protective outer layer). Covering thickness depends on the system voltage. It is designed for full span applications and is supported on polyethylene insulators

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Area	Franchise Agreement	Partnership Agreement
Undergrounding	PSE commits to develop a 15 to 20-year plan to underground the remaining (and future) above ground distribution segments. PSE would prioritize these segments by expected impact on reliability and safety. The annual program should be approximately equal each year. COBI would provide its financial commit in a timely fashion each year or biennium.	PSE commits to evaluate providing walking and biking paths in the right of way under the utility distribution lines.

Recommendation #3: The length of the PSE Franchise Agreement should be 10 years.

The length of the Partnership Agreement will be determined during its development.

We recommend that the length of the Franchise Agreement be for 10 years, which is the length of the Franchise Agreements in Bellevue, Black Diamond, and Sammamish according to the survey conducted by NREL¹⁰.

Our current Franchise Agreement is for 15 years. We believe, however, that a shorter duration is important due to the changing nature of the energy field and the rapid advancement in integrating renewable energy into the energy mix.

We would prefer a Franchise Agreement of just 5 years but understand that the resources and time to complete Franchise Agreements is substantial. We recommend that the length of the Partnership Agreement be determined during the Franchise negotiations.

Next Steps

- Present the findings and recommendations of the CCAC/UAC to the City Council.
- Present the findings and recommendations of the CCAC/UAC to the City Staff responsible for the PSE Franchise Agreement negotiations.
- Participate in PSE Franchise Agreement negotiations as outlined in an October 18, 2019 memo to the City of Bainbridge Island from Elana Zana from Ogden, Murphy Wallace, PLLC on the public process for PSE Franchise Negotiations as presented at the October 22nd, 2019 City Council Meeting¹¹.

¹⁰ Cook, Jeffrey; Grunwald, Bryn; Holm, Alison; and Aznar, Alexandra. 2020. Wait, cities can do what? Achieving city energy goals through Franchise Agreements. Energy Policy (144)(2020) 111619. National Renewable Energy Laboratory.

¹¹ <https://www.bainbridgewa.gov/1101/City-Council-Agendas>. October 22nd, 2019 Meeting.

PSE Franchise Agreement: Findings and Recommendations from Climate Change and Utility Advisory Committee's to the Bainbridge Island City Council

DRAFT

A. Introduction

The climate crisis is an immediate and existential threat to our children's existence. The world is now producing more carbon than is sustainable with consequences that are exceedingly dire. We believe therefore it is imperative for the City of Bainbridge Island (COBI) to work collaboratively with Puget Sound Energy (PSE) to create a partnership that can help COBI meet its climate, energy, reliability, safety, and undergrounding goals and for PSE to meet its mandated requirements under the Washington State Clean Energy and Transformation Act (CETA)¹².

This is reinforced by the goals and policies articulated in the 2017 Bainbridge Island Comprehensive Plan (see Appendix B). The Comprehensive Plan included an "Utilities Element - Electrical" with a goal to **"Ensure adequate, cost effective, reliable, and environmentally responsible electric service to the citizens of Bainbridge Island"**.

Under the goal there are nine policies. We believe the recommendations in this report are consistent with those goals and policies. A few of those policies are included below:

- Policy U 14.1 Develop a plan together with the electric service provider to undertake energy efficiency improvements and other alterations of electric utility facilities to provide capacity for future growth.
- Policy U 14.3 Encourage the electric service provider to improve reliability, with particular attention to adding transmission redundancy and mitigating impacts on service from storms or other natural events.
- Policy U 14.4 Encourage undergrounding new and existing electric transmission and distribution power lines, and develop a long-term strategy for future undergrounding, to include maximizing opportunities with new construction, and prioritizing the work that affects the greatest number of households and businesses.
- Policy U 14.5 Encourage the electric service provider and electricity users to use carbon neutral electricity generation, local electricity generation, and innovative technologies such as solar power that are reliable, cost effective, preserve resources, provide minimal environmental impact, and do not contribute to global warming.
- Policy U 14.9 Explore ways to obtain 100% green electricity including investing in new renewable energy projects.

The last PSE Franchise Agreement (Franchise Agreement) with COBI was in 2007 (Ordinance 2007-11)¹³. The Franchise Agreement was for 15 years and a new one is scheduled to be completed by the end of April 2022. The current Franchise Agreement

¹² CETA requires the State's electrical supply to be free of coal by 2025, carbon neutral by 2030 and 100% carbon-free by 2045.

¹³ AN ORDINANCE granting to Puget Sound Energy, a Washington public service company, and its successors and assigns, for a period of fifteen (15) years, the right, privilege, authority, consent and approval to set, erect, lay, construct, extend, support, attach, connect and stretch Facilities between, maintain, repair, replace, enlarge, operate and use Facilities in, upon, over, under, along, across and through the Franchise Area for purposes of transmission, distribution and sale of electric energy for power, heat, light and any other purpose for which electric energy can be used.

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does not include any reference to climate change, energy efficiency, renewable energy or local energy generation, green building standards, transportation electrification, or reliability. The current Franchise Agreement does address undergrounding (see Appendix A).

B. Climate Change and Utility Advisory Committee Subgroup

In 2019, a subgroup consisting of representatives from the Climate Change Advisory Committee (CCAC) and Utility Advisory Committee (UAC) was formed. The purpose of the sub-group was to provide recommendations to the City Council on the 2022 renewal of the Agreement with COBI.

The subgroup recognizes COBI has established a process for negotiating with PSE on the Franchise Agreement and recognizes that it is not the role of the CCAC or the UAC to negotiate with PSE on the Franchise Agreement.

The process for the PSE Franchise Negotiation was outlined in an October 18, 2019 memo to the City of Bainbridge Island from Elana Zana from Ogden, Murphy Wallace, PLLC on the public process for PSE Franchise Negotiations as presented at the October 22nd, 2019 City Council Meeting¹⁴. This process may have been modified because of the pandemic but we would encourage the City to engage the CCAC and UAC early in the negotiations.

At the October 6th, 2020, the City Council approved the subgroup reconvening to provide information to COBI that can be used when renegotiating the Franchise Agreement.

C. Proposed COBI Vision for PSE Franchise Agreement

COBI and PSE both have their own visions for the future. For purposes of this Franchise Agreement we propose the following shared vision. We believe this vision is consistent with the goals and policies articulated in the 2017 Bainbridge Island Comprehensive Plan.

- COBI and PSE will work collaboratively to support and achieve each other's goals for the benefit of Bainbridge Island residents, businesses and the broader community.
- We will work together to make Bainbridge Island a Regional leader in addressing climate change.
- We will work together to significantly reduce the Island's GHG emissions by working collaboratively to increase the supply of clean energy generated both on and off the Island and reducing energy demand on the Island.
- We will work together to make sure the solutions identified are equitable for all residents of Bainbridge Island.

¹⁴ <https://www.bainbridgewa.gov/1101/City-Council-Agendas>. October 22nd, 2019 Meeting.

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- We will work together to develop a Green Energy and Building Fund to help residents who need assistance to reduce their energy demand.
- We will work together to develop the infrastructure needed for electric vehicles and where needed to ensure the smooth transition to the new hybrid ferries that service Bainbridge Island.
- We will work together to improve the safety and reliability of electricity on the Island for all people and locations and to complete undergrounding where appropriate.
- We both acknowledge that PSE's ability to implement innovations rapidly may be constrained by regulatory requirements. We will work to minimize both external and internal barriers to the rapid implementation of the climate, energy, safety, reliability, and undergrounding goals.

D. Proposed Principles for PSE Franchise and Partnership Agreements

We believe it is important that COBI and PSE agree on general principles for negotiating the new Franchise Agreement and the Partnership Agreements. We propose the following five principles to guide the discussion.

Public Health and Safety: COBI and PSE will create a Franchise and Partnership Agreements that protects the public health and safety of Bainbridge Island residents.

Collaboration: COBI and PSE will work collaboratively to achieve both organizations' goals with respect, transparency and innovative thinking, as well as establishing open and effective channels of communication.

Equity: COBI and PSE will create a Franchise and Partnership Agreements that considers and minimizes the potential for unintended and/or inequitable impacts, establishes partnerships with underserved communities and involves diverse community voices from the start of the negotiation.

Accountability: COBI and PSE will establish commitments to ensure the climate, energy, safety, reliability, and undergrounding goals in the Franchise and Partnership Agreements are achieved.

Scalability: COBI and PSE will create a Franchise and Partnership Agreements that are replicable, scalable, and available for other communities in Washington State.

E. Proposed Goals for Franchise and Partnership Agreements

The CAP established goals and targets in multiple areas that are relevant to the PSE Franchise and Partnership Agreements: greenhouse gas emissions, energy demand, energy supply, preparedness, green building, and electrification. In addition, the 2017 Bainbridge Island Comprehensive Plan included goals and policies that are relevant to the PSE Franchise and Partnership Agreements.

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COBI does not currently have any specific goals or targets for reliability. PSE has announced a multiyear program for increasing reliability¹⁵ which includes a volunteer Community Sounding Board helping PSE evaluate routing. However, we believe there is a continued need to increase transparency and improve reliability.

There are currently no specific goals or targets for undergrounding. It is important to differentiate between undergrounding of transmission and distribution power lines. Transmission lines carry 115KVA and are much more expensive and dangerous to bury. They need a 25' by 8' by 8' vault buried every 2000 feet. Burying these lines is probably not worth considering. Undergrounding distribution power lines is common and required in new developments already. Many other communities have buried existing distribution power lines over time to improve reliability.

The UTC prohibits PSE from paying for the undergrounding on Bainbridge Island and then spreading the costs to all service areas rate payers. The Utilities and Transportation Commission (UTC) has created a tariff structure that COBI and PSE could utilize to create an undergrounding program for existing distribution lines. The Franchise and Partnership Agreements should require PSE to develop such a program, with PSE setting the priorities based on reliability gains subject to the City's ability to pay. Then COBI would need to decide where those resources would come from (e.g., general funds, or by establishing Local Utility Districts).

Table 2 provides the climate and energy goals and targets established in the CAP for COBI and proposes reliability and undergrounding goals and targets.

Table 2: COBI Climate, Energy, Reliability and Undergrounding Goals and Targets

Area	Goal	Target
GHG Emissions	Reduce GHG emissions	Reduce GHG emissions by 90% by 2045 compared to 2014 levels with interim goals of reducing greenhouse gases by 25% by 2025 and 60% by 2035 compared to 2014 levels.
Energy Demand	Increase energy conservation and efficiency throughout the planned and existing built environment, including	By 2022, COBI will have established a Green Energy and Building Fund to assist with conversions and efficiency upgrades for homes, businesses, and institutions with a focus on low-income housing.

¹⁵ Program includes: 1) Replacing the Winslow Tap; the distribution line from the top of the island to the Winslow substation (underway); 2) Constructing the "missing link" transmission line to connect the Winslow and Murden Cove substations; 3) Adding more "tree wire" and more tree trimming; and PSE is exploring various "non-wire" solutions such as battery storage capacity at Murden Cove and demand management solutions for residential and commercial locations.

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Area	Goal	Target
	customer-owned generation.	
Energy Supply	Eliminate carbon-based energy sources from all energy sectors.	By 2022, COBI adopts policies that prohibit propane, fuel oil, and wood stoves as the primary source of heating in all new residential, commercial, industrial, and municipal buildings. By 2040, all of Bainbridge Island's sources of electricity are carbon-free.
Preparedness	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 twelve Bainbridge Prepares disaster hubs have installed 6-20kW solar arrays and storage for resilience.
Green Building	Reduce GHG emissions from all municipal, commercial, industrial and residential buildings (work with other taxing districts such as schools and parks).	By 2021, COBI has adopted green building standards and practices for all new municipal, residential, commercial, and industrial buildings, including affordable housing and all renovations and additions of a certain size.
Electrification of Transportation	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 2025, transition COBI's fleet to 75% electric vehicles and the remainder to biofuels. By 2030, increase the mode share of public transit to 5% (currently 2%) and to 10% by 2045. By 2045, 80% of registered vehicles on Bainbridge Island will be either electric vehicles or plug-in hybrid electric vehicles. 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.
Reliability	Increase transparency and improve reliability	PSE commits to publicly post on their website details of reliability dating back 10 years to the present for the Island as a whole and the major distribution branches.

Area	Goal	Target
		PSE commits to bring Bainbridge Island's SAIDI and SAIFI ¹⁶ numbers up to PSE's system averages with 2-3 years.
Undergrounding	Increase undergrounding	PSE commits within the first year of the Franchise Agreement to develop a 15 to 20-year plan to underground the remaining (and future) above ground distribution segments.

F. Research Questions and Findings

The subgroup started its work by asking several questions and then looking for examples of how other cities have incorporated climate, energy, safety, reliability, and undergrounding goals into their Franchise Agreements. The best source we found was a study completed by the National Renewable Energy Lab (NREL) that surveyed over 3600 municipalities¹⁷ with 72 of those in Washington State. The data base includes 25 cities that are in the PSE service area¹⁸.

In addition, NRLE published a paper that summarizes their findings from the survey and includes detailed analysis of the programs in Chicago, Denver, Sarasota, Minneapolis, and Salt Lake City¹⁹.

Have cities incorporated climate, energy, safety, reliability, and undergrounding goals in their Franchise Agreements?

Findings: The NREL study found the following on how cities have incorporated their climate and clean energy goals into their Franchise Agreements:

- Questions on reducing GHG emissions was not included in survey
- 127 cities mentioned energy efficiency (4%)
- 73 cities mentioned renewable energy (2%)
- 56 cities had a 100% renewable energy goal (2%)
- 41 cities mentioned electric vehicles or electric infrastructure (1%)

¹⁶ The metrics that describe the duration and frequency of interruptions are known as the **System Average Interruption Duration Index (SAIDI)** and **System Average Interruption Frequency Index (SAIFI)**.

¹⁷ Cook, Jeffrey; Grunwald, Bryn; Holm, Alison; and Aznar, Alexandra. 2020. Wait, cities can do what? Achieving city energy goals through Franchise Agreements. Energy Policy (144)(2020) 111619. National Renewable Energy Laboratory.

¹⁸ Anacortes, Bainbridge Island, Bellevue, Bellingham, Black Diamond, Bonney Lake, Bremerton, Buckley, Burien, Des Moines, Duvall, Kenmore, Kent, Issaquah, Lynden, Maple Valley, Mercer Island, Normandy Park, Puyallup, Renton, Sammamish, Sea-Tac, Snoqualmie, Tumwater, and Woodinville.

¹⁹ Cook, Jeffrey; Aznar, Alexandra; Grunwald, Bryn; and Holm, Alison. Hand me the Franchise Agreement: Municipalities Add Another Policy Tool to their Clean Energy Toolbox. 2020. Solar Energy. In Press

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The data base indicates none of the 25 Franchise Agreements for cities in the PSE service area include references to energy efficiency, renewable energy, 100% renewable energy goals, or electric vehicle infrastructure. The NREL survey found that 322 utilities had included provisions for undergrounding infrastructure in their Franchise Agreements (9%). The survey did not ask questions about reliability.

For the PSE customers, the NREL data base indicated 12 of 25 cities included undergrounding provisions in their Franchise Agreements.

Have Cities Used Other Types of Agreements (Partnerships Agreements) along with the Franchise Agreement to advance their climate, energy, safety, reliability, and undergrounding goals?

Findings: A paper by the World Resource Institute evaluated how Cities have developed Partnership Agreements to achieve their climate and energy goals²⁰ independent of Franchise Agreements. The paper provides a step-by-step process for establishing these partnerships and identifies the common elements in the agreements (e.g., structure, implementation/governance, administration, who should be involved, when and how to pursue agreements, approving agreements, and delivery of agreement).

The paper provides the links to six city-utility partnerships: Sarasota, Minneapolis, Salt Lake City, Madison, Denver, and Charlotte (see Tables 4-6 for more details). Seven of the eight cities presented in the two studies used Partnership Agreements with utilities instead of Franchise Agreements to achieve their climate and energy goals.

The Partnership Agreements are negotiated in parallel or separately from the Franchise Agreements. In addition, the Partnership Agreements are generally non-binding and establish working partnerships with the utility to develop a workplan for achieving the cities goals along with a mechanism for administering the Partnership Agreements and establishes metrics and commitments from both parties.

What is the average length of other cities Franchise Agreements?

Findings: The current PSE Franchise Agreement with COBI is for 15 years. Based on the NREL data base we found the following length of time for Franchise Agreements in cities.

- 1-10 years (6%)
- 11- 20 years (18%)
- 21-30 years (19%)

²⁰ Bonugli, Celina; Duncan, Jake; Crandall, Kelly, and Etter-Wenzel, Cassandra. 2019. Utilizing City-Utility Partnership Agreements to Achieve Climate and Energy Goals. World Resources Institute. Working Paper. September 2019. <https://wriorg.s3.amazonaws.com/s3fs-public/utilizing-city-utility-partnership-agreements-achieve-climate-energy-and-goals.pdf>.

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- > 30 years (6%)
- No term limit identified (6%)
- Not available (44%)

The length of the Franchise Agreements for the 25 cities in the PSE service area in the NREL data base are as follows along with the expiration date on their current Franchise Agreement:

- 10 years: Bellevue (2028); Black Diamond (2028); and Sammamish (2026)
- 15 years: **Bainbridge Island (2022)**; Bremerton (2019); Buckley (2029); Burien (2019); Duvall (NA); Maple Valley (2020); Renton (2022); and Woodinville (2020).
- 20 Years: Normandy Park (2027)
- 25 years; Bellingham (2028); Kent (2018); and Lynden (2039).
- 30 years: Anacortes (2027); Issaquah (2040); and Puyallup (2014).
- Not included: Bonney Lake, Des Moines, Kenmore, Mercer Island, Sea-Tac, Snoqualmie, and Tumwater,

Other Findings from Outreach to Researchers and Municipalities

During our research we had conversations with several people who had done research on Franchise Agreements or had been involved in negotiating Franchise Agreements. These included staff at NREL, staff from the World Research Institute, staff from Missoula, Montana, and individuals who have worked on Franchise Agreements in our area. The findings from those conversations are included below.

NREL Staff

- Most Cities negotiate a separate agreement parallel with the Franchise Agreement that incorporates Climate and Energy Goals. They are generally non-binding but have specific commitments.
- Separate agreements need to have performance metrics and/or commitments to ensure implementation.
- The length of the Franchise term is usually the most contentious topic (utilities want longer, cities want shorter). This can be used to negotiate other aspects of the Franchise Agreements.
- Include pilot projects in a separate agreement as a way to move forward.
- Franchise fees are used to fund specific projects.

World Research Institute

- Partnership Agreements between a City and Utility are a common method to achieve the Cities climate and energy goals.
- There are common elements to Partnership Agreements such as:
 - Framing Agreement (vision, values, collaboration, agreed on outcomes, agreement on “not tos”).
 - Implementation and Governance (governing body, work plans, regular dialogue, time frame, roles and responsibilities, and public engagement)

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- o Administration (duration, enforceability, costs and handling disagreements).
- To ensure a successful Agreement, must have clear metrics to track progress.

Other

- Need engaged leadership from City Council and City Manager.
- Need public engagement early and often.
- Need to start at least one year in advance of the expiration of the Franchise Agreement.
- Need to reach out to other communities in the PSE service area who are renegotiating Franchise Agreements in the next few years.
- Need to reach out to other communities who have done Franchise Agreements to learn from them.

G. Recommendations

Based on the research and findings above and the goals and policies of the 2017 Comprehensive Plan, the subgroup makes the following recommendations on the issues identified below.

Recommendation #1: COBI and PSE will work to develop a separate Partnership Agreement in parallel with the development of a new Franchise Agreement.

While some cities have incorporated specific climate, energy, safety, reliability and undergrounding goals in their Franchise Agreements, many others have used parallel Partnerships Agreements²¹.

Partnership Agreements establish working partnerships with the utility to develop a workplan for achieving the cities goals along with a mechanism for administering the Partnership Agreements and establishes metrics and commitments from both parties.

The pros and cons of incorporating COBI climate, energy, safety, reliability, and undergrounding goals in a Franchise Agreement or Partnership Agreement are highlighted below.

Incorporate Climate and Energy Goals	Pros	Cons
Franchise Agreements	• Franchise is a contract so agreements have more force.	• Less flexibility.

²¹ Bonugli, Celina; Duncan, Jake; Crandall, Kelly, and Etter-Wenzel, Cassandra. 2019. Utilizing City-Utility Partnership Agreements to Achieve Climate and Energy Goals. World Resources Institute. Working Paper. September 2019. <https://wriorg.s3.amazonaws.com/s3fs-public/utilizing-city-utility-partnership-agreements-achieve-climate-energy-and-goals.pdf>.

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Incorporate Climate and Energy Goals	Pros	Cons
Partnership Agreement in parallel	• May not be as contentious and easier to reach agreement. • Provides more flexibility • Majority of cities have developed Partnership Agreements in parallel.	• Generally non-binding.
Both	• Some issues are more amendable in the Franchise Agreement versus the Partnership Agreement and vice-versa. • Provides more flexibility.	• More time and resources.

We recommend that COBI and PSE develop a Partnership Agreement in parallel with the Franchise Agreement. While this makes the process more complicated, it can help ensure COBI's climate, energy, safety, reliability, and undergrounding goals are achieved.

Recommendation #2: The Franchise Agreement and Partnership Agreements shall contain specific commitments from both PSE and COBI.

We believe it is important that both the Franchise and Partnership Agreements contain specific commitments to maintain accountability over the lifetime of the Agreements. The commitments must have timelines, specify how PSE and COBI will work together to meet those commitments, and spell out consequence of not meeting the commitments.

Table 3 provides a summary of the major commitments we recommend go into the Franchise Agreement and the Partnership Agreement. We believe these commitments are consistent with the goals and policies in the 2017 Comprehensive Plan.

Table 3: Proposed Commitments for the Franchise and Partnership Agreements

Area	Franchise Agreement	Partnership Agreement
Collaboration	PSE and COBI work collaboratively to achieve our shared goals for reducing environmental impacts, preparing for climate change, and increasing safety and reliability.	PSE and COBI work collaboratively to achieve our shared goals for reducing environmental impacts, preparing for climate change, and increasing safety and reliability.
Transparency	PSE commits to provide a semi-annual report and presentation to the City Council on their current and planned efforts to achieve the goals of the Franchise Agreement.	PSE commits to provide a semi-annual report and presentation to the City Council on their current and planned efforts to achieve the goals of the Partnership Agreement.

Area	Franchise Agreement	Partnership Agreement
Demand Reduction		PSE and COBI establish specific commitments to reduce both total energy demand and peak energy demand.
Energy Supply	PSE commits to provide COBI with information needed to complete the Bainbridge Island GHG emissions inventory (e.g., annual average ratio of CO2 emissions per KWH power/year) and other information related to GHG reductions as requested by COBI.	PSE and COBI work collaboratively to provide 100% clean free electricity to Bainbridge Island by 2040, five years ahead of the CETA requirements.
Local Generation		PSE and COBI commit to explore generating carbon free electricity on Bainbridge Island especially for low income, affordable, and senior housing.
Green Building Fund		PSE and COBI commit to explore establishing a Green Energy and Building Fund.
Electrification of Transportation		PSE and COBI commit to develop the infrastructure needed for electric vehicles on Bainbridge Island. PSE and COBI coordinate with Washington State Ferries and other entities as necessary to evaluate the need for, and feasibility of, establishing charging infrastructure on the Island to service ferries.
Reliability	PSE commits to increase its transparency on reliability reporting and bring Bainbridge Island's SAIDI and SAIFI ²² numbers up to PSE's system averages.	PSE commits to post SAIDI and SAIFI comparisons to Kitsap County, the PSE service area, other major public private utilities in WA and IEEE or other industry standards. COBI commitments to facilitate discussion with the Community on improvements to the transmission, substations and other facilities on the island. PSE commits to post the status of projects completed, underway and planned to improve reliability by section and as a system. This should include "wired" and "non-wired" solutions such as battery storage and demand management.

²² The metrics that describe the duration and frequency of interruptions are known as the **System Average Interruption Duration Index (SAIDI)** and **System Average Interruption Frequency Index (SAIFI)**.

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Area	Franchise Agreement	Partnership Agreement
		PSE commits to evaluating adding a specific amount of tree wire ²³ over the next 2-3 years.
Undergrounding	PSE commits to develop a 15 to 20-year plan to underground the remaining (and future) above ground distribution segments. PSE would prioritize these segments by expected impact on reliability and safety. The annual program should be approximately equal each year. COBI would provide its financial commit in a timely fashion each year or biennium.	PSE commits to evaluate providing walking and biking paths in the right of way under the utility distribution lines.

Recommendation #3: The length of the PSE Franchise Agreement shall be 10 years.

The length of the Partnership Agreement will be determined during its development.

We recommend that the length of the Franchise Agreement be for 10 years, which is the length of the Franchise Agreements in Bellevue, Black Diamond, and Sammamish according to the survey conducted by NREL²⁴.

Our current Franchise Agreement is for 15 years. We believe, however, that a shorter duration is important due to the changing nature of the energy field and the rapid advancement in integrating renewable energy into the energy mix.

We would prefer a Franchise Agreement of just 5 years, but understand that the resources and time to complete Franchise Agreements is substantial. We recommend that the length of the Partnership Agreement be determined during the Franchise negotiations.

²³ Tree wire or covered open wire consists of the conductor (aluminum, aluminum alloy or ACSR) and the extruded covering (conductor shield, low density inner layer and protective outer layer). Covering thickness depends on the system voltage. It is designed for full span applications and is supported on polyethylene insulators

²⁴ Cook, Jeffrey; Grunwald, Bryn; Holm, Alison; and Aznar, Alexandra. 2020. Wait, cities can do what? Achieving city energy goals through Franchise Agreements. Energy Policy (144)(2020) 111619. National Renewable Energy Laboratory.

Table 4: Comparison of Cities Franchise and Partnership Agreements for Salt Lake City, Denver, and Minneapolis

Element	Salt Lake City	Denver	Minneapolis
Utility (Population Served)	Rocky Mountain Power (201K)	Xcel Energy (717K)	Xcel Energy (425K)
Climate Goal	Net 100% renewable by 2032	Reduce GHG emissions by 80 percent by 2050 from a 2005 baseline.	Reduce GHG Emissions by 15% 2015, 30% by 2025, and 80 percent by 2050 using 2006 as a baseline.
Franchise Agreement and/or Partnership Agreement	Franchise Agreement with parallel Joint Clean Energy Cooperation Statement	Franchise Agreement with parallel Low-Income Energy Assistance and Energy Conservation Contribution Agreement	Franchise Agreement with parallel Clean Energy Partnership
Length of Agreement	5 years	20 years	10 years with a termination clause that allows the city to exit the agreement at five years, provided a one-year notice is given and a two-thirds majority vote by City Council
Franchise Fee	6% Municipal Energy Sales and Use Tax—the maximum allowable under state law—from Rocky Mountain Power, the revenue from which goes into Salt Lake City’s general fund.	3% of gross revenue	Decoupled franchise fee rates from the Franchise Agreement and established a separate city ordinance that governs the franchise fees Xcel Energy customers pay to the City of Minneapolis
Types of Actions	• Renewable energy • Energy Efficiency • EV infrastructure	• Smart technology. • Xcel provided \$2 million for energy efficiency • Fuel switching-Mobile and Stationary Sector • Resilience: Microgrids • Transparency and data access	• Renewable energy • Energy Efficiency • Green cost share program received \$1 million from Franchise fees.
Metrics and/or Accountability Measures	Established in workplan.	Established in workplan.	Established in work plan.
Administration	Develop implementation plan with dates and deadlines to achieve goals and deliverables.	Develop workplan every two years. Staff meet quarterly	Established a “Board” consisting of officials from the City and utility that develop a joint workplan,

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Element	Salt Lake City	Denver	Minneapolis
	Publish annual report each year.		meet quarterly, and prepare an annual report.

SLC: https://drive.google.com/file/d/1Zo_mLTVNO-sg01vnyZuszLfmLpcyd8LG/view

Denver: <file:///C:/Users/bcsha/OneDrive/Documents/Mike/PSE/Denver%20Xcel%20Clean%20Energy%20MOU.pdf>

Minneapolis: <https://mplscleanenergypartnership.org/wp-content/uploads/2015/02/xcel-mou-attach-b.pdf>

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Table 5: Comparison of Cities Franchise and Partnership Agreements for Sarasota, Madison, and Charlotte

Element	Sarasota	Madison	Charlotte
Utility (Service Population)	Florida Power & Light (58K)	Madison Gas and Electric Company (113K)	Duke Energy (360K)
Climate Goals	Reduce GHG emissions by 35% by 2025 from a 2003 baseline.	Carbon neutral by 2030 and 80% reduction in carbon emissions by 2050	100% of energy use in buildings and fleet from 100% carbon free sources by 2030 and city wide GHG emissions to below 2 tons CO2e per capita annually by 2050
Franchise Agreement or Partnership Agreement	Franchise Agreement with parallel Renewable Energy Agreement	Wisconsin law prohibits Franchise Agreements. City has a MOU with Madison Electric (Clean Energy 2030 Framework)	North Carolina prohibits Franchise Agreements. City has a MOCU with Low Carbon, Smart City Collaboration.
Length of Agreement	30 years	State does not allow Franchise Agreements but MOU is for 3 years.	NA
Franchise Fee	Maximum 6% fee on FPL's gross revenues in city limits that is passed to Sarasota.	State does not allow collection of Franchise fees.	NA
Types of Actions	• EV charging stations • LEED Training • Energy education • Energy audits • Rooftop PV •	• Expansion of Solar • Expansion of the use of Electric Vehicles • Promotion of Energy Efficiency • Social Equity and Economic Development • Other Transportation topics	• Smart technology. • Energy efficiency • Fuel switching-Mobile and Stationary Sector • Resilience: Microgrids • Transparency and data access • Reliability and Operations
Metrics and/or Accountability Measures	Established in annual workplan	Annual progress report to City Council.	Developed as part of workplan for MOU.
Administration	FPL and city personnel provide biannual updates to the City Commission on FPL's activities in relation to the Renewable Energy Agreement	Establish an Energy Collaboration Steering Committee whose members will include up to five members from each Party.	Workplan that is updated every two years.

Sarasota: <https://www.sarasotafl.gov/home/showdocument?id=1008>

Madison: <https://madison.legistar.com/View.ashx?M=F&ID=5194697&GUID=0E90141C-723E-4A8C-B70F-584955371518>

Charlotte: <https://charlottenc.gov/sustainability/seap/SEAP/Duke%20MOU.PDF>

Table 6: Comparison of Cities Franchise and Partnership Agreements for Chicago and Missoula

Element	Chicago	Missoula
Utility (Service Population)	Commonwealth Edison (2.7 million)	Northwestern (74K)
Climate Goals	Reduce GHG by 25% by 2020 compared to 1990 levels and 80% reduction by 2050.	100% clean electricity by 2030 and carbon neutrality for City operations by 2025
Franchise Agreement or Partnership Agreement	Franchise Agreement with incorporated energy objectives	Montana law does not allow Franchise Agreements. Missoula developed a MOU with Northwestern.
Length of Agreement	29 years	No Franchise agreement.
Franchise Fee	ComEd was required to pay the equivalent of a 4% fee on aggregate revenues received from accounts in Chicago's jurisdiction over the life of the agreement	No Franchise fee.
Types of Actions	• Energy efficiency programs for small businesses • Revolving loan funds for city energy efficiency projects • Research and development for renewable energy projects at city facilities	• New Utility-Scale Renewables • New Community-Scale Renewables • Expanded energy efficiency, conservation, and other demand-side measures • Electrification of Transportation • Distribution Grid Modernization • Resilience Planning
Metrics and/or Accountability Measures	Metrics included in Supplemental Agreement for energy conservation, reliability, cogeneration, transmission and distribution lines	Developing an implementation plan that will include commitments and metrics.
Administration	City staff in conjunction with Con Ed.	Established working committee with City and Northwestern.

Chicago: <https://drive.google.com/file/d/1rzNco24TIOh5TQtIOkE3SW4Td6QZbGL/view?usp=sharing>.

Missoula: <https://www.engagemissoula.com/missoulas-100-clean-electricity-initiative>

Appendix A: Current COBI and PSE Franchise – Undergrounding.

14 Underground of Facilities

14.1 PSE acknowledges that the City desires to promote a policy of undergrounding of facilities within the Franchise area. The City acknowledges the PSE provides electrical service on a non-preferential basis subject to and in accordance with the Tariffs on file with the WUTC. Subject to and in accordance with such Tariffs, PSE will cooperate and participate with the City in the formulation of policy and development regulations that concerning undergrounding of PSE's facilities within the Franchise Area.

14.2 The City by written notice to PSE, require PSE to underground its existing distribution facilities (of 15,000 volts or less) within the Franchise Area: provided, that such conversion of PSE's existing Franchise shall be accomplished in accordance with PSE's applicable tariffs and schedules on file with the WUTC.

14.3 If PSE elects to install new overhead distribution facilities (of 15,000 volts or less within the Franchise Area or a new extension of existing overhead distribution facilities within the Franchise Area, PSE will provide written notice to the City. The City may be written notice to PSE, may require PSE to install such facilities underground within the Franchise Area; provided, that such installation underground of PSE's Facilities shall be accomplished in accordance with PSE's applicable tariffs and schedules on file with the WUTC.

Appendix B: 2017 Bainbridge Island Comprehensive Plan

UTILITIES ELEMENT

ELECTRICAL

The City is currently served by Puget Sound Energy (PSE), which provides electricity generation sources, transmission, distribution and maintenance of electrical facilities throughout the island. PSE is regulated by the Washington Utilities and Transportation Commission (WUTC.) It is the commission's responsibility to ensure regulated companies provide safe and reliable service to customers at reasonable rates, while allowing them the opportunity to earn a fair profit.

GOAL U-14 Ensure adequate, cost effective, reliable, and environmentally responsible electric service to the citizens of Bainbridge Island.

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

Policy U 14.2 Encourage the conservation of electrical energy, especially during periods of peak usage, and encourage energy saving building code strategies, local renewable energy, and other cost-effective approaches to meeting the island's energy needs, including distributed energy systems.

Policy U 14.3 Encourage the electric service provider to improve reliability, with particular attention to adding transmission redundancy and mitigating impacts on service from storms or other natural events.

Policy U 14.4 Encourage undergrounding new and existing electric transmission and distribution power lines, and develop a long-term strategy for future undergrounding, to include maximizing opportunities with new construction, and prioritizing the work that affects the greatest number of households and businesses.

Policy U 14.5 Encourage the electric service provider and electricity users to use carbon neutral electricity generation, local electricity generation, and innovative technologies such as solar power that are reliable, cost effective, preserve resources, provide minimal environmental impact, and do not contribute to global warming.

Policy U 14.6 Periodically undertake comparative evaluations of electric service reliability, cost, and environmental impact, customer service and customer support and evaluate opportunities to provide improved and less costly electrical service from alternative service providers.

Policy U 14.7 New taxpayer-funded buildings shall use carbon-neutral energy for heating, cooling, and operational use to the maximum extent practical within site specific and existing technology limitations.

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Policy U 14.8 Encourage new development to integrate environmentally responsible and innovative energy systems.

Policy U 14.9 Explore ways to obtain 100% green electricity including investing in new renewable energy projects

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Department of Public Works Memorandum

Date: January 11, 2021

To: City Council; Interim City Manager

From: Christopher Wierzbicki, Public Works Director

Subject: January 2021 Wastewater Treatment Plant (WWTP) Illicit Discharge Summary and Follow-up Action Plan

Executive Summary

During the late evening of January 2nd and early the following morning of January 3rd, the City's WWTP discharged approximately 250,000 gallons of partially treated wastewater that was in violation of the City's wastewater discharge permit issued by the Department of Ecology. An evaluation of the incident, a summary of which follows in this memo, indicates that the discharge resulted from a number of factors, including increasingly frequent intensity of sustained weather events, and increasing demands on the plant capacity, coupled with related errors in judgement and a lack of some standard operating procedures.

To help prevent such discharges in the short-term, standard operating procedures to ensure the consistent use of additional plant capacity during the wet season will be developed and investments in key short-term minor physical/mechanical improvements will be made. Additionally, Public Works staff are engaged in a number of plant evaluation projects and processes that will result in the identification of longer-term infrastructure investments that the City will need to make to ensure compliance with the current and future iterations of the discharge permit.

Overview of Incident

At approximately 9:30 PM on Saturday, January 2nd, the Public Works on-call technician was notified by the City's remote monitoring system that an alarm was triggered at the WWTP, at which point he notified the plant stand-by staff. Upon arriving at the plant, the stand-by staff determined that the alarm was caused by consistent heavy rainfall influent flows of 1.4 MGD with peak flows exceeding 2.0 MGD. This exceptionally high amount of inflow caused solids to wash out of the main clarifier (a large tank that separates and removes solids out of the wastewater) into the effluent, overloading the UV disinfection system (the last stage of wastewater treatment). The stand-by staff person notified Kitsap Public Health, and was also able to bring an additional clarifier online (which allows for more capacity to separate and remove solids), which was already prepped for potential use. By Sunday, January 3rd at 12:30AM, the discharge was stopped. It is estimated that 250,000 gallons of partially treated effluent (not raw sewage) not meeting the City's NPDES permit

requirements for Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), and Fecal Coliform was discharged to Puget Sound through the plant outfall during the event.

Incident Analysis

The WWTP and management staff have decades of experience with the City's plant – and wastewater treatment in general – and have received numerous awards for the plant's performance over the last several years, which makes the analysis of recent events challenging to understand. Given the history of effective personnel and plant performance, it is likely that a confluence of factors contributed to the discharge event: an anomalous weather event that is slowly becoming a more frequent and more intense occurrence; increasing pressures on the plant capacity; and, a related error in judgement that was based upon past experiences in similar situations.

Plant operations and relationship to weather

The Department does not have a standard practice of maintaining additional plant capacity (keeping more than one clarifier on at any given time) during the wet season, when ground and surface water (also known as Inflows and Infiltration (I&I)) often contribute to higher flows into the plant. Having more than one clarifier online at all times is not typically necessary, as the additional clarifiers are available primarily to serve as a back-up when the main needs to be cleaned or maintained. They also contribute to the plant's permit-required rating capacity – a number that corresponds to *peak* demands, not average, or even above average demand, which can normally be handled by the main clarifier.

In lieu of making a standard practice of having more than one clarifier online at a time, management delegates the decision to the plant operators to determine based on their evaluation of the plant performance at any given time (there are many variables that affect the plant's performance, which almost functions like a living organism). This flexibility in the decision-making process allows the operator to conserve energy at the plant and reduce the time-intensive process of maintaining a second or third clarifier when they are not needed for performance.

Looking back at the last 10 years of data, the main clarifier was the only unit in service for 50% of the peak inflow events (see Appendix A, Figure 1), indicating that it is not unusual for an operator to make the decision not to bring additional clarifiers online if the plant is performing well under the current conditions. With this understanding of the plant's capacity, and the plant performing optimally, the operators made the decision not bring additional capacity online before the recent event.

However, the recent plant failure indicates that there was an error in judging the plant's capacity in this instance. The characteristics of the weather event that led to the discharge was unlike any seen in the last 22 years (quickest increase in cumulative rainfall since 1999, see Figure 2), and the resulting inflows to the plant were unmatched in a review of the last 10 years of plant data (6 days of sustained inflows above 1 million gallons, see Figure 3.) These changes in weather patterns that negatively impact plant performance are increasing in frequency (there were almost the double the amount of 2-day events in the last 5 years, than in the 5-years prior, see Figure 3) which aligns with long-term weather predictions associated with a changing Northwest climate.

Plant operations and relationship to increasing demands

In addition to the foreseeable long-term changes in weather patterns that produce larger and more sustained peak *inflows* of wastewater into the plant, the Department's ongoing assessment of the

plant's capacity indicates that the wastewater inflow *characteristics* are also changing. These changes contribute to the need for re-evaluating short-term operating procedures, and also evaluating long-term policy changes and infrastructure investments that will allow the plant to continue to meet current and future discharge permit requirements.

The final results of the capacity study are still being developed by the Department's consultant (the Council will be receiving a briefing on the study in Q1 of this year), however, the initial results indicate that while the average inflow volumes to the plant are not increasing as originally predicted, the BOD and TSS levels coming into the plant are quickly pushing the plant's capacity to the limit (see Figure 4). There are some relatively minor procedural or physical reconfigurations that can be put in place to extend the life of the plant's treatment capacity, however, the inflow *characteristics* will likely continue changing in a manner that challenges the standard operating procedures – particularly when combined with higher and longer peak *inflows*.

Conclusions

Given the changing nature of weather conditions that lead to higher inflow volumes into the plant, and the changing nature of inflow characteristics that put pressure on the plant's performance, plant operators and Department managers can no longer rely on spot judgements to determine key operational parameters. In order to reduce the potential for a future event like the one recently experienced, standard operating procedures (SOPs) for maintaining additional capacity during the wet season will be developed, adhered to, and refined to adapt to changing conditions until more permanent plant upgrades are implemented. Additionally, a series of key short-term improvements, including operational changes, mechanical improvements and additional remote alarms will be assessed and/or implemented. A list of short-term actions are outlined below.

Follow-up Short-Term Action Plan (priority order)

<u>Description</u>	<u>Planned Completion Date</u>	<u>Cost</u>	<u>Status/Remarks</u>
Automatically forward National Weather Service to O&M staff	ASAP		1/7/21 Complete
Enact a clear staff chain-of-command policy that addresses regular and periodic staff absences	ASAP		1/7/21 Complete
Order polymer and install chemical pump to improve solids dosing and settling	1/15/21	\$2000	Pump and chemical ordered 1/7, ETA 1/8, equipment will be set up, tested and in service complete by 1/15/21
Set aeration basin min, max, and target loading levels	1/8/21		1/6/21 Complete. Winter 17,000 lbs, Summer 16,000 lbs.
Stress test and set clarifier #1 min, max, and target sludge blanket levels	1/15/21		Data will augment WWTP high flow SOP

Stress test and set clarifier #1 min, max, and target sludge blanket levels	1/15/21		Data will augment WWTP high flow SOP
Develop written WWTP storm high flow SOP	2/15/21		First draft due complete by 2/15, final draft complete by 3/1/21
Convert Clarifier #1 RAS pumps from fixed rate to variable speed to pace incoming flow	2/28/21	\$2000	Not started
Convert Clarifier #2 and #3 RAS pumps from fixed rate to variable speed to pace incoming flow	3/31/21	TBD	Not started
Add SCADA sustained high influent flow rate alarm	2/28/21	\$500	Not started
Purchase and replace UV lamps as necessary	2/28/21	\$8500	1/7/21 Parts ordered, delivery pending
Schedule Wedeco UV tech onsite to PM system, install a manual switch, and provide planning level scope to add additional UV banks	3/5/21	\$5000	1/7/21 Tech scheduling requested, estimated 3 – 6 weeks delay prior to site visit
Purchase pump and equipment to efficiently transfer final effluent to fill clarifier	1/30/21	\$1000	Pending
Install effluent turbidimeter with SCADA alarm	TBD	\$6000	Implementation under review, pending cost benefit analysis
Configure remote SCADA connection	TBD	TBD	Implementation under review, pending cost benefit analysis
Relocate effluent pump backup generator receptacle	TBD	\$4000	Rewire to include UV if feasible
Develop recurring and on-call electrician Unit Bid Contract	9/30/21		Required for afterhours emergency service

Updates on Other Related WWTP Work

WWTP Capacity Study (ongoing and future)

As mentioned previously, the Department is wrapping up a consultant study of the plant's capacity, including an analysis of high intensity commercial users (particularly wineries and breweries) and their contributions to the inflow characteristics. The results of this study, which will likely include a recommendation for a closer and more in-depth evaluation of plant operations and proposed infrastructure investments, will be available in February. A Council briefing is scheduled for Q1.

Tertiary Treatment Analysis (ongoing)

The previously mentioned consultant study will also contain information regarding a pre-evaluation of enhanced secondary treatment options and tertiary treatment options (the current plant encompasses secondary treatment to meet permit requirements). The enhanced secondary treatment options include improvements that may be necessary to meet anticipated near term permit limitation requirements (that will be applied state-wide by the Department of Ecology). The tertiary treatment options include improvements that may be required by Ecology in the longer term and could also lead to wastewater re-charge or re-use. A Council briefing is scheduled for Q1.

Biosolids Handling (future)

As a part of the more in-depth plant capacity evaluation, Department staff will be recommending the inclusion of a body of work that addresses biosolid handling at the plant. The plant biosolids (the compressed and de-watered sludge that is removed by the plant clarifiers) is presently trucked to an off-site landfill, however, the City's permit requires that additional treatment and disposal options be implemented in the next several years. The biosolids handling is a pinch point for treatment capacity, as storage is limited on the restricted site (being surrounded by a residential neighborhood), and space limitations also contribute to the inability to add further bio-solids processing facilities at the site.

Fats, Oils and Greases Ordinance (future)

As a sub-set of the above evaluation work being performed by Department staff, include the development of a pre-treatment ordinance that will increase regulations on commercial establishments for ensuring that fats, oils and greases are disposed of properly. These regulations, which will be proposed to the Council mid-year, will contribute to reducing BOD and TSS levels contained in the plant inflows by ensuring they are mitigated – or eliminated - at the source.

Appendix A

Influent Flow			
Max Day Flows >1.2 MGD are highlighted			
Monthly Ave Flows > 0.8 MGD highlighted			
Month	Mnthly Ave	Max D	Clarifier Data
1-Mar-11	0.720	1.457	Three clarifiers on line
1-Nov-12	0.622	1.472	Three clarifiers on line
1-Dec-12	0.770	1.355	Three clarifiers on line
1-Mar-14	0.807	1.412	Two clarifiers on line
1-Dec-15	0.795	1.261	One clarifer on line
1-Jan-16	0.843	1.829	One clarifer on line
1-Mar-16	0.811	1.241	One clarifer on line
1-Jan-17	0.677	1.504	One clarifer on line
1-Feb-17	0.872	1.768	One clarifer on line
1-Mar-17	0.869	1.356	One clarifer on line
1-Jan-18	0.846	1.290	Three clarifiers on line
1-Dec-19	0.579	1.326	Two clarifiers on line
1-Jan-20	0.758	1.201	Two clarifiers on line
1-Feb-20	0.737	1.464	Two clarifiers on line
1-Dec-20	0.644	1.222	One clarifer on line

Figure 1 – Ten-year summary of maximum daily WWTP inflows greater than 1.2 MGD. Source: WWTP SCADA system data

Rain Gage--01 Kitsap Public Utility District Office

Lat/Long: 47.7551 -122.67 Elv: 292

Local Number: 26N/01E-10N

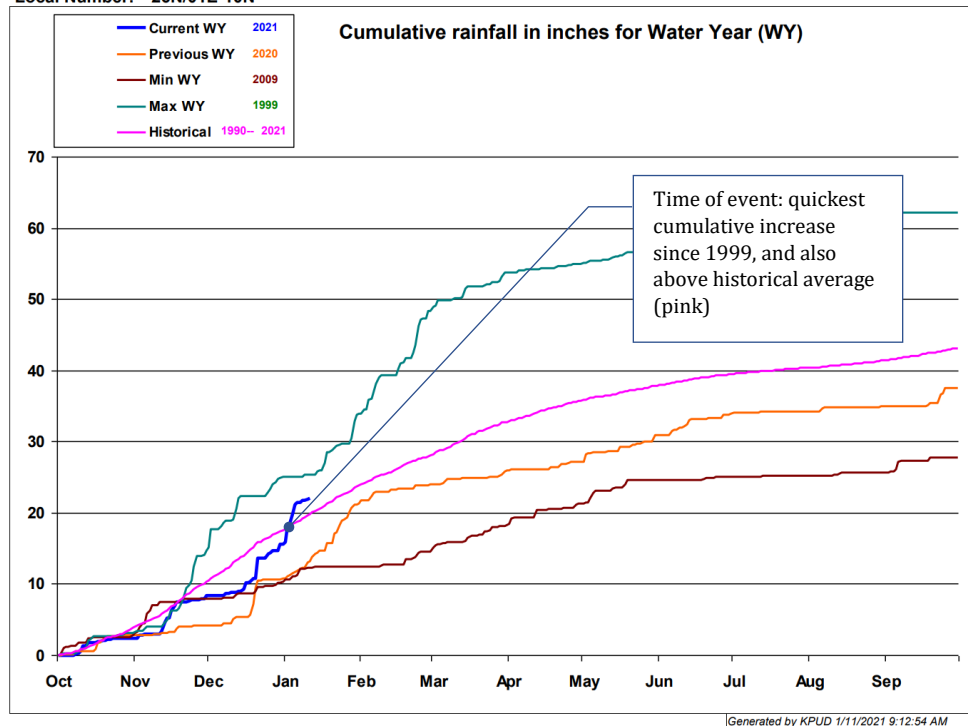


Figure 2 – Cumulative rainfall summary for 2021 compared to previous year, minimum and maximum

Influent Flows over 1 MG for more than 1 day					
Start Date & flow MG	Day 2	Day 3	Day 4	Day 5	Day 6
1/11/2010 1.117	1/12/2010 1.095				
12/11/2011 1.255	12/12/2011 1.578	12/13/2011 1.172			
3/14/2011 1.376	3/15/2011 1.219	3/16/2011 1.012			
11/19/2012 1.472	11/20/2012 1.091	11/21/2012 1.131			
12/1/2012 1.226	12/2/2012 1.033	12/3/2012 1.020	12/4/2012 1.133		
12/19/2012 1.042	12/20/2012 1.355				
3/5/2014 1.214	3/6/2014 1.229				
12/7/2015 1.099	12/8/2015 1.269	12/9/2015 1.221	12/10/2015 1.033		
1/21/2016 1.429	1/22/2016 1.322	1/23/2016 1.065			
3/12/2016 1.059	3/13/2016 1.106				
1/18/2017 1.368	1/19/2017 1.130				
2/9/2017 1.571	2/10/2017 1.099				
2/15/2017 1.362	2/16/2017 1.425	2/17/2017 1.007			
3/14/2017 1.099	3/15/2017 1.063				
1/29/2018 1.084	1/30/2018 1.002				
2/12/2019 1.098	2/13/2019 1.071				
12/20/2019 1.301	12/21/2019 1.349				
1/23/2020 1.061	1/24/2020 1.162				
1/28/2020 1.201	1/29/2020 1.069				
2/3/20 1.4640	2/4/2020 1.0420				
12/21/2020 1.220	12/22/2020 1.0440				
1/2/2021 1.0470	1/3/2021 1.4260	1/4/2021 1.4090	1/5/2021 1.2190	1/6/2021 1.4410	1/7/2021 1.0060

Figure 3 – Ten-year summary of sustained WWTP inflow events over 1 MGD. The longest sustained event over 1 MGD is the last row of the chart representing the recent event. Additionally, there were 8 events greater than 1 MGD in between 2010-2015 (yellow), and 14 events between 2016-2020 (blue).

Historical BOD and TSS Loads

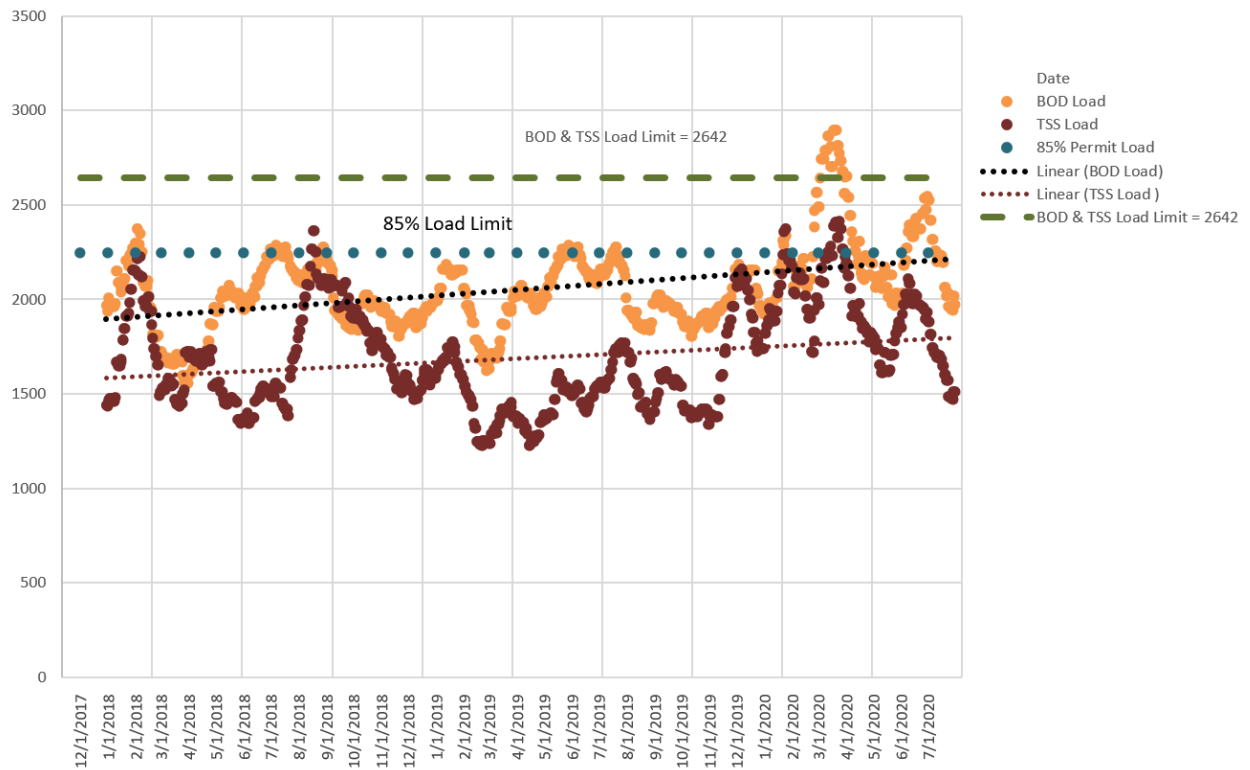


Figure 4 – Three-year summary of BOD and TSS loading into the WWTP (linear BOD trend, black dotted upward line; TSS trend brown dotted upward line). Source: Murray-Smith plant capacity study, to be released in Q1 2021

Climate Action Plan: Status of 18 Immediate Actions (January 21st, 2021)

Area	Immediate Action	Status	CCAC Lead
Implementation	5.A.1.b/6.A.1.c/7.D.1.a: Use the EcoAdapt Climate Change Adaptation Certification Tool in COBI decision making.	Proposal submitted to City	Lara
	9.B.1.a: Equity implications are addressed in all actions	Planning joint meeting with RETF/CCAC.	Mike
	8.C.1.b/8.C.1.a: Hire City staff to coordinate and lead climate efforts and review existing authorities.	Proposal submitted to City	Mike
	9.D.1.a: Develop cost estimates and staffing needs for priority actions.	TBD	All
GHG Inventory	2.A.1.a: Improve accuracy of GHG Inventory.	Proposal submitted to City.	Gary
Energy	3.A.1.b: Work with PSE to reduce our energy demand.	PSE put out RFP for demand reduction program and Connected Communities grant.	David
	3.B.1.a: Work collaboratively with PSE, via the PSE Franchise to green our energy supply.	Recommendation to City Council	Mike
	3.B.1.c: Prohibit propane, fuel oil, and wood stoves for primary heating in new buildings.	TBD	Mike
	3.A.2.a: Initiate discussions on establishing a Green Building and Energy Fund	Proposal submitted to City	David
Transportation	4.A.1.a: Support the recommendations from the Sustainable Transportation Task Force and ensure potential GHG emission reductions are considered in all options considered by Task Force.	Working with Mark Epstein and STTF.	Derik
	4.B.1.a. Transition COBI's fleets to primarily electric vehicles, use biofuels where not an option, and encourage other Bainbridge Island taxing districts to also develop a plan.	Proposal submitted to City	Derik
	4.B.2.a. Evaluate current code to see if a need to increase the number of EV-charge-ready for all new development/major	TBD	Derik

Area	Immediate Action	Status	CCAC Lead
	renovations and multifamily units/commercial development include EV charging infrastructure.		
Buildings	5.A.1.a: Support the recommendations from the Green Building Task Force.	Working with Peter Best and GBTF.	Mike
	5.B.1.a., b., and c: Build on preliminary sea-level rise assessment endorsed by CCAC.	James Rufo-Hill will engage with Peter Best.	Mike
Natural Environment	6.A.2.a: Create list of tree and plant species expected to be favored by climate change that can be used for forest management and restoration actions.	TBD	Deb
Waste	7.A.2.a: Pass an ordinance to reduce single-use plastics.	Conversations initiated with Council.	Deb
Community Engagement	8.A.1.a. and b: Develop a web presence for climate change on City website and make climate information widely and easily available to all community members.	Proposal submitted to City	Julie
	8.C.2.a: Establish equitable access to recharging generators and cell phones during outages, and provide emergency food/water/filtered air during poor air quality due to wildfires.	TBD	Lara

Climate Change Advisory Committee: 2020 Progress Report and 2021 Workplan (1/21/2021)

2020 Progress Report

- Developed first-ever Climate Action Plan (CAP) for the City of Bainbridge Island (COBI) that was approved by City Council.
- Had over 10 meetings with City staff in the development of the CAP to receive their input.
- Developed “roadmaps” for eight of the 18 immediate actions identified in the CAP.
- Collaborated with the Green Building Task Force (GBTF) and Sustainable Transportation Task Force (STTF) to ensure we were consistent in our approach to addressing climate change and had several meetings with the Chair of the Race Equity Advisory Committee (REAC).
- Worked with the Utilities Advisory Committee (UAC) to develop recommendations for the City regarding the PSE Franchise.
- Provide presentations to several local groups on climate change and the CAP (e.g., Bainbridge Island Parks District, Senior Center, Oatmeal Club, and Rotary).

2021 Workplan

Participate in Community meetings and general outreach on the CAP and climate change

- CCAC members facilitated two Community meetings in January on the contents of the CAP and answered questions from the Community.
- CCAC members will provide presentations to other Community groups as requested and work with COBI to provide information to the public on the CAP and climate change in general.

Support COBI in the implementation of the CAP

- CCAC members will work in collaboration with COBI to implement the actions identified in the CAP.
- CCAC members will meet with COBI staff when requested to provide information and support in implementation of specific actions.

Complete roadmaps for the 18 immediate actions identified in the CAP and propose additional actions

- CCAC members will complete roadmaps for all 18 immediate actions identified in the CAP.
- CCAC members will identify the next set of actions in the implementation of the CAP and present to the City Council for their review.

Collaborate with other advisory and task forces on the Island

- CCAC members will collaborate with the GBTF and STTF as they develop their strategies.
- CCAC members will work with the REAC to develop a racial equity lens for the Island.
- CCAC members will work with the UAC on the PSE Franchise.

Respond to requests from City Council

- CCAC members will respond to requests by the City Council for specific analysis or advice on issues related to climate change.

If you have questions please contact either Michael Cox or David McCaughey.