CITY OF
BAINBRIDGE ISLAND

Green Building Task Force
Special Meeting
Thursday, December 17, 2020
3:00 – 5:00 PM
Online meeting via Zoom

The Green Building Task Force (GBTF) will hold this meeting using a virtual, Zoom webinar platform, per Governor Inslee's "Stay Home, Stay Healthy" orders.

Members of the public will be able to call in to the Zoom meeting.
Please click the link below to join the webinar:

https://bainbridgewa.zoom.us/j/95154605467

Or iPhone one-tap :

US: +12532158782,,95154605467# or +16699009128,,95154605467#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 253 215 8782 or +1 669 900 9128 or +1 346 248 7799 or +1 646 558 8656 or +1 301 715 8592 or +1 312 626 6799

Webinar ID: 951 5460 5467

International numbers available: https://bainbridgewa.zoom.us/u/aevL4vjsLM

AGENDA

3:00 PM	Call to Order (Attendance, Agenda, Ethics) Disclosure of Potential Conflicts of Interest Review & Adoption of Minutes: December 1, 2020
3:10 PM	Preliminary Draft Ordinance Update Road Map & First Steps Appoint Subgroup: Proforma Cost Analysis Appoint Joint-Subgroup with CCAC: Offset Project Types
5:00 PM	Adjourn

For special accommodations, please contact Planning & Community Development
206-780-3750 or at pcd@bainbridgewa.gov

CITY OF
BAINBRIDGE ISLAND

Green Building Task Force
Regularly Scheduled Meeting Minutes
Tuesday, December 1, 2020

Call to Order (Attendance, Agenda, Ethics)
Review Minutes – August 27, 2020
Update on Climate Action Plan – Climate Change Advisory Committee
Findings from Staff Review of GBTF Recommendations
Preliminary Draft Ordinance
Update Road Map & First Steps
Appoint Subgroup: Proforma Cost Analysis
Adjourn

Call to Order (Attendance, Agenda, Ethics)
Senior Planner Peter Best called the meeting to order at 3:05 PM. Task Force members in attendance were Jonathan Davis, Kathleen O'Brien, Richard Perlot, Jason Wilkinson, and Kathleen Smith. Julie Kriegh, Russ Hamlet, and Marty Sievertson were absent and excused. City Council Liaison Joe Deets was present. City Staff present were Interim Building Official Blake Holmes, and Administrative Specialist Carla Lundgren who monitored the remote meeting and prepared minutes.

The agenda was reviewed and approved.

Disclosure of Potential Conflicts of Interest – Jonathan Davis, Jason Wilkinson & Kathleen Smith disclosed potential conflict of interest due to association with programs/organizations/industries that may be included in the new green building code. Remaining Task Force members found no issue with the disclosures and opted to continue.

Review and Adoption of Minutes – August 27, 2020

> **Motion:** I move to adopt the minutes from August 27th.
> **Smith/Davis:** Passed unanimously

Update on Climate Action Plan – *Presentation Only*
Mike Cox, Co-Chair Climate Change Advisory Committee

Findings from Staff Review of GBTF Recommendations
Discussion only

Preliminary Draft Ordinance
Discussion only

Update Road Map & First Steps
Discussion Only

Appoint Subgroup: Proforma Cost Analysis
Discussion only – subgroup not appointed at this time

Adjourn
The meeting was adjourned at 5:05PM.

Green Building Task Force
Disclosure of Potential Conflicts of Interests

Updated July 2020

*To be read at the beginning of **each** meeting.*

As an initial note for the record, this Green Building Task Force consists of individuals with specific professional expertise in green building programs.

Members of the Task Force have provided, or will soon provide, the City with "Conflict of Interest Statements" that will be available via the Task Force's webpage.

In the interests of full disclosure and transparency, we will begin this meeting by asking each member of the Task Force to disclose whether they, or a member of their immediate family, have any direct or indirect contractual employment, financial or private interests, or other potential conflicts of interest in, or related to, any of the green building programs or other agenda items scheduled to be discussed at today's meeting.

[*Each Task Force member must verbally state their disclosure(s)*]

Having heard the disclosure(s) of your colleagues, are there any objections to the members of the Task Force in attendance proceeding with the agenda for today's meeting?

[*Pause for objections*]

[*If no objection*] Hearing no objection, by unanimous consent all members of the Task Force in attendance will fully participate in today's agenda.

[*If objection, the members should discuss their concerns. Individual members could agree to recuse themselves from discussion of specific agenda items, as may be warranted.*] Having discussed the objection(s) raised, all those in favor of proceeding in the manner discussed please signify by saying "aye." All those opposed?

Green Building Code

Repeal BIMC 15.04.020(J), International Green Construction Code.

NEW CHAPTER – BIMC 15.05 Green Building Code.

15.05.010 Purpose.

A. TBD

15.05.020 Applicability.

A. This chapter shall apply to alterations, additions, and new construction of occupied buildings for which a building permit is required by BIMC Chapter 15.04.
B. The Building Official may modify or waive the requirements of this code when necessary for the preservation and protection of historic buildings and historic sites consistent with BIMC Chapter 18.24.

15.05.030 Administration

A. The Building Official shall be responsible for implementing and interpreting this chapter.
B. The City should work with local utility providers and other organizations to develop and implement programs that support the purpose of this chapter as well as related goals and policies of the City's Comprehensive Plan. Education and outreach regarding the environmental, social, and financial benefits of green building will be essential to support the implementation of this chapter.
C. This chapter shall be enforced as provided in BIMC 1.26.

15.05.040 Definitions

A. If not otherwise defined in this section, the terms in this chapter shall be defined as provided in the following codes, which shall be applied in the following order:
    1. Those codes adopted in, and as amended by, BIMC Chapter 15.04.
    2. BIMC Title 18.
    3. Elsewhere in BIMC.
B. "Carbon dioxide equivalents (CO2e)" means …
    1. Carbon dioxide equivalents shall be stated in pounds (lbs) or tons (2,000 lbs).
    2. Conversions to carbon dioxide equivalents (CO_2e) shall be based on the carbon emissions factors specified in this chapter.
C. "Carbon emissions factors" are used to convert specific energy sources, such as electricity or propane, to carbon dioxide equivalents (CO_2e). The carbon emissions factors used in this chapter shall be those published in the 2018 Washington State Residential Energy Code, Table R405.3, or its successor.
D. "Energy Offset Credit" means …
    1. One (1) energy offset credit shall equal one (1) [unit TBD] of carbon dioxide equivalents per year (CO_2e/yr) using the calculation methods in effect at the time. Once created, the CO_2e/yr attributed to an energy offset credit cannot be changed.
E. "Operational energy use" means …

Commented [PB1]: Link to Comp Plan policy, climate action plan, unique circumstances, emergency/resilience, etc

Commented [PB2]: The intent is for this chapter to only apply to buildings that are for human habitation. This may not be the correct term.

Commented [PB3]:

TABLE R405.3
CARBON EMISSIONS FACTOR

TYPE	CO_2e (lb/unit)
Electricity	0.80
Natural gas	11.7
Oil	19.2
Propane	10.5
Other[a]	195.00
On-site renewable energy	0.00

a. District energy systems may use alternative e
by calculations *approved* by the *code official*.

15.05.050 Residential Buildings

A. This chapter is not intended to conflict with the state residential building code or the state residential energy code, as amended. If there is a conflict, the state residential building code and state residential energy code shall govern.

B. It is strongly encouraged and completely voluntary for residential buildings to outperform the state residential energy code to further reduce the net operational energy use of the building.

C. Net operational energy use shall be offset as provided in BIMC 15.05.070.

15.05.060 Non-Residential Buildings

A. Net operational energy use shall be offset as provided in BIMC 15.05.070.

15.05.070 Offsetting Net Operational Energy Impacts

A. (statement regarding city authority)

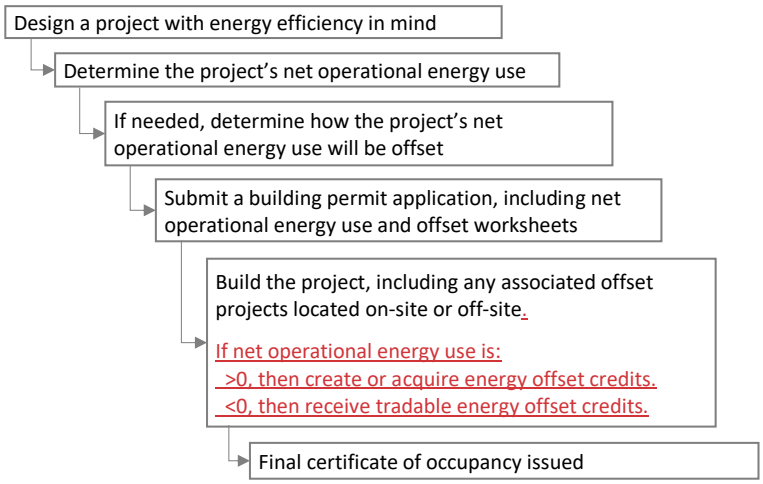
B. The following are exempt from the requirement to offset operational energy impacts.

1. The following are exempt because the expected net impact is at most minimal (i.e.: *de minimis*) and therefore do not require offsets.
    a. Any project type listed in Table 15.05.070(E) for which energy offset credits have been issued;
    b. Alterations that do not change the buildings existing thermal envelope, space heating system, or water heating system;
    c. Renewable energy production;
    d. Electric vehicle charging stations;
    e. Emergency backup power (i.e. generators or batteries);
    f. ~~Decorative~~ Ornamental fireplaces of any fuel type;
    g. (Others TBD)
2. The following are exempted because ???
    a. Industrial shop space (conditioned office and warehouse space is not exempt)

C. The general process for offsetting net operational energy impacts is depicted in Figure 15.05.070(C).

Commented [PB4]: Needs review and likely clarification/modification. The intent is to exempt internal remodels (kitchens, baths, etc) that do not affect the energy efficiency of the building.

Figure 15.05.070(C)



D. One hundred percent (100%) of net operational energy use shall be offset before a final certificate of occupancy is issued.

1. Net operational energy use shall be stated in carbon dioxide equivalents per year (CO_2e/yr) and determined using the following formula:

Building energy use (CO_2e/yr)	
– Existing energy offset credits (CO_2e/yr)	
= Net operational energy use (CO_2e/yr)	*Where:*

a. "Building energy use" is determined by using …
   - TBD (suggest model-based approach tied to the state energy code to make the process easier)

b. "Existing energy offset credits" means the sum total of energy offset credits previously recorded to the project site consistent with 15.05.070(???).

2. When the net operational energy use of a project is greater than zero, the additional energy offset credits must be acquired from offset projects located in the City of Bainbridge Island.

E. Energy offset credits shall only be created and retired as provided in this section.

1. The City shall create and maintain an administrative program through which energy offset credits will be created, transferred, and retired.
   a. The Department of Community Development and the Department of Finance and Administrative Services shall be jointly responsible for administering the energy offset credit program and shall establish reasonable administrative procedures to facilitate an efficient and effective program.
   b. The City Council may establish fees by resolution to support the administration of the program.

Commented [PB5]: Administratively, the City should produce a worksheet to document this for consistency of review and clarity for the applicant.

2. Energy offset credits shall be created using only the offset project types listed in Table 15.05.070(E).
    a. An offset project shall only be used once to create energy offset credits and ~~may~~ shall not be used to create similar credits under any other program.
    b. The number of energy offset credits created per offset project shall be determined using the calculation method listed in Table 15.05.070(E).
    c. Energy offset credits shall be transferrable until retired.
3. An offset project from which energy offset credits have been created must remain operational for at least the minimum performance period listed in Table 15.05.070(E).
    a. Reasonable down time associated with maintenance, repair, or replacement of the offset project shall not count against or be considered a breach of the minimum performance period.
    b. A notice to title in a form approved by the City shall be recorded to the property to ensure:
        i. No additional energy offset credits are created from the same offset project(s); and
        ii. The offset project remains operational for the required performance period.
4. The City shall issue a serialized energy offset certificate after a qualifying offset project(s) has successfully passed inspection and is operational.
    a. The certificate shall include the following:
        i. Unique serial number;
        ii. Date of issuance;
        iii. Certificate owner and contact information;
        iv. Permit number;
        v. Project name;
        vi. Parcel number;
        vii. Legal description of the property;
        viii. Description of the qualifying offset project(s); and
        ix. Total number of energy offset credits allocated to the certificate.
    b. Once issued, the total number of energy offset credits initially allocated to each certificate shall not be recalculated or modified.
5. Exchange of energy offset credits …
    a. TBD (recorded to certificate through City)
6. Energy offset credits shall be retired …
    a. TBD (recorded to property title)

Table 15.05.070(E)

	On-Site	Off-Site	Offset Project Type	Min. Performance Period	Offset Credit Calculation
1	x	x	Upgrade the energy efficiency of an existing building	???	The difference between the energy efficiency of the building before and after the upgrade as determined using the modeling methods in BIMC 15.05.070(D)(1).
2	x	x	Install grid-tied renewable energy production capacity, such as roof-top or ground-	???	Annual productive capacity in kWh as determined by …

Commented [PB6]: Should this be included or is it too complicated or unnecessary?

Will ROI incentivize a reasonable project?

Will net cost savings incentivize repairs and replacement, when needed?

Does the market already provide reasonable durability?
- For example: Solar panels appear to be warranted for 25 years or more.

Commented [PB7]: Should this be limited to solar or also allow for wind?
Note: As currently proposed, renewable energy production that is not grid-tied may be installed but cannot be used to create credits.

Commented [PB8]: Are there standard methods for modeling productive capacity based on latitude and site-specific solar exposure or do we just use the rating of the system?

			based solar panels with net metering		Convert annual productive capacity to CO_2e/yr using the carbon emissions factor for electricity.
3	x	x	Install new grid-tied battery storage capacity	???	???
4	x	x	Install a new grid-tied electric vehicle charging station	???	???
5	x	x	Pay an in-lieu fee as provided in BIMC 15.05.070(F)	n/a	n/a

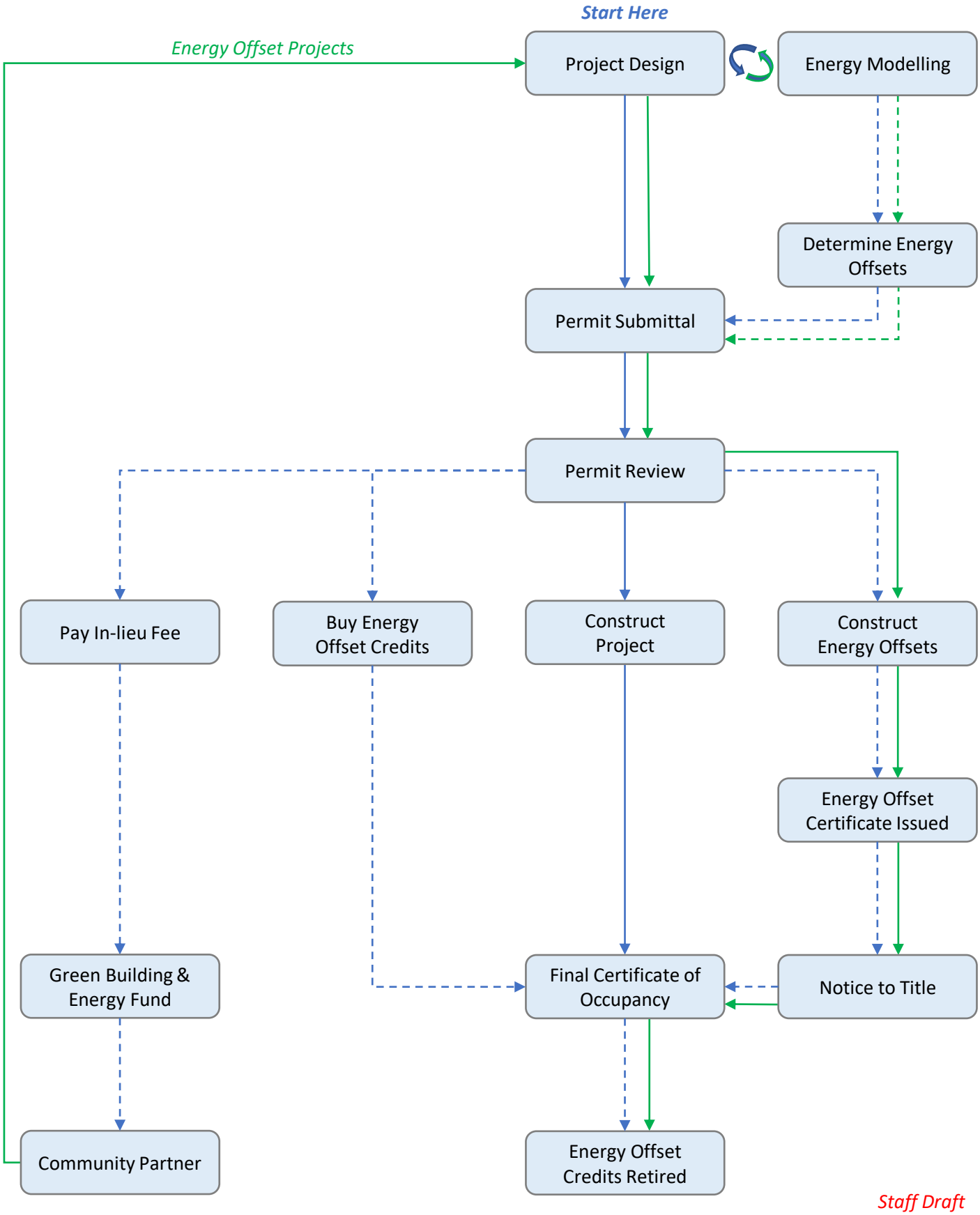
Note: The electric utility and government entities may have financial incentives or technical assistance programs that could help with offset projects.

F. An in-lieu fee shall be established by resolution of the City Council.
   1. All funds shall be deposited into the Green Building and Energy Fund.
   2. All in-lieu funds collected shall be used on Bainbridge Island to install or acquire the required number of credits using the off-site methods listed in Table BIMC 15.05.070(E).
   3. In-lieu fees shall be determined …
      a. TBD

Commented [PB9]: Need to confirm PSE is ready for this.
Note: As currently proposed, off-grid battery backups may be installed but cannot be used to create credits.

Commented [PB10]: Need to confirm PSE is ready for this.
Need to confirm stations are available in the marketplace.
Note: As currently proposed, stations that are not grid-tied may be installed but cannot be used to create credits.

COBI Green Building Energy Offset Program - Overview



Staff Draft
12/11/2020

Green Building Code

Energy Offset Program

Process Examples

Staff Draft
12/11/2020

LEGEND

Color = Applicant
Shape = Process

Color = COBI
Dash = If necessary

Color = 3rd Party
Shape = Document

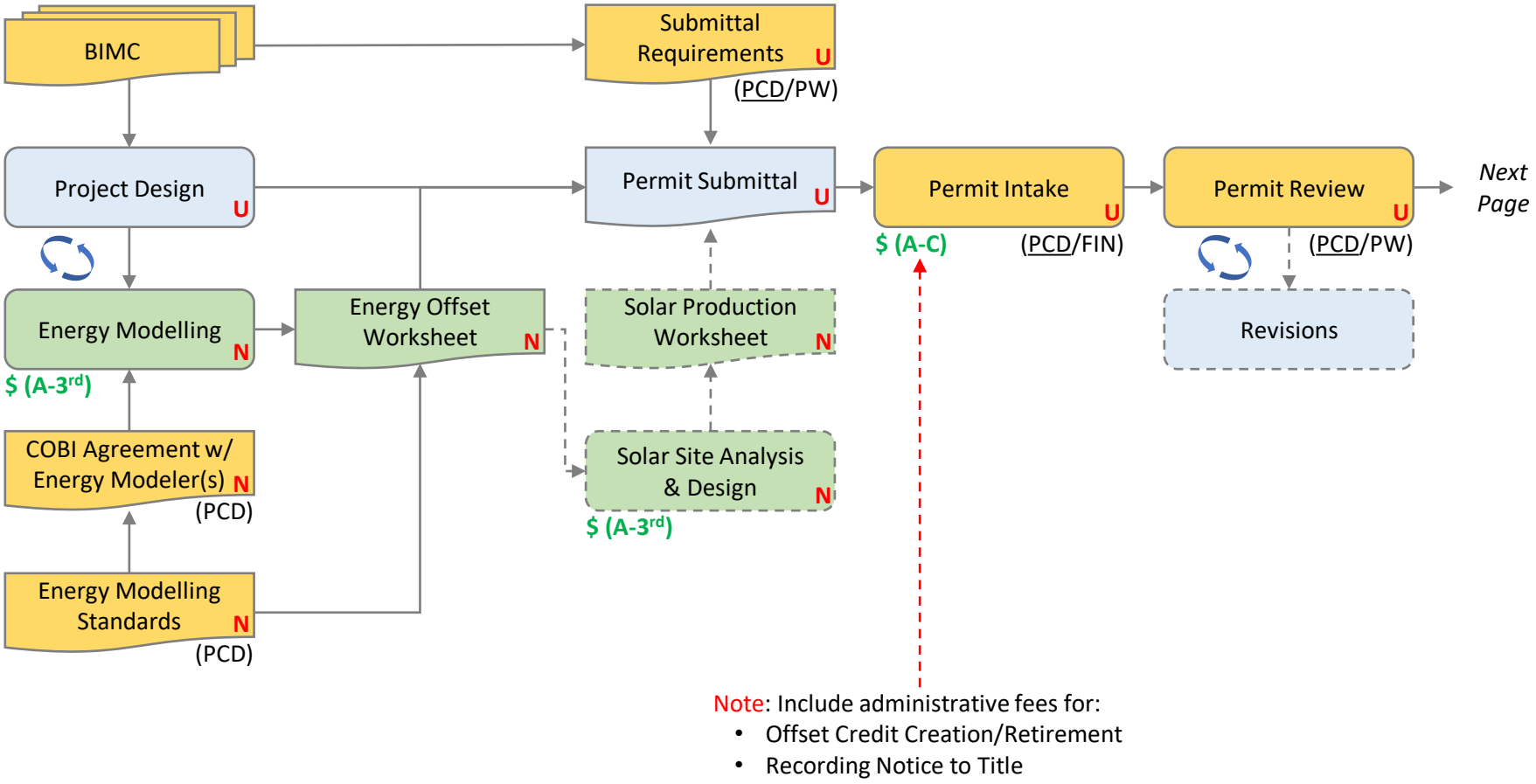
Relationship between steps may be iterative

U = Update needed
N = New step

$ (Payment from-to)
(A-3rd) = Applicant to 3rd Party
(A-C) = Applicant to City
(C-A) = City to Applicant
(C-3rd) = City to 3rd Party
(C-C) = City Inter-Fund Transfer

(Lead/Responsible Dept.)
PCD = Planning
PW = Public Works
FIN = Finance

Example #1 (Offsets Constructed On-site or Off-site at time of Project)



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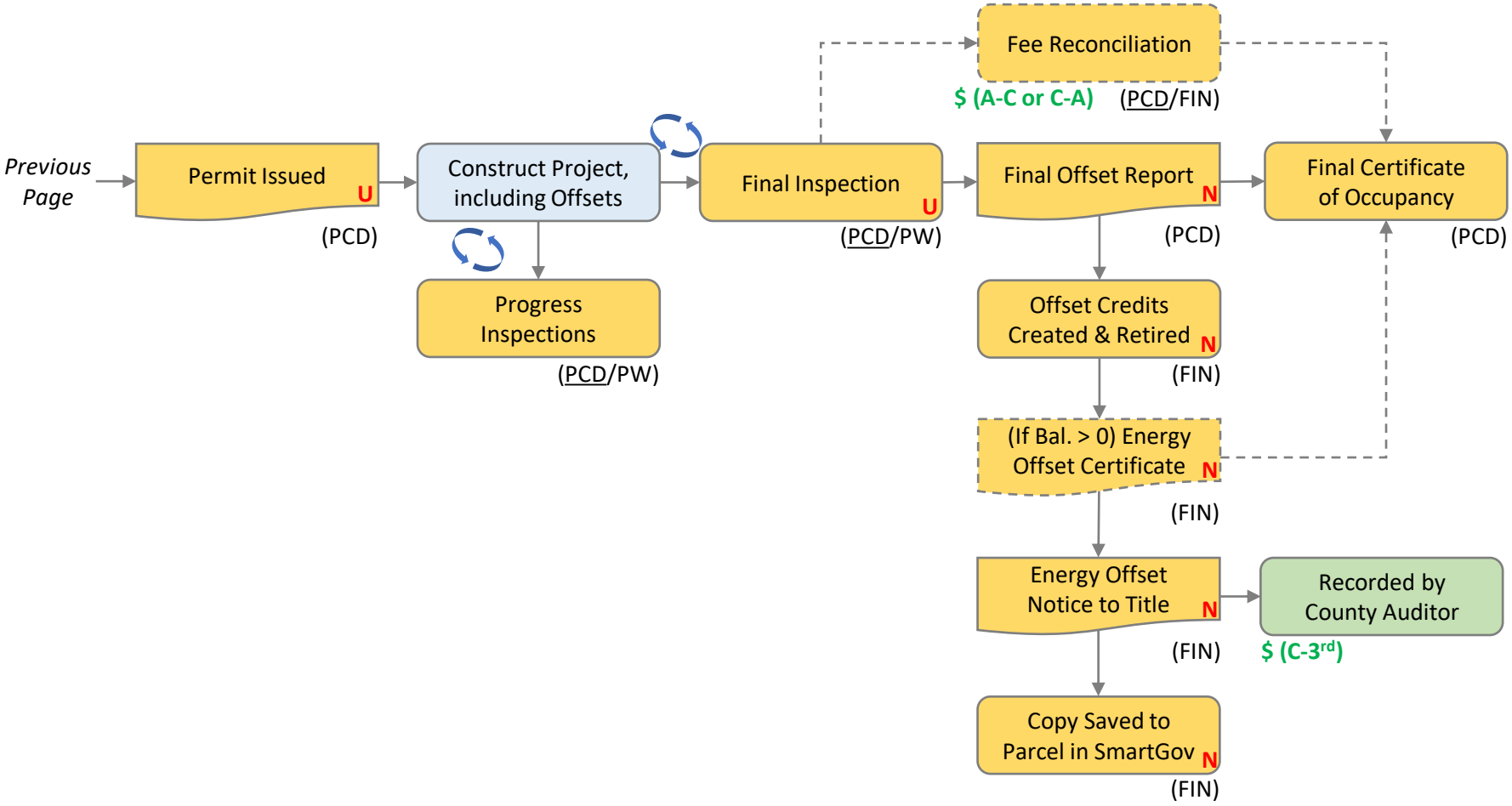
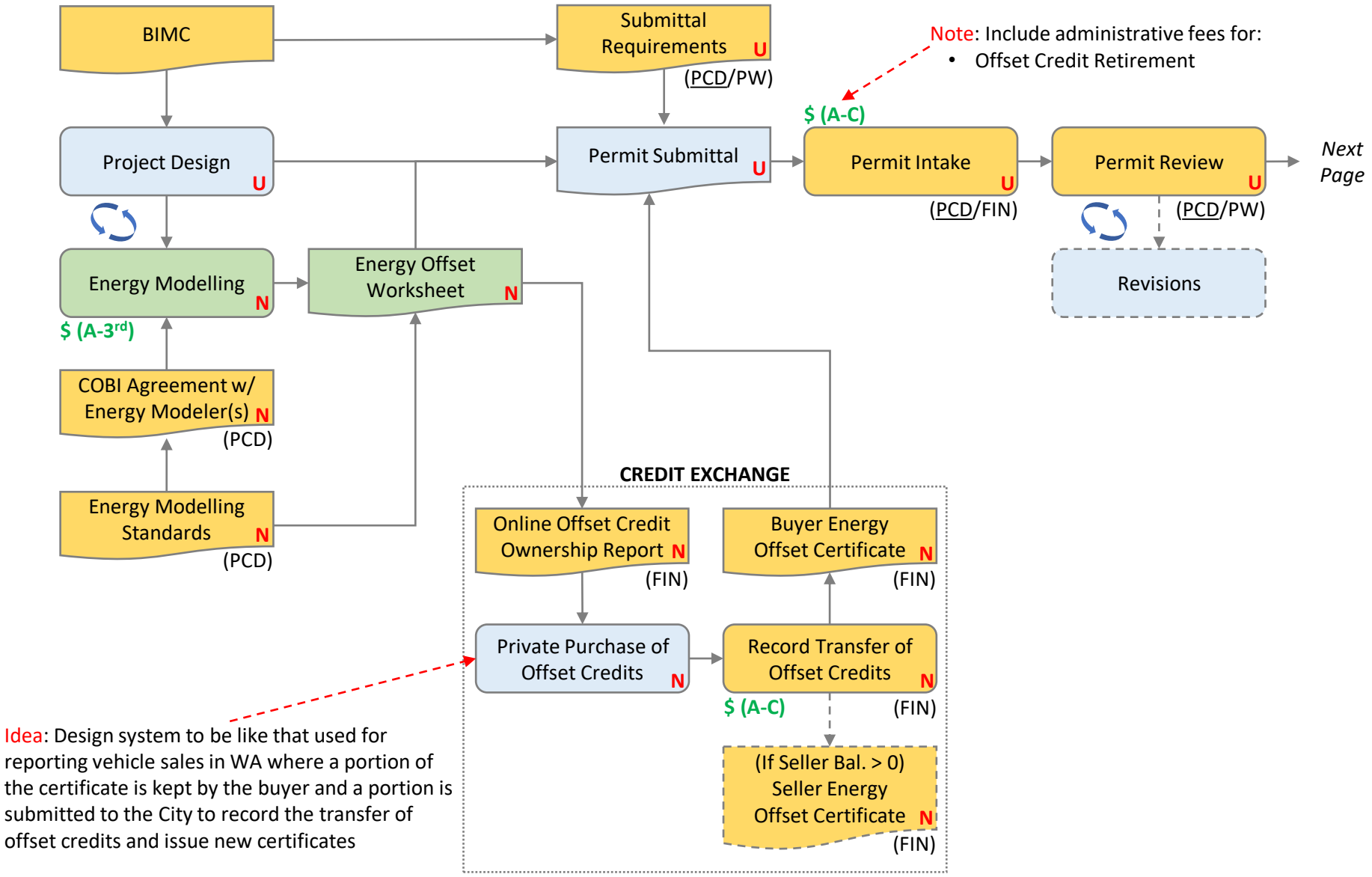


Example #2 (Project with Purchase of Existing Offset Credits)



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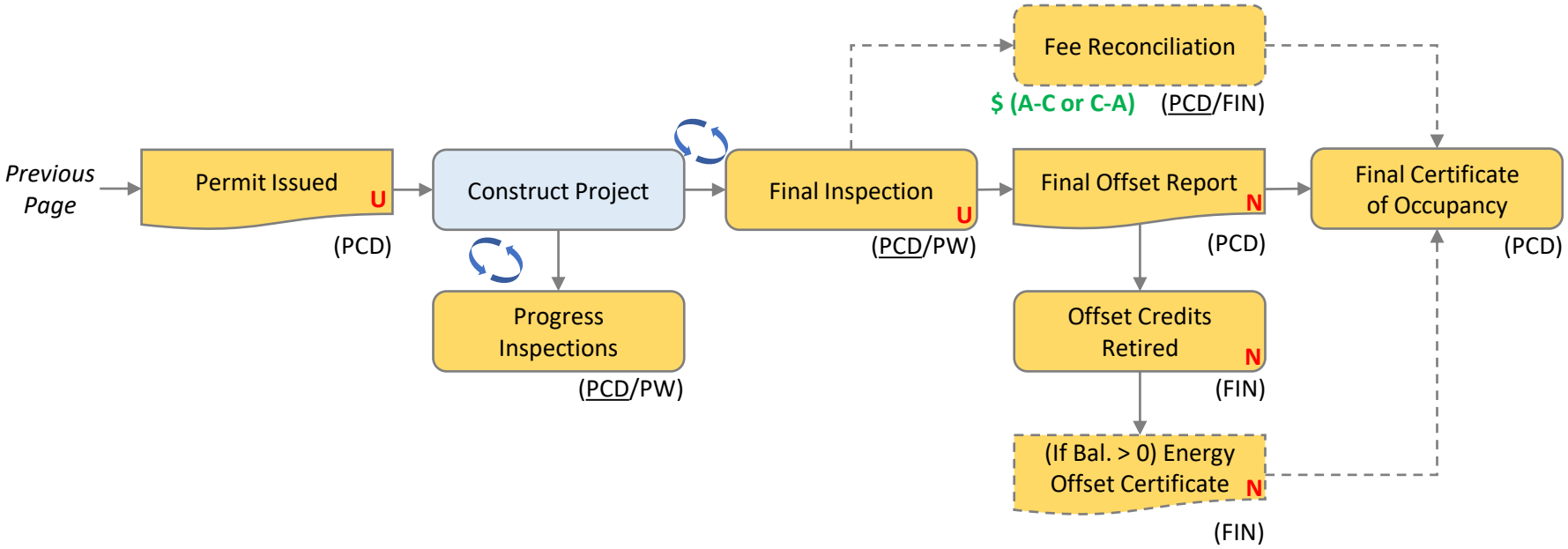
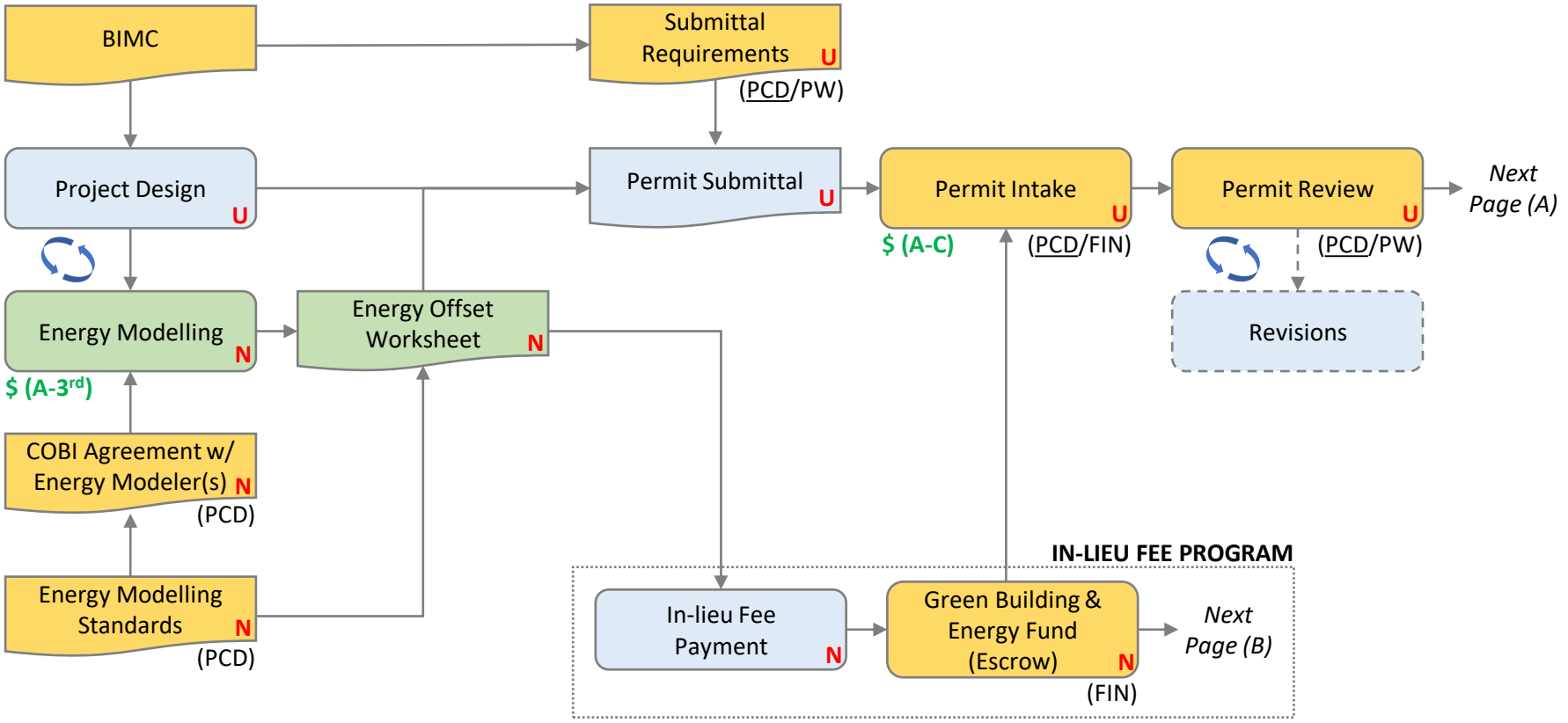
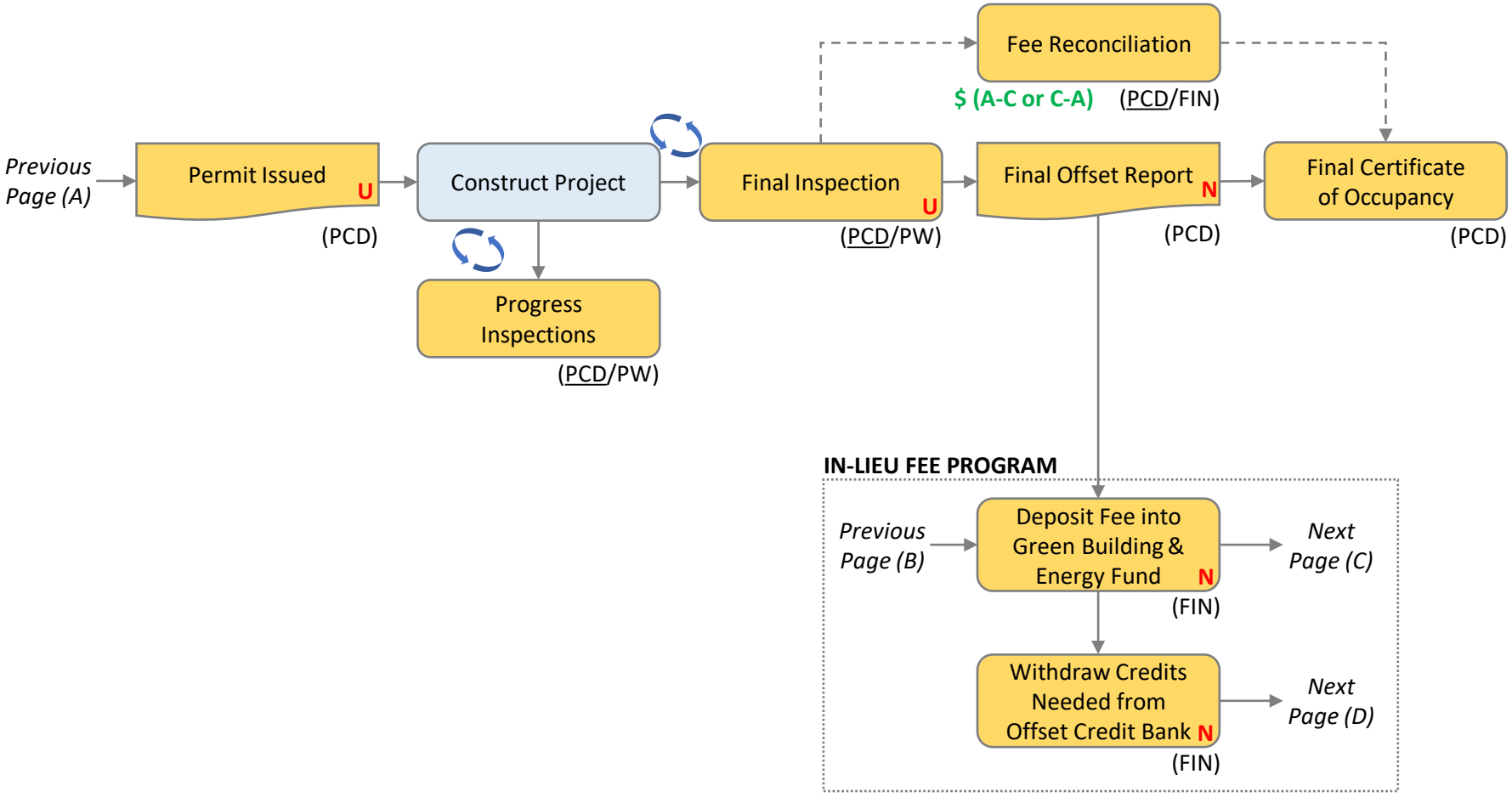


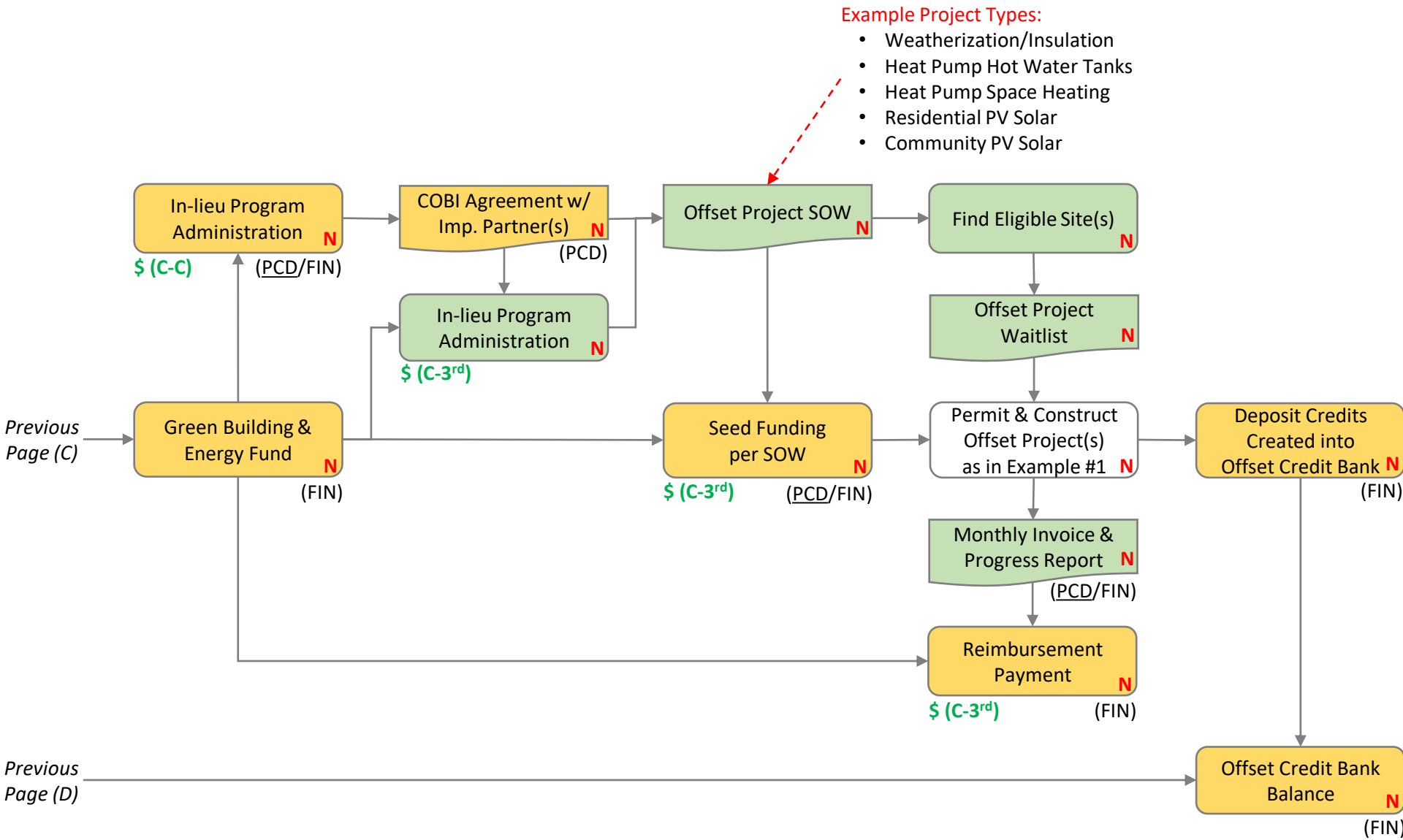
Example #3 (Project with In-lieu Fee Payment)



Example #3 (Project with In-lieu Fee Payment)



Example #4 (Construct In-lieu Offset)



CITY OF BAINBRIDGE ISLAND

Department of Planning and Community Development

Memorandum

Date: November 17, 2020

To: City Manager
City Council

From: Heather Wright, Planning Director
Peter Best, Senior Planner

Subject: Green Building Task Force Update

I. Background

On June 16th, the City Council directed the Green Building Task Force (GBTF, Attachment 2) to recommend an interim "off the shelf" green building program (or components of a program) to be implemented before the current development moratorium expires[1] to help with the City's greenhouse gas (GHG) emission reduction goals while a full Bainbridge Island program is developed. The Council also stated this direction was made within the context of their recent declaration of a climate emergency (Resolution 2020-05) and reaffirmed their previous direction for the green building initiative to aggressively contribute to GHG emission reductions.

On September 1st, the City Council directed staff to proceed with drafting an ordinance based on the GBTF recommendations and ongoing staff review and legal analysis.

On September 15th, the City Council agreed to a brief delay in the project timeline in order for staff review and legal analysis to be completed. The Council also reiterated the importance of continuing to develop an ambitious local interim green building program and discussed the possibility of seeking legislative changes to state laws that limit local green building programs.

Note: A summary of prior actions related to the Green Building Initiative is provided as Attachment 1.

Adopting a green building code is (see Attachment 3):

- A City 2020 work plan priority
- A Comprehensive Plan policy
- A Climate Action Plan goal and priority strategy

A green building code will benefit the Bainbridge Island community by:

- Reducing greenhouse gas emissions (see Attachments 4 and 5)

[1] The adopted motion specified October 20, 2020 as the implementation deadline for an interim green building program. However, at the time the motion was adopted, the development moratorium (Ordinance 2020-09) was set to expire on October 3, 2020. The moratorium has since been narrowed and extended to April 3, 2021 (Ord. 2020-24).

    - The City's goal is to reduce community emissions 90% by 2045 (from 2014 levels)
    - 55% of 2018 community emissions were from building energy use
- Conserving energy (see Attachment 6)
    - Demand is increasing due to transportation electrification (ferries, cars, etc) and growth
    - Capacity is limited and we wish to avoid (or at least delay) building a new substation
- Conserving water
    - Bainbridge Island is a sole source aquifer

II. GBTF Recommendations

The GBTF recommendations were provided in two deliverables.

Road Map (Attachment 7) – The Road Map outlined a 3-phase process for developing and implementing a comprehensive green building program for Bainbridge Island. The Road Map is guided by five overarching principles and each phase is guided by a general theme.

First Steps (Attachment 8) – These First Steps provided the initial interim program requested by the City Council. These recommendations represent Phase 1 of the Road Map and contain the core elements of the comprehensive green building program.

III. Status Update

Staff (including legal, planning and building) completed reviewing the GBTF recommendations and as a result, will be proposing modifications. As discussed with City Council previously, the primary issues included:

- Deviating from and exceeding the state residential energy code, which sets minimum and maximum requirements without the possibility of local amendments.
- Deviating from the state residential building code, which has a very high bar for local amendments.
- Reliance on private 3rd party green building certifications, which raised a variety of administrative and legal questions, particularly related to the two issues above.

IV. Next Steps

1. Staff is scheduling a meeting with the GBTF to review proposed modifications that would:
    - Comply with existing legal constraints.
    - Achieve similar outcomes.
2. We anticipate having a study session with the City Council in December to review a revised proposal.

V. Attachments

1. Green Building Initiative History Log (updated)
2. GBTF Roster (unchanged)
3. City Green Building Policies (unchanged)
4. Greenhouse Gas Emission Inventory Fact Sheet (unchanged)
5. Greenhouse Gas Emissions Charts (unchanged)
6. Bainbridge Island Energy Demand & Conservation (unchanged)
7. GBTF Road Map Recommendation (unchanged)
8. GBTF First Steps Recommendation (unchanged)

Green Building Initiative
History Log

Date	Description
7/17/2018	CC study session on a green building incentive program
11/5/2019	CC study session on an approach to a green building code
12/3/2019	CC study session on the 2019 City of Bainbridge Island Greenhouse Gas Emissions Inventory Final Findings Report which documented that 55% of the communities overall emissions came from building energy use.
12/10/2019	CC study session on workplan for green building code options
1/7/2020	CC provided direction on GBTF recruitment and for aggressive GHG reduction
1/16/2020	CC adopted its top priorities for 2020 as well as the 2020 Citywide Work Plan which affirmed green building remains a top priority
2/4/2020	CC update on GBTF applications and selection process
3/3/2020	CC update on GBTF applications and appointment process
3/10/2020	CC advanced a slate of GBTF candidates for appointment on 3/24/2020
3/24/2020	CC appointed GBTF members
5/19/2020	CC retained the green building initiative as a City workplan priority
5/26/2020	CC adopted the goals and strategies for the Climate Action Plan presented by the City's Climate Change Advisory Committee, which includes overarching GHG reduction goals as well as goals and strategies related to green building
6/9/2020	CC declared a climate emergency (Resolution 2020-05)
6/16/2020	CC provided direction to the GBTF to recommend an interim "off the shelf" green building program (or components of a program) to be implemented before the current development moratorium expires (i.e.: Ordinance 2020-09 expires on 10/4/2020) to help with the City's greenhouse gas (GHG) emission reduction goals while a full Bainbridge Island program is developed.
7/7/2020	GBTF meeting #1
7/7/2020	CC update on GBTF schedule and startup
7/21/2020	GBTF meeting #2
8/4/2020	GBTF meeting #3
8/18/2020	GBTF meeting #4 – complete recommendations for multi-phase "Road Map" and "First Steps" ordinance
8/27/2020	GBTF meeting #5 – complete recommendations for multi-phase "Road Map" and "First Steps" ordinance
9/1/2020	CC study session #1 on GBTF recommendations
9/15/2020	CC study session #2 on GBTF recommendations • Briefly extended project timeline to complete staff review and legal analysis

Acronyms
CC = City Council
GBTF = Green Building Task Force
GHG = Greenhouse gas emissions

GREEN BUILDING TASK FORCE ROSTER

CITY OF BAINBRIDGE ISLAND

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6/26/2020

City Priorities and Policies Applicable to Green Building

2020 Citywide Workplan Priorities

- Support Council consideration of Green Building Initiatives (Q1 – Q4)
    - to include consideration of proposed solar ordinances

Comp Plan Goals & Policies

- Policy LU 5.5 - Implement a green building code.
- LU Action #3 - Amend the City's development code to implement green building codes. Utilize lessons learned from communities of comparable environmental and socio-economic characteristics to implement green building codes which address issues such as site sustainability, water use efficiency, energy use efficiency, indoor environmental quality, and the impact on the atmosphere, materials and resources by buildings.

Applicable to All Types of Buildings

- Policy 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.
- Policy EC 10.2: Partner with island architects, landscape architects, builders and related construction professionals to draft development standards and practices that incorporate green building practices and context sensitive design.
- Policy EN 2.3: Use new technologies to reduce environmental impacts such as solar panels, electric and hybrid vehicles, high-efficiency lights and heating systems.
- Goal EN-4: Encourage sustainable development that maintains diversity of healthy, functioning ecosystems that are essential for maintaining our quality of life and economic viability into the future.
- Policy EN 4.1: Employ conservation design methods and principles such as low impact development techniques for managing storm and waste water, green building materials, high-efficiency heating and lighting systems.
- 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.

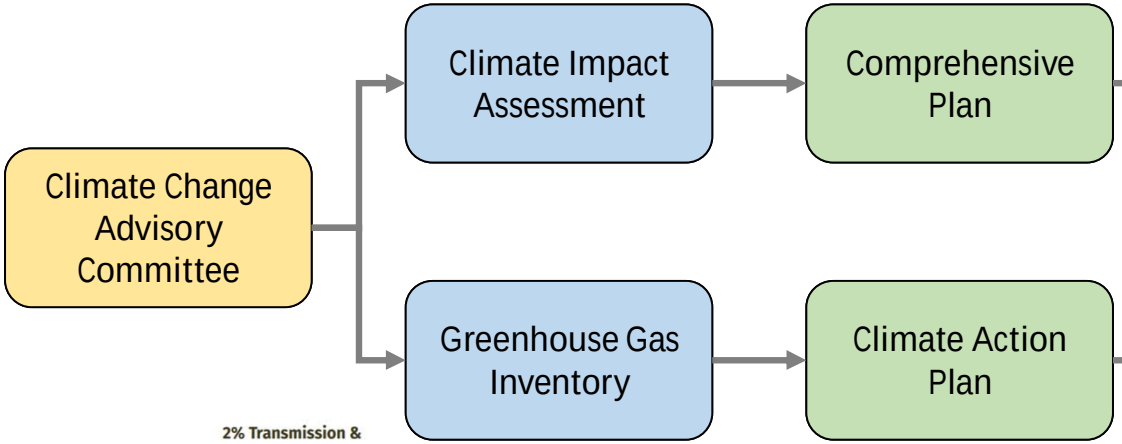
Applicable to City and Public Facilities Only

- GOAL EN-2: Encourage sustainability in City Government operations.
- Policy EN 2.1: In managing City government operations, take reasonable steps to reduce impacts to the environment and ecosystems upon which we depend. This includes recognizing and preparing for the impacts of climate change.
- Policy U 14.5: New taxpayer-funded buildings shall use carbon-neutral energy for heating, cooling, and operational use to the maximum extent practical.
- Policy EN 10.4: Ensure beneficial indoor air quality in all renovations and new construction of City-owned facilities.
- Policy EN 12.6: Promote energy conservation measures by all government entities including:
    - Retrofitting offices, shops and garages with high-efficiency lighting;
    - Converting vehicles to hybrid fuel vehicles as replacement or new vehicles are acquired;

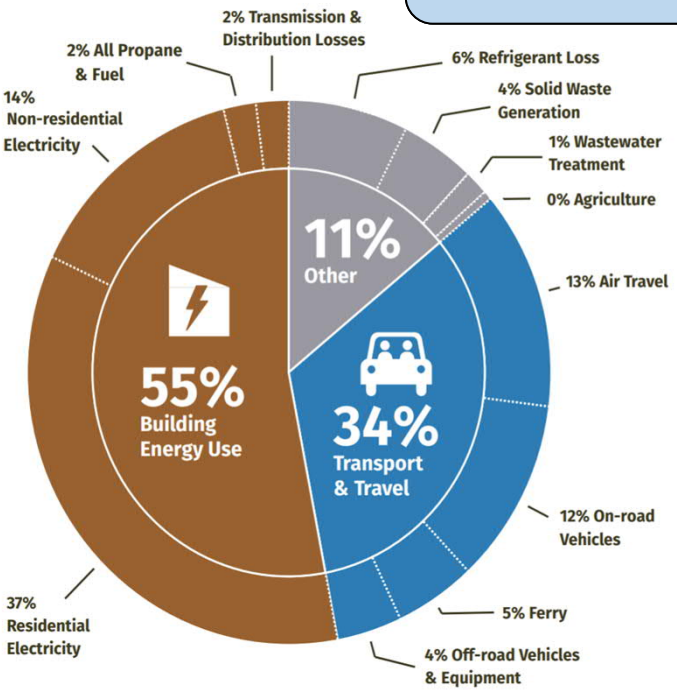
    - Converting traffic signals and lighting to the most energy efficient and spectrum appropriate technology available; and
    - Adopting incentive programs and design standards that encourage the employment of renewable energy sources and energy efficient appliances on the Island.
- Goal CF-4: Public 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.

Process Improvements

- Policy EN 12.3: Strive for reduced greenhouse gas 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 greenhouse gas emission reduction goals a component of city decision making.
- Policy EN 12.4: Establish benchmarks, metrics and targets for reduction of greenhouse gas emissions, assess current conditions and progress in reducing greenhouse gas emissions from municipal, commercial, residential and transportation-related land uses, projects and programs.
- Policy EN 12.5: Support the development of a public education program which informs all citizens on the methods and progress for meeting the Island's greenhouse gas emission goals and ways citizens can assist in reaching the reduction goals.
- Policy HO 6.4: Create a new conservation villages permit process to apply outside of designated centers to increase housing choices including affordable housing and requiring green building practices while better conserving open space.



Policy LU 5.5 - Implement a green building code.



Goal 3A: Increase energy conservation and efficiency, including customer-owned generation, across all energy sectors.
Goal 3C: Create energy self-sufficiency for emergency preparedness and increase energy infrastructure reliability and resilience.
Goal 5A: Reduce GHG emissions from all municipal, commercial, industrial and residential buildings.
Goal 6B: Protect and maintain the integrity of our Island's surface and groundwater resources in the face of climate change.
Goal 7B: Increase diversion of waste from the landfill.
Goal 8C: Empower and prepare COBI, Bainbridge Island residents, and Bainbridge Island businesses for climate impacts and emergencies.

CITY OF BAINBRIDGE ISLAND

UNDERSTANDING OUR IMPACT

Bainbridge Island's Greenhouse Gas (GHG) Inventory Results

The City of Bainbridge Island (City) recently completed a comprehensive greenhouse gas (GHG) inventory. GHG inventories quantify the amount of climate pollution produced by an entity—in this case, from the Bainbridge Island community and municipal government operations. As the City continues to take action to reduce emissions, these inventories will serve as helpful tools for tracking progress and making improvements along the way.

What are our emissions?

We estimate that the Bainbridge Island community emitted 233,998 metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2018—or 9.4 $MTCO_2e$ per resident. **Offsetting those emissions would require every Bainbridge resident to grow 11.1 acres of forestland for one year.** The biggest emissions contributors:

Energy use by residential and commercial buildings

55% of our emissions come from building energy use, residential fuels, and transmission and distribution losses.

Transportation, mainly on-road vehicles and air travel

34% of our emissions come from on-road and off-road vehicles, air travel, and ferry transportation.

GHG Inventory Quick Facts

Three inventory types

Communitywide
Emissions from community activities, like energy use, travel, and waste disposal.

City Government Operations
Emissions from everyday government activities.

Consumption-based
Emissions associated with our goods and services.

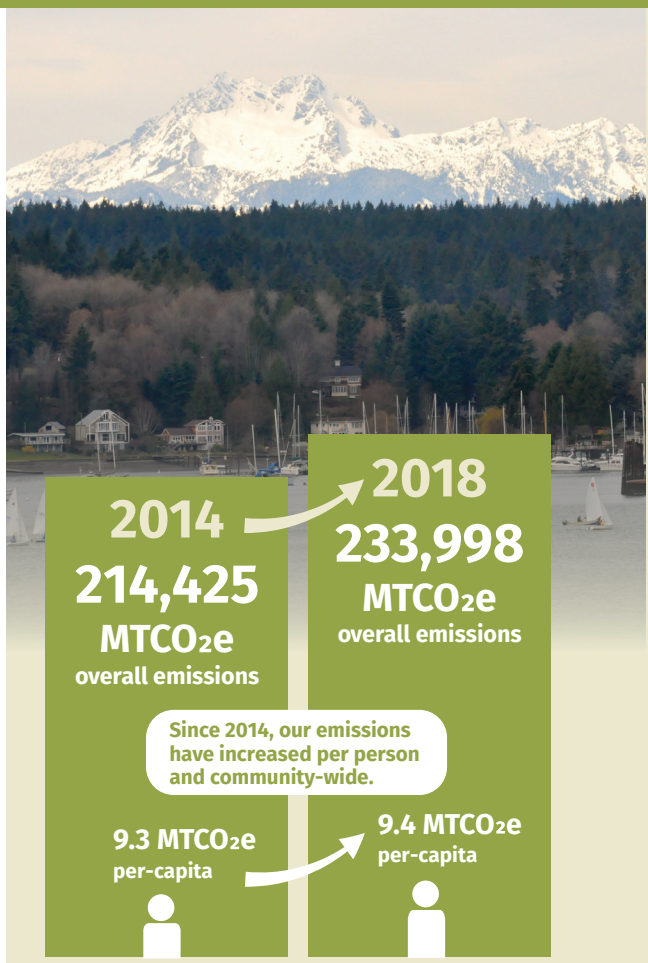
Three accepted protocols

The inventories were conducted using widely-accepted tools and protocols, including The Climate Registry's **Local Government Operations Protocol**, the **U.S. Community Protocol**, and U.C. Berkeley's **CoolClimate Calculator**.

Two representative years

Conducting inventories for both **2014** and **2018** allows us to see whether emissions are trending upward or downward over time.

See full inventory results on the back!



Trends Over Time...

The 2018 emissions results showed a 9% overall increase over 2014 emissions, but only a 1% increase in per-capita emissions.
To meet our goals, we will need to decrease our overall emissions as well as our per-capita emissions.

Emissions increases were driven by:

- Changes in **electricity fuel sources** (e.g., from renewables versus coal)
- Growth in **population** and employment

Emissions increases were limited by:

- Improvements in **vehicle fuel economy**
- Reductions in the **distance** each person drives
- Declining per-household and per-business **energy consumption**

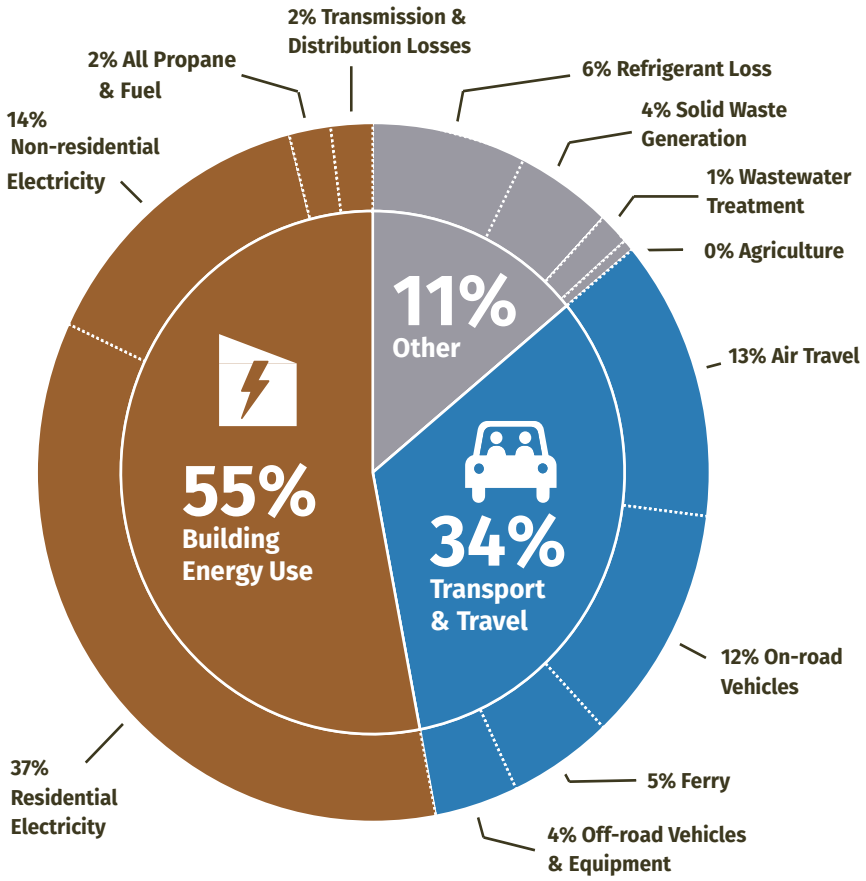
CITY OF BAINBRIDGE ISLAND

INVENTORY RESULTS

CITY OF BAINBRIDGE ISLAND

Community Overall Emissions

233,998 MTCO2e



The Bainbridge Island community emitted an estimated 233,998 $MTCO_2e$ in 2018.

That equates to 9.4 $MTCO_2e$ per person—equivalent to the emissions from driving 50,000 passenger vehicles for a year!

The majority of those emissions are from consumption of energy in homes and commercial buildings.

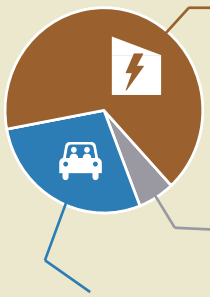
Be a part of the solution

Everyone has a role in reducing Bainbridge Island's greenhouse gas emissions. The things we buy, the way we commute to work, the food we eat, and the way we use energy in our home all have an impact.

City Government Emissions

2,291 MTCO2e in 2018

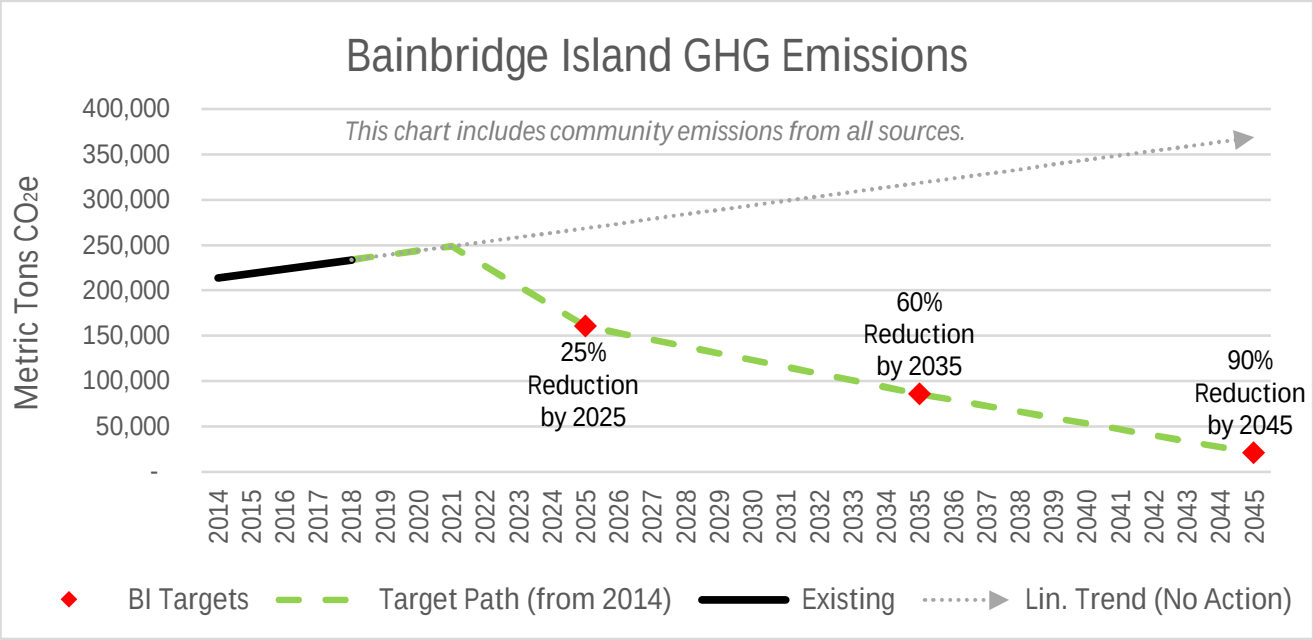
Emissions from City of Bainbridge Island activities—which only make up about 1% of the total community emissions—are largely from energy needed to power municipal buildings, equipment, and vehicles.

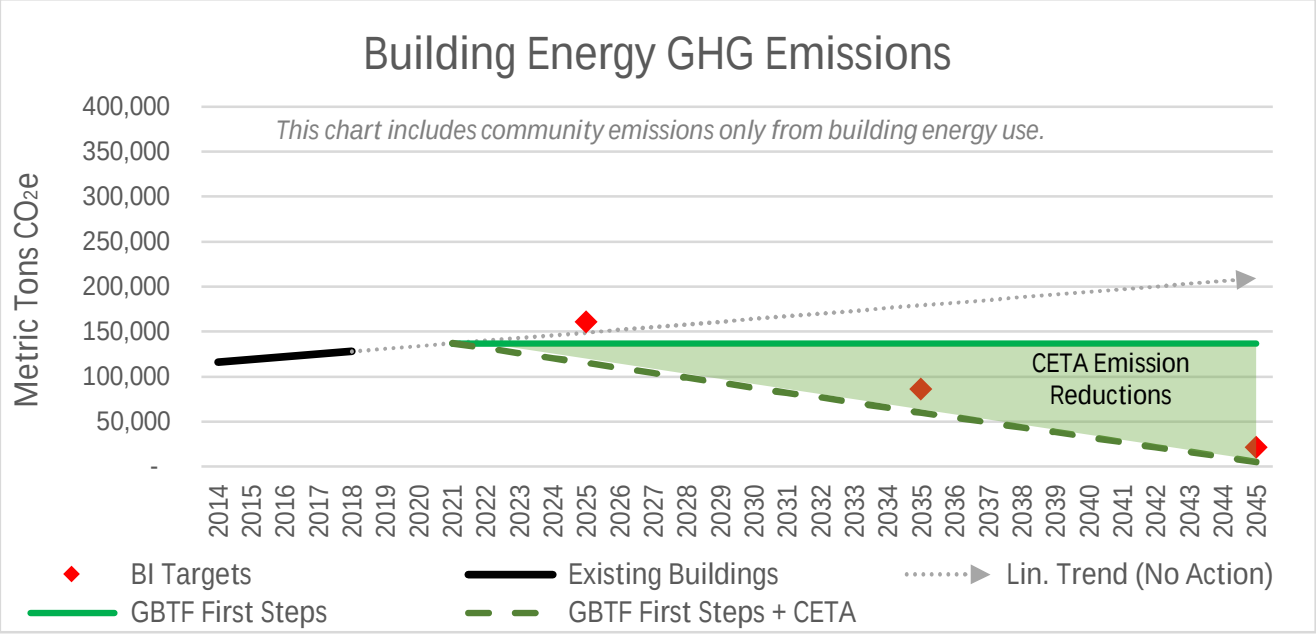


66%
Energy
60% Facility electricity
4% Street Lights & Traffic Signals
2% Building Propane

6%
Other Impacts
3% Solid Waste Generation
2% Wastewater Treatment Plant
1% Refrigerant Loss

28%
Transportation
17% On-road Fleet Vehicles
8% Employee Commute
3% Off-road Vehicles





CETA = Washington State Clean Energy Transformation Act

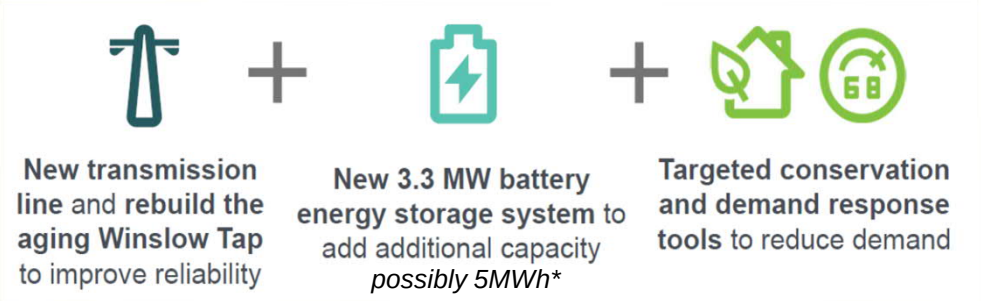
Note: GBTF "First Steps" recommendations would also require offsets for the carbon emissions embodied in new building materials, which is not currently accounted for in the GHG emissions inventory this chart is based on.

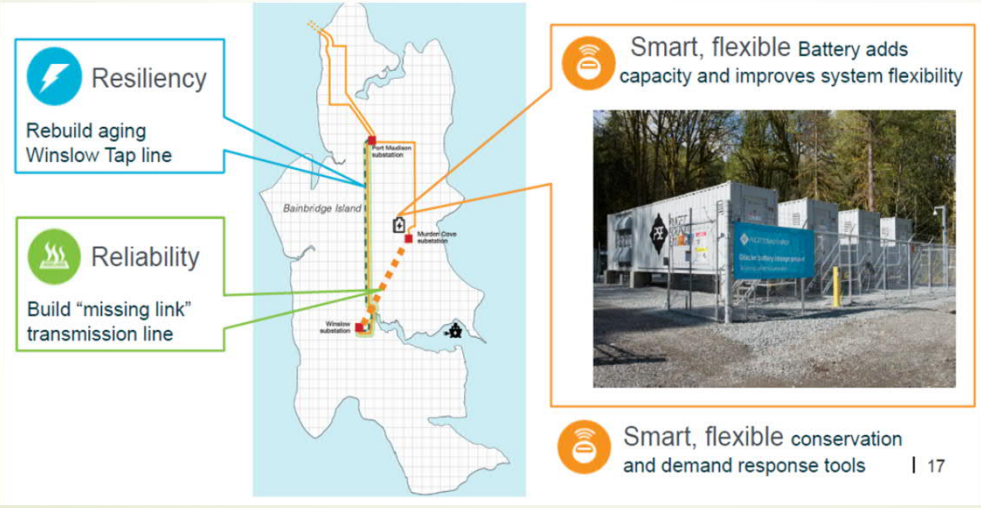
Sources:

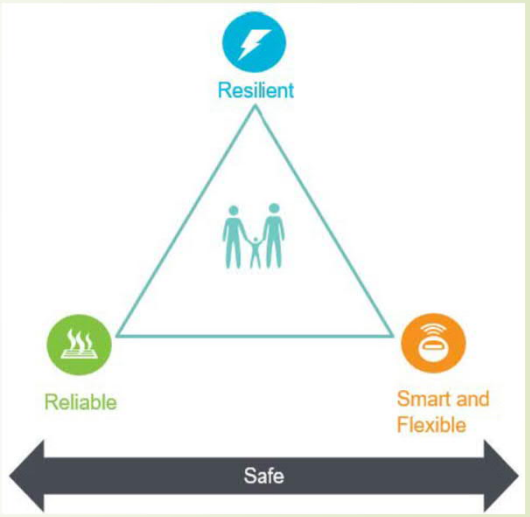
2019. City of Bainbridge Island Greenhouse Gas Emissions Inventory Final Findings Report. Prepared by Cascadia Consutling Group, INC.

In Prep. City of Bainbridge Island Climate Action Plan. Prepared by City of Bainbridge Island Climate Change Advisory Committee.

PSE's Proposed Bainbridge Island Initiative Has Three Key Elements



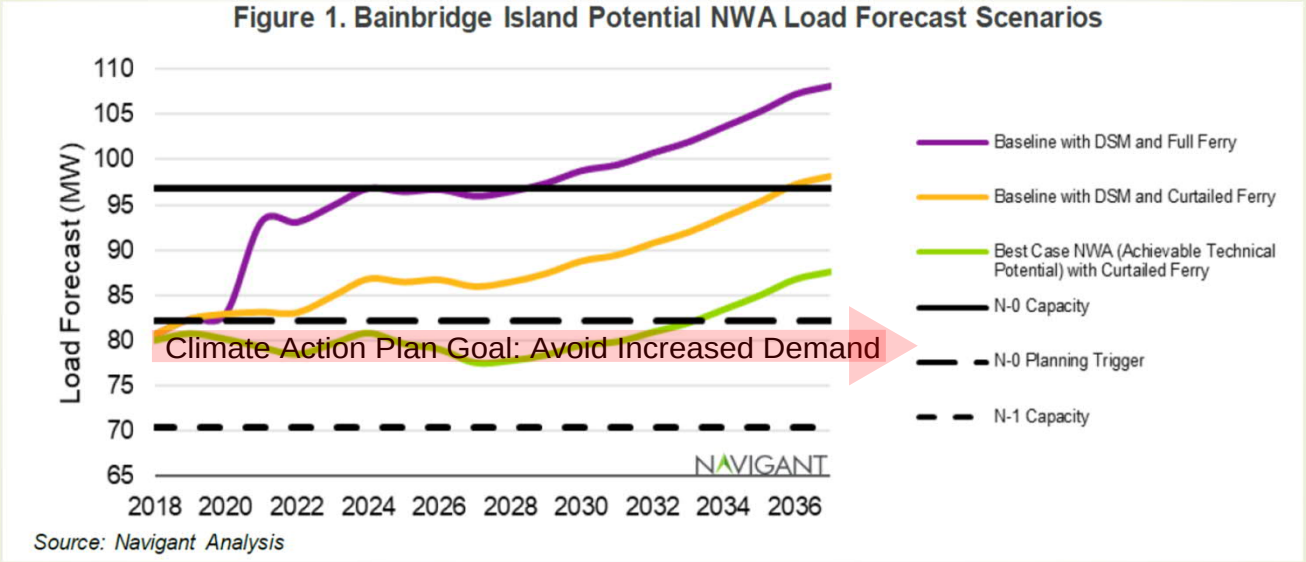




*Source: PSE's town hall on Oct 17, 2019, Appendix D

Source: PSE's town hall on Oct 17, 2019, final slide deck

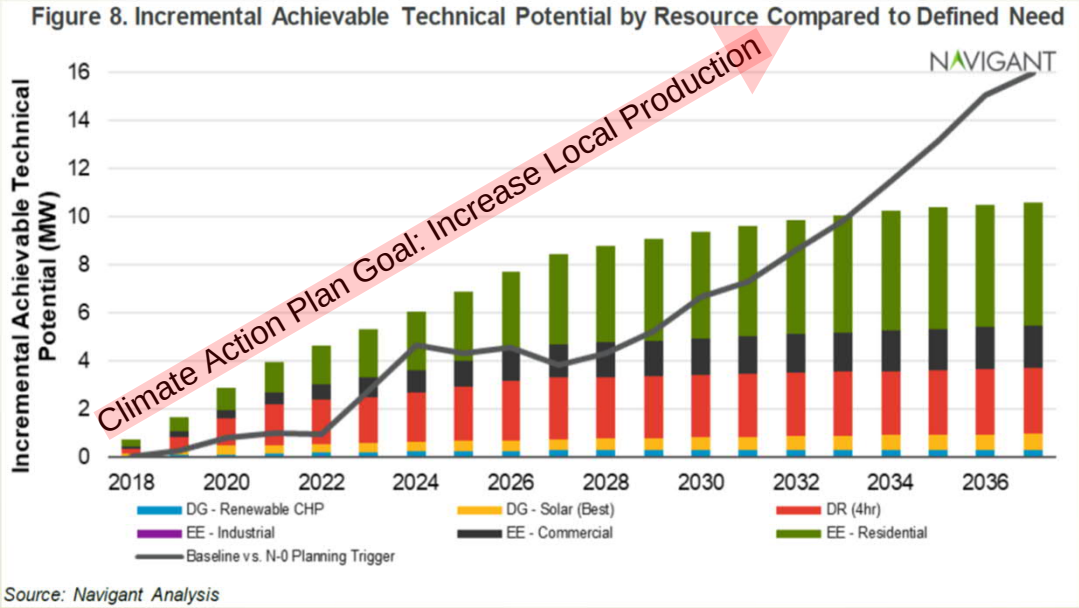
If Implemented Fully, PSE's Bainbridge Island Initiative Would Defer Grid Upgrades to 2030



Source: PSE's town hall on Oct 17, 2019, Appendix D

The Targeted Conservation and Demand Response Tools Require BI Resident's Action

- DERs considered in the analysis include energy efficiency (EE), demand response (DR), customer-sited solar photovoltaics (PV), energy storage, and combined heat and power (CHP) (renewable anaerobic digesters only).



- Note the cost-effective contribution from the anaerobic digester CHP

Source: PSE's town hall on Oct 17, 2019, Appendix D

"Road Map" for a Bainbridge Island Green Building Program

Principles

- Lead by example
- Optimize materials/emissions
- Equity/Justice
- Wholistic approach/mutual benefits (people, environment, & economy)
- Future ready (e.g. solar, EV, internet-based system controls/smart grid, battery storage, etc)

	Phase 1 (Interim by Oct)	Phase 2 (Oct - Feb)	Phase 3 (+1 year)
Theme	Carbon Reduction	Carbon Neutral	Carbon Storage
Components	Rely on prior public engagement and 1 public hearing Mandatory "baseline" green building programs for all building types Optional "stretch" green building programs Scaled to building size Mature programs & market acceptance Few additional carbon reduction measures	Expanded engagement (community & industry) Economic assessment, incentives, assistance programs (affordability & health equity) Electric vehicle & solar ready Embedded carbon reductions (concrete & other materials) Carbon offsets Site requirements Program evaluation process	Adaptive Management (next steps based on program performance)

Green Building Task Force - "First Steps" Interim Green Building Recommendation

The green building programs listed in Table 1 are adopted by the City of Bainbridge Island and organized into green building categories. The programs indicated with:

- "BR" are baseline required programs within that category (choose one if more than one is listed);
- "AR" are required programs within that category in addition to the BR program (choose one if more than one is listed); and
- "O" are optional programs that may be used in addition to a required program but shall not be used instead of a required program.

Table 1 Green Building Categories

Organization	Green Building Program	Green Building Category			Existing Buildings on BI
		A	B	C	
International Living Future Institute	Core Green Building Certification	O	O	AR	Yes
	Zero Carbon Certification	BR	BR	BR	
US Green Building Council	LEED Platinum Certification	O	O	AR	Yes
Other	Other	O	O		Yes

Table 2 Green Building Requirements

Building Type	Building Size	Green Building Category		
		A	B	C
Any Remodel and/or Addition	Up to 500 SF	N/A		
	More than 500 SF	Same category as below for building type and net building size (net = existing + addition)		
Any Residential	Any size	X		
Commercial and Institutional	Up to 5,000 SF		X	
	More than 5,000 SF			X

Table 2 notes:

- For remodels and additions over 500 SF, only the remodel/addition area needs to meet the applicable requirements. The remaining area of the existing building does not need to meet the applicable requirements.
- State funded buildings subject to RCW 39.35D (high-performance public buildings) would be subject to this requirement.
- Affordable housing projects would be subject to this requirement unless they receive funding through the State Housing Trust Fund and are therefore required to meet state mandated green building standards per RCW 39.35D.080.

Other GBTF Recommendations

City Buildings – Lead by example (retroactive to police/court facility)

Possible Incentives (until Phase 2)

- Refund part of building permit fees at final certification (amount TBD)
- Education & outreach
- Puget Sound Energy – many of the existing rebates, grants, and design assistance will apply to green building projects

Additional Carbon Footprint Reduction Measures (pending legal review)

- Heat pumps used whenever possible for space & water heating
- Propane may be used as secondary backup heat, or where heat pumps are not capable of providing for the task (such as for tankless water heaters or high demand boiler systems)
- Do not allow electric resistance elements for space heating