CITY OF
BAINBRIDGE ISLAND

Climate Change Advisory Committee Regular Meeting
Wednesday, July 17, 2024, 5:30 PM
Chamber Conference Room, City Hall
280 Madison Ave N
Bainbridge Island, WA 98110

The Climate Change Advisory Committee will hold this meeting in person,
in the City Hall Council Conference Room.
Attendance may be in person or the meeting is also accessible via the Zoom meeting platform.

Click to join Zoom: https://bainbridgewa.zoom.us/j/91390380790
Or Telephone: 1-253-215-8782
Webinar ID: 913 9038 0790

Agenda

1. **Call meeting to Order/Roll Call/Accept or Modify Agenda/Conflict of Interest Disclosure – 5:30 PM**

2. **Approve Minutes from June 10th, 2024, meeting - 5:35 PM**

3. **Public Comment – 5:40 PM**
   In person public comment is accepted at this time on any topic of public interest. Each commenter will have three minutes, or such amount as the meeting chair determines, to speak. Public comment is not taken on individual agenda items during the meeting. Public comment is simply received by the Climate Change Advisory Committee, with no response, and the Climate Change Advisory Committee cannot deliberate on items that are not on the agenda. The lack of comment is not an endorsement or a denial of the comment.
   Please refer to guidelines and instructions for public comment, including orderly behavior and civility in remarks, attached below. Remote public comment is allowed with advance notice by 4:00 p.m. on the business day before the meeting to cityadmin@bainbridgewa.gov, provided that all remote commenters shall be required to display their true name and to keep their camera turned on to show their true uncovered face while delivering their comments.

4. **Updates (Ellen Schroer, Deputy City Manager) – 5:45 PM**
   - Public Comment guidance
   - Solar PV/carbon offset project update
   - Heat pump pilot program update
   - Status of Climate Officer position
   - Greenhouse Gas Emissions inventory update
   - Possible training on equity and inclusion

Climate Change Advisory Committee meetings are wheelchair accessible. If you require additional ADA accommodations, please contact the executive department at 206-780-8624 or cityadmin@bainbridgewa.gov by noon on the day preceding the meeting.

5. **Regular Business**
   a) Recommendations on EV Charging Code (Sanjay/Steve – see attached) – 6:15 PM
      Final action requested.
   b) ETIPP Recommendations next steps (Steve/Mike) – 6:30 PM
   c) Zero Emissions Hand tools Ordinance meeting with REAC (Jens/Julie/Kevin)
   d) CAP Dashboard (Mike)
   e) Electrification Expo (Kevin/Mike)
   f) No August Meeting
   g) Other

6. **Good of the Order**

7. **Adjourn – 7:15 PM**

Materials

1. June Minutes
2. Public Comment Instructions
3. CCAC Materials on EV Charging Code

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Public Comment

Members of the public are encouraged to submit public comment to the City Advisory Committees. Interested parties may provide comment by:

- Emailing the committee members. This comment may be submitted at any time.
- Providing in-person comment at a meeting.
- Providing comment at a meeting via Zoom, in accordance with the advance notice and camera requirements.

Members of the public who wish to provide public comment in-person at a meeting should sign up to speak on the sign-in sheet. The Chair will call the people signed up on the sign-in sheet, and speakers will have three minutes (or such other time set by the Chair) to speak. The Chair or a designee will indicate when the time has elapsed.

Remote public comment is allowed with advance notice to the City by noon on the date of the meeting at cityadmin@bainbridgewa.gov, provided that all remote commenters shall be required to display their true name and to keep their camera turned on to show their true uncovered face while delivering their comments.

Guidelines for public comment are below. These guidelines were established for and approved by the City Council and also apply to all advisory boards, committees and commissions of the City Council.

Excerpts from the Governance Manual regarding public comment:

5.6 Respect and Decorum

It is the duty of the Presiding Officer and Councilmembers to maintain dignity and respect for their offices, City staff, and the public. While the Council is in session, the Councilmembers shall preserve civility, order and decorum. No member of the public shall, by conversation or otherwise, delay, disrupt, or interrupt the proceedings of the Council, nor engage in any of the prohibited behavior described below. Councilmembers and the public shall obey the proper orders of the Presiding Officer of the meeting.

5.6.1 Orderly Behavior and Civility in Remarks

Any person disrupting the business of the Council, either while addressing the Council or attending the proceedings, shall be asked to leave, or be removed from the meeting. Continued disruptions may result in a point of order by the Presiding Officer or a Councilmember pursuant to the Council's parliamentary rules, or a recess, forced removal, or adjournment as described elsewhere in this manual. Disruptive behavior includes, but is not limited to, the following:

a) Speaking without being recognized by the Presiding Officer.
b) Continuing to speak after the allotted time has expired.

c) Speaking on an item at a time not designated for discussion by the public of that item, such as speaking on a quasi-judicial item at a time other than during a public hearing or closed record proceeding on the matter.
d) Throwing objects.
e) Speaking on an issue that is not a public topic, in violation of Section 9.12.2.
f) Speaking in favor of or in opposition to a ballot proposition or a candidate for public office, provided, that public comment is allowed when the City Council is considering taking a collective position in favor of or in opposition to a ballot proposition as authorized in RCW 42.17A.555.
g) Impersonating a City Councilmember or a member of the City staff.
h) Shouting or otherwise engaging in loud or boisterous behavior.
i) Continuing to make repetitive remarks after being requested not to do so by the Presiding Officer or a majority of the City Council.
j) Attempting to engage the audience rather than the Council, e.g., asking audience members to stand, clap, boo or otherwise express collective support or opposition to any matter.
k) Booing, hissing, or otherwise disrupting the comments of another speaker.
l) Using racial slurs or other slurs directed at the color, creed, religion, ancestry, gender, sexual orientation, gender expression or identity, national origin, citizenship or immigration status, or mental, physical, or sensory disability of any individual or group, under circumstances where such words constitute "fighting words" under constitutional law.
m) Refusing to modify conduct after being advised by the Presiding Officer that the conduct is disrupting the meeting or disobeying any other lawful order of the Presiding Officer or a majority of the City Council.

5.6.2 Permission Required to Address the Council

Persons other than Councilmembers and Administration shall be permitted to address the

Council only upon recognition and introduction by the Presiding Officer of the meeting.

9.12.2 Subjects – Whether or Not on the Current Agenda

Public comments received during the public comment period may be on any public topic, whether or not on the agenda, but a comment on the subject that is covered by a public hearing at that
meeting must be made during the period of the public hearing. All public comments shall be made consistent with Section 5.6.

9.12.3 Use of Microphones

Comments shall be made directly into the microphone, as it is necessary for the public record and for the audience to hear all proceedings. No comments shall be made from any other location.

Climate Change Advisory Committee
Meeting Minutes
June 10, 2024

Meeting called to order at 5:33 PM by Michael Cox

Roll call:

- Committee members: Steve Richard, Derik Broekhoff, Sanjay Bhat, Jens Boemer, Michael Kleeman (online), Julie Matthews, Ray Victurine (online)
- City Staff liaison: Ellen Schroer
- City Council liaisons: Leslie Schneider and Kirsten Hytopolous (both online)

Agenda: No amendments

Conflicts of Interest:

- Sanjay disclosed he is marketing director at Kitsap Transit, which has a contract with COBI to promote transit, which is managed by Autumn's group at the city. He also serves on the Board with Courtyards on Madison, working with Department of Energy on community solar grant projects.
- Jens disclosed he is an employee of EPRI, a research institute that does work with PSE, but is not currently involved in any work with PSE.
- Julie disclosed she is on the Board of Helpline House, and is also affiliated with Park & Recreation

Minutes for March meeting: Steve motioned for approval, Jens seconded, adopted by those present.

Public comment: None.

City Updates

- Currently working with School District (Woodward School). No additional information on engineering specifications, but focusing on sorting out jurisdictional coordination. Aiming to have done for consideration later in June.
- Heat pump pilot program – still progressing. Original scope of work called for completion in 2024, but the program is now expanding due to funding from state. Implementation has also been slowed because of need to replace climate officer. Still exploring parameters for successful implementation. $280,000 total funding.
- First interviews for climate officer occurring this week (week of June 10). Fewer than 6 candidates. Expect to have new hire start in July.
- GHG inventory update: Cascadia beginning to collect data. Committee requested information on full scope of inventory update.
- Possible training on equity & inclusion: discussed possibility of offering DEI training for all committees and development/application of equity lens tool
- Ellen inquired about who was on PSE franchise agreement subcommittee. Issue may be coming up again in near future. PSE interested in editing draft MOU. Opportunity to review in next week.

Final ETIPP recommendations

- The committee considered final comments providing recommendations on how to move forward based on findings in the reports.
- Two reports: resiliency & pathways
- Steve moved that we forward recommendations on the pathway report to the City. Jens seconded. Approved by all voting members; Jens abstained from voting.
- Jens offered some amendments to the reports related to adjusting recommendations to take into account that PSE is no longer planning to build a 3.3MW battery storage facility on the island.
    - Action: The committee decided to submit recommendations to researchers (who are still finalizing the report) and CCAC will revisit at their July meeting.

Draft recommendations on city EV code

CCAC members discussed options for updating/revising the City EV Code, based on research and proposals developed by Sanjay and Steve:

- Option 1: Leave the existing ordinance as is.
- Option 2: Repeal its requirements in favor of the state's requirements.
- Option 3: Revise its requirements to promote certain needs (like multi-family housing) while avoiding rigidity and minimizing potential negative impact on the community.

Committee members agreed on the following:

- Non-residential numbers in Table on p. 10 of Sanjay & Steve's report need updating
- The code should probably be amended
- The committee needs more time to consider more detailed recommendations
- Motion was made and adopted to recognize complexity of issue, recognize risks & opportunities of existing code, and note that the Committee wants to explore amendments
    - Julie recused from voting

Letter to support Sound-to-Olympic (STO) trail grant

A motion was proposed to send a letter of support for the Sound-to-Olympic trail for the City's consideration.

- Moved by Derik, seconded Steve, to send to City for consideration
- All approved; Julie recused herself

Meeting with REAC

- Jens reported back on his attendance at the latest Race and Equity Advisory Committee meeting.

Zero Emissions hand tool Ordinance

After discussion, it was agreed that the CCAC is not ready to endorse the ordinance. Agreed it needs more consideration with regard to equity, and committee would like to continue to work with City to improve it.

Others items discussed

- Continued work on City climate action dashboard
- Electrification expo

The meeting was adjourned at 7:49M.

To: Bainbridge Island City Council
From: Climate Change Advisory Committee
Re: Recommendations for COBI EV Charging Infrastructure Code
Date: July 10th, 2024

Earlier this year, the Council received feedback from Helpline House and Bainbridge Artisan Resource Network (BARN) that COBI's Electric Vehicle (EV) Charging Infrastructure requirements (BIMC 18.15.020.C-3) were unnecessarily burdensome for their project and may be unwarranted for the way their facilities are used. The Council asked the CCAC to review the code and provide guidance to the Council. The purpose of this memo is to briefly explain our research and to provide our high-level recommendations to the Council.

At our April CCAC meeting we created a working group to investigate and provide recommendations. From late April into early June, the working group studied local EV adoption/trends; interviewed representatives of Helpline House, BARN, and developers; and gathered data from cities in Washington and around the country on their EV charging infrastructure codes. This research resulted in a 14-page report that was shared with the CCAC on June 11 and is provided as an appendix.

For reference, current State and COBI requirements for **new** commercial and multi-family buildings for EV charging are as follows (requirements for expansion projects are 35% of parking spaces):

Jurisdiction	**EV Capable**	**EV Ready**	**EV Installed**	**Total EV Readiness**
		Commercial (Non-residential)		
State	10%	10%	10%	30%
COBI	20%	30%	10%	60%
		Multi-family		
State	10%	25%	10%	45%
COBI	10%	25%	10%	45%

The State requirements don't apply to expansions of buildings, whereas the COBI requirements do, even if no additional parking is required by code. We believe that COBI should require the same of project expansions as of new construction because the island's buildable areas are already built out, by and large. To support a future in which 100% of vehicles are EVs and avoid a situation where projects seek to evade the requirements of new projects, COBI needs to maintain the same requirements for expansions.

As explained in more detail below, our recommendations fall into two basic categories: commercial buildings (non-residential) and multi-family buildings. We believe the requirements for single-family homes are fine and don't need any revision.

Recommendation #1: For Commercial (non-residential) the State Requirements Are Adequate

Even if we assume 100% of vehicles on Bainbridge will be EVs in the future, the state's lower and less restrictive requirements for commercial projects make more sense to us for several reasons:

- Commercial parking lots are not required to provide gas pumps for drivers to refuel their gas-powered cars. Why should they be required to provide refueling for EV's?
- In a commercial setting (i.e. retail, office, industrial, warehouse, health care), visitors tend to be parked for a short time, while employees tend to park for longer periods of time. The state exempts certain commercial projects with less than 10 parking spaces, and other types of occupancies (A, E, M) only are required to provide EV charging infrastructure for designated employee parking spaces. These exemptions are essential since the needs and uses of different commercial facilities vary widely.
- The primary place on Bainbridge and nationwide where EV owners charge their vehicle is at home (primarily overnight). Some EV owners also utilize charging stations at the workplace if they are available.
- Many of the most popular EVs on Bainbridge today have an average range of at least 300 miles, with experts forecasting affordable 400-mile range EVs within several years. Bainbridge is about 5 miles wide and 10 miles long, so EVs can make many trips across the island without needing to recharge.

Hence, requiring 30% of commercial parking spaces to be EV capable, EV ready, or EV installed (State requirement) seems more than adequate. A demand-driven approach seems a better way to determine future EV charging locations in commercial projects.

One shortcoming of the state law is it provides no incentive for the developer to aim for fast-charging EV stations. If the City wants to incentivize owners of commercial properties to install DC fast-chargers, which arguably are more useful for short dwell times, the ordinance should reward them with far more than the current 5% reduction in required EV vehicle parking spaces (3. g. (i)). Based on the NREL report's EVSE capital cost assumptions, a developer would have to install at least 25 Level 2 chargers to equal the cost of one DC 250 kW fast-charger; yet a developer who does this is rewarded with only a 5% reduction in 30 vehicle parking spaces, or 1.5 spaces, hardly an incentive. If the City wants to promote useful EV charging infrastructure in commercial development, it should focus on DC fast-chargers.

Recommendation #2: For Multi-family Explore Going Beyond State Requirements with COBI Staff

We believe COBI's ambition to be a leader by going beyond state requirements is better focused on multi-family projects. Due primarily to cost and convenience, homes are where most EV owners recharge their vehicles. Unless the home has a private garage, residents have no control over whether or not their parking space(s) are wired for EV charging. By raising requirements in new multi-family structures, COBI can provide more equitable access to EV charging, and can help future apartment and condominium residents accelerate their EV adoption, while lowering their annual operating and maintenance costs for their vehicles. This is putting the principle of equity into action.

Simply setting higher requirements, however, won't necessarily translate into equitable outcomes. Based on a quick survey of multi-family properties in the Puget Sound region, some Seattle area apartments charge more than $200 a month for a dedicated EV parking space, and some have waiting lists. Additional study and discussion is necessary to explore this further. Some ideas to discuss with COBI staff include:

- Require 100% of assigned residential parking spots to be EV Ready (treated like a private garage), while clarifying those spaces are included, not in addition to, total parking spaces required by code.
- Expand incentives for multi-family projects to go beyond minimum requirements for EVSE, such as including *shared* charging stations with automated load management systems that can accommodate a future with 100% of residents using EVs.
- If projects install solar PV arrays on site to provide renewable energy for the building, that could count toward a certain number of the EV Ready spaces and support resiliency during power outages.
- Phase in higher requirements over time in tandem with collaborative discussion with Puget Sound Energy to allow time for upgrades to the island's grid and give developers a clear and predictable timeline.
- Provide some discretion to COBI to allow reductions to certain requirements based on the scale of required utility infrastructure upgrades (Seattle and Edmonds provide this safety valve). But make sure that the facility wiring to parking spots be designed to accommodate at least Level 2 chargers.

In summary, our view is that COBI's current code should be revised in the direction of our two recommendations. We look forward to the opportunity to share and discuss our findings with COBI staff. And we would be happy to discuss our findings with the Council if desired.

Best regards,
Climate Change Advisory Committee

Appendix: EV Charging Infrastructure: A Review of Bainbridge Island's Ordinance
Report for Climate Change Advisory Committee (CCAC)

By Sanjay Bhatt and Steve Richard, CCAC members
June 5, 2024

EXECUTIVE SUMMARY

For new buildings, the City of Bainbridge Island (COBI) requires 60% of parking spaces in commercial and multi-family projects to have some level of electric-vehicle (EV) charging infrastructure installed – a much higher bar than Washington state (30% for commercial, 45% multi-family). Moreover, COBI requires commercial and multi-family projects that expand existing floor area by more than 5% to ensure that 35% of parking spaces meet EV charging infrastructure goals, while Washington state's rules apply only to new construction. The City Council adopted EV charging infrastructure requirements (BIMC 18.15.020.C-3) in November 2022 to reduce barriers to EV adoption, reduce greenhouse-gas emissions (GHGs), support its Climate Action Plan (CAP), and ensure that new developments plan for future electric-vehicle demand. However, early permit applicants and critics of the city's rules say they are overkill, cost prohibitive and should be revised, and that the state's EV charging infrastructure rules (WAC 51-50-0429) are sufficient in most cases.

Stakeholders have legitimately different perspectives: Local jurisdictions see a future where EVs rule the road, even though they're a small fraction of vehicle registrations today. Property owners want to be climate-conscious when they build a structure to last 100-plus years, but point out that rigid regulation could do more harm than good because technology advances (i.e. EV battery range, charging times) outpace the problems the regulation was designed to address. Meanwhile, utilities are struggling in some places to manage basic reliability of today's grid, even as they plan for a future of net-zero emissions.

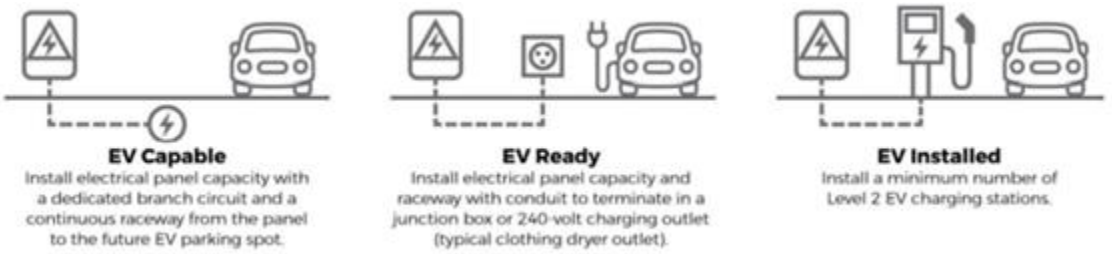
Requirements vary dramatically across local jurisdictions and should be tuned to local needs and priorities. As we see it, the City of Bainbridge Island has at least 3 options:

- Option 1: Leave its existing ordinance as is.
- Option 2: Repeal its requirements in favor of the state's requirements.
- Option 3: Revise its requirements to promote certain needs (like multi-family) while avoiding rigidity and minimizing potential negative impact on the community.

The CCAC's recommendation, we believe, should strive to balance the future demand with practical realities and certainty of technological advance. Specifically, from our research, Option 3 is the best path, with COBI raising requirements for residential multi-family developments and lowering requirements for non-residential developments.

NUTS AND BOLTS OF EV CHARGING INFRASTRUCTURE

For this report's purposes we want to ensure basic definitions and assumptions are clear. The illustration below from the City of Edmonds shows what is meant by "EV Capable," "EV Ready," and EV Installed" when discussing the progressively higher requirements for EV charging infrastructure:



The CCAC asked us to find out about the costs for each level of charging infrastructure. The City of Issaquah has estimated the cost of EV Capable infrastructure at around $280 to $760 per parking space; the City chose to emphasize EV Ready to provide certainty to end users they can have access to EVs and reduce concerns about compliance.

In 2020 King County compiled cost estimates per space for EV Ready and EV Installed.

Development type	EV Ready	EV Installed	Total Cost Range, new construction	Retrofit Cost Range
Single family/duplex	$150 - $375	$500 - $600	$650 - $975	$1,100 - $2,000
Townhome	$150 - $3,600	$500 - $3,250	$650 - $6,850	$1,100 - $7,500
Apartment (simple chargers)	$1,200 - $1,500	$1,200 - $1,500	$2,400 - $3,000	$2,900 - $8,200
Apartment, commercial & parking lots (dynamic chargers)	$600 - $1,500	$3,000 - $3,250	$4,200 - $4,750	$4,100 - $10,000

Similarly, the City of Denver compiled costs for EV Ready and EV Capable parking spaces during the city's building code update in 2018.

Infrastructure requirement	New construction - per space	Retrofit - per space
EV Capable	$300	$2,500
EV Ready	$1,300	$6,300

(Source: City of Bellevue, Electric Vehicle Readiness Draft Proposal, January 3, 2024)

A recent report by the National Renewable Energy Laboratory (NREL) provided some capital cost assumptions for EV Installed spaces (see below) but not cost estimates for front-of-meter utility upgrades (such as new transformers and line extensions), distributed energy resources (such as on-site storage or generation), operating costs (such as utility energy and demand charges), maintenance costs (necessary for ensuring a high level of reliability), and certain construction soft costs (such as delays associated with local permitting utility service connection) because of a lack of publicly accessible data.

EVSE Capital Cost Assumptions (p. 33 of NREL report)

Charger hardware	Unit cost per port	Install cost per port
Level 1 (L1) residential	$0 (included with EV)	$100 - $1,000
Level 2 (L2) residential	$400 - $1,200	$500 - $1,700
Level 2 (L2) commercial	$2,200 - $4,600	$2,200 - $6,000
DC 150 kW	$66,400 - $102,200	$45,800 - $94,000
DC 250 kW	$91,400 - $134,800	$54,750 - $105,950
DC 350 kW	$116,400 - $167,400	$63,700 - $117,900

It's worth noting that lead times dictate how quickly charging infrastructure can be deployed: "Previous studies have estimated that while charging infrastructure projects can often take 3-10 months to complete, situations requiring feeder upgrades can add one year to this timeline, and substation upgrades can potentially add up to 4 years."

Another basic concept is understanding the relationship between amperage, range added and charging time and how that is implemented in the code requirements.

The state requires a minimum of 40-ampere dedicated 208/240-volt branch circuit for each EV Ready parking space and each installed Charging Station and a conduit capable of accommodating a minimum 40-ampere dedicated 208/240-volt branch circuit for each EV Capable parking space.

Significantly, the City of Bainbridge Island's code **does not** explicitly say what size circuit is required for EV Capable or EV Ready parking spaces; it only explicitly states the minimum amperes for Installed charging stations. It refers to "Level 2" but does not define it. It does say infrastructure will be installed in accordance with National Electrical Code, but we aren't sure whether that code defines amperage for L1 or L2. This may warrant clarification in any revision.

The City of Edmonds, for example, explicitly defines the levels as follows:

- Level I- considered slow charging and operates on a fifteen-to-twenty-amp breaker on a one hundred twenty volt AC circuit.
- Level II- considered medium charging and operates on a forty-to-one-hundred-amp breaker on a two hundred eight or two hundred forty volt AC circuit.
- Level III- considered fast or rapid charging and operates on a sixty amp or higher breaker on a four hundred eighty volt or higher three phase circuit with special grounding equipment.

A 40-amp circuit can carry a 32-amp EV charger. The amount of amps an EV needs depends on the maximum input power the EV can accept: For EVs in general, if the vehicle's maximum acceptance rate is 7.7 kW or less, then a 32-amp charger is the limit of what the vehicle will accept. Even if the vehicle's charge acceptance rate is higher, the amount of power it can accept is limited by the size of the circuit – which will impact the charging time as well.

A 2023 Tesla Model 3 (rear wheel drive), one of the most common EV models on Bainbridge Island, will add 5 miles per hour on a L1 charger, 30 miles per hour on a L2 charger on a 40-amp circuit (32-amp charging) and 38 miles per hour on a L2 charger on a 50-amp circuit (40-amp charging). Put another way, to fully charge the Tesla's battery, it would take 43 hours with L1, 8 hours with L2 on 40-amp circuit, and 6 hours with L2 on 50-amp circuit, according to the EvoCharge EV Charging Time tool.

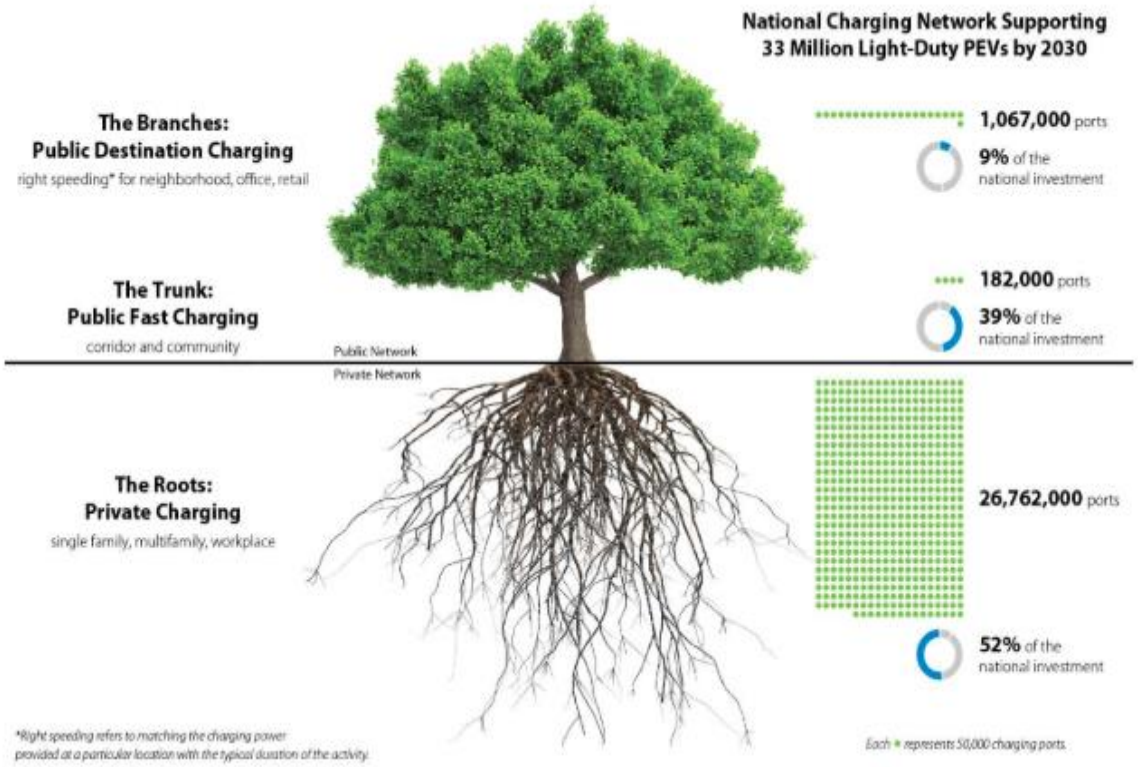
In terms of code requirements, L2 charging could be required for certain occupancy uses, but L1 charging could be sufficient for others. A 120-volt outlet can usually handle L1 charging.

DIFFERENT VISIONS FOR AN EV CHARGING NETWORK

Benoit Marcoux, an EV charging infrastructure consultant, has published a useful chart (below) to depict the relationship between charging levels, dwell time, locations (occupancy use) and criticality. His EV charging pyramid is what he expects the market share of the basic EV charging use cases to be once EV charging infrastructure is more widely deployed in a decade.

Charging Use Case	Market share	Charging Power	Park Duration	Examples of sites	Convenience	Criticality	Costs
On-the-Go Fast Charging	~5%	150+ kW	<30 min.	Service areas; convenience stores	👍	⚠⚠⚠⚠	💰💰💰💰
Destination Fast Charging	~10%	50–100kW	<1 hour	Grocery stores; shopping malls	👍👍	⚠⚠⚠	💰💰💰
Destination Level 2 Charging	~10%	5–7 kW	Hours	Curbside; national parks; train stations; workplace	👍👍👍	⚠⚠	💰💰
Home Level 1 or 2 Charging	70–80%	1–7 kW	Hours, off-peak	Detached homes; multi-dwelling units.	👍👍👍👍	⚠	💰

The NREL report uses a different planning concept (below) for the future national charging network in which 96% of charging ports are private and 4% are public.



In the context of Bainbridge, most on-island trips will be less than 5 miles, and certainly not more than 10 miles, in one direction. A worker who drives an EV to Winslow from Port Orchard (34 miles), Belfair (40 miles) or Sequim (58 miles) to their job at a dentist's office, a retail store or a daycare might need a Level 2 charger at their workplace if they left home without an adequate battery level or their home charger is out of service.

But households on Bainbridge drive off island frequently for shopping, health care and recreational trips too, averaging 18,465 miles annually, according to the Center for Neighborhood Technology. On a 52-week calendar, that's 355 miles per week.

FEEDBACK FROM THE HELPLINE HOUSE & BARN

While regulation shouldn't be based on a single project, the Helpline House project helps us understand how the City's regulation plays out and whether the city should adjust its approach.

Helpline House is proposing a new 11,719 square-foot building to house a food bank, social-services offices, and a community conference room. The city's code requires 47 parking spaces, of which 60 percent must have some level of EV infrastructure. The $11 million project could require an expensive transformer upgrade if the City's rules apply, but the non-profit won't know until it goes through the permitting process.

According to the project consultant, the difference in estimated cost between the City's and the state's rules for EV charging infrastructure are significant:

47 total parking stalls	**City of Bainbridge Island**			**Washington State**		
	% of total stalls	# of spaces	Cost	% of total stalls	# of spaces	Cost
EV Installed	10%	5	$22,830	10%	4	$15,220
EV Ready	30%	10	$27,440	10%	4	$6,860
EV Capable	20%	15	$7,300	10%	3	$2,190
Total	**60%**	**30**	**$57,570***	**30%**	**11**	**$24,270**

*Additional costs: $50,000 electrical service upgrade and unknown cost for utility upgrade to transformer on site results in a cost difference of more than $83,000.

Some key points raised by Helpline House and BARN:

- The cost of running conduit for EV capable spaces isn't high. However what drives the cost significantly higher is that the state Building Code requires the electrical service and the electrical system, including any on-site distribution transformer to have "sufficient capacity to

simultaneously charge all EVs at all required EV Charging Stations, EV Ready parking spaces, and EV-Capable parking spaces at a minimum of 40-amperes each."

- The City's code has no exemptions or reduced EV infrastructure requirements for certain commercial uses, whereas the state code does allow them for Assembly (A), Educational (E) and Mercantile (M) occupancies. "This reflects the reality that most of the parking spaces for this building are for short-term client use – visits of less than 30 minutes that are not likely to utilize EV charging."
- Parking lots don't currently offer gas pumps – so why should they be required to install so many EV-capable spaces? We know 80% of EV charging takes place at home because it's more convenient and affordable than outside the home.
- Are these EV chargers expected to be publicly accessible ones or for the facility's employees and clients? Helpline House and BARN see these chargers as serving private needs (their employees and clients), not public ones (as part of a public access charging network).

In short, these stakeholders say that installing infrastructure that outpaces the facility's needs in the near-term and long-term is a wasteful use of resources. The Building Industry Association of Washington has opposed EV charging infrastructure requirements at the state level as well.

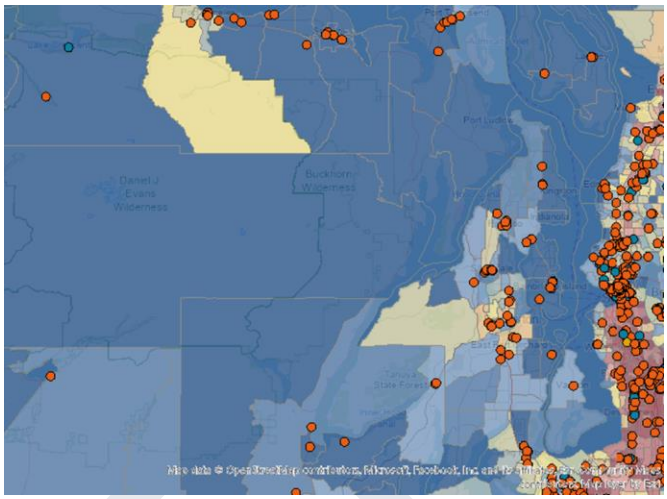
It's worth noting that little-noticed parameters can drive costs higher or lower:

- There is an exception in the state building code for the amount of electrical system capacity required: Automatic load-management systems (ALMS) can be used to adjust the maximum electrical capacity by allocating charging capacity among multiple EV stations to as little as 16-amperes per EV charger. With ALMS, building owners can double the amount of EVSE for a given electrical capacity, reducing the cost of expensive electrical upgrades.
- The number of EV parking spaces required is based upon a percentage of required parking spaces. **In a future where the City envisions a denser, taller Winslow that relies less on driving alone and more on walking, bicycling, transit and ride-sharing, the City should consider reduced parking requirements more in line with that stated vision.** The ripple effect would be fewer EV parking spaces required and lower electrical capacity charges. The zoning code requires Helpline House to offer 25 mercantile parking spaces and 22 office parking spaces in an area that has pedestrian and bicycling infrastructure improvements (Madison Avenue) and robust bus service (on-demand BI Ride, 8:30 AM-3:30 PM, as well as Routes 95 and 99 outside of those hours). Helpline House operates from 9 AM to 5 PM on weekdays.

At the end of the day, the incremental additional cost of Helpline House installing the EV charging infrastructure under the City's rules, even if $100,000, represents less than 1% of the total project cost.

Another key consideration and reason for EV requirements, is that the cost to retrofit EV charging infrastructure in existing buildings is at least 4 times higher than designing for it and installing it in new construction.

ANTICIPATED EV ADOPTION AND EQUITY



Looking at the big picture, EV charging infrastructure needs are growing daily as EV car prices plummet and more people travel through Kitsap County from Seattle, which has far more publicly accessible EV chargers than the Peninsula (see image at right from Washington Department of Commerce, EV Charging Publicly Available Site Mapping Tool).

In 2023, 31% of **new vehicle registrations** on Bainbridge were either battery-electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV) – up from 11% in 2020. New internal combustion engine (ICE) vehicle registrations fell from 78% to 56%.

Bainbridge's overall EV adoption rate (8% of all vehicle registrations) is *three times* the state average – the strongest argument for the City to set higher standards than the state.

"Electric Cars Are Suddenly Becoming Affordable," *The New York Times* reported this month, due to intense competition, lower raw-material costs and more efficient manufacturing. Federal tax credits as well as state incentives are pushing prices even lower. There will be more than 100 fully electric models for sale in the United States by next year, according to Cars.com, double the number available last year.

Peter Slowik, who leads research on passenger cars at the International Council on Clean Transportation, says that **electric cars and SUVs capable of traveling 400 miles on a full battery will cost less than ICE cars in 2030** – just 6 years away – even before taking into account government subsidies.

Today, the EVs with the highest number of vehicle registrations on Bainbridge all exceed 200 miles of range on a full charge.

Data for 2021 from the Census indicates that for all jobs on Bainbridge Island, 60 percent of workers travel less than 10 miles (roughly the length of the island) to get to their on-island job. Another 40 percent travel 10 miles or more (essentially from off the island) to get to jobs on Bainbridge – 23 percent travel 10 to 24 miles; 9 percent travel 25 to 50 miles; and 8 percent travel greater than 50 miles. These figures do not include employees of the Department of Defense. For Bainbridge Island residents commuting to jobs off the island, about 5 percent travel more than 50 miles.

"For many people, the car's price is not the only expense to consider," the *Times* story goes on. "People who live in apartments often depend on public charging plugs. Public charging, besides being less convenient, tends to be more costly than charging at home."

Or as Andrea Pratt, a former policy adviser for the City of Seattle, put it in a webinar: "When people don't have charging at home, they're not going to convert."

And there's the rub: While EV charging at home is the preferred location for EV owners, those who rent a home may not have access to an EV charger for various reasons – the landlord may not allow it or refuse to incur the cost.

"The single biggest local government consideration for an EV future is planning for equitable deployment of the chargers that are required to support the anticipated growth of EVs in our communities," according to a 2023 report by the Interstate Renewable Energy Council (IREC) and the Sustainable Energy Action Committee (SEAC). This report also calls for clear and predictable local approval processes for siting and installation of EV charging infrastructure.

Puget Sound Regional Council has recently established an information clearinghouse, Puget Sound REV, to help local municipalities stay abreast of model codes.

BASELINE ASSUMPTIONS FOR FUTURE EV CHARGING ON BAINBRIDGE

Our recommendations are based on these key assumptions about future of EV charging on Bainbridge:

- We should plan for 100% of vehicles on Bainbridge being EVs. During the 50–100-year life of any commercial building, it is very much expected that almost all vehicles will become electric.
- The range of EVs will increase so that charging is likely to become less frequent, a bit more like filling up at a gas station and then having 500+ miles of range.
- The availability of DC Fast Chargers on the island will increase and take the place of today's gas stations. Town & Country Market is the first to have one.
- Charging at home with Level 2 chargers will continue to be the most popular choice for charging due to the convenience (no special stop) and the cost (cheaper than public chargers). The Department of Energy estimates that 80% of EV owners are currently charging at home, and we expect that to continue.

EXAMPLES FROM OTHER JURISDICTIONS EXCEEDING STATE REQUIREMENTS

To promote equity, local jurisdictions in the Puget Sound region have **raised requirements for multi-family projects**, as the table below shows.

Jurisdiction	Year	Code	Capable	Ready	Installed	Total EV readiness
Bainbridge	2022	Zoning	10%	25%	10%	45%
Mountlake Terrace	2011	Land Use	20% of parking spaces Capable or Ready ()		More than 10k sqft, 10% of spaces	30%
Seattle	2019	Zoning	-	20% EV Ready: 1-6	-	20-100%

Jurisdiction	Year	Code	Capable	Ready	Installed	Total EV readiness
				stalls (all), 7-25 (6 spaces), >25 (20%). Garages 20%		
Edmonds	2022	Community Development	40%	40%	10%	90%
Issaquah	2023	Land Use	0%	30%	10%	40%
Bellevue	Prop.		20%	40%	15%	75%
WA State	2021		10%	25%	10%	45%

For new **non-residential projects**, most of the local jurisdictions have significantly lower requirements than Bainbridge:

Jurisdiction	Year	Code	Capable	Ready	Installed	Total EV readiness
Bainbridge	2022	Zoning	20%	30%	10%	60%
Mountlake Terrace	2011	Land Use	2-6% of parking spaces Capable or Ready (depending on land use)		More than 10k sqft, 1-3% of spaces	3-9%
Seattle	2019	Zoning	-	10% EV Ready	-	10%
Edmonds	2022	Community Development	40%	0%	10%	50%
Issaquah	2023	Land Use	0%	10%	5%	15%
Bellevue	*.		40%	10%	15%	65%
WA State	2021		10%	10%	10%	30%

*Proposed in Jan. 2024. The total percentage may be reduced before a Council vote.

From an international perspective, Washington state's requirements are modest, and the trend is toward higher requirements.

The International Code Council, which updates the International Energy Conservation Code (IECC) every three years to incorporate new building technologies and practices, published a 2024 draft code requirements for residential and commercial with up to 100% of parking spaces in multi-family having some level of EV readiness – but after major pushback from the building industry made them optional for jurisdictions to consider.

Table. Required EV Power Transfer Infrastructure - Commercial (selected occupancies)

Occupancy	EV Capable	EV Ready	EVSE Installed	Total EV
Group A (Assembly)	10%	0%	10%	20%
Group B (Business)	30%	0%	15%	45%
Group E (Education)	30%	0%	15%	45%
Group F (Industrial)	5%	0%	2%	7%
Group M (Mercantile)	30%	0%	15%	45%
Group R-1 (Hotels)	75%	5%	20%	100%
Group R-2 (Multi-unit Dwellings)	75%	5%	20%	100%
Group R-3/R-4 (Misc. Housing)	5%	0%	2%	7%

Rather than designating a straight percentage of parking spaces for EVs, Bainbridge may consider creating separate tables for different land uses. For instance, parking facilities for shopping centers may merit different EV charger readiness requirements than parking facilities for houses of worship.

SUPPORTING WORKPLACE CHARGING

Home charging isn't the only place where policy can help.

Workplaces also need to accelerate the availability of EV charging. Level 1 charging cannot be reasonably relied upon to top up an EV battery for long commutes off the island. Through its Up & Go program, Puget Sound Energy can cover up to 100% of the cost for qualifying customers to install and maintain Level 2 chargers for employees.

Why focus on workplaces? Commute trip reduction is a strategy to reduce single-occupancy vehicle trips and GHGs. However, a potential barrier for commuters to take advantage of Kitsap Transit's EV vanpool – a fleet of Mustang Mach-Es – is that they lack Level 2 charging both at work and at home. Many won't give up their single-occupancy ICE vehicle for a ride-share arrangement with an EV unless they know they can charge at their employer's worksite.

PLANNING FOR NECESSARY GRID CAPACITY

The cost of installing EV chargers is relatively small compared to the cost of upgrading a utility's transformers or installing underground vaults.

That is why some jurisdictions, such as Seattle and Edmonds, have provisions that allow a City official to reduce the EV charging infrastructure requirements where there is documented proof that the requirement will trigger utility upgrades above a cost threshold. Further research is necessary to determine whether such a "safety valve" is feasible in practice, but it provides an equitable solution to permit applicants and puts a spotlight on the urgency of accelerating planned improvements to the grid's capacity.

The fact that these provisions exist in ordinance points to a larger problem facing Bainbridge Island in particular – the state of its grid. The City has a franchise agreement with Puget Sound Energy (PSE) and needs to do what it can in its permitting requirements to help the utility upgrade the grid's capacity and reliability as soon as is practically feasible. Without that, the EV charging infrastructure policy goal may be dead on arrival due to the PSE capacity charges property owners will face if their projects trigger the city's requirements.

The City should solicit input from PSE on how the utility's programs can complement the EV readiness ordinance. According to the IREC/SEAC report, utilities view EV charging as a revenue stream and are thus incentivized to collaborate on code development and build community support. The City of Seattle worked with Seattle City Light and found that one of the biggest barriers to electrifying existing buildings was a "one site, one service" policy; is this a barrier for property owners on Bainbridge and can it be remedied in discussion with PSE?

The U.S. Department of Transportation recommends jurisdictions invest in planning and build for flexibility. "To avoid the need for even more upgrades in the future, consider both the current charging needs and expected future needs and ensure that planning is done in a careful and coordinated fashion. Designing infrastructure to accommodate future growth in demand – for example, through modular charging stations that allow for incremental increases in power – may be worth the extra installation costs. This approach can also reduce site preparation costs, as it may be cheaper and easier in the long run to lay electrical conduit for all potential EVSE at once instead of cutting concrete multiple times during future projects."

RECOMMENDATIONS

In our view, Options 1 (do nothing) and 2 (revert to state requirements) are not the preferred way to go. The City should pursue Option 3 and refine its existing ordinance.

We see two categories of need on Bainbridge Island where regulation can help close gaps:

- Level 2 charging for multi-family dwellings and residential condominiums
- Level 2 or 3 charging for workplaces

Adopting requirements higher than the state are necessary to eliminate costly retrofits, meet the future demand for EV charging and support the City's GHG emission reduction goals.

If more time were available, the City staff could conduct listening sessions with a cross-section of stakeholders (including PSE, property owners/developers, EV users, and major employers), as other cities have done, to update its understanding of local needs, potential opportunities and pitfalls in promulgating new requirements. But the CCAC has been asked to provide recommendations on the requirements, so we have tried to strike a balance based on available information and interviews with some stakeholders.

In all cases, the City of Bainbridge should consider these measures:

- To incentivize EV adoption and charging, as New Jersey does, allow all EV-ready stalls (with or without chargers) to *count as more than one space* for minimum parking requirements. Allow accessible stalls to count as two spaces to account for the wider stall and required landing zone. This reduces the overall number of parking spaces on a site, while also promoting alternative forms of mobility (transit, bicycling, ride-share).
- Be clear about what is required of Level 2 charging, either referencing state requirements or defining it explicitly as other cities have.
- Consider credit for GHG offsets: For example, if a property commits to installing PV solar arrays on site to ensure the building's load is 75-100% renewable energy, that could merit credit for a portion of the required EV Ready or Installed spaces. This would accelerate solar installations that provide clean, renewable energy for future EV spaces.
- Develop signage requirements to clarify whether the EV parking spaces are publicly accessible or only for use of residents and building guests and what measures may be taken (i.e. impound, fines) for unauthorized use of EV spaces.

For new and substantial expansion of multi-family dwellings and residential condominiums, the City of Bainbridge should consider these measures:

- Research planning formulas for how many shared EV chargers are needed in a multi-family building to support a future where 100% of the resident vehicles are EVs. Even though everyone may have an EV, **not everyone will need to charge every night** because EV range on a full battery will likely exceed 400 miles.
- Raise EV Capable, Ready and Installed requirements as needed, but offer flexibility based on local site conditions and the documented cost of utility service upgrades. The City could phase in these requirements to reach 50% EV Capable, 25% EV Ready and 10% EV Installed (85% EV total) by 2028, with a provision like Seattle or Edmonds that allows reductions in requirements to be granted by the Planning Director based on explicit cost thresholds for utility service upgrades to transformers or construction of vaults. By phasing in progressively higher requirements, the City

gives PSE's Bainbridge grid time to "catch up" while also giving developers a clear and predictable roadmap.

- Increase awareness of automated load management systems (ALMS) and promote demonstration projects in collaboration with PSE.
- The City of Issaquah has provisions in its code that address the need for EV spaces in affordable housing, but flexibility to reduce requirements to an extent to be cost neutral.
- For parking spots that are assigned to specific units/residents, 100% should be EV Capable - treated similarly as a private garage. The state requirements don't differentiate between unassigned and assigned parking spots, and we believe this differentiation is very important. And it's important to note that unassigned resident parking with shared charging is the most efficient use of space and smart to encourage.

For new and substantial expansion of non-residential commercial buildings and parking lots, the City of Bainbridge Island should consider these measures:

- Lower EV Capable, Ready and Installed requirements to match the state's requirements.
- Encourage employers to work with PSE's Up & Go workplace charging incentive program and take advantage of federal tax credits for EV charging infrastructure.
- Conduct a survey of EV usage at different types of commercial occupancies on Bainbridge Island to inform whether required EV spaces should vary based on different land uses or occupancies, similar to how other jurisdictions do this.
- Engage with local gas stations to understand if/when they plan to add DC fast chargers to their stations, what their hurdles are, and how the City can support their transition. The electrification of gas stations is happening already in Europe.