



EV Charging and Solar-Ready Development



Land Use and Environment Committee
June 16, 2022

Agenda

Thurston Climate Mitigation Framework

EV Charging Background

EV Ready Codes and Options

Solar Ready Codes and Options

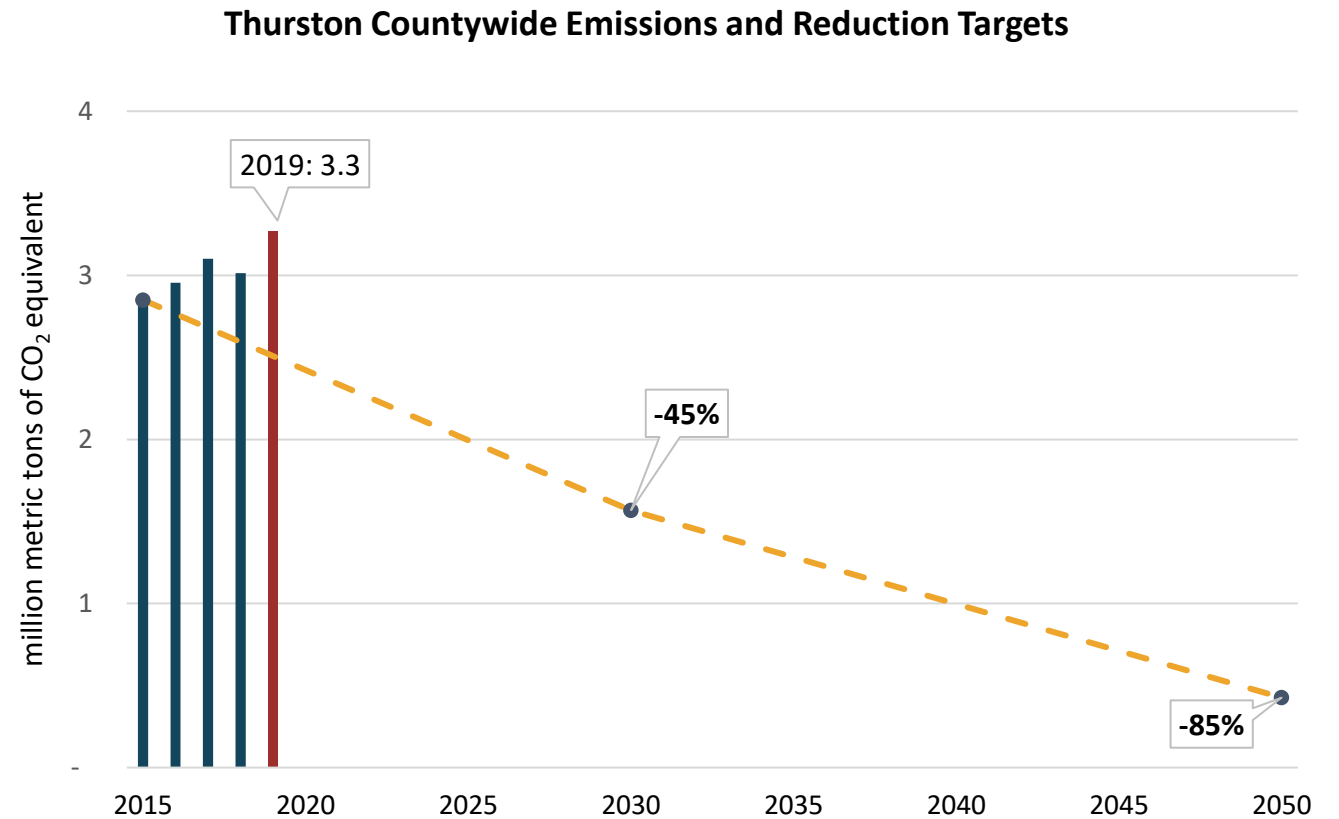
Olympia's Climate Action Commitments

- **Thurston Climate Mitigation Plan:** Reduce regional greenhouse gas emissions 45% below 2015 levels by 2030 and 85% below 2015 levels by 2040.
- **Olympia Climate Inheritance Resolution:** Achieve net-zero emissions by 2040.
- **Cities Race to Zero:** Achieve net-zero emissions by 2040 and set an interim 2030 science-based target, which reflects Olympia's fair share of a 50% global reduction in emissions by 2030.

2019 Greenhouse Gas Emissions Thurston County

3.3
million

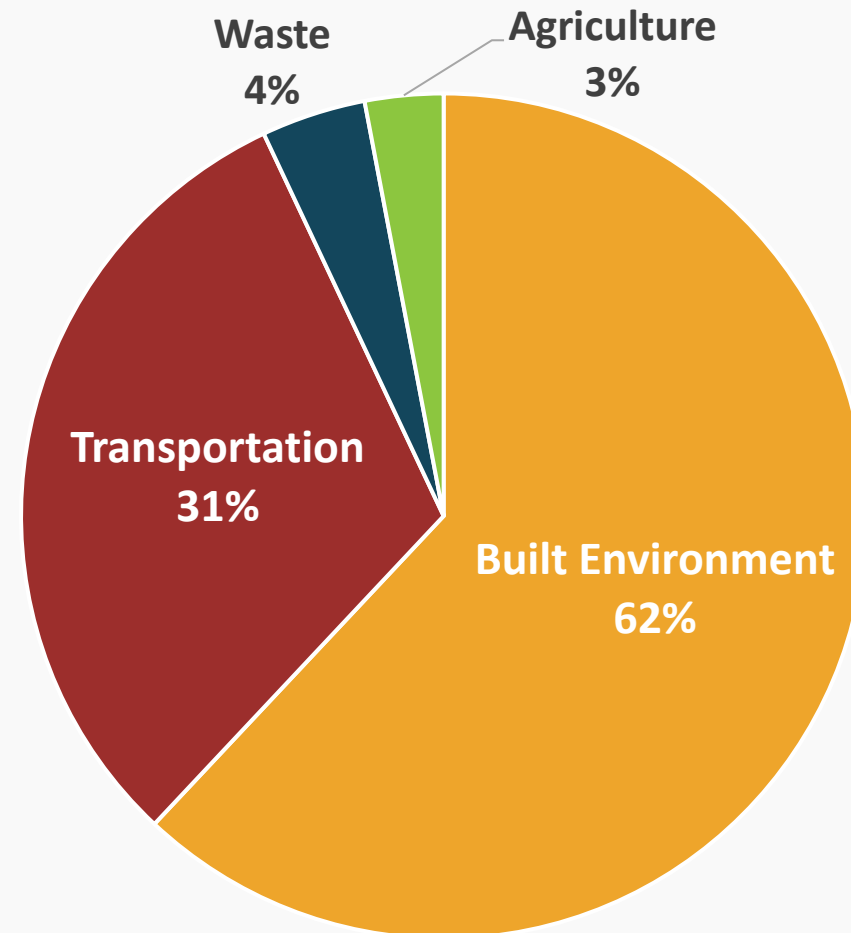
metric tons of carbon
dioxide equivalent
(MTCO₂e)



2019 Greenhouse Gas Emissions Thurston County

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Framework for Climate Mitigation Action

Live Lighter

- Create denser urban neighborhoods where more people can opt to drive less
- Make it easier to telework, walk, bicycle, and ride transit
- Reduce food and other waste

Green Our Grid

- Support State-level action to generate electricity with 100% renewable sources
- Increase energy efficiency of homes and businesses
- Make it easier to install renewables on homes and businesses

Shift Energy Sources

- Switch more appliances, heaters, and vehicles to electricity
- Make it easier to charge electric vehicles in homes and around town

Store Carbon

- Plant trees and preserve tree canopy
- Preserve farmland and increase regenerative agriculture practices
- Preserve and enhance prairies

Build Local Capacity & Resilience

- Provide coordinated leadership on climate action
- Monitor greenhouse gases and assess progress
- Develop expertise in climate-forward practices
- Factor climate impacts into funding and decisions
- Support the development of a green economy
- Further understand and address social equity issues related to climate change

**EQUITABLE
DISTRIBUTION OF
COSTS & BENEFITS**

Shift Energy Sources

Increase the adoption of electric vehicles.

T3.1 EV parking new construction.

Require large commercial and residential buildings to dedicate a percentage of parking spots for electric vehicle charging.

T3.5 EV-ready building code.

Require all new residential construction to be built EV ready.

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**EQUITABLE
DISTRIBUTION OF
COSTS & BENEFITS**

Green our Grid

Increase the production of local renewable energy.

B5.8 Solar-ready.

Amend local development code to require solar-ready construction for all buildings types.

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EV Charging Levels

AC Level 1

Does not require specialized equipment. Primarily used at home, sometimes at work.

AC Level 2

Requires additional charging equipment. Typically used at home, work, and for public charging.

DC Fast Charging

Requires highly specialized high-powered equipment. Typically used for public charging stations, especially along heavy traffic corridors.



Mix of Charging Infrastructure

Home Charging

More than 80% of charging is expected to occur at home, when available.

Workplace Charging

Supports drivers without access to home charging. Provides charging for long-distance commuters and vehicles with limited range.

Public Charging

Supports drivers without access to home or workplace charging. Provides “opportunity charging” and fast charging on longer trips.



EV-Readiness

EV Capable Parking Space

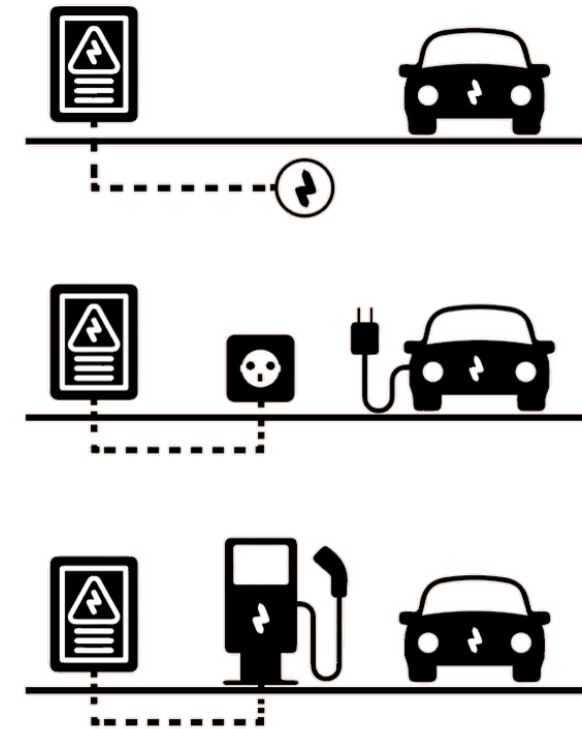
A parking space provided with a conduit, electrical panel and load capacity to support future installation of EV charging equipment.

EV Ready Parking Space

A parking space provided with a receptacle outlet allowing charging of electric vehicles.

EV Charging Station

EV Ready parking space with installed EV charger.



Estimated Cost of EV-Ready Parking

EV-Ready Labor and Materials

Single family homes and duplexes

- \$150 to \$375 per space

Multifamily and Commercial

- \$1,330 - \$1,380 per space
- Retrofitting existing parking is at least \$900 to \$5,000 more expensive per space.

Level 2 Chargers

Single family homes and duplexes

- \$380 to \$689 for a basic single-port residential charger

Multifamily and Commercial

- \$1,500 for a single-port multifamily charger with a limited interface that assigns charging to residents.
- \$3,000 per port for a “smart” charger that allows improved remote control such as wait listing, and dynamic pricing.

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Washington State Building Code

2021 IBC EV Charging Requirements (effective ~July 2023)

Occupancy	EV Charging Stations	EV-Ready	EV-Capable
Group R			
Buildings with 1-2 dwelling units	Not required	One per dwelling unit	Not required
Dwelling units with private garages	Not required	One per dwelling unit*	Not required
All other Group R	10% of total spaces	25% of total spaces	10% of total spaces

* Similar code proposal currently under consideration for the 2021 Residential Code (IRC)

Washington State Building Code

2021 IBC EV Charging Requirements (effective ~July 2023)

Occupancy	EV Charging Stations	EV-Ready	EV-Capable
Group A, B, E, F, H, I, M, S			
	10% of total spaces	10% of total spaces	10% of total spaces
	Exceptions: <ul style="list-style-type: none">• B, F, H, I, and S occupancies with less than 10 parking spaces are exempt.• A, E, and M provisions apply only to designated employee parking spaces (or one EV-charging station and EV-ready space for every 200 spaces).		

Key Questions

- **Should staff develop a proposed ordinance for local EV parking requirements?**
- **How assertive should staff be with proposed percentages for EV parking types?**
- **How soon would you like to see these proposed changes?**

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Best Practice – residential charging: 100% EV-Ready

“EV Ready” Requirements for New Buildings: A Best Practice Guide for BC Local Governments

Single Family, Duplex & Townhouse

Occupancy	EV Charging Stations	EV-Ready	EV-Capable
WA State (2021 IBC)	-	1 per unit	-
King County, WA	-	1 per townhouse unit	-
Seattle, WA	-	1 per unit	-
Lacey, WA	-	-	-
Boulder, CO	-	1 per unit	-
San Jose, CA	-	1 per unit	-
Vancouver, BC	-	100% of total spaces	-

Best Practice – residential charging: 100% EV-Ready

Multifamily

Occupancy	EV Charging Stations	EV-Ready	EV-Capable
WA State (2021 IBC)	10% of total spaces	25% of total spaces	10% of total spaces
King County, WA	10% of total spaces	25% of total spaces	-
Seattle, WA	-	20% of total spaces	-
Lacey, WA	5% of total spaces	-	-
Boulder, CO	5% of total spaces	10% of total spaces	40% of total spaces
San Jose, CA	10% of total spaces	20% of total spaces	70% of total spaces
Vancouver, BC	-	100% of total spaces	-

Best Practice – residential charging: 100% EV-Ready

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Best Practice – workplace charging: 20-40% EV-Ready

Best Practice – opportunity charging: 15-20% EV-Ready

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Non-residential

Occupancy	EV Charging Stations	EV-Ready	EV-Capable
WA State (2021 IBC)	10% of total spaces	10% of total spaces	10% of total spaces
King County, WA	5% of total spaces	10% of total spaces	-
Seattle, WA	-	10% of total spaces	-
Lacey, WA	1-3% of total spaces	-	-
Boulder, CO	5% of total spaces	10% of total spaces	10% of total spaces
San Jose, CA	10% of total spaces	-	40% of total spaces
Vancouver, BC	-	10% of total spaces	-

Best Practice – workplace charging: 20-40% EV-Ready

Best Practice – opportunity charging: 15-20% EV-Ready

EV Ready Policy Options

Status and Options

- **Washington State Building Code**

Requires a minimum number of EV-charging, EV-ready, and EV-capable parking spaces in all new development.

- **Olympia Municipal Code**

OMC allows for EV charging, but does not establish any additional EV-readiness requirements.

Option: Amend OMC Parking requirements to require a greater percent of EV-ready parking, where residential and/or non-residential parking is provided.

Agenda

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Solar Ready Policy Options

Status and Options

- **Commercial Buildings**

Washington State Commercial Energy Code requires non-residential commercial buildings to meet solar ready requirements.

Option: Amend Commercial Energy Code to extend solar readiness requirements to include large multifamily buildings.

Examples: Seattle, Shoreline, and Bellingham require a solar zone on all commercial buildings, including large multifamily.

Solar Ready Policy Options

Status and Options

- **Residential Buildings**

Washington State Residential Code allows for local jurisdictions to adopt solar-ready provisions (Appendix T).

Option: Adopt State Building Code Appendix T – Solar-ready provisions for detached one- and two-family dwellings, and multiple single-family dwellings (townhouses).

Examples: Tumwater and Lacey have adopted the residential building Solar-ready provisions.



olympiawa.gov/climate

