



## Land Use & Environment Committee

### Electric Vehicle Charging and Solar-Ready Development

**Agenda Date:** 6/16/2022  
**Agenda Item Number:** 6.C  
**File Number:**22-0572

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**Type:** discussion **Version:** 1 **Status:** Filed

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#### **Title**

Electric Vehicle Charging and Solar-Ready Development

#### **Recommended Action**

##### **Committee Recommendation:**

Briefing only. No action requested.

##### **City Manager Recommendation:**

Briefing only. No action requested.

#### **Report**

##### **Issue:**

Briefing on policies to support electric vehicle (EV) charging and solar readiness in new buildings.

##### **Staff Contact:**

Pamela Braff, PhD, Climate Program Manager, City Manager's Office, 360.753.8249

##### **Presenter(s):**

Pamela Braff, PhD, Climate Program Manager  
Erik Jensen, CBO, CFM, Building Official

#### **Background and Analysis:**

Constructing buildings to accommodate future EV-charging and rooftop solar is one of the most effective strategies to encourage the adoption of electric vehicles and solar energy. EV-ready and solar-ready codes establish infrastructure requirements for new buildings, such as electrical capacity, pre-wiring, and any design features that are necessary for the installation of future EV charging stations and solar energy systems.

Solar and EV-readiness is an important strategy to future-proof new buildings. It ensures that new buildings will be able to accommodate the anticipated rapid growth of rooftop solar and electric vehicles, without requiring expensive and complicated retrofits in the future.

#### Electric Vehicle (EV) Readiness

Access to convenient charging is frequently cited as one of the most important factors influencing EV

purchasing decisions. However, installing the necessary infrastructure to support EV charging after a building has been constructed can often be cost prohibitive. Ensuring that buildings are designed and built with the capacity to provide future EV-charging is known as EV-readiness.

Analyses of EV-infrastructure costs consistently report that is more cost-effective to plan for future EV parking in new construction, than it is to retrofit buildings to accommodate EV charging in the future. EV-readiness requirements can range from providing a minimum electrical panel capacity to support future charging, to the installation of fully operational EV-charging equipment.

The 2021 Washington State Building Code identifies three levels of EV-readiness:

- EV-Capable - A parking space provided with a conduit, electrical panel, and load capacity to support future installation of EV charging equipment.
- EV-Ready - A parking space provided with a receptacle outlet allowing charging of electric vehicles.
- EV-Charging Station - An EV-ready parking space with installed EV-charger.

In 2020, King County completed an assessment of EV charging infrastructure (Electric Vehicle Charging Options Report), reporting that previous studies have estimated the cost of a fully wired, level 2, EV-ready space in new construction to be:

- \$150 to \$375 per space for single-family homes and duplexes
- \$1,330 to \$1,380 per space for multifamily and commercial buildings

They also found that EV-readiness retrofits can be up to eight times more expensive than new construction, increasing costs by \$900 to \$5,000 per space. Increased costs for retrofits are attributed to breaking and repairing walls, parking surfaces, and sidewalks, as well as electrical service upgrades, more expensive methods of conduit installation, and additional permitting and inspection.

### Electric Vehicle (EV) Readiness - Current Requirements and Options

In April 2022, the State Building Code Council approved amendments to the International Building Code, which establish statewide requirements to provide EV charging infrastructure in new construction, effective July 2023. The approved EV infrastructure requirements include:

- For single-family, duplex, and dwelling units with private garages: 1 EV-ready parking space per unit.
- For all other residential parking spaces: 10% EV-charging, 25% EV-ready, and 10% EV-capable.
- For all non-residential parking spaces: 10% EV-charging, 10% EV-ready, and 10% EV-capable.

To increase access to EV-ready parking, Olympia could adopt EV charging codes that set EV-ready standards beyond the state minimum. Several jurisdictions in Washington (e.g., Seattle, Lacey, and King County) have taken similar actions to establish local EV-readiness and EV-charging standards through land use and zoning requirements.

### Solar Readiness

Solar-ready refers to designing and constructing a building to enable and optimize the installation of a rooftop solar photovoltaic (PV) system after the building has been constructed. If solar readiness is

not considered at the time of construction, structural and electrical limitations as well as solar access issues can prevent a solar project from being cost effective, or even feasible in the future.

#### Solar Readiness - Current Requirements and Options

Under the Washington State Commercial Energy Code, all non-residential commercial buildings are required to provide an unobstructed solar zone, to enable to the installation of future rooftop solar PV systems. These solar readiness requirements apply only to new commercial buildings. Although there are currently no statewide solar readiness requirements for single family or multifamily residential buildings, the State Building Code allows jurisdictions to adopt local solar readiness provisions for residential buildings.

For large multifamily buildings, which are regulated under the commercial energy code, Olympia could adopt a local amendment to the commercial energy code, which would extend the current solar readiness requirement to also include multifamily buildings. Several jurisdictions in Washington (e.g., Seattle, Shoreline, and Bellingham) have already taken this action to extend solar readiness requirements.

For smaller residential buildings, including single family, duplex, and townhomes, Olympia has the option to adopt Appendix T of the International Residential Code: Solar Ready Provisions. Several local jurisdictions, including Lacey and Tumwater, have already adopted Appendix T, to require a solar-ready zone on new residential buildings.

#### Consistency with the Thurston Climate Mitigation Plan

Transportation and the built environment are the two largest sources of emissions in Thurston County, making up more than 90% of regional greenhouse gas emissions. In 2019, the built environment, which includes the energy used to power, heat, and cool buildings, contributed 62% of regional emissions, while transportation contributed 31% of emissions.

Requiring EV-ready and solar-ready construction is consistent with the strategies and actions of the Thurston Climate Mitigation Plan.

EV-ready requirements support:

- Strategy T3: Increase the adoption of electric vehicles.
- Action T3.1: EV parking new construction. Require large commercial and residential buildings to dedicate a percentage of parking spots for electric vehicle charging.
- Action T3.5: EV ready building code. Require all new residential construction to be built EV ready.

Solar-ready requirements support:

- Strategy B5: Increase the production of local renewable energy.
- Action B5.8: Solar-ready. Amend local development code to require solar-ready construction for all building types.

#### **Neighborhood/Community Interests (if known):**

Since the Acceptance of the Thurston Climate Mitigation Plan in February 2021, community members have continued to urge the City to take immediate action to address climate change. EV-ready and solar-ready development support community priorities of reducing barriers to EV and solar adoption.

**Options:**

1. Receive the briefing
2. Do not receive the briefing.
3. Receive the briefing at another time.

**Financial Impact:**

None at this time. Future actions to require EV-ready or solar-ready development may increase construction costs for new buildings.

**Attachments:**

Presentation

Thurston Climate Mitigation Plan

Electric Vehicle Charging Options Report