**15-070**

**1. State Building Code to be Amended:**

International Building Code  State Energy Code

ICC ANSI A117.1 Accessibility Code  International Mechanical Code

International Existing Building Code  International Fuel Gas Code

International Residential Code  NFPA 54 National Fuel Gas Code

International Fire Code  NFPA 58 Liquefied Petroleum Gas Code

Uniform Plumbing Code  Wildland Urban Interface Code

**Section(s):**

(NEW) R329

**Title:**

Electric Vehicle Charging Readiness

**2. Proponent Name (Specific local government, organization or individual):**

**Proponent: Graydon Manning**

**Title: Business Owner**

**Date: 312 n 85th St Seattle, WA 98103**

**3. Designated Contact Person:**

**Name: Graydon Manning**

**Title: Business Owner**

**Address: 312 n 85th St Seattle, WA 98103**

**Office Phone:**

**Cell: (360)-480-0058**

**E-Mail address: graydon@nt-0.com**

**4. Proposed Code Amendment**. Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code additional pages may be attached. (Examples on the SBCC [website](https://fortress.wa.gov/ga/apps/sbcc/Page.aspx?nid=191))

**Code(s)** IRC **Section(s)** (NEW) **Section 329 – Electric Vehicle Charging Infrastructure**

Enforceable code language must be used; see an example [by clicking here](https://fortress.wa.gov/ga/apps/SBCC/File.ashx?cid=1803).

Amend section to read as follows:

Chapter 3 – Building Planning

**Section 329 – Electric Vehicle Charging Infrastructure**

**329.1 Required Electric Vehicle Charging Infrastructure** Where on-site parking is provided, one parking space per dwelling unit shall be provided with electric vehicle charging infrastructure by installing one of the following:

A 208/240 V 40-amp individual branch circuit designed to serve the housing unit parking space, or:

Infrastructure enabling for the future installation of a 208/240 V 40-amp individual branch circuit designed to serve at least one parking space per dwelling unit. This includes providing the required capacity in the service panel and a designated raceway from the service panel to the housing unit parking space.

The branch circuit or enabling infrastructure shall terminate within 10ft of one parking space.

1. **Briefly explain your proposed amendment, including the purpose, benefits and problems addressed.** Specifically note any impacts or benefits to business, and specify construction types, industries and services that would be affected. Finally, please note any potential impact on enforcement such as special reporting requirements or additional inspections required.

The electric vehicle market is growing rapidly. The successes of Tesla, Nissan, Chevrolet, BMW, and the plans of nearly every auto manufacturer on the planet to produce EVs necessitate a shift in building practices to prepare this massive change by installing charging infrastructure. Research conducted by the Idaho National Laboratory found that the vast majority of charging occurs at home. In 2014 the City of Sunnyvale, California provided estimates for wiring costs of new construction vs existing buildings[[1]](#footnote-1). For single family detached and townhouse residential development, the city estimated costs of **up to** $800 per station for wiring during new construction per dwelling unit; for the provision of wiring to existing buildings, the city estimated per station costs between $1,000 and $1,200 for single family detached dwelling units and $1,000 to $1,500 for townhouses.

In addition to the increased raw cost of omitting EV infrastructure during construction, an owner or renter would spend their own time researching and hiring an electrician (and potentially other specialty contractors if material removal and replacements are necessary) for retrofitting charging infrastructure. A general contractor would be much better equipped to handle this task along with other general electrical requirements during construction.

This proposal would save Washington State time and money while facilitating a more cost-effective, long-term solution in the transportation sector.

1. **Specify what criteria this proposal meets.** You may select more than one.

The amendment is needed to address a critical life/safety need.

The amendment is needed to address a specific state policy or statute.

The amendment is needed for consistency with state or federal regulations.

The amendment is needed to address a unique character of the state.

The amendment corrects errors and omissions.

1. **Is there an economic impact:**  Yes      No

Explain:

Construction Cost:

To provide first cost information, this proposal references the Electric Vehicle Charging Infrastructure Deployment Guidelines developed by British Columbia in 2009[[2]](#footnote-2). This study provides a detailed assessment of the cost to install EV charging. With this we have been able to disaggregate the cost and provide an estimate for the minimum code requirement as well as full deployment. These tables have been modified to reflect U.S. Dollars (2009). Totals have been inflation adjusted to U.S. Dollars (2015).

To estimate the cost of implementing the minimum electric vehicle charging required by this code change, we had deleted materials and labor that are not required.

Estimates were vetted by electrical professionals and code officials.

The estimated cost to meet minimum requirements for units with an attached garage or parking space is $367.35 per unit. The estimated cost to meet minimum requirements for units with a detached garage, carport, or a parking space not attached to the dwelling unit is $948 per unit. The difference in cost is due to the additional labor cost of trenching and installation of additional material to stub into the detached garage, carport, or parking space. It was assumed that the complications of townhouse construction would average per dwelling unit to roughly the same cost as single-family and two-family structures per dwelling unit.





1. http://www.fairfaxcounty.gov/planning/ev\_policy\_white\_paper\_4\_10\_2014.pdf [↑](#footnote-ref-1)
2. http://vancouver.ca/files/cov/EV-deplioyment-guidelines.pdf [↑](#footnote-ref-2)