2009-2010 Development Code Docket
A-13: Electric Vehicle Charging Infrastructure
(Titles 21, 22, and 23)

Date: August 18, 2010

Public Hearing Date: August 18, 2010

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Proponent/Applicant: Thurston County

Action Requested: Amend Titles 21, 22, and 23 by permitting vehicle charging
facilities and battery exchange facilities within all non-residential
and resource designated zones.

☐ Map Changes ☒ Text Changes ☐ Both ☐ Affects Comprehensive Plans/documents
☐ Affected Jurisdictions

ISSUE:
House Bill 1481 requires Thurston County to permit vehicle charging facilities and battery
exchange facilities in all areas except those zoned for residential or resource protection
(HB 1481, Sect. 9, Pg. 9). The current Lacey Urban Growth Area Zoning Ordinance (Title 21),
Tumwater Urban Growth Area Zoning Ordinance (Title 22), and Olympia Urban Growth Area
Zoning Ordinance (Title 23) do not permit vehicle charging facilities and battery exchange
facilities in a number of non-residential designated zones.

BACKGROUND:
A company called Ecotality received $200 million in federal grants to distribute 4,700 Nissan Leaf
Electric Vehicles (EV) along the west coast. 2,000 vehicles will be sold in Washington State with
approximately 900 to be sold within the central Puget Sound and Olympia areas. During the 2009
session the Washington State Legislature passed Second Substitute House Bill 1481 as part of the
partnership between Washington State and Ecotality on this lessons learned program. HB 1481 can
be found at www.co.thurston.wa.us/planning/planning_commission/planning_comm_home.htm.

HB 1481 addressed EV infrastructure including the structures, machinery, and equipment
necessary to support EVs, including battery charging stations, rapid charging stations, and
battery exchange stations. The Bill also requires Thurston County and jurisdictions within the
county to permit commercial vehicle charging facilities and battery exchange facilities within all
non-residential and resource designated areas. Staff has reviewed the Rural Zoning Code and
found that no code amendment is needed for compliance with HB 1481, but the Urban Growth
Area Zoning Ordinances do need to be amended to permit the battery exchange facilities in all non-residential zones.

Tentatively, the EV infrastructure project within Thurston County is scheduled to begin in December 2010. County staff met with Ecotality and cities’ staff to discuss permitting and zoning on June 17, 2010. For the first phase of the project, Ecotality plans to provide both commercial and residential charging infrastructure beginning with residential infrastructure for people who purchase the Nissan Leaf. A county permit is not required for EV charging infrastructure in private residences. A commercial charging station is planned for later in Phase 1. Ecotality has indicated that the battery exchange stations will not be a part of the first phase of the project. To accommodate commercial EV charging infrastructure in non-residential and resource zones, some amendments to county code are required.

DEPARTMENT ANALYSIS:
This proposed code change would permit commercial EV charging facilities and battery charging stations in all non-residential and resource zones within the Lacey, Tumwater, and Olympia Urban Growth Areas. The code addition is in compliance with Second Substitute House Bill 1481. The Rural Zoning Ordinance is already considered in compliance with HB 1481.

The language provided below is code the City of Lacey Planning Commission is recommending to the City’s Council for consideration to comply with HB 1481.

OPTIONS:
1. Change each of the three Urban Growth Area Zoning Ordinances with the same language as the City of Lacey to comply with HB 1481.

2. Adopt different language in all three Urban Growth Area Zoning Ordinances that would permit electric vehicle charging facilities and battery charging stations in all areas except those zoned for residential and resource protection to comply with HB 1481.

Option 1 (City of Lacey Language):

Chapter xx.xx Electric Vehicle Infrastructure

Sections:
xx.xx.010 Intent
xx.xx.015 General Provisions
xx.xx.020 Definitions
xx.xx.030 Permitted Where
xx.xx.035 Process for Review
xx.xx.040 Design Criteria
xx.xx.045 Prohibitions - Reserved
xx.xx.050 Incentives for provision of Electric Vehicle Infrastructure - Reserved
xx.xx.055 Violations and penalties – Reserved
xx.xx.010 Intent

A. To provide adequate and convenient electric vehicle charging stations to serve the needs of the traveling public;
B. To provide opportunities for Lacey residents to have safe and efficient personal electric charging stations located at their place of residence;
C. To provide the opportunity for commercial and industrial projects to supply electrical vehicle charging station services to their customers and employees;
D. To create standard criteria to encourage and promote safe, efficient and cost effective electric vehicle charging opportunities in a full range of zones and settings for convenience of service to those that use electric vehicles;

xx.xx.015 General Provisions

A. Use of specially designated charging stalls: Electric vehicle charging stations should be reserved for parking and charging electric vehicles only.
B. Electric vehicles allowed where: Electric vehicles may be parked in any space designated for public parking, subject to the restrictions that would apply to any other vehicle that would park in that space.

xx.xx.020 Definitions

A. “Battery charging station” means an electrical component assembly or cluster or component assemblies designed specifically to charge batteries within electric vehicles, which meet or exceed any standards, codes, and regulations set forth by chapter 19.28 RCW and consistent with rules adopted under RCW 19.27.540.
B. “Battery exchange station” means a fully automated facility that will enable an electric vehicle with a swappable battery to enter a drive lane and exchange the depleted battery with a fully charge battery through a fully automated process, which meets or exceeds any standards, codes, and regulations set forth by chapter 19.27 RCW and consistent with rules adopted under RCW 19.27.540.
C. “Charging levels” means the electrical force, or voltage, at which an electric vehicle’s battery is recharged. Levels 1, 2, and 3 are the most common EV charging levels, and include the following specifications:

1) Level 1 is considered slow charging. It requires a 15 or 20 amp breaker on a 120-volt AC circuit and standard outlet. This level of charging can fully recharge a BEV between 8 and 32 hours and a PHEV between 3 and 15 hours.
2) Level 2 is considered medium charging. It requires a 40 amp to 100 amp breaker on a 240-volt AC circuit. This level of charging can fully recharge a BEV between 4 and 6 hours and a PHEV between 1 and 2 hours.
3) Level 3 is considered fast charging. It requires a 60 amp or higher dedicated breaker on a 480 volt or higher three-phase circuit with special grounding equipment. Level 3 charging uses an off-board charger to provide the AC to DC conversion, delivering DC directly to the car battery. Charging time ranges from 25-40 minutes for BEVs and less than 20 minutes for PHEVs.
D. “Electric vehicle” means any vehicle that operates, either partially or exclusively, on electrical energy from the grid, or an off-board source, that is stored on-board for motive purpose. “Electric vehicle” includes: (1) a battery electric vehicle; (2) a plug-in hybrid electric vehicle a; (3) a neighborhood electric vehicle; and (4) medium-speed electric vehicle.

E. “Electric vehicle charging station” means a public or private parking space located together with a battery charging station which permits the transfer of electric energy (by conductive or inductive means) to a battery or other storage device in an electric vehicle. An electric vehicle charging station is permitted as an accessory use to any principal use.

F. “Electric vehicle infrastructure” means structures, machinery, and equipment necessary and integral to support an electric vehicle, including battery charging stations, rapid charging stations, and battery exchange stations.

G. “Electric vehicle parking space” means any marked parking space that identifies the use to be exclusively for an electric vehicle.

H. “Non-Electric Vehicle” means any motor vehicle that does not meet the definition of “electric vehicle.”

I. “Rapid charging station” means an industrial grade electrical outlet that allows for faster recharging of electric vehicle batteries through higher power levels, which meets or exceeds any standards, codes, and regulations set forth by chapter 19.28 RCW and consistent with rules adopted under RCW 19.27.540.

xx.xx.030 Permitted Where

A. Allowed where: “Electric Vehicle charging stations” shall be considered an allowed use in association with a primary permitted use in every zoning designation;

B. Compatibility: For land use compatibility purposes, the charging activity should be proportionate to the associated permitted use; “Electric vehicle charging station(s)” shall be permitted in a single family garage designed to serve the occupants of the home with a level 1 or 2 charging level. Whereas, charging station(s) installed in a parking lot at a commercial destination, or located in a vehicle service station in close proximity to Interstate 5, is expected to have intensive use and will be permitted to have multiple “rapid charging stations” to serve expected demand.

C. Battery Charging Stations: “Battery exchange stations” are permitted in any commercial, industrial or mixed use zone. Provided, all other requirements for the building or space the use occupies can be satisfied, such as design review, fire code and building code requirements. This use is specifically prohibited in exclusively residential zones or zones designated OSI for environmentally sensitive reasons.

xx.xx.035 Process for review

A. New residential construction: If associated with new residential construction, installation of a charging station shall be processed in association with the underlying permit(s).
B. Retrofitting single family residential: If retrofitting a single family home for a charging station, an electrical permit shall be required.

C. Retrofitting a commercial site: If retrofitting an existing commercial site for a charging station(s), this activity shall be permitted through the City Site Plan Review (SPR) process (LMC 16.84).

D. Battery exchange: If the facility includes a battery exchange station, or is associated with a new commercial activity requiring SPR approval, the application shall be reviewed and approved through SPR.

xx.xxx.040 Design Criteria

A. Design Criteria for commercial and multifamily development or common/community owned areas of a residential development: The following criteria should be applied to electric charging facilities.

1. Number required: This is an optional improvement. No minimum number of stalls applies. Provided, if electric vehicle stalls are reserved for electric vehicles, care should be taken to ensure enough spots are available for all of a site’s parking needs.

2. Generally: Location and provision of electric vehicle parking will vary based on the design and use of the primary parking lot, keeping in mind flexibility will be needed in various parking lot layout options:

3. Signage to identify: Each charging station space should be posted with signage indicating the space is only for electric vehicle charging purposes. Days and hours of operations should be included if time limits or tow away provisions are to be enforced by the owner.

4. Signage to find: Installation of wayfinding signs at the parking lot entrance and at appropriate decision points to effectively guide motorists to the charging station space(s).

5. Maintenance: Charging station equipment should be maintained in all respects, including the functioning of the charging equipment.

6. Accessibility: Where Charging Station equipment is provided within an adjacent pedestrian circulation area, such as a sidewalk or accessible route to the building entrance, charging equipment should be located so as to not interfere with accessibility requirements of WAC 51-50-005.

7. Lighting: Where Charging Station equipment is installed adequate site lighting should also be provided unless charging is for daytime purposes only.

8. Notification of station specifics: Information on the charging station identifying voltage and amperage levels and any time of use, fees or safety information.

9. Avoid the most convenient parking spaces: Stalls should not be located in the most convenient spots because this would encourage use by non electric vehicles.
10. **Avoid conflict with handicap spots**: Stalls should generally not be located adjacent to handicap spots unless designed for handicap use.

11. **Design for compatibility**: Design should be appropriate to the location and use. Facilities should be able to be readily identified by electric cars users but blended into the surrounding landscape/architecture for compatibility with the character and use of the site.

12. **Size**: Where provided, spaces should be standard size parking stalls but designed in a way that will discourage non electric car vehicles from using them.

**B. Electric vehicle charging station design standards for single family residential sites:**
Installation shall meet manufacturing requirements and sections XXX of the international building code.

xx.xx.045 Prohibitions - Reserved
xx.xx.050 Incentives for provision of Electric Vehicle Infrastructure - Reserved
xx.xx.055 Violations and penalties - Reserved

**Option 2:**
Adopt different language in all three Urban Growth Area Zoning Ordinances that would permit electric vehicle charging facilities and battery charging stations in all areas except those zoned for residential and resource protection to comply with HB 1481.

**SEPA:**
A Determination of Nonsignificance (DNS) was issued on July 23, 2010. The environmental determination became final on August 13, 2010.

**NOTIFICATION:**
Written notice of the public hearing was published in *The Olympian and the Nisqually Valley News* at least twenty (20) days prior to the public hearing.

**DEPARTMENT RECOMMENDATION:**
Amending the Urban Growth Area Zoning Ordinances as suggested in Option 1) would comply with the requirements of Second Substitute House Bill 1481 and convey consistent interpretations of all three zoning ordinances.

The Resource Stewardship Department recommends the Planning Commission forward Development Code Docket item A-13, *Electric Vehicle Infrastructure* (Title 21, 22, and 23) with a recommendation of approval of Option 1 to the Board of County Commissioners as follows:

**Title 21, 22, and 23 Zoning would be amended as follows:**

Deleted Text: Strikethrough Proposed Changes: Underlined
Staff Comments: Italic Unaffected Omitted Text: (...)
As stated above in Option 1.