# Seattle's EV Experience

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Electric Vehicles: Is Kentucky Ready to Run?
Louisville, KY

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# Outline

- About the Coalition.
- How Seattle became an Early Adopter of EVs.
- What We Had to do to Become EV Ready:
  - Regulations & Policies
  - Infrastructure Planning
  - Education & Outreach
- What We've Learned So Far.
- Advice for Other Jurisdictions.


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# About the Coalition

## History:

- Originally designated in 1998 and housed within City of Seattle
- Moved to Puget Sound Clean Air Agency in 2007

## Area:

- From 1998 to 2011, encompassed 4-counties: King, Kitsap, Snohomish, and Pierce
- In 2011, expanded to 15 Western Washington counties


## Population:

- 4.7 million in 15-county area (70% of state population)

## Hybrid Vehicles:

- 1.53 per thousand residents hybrid electric vehicle adoption in state (second after California's 1.54).
- In Seattle, 4.7 hybrids per thousand residents.

# Seattle: Early Adopter

- High correlation between early adopters of EVs and current owners of hybrids.
- Local fleets selected for 2008 PHEV pilot study with Idaho National Labs.
- Rank in several ‘Top 10’ lists by manufacturers and think tanks as an ideal location for EV adoption.
- Most cited reasons:
    1) Higher per capita percentage of hybrid-electric vehicle adoption
    2) Ideal (moderate) climate for batteries
    3) Low electricity prices and clean electricity sources
    4) Positive/green consumer attitudes
    5) Government leadership & political environment

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# Becoming EV Ready

## State Government Leadership

- State coordination on West Coast Green Highway in 2008
- HB 1481 passed in 2009
- HB 1571 clarified revenue generation for charging (no conflict with UTC) passed in 2011

*West Coast Green Highway Partnership*

## What HB 1481 Did:

- Directed the state to develop model ordinances and regulations which had to be adopted by local governments over a specific time period.
- Provide guidance for siting and installing EVSE.
- Required installation of charging or battery exchange stations on state properties and rest areas.
- Created a sales tax exemption for EVSE installation.

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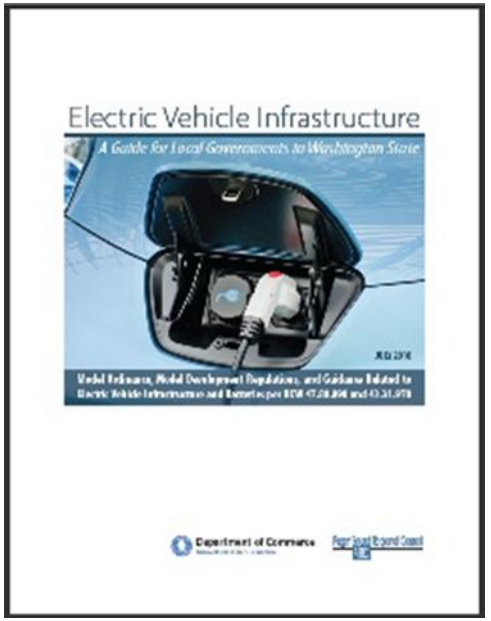
# Infrastructure Guidance

**Includes:**

- Model Ordinance
- Model Development Regulations
    - Vehicles & Traffic
    - Signage
    - Zoning
    - Streets, Sidewalks & Public Places
    - Battery, Building, Electrical Provisions
- Model Installation Guides
- Installation Checklist




*PSRC/Dept of Commerce EV Infrastructure Guide*

# And then the grants arrived

- **Ecotality** - $20 Million in Puget Sound (1200 Level 2 in commercial; 300 Level 2 in public; 50 DCFC in transportation corridors)
- **ChargeAmerica** – 250 Level 2 EVSE in east side cities
- **EECBG** – Half dozen cities/counties allocated block grant funds for EVSE
- **Clean Cities** – 150+ Level 2 EVSE (with municipalities)
- **Washington State DOT** - $1 Million+ for Level 2 and DCFC along I-5 and Highway 2 corridor.

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# Where to put infrastructure?

Pin the EVSE on the Puget Sound

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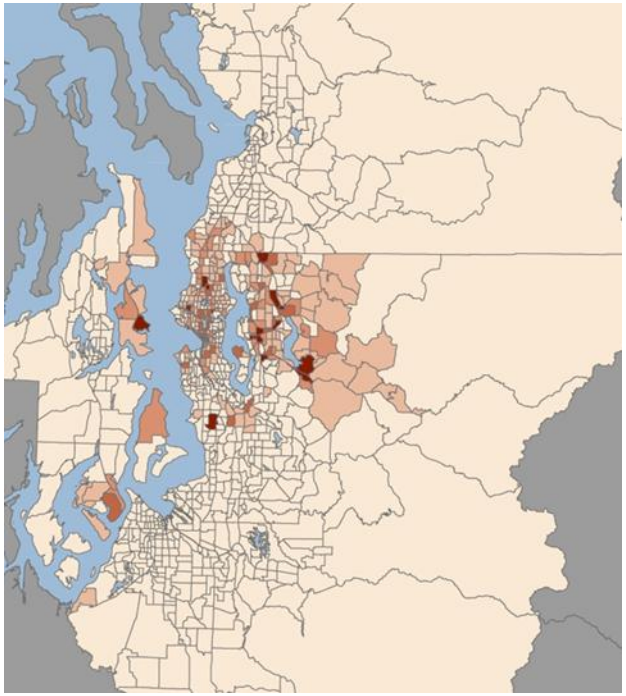
# Infrastructure Guidance

- Places of employment outside urban core are good charging station candidate sites
- In urban core, most vehicles travel less than 10 miles to work
- Outside urban core, vehicles travel 20 to 40 miles to work
- Park and Rides are rarely good candidate sites (but…)
- Recreation centers, stadiums, shopping malls, airports are good non-work charging station sites.



Top EV Destinations in Seattle for Non-Work Trips

# Current Status

## EV Planning Efforts:

- Developed EV Readiness Plan
- Developed EV outreach materials & state website (mostly to dispel myths and provide resources)
- Collaborative effort to coordinate planning, procurement, permitting, signage, L2 & DCFC locations.
- State initiated a Plug-In Vehicle Task Force with over 25 organizations.
- QR Code program for EVSE infrastructure signage.




WEST COAST ELECTRIC HIGHWAY

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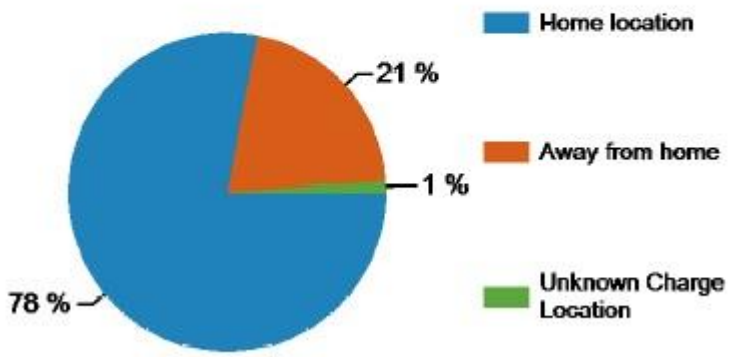
# Charging Behavior So Far

## Vehicle Usage

| | |
|---|---|
| Number of trips | 160,588 |
| Total distance traveled (mi) | 1,077,931 |
| Avg trip distance (mi) | 6.7 |
| Avg distance traveled per day when the vehicle was driven (mi) | 31.2 |
| Avg number of trips between charging events | 4.5 |
| Avg distance traveled between charging events (mi) | 30.4 |
| Avg number of charging events per day when the vehicle was driven | 1.0 |

**Frequency of Charging by Charging Location and Type**




THE EV Project

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# Advice to Other Regions

- EVSE Procurement is often based on a certain manufacturer's spec sheet – avoid that and explore all the options for networking and payment systems.
- Need coordination and cooperation – local leadership seems to be most important to get the vehicles and technology. State leadership to get regulations and policies in place.
- Most early adopters use home charging, so don't expect to see a lot of use at public stations right away.
- Focus incentives/dollars on point-of-sale price reduction, and less on building out public infrastructure.
- A lot of mythbusting still needs to be done about electricity production emissions as tailpipe displacement. Don't shy away from it in your messaging.
- Fleets are a great way to spread the message.
- Copy what others are doing and avoid reinventing the wheel.

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