

***Washington State DOT's
I-5 Electric Highway
Public/Private Partnership***

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- 1** The Transportation-Energy Imperative
- 2** Why DOTs Should Help Transition Vehicles to the Electric Power Grid
- 3** WSDOT's West Coast Green Highway Initiative
- 4** Supportive State Actions



U.S. oil dependence weakens our national security, threatens our economy, and degrades the environment.

National Security Costs of Oil Dependence:

- \$67.5 billion to \$83 billion per year to secure global supply lines and infrastructure, using military force if required.
- The need to minimize disruptions to the flow of oil constrains our foreign policy options on uranium enrichment, hostile regimes and humanitarian issues.

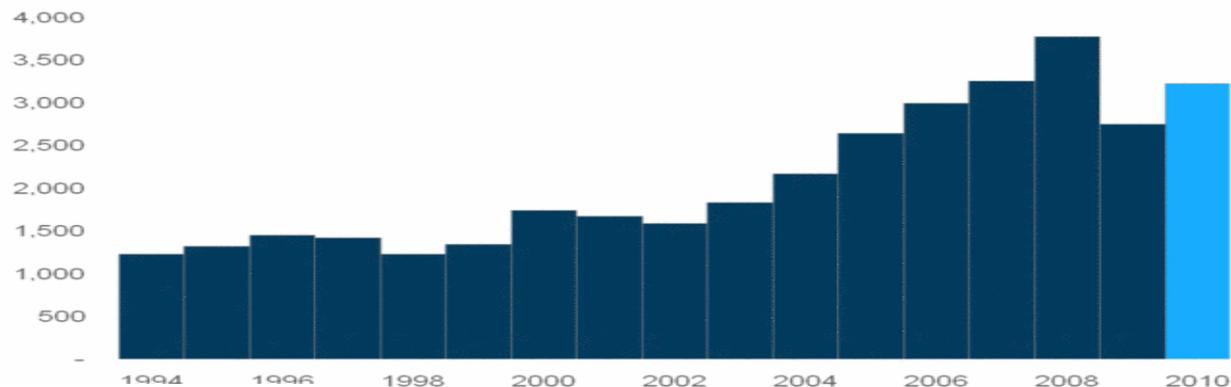


Economic Costs of Oil Dependence:

- Every recession over the past 35 years has been preceded by – or occurred concurrent with – an oil price spike.
- Annual household expenditures for gasoline were \$125/month in 2003. Sixty months later, the average American household was spending \$300/per month.

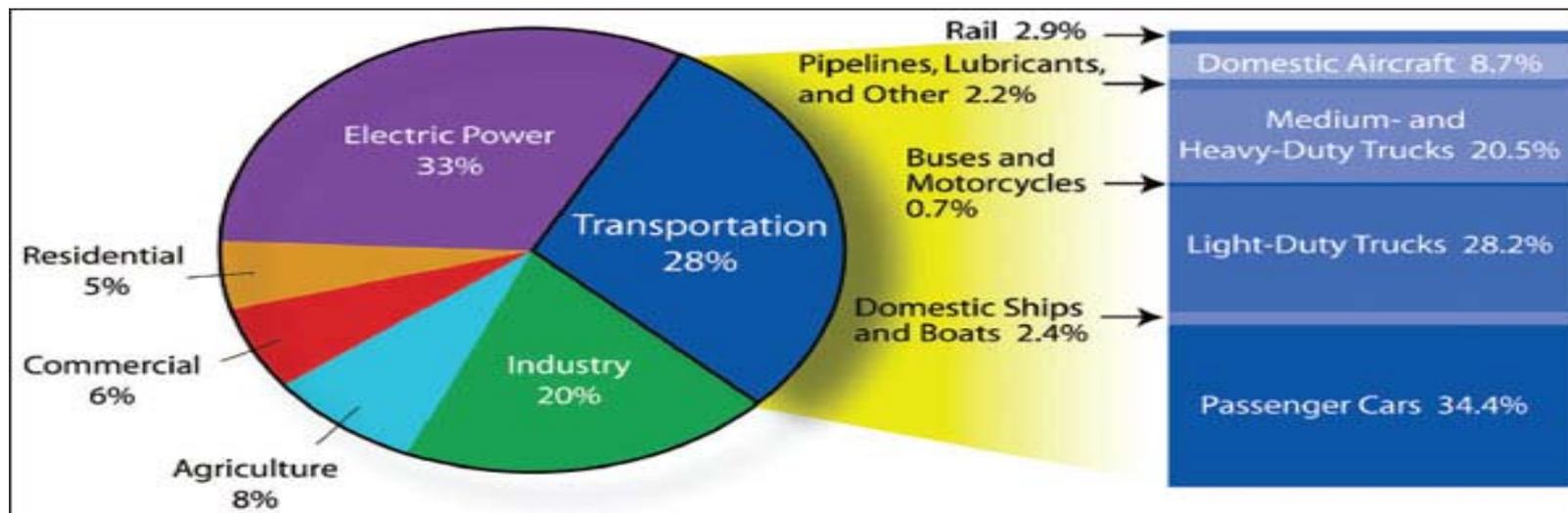
US Oil Dependence: Economic Costs

HOUSEHOLD GASOLINE EXPENDITURES (ANNUAL, NOMINAL)



Environmental Costs of Oil Dependence:

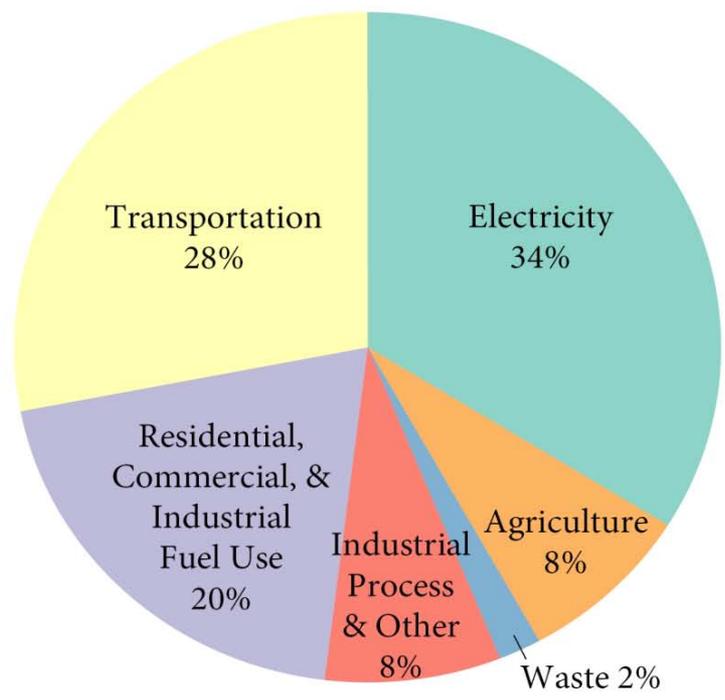
- 43 percent of all GHG emissions come from petroleum use – and 70 percent of this amount is from transportation.
- Passenger and light-duty vehicles constitute 62 percent of the transportation sector's GHG emissions.



U.S. Co2 emissions, by sector (2007)

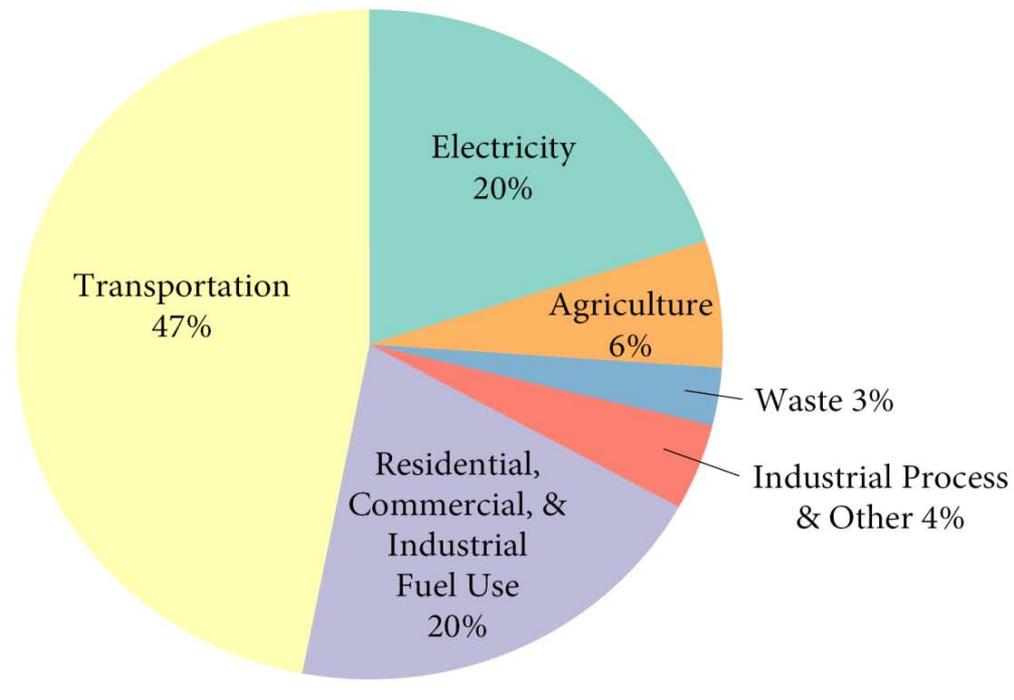
GHG emissions from Washington State's transportation sector (47%) are nearly double the national figures.

U.S. Greenhouse Gas Emissions



Source: Washington State Department of Ecology, 2005

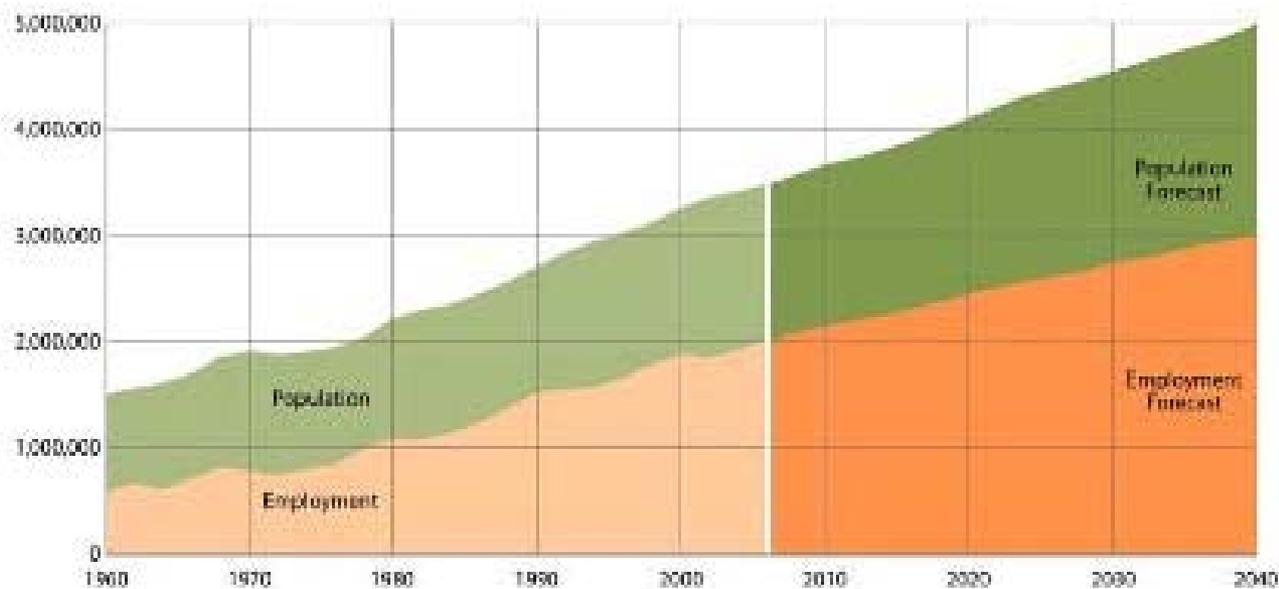
Washington Greenhouse Gas Emissions



Source: Washington State Department of Ecology, 2005

Within the next 30 years, the central Puget Sound region is expected to grow by 1.5 million people – increasing travel demand by 40%.

Puget Sound region population and employment forecasts, 2040.





In spite of these ominous forecasts, Washington's transportation system must meet stringent state laws for GHG and VMT reduction.

GHG Reduction Targets:

- To 1990 levels by 2020
- To 25 percent below 1990 levels by 2035
- To 50 percent below 1990 levels by 2050

VMT Reduction Targets:*

- By 2020, decrease by 18%
- By 2035, decrease by 30%
- By 2050, decrease by 50%

*Statewide annual per capita VMT reductions, all fuel types.

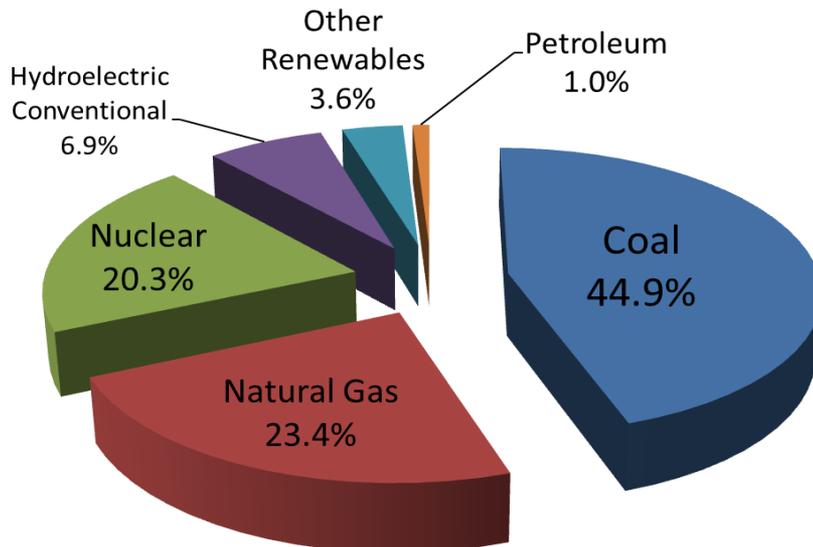
Fuel Source: Electric Power Grid

Advantages:

- Diverse and domestic
- Prices are stable
- Substantial spare capacity

- Network infrastructure already in place
- Electric miles cheaper than gas
- Electric miles are cleaner than gas
- 65 percent of present U.S. light-duty vehicles could be powered by existing off-peak generating capacity

2009 U.S. Electricity Generation by Source



West Coast Green Highway Initiative: public/private partnerships to promote sustainable transportation solutions in the I-5 corridor, “BC-to-Baja”



WEST COAST GREEN HIGHWAY

- Alternative Fuels Pilot Project
- **I-5 Electric Highway**
- NewMobility HUBs
- Solar and Wind Highway Facilities

“ This ‘green freeway’ you're planning...would link your states with a network of rest stops that allow you to do more than just grab a cup of coffee, but also charge your car.

- President Barack Obama
3/19/2009

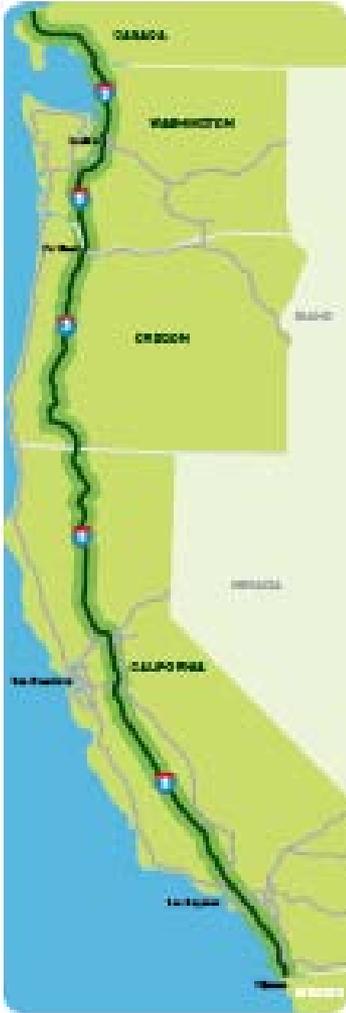
WSDOT's I-5 Electric Highway



President Barack Obama

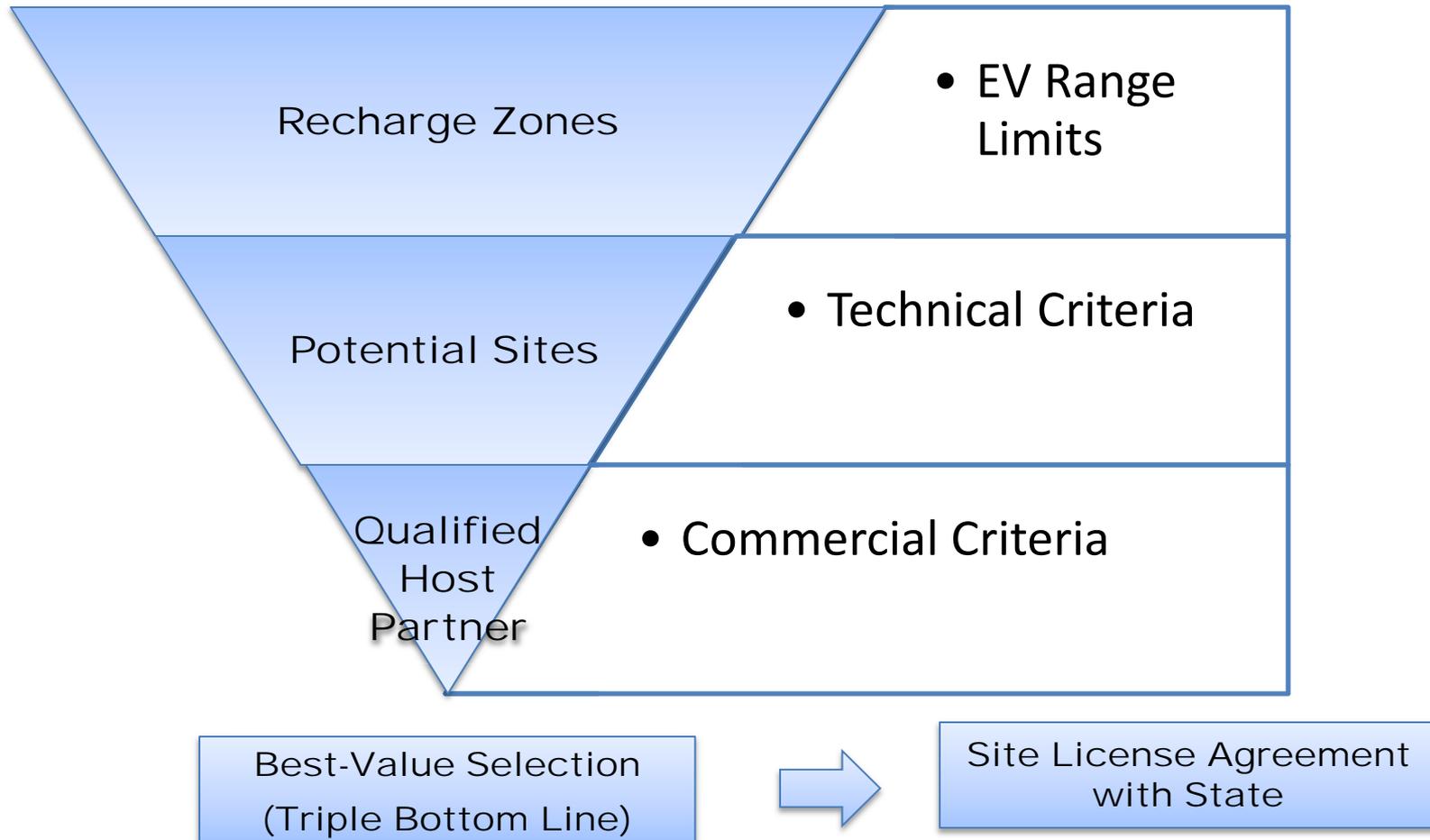
Goal: 1 million electric vehicles by 2015

WSDOT's I-5 Electric Highway Project



- Develop safety net of EV Fast-Charging stations throughout I-5 Corridor
- Seek partnerships with retail businesses located in critical recharge zones
- Coordinate EV infrastructure investments with other planned investments in Puget Sound Region
- Collaborate with Oregon and California on joint EV infrastructure development and funding

Screening and Site Selection Process



Two-Stage Deployment: Essential Charging and Corridor Completion



- Complete DC Fast-Charge network along I-5
- 2 Gateway Rest Areas (Level 2 charging for public education & demonstration)
- Additional recharge zones based on data analysis
- Potential expansion east-west (I-90, SR 2)

Showcasing emerging technologies and Washington-based companies



Real-time travel information



Renewable energy technologies

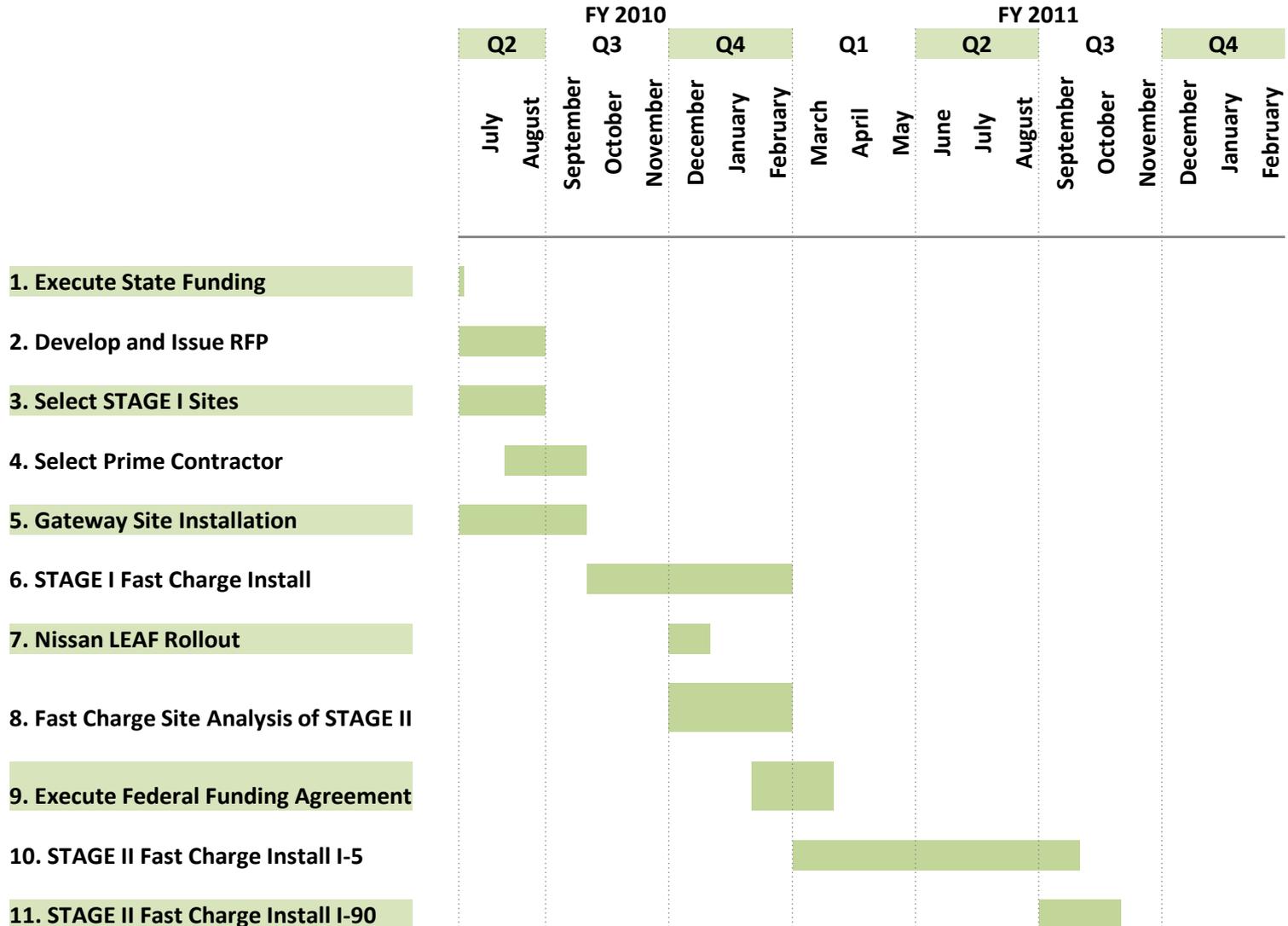


Education: Clean & Smart
Transportation



Vehicle-to-Grid Capabilities

I-5 Electric Highway Project Development Schedule



State and Local Government Assets:

- Under-utilized rights-of-way
- Park-and-Ride lots, transit centers
- Public office buildings with power supply
- Public parking stalls
- Public vehicle fleets
- Local signage (way-finder and location-based)
- Coordinated funding opportunities (grants, foundations, P3's)
- Leadership

Washington State DOT's I-5 Electric Highway Public/Private Partnership

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