Oregon Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Washington State Department of Transportation

Alternative Fuel Fact Sheet

Table 1 – WSDOT Alternative Fuel Vehicles			
Type of Fuel	**Number of Vehicles**	**Type of Vehicles**	**Cost per vehicle (if known)**
Flex Fuel – E85	325	Light Duty	
Flex Fuel – E85	273	Medium Duty	
Hybrid	86	Sedans, small SUVs, and one light duty truck	$30,937 (Ford Fusion)
Plug-in Hybrid	14	Chevy Volt	$33,859
Plug-in Hybrid	1	Ford Fusion Energi	$30,937
All Electric	6	Nissan LEAFs	$20,735
Propane	52	Medium Duty	$5,000/conversion
Biodiesel	1	Light Duty	
Biodiesel	485	Medium Duty	
Biodiesel	884	Heavy Duty	

Table 2- Alternative Fuel Stations		
Type of Fuel	**Number of WSDOT Stations**	**Cost (if known)**
E85	79 - fuel with E10	Incremental cost of $5,000 per site
Electric (Level 2)	31 ports at 9 locations	$5,000 for dual port Schneider equipment with RFID authentication
Electric (DC Fast Charger)	1 port	
Propane	2	$40,000 per site
Natural Gas	0	N/A
Biodiesel	98	Incremental cost of approximately $5,000 per site

Alternative Fuel Experience

Level of satisfaction with alternative fuels

WSDOT's experience with biodiesel fuels and testing biodiesel blends up to B90 has demonstrated the importance of: (1) managing biodiesel concentration based on climate and conditions; and (2) limiting biodiesel at sites with low fuel turn-over. Currently, WSDOT has 11 sites that are not feasible for biodiesel use because they are in areas that experience cold weather temperatures and have low fuel turn-over (no fuel use for periods of four to six months or longer). WSDOT uses B20 in Western Washington and B10 in Eastern Washington. Eastern Washington uses up to B20 during summer months. Remote mountainous areas are exempt from biodiesel due to the combined effects of low turnover and cold weather temperatures. The fuel typically runs at a 10F cold filter plug point as measured by Washington State Department of Agriculture, Weights and Measures and is required to conform with ASTM D975 standards.

WSDOT is very interested in renewable diesel, but it is not currently available in Washington State.

Why did the DOT adopt alternative fuel vehicles?

WSDOT is legislatively mandated to reduce emissions by 15% below 2005 level by 2020; use 20% biodiesel as compared to the total volume of all diesel purchased by agency; achieve average fuel economy of 36 miles per gallon for the passenger fleet; and give priority to electric vehicles and hybrids.

Emission Reduction Data Collection and Tracking

Fleet data is collected, tracked and analyzed using AssetWorks Fleet Focus M5. To report emissions, fuel use and vehicle miles travelled by unit category are reported using Washington State Department of Ecology's emissions calculator: Greenhouse Gas Calculator linked from: http://www.ecy.wa.gov/climatechange/WAleadership.htm.

Procurement Process

All Washington state contracts are developed by Washington State Department of Enterprise Services using a public invitation for bid. Vehicle State contract is located at: https://fortress.wa.gov/ga/apps/ContractSearch/ContractSummary.aspx?c=03513

Bulk Fuel contract is at: https://fortress.wa.gov/ga/apps/ContractSearch/ContractSummary.aspx?c=00311

- Biodiesel can be made from any feedstock so long as it meets ASTM specifications.
- Contractors must provide biodiesel fuel in any percentage from B1 to B100.
- Contractors must provide state agencies with biodiesel that is at least 51 percent in-state sourced.

Table 3 – Barriers to Adoption and Strategies to Address Barriers

Barrier	Strategy for Overcoming Barrier
Barrier 1: EV Technology has not caught up to how we do business. WSDOT has statewide operations; EV limited range and lack of infrastructure limit the use of EV vehicles. Fleet is primarily medium and heavy duty trucks where EV technology is unproven.	1. Negotiated an agreement with Nissan to lease Leafs which allows us to take advantage of technology advancements. 2. Purchase PHEVs (Volts) with extended range gasoline operation and hybrids. 3. Install EV charging infrastructure at locations EVs can be stationed (operationally feasible).
Barrier 2: B100 contract price has been $3.50 to $5.00 higher than diesel.	Working with Department of Enterprise Services to amend the contract.

Photos

WSDOT Propane Fueling Station


EV Charging Station