

WASHINGTON STATE DEPARTMENT OF COMMERCE

ALTERNATIVE FUEL & VEHICLE STRATEGIES

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Department of Commerce
Innovation is in our nature.

Overview

- **Policy Context**
- **Agency Rules**
- **Local Government Rules**
- **Biodiesel Procurement**
- **Electrification**



Alternative Fuel & Vehicle Policy Context

Since 1989...

- **16 Legislative Bills, 10 Chapters of Code**
- **Six Executive Orders, Three Governor's Directives**
- **Pacific Coast Action Plan on Climate & Energy**

Key results...

- **State Motor Pool 50% Hybrids** (most of any state)
- **B20 Biodiesel Requirement** (highest of any state)
- **Leader in Electrification** (West Coast Green Highway)

2007 Cleaner Energy Act (HB 1303)

- **“Extent Practicable” Rules** (agencies & local governments)



Agency Rule Development

Define “practicability” and how agencies will be evaluated in efforts to operate publicly owned vessels, vehicles and construction equipment from electricity or biofuel, “to the extent practicable:”

- **40% by June 1, 2013**
- **100% by June 1, 2015**

WSDOT obligations subject to available funds.

Electrical charging in state’s fleet parking and maintenance facilities by December 31, 2015 “to the extent practicable.”

RCW 43.19.648



Local Government Rule Development

Local government subdivisions to meet 100% of fuel use by **June 1, 2018**, “to the extent practicable:”

- Separate rulemaking by **June 1, 2015**
- Transit agencies exempt if using CNG
- SB 5099 clarified local government requirements
 - ... Advisory committee to include representatives of each subdivision (e.g. cities, counties), plus electrical and/or gas utility
 - ... Exemptions: engine retrofits that void warranties, replacement before end of useful life, authority to exempt emergency response vehicles
 - ... Highest level of biodiesel warranty when purchasing diesel vehicles



Key Considerations

Criteria and thresholds...

- **Functional Differences:** Equipment and fuels
- **Duty Cycles:** Timelines and lifecycle costs
- **Fleet Size:** Volume of fuel, number of vehicles
- **Geographic Availability:** Infrastructure, seasonality
- **Program Implementation:** Administrative cost, integration
- **Phased Approach:** Different fuel applications or quantities



Agency Rulemaking Process

- **Work Group:** Commerce, WSU Energy Program, WSDOT, Ecology, Agriculture and Enterprise Services
- **Definitions**
- **Existing State and Federal Policies and Programs**
- **Data Gathering & Tracking**
- **Motor Pool Consolidation**



Key Definitions

- **Biofuels:** Biodiesel, ethanol/ethanol blends, and renewable natural gas (biomethane)
- **Other Options:** CNG, LNG and propane possible if biofuels and electrification “not reasonably available”
- **Exemptions:** Aircraft, stationary generating equipment
- **Publicly Owned:** Not rentals or leases
- **State Agency:** Agencies and institutions of higher education covered by Ecology’s GHG requirements (~140)



2011 State Vehicle GHG Data (>10,000 gallons gas and diesel)

Agency	Total Gas & Diesel (gal)	Gas (gal)	E100 (gal)	Diesel (gal)	B100 (gal)	Propane (gge)	Power (kWh)	# PHEVs	# EVs	Total # Vehicles	VMT	Total Fuel (gal)	Fleet GHG (MTCO ₂ e)
WSDOT	20,511,882	1,298,377	126,845	19,213,505	654,516	85				3,716	14,118,780	21,301,583	210,547
State Patrol	8,405,233	8,380,084	818,691	25,149	2,490					1,605	26,779,643	2,074,338	17,592
DNR	703,301	526,316	51,418	176,985	16,358			30		1,250	9,743,328	812,927	7,157
DFW	611,407	515,716	50,383	95,691	4,523					1,157	9,436,604	666,313	5,878
DSHS	573,304	408,957	39,953	164,347	24,558					1,328	8,994,730	637,815	5,703
Corrections	550,280	453,998	44,353	96,282	10,328							604,962	4,989
WSU Pullman	300,009	232,632	22,727	67,377	1,375					1,349		324,111	3,198
UW Seattle	258,603	191,652	18,723	66,951	761					672	3,458,538	278,087	2,197
Parks & Rec	243,659	166,077	16,225	77,582	1,435		4,257		132	1,128	3,420,938	261,319	2,449
L&I	219,660	219,660	21,460							483	5,335,233	241,120	2,091
Ecology	169,786	159,640	15,596	10,146	207					422	3,245,529	185,589	1,648
WSDA	134,028	117,772	11,506	16,256	1,991					295	2,495,670	147,525	1,296
Liquor Control	110,085	110,085	10,775							192	3,354,673	120,839	1,032
EWU	57,337	51,014	4,984	6,323	129					183		62,540	498
DES	56,420	56,303	5,501	117	17					440		61,938	621
WWU	52,797	41,724	4,076	11,073	226							57,099	523

Top Tier¹ 98.6% 91.8% 91.3% 98.3%

DOL	40,933	38,333	3,745	2,600	53					77	1,096,331	44,730	390
Military Dept	37,855	34,451	3,366	3,404	69							41,290	339
Spokane CC	34,411	34,411	3,362							125	304,524	41,339	377
TESC	33,966	27,793		6,173								31,052	339
Lottery Commission	29,202	29,183	2,851	19						50	874,129	32,053	274
Employment Security	29,092	29,092	2,842							133	856,813	31,934	119
Gambling Commission	28,693	28,693	2,803							87	819,438	31,496	281
DOR	13,578	13,578	1,327							28	310,921	14,905	129
Seattle CC	12,639	4,914	480	7,725	158	885				35	81,950	14,162	138
UTC	12,423	12,423	1,214							23	331,399	13,637	117
Big Bend CC	12,335	6,120	598	6,215	76	102				78		57,850 ²	519
Insurance Commissioner	10,390	6,284	614	4,106	613					8	264,868	11,617	100
Veterans' Affairs	10,096	7,652	748	2,444	50					57	296,439	10,894	114

Both Tiers 99.5% 96.4% 96.6% 99.5%

TOTAL ALL AGENCIES 33,440,680 13,368,893 1,303,376 20,071,787 720,058 1,289 17,361 30 132 15,486 98,968,733 28,404,530 272,044

¹ Top tier agencies and universities consuming >50,000 gallons of gas and diesel in non-exempt vehicles, as percentage of all agencies reporting

² Includes substantial consumption of aircraft fuel, which under draft rule is exempt from requirements

Technical Assistance

- **Regular Meetings**
- **Ongoing Support** (Commerce, WSU Energy Program, Agriculture and Western Washington Clean Cities)
- **Local Governments & Trade Associations**
- **Integrated Reporting**

WAC 194-28



Compliance: Electrification

- **Light-Duty Vehicles:** Sedans, station wagons, SUVs, pickups and vans up to 8,500 pounds
- **Medium-Duty Vehicles:** Sedans, station wagons, SUVs and vans from 8,500 to 10,000 pounds
- **Practicable:** Due for replacement, doesn't require routine charging in the field, within 5% lifecycle cost of HEV
- **Charging Infrastructure:** ~300 publicly-owned Level Two (240v) chargers, 14 DC Fast Chargers (480v)



Compliance: Biofuels & Alternate Fuels

- **Biodiesel:** B20 on annualized basis through WSDOT and retail locations
- **Ethanol:** Already E10, use E85 for “flex-fuel” vehicles when available and 20% less than expensive
- **Biomethane:** Emerging opportunity
- **CNG, LNG and Propane:** Conversation if biofuels and electrification “not reasonably available”



Local Government Rulemaking

- **Timeline:** Began Spring 2014, due June 2015
- **Work Group:** WSAC, AWC, PFMA, WSTA, WPPA, utilities, others
- **First Step:** Define “Local Government Subdivision”
- **Existing State and Federal Policies and Programs**
- **Data Gathering & Tracking > Threshold Determination**
- **Compliance Expectations**
- **Reporting**



Participation

- **All Jurisdictions Comply** (only larger fuel users report)
- **200,000 Gallon Reporting Threshold** (annual gas and diesel use)
- **Annual Reporting** (by July 1 for previous calendar year; online form regarding fleet composition, fuel use, near-term procurement plans, alternative fuel and vehicle experiences)
- **Ongoing Program** (reporting jurisdictions invited to join Alternative Fuels & Vehicles Technical Advisory Group)



Reporting Jurisdictions

- **Cities** (10): Bellevue, Everett, Kent, Renton, Richland, Seattle, Spokane, Tacoma, Vancouver, Yakima (*Bellingham, Olympia*)
- **Counties** (18): Benton, Chelan, Clark, Cowlitz, Douglas, Grant, King, Kitsap, Lewis, Okanogan, Pierce, Skagit, Snohomish, Spokane, Stevens, Thurston, Whatcom, Yakima (*Whitman*)
- **Transit** (17): Ben Franklin, Clallam, Community, C-TRAN, Everett, Grays Harbor, Intercity, Island, King Co. Metro, Kitsap, Link, Pierce, Skagit, Sound, Spokane, Whatcom, Yakima
- **Schools** (16): Battle Ground, Bethel, Central Kitsap, Edmonds, Evergreen (Clark), Federal Way, Issaquah, Kent, Lake Washington, Northshore, Pasco, Puyallup, Seattle, Spokane, Tacoma, Vancouver (*Everett*)
- **PUDs** (3): Chelan, Grant, Snohomish
- **Ports** (2): Seattle, Tacoma
- **Fire** (1): South Kitsap Fire & Rescue



Compliance (Vehicles)

1. Electric

- Are models available that meet operational needs?
- Are they suitable for routine use?
- Compare lifecycle cost, including EVSE, with equivalent hybrids

2. Hybrid Electric

- Same as above
- Compare with equivalent hybrids

3. Hybrid

- Same as above, without EVSE
- Compare with equivalent non-hybrid options

4. Alternate Fuels

- Same as above, including costs of engine conversions and incremental changes to fueling infrastructure and maintenance facilities



Compliance (Fuels)

Biodiesel

- Minimum B5 when available for delivery to on-site storage at price equal to or less than #2 ULSD
- Up to B20, unless restricted by warranty or verification, when available at price equal to or less than #2 ULSD, including cost of any additives necessary to ensure reliable storage and performance
- Good faith effort to purchase minimum of B5 on retail basis
- Select equipment with the highest level of biodiesel warranty when making procurement decision involving comparatively priced alternatives

Ethanol (E85): Price at least 20% less than regular gasoline

Renewable Natural Gas: Price equal to or less than fossil natural gas

EVSE: Encouraged for fleet parking and maintenance facilities, incorporate into new construction and substantial remodeling

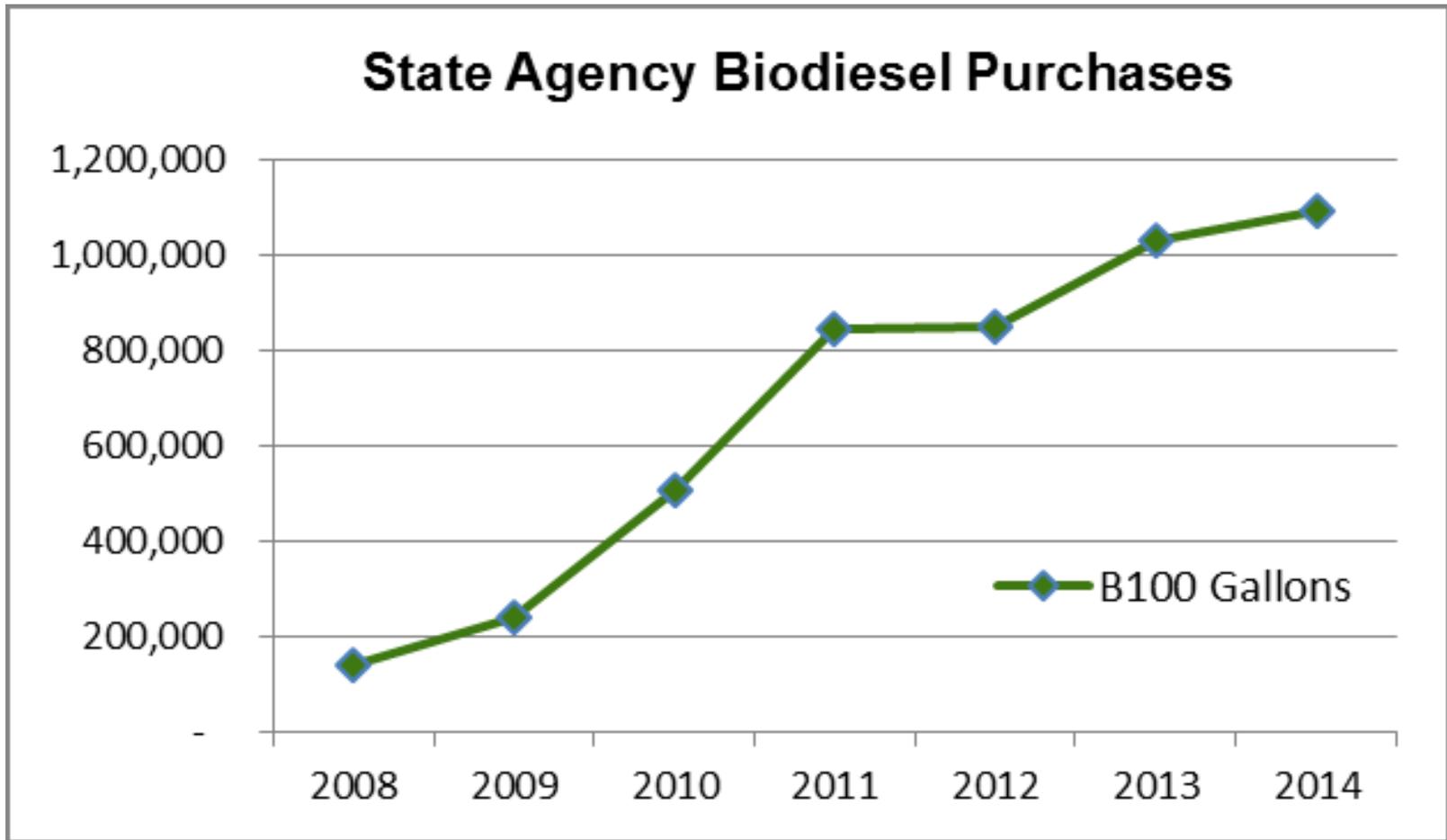


Next Steps

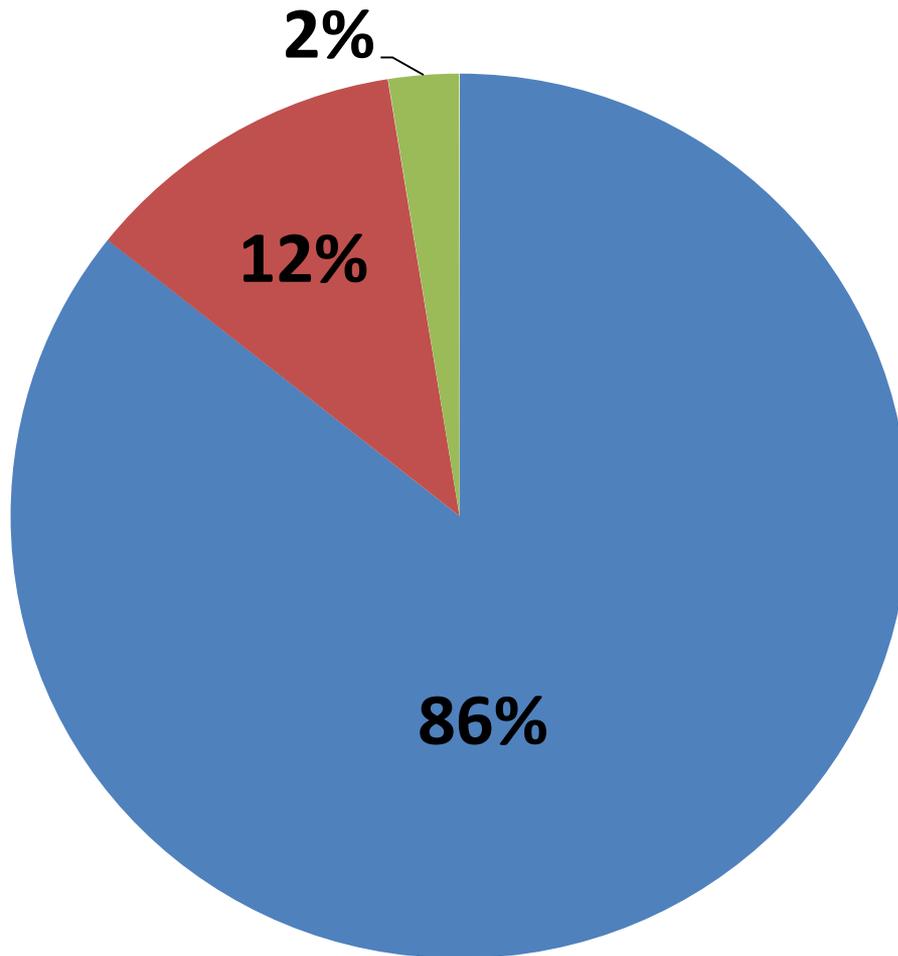
- **Respond to Final Comments and Adjust Accordingly**
 - Minimum B5 (up to B20 unless restricted by warranty or air quality regulation) when cost within 1% of neat diesel
 - Stronger encouragement to use RNG
 - Disagreement over definition of “practicable,” inclusion of “social cost of carbon,” and methodology of comparing vehicle options
- **Publish Official Draft/Public Hearing**
- **Publish Final Rule**
- **Consider Revisions to State Rules**
- **Support for Ongoing Technical Assistance**
- **Amend “Total Cost of Ownership” Tool**
- **Establish Reporting Procedure**



Biodiesel Purchases by State Agencies



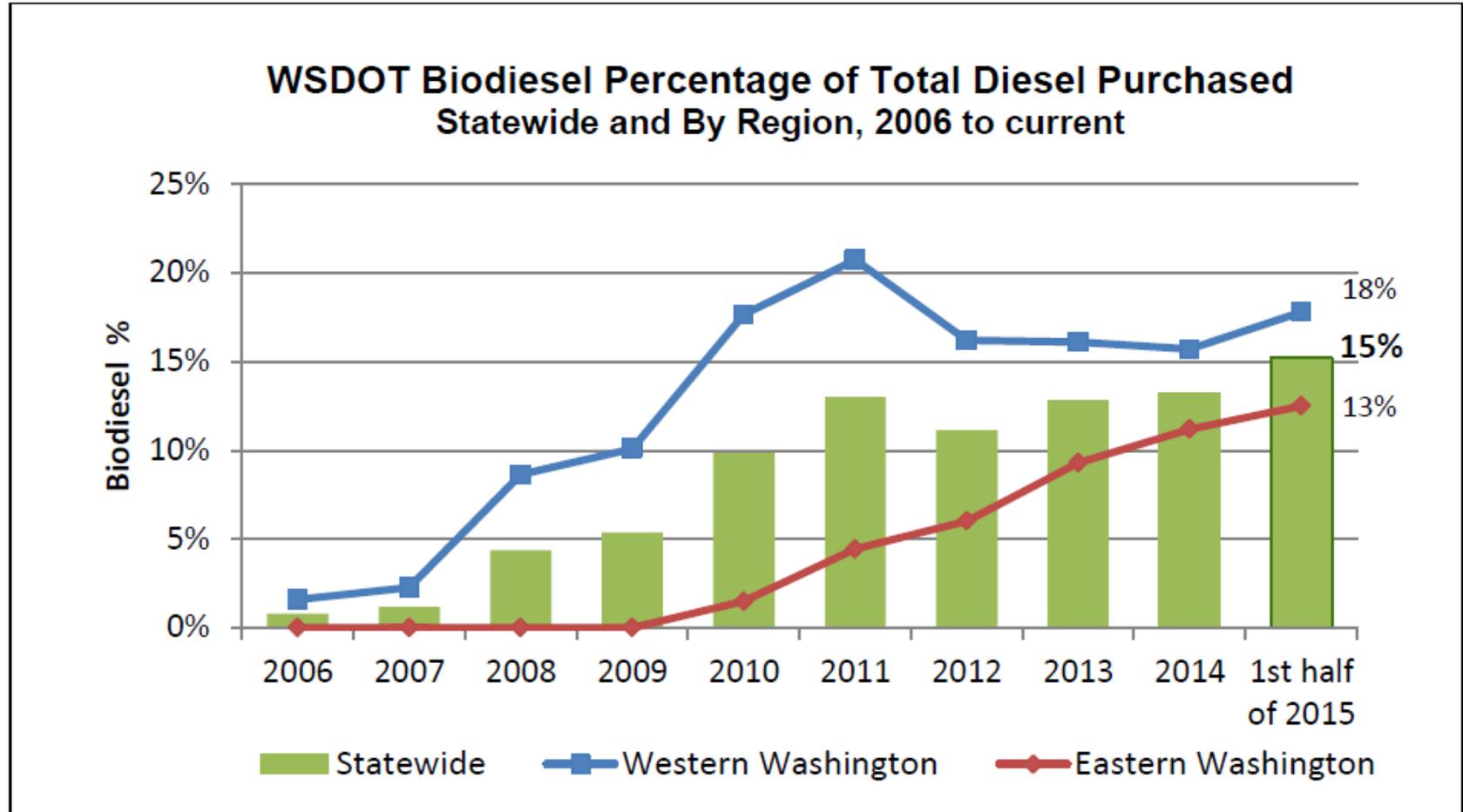
Agency Diesel Purchases



- State Ferries
- WSDOT (w/o Ferries)
- Other Agencies



WSDOT Biodiesel Purchases



Biodiesel: Current Procurement Options

- Four fuel contracts (three Ferries only)
- Bulk and Keep Full/Will Call (#00311, current term 5/20/16, maximum term 5/20/21)
- Two categories (bulk vs keep full/will call) in eight regions
- Served variously by five different contractors
- Biodiesel reference price: OPIS Tacoma gross wholesale B99 combined feedstock without RINs contract average
- Three contractors (PetroCard, Coleman, Seaport) now offer B5 as separate product, other two (APP, Wilcox & Flegel) do not
- Predominantly in-state produced fuel or feedstock required

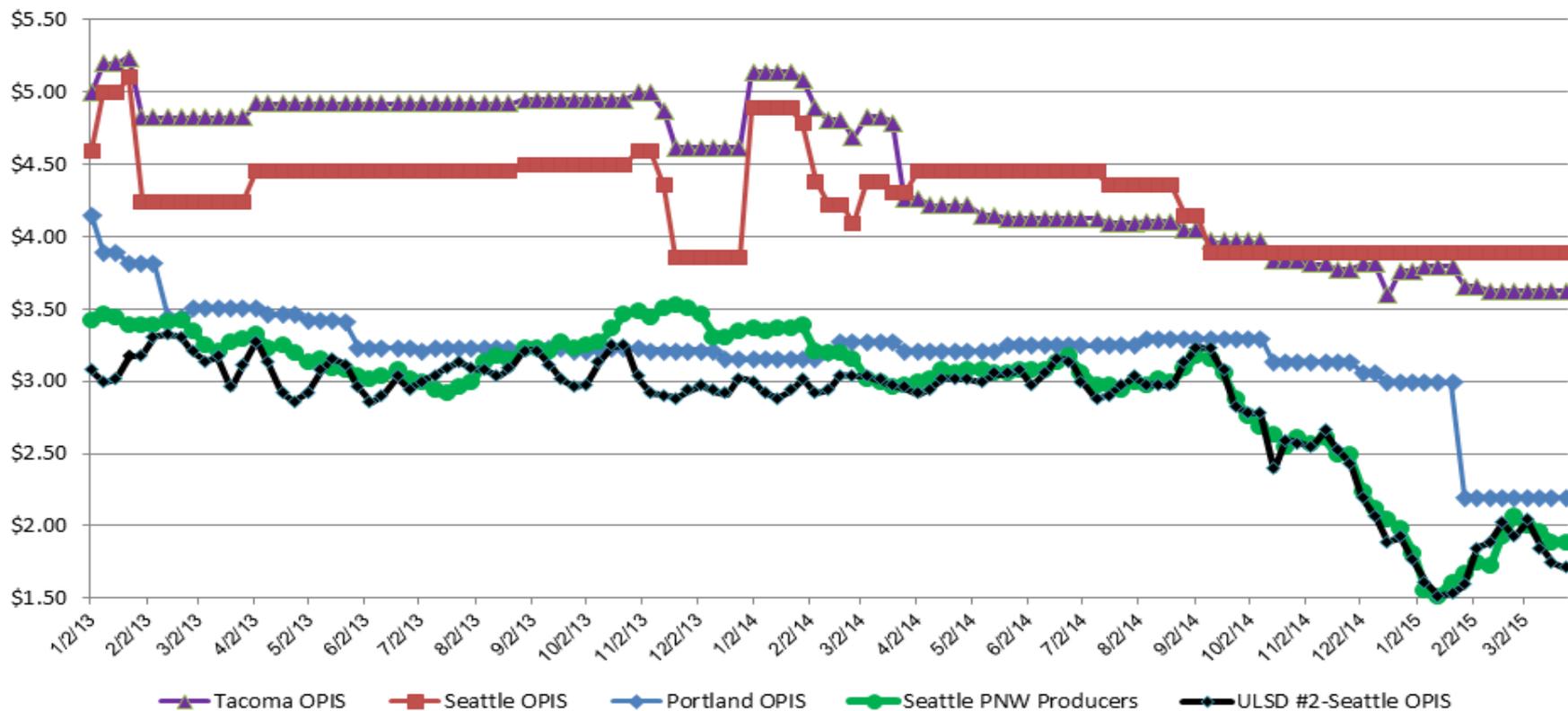


Biodiesel: New Procurement Initiatives

- Establish B5 as default unless neat diesel specifically requested
- Specific products (B5, B10, B20) rather than ratio pricing
- Use OPIS Portland for reference pricing
- Require predominantly in-state produced fuel or feedstock in marine truck delivery contract
- Upgrade key WSDOT storage tanks as funding allows



Price Comparison: B99 w/o RINs with ULSD#2, wholesale, Jan 2013 to Mar 2015

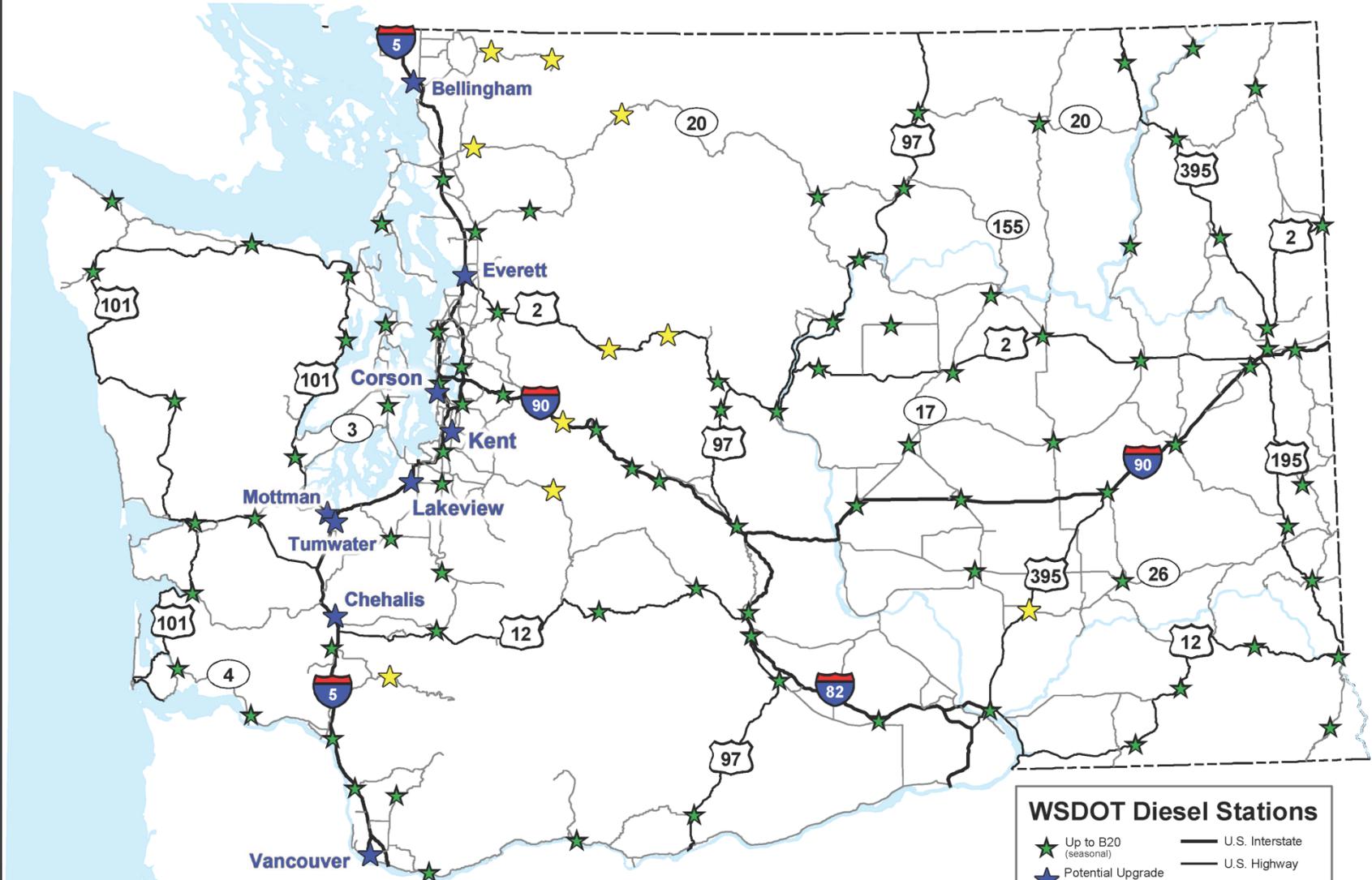


- Prices are for each Wednesday of 2013, 2014 and the 1st Quarter of 2015.
- **Tacoma, Seattle, and Portland OPIS** prices are the OPIS Gross Wholesale B99 MULT (Multiple Feedstocks) Biodiesel Price, w/o RIN, Contract Average
- The **Seattle PNW Producers** price is the average of B99 Wholesale Price, w/o RIN, delivered to Seattle using pricing data compiled by Climate Solutions from Imperium Renewables, General Biodiesel and Sequential Pacific Biodiesel. Primary feedstocks are virgin and recycled vegetable oils.

- **ULSD #2-Seattle OPIS** price is the OPIS Gross Wholesale Ultra Low Diesel #2, Clear, Contract Average

Average Price

	Tacoma OPIS	Seattle OPIS	Portland OPIS	Seattle PNW Producers	ULSD#2 Seattle OPIS
2013	\$ 4.99	\$ 4.40	\$ 3.37	\$ 3.25	\$ 3.06
2014	\$ 4.23	\$ 4.27	\$ 3.20	\$ 2.93	\$ 2.86
Q1- 2015	\$ 3.67	\$ 3.90	\$ 2.39	\$ 1.80	\$ 1.77



WSDOT Diesel Stations

- ★ Up to B20 (seasonal)
- ★ Potential Upgrade (year-round B40)
- ★ Diesel Only (cold weather or long-term storage)

— U.S. Interstate
 — U.S. Highway
 — State Route

0 5 10 15 20 25 Miles

Electric Vehicle Initiatives

- **EV Infrastructure Bank** (WSDOT rulemaking)
- **Heavy-Duty Transit Contract** (#09214, cutaways next #06209)
- **Lawn & Grounds Maintenance Equipment Expansion** (#10212)
- **Operational Leases**
- **Building Code Changes**



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