

# **Using CMAQ Funds in Washington State to Replace Drayage Trucks, Electrify Truck Parking, and Streamline Port Traffic**

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# Outline

- CMAQ overview
- Na/maintenance areas in WA
- PSRC CMAQ process
- Past success – project examples
- 2012 project
  - Partners and coordination
  - Benefits
    - Emissions
    - Exposure
    - Truckers
    - Improved elec network > adoption
- 2012 Project Status
  - Award
  - Technology/coordination

# CMAQ Overview – WA State

## ■ ISTEA, TEA-21

- WSDOT allocated based on greatest potential benefit
- “Peanut butter” approach

## ■ SAFETEA-LU

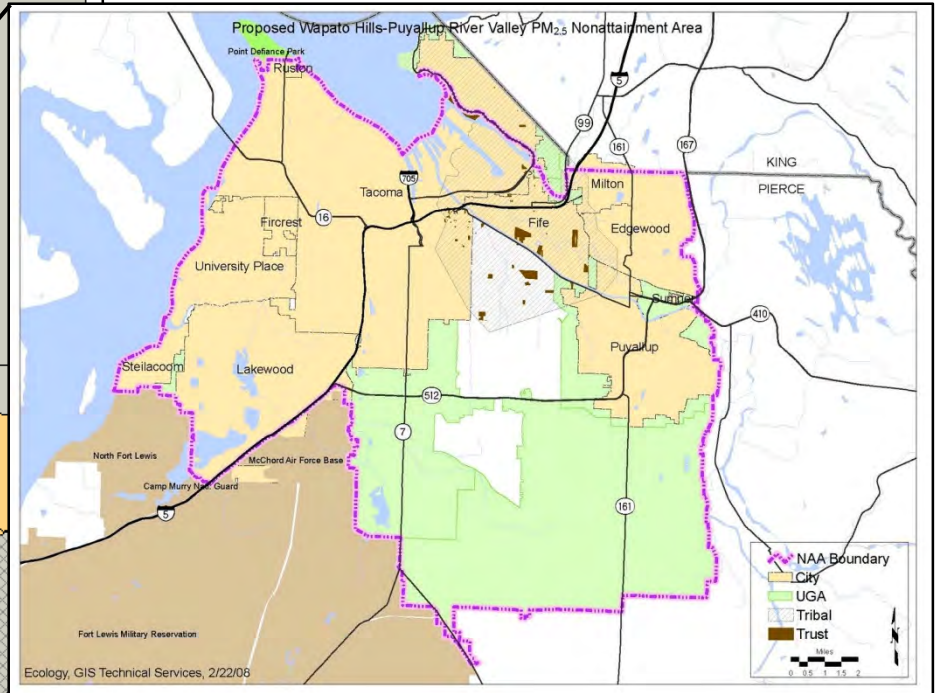
- CMAQ program language has special emphasis on transportation related diesel and small particulate emissions reduction
  - but no FHWA enforcement mechanism
- Ozone Non-attainment/Maintenance Areas
  - Can't attract funding, but could spend CMAQ funds in 1-hr O<sub>3</sub> areas
  - Didn't connect funding with revoked 1-hr standard & less stringent maintenance plan requirement (CAA 110-1A)
- Particulate Matter (PM<sub>10</sub>) Non-attainment/Maintenance Areas
  - Can't attract funding, but could spend CMAQ funds in 24-hr PM<sub>10</sub> areas

# Non-Attainment and Maintenance Areas

Maintenance area	Violation year	Pollutant (chemical abbreviation)	Current status
Spokane	1978	Carbon Monoxide (CO)	Maintenance
Puget Sound urban area	1978	Carbon Monoxide (CO)	Maintenance
Yakima	1978	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Duwamish Industrial Area (Seattle/South King County)	1987	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Tacoma Tideflats/Puget Sound	1987	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Kent/Puget Sound area	1987	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Vancouver	1991	Carbon Monoxide (CO)	Maintenance
Spokane	1991	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Olympia urban area	1997	24-hour fine particulate matter (PM <sub>10</sub> )	Maintenance
Wapato Hills/Puget Sound	2006	24-hour fine particulate matter (PM <sub>2.5</sub> )	Non-attainment

# Attachment 10 - Map of Areas Eligible for CMAQ Funds

## Central Puget Sound Region Designated Maintenance Areas



**Criteria Pollutants**

- Former 1-Hour Ozone Maintenance Area
- Carbon Monoxide and Former 1-Hour Ozone Maintenance Areas
- Particulate Matter (PM<sub>10</sub>), Carbon Monoxide and Former 1-Hour Ozone Maintenance Areas\*

----- Urban Growth Area Boundary

\* The region's current status for the 8-hour ozone and PM<sub>2.5</sub> standards is "attainment." However, both standards have recently been violated and the redesignation process has begun.

CMAQ funds may be spent in both the CO and PM<sub>10</sub> Maintenance area, as well as the former 1-hour ozone maintenance area.

# CMAQ Process – Central Puget Sound, WA

- Puget Sound Regional Council
  - MPO for Puget Sound region
  - PSRC scores projects according separate to CMAQ and STP criteria
  - Member agencies vote on CMAQ and STP project selection
  - Allocated “slots” (CMAQ, STP) to manage large number of players
    - Key member jurisdictions - 6 slots
    - WSDOT – 2 slots
    - Puget Sound Clean Air Agency – 2 slots
  
- Competition
  - Awarded to projects of regional significance, not agencies
  - Consistent with MTP

# Allocation Example – PSRC Regional Competition

- WSDOT’s “slots”
  - STP or CMAQ funds
  - Highest and best use?
  - Past - WSDOT partnered with Puget Sound Clean Air Agency
    - Diesel retrofit, LED conversions, idle reduction campaign
- New Approaches for WSDOT
  - Addressing vehicle emitters at the source, not facilities
  - Teaming up with less conventional partners
  - Acknowledgement of diesel emissions (competition with capital projects)
  - Changing selection criteria from purely total quantity basis



# 2012 CMAQ – “Clean Trucks”

## ■ Initial Proposal – ScRAPPS

- Continuation of project started in 2009
  - Collaboration - Port of Seattle, Puget Sound Clean Air Agency, and WA State Department of Ecology
  - Replaced 280 of the oldest/dirtiest drayage truck servicing Port
  - Exhaust system retrofits



**Dirty Trucks ScRAPped:  
280**

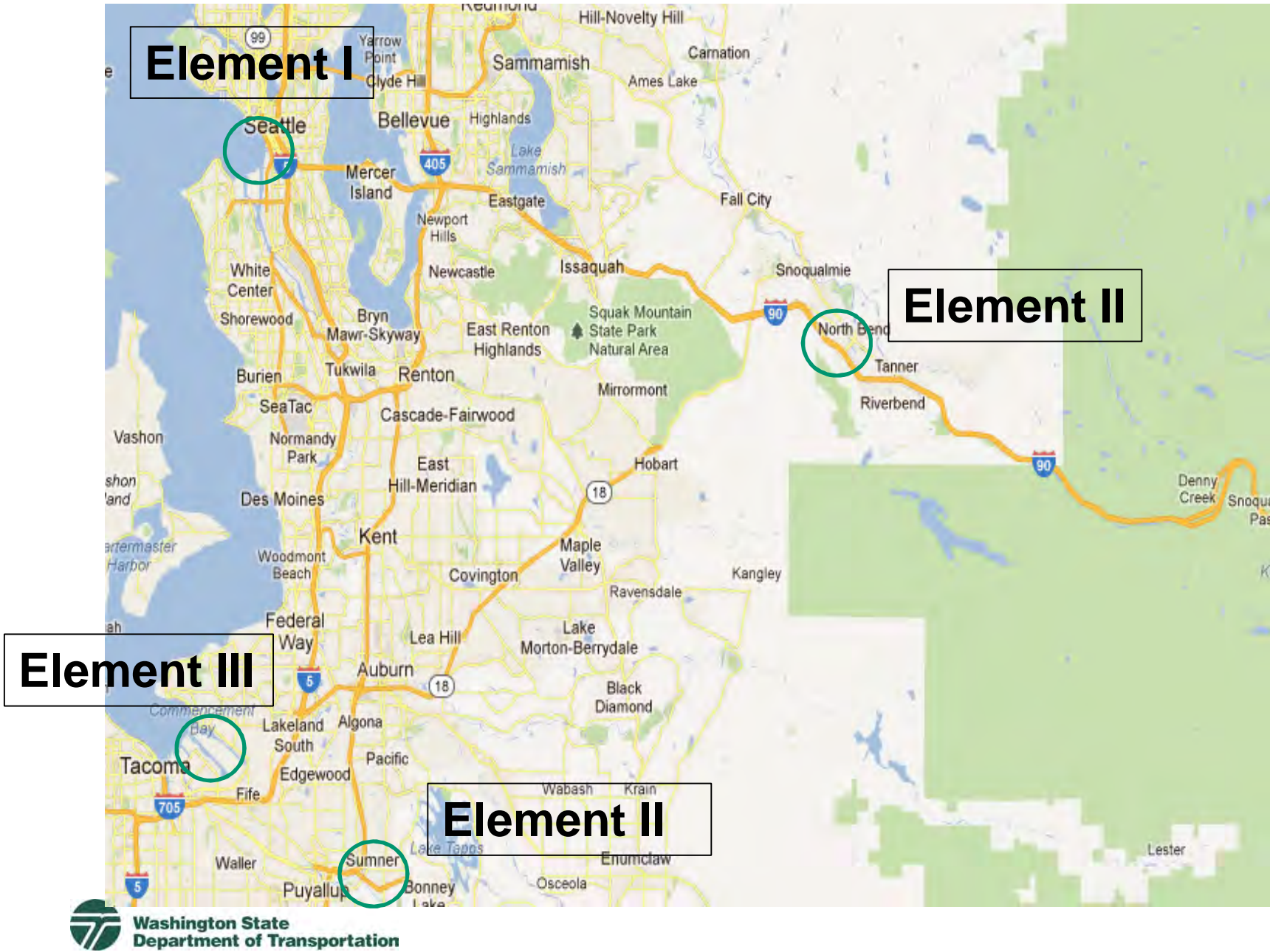
**Replacement Trucks  
Retrofitted:  
89**



# 2012 CMAQ – “Clean Trucks”

- Identified additional opportunities to reduce truck emissions in the region, including trucks servicing the Port
  
- Coordination
  - Public: Port of Seattle - Lead, King County, Port of Tacoma, WSDOT
  - Private: truck stop operators, adjacent landowners, APU and electrification pedestal vendors, heavy truck manufacturer
  - Non-profit: Cascade Sierra Solutions, Washington Trucking Association
  
- Added project elements with co-benefits for regional air quality
  1. Truck Stop Electrification - North Bend, Sumner
  2. Optical Character Recognition – Port of Tacoma

# Puget Sound Clean Truck Program



# Element I – Updating Drayage Trucks

- Drayage trucks servicing Port of Seattle marine terminals over a two-year period: by 2015
  - Scraps >200 older trucks
  - Replaces with newer model year trucks and/or EPA-certified emission reduction retrofits
  - Render equivalent to a 2007 model year truck
  - Majority of grant funds
  
- Est. Annual Emissions Benefits)
  - -15 tons of particulate matter (PM)
  - - 300 tons of nitrogen oxides (NOx)
  - - 2,500 tons of greenhouse gas (CO<sub>2</sub>e)
  - - 212,000 gallons diesel annually



# Element II – Truck Stop Electrification and APUs

- Truck stop electrification
  - 2 truck stops with significant Port traffic
  - between 35 – 240 power pedestals (each with up to 4 plug-ins)
    - land donation as potential match funding support
  
- Auxiliary Power Units (APU)
  - ~ 22 truck retrofits, assumed diesel, but potential for electric
  - allocation and eligibility TBD
  
- Est. Annual Emissions Benefits
  - - 1 ton PM
  - - 36 tons NOx
  - - 2,100 tons CO<sub>2</sub>e
  - - 189,000 gallons diesel



# Element III - Optical Character Recognition

- Optical Character Recognition (OCR)
  - Increased efficiency at gates and reduces idling when entering/exit Port
  - Improves asset management and tracking
  - Reduces exposures for drivers, Port workers, and nearby residents
- Est. Annual Emissions Benefits
  - - 4.7 tons of particulate matter (PM)
  - - 5.2 tons of Nox
  - - 296 tons of CO2
  - - 27,693 gallons diesel



# Project Status – August 2012

- Awarded \$4.8M of \$6M requested
  - ~\$3.35M for truck upgrades
  - ~ \$1.2M for truck electrification
  - ~ \$250,000 for OCR
  
- Finalizing truck stop capacity, costs for power pedestals and APUs, and landowner agreements
  
- Goal for starting work by early 2013

# Questions or Comments?

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