



Environmental Actions

West Coast Collaborative

November 6th, 2008

Environmental Partnerships

- Puget Sound Diesel Emissions Inventory
- EPA's SmartWay Transport Partnership
 - Performance Score 1.25
 - 2nd Short Line in Country
- Puget Sound Ports Diesel Retrofit
 - Port of Tacoma
 - Port of Seattle
 - PSCAA
 - Puget Sound Maritime Air Forum
- Northwest Ports Clean Air Agency
- West Coast Collaborative



Port of Seattle



A stronger economy.
A healthier environment.



SmartWay Transport Partners **DELIVER.**

TACOMA RAIL
TACOMA PUBLIC UTILITIES

Locomotive Facts



- **Idling Locomotive**
 - Burns 3-5 gallons of fuel per hour
 - Wear & Tear
- **Why?**
 - Locomotives use no antifreeze
 - Cannot be shut down during winter months
 - Needs idle reduction technology

Environmental Projects

- **Eco-Tip® SuperStack fuel injectors.**
 - 3% fuel savings at full load.
 - 2% fuel savings on medium duty cycle.
 - 44% reduction in particulate matter.
 - 75% reduction in smoke opacity.
 - * Manufacturer Numbers.
- **Ultra Low Sulfur Diesel Fuel**
 - Converted June 2006
 - 15 parts per million (ppm)
 - Standard Diesel:
1000 - 3000 ppm
- **02 Diesel Pilot Project**
 - Ethanol blended diesel for further reductions of emissions
 - Mountain Division (TRMW)

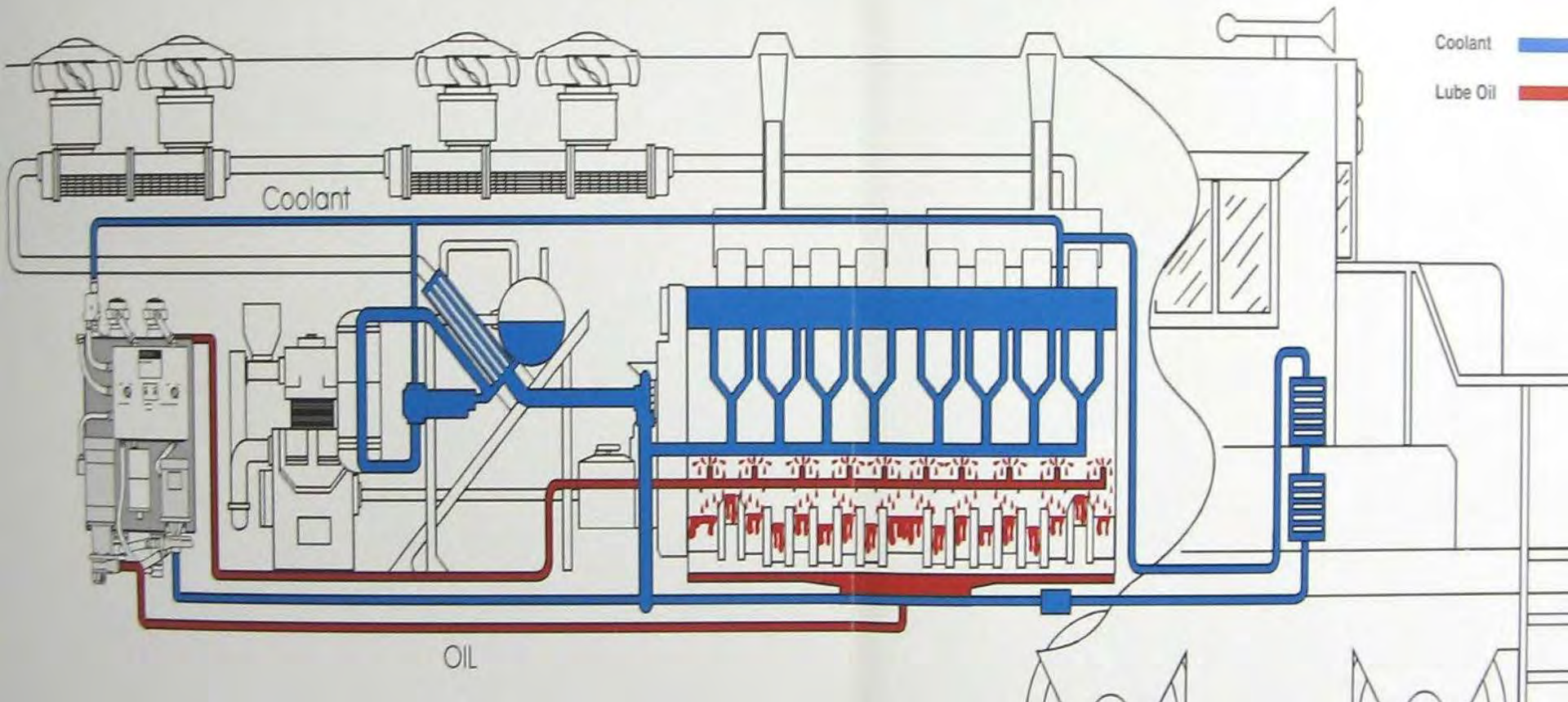


- **Idle Reduction Technology**
 - **Diesel Driven Heating System®**
 - 3 cylinder engine and circulating pump.
 - Keeps engine fluids warm.
 - **Smart Start®**
 - Monitors locomotive systems
 - Air pressure, battery condition, ambient and internal temperatures.
 - Starts locomotive if conditions warrant.



DDHS flow pattern

typical mechanical installation and flow direction



ZTR SmartStart II



Idle Reduction Benefits

- **Reduced emissions**
 - Less particulate, NOx, H.C. and C.O.
 - Shows commitment to environment
- **Less wear**
- **Noise reduction**
- **Builds partnerships with regulating agencies**
- **Idle Reduction Numbers (515 Days, 4 Locomotives)**
 - 52.80 Tons of pollutants reduced
 - Idle time saved: 25,906 hours
 - Gallons saved: 111,333
 - 15.3% reduction in fuel purchases
- **Phase II is underway on 4 more locomotives**

More Idle Reduction



- **\$15,000 to \$60,000 to Install**
 - Depends on Locomotive
- **Rail Bank Application**
 - Washington State Department of Transportation
 - 0% Loan, Possible Grant
- **Heavy Duty Diesel Retrofit Grant Program**
 - Washington State Department of Ecology
 - Receiving \$50,000

Beyond Idle Reduction

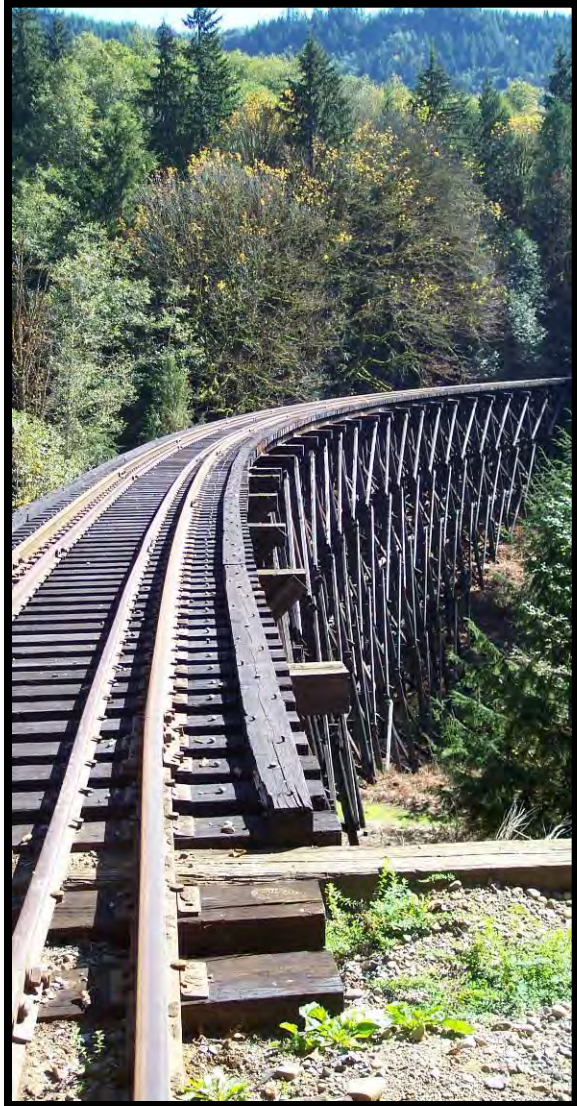
- **Genset Locomotives**
 - EPA and CARB qualified Ultra-Low Emissions Diesel Locomotive
- **NRE N-ViroMotive Locomotives**
 - Demonstrator Unit in 2007
 - 2 Genset Locomotive
 - \$1.3 Million
- **RailPower Technologies**
 - Demonstrator Unit in 2008
 - 3 Genset Locomotive
 - \$1.5 Million



RAILPOWER[®]
Technologies Corp.



Vision Statement



Our vision is to be the best short-line railroad in the nation in terms of:

Safety

Efficiency

Reliability

enVironmental Responsibility

Innovation

Customer Service

Employee Satisfaction

Serving Tacoma and the Puget Sound Region

Also...

- A proactive approach to emissions in an urban area is beneficial to all.
- Grant money/partner projects show good stewardship of public funds and the environment.