

TACOMA RAIL
TACOMA PUBLIC UTILITIES

Environmental Initiatives

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



A stronger economy.
A healthier environment.



SmartWay Transport Partners **DELIVER.**



Environmental Projects

- **Eco-Tip Super-Stack Fuel Injectors**
 - November 2005
 - 3% fuel savings at full load
 - 4% reduction in particulate matter
 - 75% reduction in smoke opacity
- **Ultra Low Sulfur Diesel**
 - Converted June 2006
- **Oxygenated ethanol-diesel mix test project in Fall 2008 with O2Diesel and SC Fuels**
- **Idle Reduction Technology Upgrades**
 - One completed project, 4 locomotives, combination ZTR SmartStart & Kim Hotstart
 - Two current projects



Idle Reduction Benefits

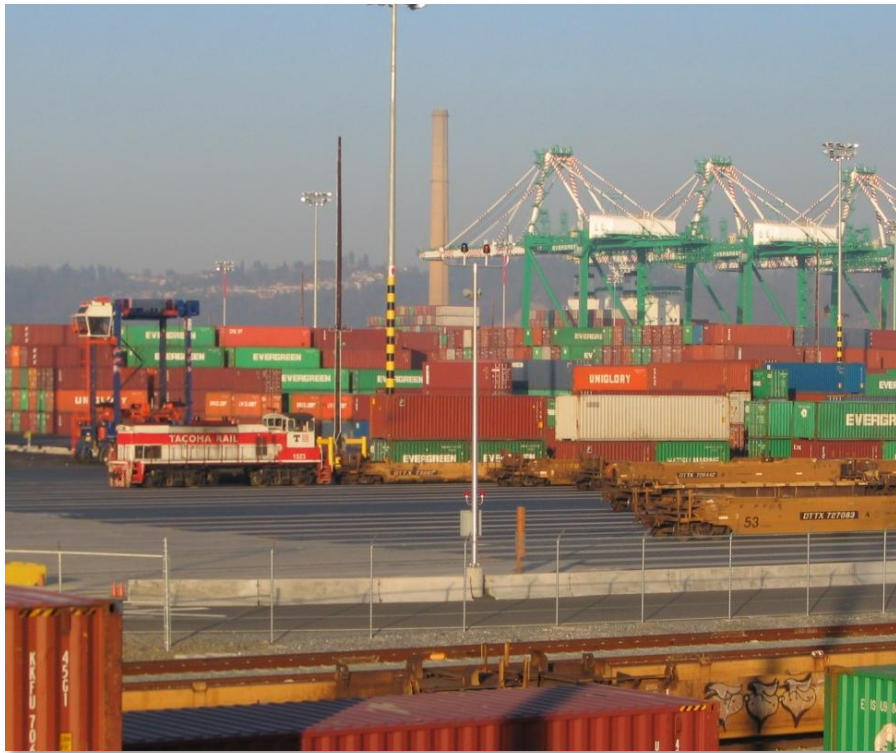
- **Reduced emissions**
 - Less particulate, NOx, and smoke
 - Shows commitment to environment
- **Less wear**
- **Noise reduction**
- **Builds partnerships with regulating agencies**
- **Fuel savings (275 Days, 4 Locomotives)**
 - Over 4 gallons per hour saved when idling
 - Idle time saved: 10,997 hours
 - Gallons saved: 47,500
 - Over \$110,000 saved
- **Positions Tacoma Rail “ahead of the curve”**

More Idle Reduction



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

Container Train Example



- ‘K’ Line, Evergreen, Hyundai...
- Over 1.5 miles long
- Up to 12,000 tons.
- Over 22 trains per week.
- Assembled from 3 or more tracks.
- Requires constant
 - Starting
 - Stopping
 - Changing Directions

Beyond Idle Reduction

- **Genset Locomotives**
 - EPA and CARB qualified Low Emissions Diesel Locomotive
 - » California Air Resources Board
 - \$1.3 to \$1.5 Million
 - 2 to 3 Gensets
 - Demonstrator Units
 - NRE N-ViroMotive Locomotives
 - RailPower Technologies
- **Existing Locomotive Repower**
 - \$850,00 to \$1.4 Million
- **Current Requests for Funding**
 - National Clean Diesel Assistance Program
 - National Clean Diesel Emerging Technologies Program



RAILPOWER[®]
Technologies Corp.



TACOMA RAIL
TACOMA PUBLIC UTILITIES

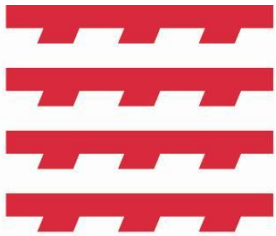
Locomotive Service Program



- **Locomotive Servicing**
 - Fueling
 - Sanding
 - Cleaning Cabs
- **Locomotive Positioning**
 - Locomotive Consists
 - Tonnage
 - Power Balancing
- **Employment Partnerships**
 - Bates Technical College
 - Future Sources
 - Apprenticeship Programs

Locomotive Service Program

- **Looking at The Savings**
 - 4 to 6 hours per locomotive over the alternative trip to Seattle for service
 - This 4 to 6 hours equates to from a minimum of 20 gallons to a maximum of 120 gallons of fuel savings for each locomotive
 - One full day of locomotive availability for each four unit train set serviced!
- **All fuel is USLD**
 - May not have been the case otherwise
- **Serviced nearly 2,000 locomotives**
- **New Locomotive Servicing Facility planned**
- **Currently Union Pacific Railroad**
- **BNSF Railroad anxious to take advantage of the savings**
 - Ongoing Negotiations



TACOMA RAIL
TACOMA PUBLIC UTILITIES

Questions?