



Meeting Minutes
Locomotive/Rail Sector Working Group Teleconference
Wednesday, August 29, 10am-11am PDT

Tacoma Rail Retrofit Update

Alan Hardy, of Tacoma Rail, provided a presentation on Tacoma Rail’s initiatives.

Several highlights from the presentation include:

- Tacoma Rail, which primarily serves the Port of Tacoma, has eighteen locomotives moving approximately 1.4 million twenty-foot equivalent units (TEU’s) of goods per year.
- In 2004, Tacoma Rail started using Interstate-McBee Ecotip Superstack injectors on their locomotives and used the opportunity to explore and try out new locomotive equipment gaining a significant PM and smoke opacity reduction.
- Tacoma Rail submitted a grant request to the Washington Dept. of Ecology based on ZTR SmartStart and Kim Hotstart idle reduction technology. After a very successful RFP process with several very attractive proposals Kim Hotstart along with ZTR Smart Start systems were selected. The idle reduction technology has been favorably received by Tacoma Rail. Benefits included significantly reduced emissions coming out of the stacks, approximately 53% savings in fuel economy, and longer equipment shelf life.
- Tacoma Rail entered into a partnership with Washington Department of Ecology, Puget Sound Clean Air agency, and Olympic Clean Air agency to equip four locomotives with idle reduction technologies. The project was completed in June 2007. In ninety days of operation, two of the four locomotives have saved 3,047 hours of idle time and 14,054 gallons of fuel.
- To extend the advantages that Tacoma Rail has received from idle reduction, they have been pursuing a grant from the State of Washington, due on October 4th, which would retrofit the remaining fourteen locomotives with idle reduction technology.
- In September of 2006, Tacoma Rail switched to only using ultra low sulfur diesel (ULSD). The price of the fuel switch was negligible and there have been no recorded detrimental effects to the engines. Tacoma Rail also learned from the experiences of the Washington State ferries, which tested the ULSD a year before.



- A demonstration locomotive unit was lent to Tacoma Rail from National Railway Equipment. The locomotive was a two engine generator set instead of a standard three. Tacoma Rail found that the demonstration unit could pull a 6,000 ton, 7000 foot train out of the terminal by itself when normally two locomotives would be needed to do the job. The test was repeated approximately ten additional times with the same results: Substantial fuel savings, 0.3 PM, 3.0 NOX per manufacturer's testing with CARB and US EPA.

For more information about Tacoma Rail Emission Reduction Program, visit: <http://www.tacomarail.com/default.asp>, or contact Alan Hardy at alan.hardy@cityoftacoma.org

BNSF Intermodal Efficiency Study

Rex Lai from the University of Illinois at Urbana-Champaign gave a presentation on a research project he is conducting in partnership with BNSF to study how loading pattern changes can potentially reduce aerodynamic drag, thereby increasing fuel efficiency, for intermodal locomotives.

- Mr. Lai worked on a loading efficiency study at the University of Illinois for the past three years. The study was funded by BNSF, with a goal of improving the energy efficiency of intermodal trains.
- Mr. Lai found that intermodal trains commonly have significant gap areas that affect the aerodynamic drag of the train and increase overall fuel usage.
- Mr. Lai utilized two systems to measure gap lengths on trains for his study: a temporary camera system and a permanent automated camera monitoring system. The data from these monitoring stations was computer analyzed to develop a "slot efficiency" model that graphed gap lengths on train as a percentage of the total train length.

For more information about the Intermodal Efficiency Study by Rex Lai, visit: http://cee.uiuc.edu/railroad/CEE/pdf/Lai_Barkan_WCRR2006.pdf , or contact Rex Lai at lai3@uiuc.edu.

General Collaborative Update and Announcements

Kristin announced that the FY07 budget was recently adopted, and it is a relatively small (approximately \$600,000). The West Coast Collaborative will issue an RFP in the next couple of weeks; however it will be for Region 9 states only. Kristin also noted that the FY08 budget will likely be more inclusive, and people with more expansive project ideas might want to apply for a 2008 grant instead of a 2007 grant due to the reduced '07 budget.



Attendees:*

Alan Hardy, Tacoma Rail (WA)

Alan Madison, Tacoma Rail (WA)

Al Blair, National Railway Equipment,
Snyder Equipment, & SDC Technology
(WA)

July Kunz, Amtrak

David Hatfield, SMUD

Kristin Riha, EPA

Paul Jensen, Energy Conversions

Rex Lai, University of Illinois

Dave Hansen, SMUD, Sacramento CA

July Kunz, Amtrak, Oakland CA

Nicholas Vincent, National Railway

Mike Jaczola, ARB

Peter Okurowski, California
Environmental Associates

Jim Halloran, Caterpillar

Roxanne Johnson, EPA

Julie Magee, EPA

Paul Jenson, Energy Conversions

Gary Judge, Hot Start Spokane WA

Jonathan Roberts, Miratech

Glen Reeds, Cummins

Christine Rigby, Vancouver Port
Authority

Mike Stanfill, BNSF

John Cockle, Richmond Pacific

Julie Kircher, TIAX

Wafaa Aborashed, Healthy Air San
Leandro

Larry Milhon, BNSF

Richard Holt, Environment Canada

Terry Levinson, Argonne National Lab

Cynthia Ritchie, Vancouver Port
Authority BC

John Cockle, Richmond Pacific Railroad

Hugo Schmitz, Exide Technology

Wayne Elson, EPA

Jonathan Roberts, Mirateck

*Apologies for any names that were
missed.