STATE OF MAINE
123RD LEGISLATURE
COMMITTEE ON TRANSPORTATION

Final Report
of the

LOCOMOTIVE IDLING WORKING GROUP

JANUARY 2007

Submitted by the Maine Department of Transportation

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0016

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

January 26, 2007

Honorable Dennis S. Damon, Senate Chair
Honorable Boyd P. Marley, House Chair
Joint Standing Committee on Transportation
State House Station 3
Augusta, Maine 04333

Re: **The Final Report of The Locomotive Idling Working Group**

Dear Senator Damon, Representative Marley and Members of the Committee:

In the Second Session of the One Hundred and Twenty Second Legislature the Committee on Transportation considered LD1793, "An Act to Prevent Noise and Air Pollution in the Town of Oakland". The Committee voted unanimously "Ought Not To Pass".

The Transportation Committee directed the Department of Transportation (MaineDOT) to convene a work group comprised of individuals concerned with locomotive idling, especially in residential neighborhoods. The groups challenge would be to address issues and concerns surrounding locomotive idling such as noise and air pollution and present potential solutions to these issues.

The working group was formed and held meetings in the fall of 2006 at the MaineDOT Augusta office. The meetings were facilitated by MaineDOT and included a range of interested parties including legislators, municipal officials, State and Federal officials and railroad representatives. Attached is the report from the working Group and a full list of participants.

We look forward to presenting this report to the Committee.

Sincerely,

David A. Cole
Commissioner

cc: Theresa Savoy, Legislative Liaison
Nathan Moulton, Manager of Rail Transportation
Participants of the Idling Working Group

Introduction

In the Second Session of the One Hundred and Twenty Second Legislature the Committee on Transportation considered LD1793, "An Act to Prevent Noise and Air Pollution in the Town of Oakland." LD1793 was a concept draft which proposed to require Guilford Transportation Industries (currently operating as Pan Am Railways) trains that run through the Town of Oakland to stop for a change of crew only at the rail yard, where train noise and diesel fumes are anticipated and the noise, fumes and odor pollution would not harm the public, at times when stops will not disrupt residential neighbors sleep. After public hearing and debate on the bill, the Committee voted unanimously "Ought Not To Pass."

Though the Transportation Committee voted not to support the legislation, it did share some of the concerns expressed during public testimony on the bill. As a result the Chairs of the Transportation Committee sent a letter to Pan Am Railways requesting Pan Am engage and work with affected parties whose complaints provided the basis for LD1793. The Transportation Committee directed the Department of Transportation (MaineDOT) to convene a working group of interested parties to have a full discussion of the issues and problems surrounding locomotive idling, along with potential solutions. The goal of the working group was to work toward finding potential resolutions pertaining to noise and air pollution caused by idling locomotives, especially in residential neighborhoods.

The working group was formed and held meetings in the fall of 2006 at the MaineDOT Augusta office. The meetings were facilitated by MaineDOT and included a range of interested parties including legislators, municipal officials, State and Federal officials and railroad representatives. A full list of participants in the working group is provided in Attachment A of this report.

Background

The diesel locomotive has been in use in the United States since 1925, primarily for freight transportation. The diesel engine of a locomotive does not directly transmit power from the engine to the drive wheels. Rather, the engine is used to drive an alternator, which then supplies electricity for traction motors which in turn drive the wheels. Because of this characteristic, a locomotive engine does not necessarily experience the amounts of stress associated with truck engines when climbing and pulling heavy loads. Most diesel electric locomotives are 2000-3000 horsepower and have an average life of 40-50 years with the engines designed to be remanufactured five to six times during their total life. Diesel locomotives are 3-4 times more fuel efficient than trucks at moving freight.

Emissions standards for locomotives are governed by the Environmental Protection Agency at the Federal level. Current standards became effective in 2000. These new standards only apply to new locomotives or to older locomotive engines at the time they are remanufactured. In 2004 EPA finalized a rule that requires the locomotive fuel sulfur level to be reduced to 500 parts per million (ppm) in 2007 and then 15 ppm in 2012. This rule, when fully implemented will significantly reduce emissions from locomotives and facilitate the introduction of emission control devices in this sector. The EPA has announced that it will have new draft regulations for locomotive emissions for later in 2007 that will further reduce locomotive emissions significantly.

Train operations and movements are regulated by Federal Interstate Commerce Law and are overseen by the Surface Transportation Board. There are no specific rules that regulate where locomotives and trains can be parked and allowed to idle or that specify idling times. The Federal Railroad Administration also has oversight of several aspects of railroad operations and safety but have no specific regulations on locomotive idling and in general try to work with local communities and the railroads when issues are reported.

Locomotives need to idle for several reasons. Some of the most common reasons include ensuring the engine is ready for immediate use, avoiding difficult start-ups due to a cold engine or weak batteries, maintaining cab heat and brake pressure as well as preventing freezing inside the engine. On passenger trains, the locomotive or "gensets" provide electrical power to cars to maintain heat, air conditioning and power for appliances and cleaning/service functions. Locomotive engines do not use antifreeze; therefore temperatures below 40° F can damage the engine. With this in mind, locomotives are designed to dump all the water from the engine when the water temperature goes below 40 degrees. Idling the locomotive maintains the temperature of the fuel, oil and water circulating throughout the engine. Obviously this becomes particularly problematic here in Maine due to its climate.

The Idling Issue

The locomotive idling issue in Maine is two fold. One specific issue is locomotives idling for long periods at locations outside of rail yards or stations at locations in or near residential areas. The second issue is locomotives idling at any location including railroad yards and station facilities.

LD1793 came about as a result of parked trains idling at a location away from the Waterville rail yard in Oakland for extended periods. As the idling issue became more public it has become obvious that there are several locations around the State that experience this problem and while LD1793 was tied to operations of Pan Am Railways, it is not the only railroad that has experienced complaints. Based on input from the municipal officials and some legislators in the working group, the frequency and the amount of time that trains are left idling varies from location to location. The frequency varied from once or twice in the last six months to almost daily occurrences in other locations. The length of time reported that locomotives sat and idled varied from 1 hour to 10 hours depending on location. It was found that the noise of the idling locomotives was as much of a concern as the emissions in residential areas though generally the complaints revolve around both noise and fumes.

In trying to address its residents concerns the on locomotive idling, municipalities reported generally positive interactions with railroads but with mixed results at times. Municipalities reported that they were able to contact the railroad and in many cases have had success in improving the situation and that in most cases trains were moved. It was brought up during the meetings that there were locations where problems continue to exist. It was reported that in Rumford after discussions with Pan Am Railways about a year ago that idling trains were moved out of the neighborhood area for about 5 months but recently complaints had started again in this area. Pan Am Railways' representatives at the meeting asked for contact information and said they would follow up with the Rumford officials on the issue. At the writing of this report Pan Am Railways have moved the trains out of the residential area and has committed to continue to do so. In the Town of Oakland it was

reported that while there have been some successes, the Town still is not getting the response that they would like from Pan Am on moving trains, the Town continues to work with the railroad but may seek legislation once again. In Rockland there have been citizen complaints around idling trains at the passenger station. The Town is working with the Maine Eastern Railroad, MaineDOT, and area legislators to resolve these issues and others surrounding passenger train operations. The Maine Eastern has met with the City and local residents and has committed to changing its operating plan to make use of shore power and minimizing locomotive idling; however, it is not known at this time if this will resolve all of the concerns of the City. Railroad representatives have indicated a willingness to continue working with municipalities to limit locomotive idling whenever possible.

While trains can be moved from residential areas in many cases it is not an overall solution to trains idling in Maine and the emissions being produced. In many cases trains are moved to yard areas where the noise and emissions are more common and accepted. As rail traffic increases there are growing concerns with idling and emissions in these areas. One such area is the Waterville yard operated by Pan Am Railways. The railroad has been working with area representatives to reduce idling by installing Auxiliary Power Units on locomotives in order to reduce idling time inside and outside the yard. Installation of these units is effective in reducing idling but quite expensive for the railroad to install, costing $30,000 per unit.

It was agreed within the group that railroads must continue to work with municipalities to resolve individual issues around idling in residential areas but as an overall policy stakeholders should work towards idle reduction of all locomotives. There was a discussion of the group about where municipalities and railroads have been unable to work together in some cases legislation and local ordinances have been developed. MaineDOT legal council has advised that generally these local laws are preempted by the Federal laws in place. In some cases however, they have been successful in assisting municipalities settle ongoing disputes with railroads. Once such case recently reached a negotiated agreement in Massachusetts in which idle reduction technology will be installed on locomotives. As most locomotives operated within the State are at least 20 years old it is obvious that it will be a significant period of time before a large number of cleaner, current generation locomotives are operated here. It was decided the best course of action would be to investigate idle reduction technologies and that we investigate funding sources that would encourage the use of technologies by railroads within the State.

Idling Minimization Technologies

There are a variety of technologies that are available to reduce idling while protecting the main engine from being damaged regardless of ambient temperature. There are two that are currently in use in Maine on a small scale. These two technologies are the most effective for this region at reasonable cost.

Shore Power plug in units are generally used by passenger locomotives. Shore Power works by plugging in the locomotive allowing three phase electrical power to heat the water and oil of the locomotive as well as charge the batteries. It also provides electrical power to passenger cars for things such as heat, air conditioning and servicing. Shore Power does not work well for freight locomotives as the engine must always be parked next to the electrical

transformer to plug in the train. There are four Shore Power units in Maine, two in Portland at the Downeaster's service facility and one each in Rockland and Brunswick used by Maine Eastern Railroads passenger train. Even with the use of Shore Power locomotive engines must be started and run for a period prior to departure to build up air pressure for brakes and to run through required safety checks on the train set.

The Auxiliary Power Unit (APU) is a smaller more efficient diesel engine that attaches to the locomotive and after a period of time at idle, shuts the locomotive engine down. The APU monitors the locomotive engine and then starts and stops as needed to maintain oil and water temperatures at safe levels for efficient operation of the locomotive as well as cab heat and emergency lighting. The APU also charges the batteries of the locomotive so that the locomotive can be restarted easily. When in operation the APU reduces emissions by 90% or more and reduces noise by 30%, significant fuel consumption reductions are also realized through the use of the APU. Pan Am Railways has installed APU's on 12 of its locomotives and continues to convert locomotives to this technology as funding allows. The average cost of each unit is $30,000 and Pan Am estimates it will be five years or more before all their locomotive fleet has APU's at the current conversion rate.

Funding Resources

In its first meeting, The Working Group directed the MaineDOT to investigate possible state and federal funding opportunities and report back at the second meeting with its findings. An investigation was done into existing public funding programs that could assist in the conversion of locomotives in the State to use APU's or install Shore Power Units where appropriate. Any funding resources could speed conversion of locomotives to use APU's or install Shore Power units to reap the benefits of these technologies sooner rather than later and encourage cleaner locomotive operations throughout the State.

The Maine DOT reported back with its findings in December. We learned that the Diesel Emission Reduction Act (DERA) authorized 200 million over 5 years for diesel emission reduction technologies and strategies. However in 2006, Congress only appropriated 12 million to be administered by EPA and distributed by region throughout the country. EPA Regions 1 and 2 received $1,480,000 to award in a competitive grant application process through the Northeast Diesel Collaborative (NEDC). This announcement was for $340,000 under the Voluntary Diesel Retrofit Program specifically for marine, rail and construction projects. The remaining funds of $1,140,000 funded the Clean School Bus USA Program. Maine Department of Environmental Protection applied for the maximum amount of $300,000 for a school bus retrofit project and will be awarded approximately $55,000. There is significant competition for these funds and it is not yet known how much funding will be authorized in upcoming years that could be applied for.

There are current State funding resources available through the Finance Authority of Maine (FAME). Funding available as loans was initially available for idling reduction for trucks but could potentially be used for rail projects. These loan funds have a low interest rate (2-3%) and could be applied for by individual railroads. Small Business Association (SBA) loans might also be available to railroads for these projects as well.

These are programs that are currently in place where funding is potentially available to provide incentives for installation of idling reduction technologies. The State could consider any number of new incentives for an idling reduction programs whether it be tax incentives or new State grant or loan programs.

Summary/Conclusions

Efficient rail operations are important to the State, continued investments in rail systems for the movement of freight and passengers make businesses more competitive and reduce truck and automobile traffic and related damage to our highways.

Locomotive idling and related emissions are becoming a growing concern throughout the State and across the country. As rail traffic grows the challenge to reduce idling of locomotives will become more important. Railroad operators need to be responsive to communities in attempting to reduce idling of locomotives especially in residential areas. Railroad operators should develop operating protocols and procedures to minimize idling times whenever possible. The State should continue to monitor and act as a clearinghouse for site specific idling complaints and encourage solutions between rail operators and municipalities, without solutions between the parties new local legislation may result. With regulation of locomotive emissions and operations done primarily at the Federal level, State and local regulation would likely be preempted by Federal regulations in place.

The State should encourage rail operators to install and use idling reduction technologies whenever possible and assist in investigating all funding sources available to reduce the cost of their installation. MaineDOT should coordinate with MaineDEP to identify and apply for funding through the NDC and other sources for funding to assist in the installation of idling reduction technologies through matching grants or loans with the railroads.

ATTACHMENT A
Locomotive Idling Working Group Participants

Name	Affiliation
Sen. Elizabeth Mitchell (D- Kennebec County)	Maine Senate
Sen. Christine Savage (R- Knox County)	Maine Senate
Rep. William Browne (R- Vassalboro	Maine House of Representatives
Rep. George Hogan (D- Old Orchard Beach)	Maine House of Representatives
Rep. Edward Mazurek (D- Rockland)	Maine House of Representatives
Rep. Marilyn Canavan (D- Waterville)	Maine House of Representatives
Diane Stewart	Leg. Aide for Sen. Elizabeth Mitchell
Darek Grant	Leg. Aide for Sen. Elizabeth Mitchell
Steve Dyer	Town Mgr. Town of Oakland
Steve Eldridge	Town Mgr. Town of Rumford
Thomas Hall	City Mgr. City of Rockland
Ryan Ewing	Councilor Town of Brunswick
David Fink	President, Pan Am Railways (former Guilford Rail)
Peter Danton	Pan Am Railways (former Guilford)
Sydney Culliford	Executive V.P. Pan Am Railways
Roger Bergeron	Pan Am Railways
Michail Grizkewitsch	Federal Railroad Administration, USDOT
Lynn Cayting	Maine Dept. of Environmental Protection
Roy Rike	Maine Dept. of Environmental Protection
Theresa Savoy	Maine Dept. of Transportation
Robert Elder	Maine Dept. of Transportation
Nathan Moulton	Maine Dept. of Transportation

*Interested members of the public also attended meetings.

STATE OF MAINE

ONE HUNDRED AND TWENTY-SECOND LEGISLATURE

COMMITTEE ON TRANSPORTATION

February 14, 2006

David Fink, Executive Vice President
Guilford Rail System
High Street
Iron Horse Park
North Billerica, MA 01862

RE: LD 1793 – An Act to Prevent Noise and Air Pollution in the Town of Oakland

Dear Mr. Fink,

A few weeks ago, the Joint Standing Committee on Transportation held a public hearing on the above referenced bill. LD 1793 is a concept draft which proposes to require Guilford Transportation Industries' trains that run through the Town of Oakland to stop for a change of crew only at the rail yard, where train noise and diesel fumes are anticipated and where the noise, fumes and odor pollution will not harm the public, at times when stops will not disrupt residential neighbors' sleep.

While the title of the proposed legislation is specific to the Town of Oakland, the Committee heard testimony from cosponsors of the bill and members of the public that idling train noise and pollution is of great concern in other communities – Portland and Waterville in particular.

Although the Transportation Committee has not held a work session on LD 1793, we prefer a non-legislative solution to the issues raised during public testimony. Therefore, we request that Guilford Rail engage and work with affected parties. Affected parties should include, but are not limited to, the Town of Oakland, the City of Portland, and the Town of Waterville. The Committee believes that Guilford Rail can make progress toward addressing noise and air pollution in partnership with the affected communities.

We appreciate your continued cooperation in these policy matters.

Sincerely,

Senator Dennis Damon, Co-Chair

Representative Boyd Marley, Co-Chair

cc: Members of the Joint Standing Committee on Transportation
Senator Elizabeth H. Mitchell
Representative Marilyn E. Canavan
Senator Kenneth T. Gagnon
Representative John R. Brautigam
Representative Theodore S. Koffman

STATE OF MAINE

ONE HUNDRED AND TWENTY-SECOND LEGISLATURE

COMMITTEE ON TRANSPORTATION

March 14, 2006

Mr. David A. Cole, Commissioner
Maine Department of Transportation
16 State House Station
Augusta, ME 04333

RE: LD 1793 – An Act to Prevent Noise and Air Pollution in the Town of Oakland

Dear Commissioner Cole,

Recently, the Joint Standing Committee on Transportation voted unanimously "Ought Not To Pass" on the above referenced bill. LD 1793 is a concept draft which proposes to require Guilford Transportation Industries' trains that run through the Town of Oakland to stop for a change of crew only at the rail yard, where train noise and diesel fumes are anticipated and where the noise, fumes and odor pollution will not harm the public, at times when stops will not disrupt residential neighbors' sleep. While the Transportation Committee shares the concerns expressed in public testimony regarding noise and air pollution attributed to train engines idling for long periods of time, we voted not to support this legislation because we do not believe legislation is appropriate at this time.

The Chairs of the Transportation Committee also recently sent a letter to Guilford Rail System requesting that Guilford Rail engage and work with affected parties. The Committee is encouraged by efforts made by Guilford Rail to communicate with concerned municipalities and by progress made towards resolution of their concerns.

However, the Committee would like to ensure that the partnership between Guilford Rail and affected communities continues. As a result, the Committee requests that the Department of Transportation convene a working group with municipal officials, neighborhood groups, federal and state environmental regulators, federal and state departments of transportation, legislators, Guilford Rail System and other rail road representatives, and any additional interested parties. The objective of the working group is to review various options and recommendations proposed, such as financial incentives for installing auxiliary power units (APUs). The group should have a full discussion of the issues and problems, as well as potential solutions. The ultimate goal of the working group is to work toward a resolution of issues pertaining to noise and air pollution caused

by idling trains in residential neighborhoods whether by developing new policies and/or legislation, if necessary.

The Committee also requests that the Department of Transportation report back to the Joint Standing Committee on Transportation on its findings and recommendations regarding this issue by January 31, 2007.

We appreciate your continued cooperation in these policy matters.

Sincerely,

Senator Dennis Damon
Co-Chair

Representative Boyd Marley
Co-Chair

cc: Members of the Joint Standing Committee on Transportation
Senator Elizabeth H. Mitchell
Representative Marilyn E. Canavan
Senator Kenneth T. Gagnon
Representative John R. Brautigam
Representative Theodore S. Koffman
Gregory G. Nadeau, Deputy Commissioner, Department of Transportation
Theresa Savoy, Legislative Liaison, Department of Transportation