



Courtesy of ARRC

Project name: Alaska Railroad
Locomotive Upgrades

Transit agency: Alaska Railroad
Corporation

Location: Anchorage, Alaska

TIGGER goal: GHG emissions reduction

FTA region number: X

Award amount: \$1,035,000

Congressional district: AK - At Large

Funding mechanism:
Appropriations

Alaska Railroad Corporation Retrofits Locomotives to Reduce Emissions and Improve Fuel Efficiency

A grant from the TIGGER Program will help the Alaska Railroad Corporation (ARRC) overhaul and retrofit three of its GP40 locomotives with emission-reduction kits and idle-reduction systems. These upgrades will bring the locomotive engines into compliance with Environmental Protection Agency (EPA) standards for lower greenhouse gas emissions and improved fuel efficiency.

The retrofit involves the installation of the following equipment:

1. New after-cooler equipment to improve coolant water flow (moving cooler air through the engine turbochargers and root blowers will reduce emissions)



Rail
Project

The Alaska Railroad

Corporation (ARRC) is a full-service railroad that offers freight and passenger services to ports and communities from the Gulf of Alaska to Fairbanks. Established in 1923 and owned by the state of Alaska since 1985, ARRC operates a fleet of 51 locomotives, 33 passenger railcars, five baggage cars, six diner/café cars, and two general purpose cars. In addition to its passenger services, ARRC provides freight-hauling services and moves more than 90,000 carloads of freight a year.

2. New engine fuel injectors that will improve fuel-burning efficiency (thus reducing emissions)
3. New power assemblies designed to reduce engine-oil consumption, also known as blow-by (using less oil will reduce emissions)
4. Automatic engine start-stop idle-reduction system, manufactured by ZTR Control Systems, to turn off the engine when the locomotive is not in use or is sufficiently warmed up (turning off the engine when it is not needed will save fuel and reduce emissions).

This project will achieve sizeable emission reductions and fuel savings at modest costs. At \$460,000 per locomotive, the budget includes overhaul activities (such as work on the locomotive engine, generator, auxiliary generator, and air compressor) and the purchase of emission-reduction kits manufactured to comply with Tier 0+ emission standards. Work on the project began in 2011 and will be completed by May 2013. The work will be accomplished primarily during the winter months when passenger service requirements are at a minimum and the locomotives can be conveniently rotated out of regular service.

ARRC's comprehensive maintenance program helps keep its locomotives in top working order through regular preventive maintenance and repair and a daily program of monitoring and inspections. This maintenance program will further enhance the retrofit project's long-term benefits of efficient locomotive performance and reduced emissions.

ARRC's commitment to safety, service, and profitability has propelled the agency on a course of environmental stewardship. ARRC is one of Alaska's first recipients of the Green Star Award, which recognizes the railroad's commitment to reducing waste, preventing pollution, conserving energy, and recycling. In addition to maintaining its Green Star business status, ARRC recently won a Green Star Air Quality Award in recognition of the railroad's substantial efforts to reduce emissions and conserve energy.

Impact:

In addition to reducing emissions and bringing the locomotives into regulatory compliance with EPA standards, the overhauls will extend the useful life of the locomotives by 13 to 15 years.

About TIGGER

The Transit Investment for Greenhouse Gas and Energy Reduction (TIGGER) Program was established in 2009 by the U.S. Department of Transportation's Federal Transit Administration (FTA). Designed to reduce energy use and greenhouse gas emissions in transit agencies around the country, the TIGGER Program made funds available for capital investments that would reduce greenhouse gas emissions or lower the energy use of public transportation systems. An initial \$100 million in American Recovery and Reinvestment Act grants funded 43 competitively-selected transit projects. In 2010, the FTA provided an additional \$75 million in grants to fund 27 new TIGGER projects. These 70 projects are employing a variety of technologies to meet the program goals, including solar installations, building efficiency improvements, wind technology, wayside energy storage for rail, and purchase of more efficient buses. In fiscal year 2011, FTA provided an additional \$49.9 million to continue the program.

For More Information

Alaska Railroad Corporation:
www.alaskarailroad.com

FTA TIGGER:
www.fta.dot.gov/TIGGER



U.S. Department of Transportation
Federal Transit Administration
1-866-377-8642

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