

2020-2024 CMAQ Application Narrative Response/Attachment 1

4. For Diesel Retrofit Development Projects:

How many vehicle or engines will be affected?

Two diesel-powered towboats will be repowered with a total of three new propulsion engines and two new generator sets.

What is the total number of miles driven per year for each vehicle type?

As these are marine engines, miles per year is not an accurate metric for evaluating the usage profile of these machines. Each engine operates and estimated 2,000 hours per year and cumulatively consume more than 20,000 gallons of diesel fuel per year. These hours and consumption occur during approximately 8 months of the year from mid-April through mid-December. Note, this consumption does not include the generator sets, which would provide additional fuel consumption efficiencies.

What is the quantity of fuel pumped or used per day?

Approximately 83 gallons of diesel are used on average for the 241-day operating season for these boats, totaling approximately 20,000 gallons per year.

What is the certification standard (and/or fuel type) expected for each vehicle or engine type?

All engines in the scope of this project will be replaced with EPA-certified Tier-3 engines. This is in accordance with the current Diesel Emission Reduction Act parameters which allow for marine engine upgrades and replacements to Tier-3 certification.

What time of day will idling- reduction operations occur?

Idle reduction is not a significant component of this scope of work.

Will the project replace existing vehicle or enlarge a fleet?

This project will replace existing engines within vehicle and not enlarge the fleet. Two of the engines will be upgraded in size due to increased usage profile demands and workloads, but significant emission reductions will still result and no new boats or additional engines will be added in this project scope of work.

6. Project Benefits

a) Why is the proposed project necessary to address non-attainment levels of fine particulate matter and/or ozone in the county or counties in which the proposed project will occur?

Milwaukee County is currently in nonattainment status for 8-Hour Ozone standards and maintenance status for PM 2.5. Marine engine replacement/retrofit projects are consistently some of the most cost-effective and impactful diesel emission projects. They are high-priority projects across state and regional EPA programs that have massive immediate and long-term emission reductions. The annual reductions in ozone-forming hydrocarbons (Volatile Organic

Compounds) and nitrous oxides (NO_x) as well as particulate matter referenced in the project description are quantifiable and guaranteed if this project is approved. The calculations are derived from the EPA's Diesel Emissions Quantifier, a tool used nationally to calculate emission reduction projects, as well as certified emissions certificates from the EPA and California Air Resources Board. These documents and calculations can be provided upon request. In addition, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) Environmental Justice Task Force identified Milwaukee County and the City of Milwaukee surrounding the Port of Milwaukee as economically distressed areas with minority population concentrations that exceed the regional average. These are men, women, and children that are disproportionately burdened by the health impacts of living, working, and playing in a non-attainment area that need tangible and immediate relief provided through this project that is primarily based and operating in the Port area.

b) How will the project sponsor ensure that the project is timely implemented in accordance with the Project Costs and Dates section of this application?

The Port of Milwaukee has a longstanding relationship with Big Lake Marine and its owner/operator, Dave Kadinger. The Port will work with the fleet to ensure that the timelines of the grant and all outcomes are upheld to the satisfaction of programmatic expectations.

c) What obstacles or problems must be overcome to implement this project?

There are very few obstacles to implementing this project. The fleet is ready to proceed upon notification of the award and the scope of work is well-defined and relatively small. A 4-month offseason should allow ample time for ordering, delivery, and installation of the engines and supplementary equipment required.

d) What will make this project a success, especially as compared to other proposed projects of the same or similar type? How will the project sponsor measure project success in the form of congestion and/or emissions reductions?

Project success will result from the full funding of this project that allows a local operator to improve their operations, invest in the long-term infrastructural needs of the Port of Milwaukee, and reduce their diesel consumption and air emissions in the process. The final emission reduction numbers (1,075 pounds of VOCs, 700 pounds of CO, 2.78 tons of NO_x, and 624 pounds of PM 2.5) will be used as an example of how public-private partnerships can result in beneficial outcomes for the economy, the environment, and public health. In addition, allowing for ongoing Port and barge movement of goods and bulk commodities can be directly translated into trucks not required to move cargo over Wisconsin's on-road transportation networks, reducing the impact to public infrastructure and commuter traffic and congestion. The fleet and vendors are willing to partner in a communications effort to promote the success of this project and encourage other port operators to engage in similar cost-effective emission-reduction projects.

e) How, if at all, does the proposed project add connectivity to the state's multi-modal transportation network, including bicycle, pedestrian and transit facilities?

The Port of Milwaukee is centered on multi-modal transportation networks that include rail, marine, and on-road transportation of goods throughout the region. While this project will not directly add connectivity, it will allow the Port to continue operations in a more efficient manner and allow goods-movement growth to continue without impinging on plans for alternative and additional network connectivity.

f) Briefly describe the manner in which the proposed project would provide a cost-effective benefit to the public.

In addition to investing in Port operations, maintenance, and longevity, there are multiple cost-effective benefits to the public. The Federal Highway Administration specifically identifies heavy-duty vehicle engine replacements as the most cost-effective project types to reduce NOx, VOCs, PM10, and PM 2.5. Median costs of diesel engine PM 2.5 emission reduction projects are estimated at \$124,000/ton, which is a fraction of the effectiveness of transit service expansion (\$2.7 million/ton) or transit amenity improvements (\$5.7 million/ton).

7. Reference Project Costs and Dates and provide detail if applicable or appropriate

Project costs are itemized and in the project budget spreadsheet included with this application. The fleet is ready to start the project as soon as funding becomes available and will complete all objectives within the first December-April period after the funding has been awarded.