



National Clean Diesel Campaign

**Fiscal Year 2011
STATE CLEAN DIESEL GRANT PROGRAM**

WORK PLAN NARRATIVE AND BUDGET NARRATIVE TEMPLATE

SUMMARY PAGE

Project Title:	Connecticut Clean Diesel Grant Program
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Project Manager and Contact Information

Please note any contact information changes from the original Fiscal Year 2008 through 2010 Application and/or amendments.

Organization Name:	Connecticut Department of Environmental Protection
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Project Budget

Please update the budget as necessary.

	FY 2008	FY 2009	FY 2010	FY 2011
EPA base allocation	\$196,880.00	\$235,294.00	\$235,294.00	\$190,493.00
State match (if applicable)	\$196,880.00	\$0.00	\$0.00	\$0.00
EPA match incentive (if applicable)	\$98,440.00	\$0.00	\$0.00	\$0.00
Additional leveraged resources	\$4,803,120.00	\$0.00	\$0.00	\$0.00
TOTAL Project	\$5,295,320.00	\$235,294.00	\$235,294.00	\$190,493.00

Project Period

This work plan includes all work funded with FY 2008 through 2010 funding, as well as FY 2011 funds. The grant project period for State Clean Diesel Program awards funded with all four fiscal year funds will span from October 1, 2008 through September 30, 2012.

Summary Statement

Insert a brief paragraph summarizing the proposed project. Please detail which parts of projects will be funded with each fiscal year's funds.

In the first year of this program, Diesel Emission Reduction Act (DERA) funds were used to retrofit Connecticut school buses with diesel oxidation catalysts and closed crankcase ventilation systems. However, Connecticut has found that the demand for retrofitting school buses has been met. The second year of funding was directed to Cross Sound Ferry to support upgrading the engines from a Tier 0 to Tier 2 level of emissions. Connecticut's priorities for FY-2010 and 2011 (Years 3 and 4) State DERA funds would be for grants to municipalities for early replacement, repowering or retrofitting of diesel vehicles or equipment in their fleets.

Grant funds could also be used:

- for Truck Stop Electrification facilities at truck parking areas,
- for idle reduction technologies, including auxiliary power units,
- for a port equipment, shore-power or marine engine diesel project at Connecticut ports,
- for technologies from EPA's Emerging Technologies List,
- for retrofit technologies for diesel vehicles or equipment,
- for compartment/block heaters for buses in the Connecticut fleet,
- for replacement or repowering of transport refrigeration units, or
- for other diesel projects consistent with agency needs and requirements.

SCOPE OF WORK

Project Description

General Description, Fleets and Technologies: Due to uncertainties revolving around the feasibility of implementing any of the proposed projects, Connecticut is providing a prioritized list of programs that could be funded in Year 4 of this grant. Historically the first priority was to use these funds to reduce diesel emissions from Connecticut school bus fleets through retrofits. The 2007 Connecticut Clean School Bus Act, June Special Session Public Act 07-4 (PA 07-4),¹ allocated funds to the Connecticut Department of Environmental Protection (CT DEP) to provide reimbursement to school districts for emission controls on school buses in the state, at reimbursement amounts specified in the legislation. Reimbursements were to have covered the purchase, installation and warranty of the emission control technologies. A competitive procurement process did not yield any bids below those legislatively specified caps. While several vendors were approved, the gap between the price caps and the contract amounts was sufficiently high that school districts were financially unable to participate. In the first year, this funding was used to bridge the gap between the legislative allocation and the contract amounts

¹ Codified in sections 14-164n, 14-164o, 22a-21j, and 22a-21k of the 2008 Supplement to the General Statutes of Connecticut.

for purchase, installation and warranty of verified diesel oxidation catalysts (DOCs) and closed crankcase ventilation systems (CCVs).

Since the underlying PA 07-4 legislative funding lapsed in June of 2009, CT DEP was compelled to complete the supplemental funding program in the third quarter of the 2009 federal fiscal year. By the end of the third quarter, this DERA supplemental funding made it possible for twenty-three school districts to retrofit 339 school buses with DOCs and CCVs, as required by PA 07-4.

A survey of Connecticut school districts to assess the remaining interest in school bus retrofits was completed in the fourth quarter. Fourteen school districts expressed a continuing interest in the program. On June 15, 2009, CT DEP submitted a request to EPA for revision of the work plan to allow the remaining \$44,826 from the first year of the 2008 State DERA grant, and the full second year allocation, to be used to fully pay for school bus retrofits in these additional towns. In October of 2009, the revision request was granted and the signed Assistance Amendment was returned to EPA on October 5, 2009.

In 2010, fourteen school buses have been retrofitted under this program. Since no new requests have been received since the third quarter, it appears that the demand for school bus retrofits has been successfully met by this program and that other proposals should be developed for the remaining DERA funds from Year 1 and the funds allocated for Years 2 through 4.

On June 17, 2010, CT DEP solicited proposals from a wide range of stakeholders that had previously been involved in diesel emission reduction projects. The EPA approved the project to upgrade the engines of the Cross Sound Ferry Services (CSF) vessel, the *MV Susan Anne*, from Tier 0 to Tier 2, the best control level available for these engines in September of 2010. The selected proposal will use \$250,000 of DERA funds of this grant in combination with funds from the American Recovery and Reinvestment Act (ARRA) Grant #2D-96102001, which were made available by the withdrawal of one of CT DEP's sub-grantees. CSF is contributing an additional \$271,135 to the Project through a combination of cash in-kind services. The contract between CT DEP and CSF to implement this project was executed on December 2, 2010. Progress on the CSF Marine Engine Upgrade Project was delayed during EPA's review of the vendor's sole source status. On February 3, 2011, EPA approved the selection of Marine Systems, Inc. (MSI) as a sole source vendor for the only EPA-certified upgrade kit compatible with the *MV Susan Anne's* engines. MSI submitted the required competitive pricing documentation, but the upgrade kit costs were higher than initially expected which lead to further delays in the procurement process. To date, the procurement process for the kits to upgrade the engines for the CSF *MV Susan Anne* is expected to be completed June 1, 2011. A revision to the contract between CT DEP and CSF has been initiated as of May 2011. The CT DEP has filed a no cost time extension to the EPA to allow time needed for the delivery and installation of the upgrade kits under the ARRA grant. Also in May 2011, the CT DEP filed an ARRA budget revision request to allow the reprogramming of unspent funds from the Connecticut Department of Transportation construction equipment retrofit project to the CSF *MV Susan Anne* marine engine upgrade project.

On December 9, 2010, an outreach letter was sent to stakeholders, who had previously expressed interest in CT DEP's clean diesel or climate change efforts, requesting proposals for new projects that could be carried out using available Year 3 State DERA funds. On the same day,

the funding availability was also announced at the monthly meeting of the State Implementation Plan Revision Advisory Committee. Six proposals were received. The proposals are being evaluated and ranked using criteria that were developed to be consistent with the EPA's priorities for this grant program and initially used in the selection of participating school districts.

Connecticut's first priority for Years 3 and 4 would be to grant funds to municipalities for retrofitting or early retirement and replacement of diesel vehicles and equipment. Replacements could include hybrid electric, compressed natural gas (CNG) or liquefied natural gas (LNG) powered vehicles as well as cleaner diesel vehicles or equipment.

CT DEP's second priority would be to assist truck owners, including municipalities, in obtaining auxiliary power units (APUs) to reduce idling emissions at ports, distribution/delivery centers, and other locations where these vehicles might idle while waiting in queues throughout the state.

Another alternative would be to encourage early replacement of trucks serving trash plants or distribution/delivery centers in the state. CT DEP is also considering the use of these funds for the establishment of truck stop electrification (TSE) facilities at locations where trucks park throughout the state. In addition, CT DEP is looking for an opportunity to fund a port-related project such as retrofit or early replacement of drayage trucks, replacing portside equipment with new units equipped with verified emission controls, repowering marine engines or establishing shore power facilities. Among the other concepts also being considered are providing compartment/block heaters for buses in the Connecticut fleet, or repowering transport refrigeration units (TRUs). CT DEP would also consider using these funds for other diesel emission reduction projects to meet agency needs that may arise during the grant period, subject to EPA approval.

Air Quality within the State: All of Connecticut is in nonattainment for the National Ambient Air Quality Standards (NAAQS) for 8-Hour Ozone. Fairfield and New Haven Counties are also in nonattainment for the fine particulate matter (PM_{2.5}) NAAQS as part of the New York/New Jersey/Connecticut nonattainment area.

As the most traveled area in Connecticut, Fairfield and New Haven Counties are impacted by air pollution from I-95, I-84 and I-91, which comprise a primary transportation corridor between New England and the rest of the country. This transportation corridor also encompasses the ship, barge and ferry traffic through Connecticut ports and in Long Island Sound as well as the railway corridors that parallel I-95 and I-91. Given the prevailing patterns of wind and weather, Connecticut also receives transported air pollution from New York City and other population centers along the East Coast as well as from sources in the Midwest.

Time Line or Schedule: The schedule for the Clean School Bus portion of the Connecticut Clean Diesel Grant Program is presented below as Table 1, with status notes showing that the tasks have been completed in a timely manner with some tasks being completed ahead of schedule. Note that Connecticut efforts on outreach and the updating of the website are ongoing. In regards to the schedule of tasks for the CSF portion of the Connecticut Clean Diesel Grant Program please refer to Table 2 included below.

**Table 1: Connecticut Clean School Bus Funding Program
Work Plan for Fiscal Years 2008 - 2011**

Task	Target Completion Date	Status
PRELIMINARY EFFORTS: CLEAN SCHOOL BUS ACTIVITIES – FISCAL YEARS 2007-2008		
Meet with Department of Education, DAS, and DMV to Discuss Program, Request for Proposals (RFP), Guidelines and Reimbursement	By September 15, 2007	Completed
RFP Development with DAS	By September 2007	Completed
Develop State School Bus Fleet Inventory <ul style="list-style-type: none"> - Contact bus companies, industry groups: CT Association of School Business Officials (CASBO), CT School Transportation Association (COSTA) - Create database with school buses to be used for identification and tracking program progress 	By October 2007	Completed
Survey Schools for School Bus Contract Expiration Dates	By October 2007	Completed
Draft Program Guidelines <ul style="list-style-type: none"> - Why the program is being done - Logistics of how program will be run - Funding Available - Prioritization criteria - How to apply and timelines for submission 	By October 2007	Completed
Design and Post Website Content	By December 2007	Ongoing
Conduct Workshops & Outreach to Local School Districts and Transportation Directors	By January 2008	Completed
Continued Support and Outreach	January 2008 – Summer 2010	Ongoing
Selection of Qualified Vendors and Issue of State Contracts	March 2008	Completed
Establish Criteria for Award Process <ul style="list-style-type: none"> - PM_{2.5} non-attainment area (1 point) - Urban environment (1 point) - Near transportation hubs or corridors (1 point) - Environmental justice area (1 point) - School anti-idling policy in existence (1 point) - Buses are required to remain in state for 3 years or a comparable technology must be installed on replacement buses. 	Spring 2008	Completed
Develop State Application and Instructions <ul style="list-style-type: none"> - Statement of Intent - Application & Bus Inventory Form - Reimbursement Form 	Spring 2008	Completed
YEAR 1 EPA DERA GRANT – FISCAL YEAR 2009		

**Table 1: Connecticut Clean School Bus Funding Program
Work Plan for Fiscal Years 2008 - 2011**

Task	Target Completion Date	Status
Invitation to Apply for Available FY 2009 Funds - Communication to school districts - Post on website	November 24, 2008	Completed
Letters of Interest Due from School Districts	Due December 9, 2008	Completed
Applications and School Bus Fleet Inventories Due from All who Submitted Letters of Interest	December 19, 2008	Completed
Review of Submitted Information and Decision on Award Finalists	December 30, 2008	Completed
Award Finalists and Alternates Announced	January 5, 2009	Completed
Workshop Held to Explain the Program and its Processing Procedures, and to Assist School Districts in Selecting Vendors. Invitees included: - Selected School Districts and Alternates - Bus Providers - District/Town Finance Officials - CT Council of Municipalities (CCM) - COSTA - CASBO - CT Association of Boards of Education (CABE) - Vendors - Environmental Advocates - EPA Region 1	January 12, 2009	Completed
Finalists Confirm Participation and Vendor Selection	January 16, 2009	Completed
School Districts Obtain Town Approvals Where Needed and Confirm Approval with CT DEP	February 16, 2009	Completed
Additional School Districts to be Added if Funds Allow	1/16/09 – 2/20/09	Completed
DEP issues Purchase Orders to School Districts	February 27, 2009	Completed
Installation of Technology and Completion of Projects	May 29, 2009	Completed
Reimbursement Forms Due	June 1, 2009	Completed
Payments made to school districts	June 1, 2009	Completed
Prepare and submit, for EPA approval, a revised work plan to use the remaining, unmatched DERA funds for additional school bus retrofits	June 15, 2009	Completed
Survey of School Districts for Continuing Interest in the Program	July 13, 2009	Completed
YEARS 2-4 EPA DERA GRANT – FISCAL YEARs 2010-2011		
Contact School Districts Expressing Interest through Survey	October 5, 2009	Completed
School Districts Confirm Participation and Vendor Selection	Fall 2009 – Summer 2012	Completed

**Table 1: Connecticut Clean School Bus Funding Program
Work Plan for Fiscal Years 2008 - 2011**

Task	Target Completion Date	Status
School Districts Obtain Town Approvals Where Needed and Confirm Approval with CT DEP	Fall 2009 - Summer 2012	Completed
DEP issues Purchase Orders to School Districts	Fall 2009 - Summer 2012	Completed
Installation of Technology and Completion of Projects	Fall 2009 - Summer 2012	Completed
Reimbursement Forms Due	Fall 2009 - Summer 2012	Completed
Payments made to school districts	August 30, 2012	Completed

**Table 2: CSF Upgrade for the *MV Susan Anne* Funding Program:
Work Plan for Fiscal Years 2010-2012**

Task	Target Completion Date	Status
Establish Criteria for Evaluation of Proposals <ul style="list-style-type: none"> • Creates Connecticut jobs (1 point) • In an EPA-designated PM non-attainment area (Fairfield or New Haven Counties) (1 point) • In an environmental justice community (1 point) • Near transportation hubs or corridors (1 point) • In an urban area (1 point) • Includes anti-idling education and outreach (1 point) Ability to be completed by 9/2011, job creation, and cost effectiveness will also be taken into account.	June 1, 2010	Completed
Develop Request for Proposals and Proposal Form <ul style="list-style-type: none"> • Letter from Commissioner <ul style="list-style-type: none"> ○ Funding Availability ○ Prioritization Criteria ○ Proposal Submittal Process • Proposal Ideas Form 	June 10, 2010	Completed
CT DEP Request for Project Proposals <ul style="list-style-type: none"> • Communication to Stakeholders • Post on Website 	June 17, 2010	Completed
Continued Support and Outreach	June 17, 2010 – January 30, 2012	Ongoing
Project Proposals due to CT DEP	July 8, 2010	Completed
Review of Received Proposals & Selection of Projects	August 2010	Completed
EPA Approval of Selected Project	September 2010	Completed

**Table 2: CSF Upgrade for the *MV Susan Anne* Funding Program:
Work Plan for Fiscal Years 2010-2012**

Task	Target Completion Date	Status
CT DEP Develops Contract with CSF	September-December 2010	Completed
Competitive Procurement for Engine Upgrade Vendor	October 2010-June 2011	Ongoing
CT DEP develops Contract Revision with CSF	May 2011	Ongoing
Installation of Technology , Sea Trials, and Completion of Projects	August 2011-January 2012	
Final Report and Reimbursement Forms Due	December 2011-January 2012	
Payments Made to CSF	January 2012	

Table 3 represents the work plan that will be adapted for any of the alternative proposals that have been described above for Years 3 and 4 State DERA funding. Experience suggests that the alternative projects could be completed within the time frame as mandated by DERA requirements. CT DEP would also consider using these funds for other, appropriate diesel emission reduction projects that may better reflect agency needs arising during the grant period.

**Table 3: Template for Alternative Projects to the Connecticut Clean Diesel Grant Program:
Work Plan for Fiscal Year 2011-2012**

Task	Target Completion Date	Status
Establish Criteria for Evaluation of Proposals <ul style="list-style-type: none"> • Creates Connecticut jobs (1 point) • In an EPA-designated PM non-attainment area (Fairfield or New Haven Counties) (1 point) • In an environmental justice community (1 point) • Near transportation hubs or corridors (1 point) • In an urban area (1 point) • Includes anti-idling education and outreach (1 point) Ability to be completed by 9/2011, job creation, and cost effectiveness will also be taken into account.	November 2010	Completed
Develop Request for Proposals and Proposal Form <ul style="list-style-type: none"> • Letter from Commissioner <ul style="list-style-type: none"> ○ Funding Availability ○ Prioritization Criteria ○ Proposal Submittal Process • Proposal Ideas Form 	November 2010	Completed
CT DEP Request for Project Proposals <ul style="list-style-type: none"> • Communication to Stakeholders • Post on Website 	December 9, 2010	Completed

**Table 3: Template for Alternative Projects to the Connecticut Clean Diesel Grant Program:
Work Plan for Fiscal Year 2011-2012**

Task	Target Completion Date	Status
Project Proposals due to CT DEP	January 19, 2011	Completed
Application Deadline Extended	January 28, 2011	Completed
Continued Support and Outreach	January 2011 – September 2012	Ongoing
Review of Submitted Information and Decision on Award Finalists	February – June 2011	Ongoing
Award Finalists and Alternates Announced	June-July 2011	
DEP issues Purchase Orders/Contracts to Participants	July – October 2011	
Installation of Technology and Completion of Projects	September 2011 – March 2012	
Reimbursement Forms Due	April 2012	
Payments made to Participants	May 2012	

Program Priorities

Maximize Public Health Benefits The emission control technologies installed under this grant reduce emissions of diesel exhaust, including PM_{2.5}. Exposure to PM_{2.5} has been linked to premature death from heart or lung disease. Fine particles, inhaled into the lungs, can aggravate existing heart and lung diseases to cause cardiovascular symptoms, arrhythmias, heart attacks, chronic obstructive pulmonary disease, asthma attacks and bronchitis. EPA has also classified diesel exhaust as a probable human carcinogen. Studies now show that heart attacks may be linked with exposures of less than 24 hours. In addition, studies have not found a safe exposure level for PM_{2.5}; in other words, any exposure to PM_{2.5} could eventually lead to adverse health effects. These facts support efforts to reduce PM_{2.5} from all sources as much as possible.

Children are more susceptible to air pollution than healthy adults because their respiratory systems are still developing and they have a faster breathing rate. Cumulatively, Connecticut children spend more than 50 million hours on school buses per year. That is why emission controls on school buses are such a high priority. Expected benefits of the program include avoided health impacts, avoided health care costs, and avoided school absences.

The 2007 Connecticut Clean School Bus Act allowed school systems to select from the full range of verified emission control technologies, which remove 20% to 85% of the PM from the engine exhaust. Because the shortened time frame dictated by this legislation did not allow for data-logging, which is necessary prior to the installation of diesel particulate filters, the program that evolved consisted of retrofits with DOCs and CCVs. While DOCs reduce air pollution from the tailpipe exhaust, CCVs provide additional protection to the student passengers by preventing the engine compartment exhaust from entering the bus cabin.

Projects that include repowers or replacement with 2010 compliant on-road or Tier 4 off-road engines will provide added benefits in reducing oxides of nitrogen (NO_x), which are ozone precursors. Ozone exposure effects on cardiovascular systems are similar to those for PM_{2.5}.

The CSF's operations significantly decrease air pollution around Long Island Sound by reducing up to 11.5 million vehicle miles travelled on roadways between Connecticut and New York City. The *MV Susan Anne* moves an average of 166 vehicles and 411 passengers daily. By upgrading the engines of the *MV Susan Anne*, from Tier 0 emission level, the dirtiest, to a Tier 2 emission level, the cleanest level available for this engine, the emissions of diesel particulates from the *MV Susan Anne*'s engines are reduced. Following the EPA's exhaust emission standards for engine upgrades found in 40 CFR 1042, replacing a Tier 0 with a Tier 2 engine is going to reduce existing PM emission by a minimum of 25%. This project enhances the air quality benefits already resulting from the ferry operation. Diesel exhaust is a significant contributor to air pollution and has been classified as a probable human carcinogen by EPA. This exposure can aggravate asthma and other cardiovascular conditions, making breathing difficult, particularly for children, the elderly and other sensitive groups. It is projected that these engine upgrades will reduce diesel particulate emissions from the *Susan Anne* by up to 3.1 tons annually.

Are Most Cost Effective: The Clean School Bus program, as originally proposed, would have given school districts a choice of verified emission control technologies, with cost effectiveness being dependent upon those choices. Program time constraints dictated the use of DOCs, which provided a bonus with regard to cost. While a diesel particulate filter would reduce three times as much particulate matter as a DOC, it would cost three-and-a-half to four times as much. The same amount of funds would purchase so many more DOCs than DPFs that the total emission benefits, from that investment, are greater. EPA's Diesel Emissions Quantifier (DEQ) was used to project the benefits, which are compiled in Tables 4 and 5 below. For the Replacement and Retrofit calculations after Year 1, the FY 2010 allocation of \$235,294 was used to determine the maximum, potential numbers of retrofits and replacements. DEQ projections used 2000 as the MY.

**Table 4: Potential Lifetime Cost Effectiveness
of the Connecticut Clean School Bus Funding Program**

Year 1: DOCs + CCVs on 353 School Buses	NO _x	PM	HC	CO	CO ₂
Amount reduced Lifetime	0	3.06	16.61	35.06	0
Capital Cost Effectiveness (\$/ton) ¹	0	\$230,521	\$42,441	\$20,109	0

¹Calculations were based on the average cost of installed DOCs, not the DERA supplemental contribution alone.

Upgrading the engines of the *MV Susan Anne*, from Tier 0 to a Tier 2, is a cost effective decision. The project will significantly improve the engine efficiency and emission profile, with estimated annual emission reductions of 44.9 and 3.15 tons of NO_x and PM, respectively. Based on original funding over a 10 year period, the cost-effectiveness of this project for NO_x and PM is \$2,227.00 and \$31,740.00, respectively. Over the remaining 20 year useful life of the vessel lifetime NO_x and PM reductions are 898 and 63 tons, respectively.

The upgraded engines in the *MV Susan Anne* will have electronic injection systems that improve fuel efficiency, thus reducing fuel use, contributing to energy independence and saving money.

The improved fuel efficiency will also yield a reduction in greenhouse gas emissions consistent with the 2008 Connecticut Global Warming Solutions Act.

Projected cost effectiveness and other benefits of the alternative projects that may be considered for Years 3 and 4 have been calculated using a variety of assumptions and estimates and are included for comparison purposes only. The resulting benefits would be expected to vary with each specific vehicle or piece of equipment and with the emission control technologies actually used. For each of the remaining priorities, it was assumed, for comparison purposes, that all of the available funds would be used for each of the options currently under consideration. Under the existing DAS contracts for retrofit technologies, for example, the 2010 allocation of \$235,294 could provide a maximum of 211 DOC retrofits on municipal trucks. For other technologies, average costs, available from similar DERA projects in the region, were used. Unless otherwise indicated, 100% funding was assumed, though incentive options are being developed that have reimbursements of a fixed amount or a percentage of the cost.

The overall cost effectiveness of a TSE project will depend upon the usage of the units. For purposes of comparison, the DEQ was used to project the benefits possible if 16 units were installed and utilized 75 percent of the time, or 18 hours daily, a maximum estimate, and the benefits resulting if the units were used 45 percent of the time, or 10.8 hours daily. The results of that exercise, compiled in Table 5, reveal a range of costs for the reduction of a ton of PM from \$66,955 for maximum usage to \$111,591 if usage is minimal. This compares favorably with the cost effectiveness of retrofits of \$132,476/ton PM for 211 truck DOCs, but highlights the importance of outreach to the trucking industry to ensure full utilization of the TSE facilities and maximize benefits from the program.

Table 5: Potential Lifetime Cost Effectiveness of Some Options for the Connecticut Clean Diesel Grant Program

DOCs on 211 Municipal Trucks	NO_x	PM	HC	CO	CO₂
Amount reduced Lifetime	0	1.78	11.07	20.94	0
Capital Cost Effectiveness (\$/ton)		\$132,475.66	\$21,244.82	\$11,236.56	
28 APUs on Short Haul Trucks	NO_x	PM	HC	CO	CO₂
Amount reduced Lifetime	27.24	0.64	0	0	1,183.43
Capital Cost Effectiveness (\$/ton)	\$8,565.96	\$367,043.13			\$197.17
27 Bus Cabin/Block Heaters	NO_x	PM	HC	CO	CO₂
Amount reduced Lifetime	7.23	0.20	0	0	239.88
Capital Cost Effectiveness (\$/ton)	\$32,491.85	\$1,187,582.16			\$979.25
16 TSE spaces					
Max. Benefit: 16 spaces, 18 hrs/day	NO_x	PM	HC	CO	CO₂
Amount reduced Lifetime	206.71	5.89	0	0	12,172.39
Capital Cost Effectiveness (\$/ton)	\$1,908.79	\$66,954.73			\$32.41
Min. Benefit: 16 spaces, 10.8 hrs/day	NO_x	PM	HC	CO	CO₂
Amount reduced Lifetime (tons)	124.02	3.54	0	0	7,303.43
Capital Cost Effectiveness (\$/ton)	\$3,181.32	\$111,591.21			\$54.02

Connecticut's Clean Diesel Grant Program provides an additional, significant cost benefit to the participating school districts and municipalities in that these public agencies were able to

purchase emission control technologies through one of the existing contracts that resulted from the competitive procurement process required by the clean school bus legislation. Each individual municipality, school district or agency was spared the expending of administrative resources to pursue its own procurement process. Currently, retrofit technology can still be purchased through these contracts.

Are in Areas with High Population and Poor Air Quality: In the Connecticut Clean School Bus program funds were made available to school districts and other entities throughout the State. The data shows that 34% of the buses retrofitted with DERA funds were from school districts in Fairfield and New Haven Counties. All of Connecticut is in nonattainment for the 8-Hour Ozone NAAQS and Fairfield and New Haven Counties, in the southwest, are part of a New York/New Jersey/Connecticut nonattainment area for PM_{2.5}. The CSF operates between New London and Orient Point, NY both of which are densely populated areas that can experience high levels of air pollutants. While the focus of this funding is PM reduction, the CSF project will also yield a reduction in NO_x. This corollary benefit will contribute towards Connecticut achieving attainment of the National Ambient Air Quality Standards (NAAQS) for ozone. In evaluating the applications, extra weight will continue to be given to projects in urban areas and to those within the PM_{2.5} nonattainment area.

Are in Areas Disproportionately Impacted by Air Pollution: The transportation corridor, including I-95, I-84 and I-91 and the rail lines that parallel them, connects New England with the rest of the United States and transits southwest Connecticut. The shore side communities receive air pollution transported from New York City and other East Coast population centers and from barges, ships and ferries accessing Connecticut's ports from Long Island Sound. When ranking applications for these funds, CT DEP will award extra points for environmental justice communities, which are characterized, in part, by disproportionate air pollution impacts, and for projects located near diesel transportation hubs, including ports, rail yards and highways.

Include Certified Control Technologies with Long Expected Useful Lives: Within the framework of the 2007 Clean School Bus Act, verified emission control technologies were required. This was consistent with EPA's requirement for the use of verified technology in the State Clean Diesel Program. The use of verified technologies will continue to be required for any of the options presented for the upcoming years of the program.

DOCs have long lives and few maintenance issues. Since most diesel vehicles and equipment also are used for lengthy periods, it is anticipated that if DOCs are used as retrofits, they will survive as long as the vehicles and equipment are in use in the state.

Similarly, marine engines have a long lifespan, so if another marine engine upgrade project is conducted, emission reductions would be expected to be sustained for its long lifespan. As an example, given the long lifespan of marine engines, the remaining useful life of the *MV Susan Anne* is expected to be 20 years.

Maximize the Useful Life of any Certified Engine Configuration or Verified Technology: To ensure that lifetime benefits of the retrofit technologies are maximized within the state, CT DEP will continue to recommend that all vehicles or equipment retrofitted or purchased under

this program remain operational in the state for a set number of years or that they be replaced by vehicles and equipment with similar or better emission control technologies.

Conserve Diesel Fuel: Reducing excessive idling can significantly decrease fuel usage resulting in decreased diesel air pollution. Connecticut has had an anti-idling law in place since 1970. In 2008, CT DEP launched a new anti-idling campaign to further increase awareness of the public health benefits and fuel savings resulting from the reduction of excess idling. In addition, CT DEP has a long-standing anti-idling campaign that includes the donation of anti-idling signs to any school or school district that requests them. Since anti-idling is a Connecticut priority, CT DEP will give more ranking weight to municipalities or other entities that have a documented anti-idling policy in place.

The TSE, bus heater and APU proposals reduce the fuel consumed by excess idling and therefore the greenhouse gases that would have been produced. Table 6 compiles DEQ calculations demonstrating that the APU, TSE and bus heater proposals would have fuel conservation and, by implication, climate change benefits stemming directly from the use of these idle reduction technologies.

Table 6: Potential Fuel Savings from Idle Reduction Technologies

APUs on 28 Short Haul Trucks	
Annual	Fuel Savings
Baseline of Fleet (gallons/year)	75,631
Percent Reduced (%)	10.8
Amount Saved (gallons/year)	8,176
Lifetime	Fuel Savings
Lifetime Baseline of Fleet (gallons)	986,228
Amount Saved Lifetime (gallons)	117,277
TSE facilities: 16 units	
Maximum Benefit: 16 spaces, 18 hrs/day	
Annual	Fuel Savings
Baseline of Fleet (gallons/year)	250,005
Percent Reduced (%)	33.6
Amount Saved (gallons/year)	84,096
Lifetime	Fuel Savings
Lifetime Baseline of Fleet (gallons)	3,260,065
Amount saved Lifetime (gallons)	1,096,612
Minimum Benefit: 16 spaces, 10.8 hrs/day	
Annual	Fuel Savings
Baseline of Fleet (gallons/year)	250,005
Percent Reduced (%)	20.2
Amount Saved (gallons/year)	50,458
Lifetime	Fuel Savings

Lifetime Baseline of Fleet (gallons)	3,260,065
Amount Saved Lifetime (gallons)	657,967
Compartment/Block Heaters on 27 Buses	
Annual	Fuel Savings
Baseline of Fleet (gallons/year)	101,250
Percent Reduced (%)	1.6
Amount Saved (gallons/year)	1,657
Lifetime	Fuel Savings
Lifetime Baseline of Fleet (gallons)	1,320,300
Amount saved Lifetime (gallons)	21,611

EPA’s Strategic Plan Linkage and Anticipated Outcomes/Outputs

Linkage to EPA Strategic Plan: Providing emission controls for diesel-powered school buses and other vehicles has been a widely accepted method for reducing the health and environmental impacts of diesel pollution. School bus retrofits were particularly desirable in that they greatly benefit children, who have both the greatest exposure to the pollutants and the greatest susceptibility to the health impacts resulting from that exposure. Vehicle or engine replacements have similar, documented benefits in decreasing the harmful effects of air pollution when the replacements are 2010 or Tier 4 compliant. The more stringent emission standards apply not only to the particulates captured by retrofit technology, but also to NO_x, a precursor of ozone. Idle reduction, which results in lowered fuel consumption and decreases in the full range of combustion-related emissions, addresses greenhouse gas pollution, lessening climate change impacts along with the health impacts of criteria pollutants.

Outputs: This program initially allowed school districts to utilize the money provided by the Connecticut General Assembly for school bus retrofits, increasing the number of clean school buses in the state. To date, 353 school buses from 24 school districts have been retrofitted with DOCs and CCVs. CT DEP routinely documents diesel retrofits in the state, including numbers of buses and technologies installed to calculate the air quality benefits.

There are many environmental benefits resulting from installation of DOCs and CCVs on the 353 buses that have been retrofitted. Those annual and lifetime emission reductions are compiled into Table 7 below. It should be noted, however, that the DOC technology by one vendor used in many of the retrofits is verified by EPA for up to 40% reduction in PM, exceeding the default value of 25% in the DEQ.

**Table 7: Potential Lifetime Emission Reductions
From the Connecticut Clean Diesel Grant Program**

Year 1: Completed 353 Buses					
Annual	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	55.69	0.92	3.12	8.78	1,323,750.00
Percent Reduced (%)	0	25	40	30	0
Amount reduced	0	0.23	1.25	2.63	0

Lifetime	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	741.18	12.23	41.53	116.87	195,555.92
Amount reduced	0	3.06	16.61	35.06	0

The Health Benefits Module of EPA’s DEQ projects that the annual benefit from retrofitting 353 school buses in the first year of the program is \$470,000.

Cost effectiveness was also calculated using the DEQ and is shown in Table 4 above. The cost effectiveness for the DOC technology used in the first 353 retrofits was \$230,521 per ton of PM_{2.5} reduced.

Previous experience and procedures used earlier in the program with school bus retrofits will be used by CT DEP to monitor the project management of this work plan. Such measures ensured that any Year 2 and subsequent installations proceed in a timely manner, following the successful retrofits of Year 1.

The *MV Susan Anne* was built in 1964. This project is an early replacement of the engines as the engines were not scheduled for maintenance rebuilds until 2016 for the starboard engine and 2014 for the port engine. This project will upgrade the two main propulsion engines with EPA Certified Tier 2 electronic engine conversion kits and thus give an estimated lifetime NO_x and PM reductions of 898 and 63 tons, respectively.

Projected air quality benefits for some of the alternative projects have been calculated using a variety of assumptions and estimates and are included in Table 8 for comparison purposes. The resulting benefits would be expected to vary with each specific vehicle or piece of equipment and with the emission control technologies actually used. While it is anticipated that funding could be allocated to more than one option, it was assumed, for comparison purposes, that a full year of available funds would be used for each of the options currently under consideration.

**Table 8: Potential Lifetime Emission Reductions
From Some Options for the CT Clean Diesel Grant Program**

DOC Retrofits of a Maximum of 211 Municipal Trucks					
Annual	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	33.92	0.68	1.70	5.35	4,014.36
Percent Reduced (%)	0	20	50	30	0
Amount reduced	0	0.14	0.85	1.61	0
Lifetime	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	442.33	8.88	22.15	69.79	52,347.25
Amount reduced	0	1.78	11.07	20.94	0
A Maximum of 28 APUs on Short Haul Trucks					
Annual	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	34.65	0.50	1.32	5.87	839.50
Percent Reduced (%)	6.0	9.8	0	0	10.8
Amount reduced	2.09	0.05	0	0	90.75
Lifetime	NO _x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO ₂ ton/yr
Baseline of Fleet	451.81	6.52	17.18	76.55	10,947.13

**Table 8: Potential Lifetime Emission Reductions
From Some Options for the CT Clean Diesel Grant Program**

Amount reduced	27.24	0.64	0	0	1,183.43
16 TSE spaces					
Maximum Benefit: 16 spaces, 18 hrs/day					
Annual	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	123.08	1.96	4.13	18.38	2,775.06
Percent Reduced (%)	12.9	23.1	0	0	33.6
Amount reduced	15.85	0.45	0	0	933.46
Lifetime	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	1,604.98	25.56	53.80	239.70	36,186.72
Amount reduced	206.71	5.89	0	0	12,172.39
Minimum Benefit: 16 spaces, 10.8 hrs/day					
Annual	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	123.08	1.96	4.13	18.38	2,775.06
Percent Reduced (%)	7.7	13.8	0	0	20.2
Amount reduced	9.51	0.27	0	0	560.08
Lifetime	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	1,604.98	25.56	53.80	239.70	36,186.72
Amount reduced	124.02	3.54	0	0	7,303.43
Compartment/Block Heaters on a Maximum of 27 School Buses					
Annual	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	4.26	0.07	0.24	0.67	1,123.88
Percent Reduced (%)	13.0	21.6	0	0	1.6
Amount reduced	0.55	0.02	0	0	18.40
Lifetime	NO_x ton/yr	PM ton/yr	HC ton/yr	CO ton/yr	CO₂ ton/yr
Baseline of Fleet	55.55	0.92	3.11	8.76	14,655.33
Amount reduced	7.23	0.20	0	0	239.88

Outcomes:

- Short Term Outcomes:** The Connecticut Clean Diesel Plan of 2006 recommended that communities and school districts seek out funding opportunities for the installation of emission controls from sources such as EPA. Leading by example, CT DEP is seeking approval of a work plan to use funding from EPA to continue increasing the number of clean diesel vehicles in the state or to advance other diesel emission reduction projects identified above. This program will be featured as part of CT DEP's education and outreach efforts for diesel emissions reduction.

Idle reduction programs not only provide technologies to reduce idling emissions, but they inherently educate drivers about the pollution impacts associated with excess idling. This effect can be enhanced by outreach efforts to truck and bus drivers and others who operate diesel engines at ports and on construction sites. Behavior changes that lead to reduced idling have immediate, beneficial outcomes.

- **Medium Term Outcomes:** In the first years of this program, 24 new school districts had their fleets retrofitted, nearly tripling the number of participating school districts in the state, expanding number of fleets already retrofitted or scheduled for retrofit in Mansfield, Newington, Norwich, New Haven, Bridgeport, Fairfield, Old Lyme, Hartford, Plainville, Westport and Hamden, to further protect the health of Connecticut's schoolchildren. Tables 7 and 8 above summarize the potential emission reductions resulting from the school bus project and its alternatives.

The retrofitting and replacement of such a large number of diesel engines also benefits the regional air quality. The *MV Susan Anne* project is a good example of this, originally built in 1964; the early replacements of its engines will save an annual emission reduction of 44.9 and 3.15 tons of NO_x and PM, respectively. The PM from diesel engines contributes to haze, which limits visibility, a concern in scenic areas in the region.

- **Long Term Outcomes:** The fact that the Clean School Bus legislation required installation of CCVs along with the emission controls greatly increased the health benefits to students riding school buses. CCVs filter the exhaust from the engine compartment which can make its way into the cabin. This feature should eventually decrease the number of student absences associated with respiratory illnesses such as asthma and bronchitis.

Reducing the emissions of diesel particulates from the *MV Susan Anne* engines builds on the air quality benefits already resulting from passengers taking advantage of ferry service to Long island instead of driving their cars. It is projected that these engine upgrades will reduce diesel particulate emissions from the *MV Susan Anne* by up to 898 tons of NO_x and 63 tons of PM.

Projects that encourage early retirement and replacement with 2010 or Tier 4 compliant engines will also yield decreases in ozone stemming from their NO_x reduction technologies. This will enhance the decreases in cardio-pulmonary diseases. In addition, the emission controls used for the school bus, CSF and municipal truck projects will reduce the black carbon constituent of diesel exhaust, which is linked to climate change, making a contribution to the long term environmental health of the region. The TSE, bus heater and APU options would yield additional climate change benefits from the decrease in excess idling, which lessens the amount of fuel burned and results in the production of smaller amounts of the greenhouse gas, carbon dioxide.

Project Partners

The 2007 Connecticut School Bus Act owes its existence to a wide group of environmental advocacy organizations in the region. In the first year of the program, CT DEP enlisted their assistance in promoting the program and encouraging school districts to participate. Other stakeholders who contributed to the 2006 Connecticut Clean Diesel Plan and legislators responsible for the Act were invited to participate in the workshop held in January of 2009.

Through its extensive experience with school bus retrofit projects, CT DEP has developed working relationships with many of the major school bus contractors and technology providers in the state. These associations will continue to be active as the diesel program develops. A true partnership with communications between all parties (municipalities, vehicle and equipment owners, technology vendors and CT DEP) is of critical importance in the success of an emission control project.

CT DEP is able to engage a wide range of industry and environmental advocacy groups, along with state and local agencies, to publicize the availability and benefits of the various programs. Potential partners in this effort could include the Connecticut Council of Small Towns, the Connecticut Conference of Municipalities, the Motor Transport Association of Connecticut, EPA SmartWay Partners, Clean Water Action, Clean Cities, the Connecticut Coalition of Environmental Justice, Environment Northeast, and the State of Connecticut Motor Carrier Advisory Committee. CT DEP will continue to work closely with the Northeast Diesel Collaborative to ensure that results are communicated and lessons learned are shared with other stakeholders in the region.

Sustainability of State Program

One requirement for the Connecticut Clean School Bus Program is that retrofitted buses remain in the state for a minimum of three years unless replaced by buses equipped with similar or better technology. That is the initial plan for sustaining the environmental benefits of the program beyond the funding period. However, one of the major conclusions of the Connecticut Clean Diesel Plan of 2006 was that retrofits, as a diesel pollution control strategy, will decrease in importance as more stringent federal emission standards are phased in. This is particularly relevant for school buses in Connecticut, where many of the school bus contracts stipulate that buses be phased out of the fleet after an average of six years. This means that by 2013, most of the school buses in the state will have 2007-compliant engines or better. Since, it may be impractical to sustain a retrofit program indefinitely, the CT DEP will advance fleet turnover as the preferred method for decreasing school bus emissions into the future.

CT DEP will, continue to promote the successful implementation of the highly popular Connecticut Clean School Bus Program. All of the DERA-funded Connecticut Clean Diesel programs will continue to be featured on the agency website and in education and outreach materials designed to encourage retrofits, replacements and other diesel emission reduction initiatives for construction and on-road transportation fleets.

The *MV Susan Anne* moves an average of 166 vehicles and 411 passengers daily and is anticipated to have a remaining useful life of 20 years. This vessel is relied upon by Connecticut and New York residents for transportation. Given the long lifespan of ferry engines this project will yield significant reductions in NO_x and PM emissions in Connecticut for years to come.

Sustainability will be an element in the selection of alternative projects. Any of the options developed to date will include recommendations that the emission control technologies be maintained for a prescribed time period or be replaced with technologies that have greater emission control effectiveness.

Quality Assurance and Quality Control

This program does not involve environmentally related measurements or data generations that would need quality assurance and quality control plans and procedures as pursuant to 40 CFR 31.45.

BUDGET NARRATIVE

Project Budget

Table 9 summarizes the projected budget for the Connecticut Clean Diesel Grant Program. The budget that appears in the June 25, 2008 revision to the Application for Federal Assistance was changed for the 2009 application. Initially, CT DEP budgeted a total state share of \$413,488, with the assumption that matching funds would be available for FY 2009 of the program. This amount was revised to reflect the fact that matching funds are not available for the second year of the program leaving a total state match of only \$196,880 over the two year period. Similarly, without the second year of matching funds, the state was not eligible for the EPA Match Incentive in the second year, which had been projected to be \$108,284. Therefore, the total EPA Allocation for the two year period was limited to \$530,614. No matching funds are available for Year 3 of the program so the budget for Year 3 will be \$235,294. Also, no matching funds are available for Year 4 of the program so the budget for year 4 will be \$190,493.00.

The projected budget for FY 2009-2011 categorizes all funds as “Other” because, following EPA guidelines, all funds will be granted to municipalities or other entities in accordance with the projects proposed in this narrative, or to meet other agency needs for diesel reductions in the grant period.

Table 9: Project Budget

Budget Category	FY 2008		FY 2009		FY 2010		FY 2011 (estimated)	
	EPA Allocation	State Match (if applicable)	EPA Allocation	State Match (if applicable)	EPA Allocation	State Match (if applicable)	EPA Allocation	State Match (if applicable)
1. Personnel	\$0	in-kind	\$0		\$0		\$0	
2. Fringe Benefits	\$0	\$0	\$0		\$0		\$0	
3. Travel	\$0	\$0	\$0		\$0		\$0	
4. Supplies	\$0	\$0	\$0		\$0		\$0	
5. Equipment	\$0	\$0	\$0		\$0		\$0	
6. Contractual								
Retrofit Technologies purchased under DAS Contract #07PSX0315, which includes installation and warranty	Awarded: \$295,320.00 -Spent in 2009: \$250,497.00 -Spent in 2010: \$30,800.19 Balance: \$14,022.81	\$196,880.00*	\$0		\$0		\$0	
7. Program Income	\$0	\$0	\$0		\$0		\$0	
8. Other	\$0	\$0	Year 2 funds have been combined with the remaining funds from Year 1 for CSF Ferry Engine Upgrade Project.		\$0			
Year 3-4 funding is categorized to allow greatest flexibility in funding alternative projects.			\$235,294.00		\$235,294.00		\$190,493.00	
9. Total Direct Charges	\$295,320.00	\$196,880.00	\$235,294.00		\$235,294.00		\$190,493.00	
10. Indirect Charges		\$0	\$0		\$0		\$0	
Grand Total	\$295,320.00	\$196,880.00	\$235,294.00		\$235,294.00		\$190,493.00	

*A total of \$423,750.00 was spent from PA 07-4 funds in Year 1.

Explanation of Budget Framework

CT DEP provided “in-kind” support for administration from the first year of this program.

Contracts for diesel retrofits under this program were awarded under DAS Contract #07PSX0315, following the state competitive procurement process required by section 4a-57(a) of the Connecticut General Statutes and reproduced below.²

Sec. 4a-57. (Formerly Sec. 4-112). Competitive bidding or competitive negotiation for purchases and contracts. Regulations. Waivers. Exceptions. (a) All purchases of, and contracts for, supplies, materials, equipment and contractual services, except purchases and contracts made pursuant to the provisions of subsection (b) of this section and public utility services as provided in subsection (e) of this section shall be based, when possible, on competitive bids or competitive negotiation. The commissioner shall solicit competitive bids or proposals by providing notice of the planned purchase in a form and manner that the commissioner determines will maximize public participation in the competitive bidding or competitive negotiation process, including participation by small contractors, as defined in section 4a-60g, and promote competition. In the case of an expenditure which is estimated to exceed fifty thousand dollars, such notice shall be inserted, at least five calendar days before the final date of submitting bids or proposals, in two or more publications, at least one of which shall be a major daily newspaper published in the state and shall be posted on the Internet. Each notice of a planned purchase under this subsection shall indicate the type of goods and services to be purchased and the estimated value of the contract award. The notice shall also contain a notice of state contract requirements concerning nondiscrimination and affirmative action pursuant to section 4a-60 and, when applicable, requirements concerning the awarding of contracts to small contractors, minority business enterprises, individuals with a disability and nonprofit corporations pursuant to section 4a-60g. Each bid and proposal shall be kept sealed or secured until opened publicly at the time stated in the notice soliciting such bid or proposal.

Match Requirements

Under the 2007 Connecticut Clean School Bus Act, CT DEP was allocated a total of \$10 million to retrofit the school buses in the state. Funds from this grant have been used to supplement state funds allocated to the Connecticut Clean School Bus Program, enabling school districts to bridge the gap left by the original legislative program under PA 07-4. Statutory language dictated the time frame within which the state-allocated funds must be spent.

The combination of budget and schedule issues limited the number of buses that could be retrofitted with the 2008 State DERA supplemental funding. CT DEP has currently spent \$250,494.00 of the DERA funds and \$423,750.00 appropriated under PA 07-4. Since the state legislative funds are no longer available, the remaining DERA funds could not be utilized as

² Contracts can be found on DAS Website at http://www.das.state.ct.us/Purchase/bl_Contract_display_detail.asp?F_Tran_Type=3&F_ID=13950.

“supplemental funding” for additional retrofits without a revision of the grant agreement. Also, without the PA 07-4 funds, CT DEP is unable to provide matching funds for the second through the fourth year of the program.

On June 15, 2009, CT DEP submitted a revision request to have the remaining funds from the first year allocation, as well as all of the second year allocation, reprogrammed to cover one hundred percent of the cost of retrofitting up to 200 additional school buses with DOCs and CCVs. The revision request was granted and the agreement was signed and returned on October 5, 2009.

Recognizing that certain challenges could make it infeasible to perform additional school bus retrofits with these State DERA grant funds, CT DEP developed a prioritized list of alternative programs that could be funded in other years of this grant period. This list of prioritized alternatives was included in the Project Narrative for the Year 2 renewal application for this State DERA grant and has been expanded for Years 3 and 4. The Year 3 application was approved by EPA on August 11, 2010. EPA approved the budget for the CSF project on October 1, 2010.

SIGNATURES

SIGNATURES

Amey W. Marella
Deputy Commissioner
Connecticut Department of Environmental Protection

Date

APPENDIX

Resources

States may wish to consult the CFR and OMB circulars as referenced in the Federal Register Notice. Links to these references are:

40 CFR 31: <http://www.gpoaccess.gov/cfr/index.html>

OMB Circular A-87: <http://www.whitehouse.gov/omb/circulars/index.html>