APPENDIX D-4

BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

State of Connecticut
Round 1
Diesel Emissions Reduction Act (DERA) Option
September 23, 2019

APPENDIX D-4
Beneficiary Eligible Mitigation Action Certification

BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

Beneficiary The State of Connecticut

Lead Agency Authorized to Act on Behalf of the Beneficiary The Connecticut Department of Energy & Environmental Protection
(Any authorized person with delegation of such authority to direct the Trustee delivered to the Trustee pursuant to a Delegation of Authority and Certificate of Incumbency)

Action Title:	Diesel Emission Reduction Act (DERA) Option
Beneficiary's Project ID:	DERA Option Round 1
Funding Request No.	*(sequential)* 2
Request Type: **(select one or more)**	■ Reimbursement ☐ Advance ☐ Other (specify):
Payment to be made to: **(select one or more)**	☐ Beneficiary ■ Other (specify): Grant Recipient
Funding Request & Direction (Attachment A)	☐ Attached to this Certification ■ To be Provided Separately

SUMMARY

Eligible Mitigation Action Action Type	☐ Appendix D-2 item (specify): ■ Item 10 - DERA Option (5.2.12) (specify and attach DERA Proposal): Attached
Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1): See attached	
Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2): See Attached	
Estimate of Anticipated NOx Reductions (5.2.3): See Attached	
Identification of Governmental Entity Responsible for Reviewing and Auditing Expenditures of Eligible Mitigation Action Funds to Ensure Compliance with Applicable Law (5.2.7.1): The Connecticut Department of Energy & Environmental Protection (DEEP)	
Describe how the Beneficiary will make documentation publicly available (5.2.7.2). See Attached	
Describe any cost share requirement to be placed on each NOx source proposed to be mitigated (5.2.8). See Attached	
Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9). See Attached	

If applicable, describe how the mitigation action will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).
See Attached

ATTACHMENTS
(CHECK BOX IF ATTACHED)

☐	**Attachment A**	**Funding Request and Direction.**
☑	**Attachment B**	**Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline (5.2.4).**
☑	**Attachment C**	**Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11).**
☑	**Attachment D**	**Detailed cost estimates from selected or potential vendors for each proposed expenditure exceeding $25,000 (5.2.6). [Attach only if project involves vendor expenditures exceeding $25,000.]**
☑	**Attachment E**	**DERA Option (5.2.12). [Attach only if using DERA option.]**
☐	**Attachment F**	**Attachment specifying amount of requested funding to be debited against each beneficiary's allocation (5.2.13). [Attach only if this is a joint application involving multiple beneficiaries.]**

CERTIFICATIONS

By submitting this application, the Lead Agency makes the following certifications:

1. **This application is submitted on behalf of Beneficiary** The State of Connecticut **, and the person executing this certification has authority to make this certification on behalf of the Lead Agency and Beneficiary, pursuant to the Certification for Beneficiary Status filed with the Court.**

2. **Beneficiary requests and directs that the Trustee make the payments described in this application and Attachment A to this Form.**

3. **This application contains all information and certifications required by Paragraph 5.2 of the Trust Agreement, and the Trustee may rely on this application, Attachment A, and related certifications in making disbursements of trust funds for the aforementioned Project ID.**

4. **Any vendors were or will be selected in accordance with a jurisdiction's public contracting law as applicable. (5.2.5)**

5. **Beneficiary will maintain and make publicly available all documentation submitted in**

support of this funding request and all records supporting all expenditures of eligible mitigation action funds subject to applicable laws governing the publication of confidential business information and personally identifiable information. (5.2.7.2)

DATED: Sept. 24, 2019

Paul E. Farrell
Director of Air Planning

Department of Energy & Environmental Protection

[LEAD AGENCY]

for

State of Connecticut

[BENEFICIARY]

APPENDIX D-4 – Supplemental Information
Beneficiary Eligible Mitigation Action Certification

Beneficiary: State of Connecticut
Lead Agency: Department of Energy and Environmental Protection

In support of funding request No. 2 – DERA Option

Appendix D-4-Summary

Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1): Connecticut's 2018 Mitigation Plan, written in accordance with the Environmental Mitigation Trust Agreement for State Beneficiaries resulting from the Settlement in *United States of America v. Volkswagen AG et al.*, Case No. 16-cv-295 (N.D. Cal.) (VW Nitrogen Oxides (NO_x) Mitigation Trust) outlined a protocol for exercising the Diesel Emission Reduction Act (DERA) option. The Connecticut Department of Energy and Environmental Protection (DEEPintends to implement the DERA Option, utilizing Trust funds to match its State DERA allocation to allow for a greater variety of eligible projects. Atlas Concrete Products (Atlas) and Sysco Leasing, LLC (Sysco) were chosen to receive funds under the DERA Option for the early replacement of commercial trucks.

Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):
Potential air quality benefits are weighted heavily in the selection of projects to be funded through the State's DERA program and such benefits are calculated for all of the projects implemented with State DERA funds. The chosen 2018 DERA Option projects are early replacement of commercial trucks which yield emission reductions from the improved technology on the new engines. Idle reduction programs, incorporated into the funded projects, also generate significant air quality benefits. Replacing the diesel flatbed truck and crane for Atlas will have an annual health benefit of $70,000 while the Sysco diesel freight trucks replacement's annual health benefit is calculated to be $130,000.

The Sysco project will replace two (2) Class 7 and five (5) Class 8 trucks with two Model Year (MY) 2019 International 4300 SBA 4x2 and five MY 2019 Mack Anthem 42T units. The trucks will be used to transport food products from the Rocky Hill, Connecticut facility to restaurants, healthcare and educational facilities throughout the state. Replacing these food delivery trucks with the newest generation of clean diesel power decreases pollution in the communities they serve. The project will enhance air quality in the surrounding residential neighborhoods by reducing NO_x emissions by 89% and decreasing fuel consumption. The Sysco project will also decrease diesel particulates in the New York/New Jersey/Connecticut maintenance area for fine particulate matter ($PM_{2.5}$) resulting in health benefits in neighborhoods along those transportation routes that have been dispropostionately impacted by air pollution from diesel vehicles.

The second DERA Option project grantee, Atlas Concrete Products, will replace one 2002 MY Mack Class 8 flatbed with hydraulic crane with a 2019 MY Mack granite 64 FR and Palfinger hydraulic loader crane. Emissions benefits will result from both the 2019 replacement truck and the new crane for Atlas. Technology advances on the new truck will enhance air quality by reducing engine emissions and improve

engine efficiency by decreasing fuel consumption. The reduction in emissions of the ozone precursor, NO_x, will be a benefit in a state that is in nonattainment with the National Ambient Air Quality Standards (NAAQS) for Ozone.

Estimate of Anticipated NO_x Reductions (5.2.3):
The estimated emissions were calculated using the EPA's Diesel Emissions Quantifier (DEQ.) The tons of pollution reduced or avoided over the lifetime of the engines/vehicles selected for the 2018 State DERA Option projects is 7.26 tons of NO_x, and 0.59 tons of $PM_{2.5}$. The net reductions, or avoidance, in diesel fuel use will be, at a minimum, 5,967 gallons per year from the selected DERA projects.

Describe how the Beneficiary will make documentation publicly available (5.2.7.2):
Complete information and documentation will be posted on DEEP's Volkswagen incentive program website at: www.ct.gov/deep/vw; promotional materials will also be posted and cross-linked on DEEP's Diesel Grants and Funding page at:
https://www.ct.gov/deep/cwp/view.asp?a=2684&q=322100&deepNav_GID=1619 and on its DriveCleanCT Facebook Page.

Describe any cost share requirement to be placed on each NO_x source proposed to be mitigated (5.2.8):
The mandatory cost share for diesel replacement is dictated by the DERA program and set at a minimum of 75%. Because these grantees were awarded less than 25% of the project cost, their cost share is greater than 75%.

DEEP is granting $149,233.61 to Sysco Leasing, LLC for the replacement of five, MY 2005-2006, Class 8 diesel freight trucks and two, MY 2006 Class 7 diesel freight trucks with 2019 MY diesel equivalents. The funds will come from the "DERA Option" under VW NO_x Mitigation Trust. The project cost is $620,210 and the awarded grant represents less than 25% of the projected cost of the seven 2019 MY replacement trucks.

Atlas Concrete Products will receive $76,280.79 toward the early replacement of a model year 2002 Class 8 flatbed truck with hydraulic crane. This grant will represent less than 25% of the $317,020.48 cost of the project. The funds will come from the "DERA Option" under VW NO_x Mitigation Trust.

Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9):
On February 22, 2018, within 30 days of the State being named a Beneficiary, the Connecticut Department of Energy and Environmental Protection (DEEP), the State's Lead Agency as designated in accordance with the requirements specifed in Appendix D-3, contacted, by U.S. Post and electronic mail, the U.S. Departments of Agricutlture and Interior, as specificed in subparagraph 4.2.8, plus the Bureau of Indian Affairs, the Defense Department and Bureau of Prisons, all of which have lands in the state.

If applicable, describe how the mitigation action will mitigate the impacts of NO_x emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10):

The primary goal of Connecticut's 2018 Mitigation Plan is to improve and protect ambient air quality by reviewing, analyzing and implementing eligible mitigation projects that will support statewide energy, environmental and economic development goals. DEEP's locational criteria for evaluating and selecting projects for State DERA funding have consistently addressed location in environmental justice

communities, which are characterized, in part, by disproportionate air pollution impacts, and nearness to diesel transportation hubs, including ports, rail yards and highways. Consideration is also given to projects that are consistent with state energy and clean transportation policies and to applicants with anti-idling policies. Since the Atlas and Sysco projects meet the locational selection criteria, mitigation funds will be used to mitigate the impacts of NO_x emissions on communities that have historically experienced a disproportionate share of the state's air pollution burden. Additionally, both Atlas and Sysco implement anti-idling programs, satisfying a preferential criteria as outlined in Connecticut's 2018 Mitigation Plan and during the selection process.

ATTACHMENT B

ELIGIBLE MITIGATION ACTION MANAGEMENT PLAN INCLUDING DETAILED BUDGET AND IMPLEMENTATION AND EXPENDITURES TIMELINE

ATTACHMENT B

PROJECT MANAGEMENT PLAN
PROJECT SCHEDULE AND MILESTONES
DERA OPTION CATEGORY

Project Management Plan– Project Schedule and Milestones

Milestone	Date
Connecticut submitted its beneficiary form to US District Court, CA Northern District and to the Trustee	October 2017
Connecticut certified as a Designated Beneficiary under the VW Trust	January 29, 2018
Connecticut submitted its final mitigation plan to Wilmington Trust (the Trustee).	April 26, 2018
Request for Round 1 Proposals Announced	May 30, 2018
DEEP Informational Webinar	June 19, 2018
Request for Round 1 Proposals Closing - Application Deadline	July 31, 2018
Round 1 Awards Selected and Notification sent to Awardees/Recipients	November 13, 2018
Recipients enter into Contracts, Purchase Orders	CY 2019, Q1
Class 7 & 8 Trucks Delivered	CY 2019, Q2 –Q3
Recipients submit proof of destruction and scrappage documentation	CY 2019, Q3
DEEP Receives all required invoices and documentation	Upon completion but no later than August 31, 2019
DEEP reviews, requests corrections if necessary, certifies project completion, and provides reimbursement.	CY2019, Q3
DEEP reports to Trustee on status of and expenditures with Mitigation Actions completed and underway	Within 6 months of first disbursement; January 30 and July 30 thereafter

Project Budget – DERA Option

Budget Category	Total Approved Project Budget	Share of Total Budget Funded by the Trust	Cost Share Paid by Recipient #1 & #2 (Atlas & Sysco)
Equipment Expenditure:			
Atlas Equipment –Recipient #1	$317,020.48	$76,280.79	$240,739.69
Sysco Equipment–Recipient #2	$620,210.00	$149,233.61	$470,976.39
Project Totals	$937,230.48	$225,514.40	$711,716.08
Percentage of Total Project Cost	100%	24.1%	75.9%
DEEP Administrative[1]	$33,827.16	$33,827.16	$0
Project Totals with DEEP Administrative	$971,057.64	$259,341.56	$711,716.08

[1]Subject to Appendix D-2 15% administrative cap

PROJECTED TRUST ALLOCATIONS

	2017	2018	2019 - 2020
1. Anticipated Annual Project Funding Request to be paid through the Trust	$0	$0	$225,514.40
2. Anticipated Annual Cost Share	$0	$0	$711,716.08
3. Anticipated Total Project Funding by Year (line 1 plus line 2)	$0	$0	$937,230.48
4. Cumulative Trustee Payments Made to Date Against Cumulative Approved Beneficiary Allocation	$0	$0	$0
5. Current Beneficiary Project Funding to be paid through the Trust (line 1)	$0	$0	$259,341.56
6. Total Funding Allocated to Beneficiary, inclusive of Current Action by Year (line 4 plus line 5)	$0	$0	$259,341.56
7. Beneficiary Share of Estimated Funds Remaining in the Trust	$0	$0	$55,464,043.38
8. Net Beneficiary Funds Remaining in Trust, net of cumulative Beneficiary Funding Actions (line 7 minus line 6)	$0	$0	$55,204,701.82

ATTACHMENT B

ELIGIBLE MITIGATION ACTION MANAGEMENT PLANS

ATTACHMENT B-1

ELIGIBLE MITIATION ACTION MANAGEMENT PLAN FOR ATLAS CONCRETE PRODUCTS

Scope of Work

Purpose: The purpose of this project is to replace, for the Atlas Concrete Products (Atlas Concrete), one 2002 model year (MY) Mack Class 8 flatbed truck with hydraulic crane, VIN 1M2K189C23M021426; the engine is a 2002 MY Mack, E7-350 engine, Serial Number 2C039. The vehicle will be replaced with a 2019 MY Mack Granite 64 FR with a Palfinger hydraulic loader crane. Because of technology advances on the new truck, the project will enhance air quality by reducing engine emissions and decreasing fuel consumption. The reduction in emissions of the ozone precursor, nitrogen oxides, is critically needed in a state that is in nonattainment with the 2008 National Ambient Air Quality Standards for Ozone.

Atlas Concrete shall be responsible for all phases of the project including project management services and materials as needed to complete this project. The project shall also require documentation of the scrappage of the replaced truck.

Project Title: ***2019 Mack Truck with Crane Replacement***

Description: Following issuance of this purchase order, Atlas Concrete shall begin providing the services outlined in this Scope of Work, and continue to provide services through the completion of the project, which will be no later than August 31, 2019.

1. Funding:

The Connecticut Department of Energy and Environmental Protection (DEEP) is granting $76,280.79 under the 2018 Diesel Emission Reduction Act (DERA) program to Atlas Concrete, the grantee. Atlas Concrete has agreed to contribute an estimated additional $240,739.69 to the above referenced project, bringing the estimated total value of the project to $317,020.48. Funds for this project will be from the DERA Option under the Environmental Mitigation Trust Agreement for State Beneficiaries resulting from the Settlement in *United States of America v. Volkswagen AG et al.*, Case No. 16-cv-295 (N.D. Cal.). Payment will be made directly by the Wilmington Trust, the trustee for Volkswagen AG. Payment by Wilmington Trust is contingent upon DEEP's approval of Atlas Concrete's documentation of the completion of the tasks outlined in this Scope of Work.

2. Work Tasks

The Scope of Work is summarized according to the following three tasks:

Task 1: Planning and Procurement
Task 2: Delivery and Scrappage
Task 3: Provide Updates and Information for Quarterly and Other Reports as Required

Task 1: Planning and Procurement:

Atlas Concrete shall conduct the project, provide oversight and track project progress. Atlas Concrete shall comply with all applicable Federal, State and local laws, rules and regulations, and meet the conditions outlined in the DERA2 Grant Agreement between DEEP and EPA (3. DERA Grant Conditions, below). Atlas Concrete will provide documentation of any payments made in association with the project. The procurement of tangible personal property having a useful life of more than one year and an acquisition cost of one thousand dollars ($1,000.00) or more per unit must be approved by the DEEP Commissioner before acquisition.

Task 1 Deliverables:

- Summary of procurement process for selecting replacement truck and crane (provide three estimates, if possible)
- Summary of criteria used for selecting Vendor (lowest cost not required)
- Copy of Purchase Order issued for new truck
- Documentation of any down payments or other up-front payments made for the project

Task 2: Delivery of New Truck and Scrappage of Replaced Truck, Completion of Project:

After selecting a Vendor and issuing a Purchase Order for the new truck, Atlas Concrete will track the progress of the manufacturing and outfitting of the new truck for its intended use. When that process is complete, Atlas Concrete shall take delivery of the vehicle.

Atlas Concrete shall render the replaced vehicle, its engine and the crane inoperable, in accordance with EPA requirements for scrappage under the DERA grant. This can include cutting the frame and drilling a 3-inch hole in the engine or performing other procedures to render the vehicle inoperable.

Equipment and vehicle components that are not part of the engine or chassis may be salvaged from the unit being replaced (e.g. plow blades, shovels, seats, tires, etc.). If scrapped or salvaged engines, vehicles, equipment, or parts are to be sold, program income requirements apply.

Atlas Concrete shall provide documentation that the vehicle has been scrapped; this includes EPA's Certificate of Destruction (Appendix A) and the following photos: 1) the VIN plate, 2) the engine serial number plate, 3) the engine before and after drilling and 4) the truck before and after cutting the chassis. Documentation required for destruction of the crane will be obtained from EPA before the project is completed. Atlas Concrete shall submit to DEEP an invoice for payment, along with confirmation that the project has been completed.

Task 2 Deliverables:

- Invoice from the Vendor for delivered truck and documentation of payment to Vendor
- EPA-required photographic scrappage documentation for replaced truck and crane
- Completed copy of EPA Certificate of Engine/Chassis Destruction
- Receipt for scrap value or other income from the scrapped vehicle, if applicable

- Confirmation that the project is completed and that the new truck is operating satisfactorily for its intended use
- An invoice to DEEP for reimbursement under the grant

Task 3: Provide Updates and Information for Quarterly and Other Reports as Required.

Atlas Concrete shall provide DEEP with status updates to be included in DEEP's quarterly reports to EPA. Quarterly progress updates will be requested before the 1st of the month following the end of a calendar quarter (i.e., April 1, 2019 and July 1, 2019). Atlas Concrete shall contribute EPA-required material for the final report upon completion of the project, which shall be as soon as possible but no later than August 31, 2019. Items to be provided may include, but will not be limited to:

- Environmental results;
- Work plan accomplishments;
- Challenges encountered during planning and implementation;
- Emissions reductions;
- Budgetary issues, including funds expended;
- Public relations activities;
- Technical and identification information for vehicles and engines; and
- Jobs preserved or created.

Task 3 Deliverables:

- *Status Updates for Quarterly Reports*
- *EPA-required material for Final Report*

3. DERA Grant Conditions

Atlas Concrete commits to complying with the administrative conditions listed in the 2018 State DERA Cooperative Agreement #DS 00A00154-1, between DEEP and EPA, which is attached as Appendix B.

4. Submission of Materials:

For the purposes of this Scope of Work, all correspondence, summaries, reports, products and requests shall be submitted to:

Patrice Kelly
Department of Energy and Environmental Protection
Bureau of Air Management
79 Elm Street
Hartford, CT 06106-5127
E-Mail: patrice.kelly@ct.gov

All **invoices** must include the PO #, PS #, Project Title, DEEP Bureau/Division name, amount dates and description of services covered by the invoice, and shall be submitted to:

DEEP – Financial Management Division
Accounts Payable
79 Elm Street
Hartford, CT 06106-5127

5. Extensions/Amendments:

Formal written amendment of the agreement is required for changes to the terms and conditions specifically stated in the original agreement and any prior amendments.

Due to the lapsing of the DERA funding, no time extensions are possible with this grant. **The Project must be completed by August 31, 2019 so that payments can be processed by September 30, 2019, the close-out date for the 2018 State DERA Grant Agreement #DS 00A00154-1, between DEEP and EPA, which is attached as Appendix B.**

6. Budget and Schedule of Payments:

Payments by the Commissioner shall allow for use of funds to meet allowable financial obligations incurred in conjunction with this Project, prior to expiration of this Purchase Order and shall be scheduled as follows, provided that the total sum of all payments shall not exceed $76,280.79.

Budget and Schedule of Payments

Task & Deliverables	Task Delivery Date	Estimated Budget		
		Project Total	Atlas Concrete Cost-Share	CT State DERA
1. Planning & Procurement: • Approved work plan with project timeline/schedule • Summary of procurement process for selecting replacement truck and crane • Summary of criteria used for selecting Vendor from DAS list and names of Vendors selected	Following execution of Contract			
• Copy of Purchase Order issued for new truck • Documentation of any advance payments if applicable	Following execution of Contract			
2. Delivery of New Truck, Scrappage of Replaced Truck, Completion of Project • Invoice from the Vendor for delivered truck and documentation of payment to Vendor	July 31, 2019	$317,020.48	$240,739.69	

• EPA-required photographic scrappage documentation for replaced truck and crane • Completed copy of EPA Certificate of Engine/Chassis Destruction • Receipt for scrap value or any other income from the scrapped truck and crane if applicable • Confirmation that the project is completed and that the truck is operating satisfactorily for its intended use • An invoice to DEEP for reimbursement under the grant	August 31, 2019			$76,280.79
3. Provide Updates and Information for Quarterly and Other Reports • Status Update for Sixth Quarter Report • Status Update for Seventh Quarter Report • EPA-required material for Final Report (upon completion but no later than 08/31/19)	04/01/19 07/01/19 08/31/19			
Total:		$317,020.48	$240,739.69	$76,280.79

Payment for each task referenced above cannot exceed the budgeted amount for each task. Total Payment shall not exceed a maximum of $76,280.79, which shall constitute full and complete compensation from the Wilmington Trust for the early replacement of one Class 8 truck and crane. The total sum of all payments shall not exceed total funds committed by DEEP.

Payment is contingent upon completion of the tasks outlined in this Scope of Work and providing documentation of compliance with the 2018 State DERA Cooperative Agreement #DS 00A00154-1 between DEEP and EPA, which is attached as Appendix B.

Signature, Atlas Concrete's Authorized Representative _____ 3-29-19

Typed Name: James Pryor Date

Signature, DEEP Assigned Project Manager _____ 4/1/19

Typed Name: Patrice P. Kelly Date

ATTACHMENT B-2

ELIGIBLE MITIATION ACTION MANAGEMENT PLAN FOR SYSCO LEASING, LLC

Scope of Work

Purpose: The purpose of this project is to replace the two Class 7 and five Class 8 trucks listed below with two Model Year (MY) 2019 International 4300 SBA 4x2 and five MY 2019 Mack Anthem 42T units. The trucks will be used to transport food products from Rocky Hill, Connecticut to restaurants, healthcare and educational facilities throughout the state. Because of technology advances on the new trucks, the project will enhance air quality by reducing engine emissions and improve engine efficiency by decreasing fuel consumption. The reduction in emissions of the ozone precursor, nitrogen oxides, will be a benefit in a state that is in nonattainment with the National Ambient Air Quality Standards for Ozone. The project will also decrease diesel particulates in a New York/New Jersey/Connecticut maintenance area for fine particulate matter and will have health benefits in neighborhoods along those transportation routes that have been dispropostionately impacted by air pollution from diesel vehicles.

Unit Number	Vehicle Class	Engine Make	Engine Model	Engine Model Year	Vehicle Identification Number(VIN)	Engine Serial Number
100666	Class 7	Volvo	VE-D12	2006	4V5NC9GF37N450492	558752
100667	Class 7	Volvo	VE-D12	2006	4V5NC9GF37N450493	558817
100690	Class 8	Volvo	VE-D12	2005	4V4M19GF26N445160	548557
100692	Class 8	Volvo	VE-D12	2005	4V4M19GF66N445162	551567
100696	Class 8	Volvo	VE-D12	2006	4V4M19GF97N466797	584922
100700	Class 8	Volvo	VE-D12	2006	4V4M19GF77N466801	584522
100705	Class 8	Volvo	VE-D12	2006	4V4M19GF97N466802	584634

Sysco Corporation (Sysco) shall be responsible for all phases of the project including project management services and materials as needed to complete this project. The project shall also require documentation of the scrappage of the replaced trucks.

Project Title: ***2018 Sysco Connecticut Diesel Truck Emission Reduction***

Description: Following issuance of this contract, Sysco shall begin providing the services outlined in this Scope of Work, and continue to provide services through the completion of the project, which will be no later than August 31, 2019.

1. Funding:

The Connecticut Department of Energy and Environmental Protection (DEEP) is granting $149,233.61 under the 2018 Diesel Emission Reduction Act (DERA) program to Sysco, the grantee. Sysco will contribute an estimated additional $470,976.39 to the above referenced project, bringing the estimated total value of the project to $620,210.00. Funds for this project will be from the DERA Option under the Environmental Mitigation Trust Agreement for State Beneficiaries resulting from the Settlement in *United States of America v. Volkswagen AG et*

al., Case No. 16-cv-295 (N.D. Cal.). Payment will be made directly by the Wilmington Trust, the trustee for Volkswagen AG. Payment by Wilmington Trust is contingent upon DEEP's approval of Sysco's documentation of the completion of the tasks outlined in this Scope of Work.

2. **Work Tasks**

The Scope of Work is summarized according to the following three tasks:

Task 1: Planning and Procurement
Task 2: Delivery and Scrappage
Task 3: Provide Updates and Information for Quarterly and Other Reports as Required

Task 1: Planning and Procurement:

Sysco shall conduct the project, provide oversight and track project progress. Sysco shall comply with all applicable Federal, State and local laws, rules and regulations, and meet the conditions outlined in the DERA Grant Agreement between DEEP and EPA (3. DERA Grant Conditions, below). Sysco will provide documentation of any payments made in association with the project. The procurement of tangible personal property having a useful life of more than one year and an acquisition cost of one thousand dollars ($1,000.00) or more per unit must be approved by the DEEP Commissioner before acquisition.

Task 1 Deliverables:

- Summary of procurement process for selecting replacement trucks (provide three estimates, if possible)
- Summary of criteria used for selecting Vendor(s) (lowest cost not required)
- Copy of Purchase Order(s) issued for new trucks
- Documentation of any down payments or other up-front payments made for the project

Task 2: Delivery of New Trucks and Scrappage of Replaced Trucks, Completion of Project:

After selecting a Vendor and issuing a Purchase Order for the new trucks, Sysco will track the progress of the manufacturing and outfitting of the new trucks for their intended use. When that process is complete, Sysco shall take delivery of the vehicles.

Sysco shall render the replaced vehicles, and their engines inoperable, in accordance with EPA requirements for scrappage under the DERA grant. This can include cutting the frame and drilling a 3-inch hole in the engine or performing other procedures to render the vehicle inoperable.

Equipment and vehicle components that are not part of the engine or chassis may be salvaged from the unit being replaced (e.g. plow blades, shovels, seats, tires, etc.). If scrapped or salvaged engines, vehicles, equipment, or parts are to be sold, program income requirements apply.

Sysco shall provide documentation that the vehicles have been scrapped; for each truck, this includes EPA's Certificate of Destruction (Appendix A) and the following photos: 1) the VIN plate, 2) the engine serial number plate, 3) the engine before and after drilling and 4) the truck before and after cutting the chassis. Sysco shall submit to DEEP an invoice for payment, along with confirmation that the project has been completed.

Task 2 Deliverables:

- Invoice from the Vendor(s) for delivered trucks and documentation of payment to Vendor(s)
- EPA-required photographic scrappage documentation for replaced trucks
- Completed copies of EPA Certificate of Engine/Chassis Destruction (Appendix A)
- Receipt for scrap value or other income from the scrapped vehicles, if applicable
- Confirmation that the project is completed and that the new trucks are operating satisfactorily for their intended use
- An invoice to DEEP for reimbursement under the grant

Task 3: Provide Updates and Information for Quarterly and Other Reports as Required.

Sysco shall provide DEEP with status updates to be included in DEEP's quarterly reports to EPA. Quarterly progress updates will be requested before the 1st of the month following the end of a calendar quarter (i.e., April 1, 2019 and July 1, 2019). Sysco shall submit EPA-required material for the final report upon completion of the project, which shall be as soon as possible but no later than August 31, 2019. Items to be provided shall include, but will not be limited to:

- Environmental results;
- Work plan accomplishments;
- Challenges encountered during planning and implementation;
- Emissions reductions;
- Budgetary issues, including funds expended;
- Public relations activities;
- Technical and identification information for vehicles and engines; and
- Jobs preserved or created.

Task 3 Deliverables:

- *Status Updates for Quarterly Reports*
- *EPA-required material for Final Report*

3. DERA Grant Conditions

Sysco commits to complying with the administrative conditions listed in the 2018 State DERA Cooperative Agreement #DS 00A00154-1, between DEEP and EPA, which is attached as Appendix B.

4. Submission of Materials: For the purposes of this Contract, all correspondence, summaries, reports, products and extension requests shall be submitted to:

Patrice Kelly
Department of Energy and Environmental Protection
Bureau of Air Management
79 Elm Street
Hartford, CT 06106-5127
E-Mail: patrice.kelly@ct.gov

All **invoices** must include the Project Title, DEEP Bureau/Division name, amount dates and description of services covered by the invoice, and shall be submitted to:

DEEP – Financial Management Division
Accounts Payable
79 Elm Street
Hartford, CT 06106-5127
Email: DEEP.AccountsPayable@ct.gov

5. Extensions/Amendments:

Formal written amendment of this agreement is required for any material changes to the terms and conditions specifically stated in the original agreement and any prior amendments.

Due to the lapsing of the DERA funding, no time extensions are possible with this grant. **The Project must be completed by August 31, 2019 so that payments can be processed by September 30, 2019, the close-out date for the 2018 State DERA Grant Agreement #DS 00A00154-1, between DEEP and EPA, which is attached as Appendix B.**

6. Budget and Schedule of Payments

The maximum amount payable under this Grant is one hundred forty-nine thousand two hundred thirty-three dollars and sixty-one cents ($149,233.61). The payments by Wilmington Trust shall provide for use of funds to meet allowable financial obligations incurred in conjunction with this Project, prior to expiration of this Grant, and shall be scheduled as follows provided that the total sum of all payments shall not exceed the maximum Contract amount noted above.

Budget and Schedule of Payments

Task & Deliverables	Task Delivery Date	Estimated Budget		
		Project Total	Sysco Cost-Share	CT State DERA Reimbursement
1. Planning & Procurement: • Approved work plan with project timeline/schedule • Summary of procurement process for selecting replacement trucks • Summary of criteria used for selecting Vendor from DAS list and names of Vendors selected	February-March, 2019			
• Copy of Purchase Order issued for new trucks • Documentation of any advance payments if applicable				
2. Delivery of New Trucks, Scrappage of Replaced Trucks, Completion of Project • Invoice from the Vendor for delivered trucks and documentation of payment to Vendor	July 31, 2019	$620,210.00	$470,976.39	

Budget and Schedule of Payments

Task & Deliverables	Task Delivery Date	Estimated Budget		
		Project Total	Sysco Cost-Share	CT State DERA Reimbursement
• EPA-required photographic scrappage documentation for replaced trucks • Completed copy of EPA Certificate of Engine/Chassis Destruction (Appendix A) • Receipt for scrap value or any other income from the scrapped trucks if applicable • Confirmation that the project is completed and that the trucks are operating satisfactorily for their intended use • An invoice to DEEP for reimbursement under the grant	August 31, 2019			$149,233.61
3. Provide Updates and Information for Quarterly and Other Reports • Status Update for Sixth Quarter Report • Status Update for Seventh Quarter Report • EPA-required material for Final Report (upon completion but no later than 08/31/19)	04/01/19 07/01/19 08/31/19			
Total:		$620,210.00	$470,976.39	$149,233.61

Total Payment shall not exceed a maximum of $149,233.61, which shall constitute full and complete compensation from the Wilmington Trust for the early replacement of seven Class 7 and Class 8 trucks. The total sum of all payments shall not exceed total funds committed by DEEP.

Payment is contingent upon completion of the tasks outlined in this Scope of Work and providing documentation of compliance with the 2018 State DERA Cooperative Agreement #DS 00A00154-1 between DEEP and EPA, which is attached as Appendix B.

Signature, Sysco's Authorized Representative _____ 3/18/19

Typed Name: Edward Tantoco Date

Signature, DEEP Assigned Project Manager _____ 3/20/19

Typed Name: Patrice P. Kelly Date

ATTACHMENT C

DETAILED PLAN FOR REPORTING ON ELIGIBLE MITIGATION ACTION IMPLEMENTATION

ATTACHMENT C

DETAILED PLAN FOR REPORTING ON ELIGIBLE MITIGATION ACTION IMPLEMENTATION

The Connecticut Department of Energy and Environmental Protection (DEEP) will provide detailed reporting on the Category 10 – Diesel Emissions Reduction Act (DERA) Option vehicle replacement project in three ways:

1. Timely updates to DEEP's Volkswagen (VW) Settlement Information Webpage,
2. Connecticut's semiannual reporting obligation to Wilmington Trust (the "Trustee"), and
3. Quarterly reports submitted to the Environmental Protection Agency (EPA)

DEEP maintains a webpage that has been designed to support public access to information relative to the VW Settlement and DEEP's administration of mitigation funds so as to implement the program in an open and transparent manner. DEEP's VW Settlement Information webpage and all supporting information and documentation can be found at: https://www.ct.gov/deep/vw. Timely updates to the webpage as well as direct outreach via email to those who have requested notification will inform the general public on project solicitations, and project status including when the projects identified herein have been completed.

Subparagraph 5.3 of the Environmental Mitigation Trust Agreement for State Beneficiaries details Connecticut's Reporting Obligations" "For each Eligible Mitigation Action, no later than six months after receiving its first disbursement of Trust Assets, and thereafter no later than January 30 (for the preceding six-month period of July 1 to December 31) and July 30 (for the preceding six-month period of January 1 to June 30) of each year, each Beneficiary shall submit to the Trustee a semiannual report describing the progress implementing each Eligible Mitigation Action during the six-month period leading up to the reporting date (including a summary of all costs expended on the Eligible Mitigation Action through the reporting date). Such reports shall include a complete description of the status (including actual or projected termination date), development, implementation, and any modification of each approved Eligible Mitigation Action. Beneficiaries may group multiple Eligible Mitigation Actions and multiple sub-beneficiaries into a single report. These reports shall be signed by an official with the authority to submit the report for the Beneficiary and must contain an attestation that the information is true and correct and that the submission is made under penalty of perjury. To the extent a Beneficiary avails itself of the DERA Option described in Appendix D-2, that Beneficiary may submit its DERA Quarterly Programmatic Reports in satisfaction of its obligations under this Paragraph as to those Eligible Mitigation Actions funded through the DERA Option. The Trustee shall post each semiannual report on the State Trust's public-facing website upon receipt."

DEEP shall, in the semiannual report following the Trustee's initial disbursement of funds as directed by DEEP, describe the progress implementing this Eligible Mitigation Action that will include a summary of all costs expended on the Eligible Mitigation action through the reporting date. The report will also include a complete description of the status, development, implementation (including project schedule and milestone updates), and any modification to the projects under this Eligible Mitigation Action.

Finally, one of the requirements of the FY2018 DERA State Clean Diesel Grant Program is the timely submissions of quarterly reports to EPA. DEEP will submit these reports to EPA and they will also be included in the semiannual reports that DEEP provides to the Trustee.

ATTACHMENT D

DETAILED COST ESTIMATES FROM SELECTED OR POTENTIAL VENDORS FOR EACH PROPOSED EXPENDITURE EXCEEDING $25,000

ATTACHMENT D
DETAILED COST ESTIMATES FROM SELECTED OR POTENTIAL VENDORS FOR EACH PROPOSED EXPENDITURE EXCEEDING $25,000

Atlas Concrete Products Class 8 Mack Truck with Crane Replacement (Attachment D-1)

Vehicle Class	Engine Make	Engine Model	Model year (MY)	Fuel	Cost
Class 8	Mack	MP8-455M	2019	Diesel	$317,020.48
Total					**$317,020.48**

Sysco Leasing, LLC Replace five (5) Class 8 Trucks and two (2) Class 7 Diesel Freight Trucks (Attachment D-2)

Vehicle Class	Engine Make	Engine Model	Model year (MY)	Fuel	Cost
Class 7	Cummins	B6.7 220	2019	Diesel	$59,920
Class 7	Cummins	B6.7 220	2019	Diesel	$59,920
Class 8	Mack	MP7-395C	2019	Diesel	$100,074
Class 8	Mack	MP7-395C	2019	Diesel	$100,074
Class 8	Mack	MP7-395C	2019	Diesel	$100,074
Class 8	Mack	MP7-395C	2019	Diesel	$100,074
Class 8	Mack	MP7-395C	2019	Diesel	$100,074
Total					**$620,210.00**

See attached vendor cost estimates for Atlas Concrete Products and Sysco Leasing, LLC

ATTACHMENT D-1

VENDOR ESTIMATE FOR ATLAS CONCRETE PRODUCTS

Atlas

2/7/2019

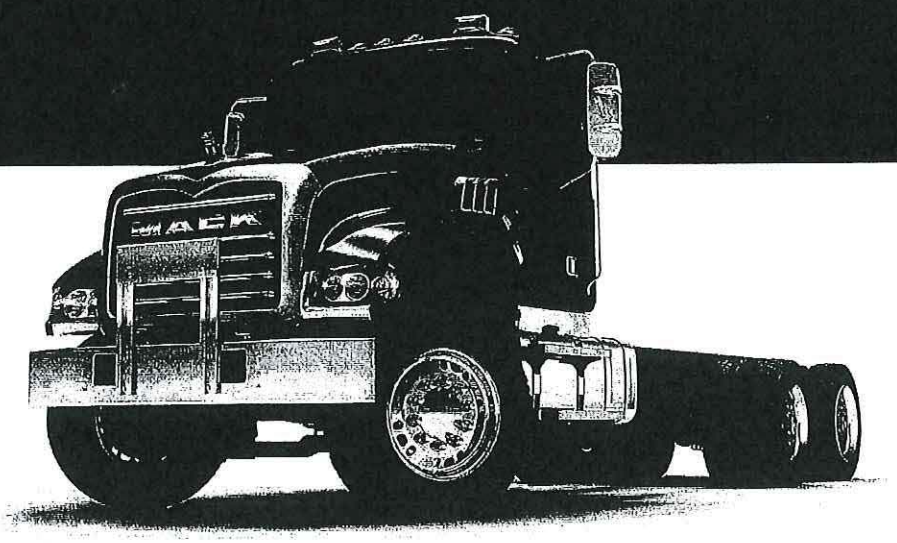
GABR2019000017A463
GRANITE 64FR
Qty: 1

GABRIELLI TRUCK SALES
OF CONNECTICUT, LL
277 NEW PARK AVE
HARTFORD
CT 061062949

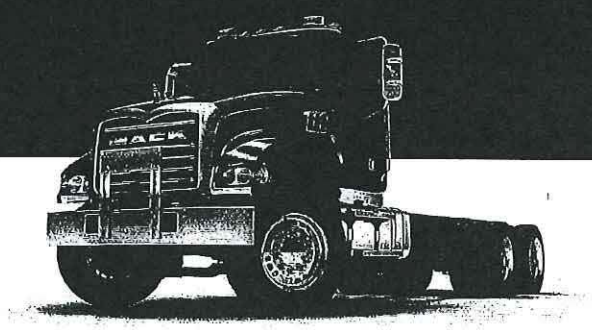
ATLAS CONCRETE
PRODS
65 BURRITT ST
NEW BRITAIN
CT 060534048

QUOTE

MACK



MACK



DATE

2/7/2019

QUOTE INFORMATION

GABR2019000017A463

GRANITE 64FR

Qty: 1

PREPARED BY

GABRIELLI TRUCK SALES OF CONNECTICUT, LL

277 NEW PARK AVE

HARTFORD

CT 061062949

PREPARED FOR

ATLAS CONCRETE PRODS

65 BURRITT ST

NEW BRITAIN

CT 060534048

Thank you for giving us this opportunity to provide a quote.

This proposal contains the complete specification and performance details of the Mack model configured for your application. Every proposed spec from Mack is prepared with lowest total cost of ownership and highest return on investment as the key objectives for our customers.

This reflects Mack's focus on application excellence to deliver uptime and fuel economy, reduced maintenance, driver satisfaction, productivity and high resale value. The enclosed spec and recommendations have been carefully designed to meet all these objectives.

Beyond the technical specifications contained in this proposal, it's important to remember that each Mack truck is backed by Mack Connect, the industry's leading uptime and productivity solution, plus a coast-to-coast network of dealer service locations. I think that after reviewing this proposal you will realize why Mack is "The American Truck You Can Count On."

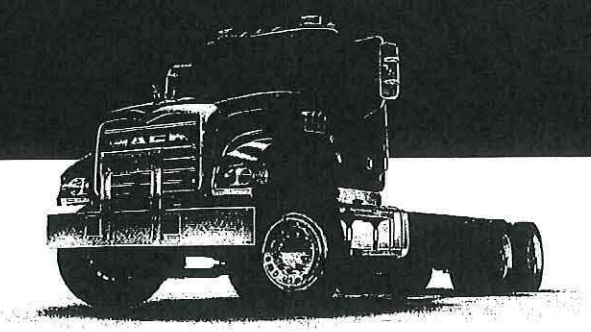
I look forward to meeting with you and to discuss any questions you might have regarding this proposal.

Yours sincerely

DEREK MCGEE

GABRIELLI TRUCK SALES OF CONNECTICUT, LL

MACK



TECHNICAL SPECIFICATION
GRANITE 64FR

				WEIGHT (LB)		
CUSTOMER/VEHICLE INFO			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	002EF2	**CHASSIS (BASE MODEL)**	GRANITE 64FR	5,144	1,903	0
S	99X93X	**FINAL ASSEMBLY PLANT**	Made in Macungie, PA USA	0	0	0
S	PB10A1	**PRICE BOOK LEVEL**	2020A Pricebook	0	0	0
S	MP2001	**CUSTOMER FLEET SIZE**	DEALER FLEET WITH LESS THAN 25 VEHICLES IN OWN FLEET OF ANY VEHICLE BRAND	0	0	0
S	013001	**TYPE OF SERVICE**	COMMERCIAL	0	0	0
S	M98018	**WARRANTY REGISTRATION LOCATION**	US - WARRANTY REGISTRATION LOCATION	0	0	0
S	505015	**INITIAL REGISTRATION LOCATION**	ALL 50 STATES, CARB ENGINE EMISSION (US17)	0	0	0
S	534014	**LANGUAGE-PUBS/DECAL/SIGNS**	ENGLISH	0	0	0
S	DHX10X	**ROAD CONDITION**	WELL MAINTAINED SURFACED ROADS >95% DRIVING DISTANCE	0	0	0
S	005145	**VEHICLE USE & BODY/TRAILER TYPE**	FLATBED TRUCK	0	0	0
S	DKX99X	**GROSS COMBINATION WEIGHT**	TRUCK ONLY - NO TRAILER TOWING PROVISIONS PROVIDED	0	0	0
S	7OBB1X	**BRAKE REGULATION**	BRAKE REGULATION, STOPPING DISTANCE 94M (310FT)	0	0	0
S	QCXB1X	**TOPOGRAPHY**	GRADES <6% GREATER THAN 98% OF DRIVING DISTANCE MAX GRADE 16%	0	0	0
S	E1BD1X	**AMBIENT TEMP UPPER LIMIT (GTA)**	AMBIENT TEMPERATURE HOT. WARMER THAN 104 F (40 C) ALLOWED UP TO 25 HOURS PER YEAR	0	0	0
S	032A89	**TERRAIN GRADE**	ON-OFF HIGHWAY, STARTING GRADES<18%	0	0	0
	033A40	**LOADING SURFACE**	HARD DIRT LOADING AND / OR UNLOADING SURFACE	0	0	0
S	0342A2	**VEHICLE VOCATION**	CONSTRUCTION SERVICE	0	0	0

			WEIGHT (LB)		
ENGINE/TRANSMISSIONS		**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	100150	**ENGINE PACKAGE, COMBUSTION**	MP8-455M MACK 455HP @ 1500-1900 RPM (PEAK) 2100 RPM (GOV) 1760 LB-FT, US'17	2,165	541	3,359

				WEIGHT (LB)		
ENGINE/TRANSMISSIONS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	Q1CA1X	**GEAR SELECTION TUNING**	BASIC, GEAR-SELECTION TUNING	0	0	0
S	136156	**TRANSMISSION**	MACK TMD13AFO-HD mDRIVE HD 13 SP, CREEPER/ MULTI-SPEED REVERSE (OVERDRIVE)	578	192	0
S	U6AA1X	**ENGINE GOVERNOR TYPE**	ENGINE GOVERNOR TYPE MIN-MAX	0	0	0

				WEIGHT (LB)		
EXHAUST/EMISSIONS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	CIRAA4	**CARB 2008 IDLE REGULATION**	IDLE EMISSION CERTIFICATION, CARB (WITH DECAL LOCATED ON LOWER LH CORNER / DRIVER DOOR	0	0	0
S	DPF04F	**DPF DIESEL PARTICULATE FILTER**	CLEARTECH ONE BOX E.A.T.S. RH SIDE UNDER CAB US17	0	0	0
S	8NAA1X	**DPF COVER**	DPF COVER, PAINTED STEEL	0	0	0
	DF10P1	**DEF TANK**	8.7 GALLON (33 L) 26" INTEGRAL TO LH FUEL TANK	0	0	0
	130AD7	**EXHAUST**	SINGLE VERTICAL RIGHT SIDE CAB MOUNTED, LOWER VENTURI DIFFUSER, TURNED END	-46	-2	360
	KRXAPX	**EXHAUST STACK HEIGHT**	9' 6" FROM GROUND	0	0	0
	Q0AC1X	**EXHAUST SYSTEM MATERIAL FINISH**	SINGLE, BRIGHT FINISH HEAT SHIELD, STACK AND SCR COVER (IF EQUIPPED)	0	0	93
S	78AC7X	**EMISSION ON BOARD DIAG CONTROL**	EMISSION OBD, DISPLAY ONLY, USA2018	0	0	0

				WEIGHT (LB)		
ENGINE EQUIPMENT			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	125AA4	**AIR CLEANER**	11" x 30" (279 mm x 762 mm) UNDER HOOD SINGLE ELEMENT DRY TYPE W/AIR INTAKE FROM BOTH SIDES OF HOOD	0	0	0
S	1VAAAX	**AIR INTAKE SOURCE**	W/O INSIDE/OUTSIDE AIR INTAKE	0	0	0
S	121AA5	**BUG SCREEN**	BLACK ALUMINUM MOUNTED BEHIND GRILLE, WITHOUT WINTER FRONT COVER	0	0	0
S	113AA6	**AIR COMPRESSOR**	MERITOR/WABCO 318 (18.7 CFM)	0	0	0
	VWXAZX	**COMPRESSOR CAPACITY**	MERITOR/WABCO 318 (18.7 CFM)	0	0	0
S	132AB4	**ALTERNATOR**	DELCO 12V 130A (24SI) BRUSH-TYPE	16	0	0
	316AA7	**BATTERIES**	(3) MACK 12V 1000/3000 CCA THREADED STUD TYPE	-15	7	95
	393AA2	**BATTERY BOX - MOUNTING**	LH RAIL UNDER CAB FORWARD OF FUEL TANK (3 BATTERY MAX)	-8	-4	0
S	L5XA1X	**BATTERY BOX COVER**	MOLDED PLASTIC	0	0	0
	LLXC1X	**EMERGENCY START CONNECTIONS**	EMERGENCY START STUDS, BATTERY BOX MOUNTED	7	0	158
	318AA3	**BATTERY DISCONNECT SWITCH**	FLAMING RIVER BIG SWITCH WIRED TO POSITIVE SIDE	3	0	139
S	NCXA5X	**STARTER**	12 VOLT DELCO 39MT-MXT	0	0	0
	NDXA1X	**ENGINE STARTING AID**	ELECTRIC PREHEATER	7	0	76
	110AA6	**ENGINE BRAKE**	MACK MP8 POWERLEASH	0	0	0
S	JMXB1X	**ENGINE BRAKE LIGHTING (CA)**	VEHICLE AND TRAILER (IF APPLICABLE) STOP LAMPS ACTIVATE UPON SERVICE BRAKE APPLICATION ONLY(3899000)	0	0	0
S	118AB8	**FAN DRIVE**	BEHR FAN AND ELECTRONIC MODULATING VISCOUS FAN DRIVE	0	0	0
S	119AE9	**COOLANT PROTECTION**	CHEVRON FULLY FORMULATED COOLANT W/ NITRATES (50/50 MIX DYED PINK) TO -34DEG	0	0	0

				WEIGHT (LB)		
ENGINE EQUIPMENT			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	HWXA1X	**COOLANT FILTER / CONDITIONER**	MACK COOLANT CONDITIONER	0	0	**0**
	124AB3	**HOSES - RADIATOR/HEATER**	SILICONE RADIATOR & HEATER HOSES W/BREEZE CONSTANT TORQUE CLAMPS ON ALL COOLANT LINES	3	0	**289**
	293AA3	**FUEL-WATER SEPARATOR**	DAVCO 382, (FLUID HTD) FUEL HEATER/WATER SEPARATOR W/VENDOR PRIMARY	9	0	**556**
CA	MBXACX	**PRIMARY FUEL FILTER POSITION (CA)**	FUEL FILTER POSITION, MTD OUTSIDE RH RAIL	0	0	**38**
	QHXABX	**OIL PAN**	CORROSION RESISTANT OIL PAN	0	0	**181**
	5NXA1X	**ENGINE BLOCK HEATER**	120V 1500W ENGINE BLOCK HEATER	5	0	**93**
	36AD1X	**TETHER DEV PKG, CAPS & COVERS**	FURNISH CAP RETAINER FOR OIL FILL & RADIATOR OVERFLOW TANK, BATTERY BOX, AND TOOL BOX (IF FURNISHED)	0	0	**33**

				WEIGHT (LB)		
CLUTCH/TRANS EQUIPMENT			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	49200B	**GEAR SHIFTER**	MACK mDRIVE-PREMIUM SHIFTER	0	0	**0**
S	133AC7	**CLUTCH**	ZF/SACHS SINGLE PLATE 17" (430MM) ORGANIC MATERIAL	0	0	**0**
S	195045	**DRIVELINE - MAIN**	MERITOR RPL35, WITH CROSS SERRATED YOKE	20	45	**0**
S	204014	**DRIVELINE - INTERAXLE**	MERITOR RPL25	0	36	**0**
S	76AXAX	**PROPELLR SHAFT MAIN, UNVSL JNT**	UNIVERSAL JOINT CROSS SERRATED YOKE	0	0	**0**
S	8WAAAX	**PROP SHAFT INTERAXL UNIV JOINT**	HALF-ROUND UNIVERSAL JOINT	0	0	**0**
S	4LDA1X	**TRANSMISSION OUTPUT TORQUE**	TRANSMISSION OUTPUT TORQUE BASIC	0	0	**0**
S	RCXB1X	**BELL HOUSING**	ALUMINUM	0	0	**0**
S	7RXD1X	**LUBRICANTS, TRANSMISSION**	75W - 90 (SYNTHETIC LUBRICANT)	0	0	0
S	139049	**TRANSMISSION OIL COOLER**	MACK mDRIVE TRANSMISSION OIL COOLER MTD LH SIDE OIL TO WATER COOLER	0	0	**0**
S	3IAA1X	**HILL START ASSIST**	GRADE GRIPPER	0	0	**0**

				WEIGHT (LB)		
FRONT AXLE EQUIPMENT			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	240AA3	**FRONT AXLE**	20000# (9100 KG) MACK FXL20 WIDE PIVOT CENTER STRAIGHT SPINDLE/UNITIZED BEARINGS	428	0	**384**
	244AB4	**SPRINGS - FRONT**	MACK TAPERLEAF 20000# (9100 KG) GROUND LOAD RATING	27	0	**45**
S	241081	**FRONT AXLE BRAKES**	MERITOR "S" CAM TYPE 16.5" x 6" Q+	29	0	0
	LQXABX	**BRAKE LINING MATERIAL FRONT**	MERITOR R403	0	0	0
S	U3XA1X	**BRAKE, FRONT**	CAST IRON	0	0	0
S	U0AA1X	**FRONT BRAKE ADJ. MANUFACTURE**	HALDEX - AUTOMATIC	0	0	0
S	V7AD1X	**FRONT BRAKE CHAMBER MFG.**	FRONT BRAKE CHAMBER MANUFACTURER, MGM	0	0	0
S	O5BD1X	**FRONT BRAKE CHAMBER SIZE**	FRONT BRAKE CHAMBER 24SQ INCHES (SERVICE)	0	0	0
S	0KXA1X	**HUB MATERIAL, FRONT**	FERROUS	157	0	0
S	K4AAAX	**SPINDLE NUTS, FRONT**	STANDARD FRONT SPINDLE NUTS	0	0	0

		FRONT AXLE EQUIPMENT	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	1KAA1X	SHOCK ABSORBER, FRONT	DOUBLE ACTING TYPE	0	0	0
	245AB0	STEERING	SHEPPARD SD110 + HD94	206	0	818
S	7VXC1X	LUBRICANTS, FRONT AXLE	PETROLEUM/SYNTHETIC (50/50) OIL FRONT AXLE	0	0	0

		REAR AXLE EQUIPMENT	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
	268AA9	REAR AXLES - TANDEM	46000# (20900kg) MACK S462R CAST DUCTILE HOUSING	0	1,614	2,589
S	6MAA1X	REAR AXLE CASING WIDTH	W/O WIDE TRACK AXLE	0	0	0
S	018AA6	CARRIER - REAR AXLE	CRDP150/151 AVAILABLE WITH OPTIONAL DRIVER CONTROLLED INTERWHEEL DIFFERENTIAL LOCKS, SEE 254 SYMBOL	0	0	0
	TAXAWX	REAR AXLE RATIO	4.19 RATIO	0	0	0
	1860K6	REAR SUSPENSION - TANDEM	SS462 MACK MULTILEAF (CAMELBACK) 46000# - EXTRA THICK SPRING THICKNESS	0	1,930	633
	402AA3	SPRINGS - ANTI-SWAY	SPRINGS, ANTI-SWAY	0	104	0
S	XZXA1X	REAR SUSP. BEAM BUSHINGS	BRONZE	0	36	0
	GWXACX	BOGIE SPREAD, REAR	55" AXLE SPACING (BOGIE WHEELBASE)	0	0	176
S	2AAAAX	REAR SPRING INSULATOR MAT'L	RUBBER SHOCK INSULATORS	0	0	0
S	XYXZ1X	TRANSVERSE TORQUE RODS, R SUSP	WITHOUT TRANSVERSE TORQUE RODS	0	-66	0
	UGXA1X	AUX.PARKING BRAKE CHAMBERS	AUXILIARY PARK, TWO EXTRA PARKING BRAKE CHAMBERS	0	20	0
S	253AA4	BRAKES - REAR	MERITOR "S" CAM 16.5"x7" Q+ (Total for QTY = 2)	0	-35	0
	MAXCAX	BRAKE LINING MATERIAL DRIVE	ABEX 931-162 (MERITOR R301) (REAR EACH AXLE 23,000LBS MAX)	0	0	0
S	U4XA1X	BRAKE DRUMS/ROTORS - REAR	CAST IRON	0	0	0
S	U1AA1X	REAR BRAKE ADJ MANUFACTURE	HALDEX - AUTOMATIC	0	0	0
S	V1AB1X	REAR BRAKE CHAMBER SIZE	REAR SPRING BRAKE CHAMBERS 30/30 TYPE	0	0	0
S	300AD0	REAR BRAKE CHAMBER	MGM MODEL TR-T; TAMPER-RESISTANT BRAKE CHAMBERS (Total for QTY = 2)	0	0	0
S	0LXI5X	HUB MATERIAL, DRIVE	IRON PRESET REAR HUB W/INTEGRATED SPINDLE NUT	0	318	0
S	1CXI2X	HUB OIL SEAL, DRIVE	PREMIUM	0	0	0
S	N2AE1X	SPINDLE NUTS, MAIN AXLE	SPINDLE NUTS, MAIN AXLE, INTEGRATED	0	0	0
S	3LAC1X	POWER DIVIDER LOCKOUT	POWER DIVIDER LOCKOUT, W/BUZZER & LIGHT	0	40	0
S	7WXA1X	LUBRICANTS, REAR AXLE(s)	FACTORY OPTION LUBE - REAR AXLE	0	0	0
S	9GAAAX	ABS SENSOR & MODULATOR	4S/4M SYSTEM REAR WHEEL END SENSORS	0	0	0
S	698AA5	ANTILOCK BRAKE SYSTEM	BENDIX WITH TRACTION CONTROL	0	0	0
S	URXD1X	BRAKE VALVE VERSION	BENDIX SWITCHES AND VALVES WHERE POSSIBLE	0	0	0
S	3ZAA1X	SPRING BRAKE INVERSION VALVE	TRACTOR SPRING BRAKE INVERSION VALVE	5	0	0

	FRAME EQUIPMENT/FUEL TANKS	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
271278	WHEELBASE	278"	547	547	677

					WEIGHT (LB)		
FRAME EQUIPMENT/FUEL TANKS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	374090	**AF (OVERHANG)**	90"	-63	629	**0**
	274AA9	**FRAME RAILS**	STEEL - 300MM X 105MM X 11.1MM -- (11.81" X 4.13" X 0.437")	0	0	**1,155**
	Z9XB2X	**FRAME INNER LINER**	FRAME REINFORCEMENT - INSIDE, 5MM STEEL, FULL LENGTH OF MAIN RAIL	0	0	**1,532**
S	5CAAAX	**FRONT FRAME EXT. (BOLTED ON)**	6" BOLT ON FRAME EXTENSION	155	-2	**0**
S	A0XH1X	**FRONT FRAME LENGTH**	FRONT FRAME LENGTH 725MM	183	-11	**0**
	281AA6	**CROSSMEMBERS**	BOC AND INTERMEDIATE CROSSMEMBERS, HD I-BEAM	27	27	**478**
	AXXA5X	**AUX CROSSM. IN REAR OVERHANG**	STEEL SINGLE CHANNEL (1)	-13	51	**0**
S	Q5AA1X	**REAR CROSSMEMBER OPTIONS**	FURNISH STANDARD STEEL CLOSING REAR CROSSMEMBER	0	0	**0**
S	X6XA1X	**REAR FRAME TREATMENT**	WITHOUT TAPERED FRAME RAIL ENDS	0	0	**0**
S	2HXA1X	**MUDFLAP, FRONT AXLE**	BLACK POLYARMOUR (NO NAME TO APPEAR ON FLAP) (NOT ANTI-SPRAY TYPE)	0	0	**0**
	4DXN5X	**FRONT BUMPER**	EXTENDED-SWEPT BACK-STEEL BRIGHT FINISH (INCL. PAINTED CNTR TOW PIN)N/A W/ FRM EXT	100	-15	**892**
	4EXD1X	**TOWING DEVICE, FRONT**	CENTER TOW CAPABILITY BASED ON BUMPER SELECTION	0	0	**0**
S	2RAA1X	**FUEL LEVEL SENDER UNIT, LIQUID**	BASIC FUEL LEVEL SENDER MOUNTED ON L.H TANK	0	0	**0**
	288AF3	**FUEL TANK - LH**	72 GALLON (275 L) 26" ALUMINUM, SLEEVED D-SHAPED	67	34	**245**
CA	290030	**FUEL TANK - RH**	72 GAL ALUMINUM; 26" D-SHAPE TANK, ISOLATED FOR HYDRAULIC OIL W/2" NPT FITTINGS @ TOP & BOTTOM OF HE	0	0	**1,235**
S	JHXB1X	**FUEL HOSES, LIQUID**	BRAIDED HOSE	5	3	**0**
	12AA1X	**FUEL LINE OPTIONS, LIQUID**	W/O FUEL LINE OPTION	0	0	**0**
S	KFXA1X	**FUEL TANK CAP**	NON-LOCKABLE FUEL TANK CAP	0	0	**0**
S	Q2AA1X	**CAB INSTEP VERSION**	STANDARD 2 STEP CAB ACCESS	0	0	**0**
S	14AA1X	**FUEL FILL SYSTEM, LIQUID**	W/O FAST FILL FUEL SYSTEM OPTION	0	0	**0**
	I7XAFX	**ISOLATE TANK FROM FUEL SYSTEM**	HYDRAULIC TANK MOUNTED RH SIDE INSTEAD OF FUEL TANK	0	0	**43**

				WEIGHT (LB)		
AIR/BRAKE			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	VHXEDX	**AIR DRYER - MANUFACTURER**	WABCO 1200P W/TURBO CUT OFF VALVE, W/COALESCING OIL FILTER, HEATED	0	0	**0**
	UWXA1X	**AIRTANK DRAIN VALVE**	AUTO DRAIN VALVE, HEATED ON SUPPLY TANK, MANUAL (PETCOCK) ON ALL OTHER TANKS	0	0	**59**
S	U2XB1X	**AIRTANK MATERIAL**	STEEL	0	0	**0**
CA	KOXABX	**AIR DRYER POSITION (CA)**	RH OUTBOARD	0	0	**61**
	141AA9	**RELOCATE AIR RESERVOIRS**	UNDER BATTERY BOX, REMAINING BETWEEN FRAME RAILS	0	0	**0**
	VSXB1X	**AUXILLIARY AIRTANK**	AUXILIARY AIR TANK CAPACITY FOR (1) EXTRA LIFT AXLE	20	16	**370**
S	1JAAAX	**PARKING BRAKE VALVE**	SINGLE VALVE SYSTEM	0	0	**0**

		ELECTRICAL	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
	5RXA6X	BACK-UP ALARM	ECCO BACK-UP ALARM 575 CONSTANT SOUND LEVEL 107 dB	0	0	106
	EAXB1X	DASH MOUNTED SWITCHES	TWO (2) EXTRA DASH MOUNTED ILLUMINATED SWITCHES	0	0	22
S	5FBB1X	MARKER/DIRECTIONAL SIGNAL	W/O MARKER/DIR SIGNAL OPTION	0	0	0
S	312AA6	ROOF MARKER LIGHT	(5) TRUCKLITE LED CHROME BULLET TYPE LAMPS	3	0	0
S	LSXH1X	DAYTIME RUNNING LIGHTS	PARK BRAKE AND ENGINE RUNNING ACTIVATED	0	0	0
S	NEXC1X	TAIL LAMPS	INCANDESCENT TAIL LAMPS	0	0	0

		TRAILER CONNECTIONS	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	LIXZ1X	FIFTH WHEEL ANGLE MATERIAL	WITHOUT FIFTH WHEEL ANGLES	0	-61	0
S	WGXB1X	TRAILER BRAKE VALVE	W/O HAND CONTROL VALVE	-6	0	0
S	3SAZ1X	TRAILER CONNECTORS HOLDER	OMIT TRAILER CONNECTORS HOLDER	3	0	0

		PTO	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
	189AA3	PTO - REAR MOUNTED	PTO PUMP PROVISIONS FOR DIN 5462 W/DASH MTD SWITCH.	47	12	1,756
	826036	HYDRAULIC PUMP	F1-81R PARKER PUMP/REAR OF mDRIVE TRANSMISSION	29	0	1,021
	TYXZ1X	POWER TAKE OFF CONTROL	WITHOUT TRANSMISSION PTO CONTROL	0	0	-224
S	2WAZ1X	PTO TRANS NEUTRAL CONTRL CHECK	W/O NEUTRAL CONTROL	0	0	0
S	B83083	BODY BUILDER INTERFACE	BODY LINK III W/CAB PASS-THRU	5	5	0

		CAB INTERIOR (A THRU G)	DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	198048	GAUGES - UNIT OF MEASURE	U.S. UNITS (PREDOMINANT)	0	0	0
	CCXE1X	GUAGE - PACKAGE, SECONDARY	2ND GA PKG W/ENG OIL TEMP,TRANS OIL TEMP,PYRO,AIR RESTRICT	0	0	0
	E0AAAX	GAUGE - TRANSMISSION OIL TEMP	TRANSMISSION OIL TEMP GAUGE	0	0	54
	D9AAAX	GAUGE - EXHAUST PYROMETER	EXHAUST PYROMETER GAUGE	0	0	54
	PVXAAX	AIR RESTRICTION INDICATOR	GRADUATED LOCK-UP TYPE (W/MEMORY) DASH MOUNTED HOLDS READING AFTER ENGINE SHUTDOWN	0	0	26
S	173AA5	AIR CONDITIONING/HEATER	BLEND AIR HVAC W/"ATC" TEMP REGULATION	0	0	0
S	I0XAHX	DOME LAMP, INTERIOR	(4) DOME LAMPS - DOOR AND SWITCH ACTIVATED	0	0	0
	3XAA1X	DASH INDICATOR - LAMP BODY OUT OF POS	DASH MTD, INDICATOR BODY/HOIST UP "BODYBUILDER LAMP"	0	0	0
	7860E6	FIRE EXTINGUISHER	5LB (ABC RATED) MOUNTED BETWEEN DRIVER SEAT BASE AND DOOR VALVE AIMED REARWARD	12	0	78
S	184AA2	FLOOR COVERING	POLYURETHANE FLOOR MAT	0	0	0

				WEIGHT (LB)		
CAB INTERIOR (H THRU R)			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	C52082	**INSTMNT CLUSTER LANGUAGE**	DEFAULT: ENGLISH, SPANISH, FRENCH	0	0	**0**
S	160AA2	**KEYED ALIKE CHASSIS**	ALL CHASSIS KEYED AT RANDOM	0	0	**0**
S	13AA1X	**DOOR OPENING OPTIONS**	W/O ELECTRONIC KEYLESS ENTRY	0	0	**0**
S	E3XD1X	**FORWARD OVERHEAD STORAGE**	(2) STORAGE COMPARTMENTS AND NET RETAINERS W/CENTER MOUNTING FOR CB PROVISIONS	0	0	**0**
S	17400N	**AUDIO ACCOMMODATION**	PREMIUM STEREO, AM/FM, CD-PLAYER, MP3, WEATHER BAND, BLUETOOTH	0	0	**0**
S	73AC1X	**ANTENNA - RADIO**	RADIO ANTENNA, CAB MOUNTED BEHIND LH DOOR	0	0	**0**
S	1WAB1X	**POWER LEADS**	POWER LEADS (5-WAY BINDING POSTS FOR CB RADIO) IN HEADER CONSOLE	0	0	**0**
S	5CXB2X	**AUDIO SPEAKER LOCATION**	SPEAKER LOCATION, IN DOORS, MIDDLE HIGH SIDE PANEL	0	0	**0**
S	5JXAIX	**COM.RADIO PREP KIT (CB)**	CB RADIO MOUNTING REINFORCEMENT IN HEADER CONSOLE	0	0	**0**
S	21XA1X	**AUXILIARY REAR WINDOW**	REAR WINDOW (FIXED TYPE)	0	0	**0**
	784054	**REFLECTOR KIT**	EMERGENCY REFLECTOR KIT MTD PARALLEL & CENTERED AGAINST BOC	12	5	**39**
S	IFXB1X	**REAR WALL STORAGE COMPARTMENT**	STORAGE POUCH REAR	0	0	**0**

				WEIGHT (LB)		
CAB INTERIOR (S THRU Z)			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	004014	**INTERIOR TRIM LEVELS**	STANDARD PACKAGE, STEEL GRAY (Package 11A)	0	0	**0**
	196ABQ	**SEAT - DRIVER'S**	MACK-AIR, HIGH BACK, 4 CHAMBER AIR LUMBAR, BOLSTER, EXTENSION	0	0	**538**
	MAPC2X	**SEAT COVERING - DRIVER'S**	DRIVER'S SEAT - STEEL GREY VINYL / CLOTH MIX	0	0	**241**
	197AA2	**SEAT - PASSENGER'S**	MACK-FIXED, HIGH BACK, W/ STORAGE BOX	7	0	**88**
S	MAQB2X	**SEAT COVERING - PASSENGER'S**	PASSENGER'S SEAT - STEEL GREY VINYL	0	0	**0**
	3PXA1X	**SEAT ARMREST**	INBOARD MOUNTED ARM REST, DRIVER'S SEAT ONLY	3	3	**25**
S	592092	**SEAT BELT(S)**	LAP & SHOULDER (BOTH SEATS) CAB MTD SHOULDER BELT ADJUSTMT(NOT AVAIL W/EXTED RIDER SEAT)	0	0	**0**
S	2QAA1X	**IGNITION TYPE**	KEY TYPE	0	0	**0**
S	161005	**STEERING WHEEL**	2 SPOKE URETHANE GRIP, GUNMETAL SPOKES, W/O SWITCHES	0	0	**0**
S	U7XB1X	**SUN VISOR - INTERIOR, FRONT**	SUN VISOR - BOTH SIDES	0	0	**0**
S	WSXBAX	**WINDSHIELD TYPE**	2-PIECE WINDSHIELD	0	0	**0**
S	145AA1	**CAB GLASS**	TINTED WINDSHIELD & SIDE WINDOWS & REAR WINDOW (IF EQUIPPED)	0	0	**0**
S	JQXAAX	**WASHER RESERVOIR POSITION**	W/O WINDSHIELD WASHER OPTION	0	0	**0**
S	148AA3	**WINDSHIELD WIPERS**	2 SPEED ELECTRIC MOTOR W/INTERMITTENT FEATURE	0	0	**0**

				WEIGHT (LB)		
CAB - SLEEPER BOX			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	768018	**SLEEPER BOX - WINDOW**	WITHOUT SLEEPER BOX WINDOWS	0	0	**0**

				WEIGHT (LB)		
CAB EXTERIOR			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	0EAA1X	**AIR INTAKE GRILLE, FINISH**	BRIGHT FINISH GRILLE	0	0	**0**
	400AA6	**GRILLE**	BRIGHT FINISH BARS W/BRIGHT FINISH SURROUND GRILL MOUNTED	0	0	**346**
S	Q4XADX	**CAB PEEP WINDOW**	PEEP WINDOW ON RIGHT SIDE NON STG WHL POS. DEPEND	0	0	**0**
S	2KXB1X	**FRONT WHEEL OPENING**	FENDER EXTENSIONS	5	0	**0**
	5870B7	**GRAB HANDLES**	BF EXTERIOR CAB GRAB HANDLES, BL GRAB HANDLE RH INTERIOR WINDSHIELD POST	0	0	**0**
S	2DX90X	**REAR CAB SUSPENSION**	REAR CAB SUSPENSION, AIR	0	0	**0**
	4UAB1X	**HOOD LATCH FINISH**	BRIGHT FINISH HOOD LATCHES	0	0	**128**
	154AA3	**HORN - AIR**	(2) MACK RECTANGULAR SINGLE TRUMPET (ONE EACH SIDE OF CAB ROOF)	9	0	**103**
S	LXXC1X	**HORN - ELECTRICAL**	SINGLE TONE	0	0	**0**
	152AC4	**MIRRORS - EXTERIOR**	BULLDOG STYLIZED MIRRORS - LH & RH HEATED & MOTORIZED W/INTEGRAL CONVEX MIRROR	3	0	**682**
	153AA1	**MIRRORS - CONVEX TYPE CAB DOORS**	WITH AERO MIRRORS	0	0	**0**
	157027	**SUN VISOR - EXTERIOR**	SUN VISOR, EXTERIOR, FIBERGLASS (PAINTED)	12	0	**208**

				WEIGHT (LB)		
WHEELS & TIRES			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	4WCC1X	**GHG STEER TIRE CATEGORY (PAWS)**	LOW ROLLING RESISTANCE, BETTER FUEL ECONOMY	0	0	**0**
	900AZ6	**TIRES BRAND/TYPE - FRONT**	315/80R22.5 L MICHELIN XZUS2 (20000 lbs) (Total for QTY = 2)	327	0	**1,054**
	531AE3	**WHEELS - FRONT**	22.5x9.00 HAYES LEMMERZ STEEL DISC 10-HOLE HUB PILOTED, FIVE HAND HOLES(11 1/4"/286mm BC) 5.25" INSET (Total for QTY = 2)	186	0	**-50**
S	FWT002	**FRONT AXLE TIRE & WHEEL QUANTITY**	TWO FRONT TIRES & WHEELS	0	0	**0**
	4XCC1X	**GHG DRIVE TIRE CATEGORY (PAWS)**	LOW ROLLING RESISTANCE, BETTER FUEL ECONOMY	0	0	**0**
	901341	**TIRES BRAND/TYPE - REAR**	11R24.5 H MICHELIN X WORKS Z (26440 lbs) (ALL POSITION) (Total for QTY = 8)	0	1,129	**3,152**
	346AF5	**WHEELS - REAR**	24.5x8.25 HAYES LEMMERZ STEEL DISC 10-HOLE HUB PILOTED, TWO HAND HOLES (11 1/4"/286 mm BC) (Total for QTY = 8)	0	635	**-384**
S	RWT008	**REAR AXLE TIRE & WHEEL QUANTITY**	EIGHT REAR AXLE TIRES & WHEELS	0	0	**0**
S	H1EB1X	**DRIVE WHEEL STUDS**	DRIVE WHEEL STUDS LONGER LENGTH	0	0	**0**
S	15XABX	**TIRE INFLATION VALVE**	STANDARD VALVE STEMS AND CAPS	0	0	**0**
S	80AA1X	**WHEEL NUT & FINISH, FRONT**	WHEEL NUT BASIC FINISH, FRONT	0	0	**0**
S	3PBA1X	**WHEEL NUT FINISH, REAR (CA)**	WHEEL NUT BASIC FINISH, REAR	0	0	**0**

				WEIGHT (LB)		
COMMUNICATION SYSTEMS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	3YAA1X	**CO-PILOT - DISPLAY FEATURES ACCESS LEVEL**	DISPLAY FEATURES, LIMITED, NO DRIVER ACCESS LEVEL 1	0	0	**0**
S	M30060	**TELEMATIC GATEWAY**	GUARDDOG CONNECT WITH 4G/LTE AND WLAN SYSTEM WITH DIAGNOSTIC SERVICES	0	0	**0**
S	U5CD1X	**REMOTE SOFTWARE UPGRADE**	REMOTE SOFTWARE UPGRADE ENABLED	0	0	**0**

				WEIGHT (LB)		
ENGINE ELECTRONICS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	WOXA1X	**OIL PRESSURE, ENGINE SHUTDOWN**	OIL PRESSURE, ENGINE SHUTDOWN	0	0	**0**
S	WMXA1X	**COOLANT TEMP, ENGINE SHUTDOWN**	COOLANT TEMP, ENGINE SHUTDOWN	0	0	**0**
S	K5XA2X	**ENGINE PROTECTION SYSTEM**	ENGINE PROTECTION (SHUTDOWN)	0	0	**0**
S	K7XH3X	**ENGINE IDLE CONTROL**	IDLE CONTROL, 650 RPM	0	0	**0**
S	X0AB0X	**SMART IDLE ELEVATED IDLE RPM TIME**	INCREASE 10 MINUTE MAXIMUM TIME	0	0	**0**
S	M3CA1X	**IDLE S/D ABS TAMPER CHECK**	IDLE SHUTDOWN ABS TAMPER CHECK, ENABLED	0	0	**0**
S	E0XGAX	**ENGINE IDLE SHUTDOWN TIME**	IDLE SHUTDOWN TIME 10 MIN.	0	0	**0**
S	B1ACAX	**IDLE S/D WARNING TIME**	30 SEC IDLE S/D WARNING TIME	0	0	**0**
S	A8AALX	**IDLE S/D IF WARM-UP TEMP**	38C DEG (100F), WARM UP TEMP DELAY	0	0	**0**
S	A4AAEX	**IDLE S/D WARM-UP TIMER**	5 MIN. WARM UP TIME DELAY	0	0	**0**
S	A6AABX	**IDLE S/D IF PTO ACTIVE**	ENGINE IDLE SHUTDOWN TIME OVERRIDDEN IF PTO ACTIVE	0	0	**0**
S	B0AAAX	**IDLE SHUTDOWN IF POWER > LIMIT**	ENG IDLE SHUTDOWN TIME OVERRIDDEN IF TORQUE > THAN LIMIT	0	0	**0**
S	M4CB1X	**IDLE S/D OVERIDE %ENGINE LOAD**	IDLE SHUTDOWN OVERIDE UPTO 20% ENGINE LOAD THRESHOLD	0	0	**0**
S	D2AAFX	**AMBIENT TEMP MIN TRESHOLD**	AMBIENT TEMP MIN TRESHOLD, 16 DEG C, (60 DEG F)	0	0	**0**
S	D3AAEX	**AMBIENT TEMP MAX TRESHOLD**	AMBIENT TEMP MAX TRESHOLD, 27 DEG C, (80 DEG F)	0	0	**0**
S	B3ABAX	**EL HD THROTTLE,MAX ROAD SPEED**	ELECTRONIC HAND THROTTLE, MAX ROAD SPEED, 16 KMH (10 MPH)	0	0	**0**
	B6ACEX	**EL HAND THROTTLE,MAX ENG SPEED**	ELECTRONIC HAND THROTTLE, MAX ENGINE SPEED, 2100 RPM	0	0	**0**
S	B4ADAX	**EL HAND THROTTLE,MIN ENG SPEED**	ELECTRONIC HAND THROTTLE, MIN ENGINE SPEED, 700 RPM	0	0	**0**
S	B9AABX	**EL HD THROTTLE,SPEED RAMP RATE**	ELECTRONIC HAND THROTTLE, SPEED RAMP RATE, 100 RPM/SEC	0	0	**0**

				WEIGHT (LB)		
TRANSMISSION ELECTRONICS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	M050B5	**TRANS SHIFT MODE POINTS**	MACK mDRIVE- ENHANCED PERFORMANCE MODE-AUTO RETURN (premium)	0	0	**0**
S	M08038	**ECONO ROLL**	ECONO ROLL DISABLE mDRIVE (REQUIRED FOR ALL OTHER TRANSMISSIONS)	0	0	**0**
S	6SAA1X	**TRANSMISSION KICK-DOWN MODE**	MACKCELLERATOR ENABLE	0	0	**0**
	E1EZ1X	**ALLISON GPIO PACKAGE**	WITHOUT GPIO PACKAGE	0	0	**0**
	B1EA1X	**TRANSM AUTO NEUTRAL ON P-BRAKE**	mDRIVE TRANSMISSION AUTO NEUTRAL ON PARKING BRAKE	0	0	**0**
	E3EZ1X	**ROLL DIRECTION CHANGE INHIBIT**	WITHOUT ROLLING DIRECTION CHANGE INHIBIT	0	0	**0**
	E4EZ1X	**AUX FUNCTION RANGE INHIBIT**	WITHOUT AUXILIARY FUNCTION RANGE INHIBIT	0	0	**0**
	F5EZ1X	**PRESELECT GEAR IN ENG. BRAKE**	WITHOUT ALLISON PRESELECTED GEAR DURING ENGINE BRAKING	0	0	**0**
	N5EZ1X	**DIRECTION CHANGE ENABLE**	WITHOUT DIRECTION CHANGE ENABLE FUNCTION (DATALINK)	0	0	**0**
	E5EZ1X	**PRIMARY CALIBRATION SHIFT MASK**	WITHOUT PRIMARY CALIBRATION SHIFT SELECT MASK	0	0	**0**

				WEIGHT (LB)		
TRANSMISSION ELECTRONICS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
	E6EZ1X	**SECOND CALIBRATION SHIFT MASK**	WITHOUT SECONDARY CALIBRATION SHIFT SELECT MASK	0	0	**0**
	E7EZ1X	**FUELSENSE CALIBRATION**	WITHOUT FUELSENSE	0	0	**0**
	E2EZ1X	**LOAD/GRADE SHIFT SENSING**	WITHOUT LOAD/GRADE SHIFT SENSING	0	0	**0**
	E8EZ1X	**DYNACTIVE BIAS IN PRIMARY MODE**	WITHOUT DYNACTIVE BIAS, PRIMARY CAL	0	0	**0**
	E9EZ1X	**DYNACTIVE BIAS SECONDARY MODE**	WITHOUT DYNACTIVE BIAS, SECONDARY CAL	0	0	**0**
	F1EZ1X	**NEUTRAL AT STOP**	WITHOUT NEUTRAL AT STOP	0	0	**0**
	F6EZ1X	**ACCELERATION RATE MGMENT BIAS**	WITHOUT ALLISON ACCELERATION RATE MANAGEMENT	0	0	**0**

				WEIGHT (LB)		
VEHICLE ELECTRONICS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	JDXA1X	**CRUISE CONTROL**	CRUISE CONTROL	0	0	**0**
S	JFXLLX	**CRUISE CONTROL, MAX SPEED**	MAX CRUISE, 105 KPH (65 MPH)	0	0	**0**
S	E3AACX	**CRUISE CONTROL MIN SPEED**	MIN CRUISE, 32 KPH (20 MPH)	0	0	**0**
S	E4AAAX	**CRUISE RESUME WITH CLUTCH**	CRUISE RESUME WITH CLUTCH	0	0	**0**
S	E5AACX	**ENG BRK ENGAGE IN CRUISE**	ENG BRK ENGAGE IN CRUISE, 3 MPH, ABOVE SET SPEED	0	0	**0**
	Y3CC5X	**PEDAL RSL SETTING**	105 KM/H PEDAL ROAD SPEED LIMITER (65MPH)	0	0	**0**
S	JCXE6X	**ROAD SPEED LIMITER SETTING**	105 KM/H ROAD SPEED LIMITER(65 MPH)	0	0	**0**
S	L2CA1X	**PDLO ENGAGED VLS**	POWER DIVIDER LOCK OUT (PDLO) ROAD SPEED LIMIT 8KMH (5MPH)	0	0	**0**
	W5BZ1X	**MAXIMUM ENG SPEED AT 0 MPH**	WITHOUT MAXIMUM ENGINE SPEED AT 0 MPH	0	0	**0**
S	A4BAAX	**DETECTION SPEED SENSR TMPRNG**	DETECTION OF SPEED SENSOR TAMPERING, ENABLE	0	0	**0**
S	8RXAEX	**ENG TORQUE LIMIT,SPEED SENSOR**	ENG TORQUE LIMITED TO 50%, IF SPEED SENSOR TAMPER DETECTED	0	0	**0**
S	X3CB1X	**DRIVER ID FUNCTION**	DRIVER ID FUNCTION, DISABLED	0	0	**0**
S	G5AAHX	**ENGINE OVERSPEED,ALL COND, LOG**	ENGINE OVERSPEED, ALL CONDITIONS, TIME LOG IF ABOVE 2200 RPM	0	0	**0**
S	G2AAGX	**ENGINE OVERSPEED,FUELED, LOG**	ENGINE OVERSPEED, FUELED, TIME LOG IF ABOVE 2100 RPM	0	0	**0**
S	G4AAUX	**VEHICLE OVERSPEED,ALL COND,LOG**	VEHICLE OVERSPEED,ALL COND, TIME LOG IF ABOVE 75MPH (121KMH)	0	0	**0**
S	G3AAPX	**VEHICLE OVERSPEED, FUELED, LOG**	VEHICLE OVERSPEED, FUELED, TIME LOG IF ABOVE 70MPH (113KMH)	0	0	**0**
S	G1AABX	**ENGINE IDLE DELAY TO LOG**	ENGINE IDLE DELAY TO START LOG, 2 MIN	0	0	**0**
S	W9A01X	**PERIODIC TRIP LOG DAY OF MONTH**	PERIODIC TRIP LOG, DAY 1 OF THE MONTH	0	0	**0**
S	R4BA1X	**PRE-TRIP DIAGNOSTIC INSPECTION**	PRE-TRIP DIAGNOSTICS INSPECTION, BASIC	0	0	**0**

				WEIGHT (LB)		
PTO ELECTRONICS			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	Y9CR1X	**TRANS PTO1 SPLITTER RANGE**	PTO1 FOR SPLITTER RANGE - KEYPAD REMOTE CONTROLLED	0	0	**0**

PTO ELECTRONICS			DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	Z1CR1X	TRANS PTO2 SPLITTER RANGE	PTO2 FOR SPLITTER RANGE - KEYPAD REMOTE CONTROLLED	0	0	0
S	F3AAEX	PTO1 SINGLE SPEED CONTROL RPM.	PTO 1ST, SINGLE SPEED SETTING, 1000 RPM	0	0	0
S	F5AABX	PTO 1ST, MAX ROAD SPEED	1ST PTO, MAX ROAD SPEED, 10 MPH (16 KPH)	0	0	0
S	F6AABX	PTO 1ST, SPEED RAMP RATE	PTO 1ST, SPEED RAMP RATE 100 RPM/SEC	0	0	0
S	F7AAPX	PTO 1ST, MAX ENGINE SPEED	PTO 1ST, MAX ENGINE SPEED, 2100 RPM	0	0	0
S	F8AAGX	PTO 1ST, ROAD SPEED LIMIT	PTO 1ST, ROAD SPEED LIMIT, 97 KMH (60 MPH)	0	0	0
S	F9AABX	PTO 1ST, MINIMUM ENGINE SPEED	PTO 1ST, MINIMUM ENGINE SPEED, 600 RPM	0	0	0
S	H6AAEX	PTO 2ND, SINGLE SPEED SETTING	PTO2 SINGLE SPEED SETTING, 1000 RPM	0	0	0
S	H0AABX	PTO 2ND, MAX ROAD SPEED	2ND PTO, MAX ROAD SPEED, 10 MPH (16 KPH)	0	0	0
S	G9AABX	PTO 2ND, SPEED RAMP RATE	PTO 2ND, SPEED RAMP RATE 100 RPM/SEC	0	0	0
S	H7AANX	PTO 2ND, MAX ENGINE SPEED	PTO 2ND, MAX ENGINE SPEED, 2100 RPM	0	0	0
S	H5AAGX	PTO 2ND, ROAD SPEED LIMIT	PTO 2ND, ROAD SPEED LIMIT, 97 KMH (60 MPH)	0	0	0
S	G8AABX	PTO 2ND, MINIMUM ENGINE SPEED	PTO 2ND, MINIMUM ENGINE SPEED, 600 RPM	0	0	0

PAINT			DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	950AD0	PAINT DESIGN	SINGLE COLOR	0	0	0
S	924014	PAINT TYPE	SOLID PAINT	0	0	0
	944CM0	PAINT COLOR - FIRST COLOR	MACK RED; P9189	0	0	0
S	945998	PAINT COLOR - SECOND COLOR	NO SECOND TRUCK COLOR PROVIDED; NO COLOR	0	0	0
S	946998	PAINT COLOR - THIRD COLOR	NO THIRD TRUCK COLOR PROVIDED; NO COLOR	0	0	0
S	996AA3	PAINT - CAB PAINT SYSTEM	PAINT - CAB, URETHANE CLEAR COAT	0	0	0
S	MPB944	CAB COLOR	SAME AS FIRST COLOR - CAB	0	0	0
S	MPD944	HOOD COLOR	SAME AS FIRST COLOR - HOOD	0	0	0
	966944	SUN VISOR COLOR	SAME AS FIRST COLOR - SUN VISOR	0	0	55
S	MPC998	SLEEPER ROOF COLOR	WITHOUT SLEEPER ROOF COLOR	0	0	0
S	MPA998	ROOF FAIRING COLOR	WITHOUT ROOF FAIRING	0	0	0
S	951AA6	CHASSIS RUNNING GEAR	MACK BLACK (URETHANE)	0	0	0
	958028	BUMPER	W/O OPTIONAL BUMPER PAINT	0	0	0
S	959019	FUEL TANK - ***NO INVENTED VARIANTS ALLOWED in the FUEL TANK PAINT FAMILY***	W/O OPTIONAL FUEL TANK PAINT	0	0	0
	07XD1X	FRONT WHEEL PAINT	PRE-FINISHED POWDER COAT GRAY	0	0	0
	08XD1X	DRIVE WHEEL PAINT	PRE-FINISHED POWDER COAT GRAY	0	0	0
S	954AA1	PAINTED DISC WHEELS, FRONT	WITHOUT PAINT	0	0	0
S	955AA1	PAINTED DISC WHEELS, REAR	WITHOUT PAINT	0	0	0
S	956016	DEMOUNT.RIMS-FRONT	WITHOUT PAINT	0	0	0
S	957027	DEMOUNT.RIMS-REAR	WITHOUT PAINT	0	0	0
S	952AA1	SPOKE WHEELS-FRONT	WITHOUT OPTIONAL SPOKE WHEEL PAINT	0	0	0
S	953AA1	SPOKE WHEELS-REAR	WITHOUT OPTIONAL SPOKE WHEEL PAINT	0	0	0

PAINT			DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
S	962032	HUBS & DRUMS-FRONT	SAME AS CHASSIS RUNNING GEAR	0	0	0
S	963033	HUBS & DRUMS-REAR	SAME AS CHASSIS RUNNING GEAR	0	0	0

CALCULATED CODES - KAX			DESCRIPTION	WEIGHT (LB) FRONT	WEIGHT (LB) REAR	LIST PRICE
	Y0XC5X	FRONT RIDE HEIGHT AT FULL LOAD	RIDE HEIGHT 206-215 MM CL AXLE TO LOWER FRAME FLANGE	0	0	0
	Y1XG1X	REAR RIDE HEIGHT AT FULL LOAD (CA)	RIDE HEIGHT 271-290 MM, CL AXLE TO LOWER FRAME FLANGE	0	0	0
	4CAAHX	NUMBER OF OPTIONAL SWITCHES	NUMBER OF OPTIONAL SWITCHES, 8	0	0	0
S	9JXA1X	PROPCALC SELECTION (CA)	YES, THE ORDER MUST BE CALCULATED	0	0	0
	TJXA2X	NUMBER OF PROP.SHAFTS	TWO PIECE PROP.SHAFTS	0	0	0
	TFXVVX	PROP.SHAFT LENGTH, MAIN AXLE	MAIN PROP.SHAFT LENGTH 1750	0	0	0
	TDXV2X	PROP.SHAFT LENGTH, FIRST AXLE	FIRST PROP.SHAFT LENGTH 1775	0	0	0
	TNXCCX	PROP.SHAFT FIRST BRKT VERTICAL	PROP.SHAFT FIRST BRKT, POS 03	0	0	0
	TSXA1X	PROP.SHAFT 1 BRKT POS. HORIZON	PROP.SHAFT 1 BRKT POSITION C	0	0	0
	XMXA1X	PROP SHAFT BRKT, FIRST, ANGLE	PROP. SHAFT BRACKET FIRST POSITION ANGLE BASIC (90 DEGREES)	0	0	0
	X2XK8X	CROSSMEMBER '1' LOCATION	CROSSMEMBER1 X=5850MM	0	0	0
	X9XP6X	CROSSMEMBER 'B' LOCATION	CROSSMEMBER B X=6800MM	0	0	0
	E7BG1X	AIR TANK LENGTH, POSITION 1	AIRTANK LENGTH, POSITION 1, 800 MM	0	0	0
	E8BC1X	AIR TANK LENGTH, POSITION 2	AIRTANK LENGTH, POSITION 2,500MM	0	0	0
	E9BA1X	AIR TANK LENGTH, POSITION 3	AIRTANK LENGTH, POSITION 3, 300MM	0	0	0
	V1BA1X	AIR TANK POSITION 1	AIR TANK POSITION 1	0	0	0
	V2BA1X	AIR TANK POSITION 2	AIR TANK POSITION 2	0	0	0
	V3BA1X	AIR TANK POSITION 3	AIR TANK POSITION 3	0	0	0
	R5BB1X	AIRTANK POS 1, BRACKET POS 1	AIRTANK PSO 1, BRACKET POS1, XM5100	0	0	0
	R6BH1X	AIRTANK POS 1, BRACKET POS 2	AIRTANK POS 1, BRACKET POS 2, XM5700	0	0	0
	R7BB1X	AIRTANK POS 2, BRACKET POS 1	AIRTANK POS 2, BRAKCET POS 1, XM5400	0	0	0
	R8BF1X	AIRTANK POS 2, BRACKET POS 2	AIRTANK POS 2, BRACKET POS 2, XM5700	0	0	0
	R9BH5X	AIRTANK POS 3, BRACKET POS 1	AIRTANK POS. 3, BRACKET POS.1, XM6350	0	0	0
	T1BH1X	AIRTANK POS 3, BRACKET POS 2	AIRTANK POS.3, BRACKET POS.2, XM6500	0	0	0
	T2BJ5X	AIRTANK POS 4, BRACKET POS 1	AIRTANK POS.4, BRACKET POS.1, XM6450	0	0	0
	T4BK1X	AIRTANK POS 5, BRACKET POS 1	AIRTANK POS.5, BRACKET POS.1, XM7300	0	0	0
	T6BL1X	AIRTANK POS 6, BRACKET POS 1	AIRTANK POS.6, BRACKET POS.1, XM7300	0	0	0

				WEIGHT (LB)		
BASE WARRANTY & PURCHASED COVERAGES			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	898003	**VEHICLE WARRANTY TYPE**	HEAVY DUTY WARRANTY CLASSIFICATION	0	0	0
S	M50030	**BASIC CHASSIS COVERAGE**	HEAVY DUTY STANDARD BASE COVERAGE 12 MONTHS/100,000 MILES (161,000 KM)	0	0	0
S	M51021	**ENGINE WARRANTY**	MACK MP7/MP8 BASE ENGINE COVERAGE 24 MONTHS / 250,000 MILES (402,000KM)	0	0	0
S	M52022	**EMISSION COMPONENT COVERAGE**	US and CANADA EQUIPPED VEHICLE EMISSION COMPONENTS COVERAGE 60 MONTHS/100,000 MILES (161,000 KM)	0	0	0
S	M54104	**TRANSMISSION WARRANTY**	36 MONTHS: STANDARD mDRIVE HD TRANSMISSIONS HEAVY DUTY WARRANTY	0	0	0
S	M55035	**CARRIER & AXLE HOUSING WARRANTY**	STANDARD MACK HEAVY DUTY COVERAGE 36 MONTHS / 350,000 (563,000 KM)	0	0	0
S	M56026	**AIR CONDITIONING WARRANTY**	AIR CONDITIONING STANDARD COVERAGE (Sealed System Only) 12 MONTHS UNLIMITED MILEAGE	0	0	0
S	M57027	**CHASSIS TOWING WARRANTY**	STANDARD NORMAL / HEAVY DUTY CHASSIS TOWING 90 DAYS OR 5,000 MILES	0	0	0
S	M58028	**ENGINE TOWING WARRANTY**	STANDARD MACK ENGINE TOWING COVERAGE 24 MONTHS/250,000 MILES (402,000 KM)	0	0	0
S	M690F9	**GUARDDOG CONNECT BUNDLE**	24 MONTH - GUARDDOG CONNECT WITH MACK OTA (with ASIST and Mack OneCall))	0	0	0
S	M67017	**PREMIUM MAINTENANCE - CHASSIS LUBE AND INSPECTION**	W/O PREMIUM MAINTENANCE - CHASSIS LUBE AND INSPECTION COVERAGE	0	0	0

				WEIGHT (LB)		
Z - DO NOT USE - OBSOLETE			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
S	508AA3	**COOLING PERFORMANCE**	STANDARD COOLING PERFORMANCE	12	-2	0

				WEIGHT (LB)		
ADDITIONAL OPTIONS (Requested)			**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
CA	2710302	**WHEELBASE**	302"	0	0	0
CA	Frame		Truck will be getting 20K steerable	0	0	0

			WEIGHT (LB)		
ADDITIONAL ENGINEERING (Requested)		**DESCRIPTION**	FRONT	REAR	**LIST PRICE**
CA	19M03540		0	0	0

	FRONT	REAR
FRONT/REAR AXLE WEIGHT (LB)	10411	9668
TOTAL WEIGHT (LB)	20,078	

MACK

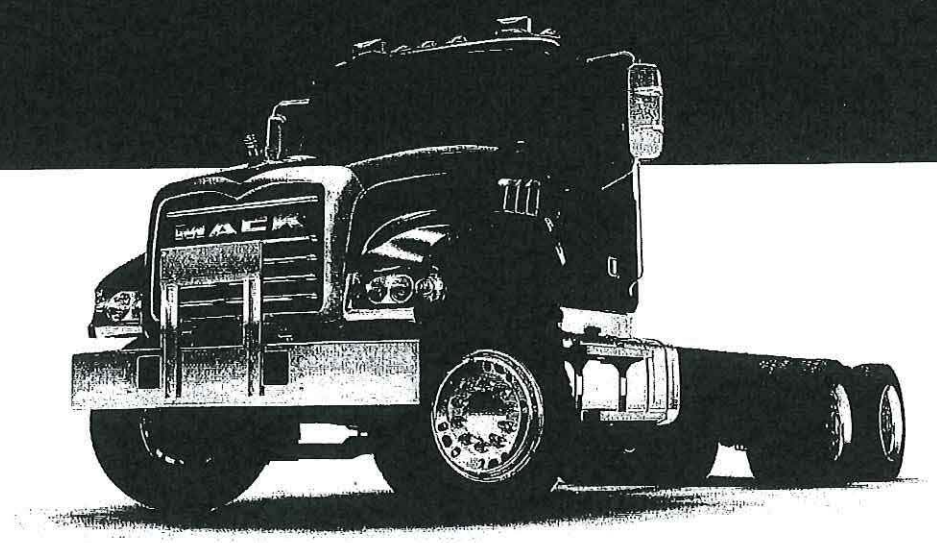
PRICING SUMMARY
GRANITE 64FR

VEHICLE PRICE		
BASE SELLING PRICE		$130,024.00
EXTERNAL LOCALS		
Pusher Axle with Tires and Rims		$9,775.00
TOTAL VEHICLE PRICE		**$139,799.00**
TAX EXEMPT ITEMS		
Flatbed Body and Crane from DC Bates		$145,963.00
TOTAL TAX EXEMPT ITEMS		**$145,963.00**
TAX SUMMARY	AMT. SUBJECT TO TAX	
FRET (12%)	$139,799.00	$16,775.88
TOTAL TAX		**$16,775.88**
TOTAL SELLING PRICE (PER UNIT)		**$302,537.88**

ATLAS CONCRETE PRODUCTS, INC DATE

GABRIELLI TRUCK SALES OF CONNECTICUT, LL DATE

MACK®



ATTACHMENT D-2

VENDOR ESTIMATE FOR SYSCO LEASING, LLC

New Vehicle Estimates, Class 6-7 Freight Trucks,
2019 International, 4300 SBA 4X2

4300 SBA 4x2

Sales Proposal For:

SYSCO COPRPORATION/ Straight Truck 26K

Presented By:

TX TRK CNTRS OF HOUS LTD

INTERNATIONAL®

January 27, 2018

Prepared For:
SYSCO COPRPORATION/ Straight Truck 26K
Purchasing Dept
1390 Enclave Pkwy.
Houston, TX 77077-2025
(801)584 - 4007
Reference ID: 2018

Presented By:
TX TRK CNTRS OF HOUS LTD
Layth Gaston
8900 NORTH LOOP EAST
HOUSTON TX 77029 -
(713)674-3444

Model Profile
2019 4300 SBA 4X2 (MA025)

List Price: $59,920

APPLICATION:	Refrigerated Van
MISSION:	Requested GVWR: 25500. Calc. GVWR: 25500 Calc. Start / Grade Ability: 25.39% / 1.78% @ 55 MPH Calc. Geared Speed: 78.3 MPH
DIMENSION:	Wheelbase: 187.00, CA: 119.90, Axle to Frame: 83.00
ENGINE, DIESEL:	{Cummins B6.7 220} EPA 2017, 220HP @ 2400 RPM, 520 lb-ft Torque @ 1600 RPM, 2600 RPM Governed Speed, 220 Peak HP (Max)
TRANSMISSION, AUTOMATIC:	{Allison 2500 HS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, Less PTO Provision, Less Retarder, with 33,000-lb GVW and GCW Max
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Navistar Select} I-Beam Type, 8,000-lb Capacity
AXLE, REAR, SINGLE:	{Meritor MS-17-14X-3DFL} Single Reduction, 17,500-lb Capacity, 190 Wheel Ends Gear Ratio: 5.29
CAB:	Conventional
TIRE, FRONT:	(2) 295/75R22.5 Load Range H CROSSTRAC HA3 (CONTINENTAL), 514 rev/mile, 75 MPH, All-Position
TIRE, REAR:	(4) 295/75R22.5 Load Range G HDR2 ECO PLUS (CONTINENTAL), 509 rev/mile, 75 MPH, Drive
SUSPENSION, REAR, AIR, SINGLE:	{International} Ride Optimized Suspension (IROS), 20,000-lb Capacity, 9.25" Ride Height, with Shock Absorbers
PAINT:	Cab schematic 100GA Location 1: 9219, Winter White (Std) Chassis schematic N/A

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
MA02500	Base Chassis, Model 4300 SBA 4X2 with 187.00 Wheelbase, 119.90 CA, and 83.00 Axle to Frame.	5474/2935	8409
1570	TOW HOOK, FRONT (2) Frame Mounted	8/0	8
1CAE	FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.125" x 3.580" x 0.312" (257.2mm x 90.9mm x 8.0mm); 460.0" (11684mm) Maximum OAL	65/315	380
1LEG	LICENSE PLATE HOLDER Includes Upper & Lower Mounting Plate Hardware, Mounted in Existing Holes in Front Bumper	3/0	3
1LLD	BUMPER, FRONT Full Width, Aerodynamic, Steel; 0.142" Material Thickness	0/0	0
	Includes : BUMPER, FRONT Powder Coated Gray (Argent) Color		
1WEH	WHEELBASE RANGE 134" (340cm) Through and Including 197" (500cm)	0/0	0
2AUS	AXLE, FRONT NON-DRIVING {Navistar Select} I-Beam Type, 8,000-lb Capacity	-21/0	-21
3770	SPRINGS, FRONT AUXILIARY Rubber	10/0	10
3ADA	SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf, 8,000-lb Capacity; with Shock Absorbers	0/0	0
	Includes : SPRING PINS Rubber Bushings, Maintenance-Free		
	Notes : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
4100	BRAKE SYSTEM, HYDRAULIC {Wabco} Split System, with Automatic Adjustment and Four Channel ABS	-11/0	-11
4722	DRAIN VALVE {Bendix DV-2} Automatic, with Heater, for Air Tank	1/0	1
	Includes : DRAIN VALVE Mounted in Wet Tank		
4GAR	BRAKE, PARKING {Bosch} DSSA Type, 12" x 3"; for Hydraulic Brake Chassis; Activated by Lever in Cab; Differential Mounted	0/0	0
	Includes : PARKING BRAKE CONTROL Lever, Floor Mounted, Located Right of Driver		
4JNP	BRAKES, FRONT, HYDRAULIC DISC Quadraulic; Four 70mm Diameter Pistons	0/0	0
4NNL	BRAKES, REAR, HYDRAULIC DISC Quadraulic; Four 70mm Diameter Pistons	0/0	0
4SPK	AIR COMPRESSOR {Cummins} 18.7 CFM Capacity, with Tank for Air Source on Hydraulic Chassis, without Gauge	36/1	37
5710	STEERING COLUMN Tilting and Telescoping	0/0	0
5CAL	STEERING WHEEL 2-Spoke, 18" Dia., Black	0/0	0
5PRG	STEERING GEAR {TRW (Ross) TAS40} Power	0/0	0
7BKY	EXHAUST SYSTEM Single, Horizontal Aftertreatment Device, Frame Mounted Under Right Rail, Back of Cab, Includes Short Horizontal Tail Pipe	0/0	0
8000	ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
	Includes : BATTERY BOX Steel		

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
	: DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab : HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever : JUMP START STUD Located on Positive Terminal of Outermost Battery : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light : STARTER SWITCH Electric, Key Operated : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector : TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature : TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted : WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever : WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted : WIRING, CHASSIS Color Coded and Continuously Numbered		
8518	CIGAR LIGHTER Includes Ash Cup	1/0	1
8541	HORN, ELECTRIC (2) Disc Style	1/0	1
8GGG	ALTERNATOR {Delco Remy 36SI} Brushless, 12 Volt 165 Amp. Capacity, Pad Mount, with Remote Voltage Sensor	7/0	7
8HAB	BODY BUILDER WIRING Back of Standard or Sleeper Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/ Turn	2/0	2
8NBJ	BATTERY SYSTEM {JCI} Maintenance-Free (4) 12-Volt 2800CCA Total	0/0	0
8RME	RADIO AM/FM/WB/Clock/3MM Auxiliary Input, with Multiple Speakers, with CD Player	1/0	1
8THB	BACK-UP ALARM Electric, 102 dBA	0/3	3
8TKC	STOP, TURN, TAIL & B/U LIGHTS {Truck Lite} Super 44, with LED Lights for Stop, Turn and Tail Lights, Truck Lite Super 40 Lamps for Backup Lights, Less Power Module, Includes License Plate Light, Includes Separate Rear Reflectors, Less Rubber Mount	0/5	5
8VBA	POWER SOURCE, SPECIAL for Customer Installed Lift Gate; 200 Amp Max, Includes 00ga. Power Cable to End of Frame, Optional Power (PDM) for Power Source, Latched Switch on Instrument Panel, with a Time Out Feature, Battery Discharge Protection, Controlling a Mag Switch Which Provides Power	2/1	3
8VUL	BATTERY BOX Steel with Plastic Cover, 18" Wide, 2, 3, or 4 Battery Capacity, Mounted Left Side Back of Cab	0/0	0
8WBW	JUMP START STUD Remote Mounted Includes : JUMP START STUD Mounted to Battery Box	2/0	2
8WMA	SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer Furnished Back of Cab Light	2/1	3
8WPB	HEADLIGHTS Halogen; Composite Aero Design for Two Light System; Includes Daytime Running Lights	0/0	0
8WPH	CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
8WTK	STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection	0/0	0
8WWJ	INDICATOR, LOW COOLANT LEVEL with Audible Alarm	0/0	0
8XAH	CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses	0/0	0
8XBK	SWITCH, AUXILIARY Switch 40 amp Circuit for Customer Use; Includes Wiring Connection at PDC and Control in Cab	2/0	2
8XGT	TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
9HAD	GRILLE Chrome	0/0	0
9WAC	BUG SCREEN Mounted Behind Grille	5/0	5
9WAY	FRONT END Tilting, Fiberglass, with Three Piece Construction	0/0	0
10060	PAINT SCHEMATIC, PT-1 Single Color, Design 100 Includes : PAINT SCHEMATIC ID LETTERS "GA"	0/0	0
10761	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
10943	KEYS - ALL ALIKE Fleet - Includes Ignition and Cab Door Keys	0/0	0
10WBD	KEYS - ALL ALIKE, ID Z-100	0/0	0
10WCY	SAFETY TRIANGLES	6/0	6
11001	CLUTCH Omit Item (Clutch & Control)	-64/-11	-75
12703	ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0
12EJG	ENGINE, DIESEL {Cummins B6.7 220} EPA 2017, 220HP @ 2400 RPM, 520 lb-ft Torque @ 1600 RPM, 2600 RPM Governed Speed, 220 Peak HP (Max)	0/0	0
12EMZ	VENDOR WARRANTY, ENGINE {Cummins} B6.7 Engine; 3-Year Unlimited Miles Standard Warranty	0/0	0
12TSY	FAN DRIVE {Borg-Warner SA85} Viscous Type, Screw On Includes : FAN Nylon	0/0	0
12UYE	RADIATOR Aluminum; 2-Row, Cross Flow, Over Under System, 717 Sqln Louvered, with 313 Sqln Charge Air Cooler, with In-Tank Transmission Cooler Includes : DEAERATION SYSTEM with Surge Tank : HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps : RADIATOR HOSES Premium, Rubber	35/-4	31
12VBR	AIR CLEANER with Service Protection Element Includes : GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	0/0	0
12VGM	FEDERAL EMISSIONS {Cummins B6.7} EPA, OBD and GHG Certified for Calendar Year 2018	0/0	0

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
12VXT	THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary; Variable Speed; Mounted on Steering Wheel	0/0	0
12WPV	OIL PAN 15 Quart Capacity, For Cummins ISB/B6.7 Engines	0/0	0
12WSY	BLOCK HEATER, ENGINE {Phillips} 120 Volt/750 Watt, for Cummins ISB/B6.7 Engines	2/0	2
12WZJ	EMISSION COMPLIANCE Low NOx Idle Engine; Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal located on Driver Door	0/0	0
12XAT	ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; with Ignition Switch Control for Cummins ISB/B6.7 or ISL/L9 Engines	0/0	0
13ASL	TRANSMISSION, AUTOMATIC {Allison 2500 HS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, Less PTO Provision, Less Retarder, with 33,000-lb GVW and GCW Max	0/0	0
	Includes : OIL FILTER, TRANSMISSION Mounted on Transmission : TRANSMISSION OIL PAN Magnet in Oil Pan		
13WLN	TRANSMISSION OIL Synthetic; 20 thru 28 Pints	0/0	0
13WYV	SHIFT CONTROL PARAMETERS Allison 1000 or 2000 Series Transmissions, 5th Generation Controls, with EcoCal and Dynamic Shift Sensing (FuelSense Basic)	0/0	0
14899	SUSPENSION AIR CONTROL VALVE Pressure Release Control In Cab	5/3	8
14ANP	AXLE, REAR, SINGLE {Meritor MS-17-14X-3DFL} Single Reduction, 17,500-lb Capacity, 190 Wheel Ends , Gear Ratio: 5.29	0/29	29
	Includes : REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle		
	Notes : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires. : When Specifying Axle Ratio, Check Performance Guidelines and TCAPE for Startability and Performance		
14TBJ	SUSPENSION, REAR, AIR, SINGLE {International} Ride Optimized Suspension (IROS); 20,000-lb Capacity, 9.25" Ride Height, with Shock Absorbers	0/-32	-32
	Notes : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.		
14WMG	AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 30 thru 39.99 Pints	0/0	0
15LMZ	LOCATION FUEL/WATER SEPARATOR Mounted Outside Left Rail, 50" Back of Cab	0/0	0
15LNG	FUEL/WATER SEPARATOR {Davco 245} 12 VDC Electric Heater, Includes Pre-Heater, Includes Water-in-Fuel Sensor	0/0	0
15SRE	FUEL TANK Top Draw, Non-Polished Aluminum, D-Style, 19" Tank Depth, 50 US Gal (189L), with Quick Connect Outlet, Mounted Left Side, Under Cab	3/-3	0
	Notes : N/A with 19.5" Tires		

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
15WDG	DEF TANK 7 U.S. Gal. 26.5L Capacity, Frame Mounted Outside Left Rail, Under Cab	0/0	0
16030	CAB Conventional	0/0	0
	Includes : ARM REST (2) Molded Plastic, One Each Door : CLEARANCE/MARKER LIGHTS (5) Flush Mounted : COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window : CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel : DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted : GLASS, ALL WINDOWS Tinted : GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side : GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side : INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color		
16564	HEATER SHUT-OFF VALVES (1) Ball Valve Type, Supply Line	2/0	2
16DAP	CAB INTERIOR TRIM ACCENT Seat Fabric, Black	0/0	0
16HBA	GAUGE CLUSTER English with English Electronic Speedometer	0/0	0
	Includes : GAUGE CLUSTER (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter : ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout : WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)		
16HGH	GAUGE, OIL TEMP, AUTO TRANS for Allison Transmission	1/0	1
16HKT	IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
16HLJ	GAUGE, DEF FLUID LEVEL	0/0	0
16JCJ	SEAT, DRIVER {National Model HP} Air Suspension, High Back, Mordura Cloth, 2 Arm Rests, Isolator, 3-14 Degree Back Recline, 3 Chamber Air Lumbar, 23" Wide Cushion, 6 Position Front Cushion Adjust, 3 Position Rear Cushion Adjust, Bellows	0/0	0
16REM	SEAT, PASSENGER {National 2000} Non Suspension, High Back, Mordura Cloth, 2 Arm Rests 11 Degree Back Angle	0/0	0
16SEA	MIRROR, CONVEX, HOOD MOUNTED {Lang Mekra} Right Side; 7.44" Sq., Bright	6/0	6
16SNA	MIRRORS (2) {Lang Mekra} Rectangular, Black Heads, Brackets and Arms, Breakaway Type, 7.55" x 14.1" Integral Convex Both Sides, 102" Inside Spacing	-3/0	-3
16VBS	CONSOLE, CENTER Polypropylene, with One Coin Holder, One Cup Holder and One Thermos Holder, with Laptop PC or Clipboard Storage, Includes small Storage Area	12/0	12
16VCC	SEAT BELT All Orange, 1 to 3	0/0	0
16WCT	AIR CONDITIONER {Blend-Air} with Integral Heater & Defroster	66/5	71
	Includes : HEATER HOSES Premium : HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps : REFRIGERANT Hydrofluorocarbon HFC-134A		

Code	Description	F/R Wt (lbs)	Tot Wt (lbs)
16WJS	INSTRUMENT PANEL Center Section, Flat Panel	0/0	0
16WJU	WINDOW, POWER (2) and Power Door Locks, Left and Right Doors, Includes Express Down Feature	5/0	5
16WKY	HVAC FRESH AIR FILTER	4/0	4
16WLE	STORAGE POCKET, DOOR Molded Plastic, Full Width, Mounted on Passenger Door	1/0	1
16WLS	FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood	1/0	1
16WRX	CAB INTERIOR TRIM Deluxe	0/0	0
	Includes : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket : DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors : FLOOR COVERING Rubber, Black : HEADLINER Soft Padded Cloth : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section : STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door : SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console		
16XWD	SUNSHADE, EXTERIOR Aerodynamic, Painted Roof Color; Includes Integral Clearance/Marker Lights	15/2	17
27DUW	WHEELS, FRONT {Accuride 51408} DISC; 22.5x8.25 Rims, Powder Coat Steel, 2-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/0	0
28DUW	WHEELS, REAR {Accuride 51408} DUAL DISC; 22.5x8.25 Rims, Powder Coat Steel, 2-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/0	0
29580	WHEEL SEALS, FRONT {International} Oil-Lubricated Wheel Bearings	0/0	0
29AAU	TIRE VALVE CAP {Alligaro V2B} Flo-Thru Design	0/0	0
29SAJ	HUB CAPS (2) {Stemco} Front with Oversize Opening.	0/0	0
29WLK	WHEEL BEARING, FRONT, LUBE {EmGard FE-75W-90} Synthetic Oil	0/0	0
7702495434	(4) TIRE, REAR 295/75R22.5 Load Range G HDR2 ECO PLUS (CONTINENTAL), 509 rev/mile, 75 MPH, Drive	0/160	160
7792495436	(2) TIRE, FRONT 295/75R22.5 Load Range H CROSSTRAC HA3 (CONTINENTAL), 514 rev/mile, 75 MPH, All-Position	74/0	74
	Services Section:		
40116	WARRANTY Standard for Durastar 1000/4000 Series, Effective with Vehicles Built January 2, 2015 or Later, CTS-2475P	0/0	0
	Total Component Weight:	**5761/3410**	**9171**

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.

Customer	SYSCO LEASING LLC 1390 ENCLAVE PKWY HOUSTON 77077-2025 TX	Your ref.	Jeff Little
		Quote no.	SYSC2017000027PSTD
		Alternative Id	1
		Date	1/23/2018
Customer no	2450759103	Order Date	
Org No		Last Change	1/23/2018
Telephone	2815841390		
Mobile phone			

Model

				Qty	Discounted List Price	
ANTHEM 42T DAYCAB				50	$100,074	
CA Status	Non-Approved					
Order number						
Price List	2017-09-10					
Delivery Time						
Delivery Addres						
Family		ID	S/O	Description		
CUSTOMER/VEHICLE INFO						
CHASSIS (BASE MODEL)		0029546	Standard	ANTHEM 42T DAYCAB		
PRICE BOOK LEVEL		PB1019A	Standard	2019A Pricebook		
VEHICLE MODEL YEAR		A192019	Option	2019 MODEL YEAR		
CUSTOMER FLEET SIZE		MP20003	Option	NATIONAL ACCOUNTS (CORPORATE APPROVAL REQUIRED)		
TYPE OF SERVICE		0130001	Standard	COMMERCIAL		
INITIAL REGISTRATION LOCATION		5051701	Standard	ALL 50 STATES, CARB ENGINE EMISSION (US17)		
LANGUAGE-PUBS/DECAL/SIGNS		5340001	Standard	ENGLISH		
VEHICLE USE & BODY/TRAILER TYPE		0059225	Option	REFRIGERATED VAN TRAILER		
TRANSPORT CYCLE		TC-DISTR	Standard	LOCAL DISTRIBUTION		
GROSS COMBINATION WEIGHT		GCW36.0	Standard	80,000 LB (36 TONNES) GROSS COMBINATION WEIGHT		
BRAKE REGULATION		BREG76	Standard	BRAKE REGULATION, STOPPING DISTANCE 76M (250FT)		
TOPOGRAPHY		T-FLAT	Option	GRADES <3% GREATER THAN 98% OF DRIVING DISTANCE MAX GRADE 8%		
AMBIENT TEMP UPPER LIMIT (GTA)		ATU40	Standard	AMBIENT TEMPERATURE HOT. WARMER THAN 104 F (40 C) ALLOWED UP TO 25 HOURS PER YEAR		
TERRAIN GRADE		0320079	Standard	ON HIGHWAY, STARTING GRADES<16%		
LOADING SURFACE		0350010	Standard	CONCRETE LOADING AND / OR UNLOADING SURFACE		
VEHICLE VOCATION		0340101	Standard	LINEHAUL / LONG HAUL SERVICE		
APPLICATION PACKAGES						
APPLICATION RECOMMENDATIONS		0230000	Standard	WITHOUT SPECIAL SALES PACKAGE		

EXTERIOR BRIGHT WORK	EXBRI-2	Option	CHROME EXTERIOR TRIM PACKAGE	434.00	
PILOT INSPECTION	0220000	Standard	NO PILOT REQUESTED		
ENGINE/TRANSMISSIONS					
ENGINE	1001757	Option	MP7-395C MACK 395HP @ 1450-1700 RPM (PEAK) 1950 RPM (GOV) 1560 LB-FT, US'17 (ON-HWY ONLY)	1,142.00	
GEAR SELECTION TUNING	GST-BAS	Standard	BASIC, GEAR-SELECTION TUNING		
GHG APPLICATION, VEHICLE	GHG-HIG	Standard	GREEN HOUSE GAS HIGHWAY APPLICATION		
SCALABLE ROAD SPEED LIMIT	USCAL	Standard	WITHOUT SCALABLE ROAD SPEED LIMITER		
TRANSMISSION	1361501	Standard	MACK TMD12AFO mDRIVE 12 SP-(OVERDRIVE)		
TRANSMISSION ELECTRONICS	UTRE	Option	W/O ELECTRONIC TRANS PACKAGE OPTION		
ENGINE GOVERNOR TYPE	EGT-MM	Standard	ENGINE GOVERNOR TYPE MIN-MAX		
EXHAUST/EMISSIONS					
CARB 2008 IDLE REGULATION	CIR0003	Standard	IDLE EMISSION CERTIFICATION - CARB 08 (WITH DECAL LOCATED ON LOWER LH CORNER OF DRIVER DOOR		
DPF DIESEL PARTICULATE FILTER	DPF0111	Standard	CLEARTECH ONE BOX E.A.T.S. RH SIDE UNDER CAB US17		
DPF COVER	DPFC-SSP	Option	DPF COVER STAINLESS STEEL, POLISHED	240.00	
EXHAUST	1305004	Option	SINGLE VERTICAL RIGHT SIDE INBOARD MOUNTED STRAIGHT EXH STACK TURNED OUT	29.00	
EXHAUST HEAT SHIELD TYPE	EXSH-BAS	Standard	EXHAUST HEAT SHIELD TYPE, BASIC		
EXHAUST STACK HEIGHT	EXSTH37	Option	12' 1" FROM GROUND		
EXHAUST - BRIGHT FINISH	EXMF-BS4	Option	SINGLE, BRIGHT FINISH HEAT SHIELD AND SCR COVER (IF EQUIPPED)	22.00	
DEF TANK	DF11170	Standard	18.4 GALLON (70 L) 26" LEFT SIDE FRAME MTD		
DEF TANK COVER	ADTC-BF	Option	BRIGHT FINISH DEF TANK COVER	40.00	
EMISSION ON BOARD DIAG CONTROL	EOBD-U18	Standard	EMISSION OBD, DISPLAY ONLY, USA2018		
SMART WAY CERTIFICATION	UEPASWAY	Standard	W/O SMARTWAY CERTIFICATION		
ENGINE EQUIPMENT					
AIR INTAKE - INSIDE/OUTSIDE	AIS-HDO	Standard	W/O INSIDE/OUTSIDE AIR INTAKE		
BUG SCREEN	1219001	Option	BLACK ALUMINUM MOUNTED BEHIND GRILLE, WITHOUT WINTER FRONT COVER	39.00	
AIR COMPRESSOR	1134100	Standard	MERITOR/WABCO 318 (18.7 CFM)		
RELOCATE FUEL FILTER (CA)	FPP-STD	Standard	STANDARD FUEL FILTER POSITION		
ALTERNATOR	1321235	Option	DELCO 12V 165A (36SI) BRUSHLESS, W/REMOTE VOLTAGE SENSING	234.00	
BATTERIES	3166106	Option	(4) MACK 12V 760/3040 CCA THREADED STUD TYPE	197.00	
COOLING PERFORMANCE	5081004	Standard	STANDARD COOLING PERFORMANCE		
COOLANT PROTECTION	1192000	Option	CHEVRON EXTENDED LIFE COOLANT W/O NITRITES(50/50 MIX DYED RED) TO -34DEG	3.00	
COOLANT FILTER / CONDITIONER	COOLF-LL	Option	SPIN ON CANISTER W/O CHEMICAL FOR USE W/TEXACO EXTENDED LIFE COOLANT ONLY	66.00	
FAN DRIVE	1180027	Standard	BEHR FAN AND ELECTRONIC MODULATING VISCOUS FAN DRIVE		
ENGINE BRAKE	1100700	Standard	MACK MP7 POWERLEASH		
FUEL-WATER SEPARATOR	2939098	Option	DAVCO 382 W/12V HEATER & 120V HEATER IN CONJUNCTION W/ENG BLOCK HEATER & MACK SEC FUEL FILTER		
AUX. FUEL SYSTEM EQUIPMENT	UAUXFUEL	Standard	WITHOUT AUXILLIARY FUEL HEATING		
FUEL HEATER (CA)	UFUEQWH	Standard	W/O FUEL HEATER		

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BATTERY DISCONNECT SWITCH	3180010	Option	FLAMING RIVER BIG SWITCH WIRED TO POSITIVE SIDE	136.00	
BATTERY BOX - MOUNTING	3939101	Standard	(4) BATTERY MAX, MTD LHS UNDER CAB, PARALLEL TO FRAME W/STEPS, W/AIR RESVR. MTD BELOW		
BATTERY BOX COVER	BBOXC-BA	Standard	MOLDED PLASTIC		
EMERGENCY START STUDS	ESS-BBM	Option	EMERGENCY START STUDS, BATTERY BOX MOUNTED	155.00	
HOSES - RADIATOR/HEATER	1249031	Option	MACK EPDM RADIATOR & HEATER HOSES, W/BREEZE CONSTANT TORQUE CLAMPS ON ALL COOLANT LINES	30.00	
STARTER	12STR-S2	Standard	12 VOLT DELCO 39MT-MXT		
OIL PAN	OILS-ST	Standard	OIL PAN		
TETHER DEV PKG, CAPS & COVERS	TDCC-P1	Standard	FURNISH CAP RETAINER FOR OIL FILL & RADIATOR OVERFLOW TANK		
ENGINE BLOCK HEATER	110EBH15	Option	120V 1500 WATT ENGINE BLOCK HEATER	91.00	
ENGINE OIL PAN HEATER	UOPHEAT	Standard	W/O OIL PAN HEATER OPTIONW/O OIL PAN HEATER		
ENGINE STARTING AID	EST-AID	Option	ELECTRIC PREHEATER	74.00	
OIL SYSTEM	UENGDRFL	Standard	W/O OIL CHANGE SYSTEM		
VEHICLE/TRAILER STOP LAMP APPLICATION (CA)	JMX-E1X	Option	VEHICLE AND TRAILER (IF APPLICABLE) STOP LAMPS UPON SERVICE/HI POS ENG. BRAKE APPLICATION(3899004)	1,015.00	
BATTERY SHOCK PADS	BISO-RUB	Option	SHOCK PADS UNDER BATTERIES	5.00	
CLUTCH/TRANS EQUIPMENT					
GEAR SHIFTER	4921401	Option	MACK mDRIVE-FLEET SHIFTER		
CLUTCH	1335201	Standard	ZF/SACHS SINGLE PLATE 17" (430MM) ORGANIC MATERIAL		
CLUTCH PEDAL	UCPEDAL	Option	W/O CLUTCH PEDAL		
CLUTCH ASSIST (AIR)	UCLAS	Standard	W/O AIR ASSIST		
DRIVELINE - MAIN	1951102	Standard	MERITOR RPL25 W/PERMALUBE U-JOINTS		
LUBRICANTS, TRANSMISSION	LUBET-SN	Standard	SYNTHETIC OIL IN TRANSMISSION		
TRANSMISSION OIL COOLER	1390026	Standard	MACK mDRIVE TRANSMISSION OIL COOLER MTD LH SIDE OIL TO WATER COOLER		
DRIVESHAFT GUARD	UPSBG	Standard	WITHOUT DRIVESHAFT GUARD FOR CENTER BEARING		
DRIVESHAFT MAIN U-JOINT	PSMUJ-HR	Standard	PROPELLER SHAFT MAIN, UNIVERSAL JOINT HALF-ROUND TYPE		
TRANSMISSION OUTPUT TORQUE	TTOR-B	Standard	TRANSMISSION OUTPUT TORQUE BASIC		
TRANSMISSION BELL HOUSING	BELLH-AL	Standard	ALUMINUM		
CLUTCH BRAKE	UCLB	Standard	W/O CLUTCH BRAKE		
CLUTCH RELEASE HOSE	ULBLINE	Option	W/O LUBRICATION FITTING OPTION		
TRANSMISSION TORQUE CONVERTER	4420000	Option	W/O TRANS TORQUE CONVERTER		
TRANSMISSION ADAPTATION RING	UTADPT	Standard	WITHOUT TRANSMISSION ADAPTATION RING		
TRANSMISSION OIL MONITORING	UTOMRF	Standard	WITHOUT TRANSMISSION OIL MONITORING, REMOTE FITTING		
ENGINE START CONDITION	UESC	Standard	W/O CLUTCH STARTING SWITCH OPTION		
GRADE GRIPPER	HILLSTA	Standard	GRADE GRIPPER		
TRANS SHIFT MODE POINTS	M050011	Option	MACK mDRIVE-NORMAL W/O PERFORMANCE MODE (fleet)		
SHUTDOWN-TRANS. TEMP.	TRAPROT	Option	TRANS. PROTECTION, ENGINE SHUT DOWN (HIGH TEMP.)		
ECONO ROLL	M080002	Standard	ECONO ROLL DISABLE mDRIVE (REQUIRED FOR ALL OTHER TRANSMISSIONS)		
mDRIVE MACKCELLERATOR	UTKDM	Option	MACKCELLERATOR DISABLE		
mDRIVE MACK PREDICTIVE CRUISE	UPVT	Standard	WITHOUT MACK PREDICTIVE CRUISE		

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FRONT AXLE EQUIPMENT					
FRONT AXLE	2402026	Option	12000# (5400 KG) MERITOR MFS-131 (HIGH OFFSET)	269.00	
SPRINGS - FRONT	2441006	Standard	MACK TAPERLEAF HD 12000# (5400 KG) GROUND LOAD RATING		
BRAKES - FRONT	2411108	Standard	MERITOR "S" CAM TYPE 16.5" x 5" Q+		
BRAKE DRUMS - FRONT	BF-DRCAS	Standard	CAST IRON BRAKE DRUM, FRONT AXLE		
BRAKE LININGS - FRONT	BLMF-M11	Option	MERITOR SOR2003 BRAKE LINING		
DUST SHIELDS - FRONT	UFBRDUST	Standard	OMIT		
SLACK ADJUSTERS - FRONT	FBADJ-AM	Option	MERITOR - AUTOMATIC		
BRAKE CHAMBERS - FRONT	FBCM-ANC	Standard	FRONT BRAKE CHAMBER MANUFACTURER, ANCHORLOK		
BRAKE CHAMBER SIZE - FRONT	FBCS24	Standard	FRONT BRAKE CHAMBER 24SQ INCHES (SERVICE)		
HUB CAPS - FRONT	HUBC-VS	Option	FRONT AXLE HUB CAPS STEMCO		
HUBS - FRONT	HUBF-PAS	Option	ALUMINUM PRESET HUB, FRONT W/ INTEGRATED SPINDLE NUT	18.00	
OIL SEALS - FRONT	HOSF-PRE	Option	PREMIUM HUB OIL SEAL, FRONT		
SPINDLE NUTS - FRONT	SPNF-INT	Option	INTEGRATED TYPE		
STEERING	2452107	Standard	TRW TAS-65 INTEGRAL POWER		
FRONT SUSP MAINTENANCE	FSM-MFR	Standard	MAINTENANCE FREE, RUBBER SPRING EYE BUSHINGS		
LUBRICANTS -FRONT AXLE	LUBEF-SG	Option	WHEEL BEARINGS 75W - 90 (SYNTHETIC LUBRICANT)	26.00	
REAR AXLE EQUIPMENT					
REAR AXLE - SINGLE	2522016	Standard	23000# (10433kg) MERITOR RS-23-161 SINGLE REDUCTION		
WIDE TRACK AXLE OPTION	RACWD-ST	Standard	W/O WIDE TRACK AXLE OPTION		
CARRIER - REAR AXLE	0180000	Standard	VENDOR CARRIER		
REAR AXLE RATIO	RAT3.21	Option	3.21 RATIO		
SUSPENSION PRESSURE DETECTION	USPDLOAD	Standard	WITHOUT SUSPENSION PRESSURE DETECTION		
REAR SUSPENSION - SINGLE	2601037	Option	MAXLITE 23EZ RATED @ 23,000LB.		
REAR AXLE BREATHERS	UBREF	Standard	WITHOUT BREATHER FILTER RELOCATION		
SUSPENSION LEVELING DEVICE	SUSPL-E	Option	ELECTRICAL REGULATION LEVELING DEVICE		
AIR SUSPENSION DUMP WARNING	ASD-SLW	Option	AIR SUSPENSION DUMP, SPEED LIMITED, WARNING INDICATOR & BUZZER		
SHOCK ABSORBERS - REAR	RSHABS	Option	SHOCK ABSORBERS - OUTBOARD MOUNTED ON FORWARD AND REAR AXLES EACH SIDE		
TRANSVERSE TORQUE RODS	TTR-RD	Option	TRANSVERSE TORQUE ROD (REAR AXLE ONLY)		
BRAKES - REAR	2531108	Standard	MERITOR - CAM 16.5"x8 5/8" Q+		
BRAKE DRUMS - REAR	BR-DRCAS	Standard	CAST IRON BRAKE DRUMS		
SLACK ADJUSTERS - REAR	RBADJ-AM	Option	MERITOR - AUTOMATIC		
REAR BRAKE CHAMBER SIZE	RBCS3030	Standard	REAR SPRING BRAKE CHAMBERS 30/30 TYPE		
DUST SHIELDS - REAR BRAKE	UDBRDUST	Standard	OMIT		
REAR BRAKE LINING	BLMD-M13	Option	MERITOR MA-2301 BRAKE LINING (TANDEM TRACTOR)		
HUBS - REAR	HUBD-PAS	Standard	ALUMINUM PRESET REAR HUB W/INTEGRATED SPINDLE NUT		
OIL SEALS - REAR	HOSD-PRE	Standard	PREMIUM		
REAR AXLE SPINDLE NUT	SPNM-INT	Standard	SPINDLE NUTS, MAIN AXLE, INTERGRATED		
LUBRICANTS, REAR AXLE(s)	LUBER-SN	Option	75W - 90 (SYNTHETIC LUBRICANT)	78.00	
REAR BRAKE CHAMBER MFG.	3000002	Standard	HALDEX "GOLD SEAL" BRAKE CHAMBERS		
TRACTION DIFFERENTIAL	2540000	Standard	OMIT DIFFERENTIAL LOCKS - 3 AXLES		
ABS SENSOR/CHANNEL OPTION	ABS4S4M	Standard	4S/4M SYSTEM REAR WHEEL END SENSORS		

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ANTI-LOCK BRAKE SYSTEM	6982000	Standard	MACK ROAD STABILITY ADVANTAGE BENDIX ABS/ATC/ESP W/YAW CONTROL		
AIR SYSTEM VALVE VENDOR	BRV-V4	Standard	BENDIX SWITCHES AND VALVES WHERE POSSIBLE		
TRACTION CONTROL DISABLE	UTCD	Standard	W/O AUTOMATIC TRACTION CONTROL (ATC) DISABLE SWITCH		
SPRING BRAKE INVERSION VALVE	USBRAIV	Standard	WITHOUT SPRING BRAKE INVERSION VALVE		
PUSHER/TAG AXLE EQUIPMENT					
AUXILIARY AXLE CONTROLS	MAC0000	Option	WITHOUT AUXILIARY AXLE CONTROLS		
TRAIL. AXLE BRAKE DUST SHIELD	UTBRDUST	Standard	TRAILING BRAKES WITHOUT DUST SHIELDS		
AUX AXLE CTRL VALVE LOCATION	UAXCONV	Standard	WITHOUT AUXILIARY AXLE CONTROL VALVE LOCATION		
FRAME EQUIPMENT/FUEL TANKS					
WHEELBASE	2710167	Option	167"		
AF (OVERHANG)	3740033	Standard	33"		
FRAME RAILS	2741023	Option	STEEL - 266MM X 90MM X 7MM – (10.47" X 3.54" X 0.275")	121.00	
FRAME-RUST PREVENTATIVE (CA)	UTRUSTP	Standard	W/O RUST PREVENTATIVE OPTION		
BOLT ON FRONT FRAME EXTENSION	UFFE	Standard	W/O FRONT FRAME EXTENSION		
FRONT FRAME LENGTH	FFL1285	Standard	STANDARD BUMPER POSITION		
CROSSMEMBERS	2811000	Standard	STEEL		
CROSSMEMBERS BEHIND REAR AXLE	UACMR	Standard	W/O OPTIONAL CROSSMEMBERS BEHIND REAR AXLE/BOGIE		
FRAME RAIL CLEARANCE	UFRF	Standard	W/O FRAME RAIL CLEARANCE		
REAR CROSSMEMBER OPTIONS	RXM-S14P	Option	REAR XMBER/TRUCK APPL, FOR PINTLE HOOK PH-30RP41, INCL SAFETY CHAIN LOOP DEVICE		
TAPERED FRAME RAIL ENDS	RF-TAP45	Option	FURNISH TAPERED AND FLANGED FRAME RAIL ENDS (45DEG.)		
MUD FLAP BRACKETS	69X-C8X	Option	BETTS B84 PAINTED MUDFLAP BRKT W/ADD'L B850 HANGER BRKTS MTD FWD OF REAR SUSP		
MUD FLAP TYPE, REAR AXLE	RMUDF-B	Option	PLAIN BLACK RUBBER, NO NAME TO APPEAR ON FLAP	53.00	
MUD FLAP, FRONT AXLE	UFMUD	Standard	W/ FRONT AXLE SPRAY SHIELD, W/O MUDFLAP		
FRONT BUMPER	BUMP-AB	Standard	AERODYNAMIC, PAINTED, WITH BLACK ACCENT		
RADIATOR GUARD	UCGUARD	Standard	W/O RADIATOR GUARD		
SKID PLATE	GUARD-R	Standard	SKID PLATE UNDER BUMPER AND RADIATOR		
TRUNNION BRACKET	UXMBBT	Standard	WITHOUT CROSSMEMBER, BOGIE		
TOWING DEVICE, FRONT	TDF2CLEV	Standard	(2) CLEVIS		
PINTLE HOOK	C-HPH30R	Option	HOLLAND PH-30RP41, PINTLE HOOK	155.00	
TOWING DEVICE,REAR	UTOWR	Standard	W/O REAR TOWING DEVICE		
FUEL TANK - LH	2882093	Option	93 GALLON (350 L) 26" ALUMINUM ROUND	79.00	
FUEL LEVEL SENDER UNIT, LIQUID	FLS-BASL	Standard	BASIC FUEL LEVEL SENDER MOUNTED ON L.H TANK		
FUEL TANK - RH	2902072	Standard	72 GALLON (275 L) 26" ALUMINUM ROUND		
TOOL BOX	UTOOLB	Standard	W/O TOOL BOX		
FUEL LINE MATERIAL	FHOS-WBR	Option	BRAIDED HOSE	54.00	
FILLER NECK SCREENS	8520005	Option	FOR ALL FUEL TANK(S) W/O SUMP	99.00	
FUEL SYSTEM - DUAL	FLI-DUAL	Option	DUAL DRAW AND RETURN FUEL SYSTEM		
FUEL TANK CAP	FCAP-UL	Standard	NON-LOCKABLE FUEL TANK CAP		
FUEL TANK MODIFICATION (CA)	4560000	Standard	W/O FUEL TANK MODIFICATION OPTION		
STEPS (BRIGHT) - FUEL TANK	2230002	Option	STANDARD FINISH STEPS AND BRIGHT FINISH STRAPS	89.00	
FUEL TANKS - BRIGHT FINISH	UFTNKPOL	Standard	W/O BRIGHT FINISH FUEL TANKS		

ISOLATE TANK FROM FUEL SYSTEM	UHYTP	Standard	W/O ISOLATED TANK(S)		
QUARTER FENDERS	4642000	Option	PLASTIC QUARTER FENDERS	93.00	
AIR/BRAKE					
AIR DRYER	AIRM-B10	Option	BENDIX AD9 WITH COALESCING OIL FILTER	166.00	
AIR TANK DRAIN VALVE	DRVA-MC	Option	MANUAL DRAIN VALVES, WITH LANYARDS ON ALL TANKS	8.00	
AIR RESERVOIRS	ATANK-ST	Standard	STEEL		
AIR DRYER POSITION (CA)	ADP-STD	Standard	W/O RELOCATION OPTION		
PARK BRAKE ALARM	3MB-C1X	Option	ELEC HORN TO SOUND WHEN DRIVER DOOR OPEN W/PARK BRK RELEASED AND KEY ON & KEY OFF		
PARKING BRAKE VALVE	PBV-YR	Standard	TWO (2) VALVE DUAL BRAKE SYSTEM - TRAILER SUPPLY AND TRACTOR-TRAILER PARK		
RELOCATE AIR RESERVOIRS	1410000	Standard	W/O RELOCATED AIR TANKS		
INCREASE AIR CAPACITY	UAUXATNK	Standard	W/O INCREASED AIR RESERVOIR CAPACITY		
ELECTRICAL					
CHASSIS WIRING HARNESS CASING	CWC-HD	Standard	CHASSIS & POWER HARNESS WITH HEAVY DUTY CASING		
AUXILIARY SPOTLIGHT (CA)	UASL	Standard	W/O SPOTLIGHT		
BACK-UP ALARM	BUPALARS	Option	W/INTERMITTENT FEATURE (AMBIENT NOISE SENSITIVE) 87-112 dB	138.00	
AUX. FOG LAMP	FOGL-WB	Option	FOG LAMP (ROUND)	130.00	
FOG LAMP TECHNOLOGY	FOGT-LED	Option	FOG LAMP TECHNOLOGY LED		
TAIL LAMPS	TL-SER44	Standard	LED TYPE TAIL LAMP MODULE MTD BELOW REAR CROSSMEMBER		
AUXILIARY LAMPS	UAUXL	Standard	W/O AUX LAMP PROVISIONS		
DASH MOUNTED SWITCHES	UAUXSW	Standard	W/O MISC ELECT SWITCHES OPTION		
MARKER/DIRECTIONAL SIGNAL	MARKD3NA	Standard	TRUCKLITE LED TYPE SIDE MARKER LIGHT		
DAYTIME RUNNING LIGHTS	LOWB-DA7	Standard	PARK BRAKE AND ENGINE RUNNING ACTIVATED		
WARNING LAMP	UWARNLIG	Standard	WITHOUT WARNING LIGHTS		
TRAILER CONNECTIONS					
FIFTH WHEEL	3301236	Option	FIXED FONTAINE SL6PML SERIES LH RELEASE	-229.00	
FIFTH WHEEL MTG ANGLES/DRILLING	5WM-STEV	Option	STATIONARY 5TH WHEEL MTG, 0" TO 24"OFFSET, 2" SPACING		
FIFTH WHEEL ANGLE MATERIAL	FWAM-ST	Standard	STEEL FIFTH WHEEL ANGLES		
FIFTH WHEEL ANGLE THICKNESS	5WAT10	Standard	5TH WHEEL ANGLE, 10MM THICKNESS		
FIFTH WHEEL OFFSET	FWP0150	Option	50" BOGIESPREAD = 31" OFFSET, 52" BS = 32", 54" BS = 33", 55" BS = 33.5", 4x2 = 6"		
FIFTH WHEEL GUIDE RAMPS (CA)	URAMP	Standard	W/O FIFTH WHEEL GUIDE RAMPS		
GRD.TO TOP OF FIFTH WHEEL	G5WH1220	Option	1220MM (48") GROUND TO 5TH WHEEL TOP HEIGHT		
FIFTH WHEEL LEG-HEIGHT (KAX Result)	5WH210	Option	210MM (8.26"), FIFTH WHEEL LEG-HEIGHT (SELECTED BY KAX)		
TRAILER GLAD HAND COUPLINGS	TBC-NA	Standard	GLAD HAND COUPLINGS - NORTH AMERICAN STD		
TRAILER CONNECTIONS	TBCP-BOC	Standard	TRAILER AIR BRAKE CONNECTIONS, BACK OF CAB		
HAND CONTROL VALVE	TRBRAKE1	Standard	HAND CONTROL VALVE FOR TRAILER BRAKES OR SERVICE BRAKES WITHOUT END OF FRAME AIR CONNECTIONS		
TRAILER ACCESS PACKAGE	RDECK-SL	Option	LOW PROFILE DECK PLATE	589.00	
HEAVY-DUTY POWER CIRCUIT	M1X-A6X	Option	TWO-PIN PLUG, BOC, 150AMP CIRC FOR LIFT GATE W/15' PWR CABLE		
HOSE TENDER/TOWEL BAR	HH-TB2S	Option	TOWEL BAR - (2) SINGLE SPRING HOSE TENDER	75.00	

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TRAILER ELECTRICAL RECEPT	3210013	Option	SINGLE 7 PINS STD SAE TYPE, BACK OF CAB & END OF FRAME	251.00	
TRAILER AIR HOSES	TBH-ST	Standard	TRAILER AIR HOSES (12 FT NON-COILED TYPE)		
TRAILER HOOKUP LIGHT	3229017	Option	DUAL TRUCKLITE SUPER-44 LED 27 DIODE RECESSED IN BOC	288.00	
TRAILER CONNECTORS HOLDER	TCH2A1E	Standard	ELECTRICAL PLUG HOLDER (INCLUDES GLAD HAND STORAGE)		
TRAILER ELECTRICAL CORD	TECC-STS	Standard	TRAILER ELECTRICAL CORD (12 FT NON-COILED TYPE)		
LOAD LOCK BRACKETS	ULOADLOK	Standard	W/O OPTIONAL SLEEPER BOX REINFORCEMENT		
PTO/SPECIALTY EQUIPMENT					
HYDRAULIC PUMP	8260000	Standard	WITHOUT HYDRAULIC PUMP		
FRAME MODIFICATIONS	0150000	Standard	NO FRAME MODIFICATIONS PROVIDED		
CERTIFIED WEIGHT	9970001	Standard	CERTIFIED WEIGHT		
PTO - CONTROL	UPTOCONT	Standard	WITHOUT TRANSMISSION PTO CONTROL		
NEUTRAL CONTROL	UPTOTNC	Standard	W/O NEUTRAL CONTROL		
PTO - SIDE MOUNTED CLEARANCE	UPTSS	Standard	WITHOUT PTO TRANSMISSION SIDE, FREE SPACE		
PTO - REAR MOUNTED	1890004	Standard	W/O REAR MTD PTO - (mDRIVE only)		
ON BOARD SCALES (CA)	OBS0000	Standard	W/O ON BOARD SCALES		
AIR UNLOAD SYSTEM	UBULKUA	Standard	WITHOUT AIR UNLOAD SYSTEM		
COLLISION WARNING SYSTEM	5482101	Option	BENDIX FUSION FRONT & SIDE COLLISION AVOIDANCE WARNING SYSTEM, STAT OBJ.BRAKING W/O ADJ ACC TIME GAP	887.00	
ACC TIME GAP CONFIG SETTING	ACCTG-C5	Option	ADAPTIVE CRUISE CONTROL ADJUSTABLE TIME GAP CONFIGURATION 5		
CWS VOLUME LEVEL	M320002	Option	VOLUME LEVEL FLEET PRESET - MEDIUM		
LANE DEPATURE SYSTEM	LSS-DW2B	Option	LANE SUPPORT SYSTEM, DEPARTURE WARNING,FUSION,W/DATA CAPTURE		
UNIQUE DECALS MACHINE DIRECTIV (CA)	USIGNSWC	Standard	W/O SPECIAL DECALS		
CAB (A THRU G)					
AUX.INCAB PNEUMATIC LINE	UAPNOUTC	Standard	WITHOUT CAB CLEANOUT		
AIR CONDITIONING/HEATER	1731002	Standard	BLEND AIR HVAC W/"ATC" TEMP REGULATION		
AIR RESTRICTION INDICATOR	AIRRI-F2	Option	FILTER MINDER CANISTER MTG.	16.00	
CAB ACCESS STEPS	CSTEP-BA	Standard	FURNISH STANDARD (2) STEP CAB ACCESS OPTION		
CAB GLASS	1450001	Standard	TINTED WINDSHIELD, TINTED SIDE WINDOW AND TINTED REAR WINDOW (IF EQUIPPED)		
CAB PEEP WINDOW	AWIND-RB	Standard	PEEP WINDOW ON RIGHT SIDE NON STG WHL POS. DEPEND		
CAB SKIRT	CSK0000	Standard	WITHOUT CAB SKIRT		
DOME LAMP, INTERIOR	DL-BS2R	Standard	(4) DOME LAMPS - DOOR AND SWITCH ACTIVATED		
EMBLEMS OPTION	EMB-CPL	Standard	W/O MISC ORNAMENT CHANGE OPTION		
FIRE EXTINGUISHER	7860007	Option	5LB (ABC RATED/AMEREX) MOUNTED BETWEEN LH SEAT BASE AND DOOR WITH VALVE AIMED REARWARD	93.00	
FLOOR COVERING	1840007	Standard	POLYURETHANE FLOOR MAT		
GAUGE - PACKAGE, SECONDARY	U2GAUGE	Standard	WITHOUT SECONDARY GAUGE PACKAGE (SWITCHES ONLY)		
GAUGE - EXHAUST PYROMETER	GEXPYR	Option	GAUGE, EXHAUST PYROMETER	53.00	
HUBODOMETER	UHUBMETR	Standard	W/O HUBODOMETER		
GAUGE - REAR AXLE OIL TEMP	UGOTRA	Standard	WITHOUT REAR AXLE OIL TEMPERATURE GAUGE		
GAUGE - MANIFOLD PRESSURE	UGPMFOLD	Standard	W/O MANIFOLD PRESSURE GAUGE		

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GAUGE - SERVICE TRAILER BRAKE PRESSURE	UBPAG	Standard	WITHOUT BRAKE PRESSURE APPLICATION GAUGE		
GAUGE - REAR AIR SUSP PRESSURE	UGPRAS	Standard	WITHOUT REAR AIR SUSPENSION GAUGE		
GAUGE - TRANSMISSION OIL TEMP	UGOTTR	Standard	WITHOUT TRANSMISSION OIL TEMP GAUGE		
GAUGES - UNIT OF MEASURE	1980001	Standard	U.S. UNITS (PREDOMINANT)		
GRAB HANDLES	5870108	Standard	PREMIUM BL EXTERIOR CAB GRAB HANDLE, BL GRAB HANDLE RH INTERIOR WINDSHIELD POST		
CAB (H THRU R)					
HEADLINER MATERIAL	HLIN-VIN	Standard	VINYL COVERED FOAM PADDED HEADLINER		
HOOD INSULATION	ENGCI-HO	Standard	HOOD INSULATION		
HORN - AIR	1549013	Option	(1) MACK RECTANGULAR SINGLE TRUMPET, CHROME PLATED STEEL W/SNOW SHIELD	19.00	
HORN - ELECTRICAL	HORN-E1S	Standard	SINGLE TONE		
IN-DASH STORAGE	UDASHPBX	Option	W/O UPPER STORAGE OPTION		
INSTRUMENT CLUSTER LANGUAGE	C520007	Standard	DEFAULT: English, Spanish, French, OPTION: None		
KEYED ALIKE CHASSIS	160M001	Option	ALL CHASSIS KEYED ALIKE-2 KEYS (M-001)	27.00	
KEYLESS ENTRY	DOP-MAN	Standard	W/O ELECTRONIC KEYLESS ENTRY		
MIRRORS - EXTERIOR	1523005	Option	AERO MIRROR - BODY COLOR, HEATED & MOTORIZED both sides, WIDE ANGLE both sides, W/O LAMPS	276.00	
MIRROR - CONVEX HOOD & FENDER	15H2026	Option	CONVEX AERODYNAMIC HOOD MIRROR, HEATED, R.H. & L.H.	375.00	
MIRRORS - PROXIMITY	UAMIRCLO	Standard	W/O OPTIONAL VISIBILITY MIRROR		
OVERHEAD CONSOLE	FOHS2BAS	Option	(2) STORAGE COMPARTMENTS AND NET RETAINERS W/CENTER MOUNTING FOR CB PROVISIONS		
PERMIT PLATE	UPERP	Standard	W/O PERMIT PLATE OPTION		
PERSONALIZED NAME PLATE	UPNPLATE	Standard	W/O PERSONALIZED OPTION		
RADIO/RADIO ACCOMMODATION	1748101	Standard	AM/FM PREMIUM STEREO, CD-PLAYER, MP3, WEATHERBAND, HANDSFREE INTERFACE, BLUETOOTH		
INFOTAINMENT SERVICES / FEATURES	MAS0000	Standard	WITHOUT INFOTAINMENT SERVICES / FEATURES		
RADIO - ANTENNA	ANR-MR	Standard	48" ANTENNA RIGHT SIDE MIRROR MOUNTED		
ANTENNA: SATELLITE RADIO	USATANT	Standard	W/O SATELLITE RADIO ANTENNA		
RADIO ANTENNA - CB	UANTCB	Standard	W/O ANTENNA OR PREP KIT		
AUDIO SHUTOFF	UAUDOFF	Standard	W/O AUTO RADIO SHUTOFF OPTION		
RADIO - BINDING POSTS FOR CB	PWL5WH	Standard	POWER LEADS (5-WAY BINDING POSTS FOR CB RADIO) IN HEADER CONSOLE		
AUDIO SPEAKER LOCATION	SPK-IDM	Standard	SPEAKER LOCATION, IN DOORS, MIDDLE HIGH SIDE PANEL		
RADIO - CB	UCRADIO	Standard	W/O CB RADIO		
RADIO - CB RADIO MOUNTING	CBM-OS	Standard	PROVIDE MOUNTING PLATE AND VELCRO STRAP IN HEADER CONSOLE		
REAR WINDOW	AWIND-RF	Standard	REAR WINDOW (FIXED TYPE)		
REFLECTORS - BACK OF CAB	AUXREF2	Option	RED REFLECTORS (ONE EACH SIDE) BACK OF CAB	9.00	
REFLECTOR KIT	7840004	Option	W/O SLEEPER BOX FURNISH KIT PARALLEL TO OUTSIDE SURFACE OF RIDERS SEAT BASE	32.00	
ROOF MARKER LIGHT	3129007	Option	(5) TRUCKLITE LED MARKER LIGHTS	-28.00	
REAR WALL STORAGE COMPARTMENT	RWSTC-CO	Option	INTERIOR STORAGE CONSOLE MTD ON FLOOR BETWEEN SEATS W/12 VOLT POWER OUTLET	433.00	
CAB (S THRU Z)					
INTERIOR TRIM LEVELS	0041110	Option	STANDARD PACKAGE, STEEL GRAY (Package 11A)		

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SEAT - DRIVER'S	1963140	Option	MACK-AIR, HIGH BACK, 4 CHAMBER AIR LUMBAR, BOLSTER, EXTENSION	526.00	
SEAT COVERING - DRIVER'S	MAP0002	Option	DRIVER'S SEAT - BLACK MORDURA		
SEAT - PASSENGER'S	1973000	Option	MACK-FIXED, HIGH BACK	62.00	
SEAT COVERING - PASSENGER'S	MAQ0002	Option	PASSENGER'S SEAT - BLACK MORDURA		
SEAT - DUST COVER(S)	SSDC-DS	Option	SEAT, DUST COVER FOR DRIVER'S SEAT		
SEAT ARM REST(S)	ARMRE-DS	Option	INBOARD MOUNTED ARM REST, DRIVER'S SEAT ONLY		
SEAT BELT(S)	5929008	Option	HEIGHT ADJUSTMENT D-RING SEATBELT LAP & SHOULDER RH/LH ORANGE IN COLOR	107.00	
SEAT BELT WARNING INDICATOR	USEATBR	Option	WITHOUT SEAT BELT REMINDER	-49.00	
STARTER SWITCH	IGT-KEY	Standard	KEY TYPE		
STEERING WHEEL	1610020	Standard	2 SPOKE URETHANE GRIP, SATIN ALUMINUM SPOKES, WITH SWITCHES		
STORAGE BIN ABOVE DOORS	USBAD	Standard	WITHOUT STORAGE BIN ABOVE DOORS		
SUN VISOR - INTERIOR, FRONT	ISUNF-BB	Standard	SUN VISOR - BOTH SIDES		
SUN VISOR - EXTERIOR	1570000	Standard	WITHOUT EXTERIOR SUNVISOR		
TURN SIGNALS	TSIGN-SC	Standard	SELF CANCELLING TURN SIGNALS		
WINDOW CONTROLS	1460008	Standard	POWER WINDOW LIFT WITH ELECTRIC DOOR LOCK, LH & RH		
WINDSHIELD TYPE	WIND-SP	Standard	2-PIECE WINDSHIELD		
WINDSHIELD WIPERS	1480011	Standard	2 SPEED ELECTRIC MOTOR W/INTERMITTENT FEATURE		
AERODYNAMIC DEVICES					
CAB SKIRT	UADCABS	Standard	WITHOUT CAB SKIRT		
AERODYNAMIC WHEEL CENTER COVER	UAWCC	Standard	WITHOUT AERODYNAMIC WHEEL CENTER COVER		
REAR AERODYNAMIC FAIRING	URFA	Standard	WITHOUT REAR AERODYNAMIC FAIRING		
ROOF FAIRING/SIDE SHIELDS	1590107	Option	ROOF FAIRING W/ SIDE SHIELDS (ROOF PIECES NOT INSTALLED)	1,948.00	
CHASSIS FAIRINGS	UADCHAS	Standard	WITHOUT CHASSIS FAIRINGS		
FAIRING GROUND EFFECTS	UADCHAGE	Standard	WITHOUT GROUND EFFECTS		
WHEELS & TIRES					
TIRE ROLLING RESISTANCE RATING - FRONT (FOR GHG)	4WC-C1X	Standard	LOW ROLLING RESISTANCE, BETTER FUEL ECONOMY		
TIRES BRAND/TYPE - FRONT	9001362	Option	295/75R22.5 G BRIDGESTONE R268 (ALL POSITIONS)	-12.00	
TIRE SPEED LIMIT	TSL-BAS	Standard	TIRE SPEED LIMIT BASIC		
WHEELS - FRONT	5312356	Option	22.5x8.25 ACCURIDE ACCU-LITE STEEL DISC 10-HOLE HUB PILOTED, FIVE HAND HOLES (11 1/4"/286mm BC)	-98.00	
WHEEL FINISH, FRONT	UWFF	Option	W/O FRONT DISC WHEEL BRIGHT FINISH		
AXLE TIRE & WHEEL QUANTITY - FRONT	FWT0002	Standard	TWO FRONT TIRES & WHEELS		
TIRE ROLLING RESISTANCE RATING - REAR (FOR GHG)	4XC-A1X	Standard	ADVANCED LOW ROLLING RESISTANCE, BEST FUEL ECONOMY		
TIRES BRAND/TYPE - REAR	9011340	Standard	295/75R22.5 G BRIDGESTONE M710 ECOPIA (DRIVE ONLY)		
WHEELS - REAR	3462356	Option	22.5x8.25 ACCURIDE ACCU-LITE STEEL DISC 10-HOLE HUB PILOTED, FIVE HAND HOLES (11 1/4" BOLT CIRCLE)	-204.00	
WHEEL FINISH - REAR	2350000	Option	W/O REAR DISC WHEEL BRIGHT FINISH		
TIRE & WHEEL QUANTITY - REAR	RWT0004	Standard	FOUR REAR AXLE TIRES & WHEELS		
DRIVE WHEEL STUDS	DSTUD-S	Option	DRIVE WHEEL STUDS BASIC LENGTH	-72.00	
WHEEL GUARDS - FRONT	UHWF	Standard	W/O FRONT WHEEL GUARD OPTION		
WHEEL GUARDS - REAR	UHWD	Standard	W/O PROTECTIVE NYLON SPACER BETWEEN DISCS WHEEL TO DRUM		

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WHEEL NUT & FINISH - FRONT	WNFF-BAS	Standard	W/O FRONT WHEEL NUT OPTION		
WHEEL NUT FINISH - REAR (CA)	WNFR-BAS	Standard	WHEEL NUT BASIC FINISH, REAR		
VALVE STEMS & CAPS	VAL-AFTC	Option	VALVE STEM, ALLIGARD, W/ (MEYER V2B) FLOW THRU CAP	26.00	
SPARE WHEEL	USPWT	Standard	W/O SPARE WHEEL W/TIRE		
SPARE WHEEL CARRIER, POS	USPWCARR	Standard	W/O SPARE TIRE CARRIER		
WHEEL FINISH, TRAILING	UWFT	Standard	WITHOUT WHEEL FINISH		
HYDRAULIC JACK	2820000	Standard	W/O HYDRAULIC JACK		
COMMUNICATION SYSTEMS					
SOFTWARE DOWNLOAD NOTIFICATION	USWDN	Standard	WITHOUT SOFTWARE DOWNLOAD NOTIFICATION		
SOFTWARE DOWNLOAD PASSWORD	USWPASS	Standard	WITHOUT SOFTWARE DOWNLOAD PASSWORD		
CO-PILOT - DISPLAY FEATURES ACCESS LEVEL	DFA-LIM	Standard	DISPLAY FEATURES, LIMITED, NO DRIVER ACCESS LEVEL 1		
COMMUNICATION/TRACKING DEVICE	6210000	Standard	W/O NAVIGATION/COMM DEVICE		
FLEET TRIP MANAGEMENT	UFTMAN	Standard	WITHOUT FLEET TRIP MANAGEMENT DRIVER CONTROL		
TELEMATIC GATEWAY	M300004	Standard	GUARDDOG CONNECT WITH 4G/LTE AND WLAN SYSTEM WITH DIAGNOSTIC SERVICES		
REMOTE SOFTWARE UPGRADE	USWUR	Option	WITHOUT REMOTE SOFTWARE UPGRADE		
VEHICLE ELECTRONICS					
DRIVER ID FUNCTION	DIDF-DIS	Standard	DRIVER ID FUNCTION, DISABLED		
DRIVER ID, RESET TIMER	UDIDRT	Standard	WITHOUT RESET DRIVER ID TIMER		
DRIVER ID, ALERT TIMER	UDIDAT	Standard	WITHOUT DRIVER ID ALERT TIMER		
BODY CONTROL PACKAGE (CA)	C7C-Z1X	Standard	WITHOUT CUSTOMER UNIQUE VEHICLE PARAMETERS		
FUEL ECONOMY INCENTIVE PROGRAM	UFEIP	Standard	WITHOUT FUEL ECONOMY INCENTIVE PROGRAM		
FUEL ECON RWRD, SPD LMT INCRS	UFERSLI	Standard	WITHOUT FUEL ECONOMY REWARD, SPEED LIMIT INCREASE		
FUEL ECON PNLTY, SPD LMT DCRS	UFEPSLI	Standard	WITHOUT FUEL ECONOMY PENALTY, SPEED LIMIT DECREASE		
FUEL ECONOMY REWARD TARGET	UFERT	Standard	WITHOUT FUEL ECONOMY REWARD TARGET		
FUEL ECONOMY PENALITY TARGET	UFEPT	Standard	WITHOUT FUEL ECONOMY PENALTY TARGET		
FUEL ECON CALC DISTANCE INTER	UFECD	Standard	WITHOUT FUEL ECONOMY CALCULATION DISTANCE INTERVAL		
DATAMAX ENG OVRSPD-CMPANY	EOSA2200	Standard	ENGINE OVERSPEED, ALL CONDITIONS, TIME LOG IF ABOVE 2200 RPM		
DATAMAX ENG OVRSPEED-FUEL	EOSF2100	Standard	ENGINE OVERSPEED, FUELED, TIME LOG IF ABOVE 2100 RPM		
DATAMAX VEH OVERSPEED-ALL	VOSAC75	Standard	VEHICLE OVERSPEED,ALL COND, TIME LOG IF ABOVE 75MPH (121KMH)		
DATAMAX VEH OVRSPEED-FUEL	VOSF70	Standard	VEHICLE OVERSPEED, FUELED, TIME LOG IF ABOVE 70MPH (113KMH)		
DATAMAX IDLE LOG DELAY	EIDL02	Standard	ENGINE IDLE DELAY TO START LOG, 2 MIN		
PERIODIC TRIP LOG HOUR OF DAY	UPTLOGH	Standard	WITHOUT PERIODIC TRIP LOG, HOUR		
PERIODIC TRIP LOG DAY OF WEEK	UPTLOD	Standard	WITHOUT PERIODIC TRIP LOG, DAY OF WEEK		
PERIODIC TRIP LOG DAY OF MONTH	PTLOM01	Standard	PERIODIC TRIP LOG, DAY 1 OF THE MONTH		
PRE-TRIP DIAGNOSTIC INSPECTION	PTRIP-DI	Standard	PRE-TRIP DIAGNOSTICS INSPECTION, BASIC		
VEHICLE APP SERVICE INTERVALS	USERINT	Standard	WITHOUT SERVICE INTERVALS (USER ENTERED)		
DATAMAX MAINT MONITOR	USALERT	Standard	WITHOUT SERVICE ALERT		
GUARDDOG MAINT. MONITORING	USAS	Standard	WITHOUT SERVICE ALERT SYSTEM		
MAINTENANCE DUE ALERT %	UMDALERT	Standard	WITHOUT MAINTENANCE DUE ALERT PERCENTAGE		

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SHUTDOWN-ENG.OIL PRESSURE	OPRESHUT	Standard	OIL PRESSURE, ENGINE SHUTDOWN		
SHUTDOWN-ENG.COOLANT LVL.	UCLEVSHU	Standard	WITHOUT COOLANT LEVEL ENGINE SHUTDOWN		
SHUTDOWN-ENG.COOLANT TEMP	CTEMSHUT	Standard	COOLANT TEMP, ENGINE SHUTDOWN		
ENG /OIL TEMP SHUTDOWN	ENGPROT	Standard	ENGINE PROTECTION (SHUTDOWN)		
FAN ENGAGEMENT-STATIONARY	UFCSV	Standard	WITHOUT ENG FAN CONTROL, STATIONARY VEHICLE		
FAN ENGAGEMENT-MOVING	UFCMV	Standard	WITHOUT ENG FAN CONTROL, MOVING VEHICLE		
FAN ENGAGEMENT TIME-MOVING	UFANCMT	Standard	WITHOUT ENG FAN CONTROL, MOVING VEHICLE, TIME SETTING		
FAN ENGAGEMENT DUE TO PTO	UFANEPTO	Standard	WITHOUT FAN ENGAGEMENT DUE TO PTO		
FAN ENGAGEMENT TIME-A/C	UFCACT	Standard	WITHOUT ENG FAN CONTROL, A/C ON, TIME SETTING		
DETECTION SPEED SENSR TMPRNG	DSST-E	Standard	DETECTION OF SPEED SENSOR TAMPERING, ENABLE		
PWR.LIMIT LVL.-MPH SENSOR	ETOL50ST	Standard	ENG TORQUE LIMITED TO 50%, IF SPEED SENSOR TAMPER DETECTED		
ENG HIGH IDLE-UPPER GEAR	EHISUG-D	Standard	ENGINE HIGH IDLE SPEED IN UPPER GEARS, DISABLED		
HIGH IDLE SPEED-UPPER GRS RPM	UHISUG	Standard	WITHOUT ENGINE HIGH IDLE SPEED IN UPPER GEARS		
1ST RATIO FOR REDUCD HIGH IDLE	U1RHI	Standard	WITHOUT 1ST RATIO FOR REDUCED HIGH IDLE		
LAST RATIO FOR FULL HIGH IDLE	ULFHI	Standard	WITHOUT LAST RATIO FOR FULL HIGH IDLE		
MASS SENSING TORQUE LIMITATION	UMSTL	Standard	W/O LOADSENSE TORQUE LIMITATION (use for ALL non mDRIVE transmissions)		
PTO 1ST, SINGLE SPEED CONTROL	UPTO1SSC	Standard	WITHOUT PTO 1ST, SINGLE SPEED CONTROL		
PTO1 SINGLE SPEED CONTROL RPM.	U1PTOSS	Standard	WITHOUT PTO 1ST, SINGLE SPEED SETTING		
PTO 1ST, MAX ROAD SPEED	U1PTOMXS	Standard	WITHOUT 1ST PTO, MAX ROAD SPEED		
PTO 1ST, SPEED RAMP RATE	U1PTORR	Standard	WITHOUT PTO 1ST, SPEED RAMP RATE		
PTO 1ST, MAX ENGINE SPEED	U1PMXES	Standard	WITHOUT PTO 1ST, MAX ENGINE SPEED		
PTO 1ST, ROAD SPEED LIMIT	U1PRSL	Standard	WITHOUT PTO 1ST, ROAD SPEED LIMIT		
PTO 1ST,JUMP TO MIN ENG SPEED	U1PJMIS	Standard	WITHOUT PTO 1ST, JUMP TO MINIMUM ENGINE SPEED		
PTO 1ST, MINIMUM ENGINE SPEED	U1PMIES	Standard	WITHOUT PTO 1ST, MINIMUM ENGINE SPEED		
PTO 1ST,AUTO SET SINGLE SPEED	U1PTOASP	Standard	PTO 1ST, AUTO SET SINGLE SPEED, DISABLE		
PTO 2ND, SINGLE SPEED CONTROL	UPTO2SSC	Standard	WITHOUT 2ND PTO, SINGLE SPEED CONTROL		
PTO 2ND, SINGLE SPEED SETTING	U2PTOSS	Standard	WITHOUT PTO 2ND, SINGLE SPEED SETTING		
PTO 2ND, MAX ROAD SPEED	U2PTOMXS	Standard	WITHOUT 2ND PTO, MAX ROAD SPEED		
PTO 2ND, SPEED RAMP RATE	U2PTORR	Standard	WITHOUT PTO 2ND, SPEED RAMP RATE		
PTO 2ND, MAX ENGINE SPEED	U2PMXES	Standard	WITHOUT PTO 2ND, MAX ENGINE SPEED		
PTO 2ND, ROAD SPEED LIMIT	U2PRSL	Standard	WITHOUT PTO 2ND, ROAD SPEED LIMIT		
PTO 2ND,JUMP TO MIN ENG SPEED	U2PJMIS	Standard	WITHOUT PTO 2ND, JUMP TO MINIMUM ENGINE SPEED		
PTO 2ND, MINIMUM ENGINE SPEED	U2PMIES	Standard	WITHOUT PTO 2ND, MINIMUM ENGINE SPEED		
PTO 2ND,AUTO SET SINGLE SPEED	U2PTOASP	Standard	PTO 2ND, AUTO SET SINGLE SPEED, DISABLE		
TRANS PTO1 SPLITTER RANGE	UPTO1SR	Option	W/O PTO1 FOR SPLITTER RANGE		
TRANS PTO2 SPLITTER RANGE	UPTO2SR	Option	W/O PTO2 SPLITTER RANGE		

MAXIMUM ENG SPEED AT 0 MPH	MESZ1950	Standard	1950 MAXIMUM ENGINE SPEED AT 0 MPH		
ACCELERATOR LIMITER	UALIM	Standard	WITHOUT ACCELERATOR LIMITER		
ROAD SPEED LIMIT (RSL)	SPEED105	Standard	105 KM/HOUR ROAD SPEED LIMITER(65 MILES/HOUR)		
CRUISE SPEED LIMITER	PRSL105	Standard	105 KM/H PEDAL ROAD SPEED LIMITER (65MPH)		
LOWER GEAR RD.SPD.LMT.OPT	ULGVLF	Standard	WITHOUT LOWER GEAR VEHICLE LIMITING FEATURE		
LOW GEAR LIMITING SPEED	UGVLS	Standard	WITHOUT LOW GEAR VEHICLE LIMITING SPEED		
ROAD SPEED LIMIT CONTROL TYPE	RSL-NORM	Standard	WITH RSL CONTROL TYPE NORMAL		
PDLO ENGAGE VLS FEATURE	PDLO-D	Standard	DISABLE POWER DIVIDER LOCK OUT (PDLO) ROAD SPEED LIMIT		
PDLO ENGAGED VLS	PDLO8	Standard	POWER DIVIDER LOCK OUT (PDLO) ROAD SPEED LIMIT 8KMH (5MPH)		
CRUISE CONTROL, MAX SPEED	CCM105	Standard	MAX CRUISE, 105 KPH (65 MPH)		
CRUISE CONTROL MIN SPEED	CCMI32	Standard	MIN CRUISE, 32 KPH (20 MPH)		
CRUISE RESUME WITH CLUTCH	CRUISRC	Standard	CRUISE RESUME WITH CLUTCH		
ENG BRK ENGAGE IN CRUISE	EBREC3A	Standard	ENG BRK ENGAGE IN CRUISE, 3 MPH, ABOVE SET SPEED		
CRUISE CONTROL	CRUISEC	Standard	WITH CRUISE CONTROL		
PTO1 HOLD TO NEAREST RPM	UPTO1H	Standard	WITHOUT PTO1 HOLD		
PTO1 ACCEL BUMP-UP RPM	UPTO1U	Standard	WITHOUT PTO1 ACCEL "BUMP-UP"		
PTO1 DECEL BUMP-DOWN RPM	UPTO1D	Standard	WITHOUT PTO1 DECEL "BUMP-DOWN"		
PTO2 HOLD TO NEAREST RPM	UPTO2H	Standard	WITHOUT PTO2 HOLD		
PTO2 ACCEL BUMP-UP RPM	UPTO2U	Standard	WITHOUT PTO2 ACCEL "BUMP-UP"		
PTO2 DECEL BUMP-DOWN RPM	UPTO2D	Standard	WITHOUT PTO2 DECEL "BUMP-DOWN"		
LOW IDLE ENGINE RPM	IDLE650	Standard	IDLE CONTROL, 650 RPM		
LOW IDLE RPM ADJUSTEMENT	ULOWIADJ	Standard	WITHOUT LOW IDLE RPM ADJUSTMENT		
SMART ENG.IDLE	UENID	Standard	WITHOUT ENGINE IDLE ADJUST		
IDLE RPM UP W/LOW VOLTAGE	UIBC	Option	WITHOUT SMART IDLE INCREASE TIME		
IDLE S/D ABS TAMPER CHECK	ISDTC-E	Standard	IDLE SHUTDOWN ABS TAMPER CHECK, ENABLED		
ENGINE IDLE COOLDOWN	UEIDLEC	Standard	ENGINE IDLE COOLDOWN, DISABLE		
IDLE SHUTDOWN	EIDLESD	Option	ENGINE IDLE SHUTDOWN, ENABLE		
ENGINE IDLE SHUTDOWN TIME	ISD10	Standard	IDLE SHUTDOWN TIME 10 MIN.		
IDLE S/D IF WARM-UP TEMP	WTEMD38	Standard	38C DEG (100F), WARM UP TEMP DELAY		
IDLE S/D WARM-UP TIMER	WTIMD005	Standard	5 MIN. WARM UP TIME DELAY		
IDLE S/D IF EHT ACTIVE	UISDEHT	Standard	WITHOUT ENGINE IDLE SHUTDOWN TIME OVERRIDE IF EHT ACTIVE		
IDLE S/D IF PTO ACTIVE	UISDPTO	Standard	WITHOUT ENGINE IDLE SHUTDOWN TIME OVERRIDE IF PTO ACTIVE		
IDLE SHUTDOWN IF POWER > LIMIT	ISDOVTO	Standard	ENG IDLE SHUTDOWN TIME OVERRIDDEN IF TORQUE > THAN LIMIT		
IDLE S/D OVERIDE %ENGINE LOAD	ISDOT20	Standard	IDLE SHUTDOWN OVERIDE UPTO 20% ENGINE LOAD THRESHOLD		
IDLE SHUTDOWN CONTROL	UISSC	Standard	WITHOUT IDLE SHUTDOWN CONTROL		
AMBIENT TEMP MIN TRESHOLD	ATMINT16	Standard	AMBIENT TEMP MIN TRESHOLD, 16 DEG C, (60 DEG F)		
AMBIENT TEMP MAX TRESHOLD	ATMAXT27	Standard	AMBIENT TEMP MAX TRESHOLD, 27 DEG C, (80 DEG F)		
EHT, MAX ROAD SPEED	EHTR16	Standard	ELECTRONIC HAND THROTTLE, MAX ROAD SPEED, 16 KMH (10 MPH)		
EHT, MAX ENG SPEED	EHTX2100	Standard	ELECTRONIC HAND THROTTLE, MAX ENGINE SPEED, 2100 RPM		
EHT, MIN ENG SPEED	EHTM700	Standard	ELECTRONIC HAND THROTTLE, MIN ENGINE SPEED, 700 RPM		

EHT, SPEED RAMP RATE	UEHTRR	Standard	WITHOUT ELECTRONIC HAND THROTTLE, SPEED RAMP RATE		
EHT, SGL SPEED CNTRL	UEHTSSC	Standard	WITHOUT ELECTRONIC HAND THROTTLE, SINGLE SPEED CONTROL		
EHT, SINGLE SPEED SET	UEHTSS	Standard	WITHOUT ELECTRONIC HAND THROTTLE, SINGLE SPEED SETTING		
EHT, JUMP TO MIN ENG SPEED	UEHTJMIS	Standard	WITHOUT ELECTRONIC HAND THROTTLE, JUMP TO MIN. ENGINE SPEED		
EHT HOLD TO NEAREST RPM	UEHTH	Standard	WITHOUT ELECTRONIC HAND THROTTLE HOLD		
EHT ACCEL BUMP-UP RPM	UETHU	Standard	WITHOUT ELECTRONIC HAND THROTTLE ACCEL "BUMP-UP"		
EHT DECEL BUMP-DOWN RPM	UEHTD	Standard	WITHOUT ELECTRONIC HAND THROTTLE DECEL "BUMP-DOWN"		
DRL OVERRIDE SW TIMED	UDRLOVER	Standard	WITHOUT DAYTIME RUNNING LAMP OVERRIDE SW		
DRL OVERRIDE SPEED THRESHOLD	UDRLOS	Standard	WITHOUT DRL OVERRIDE SPEED THRESHOLD.		
PAINT					
PAINT/VINYL STRIPING - CAB EXTERIOR	9501100	Standard	SINGLE COLOR		
PAINT TYPE	9240001	Standard	SOLID PAINT		
PAINT COLOR - FIRST COLOR	9448217	Option	WHITE IMRON; L0006		
PAINT COLOR - SECOND COLOR	9451000	Standard	NO SECOND TRUCK COLOR PROVIDED; NO COLOR		
PAINT COLOR - THIRD COLOR	9461000	Standard	NO THIRD TRUCK COLOR PROVIDED; NO COLOR		
PAINT - CAB PAINT SYSTEM	9960002	Standard	PAINT - CAB, URETHANE CLEAR COAT		
CAB COLOR	MPB0944	Standard	SAME AS FIRST COLOR - CAB		
PAINT: HOOD COLOR	MPD0944	Standard	SAME AS FIRST COLOR- HOOD		
PAINT: SLEEPER ROOF COLOR	MPC0000	Standard	WITHOUT SLEEPER ROOF COLOR		
CHASSIS FAIRING COLOR	9430000	Standard	WITHOUT CHASSIS FAIRINGS		
PAINT: ROOF FAIRING COLOR	MPA0944	Option	SAME AS FIRST COLOR - ROOF FAIRING		
PAINT - CHASSIS RUNNING GEAR	9512006	Standard	MACK BLACK (URETHANE)		
SUN VISOR COLOR	9660000	Standard	WITHOUT SUN VISOR PAINT		
MIRROR COVER COLOR	9400944	Standard	SAME AS FIRST COLOR		
PAINT:BUMPER	9580944	Standard	BUMPER SAME AS FIRST COLOR		
PAINT:FUEL TANK	9590000	Standard	W/O OPTIONAL FUEL TANK PAINT		
PAINT PROCESS: FUEL TANK	7HB-Z1X	Option	W/O PAINT FOR FUEL TANK (7HB-Z1X)		
PRE-FINISHED FRONT DISC WHEELS	WPF-PCW	Option	PRE-FINISHED POWDER COAT WHITE		
PRE-FINISHED REAR DISC WHEELS	WPD-PCW	Option	PRE-FINISHED POWDER COAT WHITE		
PAINT:DISC WHEELS-FRONT	9540000	Standard	WITHOUT PAINT		
PAINT:DISC WHEELS-REAR	9550000	Standard	WITHOUT PAINT		
PAINT:HUBS & DRUMS-FRONT	9629902	Standard	SAME AS CHASSIS RUNNUNG GEAR		
PAINT:HUBS & DRUMS-REAR	9639902	Standard	SAME AS CHASSIS RUNNING GEAR		
CALCULATED CODES - KAX					
PROPCALC SELECTION	PROPCALC	Standard	YES, THE ORDER MUST BE CALCULATED		
AUTO ROUTING & CLIPPING, CENTER	ARC-CS	Option	AUTOMATIC ROUTING & CLIPPING PLACEMENT, CENTER SECTION		
BASE WARRANTY & PURCHASED COVERAGES					
WARRANTY REGISTRATION LOCATION	M981001	Standard	US - WARRANTY REGISTRATION LOCATION		
VEHICLE WARRANTY TYPE	8980002	Standard	NORMAL DUTY WARRANTY CLASSIFICATION		
BASIC CHASSIS COVERAGE	M501000	Standard	NORMAL DUTY STANDARD BASE COVERAGE 12/MONTHS/100,000 MILES (161,000KM)		

User	Date	Time	Quote no.
Jeff Little	1/23/2018	12:06:23PM	SYSC2017000027PSTD

ENGINE WARRANTY	M511001	Standard	MACK MP7/MP8 BASE ENGINE COVERAGE 24 MONTHS / 250,000 MILES (402,000KM)		
EMISSION COMPONENT COVERAGE	M521001	Standard	US and CANADA EQUIPPED VEHICLE EMISSION COMPONENTS COVERAGE 60 MONTHS/100,000 MILES (161,000 KM)		
MACK ENGINE EXHAUST AFTER TREATMENT COVERAGE	M530000	Standard	W/O MACK ENGINE EXHAUST AFTERTREATMENT TREATMENT PROTECTION PLAN		
TRANSMISSION WARRANTY	M541004	Standard	mDRIVE TRANSMISSION NORMAL DUTY COVERAGE: 60 MONTHS OR 750,000 MILES		
mDRIVE CLUTCH PROTECTION PLAN	M710000	Standard	WITHOUT mDRIVE CLUTCH PROTECTION PLAN		
CARRIER & AXLE HOUSING WARRANTY	M551004	Standard	STANDARD VENDOR NORMAL / HEAVY DUTY COVERAGE 36 MONTHS/350,000 (563,00 KM)		
AIR CONDITIONING WARRANTY	M561000	Standard	AIR CONDITIONING STANDARD COVERAGE (Sealed System Only) 12 MONTHS UNLIMITED MILEAGE		
CHASSIS TOWING WARRANTY	M571000	Standard	STANDARD NORMAL / HEAVY DUTY CHASSIS TOWING 90 DAYS OR 5,000 MILES		
ENGINE TOWING WARRANTY	M581000	Standard	STANDARD MACK ENGINE TOWING COVERAGE 24 MONTHS/250,000 MILES (402,000 KM)		
ALTERNATOR & STARTER WARRANTY	M610000	Standard	W/O ALTERNATOR and STARTER EXTENDED WARRANTY COVERAGE		
STARTER WARRANTY	M590000	Standard	W/O STARTER PURCHASED COVERAGE		
ALTERNATOR WARRANTY	M600000	Standard	W/O ALTERNATOR PURCHASED COVERAGE		
GUARDDOG CONNECT BUNDLE	M691010	Standard	24 MONTH - GUARDDOG CONNECT WITH MACK OTA (with ASIST and Mack OneCall))		
OMNITRACS FOR MACK TRUCKS	M720000	Standard	WITHOUT OMNITRACS FOR MACK TRUCKS		
PARTNERED SERVICES	M680000	Standard	W/O TELOGIS PACKAGE		
PREMIUM MAINTENANCE PLAN 1 & PLAN 2	M650000	Standard	W/o PREMIUM MAINTENANCE PLAN		
PREMIUM MAINTENANCE AFTERTREATMENT PLAN	M660000	Standard	W/O AFTERTREATMENT PREMIUM MAINTENANCE PLAN		
PREMIUM MAINTENANCE - CHASSIS LUBE AND INSPECTION	M671000	Standard	W/OUT PREMIUM MAINTENANCE - CHASSIS LUBE AND INSPECTION COVERAGE		
CUSTOM/BUNDLED PURCHASE COVERAGE OPTIONS	M990000	Standard	W/O CUSTOM/BUNDLED PURCHASE COVERAGE OPTION		
			Total($)	154,328.00	

Customer Adaptation — Non-Approved

ID	Description	List Price	

User	Date	Time	Quote no.
Jeff Little	1/23/2018	12:06:23PM	SYSC2017000027PSTD

17M37615	LANE SUPPORT SYSTEM, DEPARTURE WARNING,FUSION,W/DATA CAPTURE PBR ALARM,EL HORN SOUND IF PBR OFF,DS DOOR OPENED,KEY ON/OFF DAVCO 382 W/12V HEATER & 120V HEATER IN CONJUNCTION W/ENG BLOCK HEATER & MACK SEC FUEL FILTER EXHAUST STACK 3.7 METRE, HEIGHT OVER GROUND (12'0") PASSENGER SEAT UPHOLSTRY COLOR, BLACK MAXLITE 23EZ RATED @ 23,000LB. 1 AXLE, 1 DRIVE, 2 AIR LOW WEIGHT VOAS(1.5) TAPERED CUT TREATMENT 45 DEGREES, REAR FRAME EL REC, AUX PWR, BOC,TRL LIFT GATE 150A W/ EXTENSION CABLE STANDARD, BLACK MORDURA REAR XMBR STRAIGHT END,FOR 13.6T(30000LB) GTW PINTLE HOOK VEHICLE AND TRAILER (IF APPLICABLE) STOP LAMPS UPON SERVICE/HI POS ENG. BRAKE APPLICATION(3899004) DAVCO 382 W/12V PREHEAT,120V W/ COMMON PLUG FOR BLOCK HEATER BETTS PAINTED ST STRAIGHT B84, ADD'L B850 BRKTS MTD FWD SUSP	1,655.00	
	Total($)	1,655.00	

User	Date	Time	Quote no.
Jeff Little	1/23/2018	12:06:23PM	SYSC2017000027PSTD

ATTACHMENT E

DERA OPTION

FISCAL YEAR 2018

STATE CLEAN DIESEL GRANT PROGRAM

WORK PLAN AND BUDGET NARRATIVE TEMPLATE

INSTRUCTIONS: States and territories applying for FY 2018 DERA State Clean Diesel Grant Program funding must use this template to prepare their Work Plan and Budget Narrative.

Please refer to the FY 2017-2018 STATE CLEAN DIESEL PROGRAM INFORMATION GUIDE for full Program details, eligibility criteria and funding restrictions, and application instructions.

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SUMMARY PAGE

Project Title: FY 2018 Connecticut Clean Diesel Grant Program

Project Manager and Contact Information

Organization Name: Connecticut Department of Energy & Environmental Protection

Project Manager: Paul E. Farrell, Asst. Director, Planning & Standards Division

Mailing Address: 79 Elm Street, Hartford, CT 06106-5127

Phone: 860-424-3389

Fax: 860-706-5339

Email: paul.farrell@ct.gov

Project Budget Overview:

	FY 2017*	FY 2018
EPA Base Allocation	$235,798.00	$275,354.00
State or Territory Matching Funds (if applicable)	$235,798.00	$391,092.71
EPA Match Incentive (if applicable)	$117,899.00	$137,677.00
Mandatory Cost-Share	$	$
TOTAL Project	**$589,495.00**	**$804,123.71**

*FY 2017 budget is only for states and territories with open FY 2017 State DERA grants

Project Period

October 1, 2018 – September 30, 2019

Summary Statement

It is anticipated that the majority of Connecticut's FY 2018 State Diesel Emissions Reduction Act (DERA) funds will be passed through to municipalities, other state agencies and/or private entities as rebates. Clean diesel project grants may also include subawards. Some awardees may include, but not be limited to, private entities such as railroads, distribution center operators or refuse haulers. Connecticut's priorities for FY 2018 State DERA funds would be for grants or

rebates to municipalities and state agencies for early replacement, repowering or retrofitting of diesel vehicles or equipment in their fleets, with an emphasis on equipment that might not be eligible for Volkswagen Mitigation Trust funding. Another goal that could be met through this funding is replacing diesel-powered transport refrigeration units (TRUs) with hybrid-electric transport refrigeration units (e-TRUs) and installing shore power systems at food distribution centers. The Connecticut Department of Energy and Environmental Protection is also looking for opportunities to help fund early replacement, repower or idle reduction technology for locomotives, trucks or other engines used in freight movement.

Grant funds could also be used for:

- early replacement, repower or retrofits of agricultural equipment in the state;
- replacement or repower of construction equipment;
- a port equipment, shore-power or marine engine diesel project at Connecticut ports;
- idle reduction technologies, including auxiliary power units and shorepower;
- retrofit technologies for diesel vehicles or equipment;
- replacement or repowering of TRUs; or
- other diesel projects consistent with State clean air needs and agency requirements.

A transparent, open and competitive solicitation process will be used for the selection of projects to be funded in 2018.

Information on projects previously funded with Connecticut's State DERA allocations can be found at http://www.ct.gov/deep/cwp/view.asp?a=2684&q=322100&deepNav_GID=1619 .

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SCOPE OF WORK

STATE/TERRITORY GOALS AND PRIORITIES:

All of Connecticut's counties are on EPA's Priority County and Area List for FY18 DERA funding..[1] The entire state is in nonattainment for both the 2008 and 2015 National Ambient Air Quality Standards (NAAQS) for 8-Hour Ozone. On April 11, 2016, EPA made a final determination that Connecticut failed to attain the 2008 8-hour ozone NAAQS and must be reclassified to indicate nonattainment based on 2012-14 data..[2] Similarly, on April 30, 2018,

[1] 2018 Priority County List, EPA Website at https://www.epa.gov/sites/production/files/2018-04/documents/fy18-priority-counties-national.pdf

[2] EPA Final Rule: Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, And Reclassification of Several Areas for the 2008 Ozone National Ambient Air Quality Standards, April 11, 2016 https://www.epa.gov/sites/production/files/2016-04/documents/20160411fr.pdf

EPA determined that Connecticut was in nonattainment for the 2015 8-hour ozone standard;[3] the effective date for this ruling will be 60 days after publication in the Federal Register. In light of this, additional significant emission reductions of nitrogen oxides (NO_X) will be necessary both within and upwind of Connecticut.

While Connecticut meets both the 2012 annual and 24-hour NAAQS for fine particulate matter ($PM_{2.5}$),[4] additional localized reductions from DERA projects will produce continued public health benefits and assist in maintaining compliance with the NAAQS.

According to the 2014 National Emissions Inventory,[5] Connecticut's diesel fleet is responsible for emitting 18,489.15 tons of NO_X, a precursor of ozone, and 928.74 tons of $PM_{2.5}$. The measured fleet includes aircraft, commercial marine, locomotives, diesel non-road equipment, on-road heavy-duty diesel vehicles and on-road light-duty vehicles.

Diesel emissions also include air toxics such as benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, polycyclic organic matter, naphthalene, and diesel particulate matter. The 2011 National Scale Air Toxics Assessment (NATA)[6] indicates that the cancer risk from exposure to air toxics can be as much as 100 in a million for residents of some Connecticut cities, but is less than 50 in a million for residents of most areas of the state.

VEHICLES AND TECHNOLOGIES:

DEEP's first priority for FY18 State DERA Grant funding is to continue providing grants or rebates to municipalities for early replacement or repowering of diesel vehicles and eligible equipment in their fleets. Replacements could include hybrid electric, CNG or liquefied natural gas powered vehicles as well as cleaner diesel vehicles or equipment.

In conjunction with the development of strategies to improve freight movement in Connecticut, DEEP will continue to support locomotive and port-related projects such as early replacement, repower or retrofit of drayage trucks or port equipment, installing idle reduction technology on locomotive engines, upgrading or replacing marine engines or establishing shore power facilities. Connecticut is also interested in helping 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 throughout the state. In accordance with funding eligibility requirements for the FY18 State Clean Diesel Funding Grant Program, no

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[3] EPA Final Rule: Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, April 30, 2018 https://www.epa.gov/sites https://www.gpo.gov/fdsys/pkg/FR-2018-06-04/pdf/2018-11838.pdf/production/files/2018-04/documents/placeholder.pdf, Federal Register, Vol. 83, No. 107, June 4, 2018 https://www.gpo.gov/fdsys/pkg/FR-2018-06-04/pdf/2018-11838.pdf

[4] Federal Register, Vol. 80, No. 10, January 15, 2015. https://www.gpo.gov/fdsys/pkg/FR-2015-01-15/pdf/2015-00021.pdf

[5] 2014 National Emissions Inventory, EPA website at https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data

[6] From 2011 NATA Maps, EPA Website at: https://www.epa.gov/national-air-toxics-assessment/2011-nata-map.

funds awarded under this program can be used for the purchase of APUs or generators for vehicles with engine model years 2007 or newer.[7]

DEEP is seeking another opportunity to use State DERA funding in FY18 to provide shore power connections for TRUs to reduce idling emissions at distribution centers located near highways in the state. DEEP is also interested in making funds available to assist Connecticut farmers in upgrading agricultural equipment, perhaps in partnership with the Connecticut Department of Agriculture. Finally, having noted the cost effectiveness of installing emission controls on construction equipment under the American Recovery and Reinvestment Act (ARRA)/DERA grant, DEEP will consider replacing, repowering or retrofitting equipment for construction use. Replacing diesel engines with alternative fueled, hybrid or all-electric engines, within the parameters of the DERA program requirements, is also being considered.

Two additional options for future funding are early replacement of Connecticut-registered trucks serving trash plants or distribution/delivery centers in the state or repowering/replacing diesel TRUs with diesel/electric hybrid engines. Subject to EPA approval, DEEP may use these funds for other diesel emission reduction projects to meet agency needs that may arise during the grant period.

DEEP's experience with previously funded projects will guide the selection and implementation of new projects under this State DERA Grant. Therefore, in addition to a prioritized list of new programs that could be funded with FY18 DERA funds, DEEP is providing a summary of successful DERA-funded programs that could serve as models for new programs. Those earlier projects are outlined below to represent potential fleets to be benefited by this grant. With the exception of the initial school bus project, DEEP has selected projects for funding through a transparent, open and competitive process.

- **Retrofits:** Historically the first priority was to use State DERA 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),[8] allocated funds to DEEP to provide reimbursement to school districts for emission controls on school buses in the state, at reimbursement amounts specified in the legislation. FY08 of the State DERA grant, Connecticut DS97195401-4, provided supplemental funding for the program until the underlying legislative funding lapsed, and full funding thereafter. Under this program, twenty-four school districts were able to retrofit 353 school buses with diesel oxidation catalysts (DOCs) and closed crankcase ventilation systems (CCVs), as required by PA 07-4.

  Funds from the state ARRA/DERA Grant #2D-96102001 were used to retrofit portions of the Connecticut Department of Transportation (CT DOT) truck fleet and a number of pieces of construction equipment owned by CT DOT contractors. In addition, a DERA

[7] FY2017-2018 State Clean Diesel Funding Grant Program Information Guide: https://www.epa.gov/sites/production/files/2018-04/documents/fy17-18-state-program-guide.pdf.
[8] Codified in sections 14-164n, 14-164o, 22a-21j, and 22a-21k of the General Statutes of Connecticut.

Grant, #DE-97199001, from the Northeast Diesel Collaborative, funded the installation of DOCs on the DEEP fleet.

One of the major conclusions of the Connecticut Clean Diesel Plan of 2006[9] 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 as of 2016, a large percentage of the school buses are 2010-compliant. Therefore, with the possible exception of construction equipment retrofits, DEEP is advancing early replacement as its preferred method for decreasing emissions from diesel vehicles and equipment going forward.

- **Marine Projects:** The replacement or upgrading of aging marine engines have provided some of the best health benefits from annual $PM_{2.5}$ reductions.

  FY09 funding was awarded to the Cross Sound Ferry Services (CSF), to upgrade the engines of the *MV Susan Anne,* from Tier 0 to Tier 2, the best control level available for these engines at the time. The selected proposal used $250,000 of State DERA funds in combination with $768,865 from the ARRA/DERA Grant #2D-96102001.

  One of two projects selected for FY10 State DERA funding was the replacement of two marine engines for a privately-owned tugboat. D. Brake Marine received $176,787.75 to install two new engines on its tug boat, *Gotham*, improving emissions from a Tier 0 to a Tier 2 level.

  All of DEEP's FY12 DERA funds, $130,892.00, were used to repower marine engines on CT DOT's river ferry, *Selden III.* This project was completed a month ahead of schedule and the ferry began full operation with its new engines on April 1, 2013.

  In FY 2016, DEEP is providing $97,245.60 to Jeanette T. Fisheries to repower two commercial fishing vessels. Both projects were completed ahead of schedule.

- **Early Replacement Projects:** DEEP has received more proposals for early replacement of diesel trucks than for any other clean diesel projects. DEEP awarded grants for up to 25% of the cost of the replacement trucks and equipment. Because of technology advances on the new engines, these projects enhance air quality through a reduction of as much as 80% in engine emissions and decrease fuel consumption through the improved efficiency. All early replacement projects are summarized in Table 1 below.

[9]On the DEEP website at http://www.ct.gov/deep/lib/deep/air/diesel/docs/ctcleandieselplanfinal.pdf

Table 1: Summary of CT Clean Diesel Early Replacement Projects

Project	Extra Emission Benefits	Grant Amount	Funding Year
Enfield Replacement of 4 Standard Recycling Trucks with 2 Automated, Single-Stream Vehicles	-Decreased VMT -Reduced idling	$146,984.50	FY10 & FY11
Middlebury Replacement of 2 Diesel Trucks, New Trucks with Automatic Shutdown Timers	Reduced Idling	$35,000.00	FY10 & FY11
University of Hartford Shuttle Bus Replacement		$25,062.50	FY10 & FY11
Wethersfield Maintenance Dump Truck Replacement		$27,246.00	FY13
CT Dept. of Correction (DOC) Refrigerated Box Truck Replacement (New Truck is Larger.)	-Decreased VMT -Lower emissions from new TRU	$27,246.00	FY13
D.A. Vento Refuse, LLC Replacement of Refuse Truck with Single Stream Refuse/Recycling Truck	-Decreased VMT -Reduced idling	$51,068.00	FY14
CT DOC Replacement of Delivery Box Truck		$22,699.69	FY14
Ledyard Maintenance Truck Replacement		$18,944.53	FY15
Wethersfield Rubber Tire Pay Loader Replacement		$47,000.00	FY15
D.A. Vento Refuse, LLC Replacement of Refuse Truck		$37,905.63	FY15
CT DOC Replacement of Delivery Box Truck		$23,193.84	FY15
West Hartford Maintenance Dump Truck Replacement		$18,944.53	FY16
Wethersfield Skid Steer Loader Replacement		$12,616.47	FY16
CT DOC Replacement of Delivery Box Truck		$21,704.85	FY16
Metropolitan District VACTOR Truck Replacement		$140,329.04	FY17
Coventry Maintenance Dump Truck Replacement		$46,001.13	FY17
Enviro Express Natural Gas, LLC Replacement of Diesel Truck with CNG-powered Truck	-Alternate fuel use	$41,269.25	FY11

- **Locomotive Idle Reduction:** Of all the projects previously funded, the installation of idle control equipment on two Providence and Worcester Railroad Company (PWR) switch engines was the most cost-effective. PWR received a FY14 grant of $9,570.62, which represents 40% of the total cost for a project to install electric idle reduction technology on two switch engines operating in New Haven. Trade literature projects that this technology can yield a minimum of 25% reduction in emissions from these aging engines, emissions benefits that are very high relative to the funds expended.
- **TRU Trailer and TSE Idle Reduction:** DEEP is granting $350,110.83 in FY17 DERA funds to C & S Wholesale Grocers, Inc. (C & S) for the replacement of twelve TRU

trailers with e-TRU trailers and the installation of sixty TSE units to reduce emissions from diesel-powered TRUs parked at the distribution facility in Windsor Locks, Connecticut. The total grant represents less than 25% of the cost of the new trailers ($1,330,950.00) plus less than 30% of the cost of the TSE units ($385,350.00). This project will expand the number of e-TRU trailers in the fleet and allow existing e-TRUs to eliminate their diesel emissions while parked at the distribution center. The new trailers will have improved insulation and require less energy to cool, thereby enhancing the benefits from the clean e-TRUs. The reduction in diesel emissions will improve air quality in an area already impacted by Bradley Airport and will benefit the surrounding residential neighborhoods.

ROLES AND RESPONSIBILITIES:

DEEP awards sub-grants to applicants selected through a transparent, open and competitive process. The funding is structured as a rebate made upon completion of the project. While most of the funds will be passed through, a portion will be reserved to cover personnel costs associated with DEEP's administration of the program.

Emissions reductions are calculated for each proposed project using the Diesel Emissions Quantifier (DEQ); these are a major factor in ranking proposals. Additional evaluation criteria are employed and are consistent with EPA's DERA programmatic priorities and strategic plan, including whether a proposed project is:

- In an EPA-designated $PM_{2.5}$ maintenance area (Fairfield or New Haven Counties);
- In an environmental justice community;
- Near transportation hubs or corridors;
- In an urban area as defined by U.S. Census Bureau;
- Near school bus depots, rail yards, distribution centers, ports, airports or construction sites; and
- Including anti-idling education and outreach.

Cost effectiveness and the potential for timely completion are also taken into account.

As with past projects funded under DERA, each sub-grantee and DEEP work cooperatively to develop a scope of work that is attached to the contract or purchase order used to implement the project and allow DEEP to release the funds. As a pass-through entity, DEEP complies with performance reporting terms and conditions specified in the Assistance Agreement with EPA. Each scope of work includes a reference to the Assistance Agreement between EPA and DEEP.

The disbursement schedule is incorporated into the scope of work. In most cases, the sub-grantee pays for the entire project and is reimbursed, to the limit allowed by EPA, after all specified deliverables documenting the completion of the project have been submitted and approved. Where a significant outlay is required in the middle of the project period, a partial reimbursement may be scheduled at an appropriate time (e.g. for a marine engine replacement

project, when the kits or engines are delivered and invoiced). Funds are drawn down quarterly, in conjunction with report preparation.

TIMELINE AND MILESTONES:

Table 2: Template for Projects for the Connecticut Clean Diesel Grant Program: Work Plan & Schedule for Fiscal Year 2018-2019

Task	Target Completion Date	Status
Establish Criteria for Evaluation of Proposals	**October 2018**	

Develop Request for Proposals and Proposal Form
• Letter from Commissioner
  o Funding Availability
  o Prioritization Criteria
  o Proposal Submittal Process
• Proposal/Application Form
• Guidance Document
	October 2018	

DEEP Request for Project Proposals • Communication to Stakeholders • Announce at State Implementation Plan Revision Advisory Committee (SIPRAC) monthly meeting • Post on Website	**October-November 2018**	
Project Proposals Due to DEEP	**November 14, 2018**	
Continued Support and Outreach	**November 2018 – September 2019**	
Review of Submitted Information and Decision on Award Finalists	**November-December 2018**	
List of Finalists Submitted to EPA for Approval.	**December 2018**	
Award Finalists Announced	**December 2018 – January 2019**	
DEEP issues Purchase Orders/Contracts to Participants	**December 2018 – February 2019**	
Installation of Technology and Completion of Projects	**January – August 2019**	
Reimbursement Requests Due	**August 31, 2019**	
Payments made to Participants	**September 2019**	
Final Draw Down of 2018 DERA Funds	**September-December 2019**	

DEEP will employ previous experience and procedures from other DERA-funded projects to monitor the project management under this work plan. Such measures will comply with EPA's

National Term and Condition for Subawards, if applicable, and will ensure that the FY18 DERA projects proceed in a timely manner, supported with proper documentation and reporting.

DERA PROGRAMMATIC PRIORITIES:

1. **Projects Are in Areas with High Population and Poor Air Quality:**

   All of Connecticut is currently in nonattainment for the 2008 and 2015 8-Hour Ozone NAAQS.[10,11] In light of this, continued and increasing NO_X reductions are needed for ozone as well as $PM_{2.5}$ benefits. While Connecticut is now in compliance with the 2012 annual and 24-hour $PM_{2.5}$ NAAQS, these DERA-funded projects will contribute to emission reductions required by the maintenance plan approved by EPA in September of 2013. DEEP's ranking criteria for evaluating proposals for State DERA funding specifically address location in urbanized (as defined by the U. S. Census Bureau) and $PM_{2.5}$ maintenance areas.

2. **Projects Are in Areas Disproportionately Impacted by Air Pollution from Diesel Fleets:**

   Major transportation corridors, including I-95, I-84 and I-91 and the rail lines that parallel them, connect New England with the rest of the United States. Barges, ships and ferries are also critical elements of the region's transportation sector. Transportation activity generates air pollution that, along with other upwind sources, negatively impacts air quality and public health in Connecticut. DEEP's criteria for evaluating and selecting projects for State DERA funding specifically address location in environmental justice communities, which are characterized, in part, by disproportionate air pollution impacts, and nearness to diesel transportation hubs, including ports, rail yards and highways. DEEP has supported school bus projects as well as projects with construction and other non-road vehicles and equipment. Based on the success of these projects, similar proposals will be considered in FY18. A locomotive idle reduction project involving two switch engines at the New Haven rail yard was successfully completed in FY14 and DEEP is currently funding an idle reduction project involving shorepower for hybrid-electric TRUs at a Connecticut distribution center near the airport. DEEP will consider using DERA funds for such idle reduction projects in 2018.

EPA'S STRATEGIC PLAN LINKAGE AND ANTICIPATED OUTCOMES/OUTPUTS:

1. **Linkage to EPA Strategic Plan**

   Reducing emissions through vehicle or engine replacements is a widely accepted method for reducing the health and environmental impacts of diesel pollution, particularly when the replacements are compliant with 2010 emission standards for on-highway trucks or the Tier 4

[10] EPA Final Rule, April 11, 2016, op. cit.
[11] EPA Final Rule, April 30, 2018, op. cit.

standards for non-road equipment. The more stringent emission standards apply not only to the particulates captured by improved filtration technology, but also to NO_X, a precursor of ozone.

New diesel engines also have greater fuel efficiency due to features such as electronic ignition systems. Burning less fuel reduces NO_X and greenhouse gas pollution. Therefore, these efforts assist ozone control plans and lower climate change impacts. Additional fuel savings accrue from idle reduction projects such as TRU shorepower projects. Idle reduction also decreases the full range of combustion-related emissions along with the negative health impacts associated with criteria pollutants.

The installation of pollution controls on diesel-powered school buses and other vehicles have similar, documented benefits in decreasing the harmful amounts of air pollution. School bus retrofits, for pre-2010 model year vehicles, are particularly desirable in that they directly benefit children, who have both the greatest exposure to the pollutants and the greatest susceptibility to the health effects resulting from that exposure.

In addition, retrofits, such as those in the school bus, truck, construction and possible agriculture equipment projects, will reduce the black carbon constituent of diesel exhaust, which is also linked to climate change, making a contribution to the long term environmental health of the region.

2. **Outputs**

Number of replaced/retrofitted engines/vehicles/equipment and/or hours of idling reduced: Without the initial allocation under the State DERA program, the 2007 Connecticut Clean School Bus Program could not have been implemented. Supplemental DERA funds 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. A total of 353 school buses from 24 school districts were retrofitted with DOCs and CCVs using Connecticut's State DERA grants. In addition, DERA funds have allowed DEEP to retrofit a total of 188 state trucks and 24 pieces of construction equipment under two different DERA grants. Two marine engines have been upgraded and five have been replaced with DERA funds. State DERA funds have contributed to the early replacement of 18 vehicles (one with CNG-powered engine) and two pieces of non-road equipment. FY17 funds have been committed toward the replacement of 12 TRU trailers and the installation of 60 shorepower units to reduce nearly 30,000 hours of idling, each year, in a neighborhood already impacted by activities at Bradley Airport. In addition, FY14 State DERA funds were used to install locomotive idle reduction technology on two switch engines, annually reducing 920 idling hours. DEEP routinely documents diesel reduction projects in the state, including numbers of vehicles/vessels and technologies installed, to calculate the air quality benefits.

Engaging local communities with respect to the design and performance of the project: DEEP maintains an expanding list of clean diesel stakeholders who are contacted whenever clean diesel grant funds become available from EPA, the Federal Highway Administration

and DEEP. The newest additions are stakeholders identified through DEEP's efforts to implement Connecticut's portion of the settlement of *In re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation*, MDL No. 2672 CRB (JSC) (Dkt. No. 2103-1). Almost all of the municipalities are represented on this list and contacts are updated regularly. A separate list of all the school superintendents in the state is used for opportunities involving clean school buses. Private fleet owners, on-road, nonroad and marine, are added as they express interest in our incentive programs; the Volkswagen incentives have expanded the list, particularly with regard to projects ineligible for Volkswagen Mitigation Trust funds but eligible for the broader-based DERA incentives. By far, the greatest number of Connecticut's DERA grants have been awarded to municipalities and school districts. DEEP encourages and supports local events and publications showcasing the clean diesel vehicles and equipment made possible through these grants.

DERA's inclusion in Connecticut's broader-based environmental or air quality plan: DEEP has incorporated DERA into its long-term air quality plans. Emissions reductions from the state DERA program were included in Connecticut's 2008 Ozone Attainment State Implementation Plan..[12] Connecticut's State DERA program will be continue to be featured as part of DEEP's education and outreach efforts for diesel emissions reduction. The Connecticut Clean Diesel Plan of 2006, which won an Environmental Merit Award, said of the fledgling DERA program, ". . . This will become a significant source of funding for diesel emissions reductions in the period covered by the Act. Community-based efforts focused on developing viable diesel emission reduction projects should continue. DEP [now DEEP] remains committed to facilitate this process to ensure that Connecticut is well positioned to compete effectively for this potential pool of federal funding.".[13]

Implementation of contract specifications requiring the use of cleaner vehicles and equipment: In 2009, CT DOT's construction equipment retrofit project, funded under the State ARRA/DERA grant, was implemented through a set of construction contract specifications. Since the retrofit technology was required to remain in place for the lifetime of the equipment, other construction projects employing the retrofitted equipment are extending the clean air benefits.

Adoption of an idle reduction policy: Connecticut has had a statutory restriction on school bus idling since 2002.[14] and regulations to limit idling from all mobile sources since the 1980s..[15] Starting with the state's first DERA project, retrofitting school buses to implement the 2007 Connecticut Clean School Bus Act, DEEP has included an idle reduction policy as one of the ranking criteria for project selection. In that initial program, many school districts

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[12] Attainment Demonstrations for the 2008 Ozone NAAQS, DEEP website at http://www.ct.gov/deep/cwp/view.asp?a=2684&q=585816&deepNav_GID=1619#GreaterCT

[13] Special Act No. 05-7, Connecticut Clean Diesel Plan of 2006, page 27. On the DEEP website at http://www.ct.gov/deep/lib/deep/air/diesel/docs/ctcleandieselplanfinal.pdf

[14] General Statutes of Connecticut, Section 14-277, found at https://www.cga.ct.gov/current/pub/chap_248.htm#sec_14-277

[15] Regulations of Connecticut State Agencies, Section 22a-174-18(b)(3), http://www.ct.gov/deep/lib/deep/air/regulations/mainregs/sec18.pdf

took advantage of the offer of free anti-idling signs. Subsequently, a number of private and public DERA grant recipients have submitted evidence of idle reduction programs and policies in their workplaces.

Providing support to clean diesel coalitions by sharing information, working with interested fleets, and addressing specific geographic needs: DEEP maintains contact with a lengthy and diverse list of clean diesel stakeholders in the state, including municipalities and state agencies, businesses with diesel fleets, environmental activist groups, school districts and transportation providers. These associations will continue to be active as new diesel control strategies are developed. A true partnership with communications between all parties (municipalities, vehicle and equipment owners, technology vendors and DEEP) is of critical importance in the continued success of emission control projects.

One example of the effectiveness of such partnerships is the 2007 Connecticut School Bus Act,.[16] which owed its existence to a wide group of environmental advocacy organizations in the region. In the first year of the Connecticut Clean School Bus Program, DEEP enlisted their assistance in promoting the program and encouraging school districts to participate. These advocacy organizations are part of an expanding list of clean diesel and climate change stakeholders who are routinely contacted for proposals when new grant funding becomes available.

DEEP has successfully partnered with CT DOT for several of the DERA-funded projects. Similar partnerships can be developed with other state agencies such as the Department of Agriculture for projects involving agricultural equipment.

DEEP 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 State Implementation Plan Revision Advisory Committee, 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. DEEP will continue to work closely with Region 1 EPA and the Northeast States for Coordinated Air Use Management to ensure that results are communicated and lessons learned are shared with other stakeholders in the region.

Number of subgrants: Almost all of the DERA funds allocated to Connecticut have been dispensed as rebates to subrecipients. Since 2008, Connecticut has made a total of 45 rebates using DERA funds.

Dissemination of project/technology information via list serves, websites, journals and outreach events: DEEP publishes information about the grants and recipients on its website at http://www.ct.gov/deep/cwp/view.asp?a=2684&q=322100&deepNav_GID=1619. Subrecipients

[16] Codified in sections 14-164n, 14-164o, 22a-21j, and 22a-21k of the General Statutes of Connecticut.

frequently post or publish information about their projects and DEEP supports outreach events promoting the funded projects.

3. **Outcomes**

Lifetime Emission Reductions: Projected air quality benefits are weighted heavily in the selection of projects to be funded through Connecticut's State DERA program. Such benefits are calculated for all of the projects implemented with State DERA funds and are included in Table 3 for comparison purposes. The resulting benefits from similar projects selected for DERA funding will vary based on each specific vehicle or piece of equipment and the emission control technologies.

One caveat worth noting is that the DEQ's CO_2 emission calculations are based solely on the amount of fuel consumed and will not project any reductions that result from automatic ignition and other engine technology improvements. Unless one can enter fuel savings data from the technology manufacturer or operator, idle reduction information from the operator, or a change in fuel, no improvement in CO_2 emissions will be shown.

Table 3: Potential Lifetime Emission Reductions From the Connecticut Clean Diesel Grant Program

FY08: Completed 353 School Bus Retrofits					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	1,012.57	15.79	29.03	170.37	205,710.75
Percent Reduced (%)	0	53.2	88.2	56.3	0
Amount reduced	0	8.39	25.59	95.93	0
FY09: Marine Engine Upgrade CSF *MV Susan Anne*					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	97.089	2.337	0.974	18.016	3,195.70
Amount reduced	47.865[1]	1.498[1]	See note[1]	3.606[1]	63.90[1]
FY10: Marine Engine Replacement for Tugboat *Gotham*					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	270.7919	6.5186	2.7161	50.2472	7,814.4000
Amount reduced	101.8525	1.0864	See note[2]	9.7778	See note[3]
FY10: Early Replacement of Enviro Express' Diesel-Powered Truck with CNG-Powered Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Existing Fleet	4.4800	0.1863	0.1353	0.8851	4,273.5000
Baseline of New CNG Fleet	1.4091	0.0374	0.0099	0.0517	683.76
Amount reduced[5]	3.0709	0.1489	0.1254	0.8334	3,589.74
FY11: Enfield Early Replacement of 4 Recycling Trucks with 2 Large, Automated, Single-Stream Trucks					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Existing Fleet	91.7519	4.4217	4.1875	23.8757	6,188.4720
Baseline of New Fleet	6.5597	0.1588	0.2411	1.2206	See notes[3,6]
Amount reduced[5]	85.1922	4.2629	3.9464	22.6551	See notes[3,6]

Table 3 cont'd.: Potential Lifetime Emission Reductions From the Connecticut Clean Diesel Grant Program

FY11: Middlebury Early Replacement of 2 Dump Trucks with 2 New Dump Trucks + Auto Shutoff					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Existing Fleet	26.6550	1.3846	1.7963	8.5575	1,748.9160
Baseline of New Fleet	7.3766	0.1812	0.2507	1.5437	See Notes[3,7]
Amount reduced[5]	19.2784	1.2034	1.5456	7.0138	See Notes[3,7]
FY11: University of Hartford Early Replacement of 1 Shuttle Bus					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Existing Fleet	2.6268	0.1306	0.1776	1.1958	212.7204
Baseline of New Fleet	1.4895	0.0389	0.0299	1.2818[8]	See note[3]
Amount reduced[5]	1.1373	0.0917	0.1477	See note[8]	See note[3]
ARRA/DERA: 149 DOCs on CT DOT Trucks, 19 DOCs & 5 DPFs on Highway Construction Equipment					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Lifetime Baseline of Fleet	308.15	7.62	18.34	61.73	41,289.34
Percent Reduced (%)	0	27.4	52.8	41.5	0
Amount Reduced Lifetime	0	2.09	9.68	25.60	0
DERA FY12: Marine Engine Repower CT DOT River Ferry, *Selden III*					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Existing Fleet	129.5148	3.1177	1.2990	24.0323	817.2375
Baseline of New Fleet	92.3438	2.9697	1.4839[9]	22.1217	See note[3]
Amount reduced[9]	37.1710	0.1480	See note[9]	1.9106	See note[3]
DERA FY13: Town of Wethersfield Dump Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	11.7869	0.8325	0.9436	4.1082	1,201.3974
Amount reduced	9.9414	0.7902	0.8440	3.6068	See note[3]
DERA FY13: CT DOC Refrigerated Box Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of 1995 Class 7 Truck	1.8773	0.0604	0.1195	0.5729	163.0590
Baseline of 2014, Class 8 Truck, reducing VMT by 1/3[10,11]	0.4758	0.0130	0.0052	0.0247	108.6579
Amount reduced[12,,13]	1.4015	0.0474	0.1143	0.5482	54.4011
DERA FY14:PWR Electric APUs on 2 Switch Engines					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	5,234.2309	109.9583	280.9333	901.9437	23,376.6000
Amount reduced: 25%[14]	2,035.53	42.76	109.25	350.76	9090.9
DERA FY14: CT DOC Replacement of 1 Box Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	3.4063	0.1595	0.3235	1.5125	372.9600
Amount reduced	2.6797	0.1416	0.2993	1.3655	See note[3]
DERA FY14: Vento 2004 Refuse Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	3.1950	0.2067	0.2192	0.9530	623.3760

Amount reduced[15]	2.3271	0.1850	0.1959	0.8365	See notes[3,15]

Table 3 cont'd.: Potential Lifetime Emission Reductions From the Connecticut Clean Diesel Grant Program

DERA FY15:Ledyard Maintenance Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	0.538	0.025	0.026	0.153	67.2
Amount reduced	0.477	0.025	0.024	0.131	See note[3]
DERA FY15: Wethersfield Pay Loader Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	2.611	0.201	0.172	0.697	536.1
Amount reduced	2.478	0.140	0.111	0.634	See note[3]
DERA FY15: Vento 2004 Refuse Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	4.085	0.169	0.212	1.463	411.8
Amount reduced	3.844	0.164	0.195	1.378	See notes[3,16]
DERA FY15: CT DOC Box Truck Replacement					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	1.307	0.065	0.093	0.409	174.8
Amount reduced	1.162	0.063	0.084	0.354	See note[3]
DERA FY16: Jeanette T. Fisheries 2 Marine Engine Repowers					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	55.838	1.344	0.560	10.361	1,363.1
Amount reduced	31.660	0.898	0.276	2.020	See note[3]
DERA FY16: Wethersfield Replacement of 2001 Skid Steer Loader					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	2.286	0.475	0.450	2.477	606.1
Amount reduced:	1.207	0.469	0.403	2.393	See note[3]
DERA FY16: West Hartford Replacement of 1995 Dump Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	0.158	0.007	0.008	0.037	33.3
Amount reduced[17]	0.152	0.007	0.007	0.035	See note[3]
DERA FY16: CT DOC Replacement of 2006 Box Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	1.232	0.076	0.119	0.480	187.4
Amount reduced	1.107	0.075	0.109	0.438	See note[3]
DERA FY17: MDC Replacement of 2006 VACTOR Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	1.244	0.127	0.130	0.469	260.9
Amount reduced	1.108	0.124	0.116	0.419	See note[3]
DERA FY17: Coventry Replacement of 2006 Dump Truck					
Lifetime	**NO_X tons**	**PM tons**	**HC tons**	**CO tons**	**CO_2 tons**
Baseline of Fleet	0.606	0.039	0.059	0.177	54.0
Amount reduced:	0.578	0.038	0.055	0.164	See note[3]

Table 3 cont'd.: Potential Lifetime Emission Reductions From the Connecticut Clean Diesel Grant Program

DERA FY17: C&S Replacement of 12 TRU Trailers					
Lifetime	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime
Baseline of Fleet[18]	1.908	0.389	0.125	0.864	270.8
Amount reduced:[18] Tier 4 diesel	0.744	0.382	0.074	0.804	See note[3]
Amount reduced:[18,19] + Diesel Idling reduction	1.145	0.384	0.092	0.825	93.4
DERA FY17: C&S Installation of 60 TSE Units					
Lifetime	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime
Baseline of Fleet	32.140	3.840	1.980	12.130	4,668
Amount reduced[20]	32.140	3.840	1.980	12.130	4,668

[1]Based on engineering estimates provided by the manufacturer of the marine engine upgrade kits; these did not include any projected reductions in HC.

[2]The DEQ defaults show no decrease in HC for marine engine replacements.

[3]The DEQ default values do not take into account the decreased CO_2 emissions resulting from greater fuel efficiency due to features such as electronic ignition systems in the new engines; the DEQ cannot calculate the CO_2 emission reductions unless manufacturers' data for fuel savings or CO_2 emissions for the new engines are available to input.

[4]The DEQ does project changes in CO_2 emissions due to the change from diesel to CNG.

[5]Since the DEQ does not include an option for vehicle replacement, emissions reductions were hand-calculated by subtracting DEQ-produced baseline emissions for new vehicle(s) from emissions for replaced vehicle(s).

[6]CO_2 reductions will result from decreasing the number of recycling trucks from four to two and from decreased idling resulting from automated collecting system.

[7]CO_2 reductions would accrue from decreased idling resulting from auto-shutoff technology.

[8] While there is an annual reduction of CO, the lifetime emissions appear to increase due to the fact that the lifetime of the old bus is only 12 years, while the new bus's projected lifetime is 29 years.

[9]Due to configuration issues in the vessel, 160 hp engines are the only new engines suitable to replace the existing 140 hp engines; therefore the reductions were hand-calculated by subtracting the DEQ-generated baseline emissions data for 2012 MY 160 hp engines from the DEQ-generated baseline data for the existing 1987 MY 140 hp engines. The higher hp engines yielded increased HC values as compared to the old engines with the result that there is no reduction in HC.

[10]The new truck is larger, can accommodate a greater load and is estimated to reduce the number of trips by 1/3; to approximate this in the DEQ, the annual VMT and fuel usage for the new truck were reduced by 1/3.

[11]Because the new truck is a different class from the old truck, benefits were calculated by manually subtracting the DEQ-generated baseline for the 2014 Class 8 truck from the DEQ-generated baseline for the 1998 Class 7 truck.

[12]DEQ does not provide a way to include the emission reduction from state-of-the-art refrigeration unit on new truck.

[13]New truck lifetime baseline was adjusted to the DEQ-projected 13-year remaining life for the old truck by multiplying the annual emissions reductions for the new truck by 13.

[14]Based on a trade journal projection of 25% emissions reductions for switch engines using this technology.

[15]Additional reductions will accrue from the combined refuse/single stream recycling collection capacity of the new truck, which results in a decrease in VMT for the fleet and less total idling time at each collection site.

[16]Additional reductions will accrue from the increased capacity of the new truck, which results in a decrease in VMT for the fleet.

[17]The remaining lifetime of this 1995 truck is 1 year, therefore the lifetime benefits are the same as the annual benefits.

[18]The remaining lifetime of these MY2005 TRUs is 1 year, therefore the lifetime benefits are the same as the annual benefits.

[19]C&S Diesel TRUs idle 34.48% of the time at distribution centers; calculate new Tier 4 diesel TRU baseline; take 34.48% of that baseline and add it to the reduction for the upgrade to Tier 4.

[20] Calculated annual diesel Idle emissions at C&S site for 48 MY2005 and 12 MY2006 e-TRUs; Assume that adding TSE will decrease virtually all the TRU idling emissions from 48 trucks parked short-term (1.5 hrs./day) and 12 trucks parked long term (3.5 hrs./day) at the site. Lifetime emissions cannot be accurately projected; it would vary with the age & horsepower of the e-TRUs plugged into the system; for this projection, DEEP followed CARB's approach, using a default of 10 years for TSE lifetime

Improvements to Human Health: Reducing diesel pollution improves air quality, public health and results in economic benefits. While there are significant health benefits, such as decreasing the risk of cancer, that are long-term outcomes, some health benefits begin to accrue more rapidly. With decreases in exposure to PM, persons who suffer from asthma, bronchitis, chronic obstructive pulmonary disease (COPD) and similar conditions are apt to experience fewer episodes, resulting in fewer missed school and work days and fewer trips to the doctor or emergency room.

Air quality and health benefits continue as medium-term outcomes, along with the economic benefits of improved fuel efficiency and work and school attendance. In the first years of Connecticut's State DERA program, 24 school districts retrofitted their fleets. This almost tripled the number of participating school districts in the state and further protected the health of Connecticut's schoolchildren.

The Clean School Bus legislation required installation of CCVs along with the emission controls resulting in greatly increased health benefits to students riding school buses. CCVs reduce the exhaust from the engine compartment which can make its way into the cabin. This feature is intended to have the short term outcome of decreasing the number of student absences associated with respiratory illnesses such as asthma and bronchitis, leading to the desired long-term outcome of more days in school enhancing the educational performance and economic prospects of Connecticut students.

The Health Benefits Module of EPA's DEQ projects that the annual benefit from upgrading the engines on a ferry running between New London, CT and Orient Point, NY is $3,100,000. The total health benefits from the projects listed in Table 4, below are $6,652,700 per year. Similar projections from proposed projects are used in the selection process.

Table 4: Health Benefits of Connecticut Clean Diesel Projects

Project	Lifetime PM Reductions	Annual Health Benefits
353 School Bus DOC/CCV Retrofits (Statewide)	3.06 tons	$670,000/yr.
149 State Truck DOC Retrofits (Statewide)	1.70 tons	$140,000/yr.
19 Construction DOC Retrofits (Fairfield Co.)	1.88 tons	$600,000/yr.
Marine Engine Upgrade: Ferry, 2 engines (New London Co. & Nassau Co., NY)	1.50 tons	$3,100,000/yr.
Marine engine repower: tugboat, 2 engines	1.09 tons	$64,000/yr.
Diesel Roll-off Truck Replaced by CNG Roll-off Truck (Fairfield Co.)	0.18 tons	$29,000/yr.
Early Replacement 2 Maintenance Trucks (New Haven Co.)	1.28 tons	$200,000/yr.
4 Maintenance Trucks Replaced (outside Fairfield & New Haven Counties)	0.86 tons	$170,000 /yr.
4 Refuse/Recycling Trucks Replaced	1.5 tons	$260,000/yr.
4 Box Trucks Replaced (Statewide)	0.33 tons	$41,700/yr.
2 Pay Loaders Replaced	0.61 tons	$128,000/yr.
1 Shuttle Bus Replaced	0.14 tons	$16,000/yr.
Marine Engine Repowers: 2 fishing vessels, 1 engine each	0.90 tons	$180,000/yr.
VACTOR Truck Replacement	0.12 tons	$34,000/yr.
12 TRU Trailer Replacement	0.38 tons	$780,000/yr.

Community engagement and partnership: To ensure community engagement, almost all of the funded projects in Connecticut's State DERA program are implemented through rebates to municipalities, agencies and private entities. DEEP encourages and supports events showcasing new equipment made possible through DERA funding. When DERA-funded projects are featured in local or business publications, DEEP includes links to such articles in its reporting to EPA.

Changes in driver behavior regarding idling practices: Idle reduction programs not only reduce emissions, but they save fuel, providing an immediate economic benefit to owners and operators. In addition, idle reduction technologies inherently educate drivers about the pollution and energy impacts associated with excess idling. This effect can be enhanced by education and outreach efforts. Therefore anti-idling outreach and education continue to appear on DEEP's list of project evaluation and selection criteria. Behavior changes that lead to reduced idling have immediate, beneficial outcomes.

An increased understanding of the environmental or economic effectiveness of the implemented technology: Economic effectiveness is one of the criteria used to select

projects for funding. This is calculated using the DEQ; results of previously-funded projects are shown in Table 5 below. The cost effectiveness for the DOC technology used in the 353 school bus retrofits was $84,017 per ton of PM reduced. The most cost-effective projects completed with Connecticut's DERA funds to date are the locomotive idle reduction project, at $560 per ton of PM reduced, and DOC retrofits on construction equipment, at $64,872 per ton of PM reduced.

Table 5: Potential Lifetime Cost Effectiveness of Some Projects Previously Funded by Connecticut Clean Diesel Grant Programs

DOCs & CCVs on 353 School Buses	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	0	8.39	25.59	95.93	0
Capital Cost Effectiveness ($/ton)		$84,017	$27,549	$7,350	
19 DOCs on Construction Equipment	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	0	3.06	4.61	15.75	0
Capital Cost Effectiveness ($/ton)		$64,872	$43,028	$12,598	
5 DPFs on Construction Equipment	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	0	1.18	1.59	6.63	0
Capital Cost Effectiveness ($/ton)		$112,077	$82,642	$19,877	
Early Replacement of Dump Truck	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	9.9414	0.7902	0.8440	3.6068	
Capital Cost Effectiveness ($/ton)	$19,122	$240,431	$225,131	$52,677	
Marine Engine Replacement for Tugboat	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	101.85	1.09	0	9.78	
Total Cost Effectiveness ($/ton)	$1,875	$175,818		$19,535	
Switch Locomotive Idle Reduction	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	2,035.53	42.76	109.25	350.76	9090.9
Total Cost Effectiveness ($/ton)	$12	$560	$219	$68	$3
Installation of 60 TSE Units for e-TRU Trailers	NO_X	PM	HC	CO	CO_2
Amount reduced Lifetime	32.140	3.840	1.980	12.130	4,668
Total Cost Effectiveness ($/ton)	$11,989	$100,344	$194,607	$31,766	$83

SUSTAINABILITY OF THE PROGRAM:

Sustainability will be an element in the selection of new projects. Early replacement, which yields the longest-lived benefits, will continue to be an important part of Connecticut's DERA program. Any of the options developed for DERA funding 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. Implementation documents will also include statements to ensure that replaced or repowered vehicles, vessels and equipment remain in the state.

Examples of sustainability considerations in previously-funded projects include the Connecticut Clean School Bus Program, which required that retrofitted buses remain in the state for a minimum of three years unless replaced by buses equipped with similar or better technology and

CT DOT's construction equipment retrofit program, in which the construction contract specifications recommended that the emission controls remain in place throughout the lifetime of the equipment. Sustainability has been a consideration in the selection of marine repower projects because of the long lifetimes of marine engines and vessels. For example, in 2010 the *MV Susan Anne* was anticipated to have a remaining useful life of 20 years, during which its own emissions are being reduced, and, as a ferry, it has the ancillary benefit of decreasing vehicle miles travelled by moving an average of 166 vehicles and 411 passengers daily. Given the long lifespan of ferry engines this project will yield significant reductions in both marine and on-road emissions for years to come.

All of the DERA-funded Connecticut Clean Diesel programs will continue to be featured on the agency website.[17] and in education and outreach materials designed to encourage retrofits, replacements and other emission reduction initiatives for diesel-powered vehicles and equipment.

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[17] Diesel Grants & Funding: http://www.ct.gov/deep/cwp/view.asp?a=2684&q=322100&depNav_GID=1619

BUDGET NARRATIVE

Itemized Project Budget

Itemized Project Budget FY 2018							
Budget Category	FY 2017*			FY 2018			Total
	EPA Allocation	Voluntary Match (if applicable)	Mandatory Cost-Share (if applicable)	EPA Allocation	Voluntary Match (if applicable)	Mandatory Cost-Share (if applicable)	
1. Personnel	$25,706.00			$30,748.00			$56,454.00
2. Fringe Benefits	$21,225.00			$23,664.00			$44,889.00
3. Travel							
4. Supplies							
5. Equipment							
6. Contractual							
7. Program Income							
8a. Other: State Matching Incentive	$117,899.00			$137,677.00			$255,576.00
8a. Other: Awards to Sub-Grantees	$182,744.00	$235,798.00		$213,399.00	$275,354.00		$907,295.00
8a. Other: Leverage from DEEP SEP					$115,738.71		$115,738.71
9. Total Direct Charges	**$347,574.00**	**$235,798.00**		**$405,488.00**	**$391,092.71**		**$1,379,952.71**
10. Indirect Charges	$6,123.00			$7,543.00			$13,666.00
Total	**$353,697.00**	**$235,798.00**		**$413,031.00**	**$391,092.71**		**$1,393,618.71**

*FY 2017 budget is only for states and territories with open FY 2017 State DERA grants

Explanation of Budget Framework

- **Personnel 2018**

Position Title	FTE	Annual Salary Rate	Percentage Assigned to Project	Personnel Category Total
Environmental Analyst 3	.15	$71,737.00	42.86%	$30,748.00

- **Fringe Benefits 2018**

Types of Benefits	Percentage	Fringe Benefit
Pension (SER), Medical Insurance, Unemployment Compensation, FICA, Group Life, OASDI/Disability	76.96%	$23,664.00

- **Other**

  Connecticut disburses any funds not used for administrative expenses as project rebates. Projects are selected through an open and competitive solicitation process and rebates are made after the projects have been completed. These "Other" expenditures are made from the Matching Incentive, Voluntary Match and the portion of the State DERA Allocation not used for administrative expenses. Rebate amounts are based exclusively on the costs of the replaced vehicles, engines or other parts and materials required for the projects. Administrative costs are not included in the rebates.

- **Indirect Charges**

  See attached FY 2018 Negotiated Indirect Cost Agreement.

Matching Funds and Cost-Share Funds

- **Volkswagen Settlement "DERA Option"**

Connecticut is using a portion of its Volkswagen NO_X Mitigation Trust Fund allocation to meet its voluntary match for the FY 2018 State DERA program. Neither the matching funds nor the "State Matching Incentive" will be committed for grants until the Volkswagen funds become available.

In the event that the Volkswagen settlement funds are not made available during the project period of this assistance agreement and Connecticut decides to not match the DERA base allocation, the State will submit an amendment to the award to decrease the total award amount

down to the EPA base allotment of $275,354 and return the State Match Bonus funds totaling $137,677.

The amount of mandatory matching funds will be determined by the projects selected for funding and is not available for this work plan. The mandatory matches will be included with project descriptions in a revised work plan submitted to EPA for approval once the projects have been selected. Mandatory matching funds are the responsibility of the grantees and will be listed as "Leveraged Funds" in the quarterly reports.

- **DEEP SEP Funds**

DEEP is using funds from a long-standing State Supplemental Environmental Project (SEP) account to further increase its voluntary match by $115,738.71. The fund was originally established to retrofit school buses in New Haven. All eligible buses were successfully retrofitted and these funds remain. Because newer buses come with emission controls as good as or better than the retrofits, additional retrofits are not an option for utilizing these funds. These funds may be applied to other clean diesel projects and have been approved to augment DEEP's State DERA voluntary contribution.

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

April 30, 2019

Mr. John Rogan
U.S. EPA Region 1
5 Post Office Square – Suite 100
ORA 01-1
Boston, MA 02109-3912

Re: Sixth Quarterly Report on the FY 2017-2018 State DERA Grant, Connecticut DS 00A00154 - 3

Dear Mr. Rogan:

The Connecticut Department of Energy and Environmental Protection (DEEP) is pleased to submit its sixth quarterly report for the State Diesel Emission Reduction Act (DERA) Grant, Connecticut DS 00A00154 -3. This report covers work performed between January 1 and March 31, 2019 on the Connecticut Clean Diesel Program. As of the end of this quarter, two projects have been completed and the third project was withdrawn for the FY 2017 funding. Fourteen projects were selected for FY 2018 funding; one of the FY 2018 grantees withdrew. The workplans and implementation documents for the remaining thirteen FY2018 projects have been developed and approved.

DEEP continued working with the recipients to track implementation of the remaining projects, with the progress summarized below:

- The Town of Coventry's reimbursement request was approved for payment. The FY 2017 project was completed on schedule.
- C & S Wholesale Grocers, Inc. (C & S) withdrew from the FY 2017 program on January 31, 2019.
- DEEP submitted a revised FY 2018 workplan to EPA for increasing its voluntary contribution using state funds.
- DEEP prepared a second workplan revision for EPA's approval of the projects selected for FY 2018 funding.
- The three marine repower projects selected for FY 2018 funding were nearly completed in the sixth quarter.
- Four municipal dump truck replacement projects, two school bus replacement projects, three commercial truck replacement projects and one municipal nonroad equipment project are also moving forward.

If you have additional questions regarding this report or the status of the Connecticut's Clean Diesel Program, please contact Patrice Kelly at 860-424-3410.

Yours truly,

Paul E. Farrell
Director, Planning & Standards Division
Bureau of Air Management

U. S. Environmental Protection Agency
State Clean Diesel Grant Program - Quarterly Report

Grant Recipient	**The Connecticut Department of Energy and Environmental Protection (DEEP)**
Grant #	**DS - 00A00154 - 3**
Reporting Period	**January 1 - March 31, 2019**

Instructions: Complete all relevant fields in this worksheet and use the other worksheets in this excel file to provide your project fleet descriptions.

WORKPLAN BUDGET	FY17	FY18
Total EPA Funds Awarded	$353,697.00	$413,031.00
Total Mandatory Cost-Share		
Total Voluntary Matching Funds	$235,798.00	$391,093.00
Total Project Costs	$589,495.00	$804,124.00

Table 1. Rate of Expenditure. Record all funds expended for each budget category.

	Federal Funds Expended this Reporting Period	Mandatory Cost-Share Expended this Reporting Period	Voluntary Match Expended this Reporting Period		Cumulative Federal Funds Expended	Cumulative Mandatory Cost-Share Expended	Cumulative Voluntary Match Expended	
			Mitigation Funds	Other Funds			Mitigation Funds	Other Funds
Personnel					$20,484.95			
Fringe Benefits					$17,033.74			
Travel								
Equipment								
Supplies								
Contractual								
Subawards								
Participant Support Costs (e.g., Rebates)								
Other		$55,921.25		$7,003.63	$137,628.23	$624,864.89		$7,003.63
Indirect Charges					$6,078.98			
TOTALS	$0.00	$55,921.25	$0.00	$7,003.63	$181,225.90	$624,864.89	$0.00	$7,003.63

Table 2. Narrative Responses

Question	Answer
	CT Dept. of Energy & Environmental Protection (DEEP) State DERA Administrative Activities: DEEP continued to monitor the progress of the remaining two FY2017 projects, working with the recipients to implement and complete the selected projects and providing assistance as needed. DEEP worked with the 14 grantees selected for FY2018 funding to draft implementation documents (scopes of work, contracts and purchase orders) for their projects and to monitor the initial progress. DEEP prepared a revised workplan and budget to increase its voluntary match by $115,738.71 using funds from a state clean diesel SEP account and submitted it to EPA for approval. DEEP prepared a second revised workplan for EPA approval of the projects selected for FY2018 funding. **Metropolitan District (MDC) Vactor Truck Replacement Grant:** MDC's reimbursement request was submitted September 14, 2018 and approved for payment on October 3, 2018. The project was completed ahead of schedule. **C & S Wholesale Grocers, Inc. (C & S) Windsor Locks Idle Reduction Project:** C & S withdrew from the program on January 31, 2019 citing multiple business challenges that have reduced available personnel and financial resources. **Town of Coventry (Coventry) 2017 Snowplowing Dump Truck Project:** Coventry's reimbursement request for $45,115.77 was submitted March 13, 2019 and approved for payment on March 19, 2019. The project was completed on schedule. **Atlas Concrete Products (Atlas) Flatbed Truck & Crane Replacement Project:** Atlas will receive $76,280.79 toward the early replacement of a model year 2002 Class 8 flatbed truck with hydraulic crane. The funds will come from the "DERA Option" under VW NOx Mitigation Trust Agreement. A Scope of Work was developed and signed on April 1, 2019. Atlas selected a vendor, issued a purchase order and made a down payment for the new truck and crane. **Town of Beacon Falls (Beacon Falls) Dump Truck Replacement Project:** Beacon Falls received a grant of $40,905.04 toward the early replacement of a MY 2000 snowplowing dump truck with a MY 2019 equivalent. The funds will come from 2018 State DERA. The Scope of Work for the project has been approved and a DEEP Purchase Order for the project was issued on March 5, 2019. The purchase of the vehicle was approved at a Town Meeting on March 7, 2019 and Beacon Falls issued a Purchase Order to Freightliner in mid-March. **Town of Burlington (Burlington) Dump Truck Replacement Project:** Burlington is receiving a grant of $42,029.59 toward the early replacement of a MY 1997, Class 8 diesel dump truck with a MY 2020 equivalent. The funds will come from 2018 State DERA. The Scope of Work for the project has been approved and a DEEP Purchase Order for the project was issued on February 6, 2019. A vendor was selected and a purchase order for the new truck was issued in March.

What actual accomplishments occurred during the reporting period?	**Town of Coventry (Coventry) 2018 Snowplowing Dump Truck Project:** Coventry will be using a grant of $49,326.66 toward the early replacement of a MY 2004 dump truck with a MY 2019 equivalent. The funds will come from 2018 State DERA. The initial Scope of Work for the project has been approved and a DEEP Purchase Order for the project was issued on March 4, 2019. However, the Scope of Work is being revised to accommodate delays projected by the selected Vendor. **Town of East Hartford (East Hartford) Backhoe & Mower Replacement Project:** A grant of $90,231.70 has been awarded to East Hartford for the replacement of one 88 horsepower (hp), MY 1999 backhoe with a Tier 1 engine and two agricultural mowers; one mower is MY 2001, with an 87 hp, Tier 1 engine and the other is MY 2010 with an 88 hp, Tier 1 engine. The new equipment will be MY 2019; the engine on the new backhoe will be Tier 4 and the engines on the new mowers will be Tier 3. The funds will come from 2018 State DERA. The Scope of Work was developed and approved and a DEEP Purchase Order for the project was issued on March 5, 2019. East Hartford has selected vendors and prepared purchase orders for the equipment. **Bartholomew L. Mansi, III, d.b.a. Guilford Lobster Pound (Guilford Lobster Pound) Marine Repower Project:** Guilford Lobster Pound, is receiving a grant of $44,857.88 for the replacement of a 1997 MY Caterpillar, Tier 0 marine engine for the *FV Erica Paige* with a new Tier 3 marine engine. The funds will come from DEEP's voluntary contribution. A Scope of Work was developed and a contract was signed on March 18, 2019 and executed. A vendor was been selected through a competitive process and Guilford Lobster Pound paid for and accepted delivery of the new marine engine. Installation was nearly complete. **Donald J. King, II, d.b.a. King Lobster (King Lobster) Marine Repower Project:** The *FV Kory Alexander*, owned by King Lobster, will be replacing a Tier 0 engine with a new, Tier 3 engine through a grant of $27,258.73 from DEEP's voluntary contribution. A Scope of Work was developed and a contract was signed in March of 2019. A vendor has been selected through a competitive process and King Lobster has paid for and accepted delivery of the new marine engine. Installation is in progress. **Savino Transportation, Inc. (Savino) School Bus Replacement Project (Diesel to Propane):** A grant of $43,311.22 will help Savino. to begin the transition of its rural school bus fleet from diesel to propane. Two diesel-powered, MY 2006 school buses will be replaced, ahead of schedule, with MY 2020, propane-powered equivalents at a total cost of $180,000.00. The Scope of Work was developed and approved. Initially, this was to have been funded through the "DERA Option" under VW NOx Mitigation Trust Agreement, however, with Wethersfield's withdrawal, this will be funded by the State DERA allocation and a contract is now being developed. The new buses have been ordered and are on schedule for delivery in July. **State Line Propane, LLC (State Line) Tractor Replacement Project:** State Line will receive a grant of $31,035.62 for early replacement of a MY 2000 Class 8 tractor with a MY 2020 equivalent. The funds will come from 2018 State DERA and from DEEP's voluntary contribution. A Scope of Work was developed and a contract is in the process of being executed. State Line has selected a vendor and issued a purchase order for the new tractor. **Sysco Corporation (Sysco) 7-Truck Replacement Project:** DEEP is granting $149,233.61 to Sysco Leasing, LLC for the replacement of five, MY 2005-2006, Class 8 diesel freight trucks and two, MY 2006 Class 7 diesel freight trucks with 2019 MY diesel equivalents. The funds will come from the "DERA Option" under VW NOx Mitigation Trust Agreement. A Scope of Work was developed and signed on March 20, 2019. Sysco has selected a vendor through a competitive process and is preparing a purchase order for the project. **Thimble Islands Ferry Company (Thimble Islands Ferry) Marine Repower Project:** Thimble Islands Ferry will repower its boat, the *MV Adriaen B*, replacing a 1997 Tier 0 engine with a new Tier 3 marine engine using a grant of $13,679.80. The funds will come from DEEP's voluntary contribution. A Scope of Work was developed and a contract has been signed. Thimble Islands Ferry selected a vendor, issued a purchase order and accepted delivery of the new engine. Installation is nearly complete. **Tirollo Bus Company, LLC (Tirollo Bus) School Bus Replacement Project (Diesel to Gasoline):** Tirollo Bus plans to use its grant of $19,249.43 to replace a MY 2006 diesel-powered school bus with a 2020, gasoline-powered equivalent. The funds will come from 2018 State DERA. A Scope of Work was developed and approved and a DEEP Purchase Order for the project was issued on February 6, 2019. Tirollo Bus selected a vendor and issued a purchase order for the new bus. **Town of West Hartford (West Hartford) Dump Truck Replacement Project:** A grant of $63,237.62 will enable West Hartford to replace a MY 1995 maintenance dump truck, which is not included in the town's replacement schedule for 2019-2021. The funds will come from 2018 State DERA. The Scope of Work for the project has been approved and a DEEP Purchase Order for the project was issued on March 1, 2019. West Hartford has selected a vendor and issued a purchase order for the new truck. **Town of Wethersfield (Wethersfield) Dump Truck Replacement Project:** Wethersfield was awarded a grant of $49,086.05 toward the early replacement of a MY 2007 (engine MY 2006) dump truck with a MY 2019 equivalent. However, the Town Council declined to approve the purchase of a new truck and Wethersfield withdrew from the program.
Did you award any rebates or subawards during the reporting period? If so, list the recipients and how much funding they received.	Coventry's FY2017 rebate of $45,115.77 was approved for payment on March 19, 2019. Since this was not drawn down in the sixth quarter, it is not included in this report. No other rebates were processed during this reporting period.
Provide a comparison of actual accomplishments with the anticipated outputs/outcomes and timelines/milestones specified in the project Work Plan.	Several of the contracts required to implement the grants for non-government recipients were delayed in execution. C & S failed to provide any documentation of progress. All other projects are on schedule.

If anticipated outputs/outcomes and/or timelines/milestones are not met, why not? Did you encounter any problems during the reporting period which may interfere with meeting the project objectives?	Several of the 2018 FY projects were delayed during internal DEEP review. The vender selected for Coventry's 2018 truck replacement has not been able to guarantee that the assembly of the chassis and dump body can be completed before August 31. DEEP was late in posting the FY2018 awards due to delayed EPA approvals resulting from the government shutdown.
How do you propose to remedy any problems? Identify how and the date you will get back on course to meet the anticipated outputs/outcomes and/or timelines/milestones specified in the project work plan.	Coventry has been negotiating with its vendor, who has agreed to deliver the chassis and body for assembly in July. DEEP has agreed to extend Coventry's deadline into September, provided that the vendor can ensure completion of the project. C & S withdrew from the program, citing multiple business challenges that have reduced available personnel and financial resources. DEEP had drafted its webpage update in advance of EPA's approval of the projects so as to be able to post the projects as soon as they were approved.
If any cost-shares are reported for this Reporting Period in Table 1 above, identify the source of the funds.	In the fourth quarter, MDC contributed $423,264.75 as its mandatory cost share of the purchase of its new Vactor truck. MDC paid an additional $3,460.02 in leveraged (voluntary) funds in the fourth quarter, however because it was subject to a decrease if the C&S project had gone forward, the voluntary match was not reported in the fourth quarter and is being reported now.
	Coventry's final reimbursement request for its 2017 grant included an additional $299.25 as part of its mandatory cost share, which is included in this quarter's report. Coventry paid an additional $3,543.61 in leveraged (voluntary) funds in the fifth quarter, however because it was subject to a decrease if the C&S project had gone forward, the voluntary match was not reported in the fifth quarter and is being reported now.
	Guilford Lobster Pound contributed $44,484.60 as its mandatory cost share for the new engine for the *FV Erica Paige.*
	Atlas Concrete Products' $3,500.00 down payment is reported as part of its mandatory cost share for the new truck.
	Thimble Islands Ferry contributed $7,637.40 as its mandatory cost share for the new engine for the *MV Adriaen B.*
Was any program income generated during the reporting period? Identify amount of program income, how it was generated, and how the program income was/will be used.	No project income was received in the sixth quarter.
Did any public relations events regarding this grant take place during the reporting period?	On January 8, 2019, DEEP forwarded EPA's announcement of the 2019 National DERA Program to its Clean Diesel Stakeholders. DEEP followed up on January 29 with announcements of the rescheduled webinars and on February 26, by forwarding the deadline extension announcement. On March 7, 2019, DEEP forwarded the announcement of increased 2019 Tribal funding to representatives of the recognized tribes in Connecticut.
What is the URL for the state website listing the total number and dollar amount of subawards, rebates, or loans provided, as well as a breakdown of the technologies funded? Please also list any other state websites used for outreach related to the State DERA Grant Program.	DEEP maintains a website for Diesel Grants and Funding. Information about this and other diesel grant programs administered by DEEP's Bureau of Air Management can be found on the DEEP website at: http://www.ct.gov/deep/cwp/view.asp?a=2684&q=322100&depNav_GID=161 DEEP has also established a website for its Volkswagen NO_X Mitigation Program. In accordance with the requirements of the VW Settlement, projects selected for "DERA Option" VW funding in the 2018 State DERA solicitation will be posted here once the revised State DERA work plan has been approved and the projects have been submitted to Wilmington Trust. http://www.ct.gov/deep/cwp/view.asp?a=2684&q=587294&deepNav_GID=1619
	DEEP State DERA Administrative Activities: In the eighth quarter, following EPA's approval of the increased voluntary match, Connecticut will submit the revised workplan for the projects selected for FY2018 funding. Upon approval by EPA, DEEP will post the list of FY2018 projects on its website. DEEP will continue to work with the 2018 grantees to finalize implementation documents for their projects and will monitor the progress of the projects, providing support and assistance as needed. DEEP will review reimbursement requests and issue rebates upon approval. **MDC VACTOR Truck Replacement Grant:** This project was completed and reimbursement approved October 3, 2018, ahead of schedule. **Coventry Snowplowing Dump Truck Replacement Project:** This project was completed and approved March 13, 2019. Coventry's rebate will be drawn down for reporting in the seventh quarter. **Atlas Concrete Products (Atlas) Flatbed Truck & Crane Replacement Project:** Atlas will be monitoring the progress of the preparation of their new truck, which should be delivered in July. **Town of Beacon Falls (Beacon Falls) Dump Truck Replacement Project:** Beacon Falls will be monitoring the progress of the preparation of their new truck, which should be delivered in the eighth quarter. **Town of Burlington (Burlington) Dump Truck Replacement Project:** Burlington will be monitoring the progress of the preparation of its new truck, which is scheduled to be delivered to the builder in late May. **Town of Coventry (Coventry) 2018 Snowplowing Dump Truck Project:** Coventry will be negotiating with its builder to ensure that the project is completed on time and monitoring the progress of the preparation of its new truck, which is scheduled to be delivered to the builder in the summer.

What project activities are planned for the next reporting period?	**Town of East Hartford (East Hartford) Backhoe & Mower Replacement Project:** East Hartford will be issuing the purchase order for the new equipment in early April. It will take delivery of the backhoe in the seventh quarter and the two mowers in the eighth quarter. **Bartholomew L. Mansi, III, d.b.a. Guilford Lobster Pound (Guilford Lobster Pound) Marine Repower Project:** Guilford Lobster Pound will complete the repower of the *FV Erica Paige* and submit reimbursement request(s) for the engine and for the installation. **King Lobster Marine Repower Project:** DEEP will execute the contract with King Lobster. King Lobster will be completing its marine repower project and preparing and submitting its reimbursement request package. **Savino Transportation, Inc. (Savino) School Bus Replacement Project (Diesel to Propane):** DEEP will execute the grant contract with Savino. Savino will be monitoring the progress of the preparation of its new propane buses, which are scheduled to be delivered July 1. **State Line Propane, LLC (State Line) Tractor Replacement Project:** DEEP will execute the contract with State Line. State Line will be monitoring the progress of the preparation of their new truck and taking delivery in late May. **Sysco Corporation (Sysco) 7-Truck Replacement Project:** Sysco will be issuing the purchase orders for the new trucks in the seventh quarter and will be monitoring the progress of the preparation of their new trucks. **Thimble Islands Ferry Company (Thimble Islands Ferry) Marine Repower Project:** DEEP will execute the contract with Thimble Islands Ferry. Thimble Islands Ferry will complete the repower of the *MV Adriaen B* and submit a request for reimbursement. **Tirollo Bus Company, LLC (Tirollo Bus) School Bus Replacement Project (Diesel to Gasoline):** Tirollo will be monitoring the progress of the preparation of their new bus and taking delivery in early May. Scrappage of the old bus should also be completed in the seventh quarter. **Town of West Hartford (West Hartford) Dump Truck Replacement Project:** West Hartford will be monitoring the progress of the preparation of their new truck, which will be delivered in the eighth quarter.

Table 3. Subaward Reporting Requirements	
Requirement	**Response**
Summaries of results of reviews of financial and programmatic reports	DEEP operates its State DERA Program exclusively as a rebate program; no subawards are granted.
Summaries of findings from site visits and/or desk reviews to ensure effective subrecipient performance	
Environmental results the subrecipient achieved	
Summaries of audit findings and related pass-through entity management decisions	
Actions the pass-through entity has taken to correct deficiencies such as those specified at 2 CFR 200.331(e), 2 CFR 200.207 and the 2 CFR Part 200.338 Remedies for Noncompliance	

Grant Recipient	The Connecticut Department of Energy and Environmental Protection (DEEP)
Grant #	DS - 00A00154 - 3
Reporting Period	January 1 - March 31, 2019

	Fleet Information	Group 1: MDC	Group 2: Woodstock Academy: This project was terminated 2/28/18		Group 3: C & S Wholesale Grocers: This project was terminated 1/31/19		Group 4: Town of Coventry, 2017	Group 5: Atlas Concrete Products
CURRENT VEHICLE INFORMATION	Fiscal Year of EPA Funds Used:	2017	2017	2017	2017	2017	2017	2018
	Vehicle Or Engine Group Name:	VACTOR Truck	School Bus		TRU Trailers	Truck Stop Electrification	Snowplowing Dump Truck	Flatbed Truck with Crane
	Fleet Owner:	The Metropolitan District (MDC)	Woodstock Academy		C & S Wholesale Grocers, Inc.		Town of Coventry, CT	Atlas Concrete Products
	Vehicle or Engine Group Type:	On Highway	On Highway	On Highway	NonRoad	NonRoad	On Highway	On Highway
	Primary Place of Performance	Hartford County, CT	Tolland County, CT		Windsor Locks, CT		Tolland County, CT	Statewide
	- State(s):	CT	CT		CT		CT	CT
	- County:	Hartford	Tolland		Hartford		Tolland County	Hartford County
	- City:	Hartford	Westbrook		Windsor Locks		Coventry	New Britain
	- Zip Code:	06142	06281		06096		06238	06053
	Target:	Short Haul - Single Unit	School Bus	School Bus	Ports and Airports	Ports and Airports	Short Haul - Single Unit	Short Haul - Single Unit
	Vehicle Class or Equipment Type:	Class 8	School Buses	School Buses	ACRefrigeration	ACRefrigeration	Class 8	Class 8
	Quantity:	1	1	1			1	1
	Vehicle Identification Number(s):	2FZHAZDE27AX52691					1HTSDAAR52H620492	1M2K180C23M021426
	Vehicle Make:	Sterling					International	Mack
	Vehicle Model:	LT9500					4900	600
	Vehicle Model Year:	2007					2002	2003
	Engine Serial Number(s) :	KC638752					1325340	2C0239
	Engine Make:	Caterpillar					International	Mack
	Engine Model:	C13					DT466	E7-350
	Engine Model Year:	2006					2001	2003
	Engine Tier:							NA
	Engine Horsepower:	330					293	350
	Engine Cylinder Displacement:	12.5					466 Cubic Inch	11.9
	Engine Number of Cylinders:	6					6 Cylinders	6
	Engine Family Name:	6CPXH0763EBX					1MVXH0466A1NB	2MKXH11.9V00
	Engine Fuel Type:	ULSD					ULSD	ULSD
	Annual Amount of Fuel Used:	3313					1600	10,485
	Annual Usage Rate:							
	Annual Miles Traveled:	11400					4000	45,000
	Annual Idling Hours:	890					2000	600
	Annual Hoteling Hours:							
	Remaining Life:	7					4	4
	Normal Attrition Year:	2022					2022	2022
NEW VEHICLE/UPGRADE INFORMATION	Year of Upgrade Action:	2018					2018	2019
	Upgrade Type:	Vehicle Replacement					Vehicle Replacement	Vehicle Replacement
	Upgrade:	Vehicle Replacement - Diesel					Vehicle Replacement - Diesel	Vehicle Replacement - Diesel
	Upgrade Cost Per Unit:	$564,353.00					$194,637.52	$317,020
	Upgrade Labor Cost Per Unit:							
	New Engine Model Year:	2018					2018	2019
	New Engine Tier:							NA
	New Engine Horsepower:	500					370	455
	New Engine Duty Cycle:							NA
	New Engine Cylinder Displacement:	14.9 Liters					8.9 liter	13 L
	New Engine Number of Cylinders:	6					6 Cylinders	6
	New Engine Family Name:	JCEXH0912ZAW					JCEXH0540LAT	
	New Engine Fuel Type:	ULSD					ULSD	ULSD
	Annual Idling Hours Reduced:							
	Annual Hoteling Hours Reduced:	NA					NA	NA
	Annual Diesel Gallons Reduced:	0					NA	4000

Group 6: Savino Transportation, Inc.		Group 7: State Line Propane	Group 8: Sysco Leasing			Group 9: Tirollo Bus	Group 10: Town of Beacon Falls	Group 11: Town of Burlington
2018	2018	2018	2018	2018	2018	2018	2018	2018
School Bus		Tractor	Food Delivery Trucks			School Bus	Dump Truck	Snowplowing Dump Truck
Savino Transportation, Inc.		State Line Propane, LLC	Sysco Leasing, Inc.			Tirollo Bus Company	Town of Beacon Falls	Town of Burlington
On Highway		On Highway	On Highway			School Bus	On Highway	On Highway
Windham County		Hartford County	Statewide			Orange	Beacon Falls	Burlington
CT		CT	Connecticut			CT	CT	CT
Windham County		Hartford County	Hartford County			New Haven County	New Haven County	Hartford
Scotland		Granby	Rocky Hill			Orange	Beacon Falls	Burlington
06264		06035	06067			06477	06403	6013
School Bus	School Bus	Short Haul - Single Unit	Short Haul - Single Unit	Short Haul - Combination	Short Haul - Combination	School Bus	Short Haul - Single Unit	Short Haul - Single Unit
School Buses	School Buses	Class 8	Class 7	Class 8	Class 8	School Bus	Class 8	Class 8
1	1	1	2	2	3	1	1	1
1BAKFCKH78F246705	1BAKFCKH68F246706	1HTSCAAN57H256706	4V5NC9GF37N450492, 4V5NC9GF37N450493	4V4M19GF26N445160, 4V4M19GF66N445162	4V4M19GF97N466797, 4V4M19GF77N466801, 4V4M19GF97N466802	4UZABRDC59CZ21325	1H1GBADR7YH289569	1HTSDAAR6WH527795
Bluebird	Bluebird	4700	Volvo	Volvo	Volvo	Freightliner	International	International
Vision	Vision	2000	VNL	VNM	VNM	C2	2554	4900
2008	2008	2000	2008	2003	2006	2008	2000	1997
WAX69117	WAX68948	1833180C1	558752, 558917	548597, 551567	584922, 584932, 584934	WAX68443	93HMZU1203751	1064068
Caterpillar	Caterpillar	International	Volvo	Volvo	Volvo	Caterpillar	International	International
C7	C7	DT466E	VE-D12	VE-D12	VE-D12	CAT C7	DT530	DT466
2006	2006	2000	2008	2008	2006	2006	2000	1997
NA	NA	NA	NA	NA	NA	NA	NA	NA
190	190	195	365	365	365	210	215	250
7.2	7.2	7.6	12.13 L	12.13 L	12.13 L	210	8.7	7.6
6	6	6	6	6	6	8	6	6
6CPXH0442HBK	6CPXH0442HBK	YNYXH0466ANA	6VTXH12.1503	6VTXH12.1503	6VTXH12.1503	6CPXH0443HBK	YNYXL0530ANA	YNYX6600ASA
ULSD	ULSD	ULSD	ULSD	ULSD	ULSD	ULSD	ULSD	ULSD
1327	1665	11,000	2,208 & 1,193	3,940 & 2,316	2,696 & 2,535 & 4,690	4000	815	900
NA	NA	NA	NA	NA	NA	N/A	NA	NA
9,997	14,741	61,943	14,431 & 12,123	23, 683 & 13,690	18,770 & 17,442 & 28,087	16,000	3,000	5108
57	57	300	106 & 156	145 & 162	77 & 391 & 119	1000	200	453
NA	NA	NA	NA	NA	NA	N/A	NA	NA
5	5	3	6	6	6	5	3	5
2023	2023	2021	2024	2023	2024	2023	2021	2023-2024
2019	2019	2019	2019	2019	2019	2019	2019	2019
Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement
Vehicle Replacement - LPG/Propane	Vehicle Replacement - LPG/Propane	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Gasoline	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel
$92,500.00	$92,500.00	$129,444.00	$59,923.00	$100,074.00	$100,074.00	$55,164.00	$168,072.35	$174,673.00
2020	2020	2019	2019	2019	2019	2020	2019	2020
NA	NA		NA	NA	NA	NA	NA	NA
320	320	470	220	345	345	265	370	370
NA	NA		NA	NA	NA	NA	NA	NA
6.8 L	6.8 L	12.8	6.7 L	11 L	11 L	8.8	8.9	8.9
10	10	6	6	6	6	8	6	6
LPG	LPG	ULSD	ULSD	ULSD	ULSD	Gasoline	ULSD	ULSD
NA	NA	NA	NA	NA	NA	NA	NA	NA
1327	1665		146	458	302	1716	415	436

Group 12: Town of Coventry, 2018	Group 13: Town of East Hartford			Group 14: Town of West Hartford	Group 15: Town of Wethersfield; This project was terminated 4/2/19
2018	2018	2018	2018	2018	2018
Snowplowing Dump Truck	John Deere Backhoe	Detroit Diesel Mower	Kubota Mower	Maintenance Dump Truck	
Town of Coventry, CT	Town of East Hartford			Town of West Hartford	Town of Wethersfield
On Highway	NonRoad	NonRoad	NonRoad	On Highway	On Highway
Tolland County, CT	East Hartford			West Hartford	
CT	Connecticut			CT	
Tolland County	Hartford			Hartford County	
Coventry	East Hartford			West Hartford	
06238	06108			06110	
Short Haul - Single Unit	Construction	Agriculture	Agriculture	Short Haul - Single Unit	Short Haul - Single Unit
Class 8	Tractors/Loaders/Backhoes	Agricultural Mowers	Agricultural Mowers	Class 8	Class 8
1	1	1	1	1	
1HTWDAZR66J345994	T03105E880766	70525 1722	705250 1660	1FDYK90U09VA35224	
International	John Deere	Detroit Diesel	Kubota	Ford	
7400	John Deere 310E	Jacobsen HR 9016	Jacobsen HR 9016	L9000	
2009	1999	2001	2010	1995	2002
57KHM2420973310	T04045T830181	77B/1-2166	GB20891-2007	1174341	
International	John Deere	VM Motori	Kubota	Cummins	
DT570	4045T	D704LTE	V3300-DI-T-ES01	N14-350E	
2005	1999	2000	2007	1995	
	Tier 1	Tier 1	Tier 1	NA	
300	88	87	88	350	
9.3	4.5	2.7	3.318 L	14 L	
6	4	4	4	6	
5NVXH0570AEA	NA	YV5XL02 8A2V	7K6LXL03 3AAD	RCE655EJDASW	
ULSD	ULSD	ULSD	ULSD	ULSD	
1600	500 7	719 1	1175 8	1000	
NA	970	500	678	NA	
4000	NA	NA	NA	2870	
2000	NA	NA	NA	110	
NA	NA	NA	NA	NA	
4	8 years	3 years	9 years	6 years	
2022	2026	2021	2027	2024	
2019	2019	2019	2019	2019	
Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement	Vehicle Replacement
Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel	Vehicle Replacement - Diesel
$205 000 00	$135 000 00	$120 000 00	$120 000 00	$282 813 47	
2020	2019	2019	2019	2019	
NA	4	3	3	NA	
370	74	80-110	80-110	350-505	
NA	NA	NA	NA	NA	
8 9 liter	4 5 L	3 3	3 3	12 8	
6	4	4	4	6	
ULSD	ULSD	ULSD	ULSD	ULSD	ULSD
	NA	NA	NA		
NA	NA	NA	NA	NA	
NA	0	0	0	613	

Grant Recipient	The Connecticut Department of Energy and Environmental Protection (DEEP)
Grant #	DS - 00A00154 - 3
Reporting Period	January 1 - March 31, 2019

	Fleet Information	Group 1: Guilford Lobster Pound
CURRENT VEHICLE INFORMATION	Fiscal Year of EPA Funds Used:	2018
	Name of Vessel:	*FV Erica Paige*
	Total # of Propulsion Engines	1
	Total # of Auxiliary Engines	0
	Vehicle Or Engine Group Name:	Guilford Lobster Pound
	Fleet Owner:	Bart Mansi
	Application:	Commercial Fishing
	Primary Place of Performance	Long Island Sound
	- State(s):	Connecticut, New York, Rhode island
	- County:	New Haven
	- City:	Guilford
	- Zip Code:	6437
	Engine Group Type:	propulsion
	Quantity:	1
	Engine Serial Number(s) :	4TB05456
	Engine Make:	Caterpillar
	Engine Model:	3406
	Engine Model Year:	1997
	Engine Tier:	Tier 0
	Engine Horsepower:	581
	Engine Cylinder Displacement:	1.2 <= size <2.5
	Engine Number of Cylinders:	6
	Engine Total Displacement:	14.6 L.
	Engine Family Name:	NA
	Engine Fuel Type:	ULSD
	Annual Amount of Fuel Used:	14000
	Annual Usage Rate:	1600 hrs.
	Remaining Life:	3
	Normal Attrition Year:	2021
NEW VEHICLE/UPGRADE INFORMATION	Year of Upgrade Action:	2018
	Upgrade Type:	Engine Replacement
	Upgrade:	Engine Replacement - Diesel
	Upgrade Cost Per Unit:	$74,141.00
	Upgrade Labor Cost Per Unit:	$38,003.69
	New Engine Model Year:	2019
	New Engine Tier:	Tier 3
	New Engine Horsepower:	610
	New Engine Cylinder Displacement:	2.5<= size <3.5
	New Engine Number of Cylinders:	6
	New Engine Total Displacement:	10.8
	New Engine Family Name:	KCEXN10.8AAB
	New Engine Fuel Type:	ULSD
	Annual Diesel Gallons Reduced:	7,136

Grant Recipient	The Connecticut Department of Energy and Environmental Protection (DEEP)
Grant #	DS - 00A00154 - 3
Reporting Period	January 1 - March 31, 2019

	Fleet Information	Group 1: King Lobster
CURRENT VEHICLE INFORMATION	Fiscal Year of EPA Funds Used:	2018
	Name of Vessel:	*FV Kory Alexander*
	Total # of Propulsion Engines	1
	Total # of Auxiliary Engines	0
	Vehicle Or Engine Group Name:	King Lobster
	Fleet Owner:	Donald J. King, II
	Application:	Commercial Fishing
	Primary Place of Performance	Long island Sound
	- State(s):	CT
	- County:	New Haven
	- City:	Branford
	- Zip Code:	6405
	Engine Group Type:	propulsion
	Quantity:	1
	Engine Serial Number(s) :	2071166620
	Engine Make:	Volvo
	Engine Model:	TAMD-74
	Engine Model Year:	2003
	Engine Tier:	Tier 0
	Engine Horsepower:	294
	Engine Cylinder Displacement:	0.9 <= size < 1.2
	Engine Number of Cylinders:	6
	Engine Total Displacement:	7.28
	Engine Family Name:	NA
	Engine Fuel Type:	ULSD
	Annual Amount of Fuel Used:	3100
	Annual Usage Rate:	1600
	Remaining Life:	3
	Normal Attrition Year:	2021
NEW VEHICLE/UPGRADE INFORMATIOIN	Year of Upgrade Action:	2019
	Upgrade Type:	Engine Replacement
	Upgrade:	Engine Replacement - Diesel
	Upgrade Cost Per Unit:	$23,560.00
	Upgrade Labor Cost Per Unit:	$4,762.00
	New Engine Model Year:	2019
	New Engine Tier:	Tier 3
	New Engine Horsepower:	290
	New Engine Cylinder Displacement:	1.2 <= size <2.5
	New Engine Number of Cylinders:	6
	New Engine Total Displacement:	8.9
	New Engine Family Name:	
	New Engine Fuel Type:	ULSD
	Annual Diesel Gallons Reduced:	2400

Grant Recipient	The Connecticut Department of Energy and Environmental Protection (DEEP)
Grant #	DS - 00A00154 - 3
Reporting Period	January 1 - March 31, 2019

	Fleet Information	Group 1: Thimble Islands Ferry
CURRENT VEHICLE INFORMATION	Fiscal Year of EPA Funds Used:	2018
	Name of Vessel:	*MV Adraien B*
	Total # of Propulsion Engines	1
	Total # of Auxiliary Engines	0
	Vehicle Or Engine Group Name:	Thimble Islands Ferry
	Fleet Owner:	William Smith
	Application:	Ferry/Excursion
	Primary Place of Performance	Long Island Sound
	- State(s):	CT
	- County:	New Haven
	- City:	Branford
	- Zip Code:	6405
	Engine Group Type:	propulsion
	Quantity:	1
	Engine Serial Number(s) :	620256NC610
	Engine Make:	Westerbeke
	Engine Model:	4-107
	Engine Model Year:	1986
	Engine Tier:	Tier 0
	Engine Horsepower:	25
	Engine Cylinder Displacement:	0.9 <= size < 1.2
	Engine Number of Cylinders:	4
	Engine Total Displacement:	1.75 L.
	Engine Family Name:	engine is too old
	Engine Fuel Type:	ULSD
	Annual Amount of Fuel Used:	740
	Annual Usage Rate:	1480
	Remaining Life:	3
	Normal Attrition Year:	2022
NEW VEHICLE/UPGRADE INFORMATION	Year of Upgrade Action:	2019
	Upgrade Type:	Engine Replacement
	Upgrade:	Engine Replacement - Diesel
	Upgrade Cost Per Unit:	$13,557.00
	Upgrade Labor Cost Per Unit:	$21,976.00
	New Engine Model Year:	2019
	New Engine Tier:	Tier 3
	New Engine Horsepower:	30
	New Engine Cylinder Displacement:	size < 0.9
	New Engine Number of Cylinders:	3
	New Engine Total Displacement:	1.123
	New Engine Family Name:	
	New Engine Fuel Type:	ULSD
	Annual Diesel Gallons Reduced:	355