



GRADE

Quarterly Project Summary

2018 – 4th Quarter

Highlights:

- *GRADE CMAQ 2018*: Mecklenburg County Air Quality (MCAQ) opened a Call for Projects (CFP) in July 2018. Eleven of 18 project applications were selected for funding, and contracts are being prepared. Funded projects are expected to reduce 36.61 tons of NOx over their lifetimes.
- *GRADE for Freight*: All projects have been completed and the final grant report was submitted to EPA in December 2018.
- *AeroGRADE 2.0*: Be on the lookout for information about our newest airport-focused GRADE CFP in our next update. Hint: electrification is the name of the game!

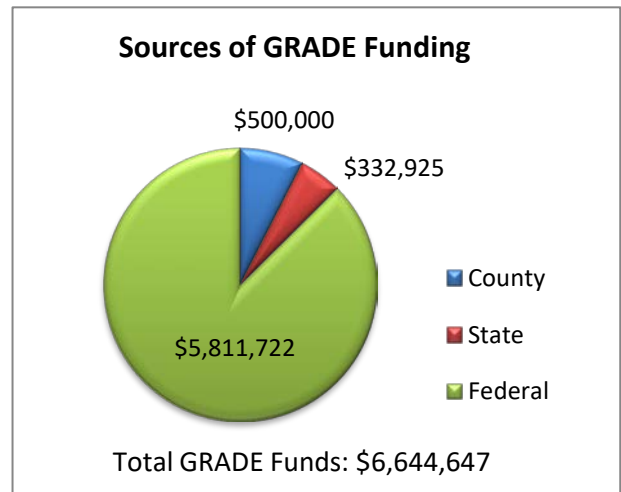


Photo: Custom Corrugated Container box truck replacement funded by GRADE for Freight.

Executive Summary

In 2007, Mecklenburg County Air Quality launched an innovative air quality improvement program called **Grants to Replace Aging Diesel Engines** or **GRADE**. **GRADE** is designed to reduce oxides of nitrogen (NOx), an ozone forming air pollutant, by providing businesses and organizations funding incentives to replace or repower heavy-duty non-road equipment with newer, cleaner, less polluting engines. As a local air quality agency with the goal to improve ambient air quality in the region and reduce exposure to unhealthy airborne pollutants, Mecklenburg County Air Quality (MCAQ) strives to maintain progress toward attainment of National Ambient Air Quality Standards by limiting and reducing emissions.

2018 CMAQ: PROJECT SELECTION – In February 2017, MCAQ was awarded \$500,000 in CMAQ funding from the USDOT. MCAQ received approval on April 17, 2018 to initiate the first Call for Projects (CFP). Eleven of the selected projects have been accepted, and contracts are being prepared as of January 2019.



GRADE for Freight: COMPLETED - In August 2015, MCAQ was awarded \$500,000 in DERA funding. MCAQ opened the first CFP on June 1, 2016; this CFP ended July 31, 2016. A second CFP opened from September 19, 2016 until October 17, 2016. A third CFP opened from July 24, 2017 until September 1, 2017. So far, 17 projects have completed with 3 additional that have been allocated funds and are pending completion. These 20 projects are so far expected to reduce 118.52 tons of NOx over their activity life.

GRADE for Landfills: COMPLETED – Five projects have been completed and reimbursed. The amount of funding reimbursed to these completed projects totals \$490,391.97 and the expected NOx reduction is 45.57 tons. The remaining \$6,330.03 was not used and so was returned to the EPA.

AeroGRADE: COMPLETED - A combined 96 diesel Ground Support Equipment (GSE) projects have been completed and are expected to reduce 560 tons of NOx reductions over their activity life. American Airlines has completed 31 diesel-to-diesel repower projects and 35 diesel-to-electric replacement projects. Piedmont Airlines, Inc. has completed 30 diesel-to-electric bag tractor replacements. Overall, \$797,548 in funding has been dispersed to completed projects.

2013 CMAQ: COMPLETED - Twenty-three projects have been completed and reimbursed. The amount of funding reimbursed to these completed projects totals \$1,426,033 and the expected NOx reduction is 82.9 tons. The \$1.4M in Congestion Mitigation and Air Quality Improvement (CMAQ) funding was compiled from (4) local MPOs/RPOs: Rocky River RPO - \$596K; MUMPO - \$500K; Lake Norman RPO - \$207K; and Gaston MPO - \$137K.

2012 CMAQ: COMPLETED - Three projects have been completed and reimbursed. The amount of funding reimbursed to these projects totals \$284,408 and the expected NOx reductions total 14 tons. The remaining \$15,591 of available funding was used in conjunction with 2013 CMAQ funding. All 2012 CMAQ funding has been dispersed to completed projects.

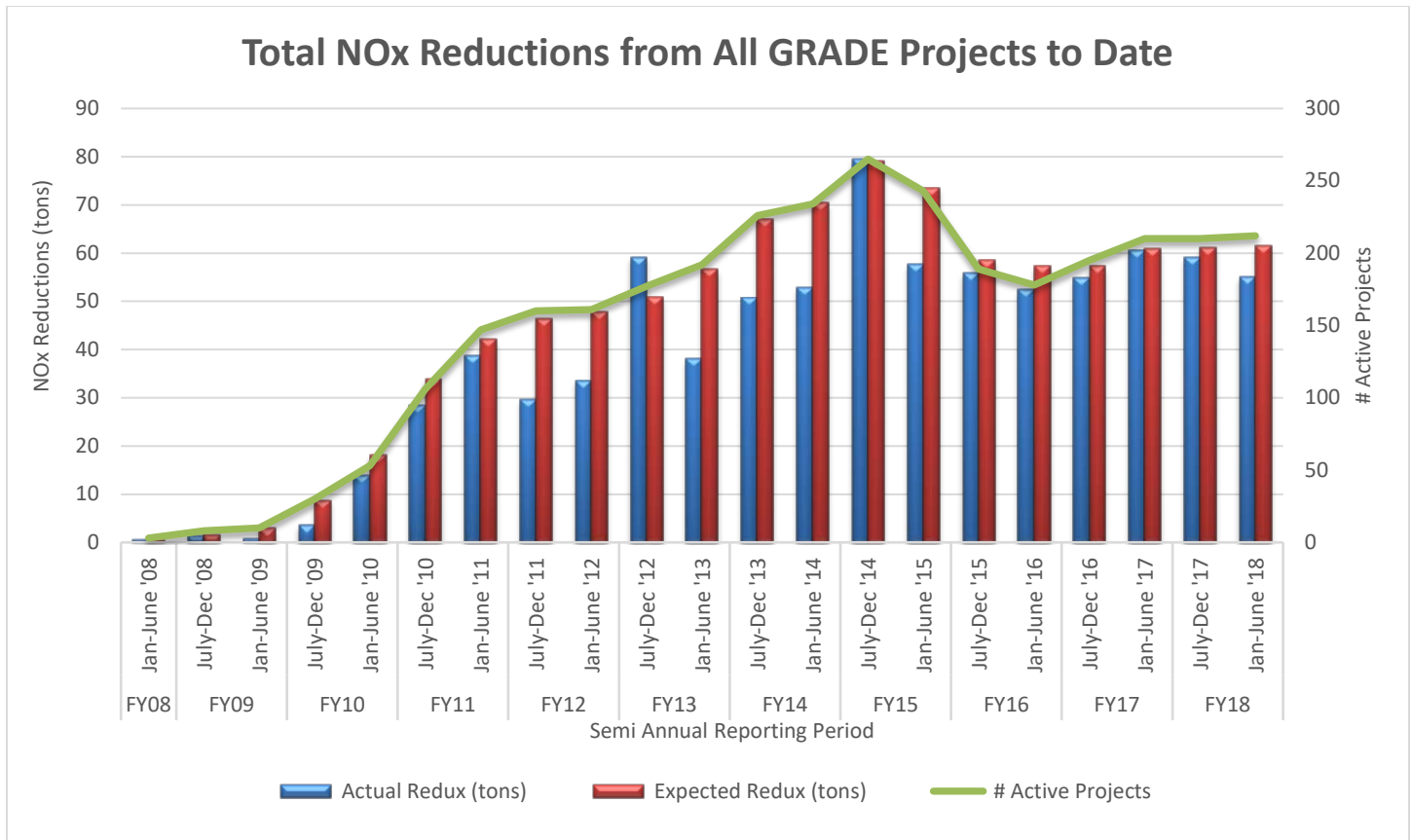
GRADE+: COMPLETED - 112 projects were selected and are expected to produce 383.6 tons of NOx reductions over their activity life; \$1,845,588 was allocated to the GRADE+ projects to achieve the proposed NOx reductions. 112 of 112 projects are completed and reimbursed.

GRADE 2009: COMPLETED - 13 projects were selected and are expected to produce 98.77 tons of NOx reductions over their activity life. \$220,625 was allocated to the 2009 projects to achieve the proposed NOx reductions. All 13 projects are complete and reimbursed.

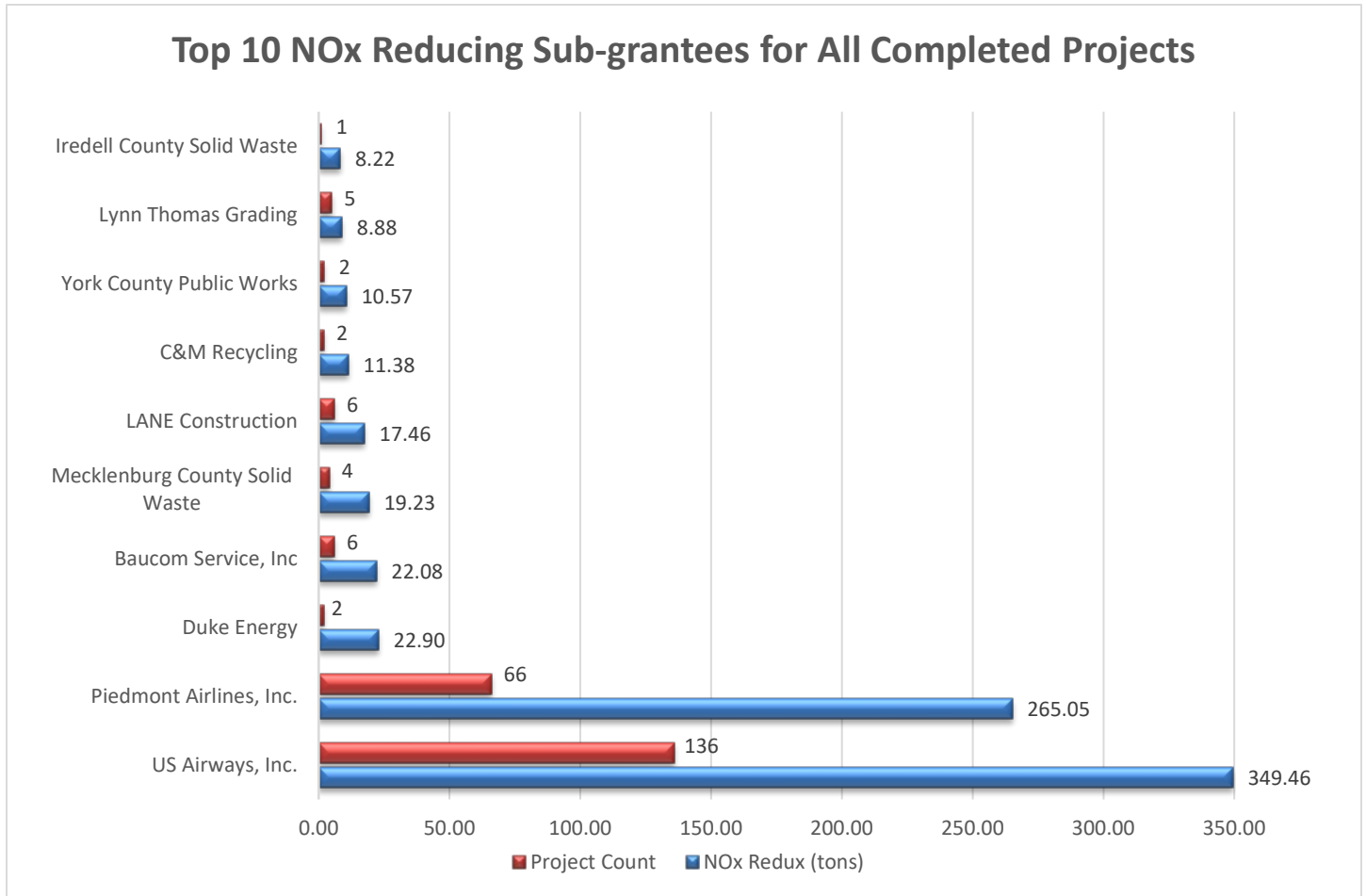
GRADE 2008: COMPLETED – Originally, 35 projects were selected for implementation and were projected to produce 121.74 tons of NOx reduction over their activity life. \$343,232.40 was allocated to the projects to achieve the proposed NOx reductions. However, of the 35 projects originally selected, 27 projects were completed and reimbursed, 8 projects were pulled from the program by the equipment owners due to financial constraints of a down economy.

GRADE 2007: COMPLETED - Funds dispersed are \$308,119.29 and have yielded NOx reductions of 10.814 tons. Although this is below target for expected reductions, this can be attributed to the slow economy during the recession resulting in lower than anticipated machine use.

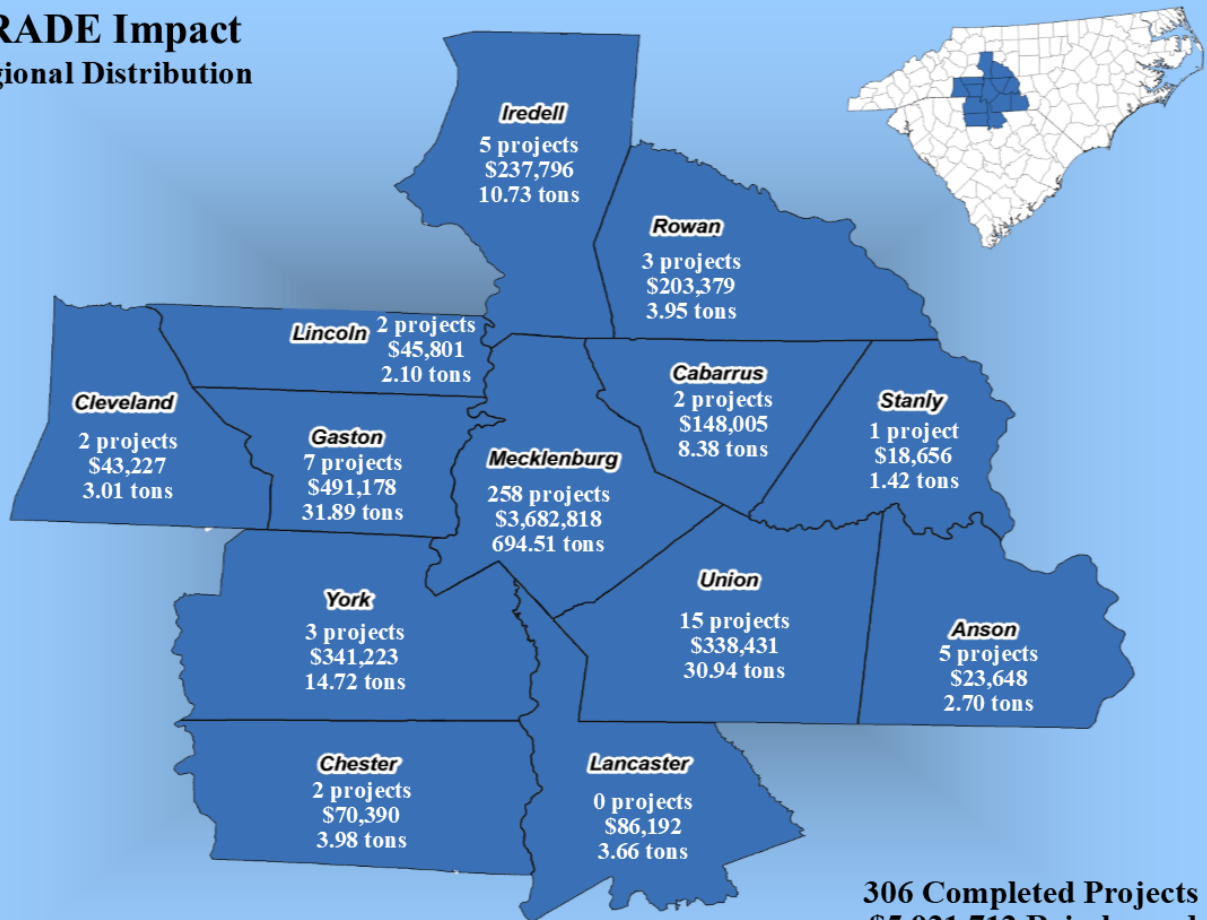
The following chart summarizes to date the total NOx reductions achieved and expected NOx reductions of all active GRADE projects during each semi-annual period.



The following chart highlights the top 10 overall GRADE sub-grantees based on their NOx reduction results. These results are based on reported usage of each project through June 2018. The NOx reductions reflect a total from all projects under the sub-grantee.



GRADE Impact Regional Distribution



306 Completed Projects
\$5,921,712 Reimbursed
818 tons of Actual NOx Reductions

Actual NOx reduction data is updated semi-annually and is current through June 2018. The total number of projects is based on the award recipient's home county. Total funds reimbursed and NOx reductions are not limited to the above counties. Dollar figures per county may fluctuate between GRADE Summary Reports based on increased/decreased percentage of use in each county.

Summary of GRADE Funding Sources					
Funding Source	Award Date	Award Amount	Projects	Funding Category	Cost Effectiveness (\$/ton)
2007 MSERG	March 28, 2007	\$230,000	6	Non-road	\$13,185.66
Mecklenburg County BOCC	July 1, 2007	\$500,000	13	On-Road, Non-road, & Stationary	\$3,239.76
2008 MSERG	Sept. 15, 2008	\$102,925	5	Non-road	\$3,503.82
SEDC	April 15, 2009	\$750,000	82.5*	On-Road, Non-road, & Stationary	\$5,063.39
2009 ARRA	June 26, 2009	\$1,025,000	53.5*	On-Road, Non-road, & Stationary	\$3,519.66
2012 CMAQ	May 17, 2011	\$300,000	3.5**	Non-road, Transportation Infrastructure	\$20,142.24
2011 AeroGRADE	Sept. 23, 2011	\$800,000	96	Non-road, Airport GSE	\$1,423.63
2013 CMAQ	April 24, 2013	\$1,440,000	22.5**	Non-road, Transportation Infrastructure	\$17,385.73
2014 DERA	March 12, 2015	\$496,722	5	Non-road, Solid Waste Equipment	\$10,761.29
2015 DERA	December 4, 2015	\$500,000	19	On-road & non-road, Freight & Drayage	\$4,218.70
2018 CMAQ	February, 2017	\$500,000	TBD	On-road, Non-road Highway Infrastructure	TBD
Total		\$6,644,647.00	305		\$7,111.38 (Average)

(*Includes one shared project, Rea Contracting Asphalt Paver Replacement)

(**Includes one shared project, Lynn Thomas Grading Wheel Loader Replacement)

(Active Projects column includes contracted projects that are currently underway and completed projects)

Call for Projects	Number of Project Awards	Number of Contracts Executed	Number of Projects Completed	Annual NOx Reduction Expected (tons)	Total NOx Reductions Expected Over Project Life (tons)	Total NOx Reductions Achieved as of 12/31/2017 (tons)
GRADE 2007	9	9	8	3.770	24.355	10.814
GRADE 2008	35	27	27	21.164	119.295	78.990
GRADE 2009	13	13	13	9.877	98.770	74.327
GRADE +	167	114	112	59.170	447.731	286.102
GRADE CMAQ 2012 (4 Calls)	6	5	3	1.412	14.120	4.209
GRADE CMAQ 2013 (3 Calls)	23	23	23	8.366	82.920	33.371
AeroGRADE (4 Calls)	96	5	96	65.911	560.219	307.572
GRADE for Landfills	5	3	5	4.557	45.570	11.526
GRADE for Freight (3 Calls)	20	20	19	9.459	118.520	11.218
GRADE CMAQ 2018 (1 Call)	11	0	0	3.661	36.610	0
Total	385	219	306	187.347	1548.11	818.129

GRADE CMAQ 2018

2018-Present

Project Diversity: This version of GRADE is funded by a CMAQ grant and is focused on reducing NOx emissions from highway construction projects as well as on-road diesel trucks and equipment. The CFP was announced in July 2018 and closed at the end of August 2018. So far, 11 projects have been awarded funding and are awaiting contracts.

Emission Reductions: The anticipated Project Life NOx reduction for the 11 projects is 36.61 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved 2018 CMAQ funding allocation is \$500,000, of which \$403,434.84.00 has been allocated toward awarded projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
AL Baucom	Class 8b Truck	Replace	37,250.00	0	18.20	0
AL Baucom	Class 8b Truck	Replace	37,250.00	0	3.43	0
AL Baucom	Class 8 Truck	Replace	37,250.00	0	0.36	0
City of Charlotte - Landscaping	Class 5/6 Truck	Replace	19,836.34	0	0.17	0
Concrete & Materials Placement LLC	Class 5/8a Truck	Replace	61,693.75	0	1.19	0
Heartwood Tree Service	Class 6 Truck	Replace	45,700.50	0	0.55	0
Mecklenburg County LUESA – Solid Waste	Class 5 Truck	Replace	59,007.75	0	3.80	0
Party Reflections	Class 6 Truck	Replace	22,473.25	0	1.53	0
Party Reflections	Class 6 Truck	Replace	22,473.25	0	1.53	0
Sanders Utility Construction	Class 8b Truck	Replace	42,625.00	0	4.58	0
Tarpon Construction	Class 6 Truck	Replace	17,875.00	0	1.27	0
Total			403,434.84	0	36.61	0

GRADE for Freight 2016-2018

Project Diversity: This version of GRADE is funded by a DERA grant and is focused on reducing NOx emissions from on-road and non-road goods distribution diesel trucks and equipment. The first CFP was announced in June 2016 and closed at the end of July, 2016. The second CFP ran from September 19, 2016 until October 17, 2016. A third CFP ran from July 24, 2017 until September 1, 2017. Totally, 20 projects were awarded funding and are complete.

Emission Reductions: The anticipated Project Life NOx reduction for the 20 projects is 118.52 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved 2015 DERA funding allocation is \$500,000, of which \$498,750.00 was allocated toward awarded projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
Custom Corrugated Container, Inc.	Class 7 Truck	Replace	\$23,785.00	\$20,503.71	3.61	0.637
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.34	0.791
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.06	1.018
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.06	1.134
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.34	1.132
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.34	1.110
Piedmont Airlines, Inc.	Baggage Tractor	Replace	\$9,570.25	\$9,570.25	8.34	1.062
Tarpon Construction Inc.	HDDV8b	Replace	\$39,250.00	\$39,250.00	1.91	0.273
AL Baucom Co.	HDDV8b	Replace	\$19,750.00	\$19,750.00	2.95	0.290
AL Baucom Co.	HDDV8b	Replace	\$19,750.00	\$19,750.00	6.63	0.709
Heartwood Tree Service	Chipper	Replace	\$18,920.94	\$17,670.94	4.60	0.076
Heartwood Tree Service	Chipper	Replace	\$18,787.50	\$17,178.13	1.94	0.080
Heartwood Tree Service	Chipper	Replace	\$18,787.50	\$17,039.18	2.09	0.064
Sanders Utility Construction Comp.	Excavator	Replace	\$97,500.00	\$97,500.00	14.48	1.551
Sanders Utility Construction Comp.	Excavator	Replace	\$54,500.00	\$54,500.00	11.06	0.141
Doggett Concrete	Mini-Excavator	Replace	\$12,405.48	\$12,405.48	0.98	0.037
Doggett Concrete	Mini-Excavator	Replace	\$12,405.48	\$12,405.48	0.98	0.048
DOT Construction	Mini-Excavator	Replace	\$26,705.95	\$26,705.95	0.64	0.074

Advanced Development Concepts	Articulated Dump Truck	Replace	\$56,653.31	\$56,653.31	9.63	0.989
Advanced Development Concepts	Grader	Replace	\$30,016.32	\$30,016.32	7.56	0.000
Total			\$506,638.98	498,750.00	118.52	11.216

GRADE for Landfills Project Summary

2015-2016

Project Diversity: This version of GRADE is funded by DERA grant and is focused on reducing NOx emissions from non-road solid waste diesel equipment.

The first CFP was announced in April 2015 and closed in June 2015. Six projects were initially selected to receive funding from this CFP. One project withdrew after moving forward with a purchase of a piece of equipment prior to being awarded funding. The remaining projects consist of one compactor replacement by York County Public Works, one Dozer replacement by Gaston County Solid Waste, and three wheel-loader replacements by Mecklenburg County Solid Waste. All projects are complete. Watch [our video](#) for interviews from recipients.

Emission Reductions: The anticipated Project Life NOx reduction for the 5 projects is 45.57 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved 2014 DERA funding allocation was \$496,722, of which \$490,391.97 was allocated towards awarded projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
Gaston County Solid Waste	Dozer	Replace	\$170,987.75	\$170,987.75	17.85	3.030
York County Public Works	Compactor	Replace	\$149,750.00	\$143,419.97	10.59	3.321
Mecklenburg County Solid Waste	Wheel Loader	Replace	\$58,661.41	\$58,661.41	5.71	1.837
Mecklenburg County Solid Waste	Wheel Loader	Replace	\$58,661.42	\$58,661.42	5.71	1.654
Mecklenburg County Solid Waste	Wheel Loader	Replace	\$58,661.42	\$58,661.42	5.71	1.684
Total			\$496,722	\$490,391.97	45.57	11.526

2013 CMAQ Project Summary

2013-2015

Project Diversity:

The initial CFP opened in early May 2013 and closed on May 24, 2013. Seven project applications were received and approved by the selection committee to receive funding. The City of Gastonia withdrew their two replacement projects and DOT construction cancelled their replacement after awards had been made. The remaining four replacement projects have been completed.

A second CFP opened in mid-July and closed on August 16, 2013. Twenty-two project applications were received. Fifteen projects were approved by the selection committee and NCDOT in early September. A project by Skyline Design and Landscape was later found to be ineligible for funding due to its primary use not being transportation infrastructure construction. Partners Communications withdrew their project after deciding to keep their old piece of equipment. The 13 remaining projects have been completed.

The third CFP was opened from April 3, 2014 – May 9, 2014. Eleven project applications were received, six were approved for funding allocating all remaining CMAQ2013 funding. These six projects have been completed.

Emission Reductions: The anticipated Project Life NOx reduction goal for the 23 CMAQ projects is 82.9 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved 2013 CMAQ funding allocation was \$1,440,000; of those approved funds, \$1,426,033 has been reimbursed to completed projects. The \$1.4M in funding was compiled from (4) local MPOs/RPOs: Rocky River RPO - \$596K; MUMPO - \$500K; Lake Norman RPO - \$207K; and Gaston MPO - \$137K. The remaining \$15,591 in 2012 CMAQ funding was used in conjunction with 2013 CMAQ funds for reimbursement of the wheel loader replacement project by Lynn Thomas Grading.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
Diversified Enterprises	Excavator	Replace	\$72,750	\$72,750	10.50	3.132
Diversified Enterprises	Excavator	Replace	\$72,750	\$70,980.70	9.33	3.033
Diversified Enterprises	Excavator	Replace	\$17,253.05	\$17,253.05	2.96	0.267
Oliver Paving	Backhoe	Replace	\$26,244	\$23,648	7.45	1.069
Oliver Paving	Skid Steer	Replace	\$31,875	\$31,875	4.05	0.667
BDP Concrete	Skid Steer	Replace	\$23,000	\$23,000	1.90	0.159
H&S Paving	Backhoe	Replace	\$44,221.80	\$44,221.80	3.33	0.153
DOT Construction	Mini-Excavator	Replace	\$31,362	\$31,362	2.74	1.248
Lynn Thomas Grading	Dozer	Replace	\$70,250	\$70,250	3.04	1.354
Lynn Thomas Grading	Excavator	Replace	\$36,275	\$35,975	.24	0.141
*Lynn Thomas Grading	Wheel Loader	Replace	\$63,908.39	\$63,908	1.46	0.562
Appian Construction	Skid Steer	Replace	\$23,312	\$19,558.03	.36	0.224

Appian Construction	Pneumatic Roller	Replace	\$23,363.13	\$23,363.13	2.79	0.099
Appian Construction	Paver	Replace	\$62,500	\$62,500	2.16	1.062
Appian Construction	Curb Machine	Replace	\$107,262.50	\$107,262.50	1.83	0.381
C&M Recycling	Excavator	Replace	\$172,000	\$172,000	5.99	3.760
C&M Recycling	Wheel Loader	Replace	\$207,000	\$206,498	7.28	7.621
LANE Construction	Wheel Loader	Replace	\$84,508	\$84,507.72	5.34	3.091
LANE Construction	Asphalt Roller	Replace	\$65,561.50	\$65,561.50	1.40	0.478
LANE Construction	Asphalt Roller	Replace	\$65,561.50	\$65,561.50	1.40	0.613
WC Black and Sons	Excavator	Replace	\$66,500	\$63,475	4.87	3.046
WC Black and Sons	Skid Steer	Replace	\$19,500	\$14,500.00	.39	0.087
WC Black and Sons	Excavator	Replace	\$79,500	\$65,195	2.11	1.126
Total			\$1,440,000	\$1,423,008	82.92	33.371

(*Shared funding; \$15,591.61 from 2012 CMAQ funding, \$63,908.39 from 2013 CMAQ funding, for a total of \$79,500 reimbursed for this project)

(*Shared funding; \$15,591.61 from 2012 CMAQ funding, \$63,908.39 from 2013 CMAQ funding, for a total of \$79,500 reimbursed for this project)

AeroGRADE Project Summary

2011-2015

Project Diversity: American Airlines (formerly US Airways, Inc.) and Piedmont Airlines, Inc. have submitted a combined 96 project applications to MCAQ for review. All 96 projects have been completed: 65 diesel-to-electric replacements and 31 diesel-to-diesel repowers. Piedmont Airlines, Inc. has completed 30 of 30 diesel-to-electric bag tractor replacements and American Airlines has completed 31 diesel-to-diesel repowers and 35 diesel-to-electric replacements.

Emission Reductions: The anticipated Project Life NOx reduction goal for 96 AeroGRADE projects is 560.22 tons. The aggregate NOx reductions achieved to date are 278.319 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved AeroGRADE funding allocation was \$800,000; of those approved funds, \$797,548.39 has been reimbursed to completed projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
American Airlines (15 projects)	Bag Tractor	Replace	\$175,058.30	\$159,826.16	125.46	66.252
Piedmont Airlines, Inc. (20 projects)	Bag Tractor	Replace	\$216,526.00	\$200,951.39	125.16	88.197
American Airlines (31 projects)	Bag Tractor	Repower	\$157,286.25	\$157,286.25	98.89	79.894
American Airlines (20 projects)	Bag Tractor	Replace	\$203,325.60	\$189,938	156.33	45.206
Piedmont Airlines, Inc. (10 projects)	Bag Tractor	Replace	\$89,546.60	\$89,546.59	54.38	28.023
Total			\$841,741.55	\$797,548.39	560.22	307.572

2012 CMAQ Project Summary

2012-2013

Project Diversity: A call for projects was announced in January 2012; project selections were finalized in mid-April. The CMAQ grant is targeting business and organizations that own equipment that supports the construction of transportation infrastructure. Three (3) projects were selected to receive funding. A second call for projects was opened in late-April and closed on May 31, 2012. The second call was not successful, as no applications were received; therefore, a third call was opened, the call for projects closed in September. Two (2) applications were submitted: an asphalt paver replacement and a wheel loader replacement. Both of these replacement project's emissions were evaluated and were approved by the MCAQ Selection Committee. The Lane Corporation and C&M Recycling, Inc. voluntarily withdrew their respective projects after the MCAQ Selection Committee approved the projects. A fourth project call opened in January 2013 and sparked significant interest because the reimbursement amounts were increased to 80% for engine repowers **and** equipment replacements. Lynn Thomas Grading was awarded a grant to replace a motor grader. The City of Monroe, The LANE Corporation, and the Lynn Thomas Grading projects are complete.

Emission Reductions: The anticipated Project Life NOx reduction goal for the 3 CMAQ projects is 14.12 tons. The reduction amount will be spread out over the activity life of all projects.

Funding Allocation: The approved 2012 CMAQ funding allocation was \$300,000; of those approved funds, all has been reimbursed towards completed projects. Three projects were funded fully by 2012 CMAQ funding, totaling \$284,408.39. The remaining \$15,591 of 2012 CMAQ funding was used in conjunction with 2013 CMAQ funds to reimburse one of the 2013 CMAQ projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to Date (tons)
City of Monroe	Backhoe	Replace	\$19,750	\$19,389.71	2.96	0.469
The Lane Corporation	Asphalt Paver	Replace	\$98,618	\$98,618.68	4.94	2.574
Lynn Thomas Grading	Motor Grader	Replace	\$166,400	\$166,400.00	6.22	1.166
*Lynn Thomas Grading	Wheel Loader	Replace	\$15,591.61	\$15,591.61	See 2013 CMAQ	See 2013 CMAQ
Total			\$300,000	\$300,000	14.12	3.858

(*Partially funded by 2012 CMAQ funds in conjunction with 2013 CMAQ funds; NOx reductions will be tallied with 2013 CMAQ reductions)

GRADE+ (ARRA & DERA) Project Summary

2010-2011

Project Diversity: 112 total projects have been completed.

Emission Reductions: The anticipated Project Life NOx reduction goal for all 112 GRADE+ projects is 447.73 tons. The aggregate NOx reductions achieved to date are 279.704 tons.

Funding Allocation: The approved fund allocation for all GRADE+ activities: Marketing and Administrative; Repowers; and Replacements was approximately \$1.1 million from “stimulus funding” as well as the remainder of the 2008 Mobile Source Emission Reduction grant and the Southeast Diesel Collaborative grant. Funds dispersed to date are \$1,768,651.53. The expended funds cover invoices for project reimbursement. All GRADE+ contracts have been paid. No additional funds will be dispersed to these projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reductions to date (tons)
Ronald & Steve Johnson Farms	Farm Tractor	Replace	\$28,904	23,500.00	6.03	0.564
Ideal Logging, Inc.	Skidder	Replace	\$55,692	\$54,194.28	7.37	4.562
Lincoln Co. Solid Waste Div. of Public Works	Scraper	Repower	\$18,176	\$18,147.82	1.34	1.266
American Airlines (21 projects)	Belt Loaders	Repower	\$148,449	\$148,449.00	42.95	31.057
T.C. Towing & Hauling, Inc. (2 projects)	Class 6 & 8a Trucks	Replace	\$41,182	\$41,182.57	5.20	2.268
C&D Management Co. (2 units)	Refuse Compactors	Repower	\$55,628	\$55,628.00	6.66	3.088
Lake Wylie Marine	Forklift	Repower	\$7,013	\$7,013.00	2.39	1.596
City of Gastonia	Loader/Backhoe	Replace	\$19,375	\$19,375.00	3.11	0.504
Town of Mooresville	Class 8a Truck	Replace	\$23,825	\$23,825.00	3.50	0.769
Sunnybrook Farm, Inc.	Class 8a Truck	Replace	\$6,250	\$6,250.00	1.12	0.100
Baucom Service, Inc. (4 projects)	Class 8b Truck	Replace	\$16,750	\$16,750.00	62.11	14.396
Vulcan Construction Materials, Inc. (2 projects)	Drill & Pump	Repower	\$32,665	\$32,664.88	8.15	4.683
Piedmont Airlines, Inc. (10 projects)	Baggage Tractor	Replace	\$125,070	\$88,863.00	56.70	62.759
Char-Mecklenburg Utilities (5 projects)	(4) Air Compressors, (1) Loader/Backhoe	Repower	\$51,836	\$51,836.00	5.43	1.325
Duke Energy	Dozer	Repower	\$107,068	\$107,068	12.015	13.514
Cleveland Co. Solid Waste	230 LC Excavator	Repower	\$17,216	\$17,216	4.275	2.190
Al Baucom, Inc.	Farm Tractor	Replace	\$36,000	\$36,000	13.39	6.050
Al Baucom, Inc.	Dozer	Repower	\$29,997	\$29,997.00	1.17	0.270
Lock-Lane Const., Inc.	Excavator	Repower	\$4,070	\$4,070.28	0.28	0.050

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	Actual NOx Reduction to date (tons)
Cleveland County Solid Waste	Wheel Loader	Repower	\$17,595	\$17,595.00	1.76	.357
F. Guy Darby & Son	Farm Tractor	Replace	\$35,000	\$34,687.50	2.54	1.115
Custom Corrugated Containers, Inc.	Class 6 Truck	Replace	\$16,766	\$16,766.00	2.30	1.345
Iredell County	Refuse Compactor	Replace	\$135,000	\$135,000.00	18.67	8.223
Griffin Brothers Leasing (2 projects)	Refuse Compactor	Repower	\$61,286	\$53,747.96	5.50	2.168
Rea Contracting (LANE Const.)	Rubber Tire Loader	Replace	\$86,250	\$64,063.50	7.76	6.169
Town of Mooresville (2 projects)	Class 8b Dump Truck	Replace	\$45,196	\$45,196.00	3.90	0.424
Lynn Thomas Grading, Inc.	Class 8b Dump Truck	Replace	\$29,625	\$28,941.63	7.72	5.659
Oliver Paving Co.	(1) Class 8b	Replace	\$12,652	\$10,271.34	7.11	3.557
American Airlines (30 projects)	Baggage Tractors	Repower	\$144,900	\$144,900.00	51.90	66.470
Rea Contracting (LANE Const.)	Asphalt Paver	Replace	\$104,651	\$104,651.00	7.02	4.538
Piedmont Airlines, Inc. (10 projects)	Tow Tractors	Replace	\$75,750	\$75,750.00	10.13	13.758
York Co. Public Works	Refuse Compactor	Replace	\$131,000	\$130,301.77	16.41	7.513
Mecklenburg County Solid Waste	Tub Grinder	Replace	\$124,750	\$124,750.00	21.32	14.054
Total			\$1,845,588	\$1,768,651.53	407.20	286.364

GRADE 2009 Project Summary

2009-2010

Project Diversity: 13 active individual projects consisting of 13 equipment replacements and no repowers. All 13 projects are reimbursed and complete.

Emission Reductions: The Project Life NOx reduction goal for all 13 projects is 98.77 tons. The aggregate NOx reductions achieved to date are 74.327 tons.

Funding Allocation: The approved GRADE 2009 funding allocation was \$220,625; of those approved funds, \$174,241.40 has been reimbursed. All GRADE 2009 contracts have been paid. No additional funds will be dispersed to these projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	NOx Reduction to date (tons)
Piedmont Airlines (10 units)	Baggage Tractor	Replace	\$150,000	\$106,616.40	73.20	66.069
Baucom Service, Inc. (2 units)	Switch Truck	Replace	\$53,000	\$53,000	21.67	7.688
City of Gastonia	Loader/Back hoe	Replace	\$17,625	\$17,625	3.90	0.570
Total			\$220,625	\$174,241.40	98.77	74.327

GRADE 2008 Project Summary 2008-2010

Project Diversity: Originally there were 35 eligible projects, 4 companies declined the offer very early in the process leaving 31 active individual projects consisting of 27 engine repowers and 4 equipment replacements. Although 31 projects were eventually funded, 4 projects have since been removed from the program by the equipment owners due to funding constraints as a result of the down economy leaving 27 projects.

Emission Reductions: The aggregate Project Life NOx reduction goal for all 27 projects is 107.91 tons. The aggregate NOx reductions achieved to date are 78.99 tons.

Funding Allocation: The approved GRADE 2008 funding allocation was \$343,232.40; funds dispersed to date are \$337,967.04. All GRADE 2008 contracts have been paid. No additional funds will be dispersed to these projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	Actual NOx Reduced (tons)
American Airlines (19 units)	Belt Loaders	Repower	\$148,133.50	\$148,133.50	87.95	60.581
Duke Energy	Dozer	Repower	\$68,532.10	\$68,532.10	5.50	9.385
TRANSFLO Terminal Services (4 units)	Master Vac.	Repower	\$60,700.80	\$60,700.80	5.53	7.953
Meck. Co. Stormwater	Loader	Replace	\$27,000.00	\$25,129.50	4.18	.600
Charlotte Douglas International Airport (2 units)	Wheel Loader & Dozer	Repower	\$38,866.00	\$35,471.84	4.75	.472
Total			\$343,232.40	\$337,967.04	107.91	78.991

GRADE 2007 Project Summary

2007-2008

Project Diversity: 9 individual projects consisting of 8 engine repowers and 1 equipment replacement (Okuma America Corp.).

Emission Reductions: The aggregate Project Life NOx reduction goal for the 8 completed projects is 22.59 tons. The aggregate NOx reductions achieved to date are 10.96 tons.

Fund Allocation: The approved GRADE 2007 fund allocation is \$310,088 and the funds dispersed to date are \$308,119.29. All GRADE 2007 contracts have been paid. No additional funds will be dispersed to these projects.

Applicant	Project	Type	Funds Awarded	Funds Reimbursed	Expected NOx Reduction (tons)	Actual NOx Reduced (tons)
Blythe Development	Grader	Repower	\$23,348.06	\$22,811.03	1.71	1.120
Culp Brothers #1	Excavator	Repower	\$29,788.50	\$33,768.63	2.93	.672
Culp Brothers #2	Dozer	Repower	\$40,437.14	\$38,340.30	3.34	.910
Culp Brothers #3	Dozer	Repower	\$40,437.14	\$37,121.97	3.34	2.693
Gaston Co. Solid Waste	Dozer	Repower	\$29,915.00	\$29,915.00	2.00	2.395
Hoopaugh Grading	Loader	Repower	\$18,663.00	\$18,663.00	2.30	1.263
Hoopaugh Grading	Grader	Repower	\$23,348.06	\$23,348.06	1.94	1.302
McWhirter Grading*	Loader	Repower	\$24,151.30	\$24,151.30	3.09*	.150*
Okuma America	Fork Truck	Replace	\$80,000.00	\$80,000.00	5.03	.459
Total			\$310,088.20	\$308,119.29	22.59	10.96

(*McWhirter Grading sold their 2007 project in May 2010 and refunded a pro-rata amount in 2011)