

North Carolina
Department of Environmental Quality
Summary of Public Comments from
Request for Information
For the N.C. VW Mitigation Plan

Introduction

On November 22, 2017, the N.C. Division of Air Quality (DAQ) in the N.C. Department of Environmental Quality (DEQ) announced a Request for Information (RFI) seeking public input on how North Carolina's \$92 million allocation from the Volkswagen Environmental Mitigation Trust Fund (EMT) should be invested to reduce pollution. The EMT was established as part of the Partial Consent Decree that was finalized between the U.S. Justice Department and Volkswagen A.G. regarding the installation illegal software on some of its diesel vehicles. The RFI closed on December 31, 2017.

Airport - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *Projects that have potential to provide highest quality impacts to as large a demographic as possible should be highest priority, ie: city populations should be of higher priority than rural, and public entities should be of higher priority than smaller reaching stakeholders.*

Airlines for America (Veronica Bradley): *A4A recommends that North Carolina use non-competitive funding programs to disburse the Trust funds to the various categories of projects. GSE projects are a cost-effective, long-term solution to mitigate nitrogen oxide emissions, but competitive grant processes are often prohibitively risky for GSE projects. Airline budgetary plans require higher levels of certainty throughout the planning process than competitive grants can guarantee. On the other hand, vouchers and rebates provide airlines the certainty necessary to invest resources in planning for equipment acquisition and in coordinating with airports to secure associated infrastructure. Reducing risk and streamlining the disbursement of Trust funds are especially important for our members who intend to continue to promote emissions reductions across the nation through investment in GSE projects under the Trust.*

American Airlines (Tracy Montross): *DEQ should prioritize projects so that funds are allocated for each project type to ensure that all industries and all segments of the identified project categories benefit from the investment. Projects that meet the below listed factors should be given a higher evaluation score, regardless of whether the request comes from a government or non-government entity. The percentage of funding should be based on a determination of the following factors:*

- *Is the project identified as an applicable eligible mitigation project category and does it reduce diesel emission exposures in areas designated as poor air quality areas, areas with historical air quality issues, and areas that receive a disproportionate quantity of air pollution from diesel fleets?*
- *Is the project cost-effective and does the applicant have experience with cost-effective thresholds?*
- *Does the project applicant have demonstrated experience and programmatic structures in place to effectively and efficiently implement the project?*
- *Does the project have partnerships in place that will help with efficiency and cost-savings? (For example, American envisions partnering with airport operators in integrated GSE electrification projects that will enable cost-effective investments in electric GSE).*
- *Does the project align with the State's priority to invest in projects that can be implemented within three years of the award date?*
- *Does the project benefit a locality that has already been designated by the state as a funding priority area?*

2. What is the anticipated demand for each eligible project type?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *The demand for the projects the Airport is interested in pursuing would be high. The Airport is currently preparing to purchase various fleet vehicles, as well as traditional gas-fueled small equipment in the next*

fiscal year. The vehicles to be purchased impact the traveling public directly which drives a higher demand.

Airlines for America (Veronica Bradley): *Our member airlines recognize that as non-government entities they will have to share the capital costs of replacing airline-owned GSE with all-electric alternatives. To be sure, electric GSE cannot be deployed without supporting infrastructure such as onsite power distribution and sufficient point of use recharging equipment, which typically is owned and operated by airport operators. As such, airlines envision partnering with airport operators in integrated GSE electrification projects that will enable cost-effective investments in electric GSE. Considering airports in North Carolina are usually owned by local governments, A4A encourages DEQ to incorporate clear funding mechanisms and programs to accommodate this real-life scenario, as airports will not likely invest in infrastructure without demand and airlines will not purchase electric GSE without guaranteed supporting infrastructure.*

American Airlines (Tracy Montross): *Given the lack of VALE funding that has been available specifically to airport authorities and airlines in North Carolina, there is significant pent-up demand within the industry to replace older airport GSE. As background, past grant opportunities for Airport GSE, such as those under the Diesel Emissions Reduction Act (DERA) or the Voluntary Airport Low Emissions Program (VALE), have only been available to governmental authorities, such as airport authorities, and unfortunately, airport authorities within North Carolina have not been awarded these grants since the program was created in 2004.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *No input here. Focus should be on greatest potential emission impact regardless of size of project.*

American Airlines (Tracy Montross): *Access to supply equipment is critical for the success of any zero emission vehicle project. However, American believes trust funds should only be spent on Light Duty Zero Emission Vehicle Supply Equipment that supports funding for zero emission vehicles.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *Contingent upon the approval of funding, not only the purchase of emission reduction vehicles would be pursued, additional supporting infrastructure would be required as well. This would increase demand beyond simply the one-time purchase of fleet vehicles and small equipment, but also provide long-term benefits and create future demand for emission reduction projects.*

Airlines for America (Veronica Bradley): *A4A urges North Carolina to carefully consider allocation of funds to the DERA Option. The requirements projects must meet to fulfill program requirements under DERA decrease the scope of projects that could possibly be funded through the Trust. Projects that may not fit within the project criteria of DERA may nonetheless effectively reduce emissions. North Carolina should not limit the types of projects applicants can use by over-allocating funds to the DERA Option.*

American Airlines (Tracy Montross): *American anticipates little demand for diesel emission reduction projects not eligible under the VW Settlement of Airport GSE. Other types of projects, such as particulate filters and oxidation catalysts often require continued maintenance to be effective and do not provide the assured emissions reduction that is provided by electrification.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *No input here. Focus should be on greatest potential emission impact regardless of type of project.*

American Airlines (Tracy Montross): *Yes. The funds should be allocated for each project type to ensure that all industries and all segments of the identified project categories benefit from the investment. Projects that meet the below listed factors should be given a higher evaluation score, regardless of whether the request comes from a government or non-government entity. The percentage of funding should be based on a determination of the factors listed in Question #1.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *Absolutely, in order to provide equal benefit to a majority of the population, government projects must be prioritized. If 100% of the Trust funds were to be utilized by private stakeholders, the impact will be minimized.*

American Airlines (Tracy Montross): *Yes, but only to the extent that government project is equal to all other non-government project categories. A government project should not be given precedence simply because it is a government project, but should be held to the same criteria as a non-government agency project within a particular project category. Cost-effectiveness and speed of implementation capabilities should be factored when considering any proposed project.*

7. Should funds be geographically distributed, and if so how?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *Definitely, in order to provide maximum benefit, the funds should be distributed based on population, as well as the size of the stakeholder's carbon foot-print.*

American Airlines (Tracy Montross): *Yes. The funds should be allocated for each project type and distributed throughout the whole of the State in order to ensure the benefits of the investment are realized throughout all North Carolina. However, as identified above in question number 5, the overarching goal should be to leverage the funds to best reduce pollution in critical non-attainment zones and zones at risk of becoming non-attainment, and no distributions should be made until the project has been scored against these criteria.*

North Carolina's main regions are identified as Western, Southwestern, Triad, Triangle, Eastern, and Southeastern. To the extent possible, DEQ should consider each region, whether there is a project opportunity in the region, and then allot investment funds based on population and air emissions levels.

8. Should governmental entities be required to provide matching funds and if so, how much?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *The Airport would certainly be willing to provide a local match, similar to Airport Improvement Program grants we currently receive from the FAA, which is a 75%/ 25% split.*

American Airlines (Tracy Montross): *Government and non-government entities should be given the opportunity to provide matching funds. An entity's ability to provide matching funds or a partnership that allows for an expansion of the investment should be given greater consideration.*

9. Should DEQ establish a minimum project size and if so, what size?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *No, any project that can provide some level of environmental mitigation should be considered.*

American Airlines (Tracy Montross): *Yes, DEQ should establish a minimum project size. For electrification projects, establishing a minimum project size will help maximize the environmental benefit of the available funds. Smaller electrification projects will likely require that a greater portion of funding go to infrastructure, such as charger installation, instead of vehicle replacement. Larger electrification projects will likely be better able to utilize chargers which will allow for more funds to be spent on electric vehicles and result in greater emissions reductions.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *The number of public users that will be reached by a project should be considered in order to provide maximum benefit. Additionally, the frequency of a projects' use by the public should be considered.*

American Airlines (Tracy Montross): *Please review factors outlined above in Question 1.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *No input here.*

Airlines for America (Veronica Bradley): *A4A recommends that North Carolina use non-competitive funding programs to disburse the Trust funds to the various categories of projects. GSE projects are a cost-effective, long-term solution to mitigate nitrogen oxide emissions, but competitive grant processes are often prohibitively risky for GSE projects. Airline budgetary plans require higher levels of certainty throughout the planning process than competitive grants can guarantee. On the other hand, vouchers and rebates provide airlines the certainty necessary to invest resources in planning for equipment acquisition and in coordinating with airports to secure associated infrastructure. Reducing risk and streamlining the disbursement of Trust funds are especially important for our members who intend to continue to promote emissions reductions across the nation through investment in GSE projects under the Trust.*

American Airlines (Tracy Montross): *Again, the factors identified above in question 1, which should be applied to all proposals and used as a basis for evaluating all projects, regardless of whether they are government or non-government projects.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *No input here.*

American Airlines (Tracy Montross): *The Environmental Protection Agency's Diesel Emissions Quantifier Tool (DEQT) is an easy to use, publically available tool for estimating diesel emissions.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *More widespread advertisement of the program, as well the process for seeking participation.*

American Airlines (Tracy Montross): *American appreciates the transparency and the methods utilized by DEQ to communicate with stakeholders interested in this initiative and we urge DEQ to continue these efforts in all future solicitations.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Charlotte Douglas International Airport (Amy Harris/Kaitlyn Relyea): *Once defined, clearly defined eligibility requirements should be made available so that stakeholders are able to apply internal decision making processes prior to application.*

American Airlines (Tracy Montross): *The greatest value to stakeholders interested in submitting projects is to ensure that requested information is clearly stated and that only the information that will be used to make funding decisions will be included in the request. American appreciates the opportunity to submit this response and commends DEQ for soliciting informational proposals as a way to help frame the investment. The VW mitigation investment presents a significant opportunity for North Carolina and the RFI process will better enable DEQ to understand the projects that are most important to the businesses and citizens of the Old North State. Thank you.*

Alternative Fuels - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

The GOAL Site (J. Marc Dreyfors): *Use life-cycle analyses of benefits and costs, preventative risk and social justice. Renewable energy, energy efficiency and air toxics exposure reductions.*

CNG Coalition: *These grants should be used to leverage as many benefits for the Tar Heel state as possible. Therefore, priority should be given to those applications which:*

- *Result in the use of alternative fueled vehicles) engines, and parts that are*
- *manufactured or assembled in this State;*
- *Will attract new employers to the State or will encourage job growth;*
- *Benefits small businesses.*

PSNC Energy (George Ratchford): *PSNC would also like to acknowledge our role as a signatory to a letter from the Compressed Natural Gas ("CNG") coalition that was recently delivered to DEQ. PSNC supports the positions explained in that letter, and is writing now to emphasize the following:*

- *Many studies have determined that the expanded use of CNG is the best way to decrease NOX emissions, which is consistent with the stated goals of the settlement.*
- *While CNG is well-suited for many applications, studies also have determined that CNG is an excellent, more cost-efficient choice for heavy-duty applications compared to other fuel choices. We submit that the final plan should certainly include expanded CNG use for heavy-duty applications.*
- *Finally, PSNC's position is that enough of the overall settlement funds have been directed to electric vehicles, and that the remaining settlement funds should be directed to other fuels.*

Blue Gas Marine (Edward May): *DEQ should prioritize project selection based as follows: What projects will reduce the most emissions for the money. This "Bang for the Buck" approach should ensure that the projects that can most efficiently achieve the goals of the settlement will get funded.*

- *Cost-efficient projects that benefit taxpayers by providing savings in state operating costs.*
- *Projects in non-attainment areas as a way of addressing the most pressing emissions issues.*

Propane Industry emails: *DEQ received 84 identical emails from the propane industry urging consideration of propane-powered vehicles in NC's VW Environmental Mitigation Plan.*

2. What is the anticipated demand for each eligible project type?

The GOAL Site (J. Marc Dreyfors): *Environmental mitigation 70%, EV 20% and Buyback 10%(buy back from consumers then donate to fleets using RDB50 infrastructure, thus latent energy of car won't be lost).*

Blue Gas Marine (Edward May): *For the conversion of marine engines, the demand should be significant, given the +20 times improvement in emissions per dollar spent vs. on road trucks.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

The GOAL Site (J. Marc Dreyfors): *Base number on current growth of industry and then double it.*

CNG Coalition: *Allow All Low NOx, Near-Zero and Zero Emission Vehicles to be Eligible for Grants in the Amount of 25 Percent of the Total Vehicle Cost.*

Blue Gas Marine (Edward May): *BGM believe that the best projects should win. Therefore, allocating amounts of money to each project type would have the greatest benefit to the overall goal of the settlement, which is to reduce emissions.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

The GOAL Site (J. Marc Dreyfors): *High*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

The GOAL Site (J. Marc Dreyfors): *Environmental Mitigation 50%, EV 40%, Buy Backs 10%*

Blue Gas Marine (Edward May): *BGM believe the best projects should get the funding regardless of type.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

The GOAL Site (J. Marc Dreyfors): *Only if they meet highest lifecycle impact and can be leveraged.*

CNG Coalition: *Aim for the Greatest Environmental Impact for Public Health by Separating the Funds - Private & Public Sectors Respectively, 70-30.*

By sharing the funds between the public and private sectors, North Carolina serves to benefit from cleaner mass transit, school buses, refuse, regional and short-haul trucking. A structured plan should account for the greater miles travelled by private fleets and allow the state to show it takes air pollution seriously, by targeting investment where NOx emissions are greatest – while also improving the emissions of government owned vehicles.

Blue Gas Marine (Edward May): *Yes, to the extent these projects can reduce costs, that benefit should accrue to the taxpayers of NC.*

7. Should funds be geographically distributed, and if so how?

The GOAL Site (J. Marc Dreyfors): *Non-attainment areas should be given priority.*

Blue Gas Marine (Edward May): *DEQ should focus on delivering the greatest benefit for the funds deployed. To the extent that a specific geographic distribution would enable this, then this should be taken into consideration. For example, as it relates to refueling/recharging infrastructure. This is important for projects that require infrastructure to be successful. For example, electric vehicles, or natural gas fuel marine vessels, will need a network of refueling/recharging stations in order to be viable. However, to the extent this infrastructure develops, it will benefit many other operators in these respective spaces, helping boost the industry as a whole.*

8. Should governmental entities be required to provide matching funds and if so, how much?

The GOAL Site (J. Marc Dreyfors): *Yes 50%*

CNG Coalition: *Public Sector Vehicle Grants Should Require a 50 Percent Match.*

The full funding of government vehicles results in fewer vehicles being deployed per dollar, and therefore, a reasonable cap must be put in place. A proper balance can be achieved by requiring matching funds in the amount of 50 percent of the vehicle cost, which will not only ensure a larger deployment of vehicles but also encourage judicious decision making regarding new vehicles. This approach sets a financially sustainable trajectory over the long-term, rather than a one-time proposition that does not account for future replacement costs.

Blue Gas Marine (Edward May): *In the case where the funds will also go to reduce operating costs, no, as these will benefit all taxpayers in NC.*

9. Should DEQ establish a minimum project size and if so, what size?

The GOAL Site (J. Marc Dreyfors): *Whatever makes sense from a review time and likely number of submissions, if it's a ten-year program then projects with ten year timelines would be good? Small is not a measure of impact. Projects that can scale or replicate easily should be prioritized.*

Blue Gas Marine (Edward May): *No, to the extent they can be reasonable administered, all projects should be considered.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

The GOAL Site (J. Marc Dreyfors): *Social justice and social cost of pollution are key, low income communities are being hurt at a much higher rate than others from pollution, money spent should also be used to attack the income and voting inequality gaps which kills people due to denial of service, public transportation.*

Blue Gas Marine (Edward May): *DEQ should consider: 1) What if any operational savings they will generate; 2) if these saving accrue to the benefit of tax payers or only one municipality or private industry; and 3) the prospects for helping establish and grow a new industry in NC.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

The GOAL Site (J. Marc Dreyfors): *Get a diverse review team, simplify the process of submission and metrics.*

Blue Gas Marine (Edward May): *See question 1.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

The GOAL Site (J. Marc Dreyfors): *NREL, EPA and UNC have some new modeling tools, not sure how user friendly they are.*

Blue Gas Marine (Edward May): *North Carolina State University has emissions testing facilities that have already been used to measure emissions from new combustion technologies.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

The GOAL Site (J. Marc Dreyfors): *Standardized form submission, make sure people of color list serves are notified. Suggest partnerships of similar projects or participants.*

Blue Gas Marine (Edward May): *Allow for fast tracking of similar previously approved and implemented projects.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

The GOAL Site (J. Marc Dreyfors): *Stats. on relative risk, lifecycle analyses of impacts, cost benefit versus precautionary principle, help find additional funding sources as well as risk reduction insurance and interest rate reduction systems for other capital lending entities. We need a model that will show human health cost reductions for each gallon of diesel, or other fossil fuels, displaced. Market failure/externalities are poorly modeled.*

Blue Gas Marine (Edward May): *Identify any areas the state government could be a project partner.*

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Environmental Groups and Associations - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

American Heart/Stroke Association (Betsy Vetter): *The VW settlement is required to be used to positively impact air quality. These funds could be used uniquely to improve air quality and increase daily physical activity, both of which would help impact overall health. Local communities in NC are trying to provide residents with more access to public transit, bicycle pathways, sidewalks, and greenways. The AHA/ASA urges the DEQ to consider establishing a transportation trust fund that local communities could access to help them invest in bike and pedestrian pathways and public transit infrastructure. A portion could be dedicated to Safe Routes to School which would improve safety for students walking or biking to school. This will help community leaders prioritize reducing traffic congestion while improving health and the environment.*

Ceres (Anne Kelly): *We recommend that all-electric or hydrogen fuel cell electric vehicles (FCEVs) be prioritized across all transportation classes, where feasible. If practicable, full reimbursement should be reserved for all-electric or hydrogen fuel cell electric vessels/vehicles, rather than new diesel or other alternative fuel vehicles, vessels or engines.*

Sierra Club (Molly Diggins): *Investments should be prioritized in areas with high levels of air pollution and in communities disproportionately impacted by air pollution. We believe DEQ should prioritize investments in areas that suffer from higher levels of air pollution and in disadvantaged communities, including those with low-income residents and people of color who are often disproportionately exposed to air pollution. For the allotment of funds assigned to electric vehicle (EV) infrastructure programs, we believe there should be a minimum investment commitment in disadvantaged communities.*

NC Alliance of YMCAs (Sherée Thaxton Vodicka): *Same as American Heart/Stroke Association.*

North Carolina Alliance for Health (Morgan Wittman Granann): *Same as American Heart/Stroke Association.*

2. What is the anticipated demand for each eligible project type?

Southern Environmental Law Center/NC Conservation Network/Clean Air Carolina/Sustain Charlotte/Wake Up Wake County (Brian Buzby/Kym Hunter/Terry Lansdell/Shannon Binns/Karen Rindge): *After investing the maximum 15% of its Mitigation Trust allocation towards EV charging infrastructure, we suggest North Carolina should invest the remaining funds in the electrification of diesel transit buses and school buses.*

While we suggest that most, if not all, the Mitigation Trust Funds be spent on EV charging stations and electric bus purchases and replacements, we do also want to note that there may be some benefit to directing a small portion of the Mitigation Trust Funds toward the electrification of airport ground support equipment.

Sierra Club (Molly Diggins): *North Carolina should invest EMT funds in electric transportation to place downward pressure on electricity rates. Not only can electrification of the transportation sector save our residents and businesses money on transportation fuel costs, it can also place downward pressure on electricity rates for all utility customers, whether or not they own electric vehicles. Electric vehicle charging will increase electricity sales, which if well integrated into the electric power system can dilute the fixed costs of electricity transmission and distribution and lower electricity rates for all utility customers.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Ceres (Anne Kelly): *We encourage the state of North Carolina to allocate the maximum amount (15 percent) of EMT funds on charging infrastructure for electric vehicles (EVs). In order to create a market in which EVs can thrive, it is essential to create a network of EV charging infrastructure that is easily accessible for all. This fall, your neighboring state of Virginia announced plans to designate the full 15 percent of its EMT funding to establish an interconnected and statewide public EV charging network. This decision will drive EV adoption, encourage innovation in EV technology, facilitate public-private partnerships, and improve public health by reducing oxides of nitrogen and carbon dioxide emissions.*

Environmental Defense Fund (Dionne Delli-Gatti): *We would first like to echo the North Carolina Electric Vehicle Working Group's (NCEVWG) recent recommendations to Governor Cooper "that North Carolina allocate the maximum allowable amount (15%) of settlement funds for electric vehicle charging infrastructure and installations" and "prioritize EVs for medium, heavy duty and buses for replacement with the other 85% of the settlement funds because doing so will maximize both the local economic impact and the reduction of NOx."*

Southern Environmental Law Center/NC Conservation Network/Clean Air Carolina/Sustain Charlotte/Wake Up Wake County (Brian Buzby/Kym Hunter/Terry Lansdell/Shannon Binns/Karen Rindge): *We strongly urge North Carolina to allocate the maximum allowable percentage of its Mitigation Trust funds to Electric Vehicle ("EV") charging stations. By seizing on this chance to increase the EV charging infrastructure, North Carolina can hasten its march toward electrification of transportation system and a cleaner, more efficient future.*

Sierra Club (Molly Diggins): *North Carolina should invest the maximum 15% of funds in EV infrastructure and supply equipment (EVSE). Section X of the settlement provides that states can use up to 15% of their total allotted EMT funds to build out charging infrastructure for light duty electric vehicles--provided that the chargers be installed in workplaces, multi-unit dwellings or on highways. North Carolina should take advantage of the funding opportunity to expand access to chargers in these locations, as they are the places where parked vehicles have long "dwell" times--i.e., they are parked for long periods of time. They also increase public awareness of electric vehicles.*

North Carolina should invest EMT funds to electrify our transportation sector and not to double down on more diesel and natural gas. It is in our state's best interest to use funds from the EMT to advance the electrification of the transportation sector. The electrification of the transportation sector can: a) keep our money in-state and save all of us

-our residents, schools, governments and businesses--money on transportation fuel; b) save all of us money through lower electricity rates; c) create in-state jobs; d) drastically reduce NOx, smog, and greenhouse gas levels to protect our health and our environmental justice communities; and e) drastically reduce CO2 emissions.

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Southern Environmental Law Center/NC Conservation Network/Clean Air Carolina/Sustain Charlotte/Wake Up Wake County (Brian Buzby/Kym Hunter/Terry Lansdell/Shannon Binns/Karen Rindge): *We urge North Carolina to use the DERA program to help maximize the Mitigation Trust funds. Specifically, we encourage North Carolina to apply for program funding through DERA from the EPA, and then use Mitigation Trust funds to participate in the DERA voluntary match program.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?
6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?
7. Should funds be geographically distributed, and if so how?

Ceres (Anne Kelly): *We strongly support prioritizing investment of the funds in communities disproportionately affected by higher levels of pollution, non-attainment or maintenance areas, or designated Federal Class 1 areas.*

Environmental Defense Fund (Dionne Delli-Gatti): *We would like to request that there be careful consideration and stakeholder engagement in the process of selecting where the electric charging infrastructure investments are made throughout the state. It is imperative that the investment and resulting benefits be available to as many of North Carolina's residents as possible, including those who reside in the rural communities many of which are served by the state's many electric co-ops.*

8. Should governmental entities be required to provide matching funds and if so, how much?
9. Should DEQ establish a minimum project size and if so, what size?
10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?
11. What other feedback do you have on project evaluation and/or scoring criteria?
12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?
13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Sierra Club (Molly Diggins): *The process should be transparent. We encourage DEQ to be transparent in its decision-making process and allow for meaningful public input as the state's mitigation plan begins to be formulated.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

American Heart/Stroke Association (Betsy Vetter): *The AHA/ASA further encourages DEQ to require communities be engaged in providing input into proposed plans, especially residents in low and moderate-income neighborhoods. This focus will help ensure greater health equity and safe access to public transit and economic centers.*

NC Alliance of YMCAs (Sherée Thaxton Vodicka): *Same as American Heart/Stroke Association.*

North Carolina Alliance for Health (Morgan Wittman Granann): *Same as American Heart/Stroke Association.*

EV Infrastructure - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

NC Electric Cooperatives (Nelle Hotchkiss): *Adoption of a Mitigation Plan that sets aside funds for the continuation of cooperatives' ZEV support efforts will not only mitigate the harm caused by the offending VW vehicles, but it will also propel North Carolina tourism and generate commerce and economic development opportunities in our state's rural communities.*

Plug-in NC (Lisa Poger): *Prioritize medium and heavy-duty vehicle replacements with available electric vehicles.*

Blue Ridge Energy (Jon Jacob): *Funding the deployment of more Level 2/Level 3 charging station infrastructure will do the most drive EV adoption rates and improve air quality. In a ChargePoint study of suburban St. Louis, the addition of 10 EV charging stations yielded a 73% increase in the number of new EV purchases year over year. Prioritizing the deployment of funding to areas without significant EV charging infrastructure is important to avoid limiting the prospects of EV adoption in non-urban areas. Creating a state tax credit for new EV purchases while outside the proposed projects would also be an excellent way to encourage the beneficial electrification of transportation in NC.*

Brightfield Transportation Solutions (Stan Cross): *Prioritization should include the following:*

- *Geographical locations for DC Fast Chargers that connect all NC cities and towns along major state and federal highways from the mountains to the sea to support state-wide EV ownership.*
- *Geographical locations for Level 2 Chargers where amenities exist that will attract and service EV drivers while they wait to charge such as commercial downtowns and retail centers.*
- *Public charger locations that offer 24/7 access and high visibility to all consumers because consumer confidence in ample public EV charger availability is a primary driver of EV adoption.*
- *Sites where hosts are willing to designate parking as 'EV Only' at a minimum ratio of 1 parking space per charging cord installed.*
- *Workplace charger locations where proven demand for chargers exists today or where it is demonstrated that installation of chargers will create demand.*
- *Charger equipment that runs on open standards protocols (OCPP) to create an open application protocol which allows EV charging stations and central management systems from different vendors to communicate with each other.*
- *Open-standards based networked charging stations that will enable the collection of valuable usage data and will allow site hosts to charge drivers for use to offset long-term operation and maintenance costs.*
- *Projects that integrate renewable energy solutions to provide the greatest air quality and transportation energy security benefits to NC citizens.*
- *Projects that integrate energy storage solutions when needed to mitigate demand charge and/or peak load grid-related issues, and provide emergency back-up power.*
- *NC-based hardware and installation companies that generate jobs in NC.*

ChargePoint (David Schatz): *ChargePoint strongly believes that priority should be given to eligible project categories that focus on expanding transportation electrification throughout the State, including:*

- *All-Electric: Local Freight Trucks and Port Drayage Trucks;*
- *All-Electric: Class 4-8 School Bus, Shuttle Bus, or Transit Bus;*
- *All-Electric: Class 4-7 Local Freight Trucks;*
- *All-Electric: Forklifts and Port Cargo Handling Equipment;*
- *Light Duty Zero Emission Vehicle Supply Equipment.*

Committing priority to eligible project categories that promote electrification and utilize a standard connector will accelerate the State’s adoption of transportation electrification technologies, increase access to electric-drive vehicles, and enable local energy use to achieve day-one emissions reductions in communities across North Carolina.

General Motors (Britta Gross):

- *Highway corridor DC fast-charging most visibly inspires consumer confidence in the driving range, and practicality, of EVs. A 2016 survey of 2,500 consumers by Altman Vilandrie & Company found the top reason customers gave for not wanting to purchase a plug-in electric vehicle was a perceived lack of charging stations (85%). Highly visible corridor EV charging (SAE industry standard) can help address this consumer perception issue.*
- *Workplace EV charging creates an EV “showroom” that very effectively grows EV awareness among corporations, and employees of these corporations. According to US DOE data, workplace charging results in employees 6X more likely to purchase an EV than employees at companies not offering workplace charging.*
- *Multi-unit dwelling EV charging provides an important opportunity to expand EV adoption to consumers residing in townhomes, condominiums, and apartments, who may not have access to a “home” charger every evening. This is currently an untapped segment of potential EV buyers. This need can be met by Level 1 or Level 2 charging directly at the multi-unit dwellings, or by neighborhood DC fast-charge hubs that can serve these residents.*
- *Public EV charging at key destinations is also important to increase the practicality of EVs and the number of places an EV can go, with a special focus on destinations typically outside a consumer’s normal daily driving patterns (e.g. airports, beaches, hotels, resorts, etc.).*

Grant Millin: *ZEVs are part of responsible climate and air pollution action. Whether its NOX or PM 2.5, ZEVs are the primary long-range solution while offering reliable transportation. However, without FCH2, a large portion of this CleanTech portfolio for North Carolina is needlessly eliminated.*

2. What is the anticipated demand for each eligible project type?

NC Electric Cooperatives (Nelle Hotchkiss): *Replacing diesel trucks will also serve as a case study to determine the vehicles’ ability to perform in routine and emergency restoration situations, which are often in difficult terrain. NC DEQ considering awards to Class 4-7 bucket truck replacement will provide an opportunity to confirm their performance advancing adoption across the state’s utilities. NC electric cooperatives recommend NC DEQ consider funding pilot projects working with local government in rural counties to demonstrate the viability of a transition to all-electric school bus fleets. Data can be gathered and shared across school systems.*

Blue Ridge Energy (Jon Jacob): *Based on our experience with the Duke Energy EV Charging Infrastructure support project, we think the highest demand will be for EV charging station infrastructure. The \$1 million in funding available was completely distributed to 83 cities, counties and utilities who were wholesale or retail customers of Duke Energy and the selection process for projects only took a few months. The project resulted in 200 new EV charging stations and increased the availability of public EV charging stations by 30%. This program could serve as a useful model for how to distribute VW settlement funding.*

Brightfield Transportation Solutions (Stan Cross): *EV charging infrastructure is lagging EV sales growth both in NC and nationally. Today there is approximately 1 public charger for every 15 EVs on the road. According to industry studies by NREL, Rocky Mountain Institute and others, to meet demand, that ratio needs to be 1 public charger for every 5 EVs. Hence, there exists high demand for public chargers. Based on the performance of the 28 DC Fast Charge and Level 2 public charging stations Brightfield owns and operates across NC, immediate demand will likely to be upwards of 3 uses per day per public charging station with a likely 50% annual growth rate.*

ChargePoint (David Schatz): *Demand for electrification projects across the State of North Carolina is expected to increase rapidly in the coming years, and concentrating Environmental Mitigation Trust funds on electrification will facilitate the transition to a 21st Century transportation sector.*

Many communities in the State are already adopting electric bus models, and as more electric truck and forklift models become available over the 10-year investment horizon of the Trust, greater adoption is expected in those categories as well.

Committing Environmental Mitigation Trust funds to electric vehicle charging deployments will lead to the fastest and most efficient use of Environmental Mitigation Trust funds. A number of charging station providers already operate in North Carolina in a highly competitive market, and establishing a funding program can leverage the existing market's activities. While some eligible categories may require months or years of project and selection diligence, the EV charging market is already setup to fully deploy within a prequalified grant program structure in a matter of months.

Grant Millin: *FCEVs are procured when the hydrogen station-FCEV manufacturer relationships have produced outcome. The ZEV-GFC Working Group is available to develop this side of North Carolina's CleanTech portfolio.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Blue Ridge Energy (Jon Jacob): *Blue Ridge Energy strongly believes that the best use of trust funds is the deployment of a mix of Level 2/Fast Charging infrastructure to encourage EV adoption and further the beneficial electrification of transportation. While that percentage currently is capped at 15%, it is our position that limit should be reevaluated to allow for greater investment in LDZEV charging stations.*

Plug-in NC (Lisa Poger): *Allocate the maximum 15 percent of the funds to increasing electric vehicle charging infrastructure in North Carolina. Accelerate the proven benefits of light-duty electric vehicle adoption by immediately expanding EV charging networks into low coverage/high impact areas.*

Brightfield Transportation Solutions (Stan Cross): *The full allowable 15% of trust funds should be allocated to EV charging infrastructure. NC is becoming a top-tier EV market with Raleigh and Charlotte among the top 25 fastest growing municipal markets in 2017. Strong statewide EV adoption will significantly improve air quality, reduce greenhouse gas emissions, improve NC's transportation energy security and put money on North Carolinians' pockets from the on-average \$1,300 in annual gas and maintenance savings EVs provide. Access to ample public and workplace charging drives market growth.*

ChargePoint (David Schatz): *ChargePoint strongly supports DEQ's intention to allocate the maximum 15% to light-duty electric vehicle supply equipment (EVSE). Several states have already committed to 15% for EVSE as part of their mitigation plans, and Virginia has issued an RFP for charging stations associated with their 15% distribution.*

General Motors (Britta Gross): *We encourage the state to directly engage all electric utilities in the strategic planning of EV infrastructure to ensure the most cost-effective and grid-responsible EV charging solutions. Utilities can also play an important role in outreach and education to support the transformational change that is required to electrify transportation.*

Global Automakers: *Global Automakers urges the State of North Carolina to allocate the full 15% towards this effort and to support all electric vehicle infrastructure – charging stations and hydrogen refueling stations. The state needs to establish a strong foundation for electric vehicles by expanding its network of charging and building out a network of hydrogen refueling stations to support sales of electric vehicles. Increasing available infrastructure is critical to the state’s ability to advance electrification. Range anxiety is a significant impediment to sale of electric vehicles.*

Form email comments: *DAQ received a total of 679 form emails advocating the allocation of the maximum 15 percent of the funds for electric vehicle charging infrastructure and installations and prioritize electric vehicles and buses for replacement whenever possible with the other 85 percent of the settlement funds. The emails additionally encouraged DEQ to not use the funding for natural gas, propane or diesel vehicles.*

Individual email comments: *DAQ received eight additional emails advocating vehicle electrification.*

Grant Millin: *This RFI response recommends two hydrogen fueling stations be supported, one in Asheville and one near RDU, as part of North Carolina new ZEV program. A minimum of \$250,000 is suggested to support a cost share plan for these initial public, credit card payment North Carolina hydrogen fueling stations.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

ChargePoint (David Schatz): *ChargePoint has no comment on the anticipated demand for DERA-related projects.*

Grant Millin: *Not addresses, except as to importance of developing a true North Carolina ZEV / CleanTech program inclusive of FCH2.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Blue Ridge Energy (Jon Jacob): *No. The entire trust fund should be made available for project proposals of all types and the proposals should be evaluated upon their merits and expected benefits.*

ChargePoint (David Schatz): *Beyond the 15% allocation to EV charging infrastructure, ChargePoint encourages the State to allot a significant portion of the remaining 85% to electric fuel project categories over other fuel types, which will lead to long-term transportation emissions reductions and increased efficiency.*

Under the terms of the Environmental Mitigation Trust, funds used for transportation electrification projects in multiple categories may cover the cost of the vehicle/engine and associated charging infrastructure. ChargePoint notes that many of these technologies utilize a standard connector, which can increase economies of scale as the State procures supporting charging infrastructure across eligible project types. For example, investing in electric models and associated infrastructure could

enable public light-duty fast charging stations to be utilized for bus charging and other fleet needs. And across applications in the same category, shuttle bus electrification programs could support regional, municipal, and school bus fleets.

Grant Millin: *BEVs are supported by conventional CleanTech wisdom in this state. This is part of why only a small percentage of the total NC VW ZEV allocation is suggested.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Blue Ridge Energy (Jon Jacob): *No. All projects should be evaluated upon their merits and expected benefits in terms of reducing emissions and promoting adoption of EVs. Reserving a portion of funding exclusively for government projects limits competition and will result in a sub-optimal distribution of funding.*

Brightfield Transportation Solutions (Stan Cross): *Municipalities play an important role in providing quality sites for EV chargers. Reserving funds to support EV charger deployment in downtown commercial districts, especially Level 2 stations, is wise as these investments have the added benefit of bringing economic development to NC's main streets. Additionally, reserving funds for deployment of chargers at NC State Parks, the NC Arboretum and other such destinations would be wise as well as these state-assets attract EV driving residents and tourists alike and provide high visibility sites.*

ChargePoint (David Schatz): *ChargePoint would not recommend a specific percentage for government-owned or municipal projects, but we note the potentially higher coverage of Trust funds toward government-based projects. For electric vehicle infrastructure, municipal charging stations represent a significant portion of charging station demand, and publicly available charging stations in municipalities can provide an important amenity to local EV drivers and those passing through town. The funding program for EVSE can be tailored to best fit North Carolina's communities.*

Grant Millin: *Part of the new North Carolina ZEV program needs to include funding for public awareness programs. The VW ZEV Investment Plan component of the VW settlement allows for public trust education. FCH2 needs to be emphasized in North Carolina's new ZEV / CleanTech programs.*

7. Should funds be geographically distributed, and if so how?

Blue Ridge Energy (Jon Jacob): *Funds should be deployed along major transportation corridors with the goal of creating a statewide fast charging network without gaps in rural areas.*

Brightfield Transportation Solutions (Stan Cross): *To maximize broad economic development benefits and provide access to all, funds should be distributed across the state focusing on primary transportation corridors, high visibility and high need locations, tourism destinations and regions underserved by EV infrastructure.*

ChargePoint (David Schatz): *Light-duty electric vehicle infrastructure funding programs can be flexible in how they are distributed, whether they are solely responsive to the demand from the market and site hosts, targeted to specific use cases and geographically-based allocations, or a hybrid of factors for distribution.*

Light-duty electric vehicle charging infrastructure projects can align with the State's goals for the EV charging sector and complement existing infrastructure. Existing deployments in North Carolina have focused around key municipalities and areas of higher density, but there are gaps to address in order to promote broader EV adoption in all communities. DEQ should determine that a funding program

be designed to target areas that will drive the greatest near- and long-term utilization of charging assets. Focusing on utilization will significantly contribute to the success of the State's deployment. Additionally, the program can be structured to concentrate on local emissions reductions and prioritize specific nonattainment zones.

In general, ChargePoint recommends that DEQ focus on Level 2 charging stations for municipalities and local points of interest, where people may dwell for longer periods of time. For DC fast charging stations, we suggest targeted sites at regular intervals along the major corridors, specifically those that are not designated as FHWA Alternative Fuels Corridors under the FAST Act, notably I-95 and I-77. We can also assess traffic patterns to determine the right corridors for development.

Grant Millin: *This RFI response recommends two initial hydrogen fueling stations, one in Asheville and one near RDU, be supported by the NC VW Beneficiary Mitigation Plan and future ZEV / CleanTech programs.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Blue Ridge Energy (Jon Jacob): *We propose that the awarded funding cover the cost of hardware and installation of equipment and that the ongoing labor, operation and maintenance should be the responsibility of the awarded organization.*

Brightfield Transportation Solutions (Stan Cross): *Instead of matching funds in the form of cash, we recommend requiring an in-kind match of that could include, for example, waiving permitting fees, supporting installation work, the value of 'EV Only' designated parking, and providing public outreach.*

ChargePoint (David Schatz): *No, governmental entities should not be required to provide matching funds for projects. ChargePoint does note that for electric vehicle supply equipment, it is important to have site hosts have skin-in-the-game. This will ensure that site hosts are invested in the station and will have an interest in its success as a project, and consequently, the DEQ can preserve a portion of its match for other projects.*

Grant Millin: *The US Department of Energy, EPA, and DOT are FCH2 partners, including as to financing.*

9. Should DEQ establish a minimum project size and if so, what size?

Blue Ridge Energy (Jon Jacob): *No. Setting a minimum project size would exclude some creative low-cost project proposals of trust funding.*

Brightfield Transportation Solutions (Stan Cross): *Size limits do not make sense as each location will have its own unique prescription based on intra or inter-city location, proximity to high growth regions, site constraints including access to utilities, and site host willingness to reserve parking as 'EV Only'.*

ChargePoint (David Schatz): *ChargePoint supports a flexible program that is designed to accommodate a range of project sizes and types of EVSE. DEQ should establish baseline eligibility criteria for stations supported by Trust funding, including:*

- *Level 2 and DC fast charging only*
- *Smart, networked charging stations*
- *Standard port connectors*
- *Energy Star Certified*

- Capable of data collection for the State's environmental mitigation tracking and transportation planning
- Minimum of 5 years of operation guaranteed
- Requires an ongoing maintenance agreement.

Grant Millin: *Project size is relative and ancillary to CleanTech social, environmental, and economic impacts. FCH2 cost / benefit analysis will be covered in more depth by the ZEV-GFC Working Group as it develops.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Blue Ridge Energy (Jon Jacob): *Current levels of EV charging infrastructure available in the geography served by the applicant. The cost of interconnecting EV charging infrastructure to existing grid infrastructure and the potential effects during periods of peak demand, especially for Level 3 charging stations.*

Brightfield Transportation Solutions (Stan Cross): *Refer to Question 1 response.*

ChargePoint (David Schatz): *For light-duty EVSE, ChargePoint recommends an evaluation of the baseline criteria outlined in Question #9 above, and also account for priority scoring based on additional criteria DEQ deems appropriate. Those additional criteria may include a) consideration of desired locations, b) segment of the market served (workplace, retail, multi-unit dwelling, etc.), c) redundancy with existing deployments, and d) economic development contribution.*

Grant Millin: *See answer #9*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Brightfield Transportation Solutions (Stan Cross): *Keep it simple and avoid a one-size-fits-all approach. Maintaining the flexibility for strategic deployment of diverse charger technology applications is critical for success. What a large municipality vs small town or a large corporation vs small business can support varies widely as does the technology application and costs of an intra-city DC Fast Charge depot vs a destination Level 2 station vs an installation designed to maximize consumer visibility.*

ChargePoint (David Schatz): *ChargePoint looks forward to being a resource for DEQ as it develops objectives for its mitigation plan.*

Grant Millin: *Further stakeholder engagement is needed in developing new North Carolina ZEV / CleanTech programs. Such program questions will be addressed in further ZEV-GFC Working Group actions.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Blue Ridge Energy (Jon Jacob): *Developing a simple online calculator to estimate avoided emissions per EV/ EV Charging Station that has variable inputs for generation mixture depending on the wholesale energy supplier would be extremely helpful.*

Brightfield Transportation Solutions (Stan Cross): A tool such as Brightfield’s Solar Driven Calculator that measures the triple bottom line environmental, social and economic benefits of EV charger deployment, charger usage, and EV adoption will help decision makers understand the value of trust funds invested in EV infrastructure and will inform strategy and provide justification for future investment.

ChargePoint (David Schatz): ChargePoint has developed an empirical and verifiable methodology for accounting for NOx emissions reduction from transportation electrification projects, and we also currently track our carbon emissions reduction data as well. This approach is based around anticipating/measuring consumption at charging infrastructure, and we note that the following methodology cannot be used if stations are not networked.

We assume that there is a one-to-one ratio between the number of EV charging sessions delivered and the number of internal combustion engine fueling sessions displaced. ChargePoint used the following assumptions to calculate the total petroleum displacement and NOx reduced:

Grams of NOx per mile driven	0.693
Miles per kWh (EV average)	3.2

Based upon our study of existing DC fast charger usage data network-wide, ChargePoint estimates that each DC fast locations will conduct an average of two sessions per day, with an average of 19 kWh delivered at each session. Similarly, for Level 2 stations in the region, ChargePoint estimates that each Level 2 charging spot will conduct an average of one charging session per day in the initial year of operations with 8 kWh delivered at each session. Once DEQ knows the total EV charging stations installed, a simple calculation can deduce the NOx mitigation metric from the number of kWh in anticipated charging sessions.

From publicly available data, DEQ would only require an understanding of NOx emissions derived from the State’s electric power resources. This information is available on the U.S. Energy Information Administration’s website.

Grant Millin: See answer #9 and #11

- 13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Blue Ridge Energy (Jon Jacob): Setting up an online portal for project proposals and creating a working group consisting of EV owners, manufacturers, utilities (IOU, Coop, Muni), charging network operators, etc. to collaborate and establish best practices.

Brightfield Transportation Solutions (Stan Cross): Along with keeping it simple and avoiding a one-size-fits-all approach, creating a transparent and easy application process that includes clear descriptions of project goals, provides specific yet flexible site host requirements, supports large or small installations based on the ideal prescription at a given location, offers charger and network technology choice across OCPP compliant platforms, provides a list of pre-qualified consultants, charger providers and installers, and communicates the value proposition for hosting EV chargers.

ChargePoint (David Schatz): In ChargePoint’s experience with Environmental Mitigation Trust activities in other states, public, in person workshops can be highly effective in encouraging a public discourse around use of Trust funds and demand for certain project types. But, we also believe that DEQ should not delay in its consideration of funding programs and draft designs.

Grant Millin: See answer #9 and #11

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Brightfield Transportation Solutions (Stan Cross): *See response to Question 13. It may be wise to engage the NC Council of Governments to lead outreach to stakeholders. They have been working in the EV infrastructure space for years, have built stakeholder trust, and have experience coordinating large state-wide grant funded projects.*

ChargePoint (David Schatz): *We believe that industry would benefit from certainty surrounding the funds, including priority for some eligible mitigation action categories. Therefore, we encourage DEQ to release a draft outline or draft text of the mitigation plan once high-level details are approved. In particular, several states have already indicated publicly that the maximum 15% for charging will be included in their mitigation plans. We hope that DEQ can communicate the same commitment publicly, which will attract private investment and increased participation in upcoming programs. Those announcements took several forms, but most chose to include those details in a draft plan.*

Grant Millin: *See answer #9 and #11*

Ineligible Projects - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *DEQ should prioritize projects based on a) project readiness; b) long term potential impact; c) educational values to NC citizens; and d) technology innovations. While “shovel-ready” projects are the target of this solicitation, there is no reason to deviate from applied research which often results in innovations. This proposed study is representative of projects that can have long term impacts on the citizens of North Carolina in gaining awareness of air quality issues and the benefits of zero emission public transportation.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Recommend that DEQ should consider the following when determining priority of projects:*

- *Most optimal air pollution improvements per dollar spent*
- *Opportunities to introduce new emissions reduction technologies. Embracing new technologies will establish North Carolina as a national leader in air pollution reduction efforts, which will in turn put the State at the forefront of opportunities for future funding for additional emissions reduction.*
- *Ability of agencies to pay for projects without VW money; i.e. projects that otherwise may not be accomplished without VW funding should take priority over agencies that possess means to pay for emissions reduction efforts.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Technical merit followed by a metric like \$/ton.*

Individual Citizen Emails: *DAQ received an additional 31 emails for projects that are ineligible under the provisions of the VW Consent Decree Eligible Mitigation Actions and EPA DERA program.*

2. What is the anticipated demand for each eligible project type?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *The anticipated demand for each eligible project type should include: 1) measurable assessment of project impacts; 2) management accountability; 3) refereed publications.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *It is anticipated that there will be a significant demand for each project type.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Can't answer this question till one sees the full spectrum of proposed ideas.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *Purchase of equipment has limited long term benefits due to vehicle depreciations from standard wear and tear. It is more advisable for the trust funds to be invested in enhancing citizen education on air*

quality mitigations. Hence, the trust fund expenditure to light duty zero emission vehicle supply equipment should not exceed 50% of the trust funds.

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *The percentage of funds devoted to LDZEV supply equipment should be proportional to the amount these vehicles contribute to total air pollution for the State.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *< 10%.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *The anticipated demand for each DERA or other state program should include: a) relevant enhancement to state air quality; b) relevance to state commerce and air quality improvement; and c) innovation.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *There will be a significant demand for DERA-eligible projects under the VW settlement. UNC Charlotte's request is in fact a good example of this – emissions testing equipment is not eligible for VW funds directly but could be funded as a DERA project, and if funded would have a significant impact on emissions reduction. Acquisition of the proposed RAVEM system would allow UNC Charlotte to be able to quantitatively measure emissions reductions due to any type of improvements that are made on any diesel engine by any agency using a CFR-compliant system; this capability restricted to only a few agencies in the United States, none of which are located in the Southeastern United States.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Unsure*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *No comment.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *DEQ should determine how much each project type contributes to overall levels of air pollution across the State, taking into account regional “hot spots” and cost of upgrades/replacement vs. amount of pollution generated.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Yes. Through analyses of emissions.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *Yes – Government projects often have significant impact to the citizens.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Yes. UNC Charlotte strives to be an academic and technical leader in emissions reduction, and having a system that would allow*

for convenient emissions testing (via DERA funding) will be an excellent opportunity to continue this effort. With strong environmental research and motorsports technology studies, close vicinity to over 200 energy companies, and situated in the largest city in North Carolina, UNC Charlotte has the potential of impacting the Carolinas region in promoting clean and zero emission technologies. This project represents a group of several dedicated faculties and researchers interested in zero emission transportation energies within the college of engineering.

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Yes.*

7. Should funds be geographically distributed, and if so how?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *It is not necessary to have the projects geographically distributed.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Funds should be distributed in a manner that results in the maximum reduction of air pollution across the State, in keeping with the criteria suggested in Question #1 above.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Based on VW sales figures by county. This will make sure that most of the impacts are felt where excess emissions occurred, and is in line with how VW made the overall settlement by each state in the U.S.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *If matching funds are necessary, then 25% to 100% should be required.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Recommend that DEQ abide by the indicated VW criteria for percent matching funds for indicated projects; this should be applied equally to governmental and non-governmental agencies.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *No, but suggest making it optional.*

9. Should DEQ establish a minimum project size and if so, what size?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *Suggest \$100,000.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Recommends that DEQ consider all projects regardless of size and provide funding in accordance with the criteria indicated in Question #1 above.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Yes, \$50,000.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *Other considerations may include the users of the technologies (who benefits from the project).*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *DEQ should also consider the impact of implementing new technologies to combat air pollution. Continuing to embrace new technologies will establish North Carolina as a national leader in air pollution reduction efforts, which will in turn put the State at the forefront of opportunities for future funding for additional emissions reduction.*

Furthermore, as an educational institution, UNC Charlotte can be a strong entity to influence future generations in raising awareness in clean air quality technologies and the importance of clean air for the environment.

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Novelty of idea, technical qualifications of project team.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *No comment.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Request that DEQ continue to keep all interested parties apprised of the project schedule to ensure that all critical applications and other documentation is received within proper timeframes.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Create a panel of peer reviewers from diverse disciplines and stakeholder community to ensure that diverse viewpoints are considered. Develop an objective set of scoring criteria that are then uniformly applied across all proposals during evaluation.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *No comment.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *The emissions reduction calculation tools provided in this RFI are acceptable. UNCC believes DEQ has done a commendable job to date regarding rollout of the VW application process. DEQ should continue to make itself available as a resource to all parties interested in VW funding.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *It will help for DEQ to create a repository / warehouse of all publicly available tools, and provide limited training and documentation of these tools for the general public and novice users.*

• *There are many tools in the public domain, but DEQ should ensure that these use solid and published science (peer-reviewed), and have adequate documentation and training. These include the following:*

○ *EPA:*

▪ *Diesel Emissions Quantifier Tool*

- *Control Strategy Tool (CoST)*
- *Avoided Emissions and Generation Tool (AVERT)*
- *Environmental Benefits Mapping and Analyses Program (BenMAP)*
- *Co-Benefits Risk Assessment and Screening Model (COBRA)*
- *DOE Argonne*
 - *Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool*
 - *Greenhouse gases, Regulated Emissions, and Energy use in Transportation Model (GREET)*
- *UNC CMAS Center:*
 - *Community Tools (C-TOOLS) including C-LINE, C-PORT and CAIRPORT*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *No comment.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *UNCC believes that DEQ does a good job of communicating solicitations for projects. Continued communication of future solicitations to previous applicants is important to ensure these solicitations receive positive feedback. DEQ should continue to encourage applicants to communicate opportunities for funding to their colleagues to increase interest and potential number of applicants.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *Provide at least 2 to 3-month notice for responses, and not require submission during a popular holiday weekend (for e.g. Dec 31)*

- *Encourage email or electronic submission*
- *Encourage small businesses, NGOs and University participation*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Energy Production Infrastructure Center UNC-Charlotte (Dr. Shen-En Chen): *Public forum with Q/A sessions – would be very helpful to solicit public interests and to clarify project requirements.*

UNC-Charlotte College of Engineering (Dr. Shen-En Chen): *Information such as scope, funding limits, and application requirements are critical for submitting proposals. DEQ communicates this information well in RFPs and announcements associated with funding solicitations.*

Institute for the Environment – UNC Chapel Hill (Sarav Arunachalam, Ph.D.): *N/A*

Local Government Related Comments

Comment responses:

1. How should DEQ prioritize projects?

Fayetteville Metropolitan Area Air Quality Stakeholders (Denise Bruce): *The Fayetteville Metropolitan Area Air Quality Stakeholders make the following recommendations for projects:*

- *To implement a primary focus of allocations on transitioning from older diesel engines to electric vehicles.*
- *Including allocation of funds to be used for the purpose of swapping short-range driving diesel vehicles to electric vehicles, including: municipal, utility and fleet vehicles, fleet vehicles used on college and university campuses, airport ground transportation, etc.*
- *Allocate a portion of the funds to encourage private sector diesel engine owners of vehicles or equipment 7-25 years old or older to transition to newer, cleaner burning engines, either through upgrading or by purchasing new equipment. This allocation may be in the form of rebates or other incentive programs of a sufficient amount to ensure a measurable impact.*
 - *Proposed model would allocate 1% of total VW Settlement for retrofit of catalytic converters and PM Filters for up to 200 older diesel engines statewide with an incentive of \$5,000 per engine, reducing NOX by a minimum of 70% and particulate matter by up to 90% per vehicle.*

Mecklenburg County (Leslie Rhodes): *Rank projects by cost-effectiveness (\$/ton of NOx reduced). Ranking projects by cost effectiveness will maximize emission reductions and public health benefits.*

Prioritize projects in areas with a history of nonattainment with the health-based ozone standard or prioritize areas by current ozone design value. After decades of nonattainment with the Ozone NAAQS, Mecklenburg County and the Charlotte region were designated attainment for the ground-level ozone NAAQS in 2017. However, the region continues to have the highest design value in the state.

Prioritize projects in areas where mobile sources contribute most of the ozone-forming emissions. In Mecklenburg County, almost 90% of ozone-forming NOx emissions come from mobile sources.

Prioritize projects in areas with large populations. As the state's largest metropolitan area, reducing emissions in the Charlotte region will benefit 2.5 million North Carolinians.

*Prioritize projects from organizations that have a successfully completed grant-funded projects in the past. MCAQ has a successful track record of administering grant-funded programs that benefit citizens. In 2007, MCAQ 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) from mobile sources, by providing businesses and organizations funding incentives to replace or repower heavy-duty on-road and non-road equipment with newer, cleaner, less polluting engines. GRADE relies heavily on receiving federal grants which are then sub-granted to applicants not only in Mecklenburg County, but also in the many counties surrounding it. To date, GRADE projects have achieved a total of 714 tons of actual NOx reductions for the region. This large reduction in NOx, a precursor to ozone, helped the region reach attainment for the ozone NAAQS.*

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager):

- *Determine where VW vehicles sold on a pro-rated basis,*
- *Determine areas with greatest air quality challenges,*
- *Ascertain largest impact on air quality based on both new vehicle technology and also on replacement vehicles, and*
- *Select projects with most cost-effective strategy in concert with high NOx reduction and sustained future investment opportunities.*

2. What is the anticipated demand for each eligible project type?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *We see specific fuels, vehicle types and technology being sought by specific niche markets and fleet applications; therefore, the greater the flexibility of the funds and eligibility the broader demand across project types. The Coalitions recommend leaving great flexibility in the project types to allow for niche markets, innovative solutions and new technologies. However-*

- *Currently, there is little known demand for Marine, Ports, Ferries and Tugs in North Carolina.*
- *Specific interest for NC school bus purchases in the form of alternative fuels and clean diesel.*
- *Identified a high demand for EVSE with local municipalities.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager):

- *The Coalitions believe funding should be left as flexible as possible, to allow for emerging technologies and applications.*
- *The Coalitions recommend that some priority is given to DC Fast Charging equipment, especially to fill gaps in network including along DOE designated Alternative Fuel Highway Corridors. We also encourage DAQ to have continued discussions with Electrify America on the installation of DC Fast Charging equipment and to identify remaining gaps.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Coalitions support the State allocating VW funds for DERA due to funding provision for light duty diesel vehicles that are not included in VW settlement categories.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Coalitions advised leaving this funding distribution as flexible as possible and would recommend not allocating funds to categories in the first round, but rather take a “wait-and-see” approach to see where demand is.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Again, we recommend leaving as much flexibility as possible with the funds. However, DAQ should anticipate the government sector as a likely applicant due to more limited funding opportunities versus private sector.*

7. Should funds be geographically distributed, and if so how?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager):

- *Coalitions recommend a pro-rated approach based on where vehicles sold and the areas with greatest air quality challenges.*
- *It is also recommended that the FHWA Alternative Fuel Corridors are considered and supported.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Governments should be required to provide matching funds, to demonstrate commitment and ownership of the project. However, may consider terms that are more favorable and flexible to encourage adoption of program.*

9. Should DEQ establish a minimum project size and if so, what size?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Coalitions do recommend a minimum project size be implemented, in order to expedite project review and limit staff time. Clean Cities Coalitions can work to help bridge capacity to reduce administrative burden, while enabling smaller fleets and projects to participate.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Mecklenburg County (Leslie Rhodes): *See question 1.*

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Additional impacts to consider include:*

- *Larger strategy and organizational vision,*
- *Increased mobility options,*
 - *Environmental justice,*
 - *Partnership opportunities,*
 - *Educational opportunities,*
- *Paring funding request with biodiesel use or other advanced technologies (telematics, idle reduction, etc), and*
- *Identify regions within the state most sensitive to air quality measures including WNC's Class I Areas under the Clean Air Act (GSM National Park and Wilderness Areas).*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Mecklenburg County (Leslie Rhodes): *See question 1.*

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *Make self-scoring possible through clear and understandable requirements. Provide support for applicants so that this step is not a barrier, but an opportunity for project assessment and chance to prepare the applicant for the greatest success.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager): *AFLEET - Alternative Fuel Life-Cycle Environment and Economic Transportation*

- a. The Clean Cities Coalitions would urge DAQ to list our Coalitions as a resource to fleets.*
- b. Additional tools may include:*
 - i. GREET - Greenhouse gases, Regulated Emissions, and Energy use in Transportation Model,*
 - ii. MOVES - Motor Vehicle Emissions Simulator,*
 - iii. Diesel Emissions Quantifier (DEQ), and*
 - iv. CMAQ Emission Calculator Toolkit for Alt Fuel Vehicles and Infrastructure*
- c. Additional local organizations include:*
 - i. Advanced Energy's Plug-In NC, and*
 - ii. NC Clean Energy Technology Center*
- d. Trade associations and companies and national education organizations:*
 - i. NGV America,*
 - ii. Propane Education and Research Council (PERC),*
 - iii. Electric Drive Transportation Association,*
 - iv. Plug-In America,*
 - v. NASEO VW Toolkit,*
 - vi. PSNC Energy,*
 - vii. Piedmont Natural Gas, and*
 - viii. Duke Energy*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Mecklenburg County (Leslie Rhodes): *The North Carolina Department of Environmental Quality (NCDEQ) should design a solicitation process that is simple and provides easily comparable data in order to rank projects. The solicitation design should include the following components:*

- Minimize application paperwork, target having a one-page application.*
- NCDEQ staff or their designee should perform all emissions calculations.*
- NCDEQ staff or their designee should be available by phone or in person meeting to answer questions and assist companies with the funding process.*
- North Carolina's VW website should house needed forms, call for project information, and if possible, a video to explain the process and highlight the benefits of completing a project.*

Lastly, NCDEQ should consider spending some of the WV funding on marketing. MCAQ's experience administering GRADE showed that direct phone marketing was an effective way to reach busy equipment and vehicles owners. This type of marketing also results in a database of company and municipality contacts that could be eligible for funding.

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager):

- a. Consider an online based voucher or rebate program with a simplified application form and process.*
- b. Consider funding regional entities (ie, Clean Cities Coalitions or COGs) that could then carry out funding opportunities that adhere to overarching state eligibility and selection guidelines but are carried out on a more flexible timeline and application process than the state can manage.*
- c. State or contractor should do the emission calculations to ensure consistency.*
- d. Utilize assistance of Clean Cities Coalitions for education and outreach and technical assistance to applicants.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Clean Cities Coalition (Andrea Eilers/Bill Eaker/Jason Wager):

- a. Technical support workshops, webinars, and staff available to run through ideas and proposal ideas to determine eligibility and feasibility, reviews of proposals, etc.*
- b. Existing groups and associations that can help assemble key partnerships and strategically impactful proposals.*
- c. Ensure that resources and support with regional/local knowledge are available to applicant.*
- d. Inclusion of a FAQ on the DAQ website.*

Original Equipment Manufacturers - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

NGV America (Daniel Gage): *Prioritize funding for commercially available products that are ready for use. Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, we believe that the funding should be set aside for clean, alternative fuel vehicle projects that focus on maximizing NOx reduction for the funds spent. Prioritize projects that include partnerships that provide a match such as a CNG or LNG station being built in locations that will receive the VW funding.*

Caterpillar (Ray Agama): *North Carolina should invest its Mitigation Trust Funds in cost-effective Eligible Mitigation Actions which would realize greater NOx reductions and better meet the stated purpose of the Mitigation Trust Fund.*

NAVISTAR (Jacqueline Gelb): *Encourages you to include the renewal and replacement of diesel school buses and heavy-duty trucks when the State of North Carolina prepares and submits its Beneficiary Mitigation Plan to the Trustee overseeing the Volkswagen Consent Decree.*

Individual Citizen Emails: *DAQ received two additional emails advocating engine repowers with new clean engines.*

2. What is the anticipated demand for each eligible project type?

NGV America (Daniel Gage): *Provide the highest level of funding to applications that produce the largest share of NOx emissions (in most regions this means prioritizing for short-haul, regional-haul and refuse trucks).*

Caterpillar (Ray Agama): *DEQ should invest a proportional amount of its allocated Trust Fund towards Eligible Mitigation Actions in the nonroad space of marine, locomotive, and nonroad mobile sectors, which have been shown to have better cost effectivity for the NOx emissions reduced in line with the stated purpose of the Mitigation Trust Fund.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

NGV America (Daniel Gage): *Prioritize funding for clean vehicles rather than fueling infrastructure.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

NGV America (Daniel Gage): *Provide a larger incentive and greater overall funding for medium- and heavy-duty engines that deliver greater NOx reductions than currently required for new vehicles and engines.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

NGV America (Daniel Gage): *Ensure that funding incentivizes adoption by both public and private fleets.*

7. Should funds be geographically distributed, and if so how?

Caterpillar (Ray Agama): *ADEQ should consider distributing its proposed allocation for funding of emission reductions for marine vessels, switcher locomotives, and nonroad equipment in the top NOx counties in North Carolina as these Eligible Mitigation Actions provide the most cost-effective NOx reductions and would benefit the urban areas in North Carolina most impacted by the VW, Audi and Porsche vehicles.*

8. Should governmental entities be required to provide matching funds and if so, how much?

NGV America (Daniel Gage): *Scale funding to incentivize the cleanest engines available – at a minimum, provide parity among alternative fuels by following a version of the Colorado VW Plan that funds non-diesel alternative vehicles in the private sector at 25% of the cost of the vehicle and public-sector vehicles at 40%.*

9. Should DEQ establish a minimum project size and if so, what size?

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

11. What other feedback do you have on project evaluation and/or scoring criteria?

NGV America (Daniel Gage): *Accelerate the funding in the early years to maximize the NOx reduction benefits. Target funding for technologies that have demonstrated the ability to deliver actual lower in-use emissions when operated in real-world conditions.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

NGV America (Daniel Gage): *Use vehicles emissions measurement tools that reflect current technologies and performance under real world operation duty cycles – Argonne National Laboratory's AFLEET tool is the most current.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

School Bus Related - Comments

Comment responses:

1. How should DEQ prioritize projects?

Wake County Public School System (Doug Thilman): *Priority should be given to those projects that provide the most significant reduction, overtime, of the harmful emissions from diesel engines.*

North Carolina Department of Public Instruction (Kevin Harrison): *This settlement fund exists because Volkswagen circumvented environmental regulations on their vehicles; therefore, it is logical that these funds primarily be focused on addressing mobile source emissions from vehicles.*

Projects should be prioritized based on their capacity to not only reduce vehicle emissions and fuel consumption, but also to increase highway safety.

Further, projects should be prioritized based on past performance with the entity, and that organization's ability to execute and implement emissions reduction projects quickly so that the benefits can be realized as soon as possible.

Gregory Poole (Paul Eberhart): *Projects should be reviewed based upon opportunity to reduce NO_x over the projects lifetime, in addition to the opportunity of the applicant to grow and sustain the program. The cost to achieve these pollutant reductions should be an important factor. These costs include not only the technologies capital cost, but also the other costs associated with the program proposed (fueling and maintenance infrastructure, training, certification, etc.).*

Carolina Thomas (Tom Schaaf): *North Carolina has the oldest school bus replacement cycle in North America with 7000 buses older than 2009. If the entire VW fund was utilized, 1099 of these older polluting buses could be replaced. There is an existing state bid that is a menu bid which created exceptional competition. Projects should be reviewed based upon opportunity to reduce all emissions and not focus on just one area and ignore the rest. And is the program sustainable when special funds evaporate. Costs should include not only the technologies capital cost, but also the other costs associated with the program proposed (fueling and maintenance infrastructure, training, certification, etc.).*

Agility (Curtis Donaldson): *School buses are an important segment to make a priority*

- *Our children ride these buses for 12 years*
- *Replacing the diesel engine with an LPG engine repower package would provide years of operation using an environmentally cleaner, quieter and more reliable product in comparison to the diesel engine*
- *Running a clean LPG engine provides many social, economic and environmental benefits*
 - *All required vendors are located in North Carolina which brings jobs and prosperity to the State*
 - *Lower cost fuel, lower operating cost per mile driven*
 - *Lower maintenance costs*
 - *Cleaner burning fuel.*

Individual Citizen Emails: DAQ received 4 additional emails from citizens advocating bus electrification.

2. What is the anticipated demand for each eligible project type?

Wake County Public School System (Doug Thilman): *There is substantial and continuous demand for yellow school buses. In Wake County, the average school bus travels +/- 19,500 miles per year. We are the largest transit provider in Wake County. Our buses travel nearly 16,000,000 miles per school year.*

Gregory Poole (Paul Eberhart): *North Carolina ranks lowest in its percentage of alternative fuel use in school buses. We believe that with some assistance from the state, the misguided perception that alternative fuels are difficult and costly to implement could be overcome.*

Carolina Thomas (Tom Schaaf): *North Carolina has the oldest school bus replacement cycle in North America with 7000 buses older than 2009. If the entire VW fund was utilized, 1099 of these older polluting buses could be replaced. There is an existing state bid that is a menu bid which created exceptional competition. There have been pilots with other alternative fuels in school buses besides clean diesel. They did not work. In fact, the pilot units are being offered for sale now in this market for a fraction of the cost of a new unit. The fuel consumption was nearly 2x that of the low emission clean diesel units. The engines cost considerably more even though based on a light duty platform and the total bus cost considerably more. The buses do not have an automatic transmission like the counties are equipped to handle. North Carolina school buses are on a 20-year replacement cycle so the engine platform is extremely important and the transmission is extremely important.*

Agility (Curtis Donaldson): *A repower of one of the older diesel engines could be a large demand due to a number of factors.*

- *Inherent mechanical problems require engine replacement long before the expected life expectancy of the vehicle.*
- *There are > 11,000 school buses using this engine and every shop has had trouble.*
- *In North Carolina this engine is currently used in ~1,000 school buses that could all be easily converted to operate on clean burning LPG using proven OEM products. Replacing diesel engines would enable North Carolina to meet the goal of the VW mitigation trust.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Wake County Public School System (Doug Thilman): *A portion of the trust funds should be dedicated to Light Duty Zero Emission Vehicle Supply. These vehicles are a major contributor to regionally based emission problems. The light duty fleet, while often a lower capital cost, with the ease of use makes the vehicle popular to run with little to no regard for emission standards.*

Gregory Poole (Paul Eberhart): *Of all the mobile source emissions in North Carolina, on-road light-duty gasoline vehicles contribute 42% of the NOx emissions to the state's inventory. Thus, we support taking advantage of the maximum 15% allocation for Light Duty Zero Emission Vehicle Supply Equipment in order to mitigate these emissions.*

Carolina Thomas (Tom Schaaf): *All areas should be considered. 10% of the funds would represent a good balance and distribution of funds for light duty.*

Agility (Curtis Donaldson): *All clean air plans should include support of all forms of clean power vehicles.*

- *The key to successful deployment that achieves desired near and long-term results is to assess and balance the overall cost of implementation and emission reduction benefit across the fleet.*
- *Near term, the total cost of zero emission vehicle deployment is quite high resulting in displacing fewer diesel vehicles per dollar invested when compared to near zero clean fuel vehicles. So, while funds should be devoted to zero emission vehicles, successful growth of a clean fuel vehicle market requires balanced seeding and support. The VW settlement provides the opportunity for developing the foundation for clean fuel vehicles by also promoting abundant domestic produced energy.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Wake County Public School System (Doug Thilman): *This information is not available at this time. We would expect to work with DEQ on answering this question.*

Gregory Poole (Paul Eberhart): *We cannot speak to the demand for various eligible project types, under DERA or otherwise.*

Carolina Thomas (Tom Schaaf): *We are not able to comment on various eligible DERA projects or others.*

Agility (Curtis Donaldson): *The demand for clean diesel emission reduction projects is high.*

- *The challenge remains though that diesel emission reduction technology continues to add significant cost to the engine and exhaust after treatment including the inconvenience of adding DEF to a separate tank.*
- *Where the VT365 engine has a diesel particulate filter, regeneration has performed poorly due to the duty cycle of a school bus and many larger school districts have purchased expensive equipment to clean these filters, taking more maintenance time as well.*
- *Put as much or more funding into engine combustion efficiencies/technology as exhaust after treatment for diesel.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Wake County Public School System (Doug Thilman): *VW Funds should be distributed to those projects that have the most impact on emission reduction, but also those that project sustainability over time. These two factors should carry a significant weight in determining which projects should receive funding.*

Gregory Poole (Paul Eberhart): *We appreciate that North Carolina has a suite of options from which to choose. However, to most efficiently and effectively distribute these funds, we recommend that the state allocate at least 50% of its funds for school buses. To do so, North Carolina can take advantage of ready-made grant programs, such as DERA's Clean School Bus*

Rebate Program, that will reduce the state's administrative burden and ultimately lead to greater cost-effectiveness in terms of NOx reductions statewide.

Carolina Thomas (Tom Schaaf): *VW Funds should be distributed to those projects that have the most impact on a holistic emission reduction but also those that are sustainable over time. When the grants and special funds no longer exists can the project support itself? All factors should be included and debated in an open forum where competing opinions are available at the same time. When claims are made where did the data come from to make the claim? Did it consider an engine or transmission that will not last as long as an example or does it ignore certain data points?*

Agility (Curtis Donaldson): *Yes, VW funds should be allocated to numerous project types. A balanced approach to advance all forms of clean fuel vehicles near term should be employed. The percentages should be determined based on emission reduction impact. Maximizing the number of aged diesel vehicles that are replaced with low emission vehicles thus growing the overall clean fuel vehicle fleet in the State is also a good measure.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Wake County Public School System (Doug Thilman): *In the larger urban areas a significant portion of fossil fuel emissions comes from government owned vehicles. An additional weight should be added for government projects that contain large fleet reduction proposals to include a move to lower emission, alternative fuel or electric fleets. Yes, yellow school buses are, by far, the largest transit provider in North Carolina. School buses transport young people to and from school over 180 days per year. School buses make numerous stops and traverse through most of the communities that they service. Wake County Public Schools transport approximately 75,000 students on yellow school buses daily.*

Gregory Poole (Paul Eberhart): *Yes, we recommend that North Carolina prioritize the replacement publicly-owned diesel vehicles.*

Carolina Thomas (Tom Schaaf): *North Carolina has the oldest school bus replacement cycle in North America with 7000 buses older than 2009. If the entire VW fund was utilized, 1099 of these older polluting buses could be replaced. Start with the oldest most polluting vehicles and work toward newer to have the greatest impact on the environment as a whole.*

Agility (Curtis Donaldson): *At least 50% should be reserved for school buses alone. Our future scholars are riding a school bus and this needs to have a major priority.*

7. Should funds be geographically distributed, and if so how?

Wake County Public School System (Doug Thilman): *Funds should be distributed geographically, based on need for a reduction in emissions within that particular region. If there is a specific region that has a more disparate need for such a reduction and the project contained within can show a positive impact then geography can be used as a determinant for funding. Large school districts would likely be best positioned to maintain and operate electric school buses given economies of scale and the number and types of trips that are provided.*

Gregory Poole (Paul Eberhart): *While we recognize the benefits of targeting projects in specific counties, we also urge the state recognize the benefits of funding projects that directly benefit sensitive populations, such as school buses that transport thousands of students daily across North Carolina.*

Propane school buses in particular significantly reduce children's exposure to emissions that are associated with pre-2007 diesel buses, including increased asthma emergencies, bronchitis, and school absenteeism, especially among asthmatic children. Propane school buses also effectively eliminate diesel particulate matter emissions that are associated with cancer and thousands of premature deaths nationwide every year. These vehicles are also a safe transportation solution because propane is non-toxic, non-carcinogenic and non-corrosive, and because their vehicle fuel tanks are 20 times more puncture-resistant than gasoline or diesel tanks.

Carolina Thomas (Tom Schaaf): *Large communities should not have an advantage over rural communities. If you work from the oldest most polluting old buses the rural areas can benefit as well. There are 100 counties that operate school buses. If the project size was not a limiting factor all counties regardless of their financial strength could participate. A single bus can be as important to a poor county as 10 buses to a wealthier county.*

The safest form of fuel in a school bus is low emissions clean diesel. It does not have to have a special fuel tank that resists puncture as it is safe in its standard state. As an example, CNG is stored at 3500 psi which takes a special tank. Propane is stored with a puncture resistance tank as it is required for safety. Propane is lighter than air and settles and pools on the ground. This is extremely dangerous in a confined shop with floor drains, or water heaters, etc. A diesel fuel tank can be filled to capacity with standard equipment. Propane or CNG cannot. If all emissions are considered and fuel consumption rates, clean diesel is the best holistic approach.

Agility (Curtis Donaldson): *By the most populated or polluted cities/counties first.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Wake County Public School System (Doug Thilman): *No. In most cases such capital outlays are not available to local government agencies. These funds should be reserved for projects that are built to have a significant impact but do not require the agency to pull funding from other sources in order to do so. The VW Settlement Funds can be used for large capital outlays that also include infrastructure. Therefore, the projects that are funded should be complete. However, the funds should not be allocated for the maintenance of the project over time. Agencies should demonstrate the long-term plan for such maintenance of the project.*

Gregory Poole (Paul Eberhart): *We find that funding projects at 100% will limit the potential NOx reductions that North Carolina may fund. Additionally, school district commitment to a long-term, thoughtful and sustainable program diminishes as funding percentages increase from our experience. We thus recommend that the state limit its funding for governmental entities to a maximum of 50% of the total vehicle costs to improve cost-effectiveness and spread the state's dollars further.*

Propane school buses save districts over \$2,500 per year per bus in fuel and maintenance savings (national average). Also, infrastructure rarely cost a school district or the state upfront. No maintenance facility upgrades are required either. Once the initial aversion to change through a lower capital cost is achieved, the district typically sees the other benefits within one

year of operation. Therefore, once the aversion to change is overcome with a capital cost that is more attractive than the used school bus market, districts will likely see the benefit of an alternative fuel fleet.

Carolina Thomas (Tom Schaaf): *No. They have finite budgets. The bus replacement schedule is already established over years of use. The fuel prices are dictated by state bids. This is why alternate fuels such as propane are so risky for virtually no benefit over today's clean diesel units. If funding is interrupted the district is left to take the money from other areas to continue to operate. Some alternative fuel vehicles consume two times as much fuel so this could be financially devastating if there are not guaranteed subsidies. If all data and costs are considered with today's clean diesel vehicles an alternate fuel such as propane or CNG does not provide a lower cost of operation. Data has to be eliminated, not included, or compared to flawed engines from a previous time in order to provide projected savings. Infrastructure for fueling such as propane can often be provided free by an entity IF the consuming entity agrees to purchase fuel from only one source. This is not how it works with other fuel types. Infrastructure is only going to be free IF there is some caveat of single source fuel, etc. The leading propane school bus provider in North America lost \$7.5M in Q1- 2018. This needs to be seriously considered These buses in NC are on a 20-year rotation cycle.*

Agility (Curtis Donaldson): *To be eligible for funds from the VW settlement, matching funds shouldn't be required.*

9. Should DEQ establish a minimum project size and if so, what size?

Wake County Public School System (Doug Thilman): *Any project that demonstrates the reduction of fuel emissions and shows a positive environmental impact on the community within should be considered regardless of the size. Larger projects would likely generate more reliable data and useful data on the performance of electric school buses.*

Gregory Poole (Paul Eberhart): *We recommend that North Carolina allow the applicants to propose budgets without the constraints of a minimum project size. This will allow applicants from rural locations, who may only have one or two vehicle fleets, to participate in the funding programs.*

Carolina Thomas (Tom Schaaf): *We would hope that rural areas have an equal opportunity.*

Agility (Curtis Donaldson): *Yes, creating critical mass of clean fuel vehicles and attracting the sustained interest of innovative companies and individuals requires a fair and balanced approach of funding sizable projects that can then grow into self-sustaining clean air vehicle market segments.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Wake County Public School System (Doug Thilman): *Cost, safety, PR Plan, Education plan for those impacted by the project. The DEQ should consider projects that have the most potential for long-term benefits. For example, this funding could be used to substantially advance or be a catalyst for "clean" transportation for the state's school age population.*

North Carolina Department of Public Instruction (Kevin Harrison): *Cost effectiveness of the environmental benefits is a very important consideration. That said, \$/ton is not the only way to view improvements to the environment. Localized emissions benefits can create a far more powerful benefit to the health and wellness of our children than a reduction in overall emissions spread over large areas or in areas with little population. Thus, DPI suggests that DEQ also factor in whether the projects will improve the local environment significantly and whether those emissions improvements will significantly improve the health and wellbeing of vulnerable populations.*

DEQ should also consider whether the project will have other monetary benefits to the State of North Carolina, such as reductions in General Fund expenditures and lower cost of operation for government entities. These benefits allow the VW money to serve the purpose of reducing emissions while also reducing the cost of government operations.

Another key consideration should be the project's visibility and ability to garner media attention. Ideal projects should be able to quickly and effectively raise the public's perception and draw attention to how settlement funds are being used in a positive way. The most effective projects should have visible and tangible deliverables that are easy to showcase to the general public.

Finally, where a project involves government services, the project should raise the profile of those services with a goal of increased utilization and long-term benefits. If increased utilization of the government service would have positive environmental and economic benefits to the state, then those potential benefits should also be considered.

Gregory Poole (Paul Eberhart): *We recommend that North Carolina provide bonus points or some other form of preferential treatment in the application process for vehicles equipped with low NOx engines. As evidence of this, we used the 2016 version of AFLEET, developed by Argonne National Laboratory, to model NOx reductions and cost effectiveness. Our analysis compares the replacement of a model year 2007 diesel school bus with a new diesel, propane, CNG or electric school buses. It is clear that propane is the most cost-effective option at reducing NOx emissions.*

Carolina Thomas (Tom Schaaf): *The project should focus on a holistic approach. Not just an emission like NOx. Consider all emissions. Consider tests of alternate fuels to date in NC in this application. What is the actual fuel consumption rate? What is the actual equipment being used to provide the solution? As an example, do the specifications for the bus have to be altered for the transmission because the provider will not engineer the vehicle to meet the specs? Does the end user have to purchase fuel from a sole source in order to afford the infrastructure? Does the fueling timeline specification have to be eliminated in order for the vehicle to meet specifications? (Clean diesels have a fueling standard to eliminate labor).*

Agility (Curtis Donaldson): *Start to finish timing of implementation and benefit. Life cycle vehicle cost and benefit to the consumer.*

- *The number of diesel vehicles/engines removed from service.*
- *Projected fleet operating cost reductions.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Wake County Public School System (Doug Thilman): *The evaluation and scoring of each project should be independent of other projects. The team scoring should include industry experts*

as well as concerned citizens who demonstrate a working knowledge of how such projects may impact the local or regional community.

Gregory Poole (Paul Eberhart): *North Carolina should create funding programs that allow all fuel types to compete. However, the state should select projects based on the most cost-effective use of funds in terms of NOx reductions and the proposed project's benefits to areas disproportionately burdened by diesel pollution. We also appreciate consideration of factors described in our response to question 1.*

Carolina Thomas (Tom Schaaf): *Funding programs that allow the clean fuels to compete on their own merits are the most desired. Special focus or advantages on just one emission criteria are flawed even though they may get publicity. Is the vehicle built in North Carolina? Is the engine built in North Carolina? If government subsidies are discontinued is the vehicle still going to provide the benefits? Clean fuel should also include low emission clean diesel. The safety of handling any type of fuel should be experienced versus listening to just vendors. How is the equipment serviced? How is the equipment stored? How is the fuel transported? As an example, most of the time these alternative types of fuels are transported to schools or business using clean diesel as they are proven to do the most work at the lowest possible cost.*

Agility (Curtis Donaldson): *Where engines are removed from service a way to track and confirm they are destroyed so there's no chance for anyone to rebuild or re-cycle for profit.*

- *Leverage this funding opportunity to make it mandatory that fleets in the State acquire a certain percentage of clean fuel vehicles.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Wake County Public School System (Doug Thilman): *The DEQ in cooperation with Wake County Public Schools could establish a web or mobile computer application (app) that allows schools to track the reduction in "pollution" using electric school buses. This data could be incorporated into science classes to evaluate effectiveness.*

Gregory Poole (Paul Eberhart): *We used the 2016 version of Argonne's AFLEET tool to calculate anticipated emissions reductions as well as cost effectiveness (as shown in Table 3 above). Unfortunately, EPA's DEQ and GREET do not account for some of the new alternative fuel school bus technology, such as the low NOx propane school buses (.05 g/bhp-hr) we are currently purchasing and the near-zero emissions propane school buses that will be available from Blue Bird next year (.02 g/bhp-hr).*

Carolina Thomas (Tom Schaaf): *Use Federal EPA information. Gather complete emission data versus one specific emission that promotes one fuel type. Look at propane study performed by State of North Carolina – DPI at actual locations in NC. This is real world experience. Compare existing data from 100 counties. Tour manufacturing facilities in North Carolina. There are school buses built in North Carolina. There are clean diesel engines built in North Carolina. Agility (propane engines) is in North Carolina.*

Agility (Curtis Donaldson): *In North Carolina, the EPA has emissions testing capabilities and could offer some testing support.*

- *PEMS, portable emissions measurement system, is light weight and effective to measure the emissions. Available to the public from a number of suppliers.*
- *The project could also include the costs of this equipment but also could be shared in a geographic area.*
- *The need to confirm effectiveness of the project is crucial.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Wake County Public School System (Doug Thilman): *Ease of application is the most important factor for agencies to see in terms of participation in such projects.*

Gregory Poole (Paul Eberhart): *We commend the state on its transparent process thus far and we encourage the state to continue these measures. We have found that this is the best way to reduce barriers and increase participation.*

Carolina Thomas (Tom Schaaf): *The process appears transparent thus far and we encourage the state to continue these measures. Ask others for input. Many of the alternative fuel meetings are loaded for a specific view. Many things are not vetted and data is considered factual.*

Agility (Curtis Donaldson): *Invest in education and awareness programs promoting the benefits and attributes of clean air vehicles.*

- *Identifying where and what is emitting the most emissions and providing attractive solutions. Technology will catch up but not without the pressure of regulations and the first adopters to implementation.*
- *Operating cost is always the bottom line influence, so providing real life examples of how to reduce emissions.*
- *Provide incentive programs direct to end users that promote the acquisition on clean air vehicles.*
- *Keeping up with technology and the DEQ can announce new technologies that are coming before the public actually hears about it. Providing funding channels to help attract participation.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Wake County Public School System (Doug Thilman): *Information must be easily accessible via the web and contained in a manner that allows for easy download. It should also include relevant links that provide more detailed information. This should include links that demonstrate a novice level as well as expert level of detail. The ease of navigation of such information is critical to applicant's engagement with the process.*

Gregory Poole (Paul Eberhart): *Gregory Poole Bus Sales would like to be added to the mail list for any future meetings or discussion groups.*

Carolina Thomas (Tom Schaaf): *Carolina Thomas and Thomas Built Buses respectfully request to be involved in these discussions at every possible point. We can facilitate learning opportunities at a NC school bus manufacturing facilities, NC clean diesel engine manufacturing*

facilities, NC propane engine facilities, and NC maintenance garages. We focus 100% specifically on school buses. Our firm includes over 700 years of school bus equipment experience. Thomas has 100 years of experience in NC and they offer a wealth of information on the bus specifications and operation

Agility (Curtis Donaldson): *Publish the State vision, priorities and timing plans to increase the number of clean fuel vehicles on the road.*

- *Training workshops. Go direct to the interested/proposed stakeholders to encourage participation by providing information and direction.*

State Government - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

NCDOT- Ferry Division (Sterling Baker): *The NCDOT Ferry Division suggests that DEQ should consider the following when determining priority of projects:*

- *Opportunities to introduce new emissions reduction technologies. Embracing new technologies into our fleet will help establish North Carolina as a national leader in air pollution reduction efforts.*
- *Most optimal air pollution improvements per dollar spent.*
- *Ability of agencies to pay for projects without VW money; i.e. projects that otherwise may not be accomplished without VW funding should take priority over agencies that possess means to pay for emissions reduction efforts.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division. DAQ also received an additional citizen email advocating spending the funds for locomotive freight switchers and all electric rail car movers.*

Mooresville Hydrail Initiative (Stan Thompson): *DEQ should prioritize projects based on the maximum incremental mass of avoided carbon dioxide and health-affecting particulates kept out of the earth's atmosphere by the projects. The supplanting by hydrail of diesel rail traction with electric traction power onboard by hydrogen fuel cells will be one of the most massive GHG mitigations on the planet during the next decade.*

Recommend that DEQ should consider the following when determining priority of projects:

- *Synergy with similar international projects in China, Germany, Canada and Japan with enhance North Carolina's diesel-to-hydrail climate and pollution contribution.*
- *Opportunities to introduce new emissions reduction technologies. Embracing hydrail will establish North Carolina as a national leader in air pollution reduction efforts, which will in turn put the State at the forefront of opportunities for future related green rail infrastructure funding for additional emissions reduction. This includes funding research and manufacturing initiatives for new, clean technology that can be implemented onto urban and intercity rail vehicles that have traditionally used diesel engines.*
- *Ability to leverage VW money as seed money to expedite inevitable changes that would have evolved much later should be given high priority.*

NC Clean Energy Technology Center (Richard Sapienza): *Prioritization of projects should be based on several primary dimensions. The first being emissions reductions with weighting on NOX criteria pollutant emissions which is the primary criteria pollutant of concern for air quality in NC. This is also the primary objective of the VW Mitigation fund. Other primary considerations should be efficiency of the reductions (\$ per kg or ton reduction), risk or likelihood of technology/project success, likelihood that project will contribute to further technology adoption by being a pilot or primer, technology diversity, and contributions to local job market and economy. On road vehicle repower should be discouraged or low priority due to liability issues. We do not know the condition of body, frame or suspension of an older vehicle.*

NC Forest Service (Joseph Gilroy): *The VW Mitigation Settlement Trust is sure to draw the interest of*

many companies, agencies and organizations proposing worthy and beneficial projects. While the settlement amount is large, it is also finite and must be handled with tremendous stewardship. Therefore, it is important to prioritize projects based on their ability to provide prolonged and targeted environmental benefits not only after the funds are spent, but also well beyond the life of the purchased equipment. This “sustainability return on investment” model will help ensure that funded projects meet the settlement requirement to fully mitigate the lifetime excess NOx pollution emitted by VW vehicles that violated the Clean Air Act. Projects that carry environmental benefits in addition to direct emissions reduction, such as those that have an educational component, provide for tree planting and other carbon sequestering activities, or improve, protect, restore or reduce risks to public health, should be given greater weight.

UNC-Charlotte (Christopher Facente): *The DEQ should look at non-attainment areas for the distribution of funds. I do believe all counties should have access to the funds, the former non-attainment counties should be disproportionate to 60 percent of the funds.*

2. What is the anticipated demand for each eligible project type?

NC Ports (Stephanie Ayers): *A moderate capital infusion from the VW settlement in support of NC Ports' capital investment plan will significantly boost NC Ports' ability to provide better service to existing and future container customers. Under Section 8 of the eligible mitigation actions, Forklifts and Port Cargo Handling Equipment needs at the Port of Wilmington include:*

- *Reefer container storage and electrical infrastructure at the Port of Wilmington (reefer receptacles on racks) in support of refrigerated containers.*
- *One Ship to Shore electrified container crane at the Port of Wilmington to replace an aging diesel crane in support of the increased container activity at the Port.*

NCDOT- Ferry Division (Sterling Baker): *It is anticipated that there will be a significant demand for each project type.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *A paradigm shift to hydrail is in progress world-wide because of its dramatically lower cost and role as an enabling technology for intermittent renewable energy (wind, solar, tide) to power rail transportation as well as zero-carbon nuclear energy.*

NC Clean Energy Technology Center (Richard Sapienza): *That is very difficult to answer. Based on what we have seen with CMAQ, FTA, and DERA funding application, and industry experience overall requests for funding will exceed available funding by a factor of 2 to 5 times. There will be strong demand for funding of CNG projects 7-8 vehicles which includes short haul freight, refuse, dump trucks and transit buses. Propane paratransit and shuttle buses will be another strong category. Recently, there has been significant electric transit bus technology advances and industry coverage. Therefore, we expect that there will be demand for electric transit buses. With NC having the 5th largest ferry fleet¹ and it is an aging ferry fleet in need of upgrades², they might be potential projects. Also, there is a similar situation regarding the NCDOT rail which would be good candidate projects, if mitigation money were allocated for the DERA option.*

UNC-Charlotte (Christopher Facente): *The focus is on zero emission diesel replacement. Many off road, heavy polluters (mowers, tractors, construction equipment) does not have a direct zero*

emission replacement for these. I propose a much lower emission replacement of propane for various equipment.

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

NCDOT- Ferry Division (Sterling Baker): *The percentage of funds devoted to LDZEV supply equipment should be proportional to the amount these vehicles contribute to total air pollution for the State.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooreville Hydrail Initiative (Stan Thompson): *The percentage of funds devoted to LDZEV supply equipment should be proportional to the amount these vehicles contribute to total air pollution for the State.*

NC Clean Energy Technology Center (Richard Sapienza): *The allowable 15% of mitigation trust should be allocated to ZEV infrastructure. According to Electrify America, despite the \$2.0 billion National ZEV Plan expenditure on ZEV infrastructure, less than 10% of US charging needs will be met. See attached documents from NCSEA EV Working Group and Plug-In NC Steering Committee.*

UNC-Charlotte (Christopher Facente): *This is the easiest to convert and the most easily replaced. A light duty (1 ton or less) diesel truck can be an electric hybrid easily. Many small utility vehicles running on diesel can be converted or replaced to electric with no loss of benefits. A share of 30% would be fair.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

NCDOT- Ferry Division (Sterling Baker): *It is anticipated that repowering of the vessels mentioned in the Ferry Division's requests will not eliminate the demand for future capital replacement or refurbishment projects, but it will assist in moving these needs out several years in our long range capital replacement plan.*

NCDOT- Rail Division (Allan Paul): *There will be a significant demand for DERA-eligible projects under the VW settlement. The Rail Division's request is in fact a prime example of this – passenger rail equipment is not eligible for VW funds directly but could be funded as a DERA project. NCDOT's Piedmont passenger rail program passes through nine counties between Raleigh and Charlotte, NC, all of which are EPA non-attainment for one or more types of pollutant. Additionally, more than half of the population of North Carolina lives within a one-hour drive of the Piedmont corridor and as such is subject to the effects of locomotive air pollution. Thus affording the Rail Division opportunities to improve its locomotive emissions levels, via DERA funding, would have significant and far-reaching effects on the wellbeing of the citizens of North Carolina.*

Mooreville Hydrail Initiative (Stan Thompson): *There will be a significant demand for DERA-eligible projects under the VW settlement. MHI's request is in fact a good example of this – hydrail equipment is not eligible for VW funds directly but could be funded as a DERA project, and if funded would have a significant impact on emissions reduction.*

NC Clean Energy Technology Center (Richard Sapienza): *Similar to question 2, this is a tough question to answer. However, we fully support using mitigation funds to supplement DERA for locomotive eligible projects (repower and exhaust after treatment), as well as stationary (parking space electrification) and mobile idle reduction technologies (APUs and battery banks). In evaluating these types of projects for CMAQ funding, these types of projects have some of the highest emissions reductions per dollar spent. I would use DERA for only these types of projects, because the requirements of DREA are more rigorous than that of the mitigation decree. Keep projects that would be eligible under both DERA and Mitigation Trust under the Mitigation Trust.*

NC Forest Service (Joseph Gilroy): *Due to the cost of DERA eligible equipment, demand for shares of DERA funding should be high regardless of the number of project proposals submitted. For the North Carolina Forest Service (NCFS), it is extremely cost-prohibitive to regularly replace agricultural and construction equipment. The purchase of one replacement fire dozer unit, which includes a truck tractor, crawler tractor and trailer, would consume most of the NCFS annual equipment budget. Therefore, as the demand for replacement has grown, so too has the need for external funding sources to either carry or supplement the cost. NCFS expects that this will be the case for other government agencies and companies with relatively small equipment replacement budgets. NCFS anticipates that about half of the equipment it is seeking to replace would be eligible for more than \$18 million in DERA funding.*

UNC-Charlotte (Christopher Facente): *Not sure*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

NCDOT- Ferry Division (Sterling Baker): *DEQ should determine how much each project type contributes to overall levels of air pollution across the State, taking into account cost of upgrades/replacement vs. amount of pollution generated.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *If DEQ determines that the fundamental change from diesel to wireless electric railways will afford the maximum climate protection and pollution mitigation that should substantially apportion VW resource allocation.*

NC Clean Energy Technology Center (Richard Sapienza): *We would not set allocations for each eligible project type. Allow for the flexibility to let the market mechanism do its thing and demand will fall where it does. There should be attention and approval checks that a disproportionate amount of funding does not go to a specific technology and vehicle type due to a strong coalition alignment. As stated over and over in the clean transportation world, there is no silver bullet or one size does not fit all. There are certain applications and good fits for the available technologies. It is an all of the above solution. In the situation where funds are going to be used to supplement existing programs or be comingled with Federal funds then it is likely that an allocation amount will be required.*

UNC-Charlotte (Christopher Facente): *Determined by impact for air quality.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

NCDOT- Ferry Division (Sterling Baker): *Yes. The NCDOT Ferry Division is an excellent example of a State government agency that has embraced state-of-the-art technology to reduce air pollution on many of our Hatteras Class Vessels by repowering 5 of these vessels approximately 5 years ago under a Ferry Boat Discretionary Grant from FHWA – please note this program no longer exists, therefore funding to continue similar activities would have to come from some other source such as this VW settlement.*

NCDOT- Rail Division (Allan Paul): *Yes. The NCDOT Rail Division is an excellent example of a State government agency that has embraced state-of-the-art technology to reduce air pollution on its locomotives in the form of specialized catalytic reduction systems and battery technology, and this VW funding (via DERA) will be an excellent opportunity to continue this effort.*

Mooresville Hydrail Initiative (Stan Thompson): *Yes, assuming universities are included – government funded/collaborated projects often have significant impact on public wellbeing.*

NC Clean Energy Technology Center (Richard Sapienza): *There is an argument that can be made on both sides. Private sector entities are for profit and some are very profitable. Why don't they use their own money? On the same hand government fleets have tight budgets and many cannot and will not without the assistance, as well as benefit holistic benefit to the tax payer base. However, the private fleets typically have higher utilization of the vehicles and burn more fuel. Funding private fleets will have a bigger impact. And, for government fleets, there is more cooperation and communication, funding them will result in faster and wider spread adoption. Overall, we are asking both types of fleets to do something different and no matter how proven a technology, there is inherent organizational risk. The funding is a motivator that helps reduce the project risk. We think that both private and government entities should be included with a possible minimum allocation of 30% to 50% of the NC Mitigation Trust for government projects.*

NC Forest Service (Joseph Gilroy): *Funds should be awarded based on the project's ability to fully mitigate the lifetime excess NOx pollution emitted by VW vehicles that violated the Clean Air Act regardless of whether a government or nongovernment organization is conducting the work.*

UNC-Charlotte (Christopher Facente): *I believe a good project should go through no matter the proposer if it cleans the air; however, government projects may be able to achieve oversight and economies of scale that would allow for a greater impact per dollar spent. Public-Private partnerships should be encouraged to achieve the economy of scale. An example might be a grant to a municipality that can hire a single contractor to install equipment like EV chargers at both public and private business locations.*

7. Should funds be geographically distributed, and if so how?

NCDOT- Ferry Division (Sterling Baker): *Funds should be distributed in a manner that results in the maximum reduction of air pollution across the State, in keeping with the criteria suggested in Question #1 above.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *There is an argument that can be made on both sides. Private sector entities are for profit and some are very profitable. Why don't they use their own money? On the same hand government fleets have tight budgets and many cannot and will not without the assistance, as well as benefit holistic benefit to the tax payer base. However,*

the private fleets typically have higher utilization of the vehicles and burn more fuel. Funding private fleets will have a bigger impact. And, for government fleets, there is more cooperation and communication, funding them will result in faster and wider spread adoption. Overall, we are asking both types of fleets to do something different and no matter how proven a technology, there is inherent organizational risk. The funding is a motivator that helps reduce the project risk. We think that both private and government entities should be included with a possible minimum allocation of 30% to 50% of the NC Mitigation Trust for government projects.

NC Clean Energy Technology Center (Richard Sapienza): *There should be no geographic restrictions on fund distribution. There have been a number of areas in NC that been excluded from funding opportunities and have pent-up demand for clean transportation technologies. Some of these areas, eastern and western NC, have leadership and a demographic that meets the profile of an early adopter of these technologies. Furthermore, there is a halo effect. When one area adopts clean transportation technologies, their neighbors and competitors get interested. Also, there are some entities that operate across regions and restrictions will act as a barrier for changing technologies in that they will have a mix of technologies. We have seen that occur with CMAQ regional restrictions. There might be concern regarding areas that have a disproportionate negative air quality impact. Those regions have higher populations and population density. By that virtue there will be more project demand from those areas. Finally, we view clean transportation as a holistic approach that provides benefit every time and everywhere deployed.*

NC Forest Service (Joseph Gilroy): *Funds should be distributed in a way that ensures the widest geographical impact.*

UNC-Charlotte (Christopher Facente): *Historical non-attainment areas first.*

8. Should governmental entities be required to provide matching funds and if so, how much?

NCDOT- Ferry Division (Sterling Baker): *The Ferry Division recommends no matching fund requirement for government agencies.*

NCDOT- Rail Division (Allan Paul): *The Rail Division recommends that DEQ abide by the indicated VW criteria for percent matching funds for indicated projects; this should be applied equally to governmental and non-governmental agencies.*

Mooresville Hydrail Initiative (Stan Thompson): *In accordance with question 6, if DEQ determines addressing the hydrail transition will yield the most massive climate and pollution mitigation, the geography is less relevant.*

NC Clean Energy Technology Center (Richard Sapienza): *Yes, all entities should have some skin in the game. This will ensure that due diligence is done. If the 100% level of funding is employed, technology might be deployed in the wrong application and fail. The failure will have a negative ripple effect doing further damage. Many programs are successful funding less than 100% of the project. Some fund a percentage of the plus cost of the technology feature over a conventional vehicle. Where there is the requirement to scrap the engine or vehicle, we support funding a percentage of the total cost of the project. A target funding amount for government entities should be 25% to 50%. DERA is currently using 25% to 35%.*

NC Forest Service (Joseph Gilroy): *No. Many applications from governmental and non-governmental entities will be need based. Requiring a match from governmental entities may be*

cost-prohibitive to them and discourage the submission of what would be impactful and beneficial project proposals.

UNC-Charlotte (Christopher Facente): *Not on these funds, should be for projects not otherwise attainable. If matching funds are required the qualified matching should include in-kind and depreciated or current market value of retired and disabled equipment.*

9. Should DEQ establish a minimum project size and if so, what size?

NCDOT- Ferry Division (Sterling Baker): *The Ferry Division recommends that DEQ consider all projects regardless of size and provide funding in accordance with the criteria indicated in Question #1 above.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *DEQ should allocate VW funds in such a way the greatest mass of CO2 emission is avoided.*

NC Clean Energy Technology Center (Richard Sapienza): *Yes. This will help with administrative efficiency. It is typically about the same amount of work administratively for a small project as is a large project. Minimum project size should be \$25,000 to \$50,000. We suggest allowing multiple entities to collaborate and put together a group application with a lead organization such as a non-profit, trade association or supplier.*

UNC-Charlotte (Christopher Facente): *Yes at least \$100,000.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

NCDOT- Ferry Division (Sterling Baker): *In order to maximize the benefits of the settlement funding in reducing emissions support for government projects that provide support for North Carolina businesses and promote traffic conveyance with greatly reduced emissions should be looked at.*

NCDOT- Rail Division (Allan Paul): *DEQ should also consider the impact of implementing new technologies to combat air pollution. As noted above, the NCDOT Rail Division has implemented new air pollution reduction technologies onto one of its locomotives and has been nationally recognized for doing so. Continuing to embrace new technologies will establish North Carolina as a national leader in air pollution reduction efforts, which will in turn put the State at the forefront of opportunities for future funding for additional emissions reduction.*

Mooresville Hydrail Initiative (Stan Thompson): *DEQ should also consider the permanent and global impact of implementing new technologies like hydrail that have recently begun to be deployed in other countries. The Mooresville Hydrail Initiative brought zero carbon railway technology to China and Germany perhaps a decade sooner than would otherwise have occurred. Continuing to lead in introducing this new technology onshore will establish North Carolina nationally in air pollution reduction efforts while helping the State attract Federal funds to manufacture hydrail rolling stock, creating massive commerce and jobs.*

NC Clean Energy Technology Center (Richard Sapienza): *Same as stated in question 1. Prioritization of projects should be based on several primary dimensions. The first being*

emissions reductions with weighting on NOX criteria pollutant emissions which is the primary criteria pollutant of concern for air quality in NC. This is also the primary objective of the VW Mitigation fund. Other primary considerations should be efficiency of the reductions (\$ per kg or ton reduction), risk or likelihood of technology/project success, likelihood that project will contribute to further technology adoption by being a pilot or primer, technology diversity, and contributions to local job market and economy.

UNC-Charlotte (Christopher Facente): *Duration of the clean air. If a vehicle will only have a 5-year usefulness, then this project would be lower priority than a 10 year usefulness. Proposers should describe their capacity and experience in maintaining the equipment and its fuel source.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

NCDOT- Ferry Division (Sterling Baker): *The Ferry Division requests that DEQ continue to keep all interested parties apprised of the project schedule to ensure that all critical applications and other documentation is received within proper timeframes.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *Request that DEQ continue to keep all interested parties apprised of the project schedule to ensure that all critical applications and other documentation is received within proper timeframes.*

NC Clean Energy Technology Center (Richard Sapienza): *NCCETC respectfully offers and would welcome the opportunity to be involved on the project review board and be involved in the approval process. We have been doing similar for the past 12 years and have experience and knowledge regarding the eligible technologies.*

UNC-Charlotte (Christopher Facente): *Public visibility, market development for emerging technologies, and educational opportunities should earn credit in scoring.*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

NCDOT- Ferry Division (Sterling Baker): *The emissions reduction calculation tools provided in this RFI were not very helpful in regards to Ferry Division scopes, but the Ferry Division niche is a very specialized one. We had to get most of our data from vendors. DEQ should continue to make itself available as a resource to all parties interested in VW funding.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooresville Hydrail Initiative (Stan Thompson): *Emissions information from the recent publicly available Ernst and Young national study for converting Germany's diesel to hydrail should inform NC's decision considerably.*

NC Clean Energy Technology Center (Richard Sapienza): *Available resources to estimate emissions impacts include the EPA Diesel Emissions Quantifier, the AFLEET Tool, the CMAQ Toolkit, MOVES, and GREET. GREET returns well-to-wheel emissions results and ideally that would be the best way to evaluate projects. For example, pure electric vehicles can boast zero*

source or tailpipe emissions. Looking at projects that way is misleading, because unless the electricity was produced by wind or solar, there are emissions associated with the electricity. The Diesel Emissions Quantifier is the least attractive of the possible tools in that it is not as up to date as the other tools. AFLEET and CMAQ Toolkit are very easy to use.

UNC-Charlotte (Christopher Facente): Point scoring for impact based upon current metrics like amount reduced and impact. DEQ should make provisions to provide technical assistance with any emissions models they require proposers to use.

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

NCDOT- Ferry Division (Sterling Baker): The Ferry Division believes that DEQ does a good job of communicating solicitations for projects. Continued communication of future solicitations to previous applicants is important to ensure these solicitations receive positive feedback. DEQ should continue to encourage applicants to communicate opportunities for funding to their colleagues to increase interest and potential number of applicants.

NCDOT- Rail Division (Allan Paul): Same as Ferry Division

Mooresville Hydrail Initiative (Stan Thompson): DEQ has done a good job of communicating solicitations for projects. Continued communication of future solicitations to previous applicants is important to ensure these solicitations receive positive feedback. DEQ should continue to encourage applicants to communicate opportunities for funding to their colleagues to increase interest and potential number of applicants.

NC Clean Energy Technology Center (Richard Sapienza): A multi-channel approach should be employed, using brochures on a website, a series of regional informational sessions, and online live webinars. These would provide a platform to explain what projects are eligible, as well as provide high level technical information on the options. Primers with best practices and lessons learned should be part of all of these channel communications. A help center with a call-in number or question submission website should be established to clarify any confusion and address potentially unique situations. These questions should be compiled and added to an FAQ document. An extensive distribution list of target project participants needs to be compiled from past projects, professional groups and associations, trade publications, internal information sign-up lists, NC Clean Cities, NCCETC . . .

UNC-Charlotte (Christopher Facente): Greater communication through independent sources like NC Clean Energy or Clean Fuels Coalition. Consider having application categories for two or more scales, ranging from simple, brief, low cost proposals to complex, better documented, more expensive proposals. Multiple-scale applications could also allow DEQ to focus its selection and oversight efforts on spending and performance of larger projects. The largest projects (e.g. >\$5 million) might be required to host a sight review as part of the selection process.

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

NCDOT- Ferry Division (Sterling Baker): *Information such as scope, funding limits, and application requirements are critical for submitting proposals. DEQ communicates this information well in RFPs and announcements associated with funding solicitations.*

NCDOT- Rail Division (Allan Paul): *Same as Ferry Division*

Mooreville Hydrail Initiative (Stan Thompson): *Information such as scope, funding limits, and application requirements are critical for submitting proposals. DEQ communicates this information well in RFPs and announcements associated with funding solicitations.*

NC Clean Energy Technology Center (Richard Sapienza): *See question 13 response above.*

UNC-Charlotte (Christopher Facente): *Templates for financial and emission estimates, to reduce confusion on meeting the submission requirements. These should be part of an RFP package, but DEQ should also provide technical assistance (e.g. FAQ pages, contacts, tutorial videos/pages etc.).*

Transit - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

Charlotte Area Transit (E. D. McDonald): *Projects should be prioritized based upon emission reductions, project readiness and financial match. It is imperative that the emissions reduction calculations include consideration of the utilization of the vehicles as well. Implementing a project that will receive minimal usage will not provide as great a benefit as one that is utilized daily and serves numerous users. Funding for Bus replacements is in high demand statewide and can be implemented quickly and can easily demonstrate the number of daily and annual users and vehicle utilization. Additionally, the encouragement of matching funds from various sources will expand the reach and effect of the program.*

Go Triangle (Jeff Mann): *In an effort to maintain the highest level of compliance with the settlement, potential projects should be prioritized based on the following:*

- *Environmental impact - Projects that maximize reduction in emissions should be given the highest priority. Diesel for diesel power plant replacements meet the settlement requirements, however replacing a diesel vehicle with an electric or CNG engine will have a greater impact on the environment.*
- *Minimizing tax burden - Minimizing taxpayer subsidies by allocating settlement funds to public agencies should be considered. Distribution of VW settlement revenue between private and public providers should be weighted in favor of public agencies and the impact funding could have on the budgets of local governments. Reduction in federal funding for significant projects which are eligible for settlement grants should be considered when priorities are quantified.*
- *Project readiness - Inflationary pressure will minimize the impact of projects awarded if grantees are not in a position to quickly implement projects. The option of a near term purchase versus a purchase in future years could result in significant savings. Prioritization of this type would serve to maximize the purchasing power of the settlement.*
- *Project cost - Projects that maximize the investment of settlement funding, taking into account the environmental impact, should be given priority. This should include projects that include significant matching funds. For conversion to battery electric buses, GoTriangle will only request settlement funds to offset the increased initial cost of each bus and charging components, not the full cost of the vehicle.*
- *Commitment to sustainability - Settlement funds should be prioritized to assist agencies that have demonstrated a commitment to sustainability. Established transportation demand management programs should also be considered as commitment.*

NC DOT Public Transportation Division (Debbie Collins): *In an effort to maintain the highest level of compliance with the settlement, potential projects should be prioritized based for transit vehicles fueled by clean diesel, diesel hybrid, electric and CNG as follows:*

- *Environmental impact - focusing the settlement funds on applications targeting the greatest emitters, providing the greatest environmental benefit. Under the terms of the settlement, there are eleven categories eligible for funding. Four of these represent medium and heavy-duty on-road vehicles, which are also the greatest contributors of*

NOx emissions of the categories listed. In our urbanized areas, NC has a need to replace 910 buses between FY18-23 which exceed their useful life of 15 years. Some are older than 20 years. The reduction in NOx would occur with vehicle replacements of any type - clean diesel, diesel hybrid, electric and CNG.

- *Minimizing tax burden - minimizing taxpayer subsidies by allocating settlement funds to public entities should be considered. This minimizes the impact on local government budgets. Reduction in federal funding for significant projects which are eligible for settlement grants should be considered when priorities are quantified.*
- *Project readiness - inflationary pressure will minimize the impact of projects awarded if grantees are not in a position to implement projects in a timely manner. The option of a near term purchase versus a purchase in future years could result in significant savings. Prioritization of this type would serve to maximize the purchasing power of the settlement.*

Proterra (Eric McCarthy): *First, we urge the DEQ to adopt the competitive funding programs in place in California and at the federal level. The CA Zero-Emission Truck and Bus Program is a competitive funding program that allows all manufacturers of zero-emission technology to partner with transit agencies and compete for project funding. It is very much modeled after the highly competitive Federal Transit Administration's Low or No Emission Program, which has helped fund the purchase of zero emission transit buses across the US and in the state of North Carolina. The CA program is important in that it allows newcomers to receive funding for not only buses, but also chargers.*

Second, we request the DEQ to adopt the successful voucher/incentive programs that are helping to accelerate the adoption of heavy-duty EV buses. California's Hybrid & Zero-Emission Truck and Bus Voucher Incentive Program (HVIP) is a pool of money that is used by transit agencies on a first come, first served basis to bridge the gap between purchasing a fossil fuel vehicle and a zero-emission vehicle. New York City (New York Truck Voucher Incentive Program) and Chicago (Drive Clean Truck Voucher Program) have implemented similar programs. These programs have proven valuable in allowing agencies (and commercial properties) to grow their fleets of zero-emission buses.

Cape Fear Public Transportation Authority (William Bryden): *Same as Go Triangle.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *We would like to let the MPO's and RPO's (COG's) prioritize the projects for their respective areas.*

City of Asheville (Amber Weaver): *In order to have the most significant impact on air quality across North*

Carolina potential projects should be based on the following:

- *Environmental Impact: The funds should target vehicles that have the greatest emissions or reduce the number of vehicles on the road. Considerations should be prioritized by average yearly miles driven, average yearly fuel consumption and reduction of vehicles on the road.*
- *Market Transformation: Projects that will support a change in market behavior by removing identified barriers or accelerate the adoption of all cost-effective low emission vehicles as a matter of standard practice. These projects will stimulate economic activity or opportunities in the green economy. This should include public sector projects that have the ability to influence private sector activity.*

- *Economic Stability: Projects that will decrease costs for the citizens of North Carolina should be prioritized. This should include projects for governmental agencies which will result in a decrease of cost that is supported by taxpayer dollars. These dollars will be able to be diverted to providing economic stability through affordable housing, increased infrastructure, public education, etc.*
- *Sustainable Policies: Organizations that have dedicated policies to sustainability and resiliency should be given priority. This ensures that these funds will support systemic change to reduce the impact on our environment as well as respond the changes in our atmosphere as a direct result of vehicle emissions and climate change.*
- *Preparedness: Organizations that the demonstrated the need and ability to replace vehicles quickly should be expedited. This will magnify the impact of this funding by taking high emission vehicles off the road more quickly.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *In an effort to maintain the highest level of compliance with the settlement, we believe potential projects should be prioritized based on the following:*

- *Environmental Impact – projects that provide the maximum reduction in emissions should be given this highest priority, while also taking into account maximum return on investment.*
- *Project Cost/Return on Investment – when developing the quantifiable criteria by which all projects will be judged, the scale should be weighed to maximize the greatest return on investment.*
- *Tax Burden Reduction - minimizing taxpayer subsidies by allocating settlement funds to public entities before private companies should be considered. Distribution of VW settlement revenue between private and public providers should be weighted in favor of public agencies and the impact funding could have on the budgets of local governments.*
- *Project Readiness – Prioritization should be given to projects that are ready to be implemented to reduce overruns and inflationary increases, which would minimize the effectiveness of the purchasing power of the settlement moneys. Projects should be evaluated based on the extent to which the project is ready to implement within a reasonable period of time.*
- *Demonstration of Need - Applicants must demonstrate how the proposed project will address an unmet need for capital investment and mitigation of emissions.*
- *Demonstration of Benefits – Applicants should be able to demonstrate the benefits of the project’s ability to reduce emissions, while placing emphasis on creating economic improvement and support for partnerships between public agencies, non-profit organizations and the private sector.*
- *Demonstration of Capability - Applicants must demonstrate that they have the technical, legal and financial capacity to undertake the project. Applicants should also demonstrate how the proposed project is consistent with local and regional long-range planning documents and local government priorities and local financial commitment to the project.*

City of High Point (Greg Demko): *Same as NC DOT Public Transportation Division.*

iv. Project cost – projects that maximize the investment of settlement funding, taking into account the environmental impact, should be given priority. For example, if an entity can purchase two Class 4-8 vehicles that are powered by clean diesel for the cost of a single electric vehicle, the two-vehicle purchase would be more impactful thereby justifying a higher priority.

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *The City of Winston-Salem, the Winston-Salem Transit Authority (WSTA) and the Office of Environmental Assistance of Forsyth County are of the opinion that projects should be prioritized in accordance with its potential reduction of NOx emissions. We believe such projects as the replacement of existing diesel buses with alternatively fueled buses offer the greatest potential and should receive the highest priority.*

City of Raleigh (David Eatman): *The City encourages prioritization of public projects to lessen taxpayer burden. Allocation of funds from the settlement, for all purposes, not just for transit vehicles, should be allocated through a competitive process, based on strength of application and ability to match funds, including leveraging settlement funds with local and/ or federal participation.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as NC DOT Public Transportation Division and City of Asheville.*

Individual Citizen Emails: *DAQ received 8 additional emails advocating bus electrification, and spending funds on public transportation and CNG bus programs.*

2. What is the anticipated demand for each eligible project type?

Charlotte Area Transit (E. D. McDonald): *CATS believes that the replacement of transit vehicles would be one of the greatest demands within the 9 eligible project types listed in section 3.*

East Carolina University Transit (Wood Davidson): *The availability of diesel mitigation funds would significantly impact our ability to replace aging heavy-duty transit buses with new clean compressed natural gas transit buses. ECU Transit, in partnership with Greenville Utilities, began purchasing clean CNG powered heavy-duty transit buses in 2016. The natural gas engine from Cummins, produced in North Carolina, significantly reduces emissions compared to the standard diesel transit bus for a nominal upcharge of \$40,000 per transit bus. To date, we have purchased four new transit buses powered by clean CNG with two additional units to be built and delivered in April 2018. Natural gas provides a clean alternative fuel option to diesel at an affordable price point as compared to other options such as battery electric technology which has reduced operating range and costly infrastructure requirements.*

Go Triangle (Jeff Mann): *Support for bus capital funding has decreased since 2012 primarily due to reduced federal funding. The impact of this reduction in funding has been significantly impacted the transit industry. The decrease in federal funding has been compounded by rising commodity costs, changes to compliance regulations and increasing onboard technology investments. While significant demand for discretionary funding is expected, high demand among transit providers should be expected due to aging fleets and decreased federal support.*

NC DOT Public Transportation Division (Debbie Collins): *Congressional support for bus capital under USC 49 has decreased over 100% from 2012 to 2016. This change was primarily due to the elimination of federal congressional earmarks in 2009. The impact of this reduction in funding has been significantly impactful to the transit industry. The decrease in federal funding has been compounded by inflationary pressures, rising commodity costs, changes to compliance regulations, and increasing onboard technology investments. While significant demand for*

discretionary funding is expected, high demand among transit providers should be expected due to aging fleets and decreased federal support.

Cape Fear Public Transportation Authority (William Bryden): *Same as Go Triangle.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *We can see a demand for public transportation vehicles.*

City of Asheville (Amber Weaver): *We anticipate that there will be a high demand for replacement vehicles within government agencies as more and more jurisdictions embrace more efficient fleet policies.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *The elimination of Congressional earmarks in 2009 has had a significant impact on the public transit; a reduction in over 100% for available federal funds for bus capital purchases between the years of 2012 and 2016. This has resulted in many transit agencies running older buses long past their defined useful life. This extension has led to a backlog in the need of transit agencies to replace aging heavy duty and light duty diesel vehicles. Replacement of these older vehicles would result in a high return on investment as newer buses – especially zero emission buses – would result in a massive mitigation of high emission vehicles.*

City of Greensboro (Adam Fischer): *The City of Greensboro fully supports the effort to deploy 100% electric buses in North Carolina and urges you to give strong consideration for Public Transit initiatives to increase sustainable mobility options for the State.*

City of High Point (Greg Demko): *Same as NC DOT Public Transportation Division.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *We believe the replacement of diesel buses with alternatively fueled buses would aid in the anticipated demand of the Business 40 interstate closure (Fall 2018 to Summer 2020). In anticipation of the 1.2-mile closure, the city and WSTA have evaluated its transit system and developed mitigation strategies to meet the anticipated demand.*

City of Raleigh (David Eatman): *The City of Raleigh is supportive of the inclusion of Class 4-8 public transit vehicles as an eligible project type in North Carolina's distribution of the Volkswagen (VW) Mitigation Trust Fund monies.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as NC DOT Public Transportation Division.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Charlotte Area Transit (E. D. McDonald): *Significant investment in electric charging stations and parking was made under various grants of ARRA funds. Unless this section could be utilized to provide funding to help offset the cost of construction/implementation of a CNG fueling facility, CATS believes that the investment in this category should be a lower priority.*

Go Triangle (Jeff Mann): *GoTriangle proposes to deploy zero tailpipe emission battery electric buses, both for replacement and expansion purposes.*

Proterra (Eric McCarthy): *To achieve that primary goal, Proterra encourages the DEQ to promote the adoption of zero-emission technology, and not "near-zero" technology.*

Cape Fear Public Transportation Authority (William Bryden): *our initial comment to this request would be to challenge the term "zero emission." A more accurate moniker would be "zero on board emission" vehicles. For demonstration purposes, compare a compressed natural gas vehicle to an all-electric bus. Assuming the utility is producing electricity from natural gas, which many in the state are, both a natural gas-powered vehicle and an electric vehicle would produce propulsion from the same natural resource, thereby emitting similar amounts of tailpipe exhaust.*

Infrastructure costs, whether they are allocated to a natural gas fueling station, or to charging stations for electric vehicles can be significant. This would reduce trust funds available for vehicle replacement. Wave Transit supports a grant program with VW trust funds that demonstrates a prior commitment to alternative fuels. This would limit funding for infrastructure investments and direct settlement funds to vehicle replacement which will directly lead to increased reduction in emissions. Without including cumbersome requirements in the grant application, it is conceivable that government agencies could invest significant trust funds to vehicle supply equipment that would be underutilized without additional investment outside of trust funding. This would be the most inefficient investment of trust funds.

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *We would like to investigate the Light Duty Zero Emission Vehicles for our area.*

City of Asheville (Amber Weaver): *We suggest that this be redefined as "zero emission vehicles and/or charging infrastructure". This will provide the market the most flexibility while ensuring that emission-free vehicles are the result.*

City of High Point (Greg Demko): *Infrastructure costs, whether they are allocated to a natural gas fueling station, or to charging stations for electric vehicles can be significant. This would reduce trust funds available for vehicle replacement. Directing funds to vehicle replacement will directly lead to increased reduction in emissions.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *Not applicable to the services provided by WSTA.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as City of High Point.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Charlotte Area Transit (E. D. McDonald): *CATS believes that significant demand for capital vehicle replacement exists, and it is not anticipated that VW settlement funding will eliminate demand but should help address some demand.*

Go Triangle (Jeff Mann): *Significant demand for capital vehicle replacement already exists, and it is not anticipated that VW settlement funding will eliminate this demand but should provide assistance in meeting vehicle replacement and expansion needs.*

NC DOT Public Transportation Division (Debbie Collins): *Significant demand for capital vehicle replacement exists, and it is not anticipated that VW settlement funding will eliminate demand but should relieve some demand.*

Cape Fear Public Transportation Authority (William Bryden): *Significant demand for capital vehicle replacement exists, and it is not anticipated that VW settlement funding will eliminate demand but should relieve some exigency.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Depends on the cost and available funding.*

City of Asheville (Amber Weaver): *Not sure.*

City of High Point (Greg Demko): *Anticipated Demand Outside the VW Settlement - significant demand for capital vehicle replacement exists, and it is not anticipated that VW settlement funding will eliminate demand but should relieve some demand.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *Not applicable to the services provided by WSTA.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as Cape Fear Public Transportation Authority.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Charlotte Area Transit (E. D. McDonald): *Funding should be allocated based on the priorities outlined in number 1 of this section. The number one priority should be diesel emission reduction. Projects that demonstrate the greatest diesel emission reduction in the most economical manner when considering utilization should receive priority.*

Go Triangle (Jeff Mann): *Funding should be allocated based on the priorities outlined in number 1 of this section. DEQ is tasked with implementing the provisions of the settlement and a key priority should be diesel emission reduction. Projects that demonstrate the greatest diesel emission reduction in the most economical manner should receive priority.*

Proterra (Eric McCarthy): *Proterra strongly urges the DEQ to consider allocating a minimum of 25% of its mitigation funding for zero-emission, battery electric transit buses. Additionally, we suggest that the state pay 110% of only the incremental costs of the buses and required charging infrastructure, much like the state of Colorado has proposed in its draft mitigation plan. This approach will help spur the adoption of a greater number of electric buses among transit agencies, airports and universities.*

NC DOT Public Transportation Division (Debbie Collins): *Funding should be allocated based on the priorities outlined in number 1 of this section. The number one priority should be diesel emission reduction. Projects that demonstrate the greatest diesel emission reduction in the most economical manner should receive priority.*

Cape Fear Public Transportation Authority (William Bryden): *In the opinion of the Cape Fear Public Transportation Authority, funding should be allocated based on the priorities*

outlined in number 1 of this section. DEQ is tasked with implementing the provisions of the settlement and the number one priority should be diesel emission reduction. Projects that demonstrate the greatest diesel emission reduction in the most economical manner should receive priority without regard to competing project types.

Weighted distribution to areas with a higher percentage of affected vehicles sold should receive strong consideration. DEQ data highlights the areas where affected Volkswagen's were sold throughout the state. The areas where these vehicles were sold should be afforded greater consideration for settlement distribution.

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *The MPO's and RPO's could develop the percentages depending on the need of each area.*

City of Asheville (Amber Weaver): *Allocation should be distributed based on the need that is demonstrated through the RFI process.*

City of High Point (Greg Demko): *Funding Percentage Allocation - funding should be allocated based on the priorities outlined in number 1 of this section. The number one priority should be diesel emission reduction. Projects that demonstrate the greatest diesel emission reduction in the most economical manner should receive priority.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *The percentage of available funds should be distributed in accordance with their potential for NOx reduction.*

Piedmont Authority for Regional Transportation (Scott Rhine): *In the opinion of the Piedmont Authority for Regional Transportation, funding should be allocated based on the priorities outlined in number 1 of this section. The number one priority should be diesel emission reduction within government fleets which provide the most trips for the people of North Carolina.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Charlotte Area Transit (E. D. McDonald): *Yes, projects that reduce the burden on NC taxpayers should receive that highest priority. Furthermore, government agencies are best set up to utilize these funds while maintaining openness and accountability to the public for their use.*

Go Triangle (Jeff Mann): *Projects that reduce the burden on North Carolina taxpayers should receive high priority.*

NC DOT Public Transportation Division (Debbie Collins): *Projects that reduce the burden on North Carolina taxpayers should receive the highest priority. Should surplus settlement funding be available, private projects could be considered. The responsibility of public agencies to allocate settlement funds in compliance with grant requirements will lead to less administrative burden for DEQ and significantly higher compliance. North Carolina's transit system have a high level of oversight and expectations for compliance.*

Cape Fear Public Transportation Authority (William Bryden): *Projects that reduce the burden on North Carolina taxpayers should receive the highest priority. Should surplus settlement funding be available, private projects could be considered. The responsibility of public agencies to allocate settlement funds in compliance with grant requirements will lead to less*

administrative burden for DEQ and significantly higher compliance. North Carolina governments are held to a standard and have internal controls and available staff that will produce the highest level of conformity with the settlement requirements. Compliance by private entities over the life

cycle of a vehicle funded by the trust could be burdensome. Settlement funding awarded to public agencies will reduce taxpayer funded investments at the federal, state, and local levels and provide a far greater return on investment for taxpayers than settlement funding awarded to private providers, while meeting the ultimate goal of emission reduction.

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *That would be good idea to investigate further.*

City of Asheville (Amber Weaver): *Yes, a percentage of the funding should be reserved for governmental projects. Projects that aim to maximize the environmental impact as well as the societal cost should fast-tracked. Investments in government projects reduce the cost to taxpayers in the long term and should be prioritized.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *As mentioned above, projects that reduce the burden on North Carolina taxpayers should receive the highest priority. Government agencies are uniquely suited to steward these funds as we already possess the necessary staff and continuing controls in place to ensure proper use of funds in accordance with both federal and state regulations. Likewise, the ability of government agencies to meet these regulatory demands in house would reduce the oversight burden on DEQ.*

City of High Point (Greg Demko): *Projects that reduce the burden on North Carolina taxpayers should receive the highest priority. Should surplus settlement funding be available, private projects could be considered. The responsibility of public agencies to allocate settlement funds in compliance with grant requirements will lead to less administrative burden for DEQ and significantly higher compliance. North Carolina governments are held to a standard and have internal controls and available staff that will produce the highest level of oversight and compliance with settlement requirements. Settlement funding awarded to public agencies will reduce taxpayer funded investments at the federal, state, and local levels and provide a far greater return on investment for taxpayers than settlement funding awarded to private providers, while meeting the ultimate goal of emission reduction.*

City of Winston Salem (Art Barnes/Toneq’ McCullough/Minor Barnette): *Yes. A percentage of mitigation trust funds should be reserved for government projects in that the settlement is a result of proactive prosecution by a government agency tasked with protecting the environment. Therefore, the interests of the public should be preserved and perpetuated through government projects that mitigate damage resulting from excessive NOx emissions from VW automobiles. Moreover, the government operates many of the eligible project types designated in the settlement.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as Cape Fear Public Transportation Authority.*

7. Should funds be geographically distributed, and if so how?

Charlotte Area Transit (E. D. McDonald): *A higher emphasis should be placed on benefit and demand for the use of these funds.*

Go Triangle (Jeff Mann): *Matching funds should be considered to broaden the reach of settlement funding. As noted previously, GoTriangle proposes to only seek settlement funds for the delta between a diesel and an alternative fuel vehicle (and related components). For example, the estimate initial capital cost of a state of the art battery electric bus is approximately \$980K. A new full size Gillig diesel bus is approximately \$500K. In this case matching funds total over 50% per vehicle.*

NC DOT Public Transportation Division (Debbie Collins): *Geographical equity between urban and rural areas should be considered. It is also imperative to distribute the funds in an equitable manner between the large urban areas including Charlotte, the Triad and Triangle, and the urban centers in the eastern and western portions of the state. Prioritizing funding to ozone non-attainment areas would be short sighted. Areas meeting EPA clean air requirements can only continue to maintain such status by continued investment in emission reduction efforts.*

Cape Fear Public Transportation Authority (William Bryden): *Geographical equity between urban and rural areas should be considered. It is also imperative to distribute the funds in an equitable manner between the large urban areas including Charlotte, the Triad and Triangle, and the urban centers in the eastern and western portions of the state. Prioritizing funding to ozone non-attainment areas would be short sighted. Areas meeting EPA clean air requirements can only continue to maintain such status by continued investment in emission reduction efforts.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *They should be distributed by population to the MPO's and RPO's across the state.*

City of Asheville (Amber Weaver): *Not necessarily. Priority should be given to projects and communities that are demonstrating commitment to clean air and expedited based on the list included in #1.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *We believe DEQ should consider a plan that foster's geographical equity between urban and rural areas. It is imperative to distribute the funds in an equitable manner between the large urban areas across the state and among rural entities.*

City of High Point (Greg Demko): *Geographical equity between urban and rural areas should be considered. It is also imperative to distribute the funds in an equitable manner between the large urban areas including Charlotte, the Triad and Triangle, and the urban centers in the eastern and western portions of the state. Prioritizing funding to ozone non-attainment areas would be short sighted. Areas meeting EPA clean air requirements can only continue to maintain such status by continued investment in emission reduction efforts.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *Yes, funds should be proportionally distributed throughout the state, based on air quality levels of the area and potential reduction from the proposed project.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as Cape Fear Public Transportation Authority.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Charlotte Area Transit (E. D. McDonald): *A match should be encouraged from all applicants to maximize the effect of the program and to ensure project sponsor commitment to the project. The amount of the match should be a factor in the rating/award of the project. The source of the match should be flexible and allow any combination of funds available to the local sponsor to maximize potential investment.*

Go Triangle (Jeff Mann): *To maximize the impact of settlement funding in reducing emissions, the evaluation of cost effectiveness should include an assessment of the hours and/or miles the proposed vehicles will be operated. Projects that include vehicles that will operate on a limited or somewhat limited basis will not provide the same level of benefit and highly utilized vehicles such as transit buses, which in many cases operate well in excess of 40,000 miles per year.*

NC DOT Public Transportation Division (Debbie Collins): *There is no debate that requiring matching funds will broaden the reach of settlement funds and an argument could be made for matching fund requirements, but the process could prove burdensome. Also, projects often are delayed due to lack of matching funds. NCDOT favors no matching fund requirements for government agencies.*

Cape Fear Public Transportation Authority (William Bryden): *There is no debate that requiring matching funds will broaden the reach of settlement funds and an argument could be made for matching fund requirements, but the process could prove burdensome. For example, could local, state and/or federal funding be considered matching funds? What about subsidized program revenues? Would a matching fund requirement eliminate a quality project? Would the matching fund requirement be more burdensome to a small entity or a rural agency thereby impacting geographical equity? It could be argued that matching funds demonstrate a commitment to the project which would support the argument. The Authority favors no matching fund requirements by government agencies for the benefit it would provide to taxpayers as mentioned earlier. If utilized, matching funds for government sponsored projects should not exceed 10% of the project cost. Wave Transit supports matching fund requirements for private entities in accordance with the Eligible Mitigation Action 1 - 10: DERA Options for nongovernment owned assets only after the needs of governments are addressed.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Requiring a 20% match would be reasonable since most local governments are required to pay 20% for other government programs.*

City of Asheville (Amber Weaver): *Yes, local matches ensure that governments are committed and have vetted the viability of a project. Without local matches, scarce financial resources can be squandered because there is no public cost.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *Matching funds will not only increase the reach and purchasing power of the settlement funds, and allow for a wider array and larger quantity of projects, but will also ensure a local commitment in the continued mitigation of emissions. A requirement of 10% matching funds would not be unreasonable and would serve to ensure a continued local commitment to investing in the infrastructure needed for continuing new technologies.*

City of High Point (Greg Demko): *There is no debate that requiring matching funds will broaden the reach of settlement funds and an argument could be made for matching fund requirements, but the process could prove burdensome. Also, projects often are delayed due to*

lack of matching funds. The City of High Point favors no matching fund requirements for government agencies.

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *No, governmental entities should not be required to provide matching funds, considering this settlement is a result of the proactive prosecution by the government.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as Cape Fear Public Transportation Authority.*

9. Should DEQ establish a minimum project size and if so, what size?

Charlotte Area Transit (E. D. McDonald): *Yes, in order to minimize the amount of funds going toward oversight/overhead a minimum project cost should be established. This would encourage smaller projects/applicants to partner with each other to help improve program efficiency and project efficiency.*

Go Triangle (Jeff Mann): *An agency's ability to manage grant funding in a responsible and compliant manner should be considered. This will not only serve to ensure compliance but will reduce the administrative burden on DEQ.*

NC DOT Public Transportation Division (Debbie Collins): *Taking into account the administrative burden on the trustee, restricting a project to a minimum cost could lead to a quality project being excluded. NCDOT trusts DEQ's experience with different project sizes to answer this question.*

Cape Fear Public Transportation Authority (William Bryden): *Taking into account the administrative burden on the trustee, restricting a project to a minimum cost could lead to a quality project being excluded. This is especially true in a rural area. That said, projects under \$500,000 could be difficult to justify.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Minimum project size should be \$50,000.*

City of Asheville (Amber Weaver): *Perhaps a minimum number of miles driven or gallons of fuel to be transitioned from. We should judge the reduced impact of emissions not the size of the vehicle.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *There are two equally valid arguments to be made here: minimum project size would reduce the number of projects that DEQ has to exercise oversight on, but at the same time might eliminate smaller, quality projects – especially in rural areas – thus affecting the equitable distribution discussed above. If DEQ sets a minimum project size, it might be prudent to consider two separate categories for award and set different criteria for each: i.e. small-scale project and large-scale projects.*

City of High Point (Greg Demko): *Taking into account the administrative burden on the trustee, restricting a project to a minimum cost could lead to a quality project being excluded.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *Yes, the DEQ should establish a minimum project size commensurate with project award. We are of the opinion*

that the full utilization of awarded funds will have the maximum effect on the reduction of NOx in designated areas.

Piedmont Authority for Regional Transportation (Scott Rhine): *Taking into account the administrative burden on the trustee, restricting a project to a minimum cost could lead to a quality project being excluded. This is especially true in a rural area. It may be more appropriate to set the minimum project size by another measure than by cost.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Charlotte Area Transit (E. D. McDonald): *To maximize the impact of settlement funding in reducing emissions the cost effectiveness evaluation should include the utilization (amount of hours and/or miles) the proposed project is operated.*

Go Triangle (Jeff Mann): *Significant data exists to demonstrate the benefits of replacing an eligible diesel engine with a newer model, regardless of fuel type. Verifiable data also exists to demonstrate additional emission reduction from alternative fuels and electric propulsion vehicles. The attached FTA No Emission/Lo Emission grant application that was submitted earlier this year includes an estimate of emission reduction that would be realized through the deployment of just seven battery electric buses. The grant application is attached for your review.*

NC DOT Public Transportation Division (Debbie Collins): *To maximize the impact of settlement funding in reducing emissions, cost effectiveness evaluation should include the amount of hours and/or miles the proposed vehicles are operated. Support for government projects that benefit North Carolina businesses would be beneficial to private manufacturers operating in the State.*

Cape Fear Public Transportation Authority (William Bryden): *To maximize the impact of settlement funding in reducing emissions, cost effectiveness evaluation should include the amount of hours and/or miles the proposed vehicles are operated. Support for government projects that benefit North Carolina businesses would be beneficial to private manufacturers operating in the State. Priority should be afforded to projects that include manufacturing activities and job support to North Carolina businesses.*

Alternative fuel projects which reduce emissions at levels higher than diesel engines should also be given priority. While current diesel technology meets the requirements of the settlement and would reduce emissions significantly, proven affordable and available technology exists to exceed the minimum requirements. NC DEQ should provide the greatest support for projects that exceed minimal expectations.

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *That projects can be sustained in the future.*

City of Asheville (Amber Weaver): *Yes, they should consider the cost per metric ton of carbon that is offset by each vehicle.*

City of High Point (Greg Demko): *To maximize the impact of settlement funding in reducing emissions, cost effectiveness evaluation should include the amount of hours and/or miles the*

proposed vehicles are operated. Support for government projects that benefit North Carolina businesses would be beneficial to private manufacturers operating in the State.

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *The population of the proposed project should be evaluated to determine how many people overall will benefit from the proposed project. In addition, socioeconomic data such as low income, elderly, children and/or minority groups should be evaluated to determine if the project has a greater impact to these groups. Lastly, air quality levels and the amount of reduction with the proposed project should be a determinant in evaluating projects as well.*

City of Raleigh (David Eatman): *A competitive process that would allow VW Settlement funding to pay for the differential between the cost of an electric or compressed natural gas (CNG) bus, as compared to the cost of a diesel bus, would be transformative for the region in shaping the provision of bus service and meeting the City's goals of transitioning to alternative fuel vehicles.*

Piedmont Authority for Regional Transportation (Scott Rhine): *To maximize the impact of settlement funding in reducing emissions. DEQ's evaluation of proposed project should include the estimated number of single occupant vehicles taken off the road and the estimated VMT that represents; the amount of days, hours and miles the proposal vehicles are operated throughout each month or annually; and the actions of the agency to provide seamless connectivity across political boundaries. All of these points factor into the ease in which the public take advantage of vehicle emission reducing travel modes.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Charlotte Area Transit (E. D. McDonald): *As stated in #1 above, the amount of project match being provided should be a consideration.*

Go Triangle (Jeff Mann): *An agency's ability to manage grant funding in a responsible and compliant manner should be considered. This will not only serve to ensure compliance but will reduce the administrative burden on DEQ.*

NC DOT Public Transportation Division (Debbie Collins): *As highlighted in previous responses, an agency's ability to manage grant funding in a responsible and compliant manner should be considered.*

Cape Fear Public Transportation Authority (William Bryden): *Same as NC DOT Public Transportation Division. This will not only serve to ensure compliance but will reduce the administrative burden on DEQ and prevent situations where non-compliance could prove counterproductive.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Number of population affected and specific populations (low income, elderly).*

City of Asheville (Amber Weaver): *Funding should not be allocated to any project that aims to pilot or test vehicles because there are communities that have already demonstrated commitments to transition to zero-emission vehicles and it would be better to fund jurisdictions that are moving in a direction that will move the market rather than offering scarce funds for trials that tend to lack political commitment. This is the standard for FTA's Low or No Emission Vehicle Program.*

Town of Chapel Hill – Chapel Hill Transit (Brian Litchfield): *Consistent feedback, not only on the development of the criteria, but also on the selection and rejection process would be beneficial to all agencies and could be easily accomplished through webinars, conference calls or even regional meetings for question and answer sessions. Specifically, highlighting successful awards and why they were chosen would help agencies tailor their projects to meet DEQ settlement goals and reduce the time DEQ spends reviewing any potential future applications.*

City of High Point (Greg Demko): *Same as NC DOT Public Transportation Division.*

City of Winston Salem (Art Barnes/Toneq’ McCullough/Minor Barnette): *Scoring criteria should be based on all of the above factors; however, “air quality” should receive at least 50% or more in project evaluation scoring.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Cape Fear Public Transportation Authority*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Charlotte Area Transit (E. D. McDonald): *There are several tools that are publicly available from the CMAQ process that could be utilized for this purpose. CATS agrees that it is important to have a set of tools available to effectively and fairly evaluate each project.*

Go Triangle (Jeff Mann): *Significant data exists to demonstrate the benefits of replacing an eligible diesel engine with a newer model, regardless of fuel type. Verifiable data also exists to demonstrate additional emission reduction from alternative fuels and electric propulsion vehicles. The attached FTA No Emission/Lo Emission grant application that was submitted earlier this year includes an estimate of emission reduction that would be realized through the deployment of just seven batter electric buses. The grant application is attached for your review.*

NC DOT Public Transportation Division (Debbie Collins): *Absent significant investment in air quality monitoring equipment, quantifying success could be challenging. Significant data exists on bus emissions as shown in the answer to question #3.*

Cape Fear Public Transportation Authority (William Bryden): *Absent significant investment in air quality monitoring equipment, quantifying success could be challenging. Significant data exists to demonstrate the benefits of replacing an eligible diesel engine with a newer model, regardless of fuel type. Verifiable data also exists to demonstrate additional emission reduction from alternative fuels and electric propulsion vehicles.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *We have ozone-reducing resources.*

City of Asheville (Amber Weaver): *EPA Greenhouse Gas Equivalency Calculator: [link](#).*

City of High Point (Greg Demko): *Same as Cape Fear Public Transportation Authority.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *In order to calculate emission reductions, the most recent EAP and State of NC data should be available for Ozone and PM 2.5.*

Piedmont Authority for Regional Transportation (Scott Rhine): *The Argonne GREET, NCDAQ Mobile 6 or CARB models are all sufficient to estimate anticipated emissions reductions when replacing a 2009 or older transit bus with a newer transit bus.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Charlotte Area Transit (E. D. McDonald): *Partnering with NCDOT, the NC Association of MPOs and the NC Public Transportation Association could help in this area.*

NC DOT Public Transportation Division (Debbie Collins): *Use the partners created in this process to share the news of these opportunities.*

Cape Fear Public Transportation Authority (William Bryden): *A certain level of administrative resources and experience in diesel fleet management is vital to a successful grant program from settlement funds. Expanding the scope of involvement in the program is admirable but could lead to failure of grantees to implement successful projects which could dilute the impact of settlement funding.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Public workshops to better explain the process.*

City of Asheville (Amber Weaver): *Please prioritize projects that can use funding in the first years in order to provide maximum benefits to communities quickly. If funds are not available until later years, the age of vehicles should be adjusted as pre-2009 vehicles will be largely out of service.*

City of High Point (Greg Demko): *Same as Cape Fear Public Transportation Authority.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *Through publications as well as in-person and online information sessions, the DEQ could better inform and educate potential stakeholders and increase participation in future projects.*

Piedmont Authority for Regional Transportation (Scott Rhine): *PART does not know of any barriers to participation which DEQ could address. The barriers I know of are set by the settlement and cannot be changed. There may be government agencies across the state which do not understand how the settlement might benefit them or how they may be eligible to apply for funds; however, this is a matter of education/getting the word out and not a matter.*

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Charlotte Area Transit (E. D. McDonald): *Utilization of your website is important; but, continued use of the partners mentioned in 13 and the inclusion of all RFI responders on an email list would also be beneficial.*

Go Triangle (Jeff Mann): *As a potential stakeholder, GoTriangle would benefit from consistent feedback highlighting successful settlement awards and methods for improving applications. A clear understanding of how settlement funds are proposed to be distributed including: annual awards; award types; public private split (if applicable); geographic distribution; and detailed annual reporting would allow stakeholders to develop strategies for future submittals. Additional resources could include webinars and listening sessions as well as regional questions and answer sessions. If implemented, these steps should lead to increased interest in the program, better applications for settlement funding, simplified project evaluations, reduced administrative burden, and a high level of transparency.*

NC DOT Public Transportation Division (Debbie Collins): *NCDOT PTD will assist DEQ in sharing and communication about the opportunities.*

Cape Fear Public Transportation Authority (William Bryden): *Same as Go Triangle.*

Greater Hickory MPO/Western Piedmont Regional Transit Authority (John Marshall): *Probably more time to research the topics and respond.*

City of Asheville (Amber Weaver): *Specific guidelines and standards for how to calculate cost effectiveness and measure anticipated environmental impact.*

City of High Point (Greg Demko): *Same as Go Triangle.*

City of Winston Salem (Art Barnes/Toneq' McCullough/Minor Barnette): *For the VW settlement funding opportunity, stakeholders could use more Q&A opportunities in a variety of different communication mediums and point of contacts for future questions.*

Piedmont Authority for Regional Transportation (Scott Rhine): *Same as Go Triangle.*

Utility - Related Comments

Comment responses:

1. How should DEQ prioritize projects?

Greenville Utilities (F. Durward Tyson): *The BMP should aim for the greatest environmental impact for public health by providing funds for both private and public sectors.*

The grants should give priority to applications which:

- *Result in the use of alternative fueled vehicles, engines and parts that are manufactured or assembled in North Carolina.*
- *Will attract new employers to the State or will encourage job growth.*
- *Benefit small businesses.*

Waste Management (Randall Essick): *DEQ should prioritize projects to ensure that the funds make the largest environmental impact for the lowest cost possible, which also considering that an equitable distribution of funding is reasonable. There are two elements to this:*

- *Using the Funds for Heavy-Duty Fleets. Under the terms of the settlement there are eleven categories eligible for funding. Four of these represent medium and heavy-duty on-road vehicles which are also the greatest contributors to the overall NOx emissions inventory for the categories listed. Focusing the settlement funds on the heavy-duty applications will provide the greatest NOx reducing benefits to the State.*
- *DEQ should consider the role of natural gas fleets in NOx reduction, as well as the specific activities of the trucks on the road that could be funded. Heavy duty refuse and recycling trucks are on the road in communities across the state for over eight hours per day, five and six days a week, fifty-two weeks per year. They offer the greatest environmental bang for the buck opportunity in North Carolina, associated with the VW Settlement Funds.*
- *DEQ should dedicate funds equally between the public and private sectors. WM recognizes that North Carolina serves to benefit from cleaner mass transit and school buses and cleaner refuse, regional and short-haul trucking. This type of structured investment not only allows the state to show it takes air pollution seriously by improving the emissions of government owned vehicles but also injects a substantial amount of funding into the private sector to assist businesses who are leading the way to a cleaner transportation future.*
- *At the same time, the investment in privately owned heavy-duty trucks is the greatest environmental bang for the buck in the State. For example, WM has 213 diesel trucks in North Carolina. If these trucks were replaced through the VW Funds, WM would contribute 75% of the cost of each new \$300,000 truck allowing the state's funds to go 3 times farther through private investments than through public fleet funding that would require 100% of the funds. The benefit associated with transitioning these trucks to the latest Cummins-Westport Near-Zero engine that reduces NOx by 90% compared to the newest diesel engine options.*
- *Each existing privately-owned diesel truck that is replaced with a Cummins-Westport Near-Zero engine, through VW funding, will remove over 1 ton of NOx from local communities in the state at 25% of the cost to the Fund of public fleets. For Waste*

Management's trucks alone, that translates to over 213 tons of NOx eliminated in communities across the State.

This is the greatest opportunity available in the state, given current technology, to reduce NOx emissions.

2. What is the anticipated demand for each eligible project type?

Greenville Utilities (F. Durward Tyson): *Allow all Low NOx, Near-Zero and Zero Emission Vehicles to be eligible for grants (capped at 25% of the total vehicle cost).*

NC Petroleum Council (David McGowan): *We encourage you to consider the benefits of repowering your existing fleet with newer efficient diesel engines.*

Waste Management (Randall Essick): *WM alone has 213 diesel trucks that should be eligible for funding according to the VW Settlement funds. There are hundreds of other trucks owned by private refuse/recycling operators in the state that would likely apply for this funding.*

3. The percentage of trust funds, if any, that DEQ should devote to Light Duty Zero Emission Vehicle Supply Equipment?

Waste Management (Randall Essick): *The funding should be proportional to the NOx reduction opportunity.*

4. What is the anticipated demand for specific types of diesel emission reduction projects not eligible under the VW settlement but otherwise eligible under DERA or other state programs?

Waste Management (Randall Essick): *Our vehicles are eligible for the VW Settlement and DERA Funding programs.*

5. Should a certain percentage of available VW funds be allocated to each eligible project type and if so how should the percentage be determined?

Waste Management (Randall Essick): *The funding should be proportional to the NOx reduction opportunity.*

6. Should a certain percentage of available Mitigation Trust funds be reserved for government projects?

Waste Management (Randall Essick): *Yes, however, recognizing that the funding will go farther with private fleets, government projects should be required to provide 50% of the funding in a matching program requirement.*

7. Should funds be geographically distributed, and if so how?

Waste Management (Randall Essick): *Funds should be distributed in the priority geographic areas highlighted in the Settlement Fund Agreement.*

8. Should governmental entities be required to provide matching funds and if so, how much?

Greenville Utilities (F. Durward Tyson): *To stretch the settlement dollars, all grants should require at least a 50% match.*

Waste Management (Randall Essick): *One hundred percent funding level for government vehicles provides a great opportunity for public fleets to reduce their emissions. However, the allure of "free" vehicles for the government should not be permitted to dissipate the greater potential deployment of cleaner vehicles. The full funding of government vehicles results in fewer vehicles being deployed per dollar and therefore a reasonable cap must be put in place. A proper balance can be achieved by requiring matching funds in the amount of 50 percent of the vehicle cost which will not only ensure a greater deployment of vehicles but also encourage choices in vehicles which will be financially sustainable over the long-term rather than a one-time proposition.*

9. Should DEQ establish a minimum project size and if so, what size?

Waste Management (Randall Essick): *Yes. Project sizes starting at \$500,000 allow more administration of the state's funds, ensuring that maximum funds are allocated to NOx reducing projects.*

10. In addition to evaluating a proposed project's total cost effectiveness (\$/ton), what other key factors should DEQ consider when evaluating projects?

Waste Management (Randall Essick): *Priority should be given to those applications which:*

- *Result in the greatest NOx reduction per dollar spent*
- *Result in the use of new alternative fueled vehicles, engines, and parts that are manufactured or assembled in this State*
- *Will encourage job growth in the state.*

11. What other feedback do you have on project evaluation and/or scoring criteria?

Waste Management (Randall Essick): *NA*

12. What publicly available tool(s) should be used to quantify anticipated emission reductions/offsets for eligible mitigation projects? What, if any, additional resources should be provided and made available?

Waste Management (Randall Essick): *Argonne AFLEET tool was originally commissioned by DOE Clean Cities program to develop a USE PA cosponsored tool to assist metro areas and Clean Cities coalitions in estimating criteria air pollutant reductions achieved by alt fuel vehicles (this model became known as AirCRED). The calculator measures petroleum displacement and GHG emissions of medium- and heavy-duty alternative fuel vehicles. Argonne then developed a combined, simplified calculator using both of the predecessor models to measure both the environmental and economic costs and benefits of alt fuel vehicles and advanced technology vehicle - AFLEET model. The latest version of AFLEET added low-NOx engine option for CNG and LNG heavy-duty vehicles and added diesel in-use emissions multiplier sensitivity case.*

13. What methods could DEQ employ to reduce barriers and increase participation in future solicitations for projects?

Waste Management (Randall Essick): NA

14. What information/resources would be most valuable for stakeholders interested in submitting projects and what is the best way to communicate those?

Waste Management (Randall Essick): NA