

Georgia Department of Natural Resources

Environmental Protection Division

2 Martin Luther King Jr. Dr., Suite 1456, Atlanta, Georgia 30334
Judson H. Turner, Director
(404) 656-4713

NOV 25 2014

Mr. C. Douglas Corbin
Norfolk Southern Railway Company
Mechanical Dept. – Box 184
1200 Peachtree Street, N. E.
Atlanta, Georgia 30309

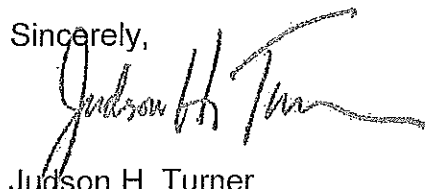
**RE: Railroad-Related Emission Reductions Grant Program
Switch-Duty Locomotive Conversions in Rome, Georgia**

Dear Mr. Corbin:

Attached is one fully-executed copy of the agreement between Norfolk Southern Railway Company and the Georgia Department of Natural Resources Environmental Protection Division (EPD) regarding the Railroad-Related Emission Reductions Grant Program for Switch-Duty Locomotive Conversions in Rome, Georgia. The amount of this contract is eight hundred ninety-nine thousand eight hundred twenty dollars (\$899,820.00).

If you have any questions, please call Lynne Collier at 404-363-7012. We look forward to working with Norfolk Southern Railway Company on this important project.

Sincerely,



Judson H. Turner
Director

JT:klc

Enclosure: Executed Contract (1)

c: Jimmy Johnson
Elisabeth Munsey

CONTRACT

Between

Georgia Department of Natural Resources,

Environmental Protection Division

And

Norfolk Southern Railway Company

For CMAQ Railroad-Related Emission Reductions Grant Program:

Switch-Duty Locomotive Conversions in Rome, Georgia

This CONTRACT is made effective as of the 25th day of November 2014. This CONTRACT is by and between the Georgia Department of Natural Resources, Environmental Protection Division, (the "Division"), and Norfolk Southern Railway Company (the "CONTRACTOR").

WITNESSETH

WHEREAS, the Division is established as an agency of State Government pursuant to the laws enacted by the Georgia General Assembly; and

WHEREAS, the Division is responsible for programs and activities that are designed to protect and enhance air quality; and

WHEREAS, particulate matter (PM) and nitrogen oxide (NOx) emissions are key pollutants that contribute to poor air quality in Georgia; and

WHEREAS, locomotive diesel engines are large sources of PM and NOx emissions; and

WHEREAS, advanced technologies and techniques are not required but can be voluntarily applied to greatly reduce locomotive emissions and reduce fuel use; and

WHEREAS, the Division received Federal funding in the amount of nine hundred thousand dollars (\$900,000) through the Georgia Department of Transportation from the

Congestion Mitigation and Air Quality Improvement Program (CMAQ) to reduce PM2.5 in the Rome nonattainment area through the reduction of locomotive emissions; and

WHEREAS, the Georgia Department of Natural Resources Board approved eligibility and selection criteria for selecting the locomotive emission reduction projects, and the criteria is included in the EPD Grants Program Chapter 391-3-21.14; and

WHEREAS, the Division issued the Request For Applications (RFA) on November 16, 2012 with a due date of January 11, 2013; and

WHEREAS, the CONTRACTOR submitted a project application that has been selected to be funded according to terms and conditions of this CONTRACT; and

WHEREAS, the Division and the CONTRACTOR desire to cooperatively enter into a contractual arrangement to reduce emissions from locomotives used for switching in Rome for the purposes of improving air quality in Georgia; and

WHEREAS, this CONTRACT is subject to all applicable provisions of implementing guidance for the Congestion Mitigation and Air Quality Improvement (CMAQ) program, which is provided to the state through the Federal Intermodal Surface Transportation and Efficiency Act (ISTEA) and Federal Transportation Equity Act for the 21st Century (TEA-21) and continues to be provided under the Safe Accountable Flexible Efficiency Transportation Equity Act: A Legacy for Users (SAFTEA-LU) for projects that improve air quality and congestion.

NOW, THEREFORE, the Division wishes to contract with the CONTRACTOR to convert locomotives to low emission technology for the purpose of reducing air pollution as designated in the attached Exhibit A: Norfolk Southern Railway, Company Scope of Work for Switch-Duty Locomotive Conversions in Rome, Georgia project (the "Scope of Work") and detailed in CONTRACTOR's Project Proposal and Supplemental Materials as attached Exhibit B (the "Project Proposal"), which was submitted in response to the RFA (Exhibit C). In consideration of the mutual promises and terms and conditions set forth herein, the Parties hereto do mutually agree as follows:

1. **Scope of Services**

- A. The CONTRACTOR shall do, perform, and carry out in a safe, efficient and workmanlike manner, the following services pertaining to Railroad-Related Emission Reductions in support of the Division's current and future programs: The services shall include those items described below in Section 1.B. and included in the attached Exhibit A.
- B. The CONTRACTOR shall perform or contract to perform all tasks as described in the Project Proposal (Exhibit B). The Project was submitted January 11, 2013 in response to the Request for Applications released by the Division (Exhibit C) on November 16, 2012. Specifically, the CONTRACTOR shall convert 2 traditional 3000 hp locomotives with at least 5 years expected remaining life from Tier 0 or a lower rating as described Exhibit B to a mother-slug unit utilizing an advance 12-ECO710 3000 hp locomotive meeting at least the EPA Switch-Duty Tier 3 emission standards or better (i.e. lower emissions).
- C. The CONTRACTOR shall fully cooperate with audits or information requests by the Division to the extent such requests are intended to verify that the conditions of CMAQ and this CONTRACT are met, including without limitation the report schedule described herein. Upon request, the CONTRACTOR shall cooperate in any governmental audit to assess how grant funding was used for the Project. The CONTRACTOR shall provide copies of procurement contracts and subcontracts used in connection with the Project if requested by the Division. The CONTRACTOR shall provide Project-related records if requested by the Division. The CONTRACTOR and its employees shall fully cooperate with investigation directly related to activities and transactions regarding CMAQ grant project funding for this Project. Notwithstanding any of the foregoing, CONTRACTOR shall have no obligation to conduct extra-operational studies or investigations or to generate data not generated in the normal course of business other than what is required for reporting in order to provide information requested by the Division under this CONTRACT. Further, the Division acknowledges the reporting limitations as set forth in the Project Proposal. The result(s) of a governmental audit or investigation shall be made available to the public, but CONTRACTOR

may seek to withhold company confidential or business proprietary information from public availability.

- D. The CONTRACTOR shall maintain the Converted Locomotives sufficiently to assure each Converted Locomotive remains operational for a period of ten years from the date after that Converted Locomotive is retrofitted (the "Operating Period") and shall operate the Converted Locomotives at least 80% of each Converted Locomotive's operational hours in and around the Rome Railyard, as described in the Scope of Work (Exhibit A) and in accordance with the Project Proposal (Exhibit B). The Division understands that the CONTRACTOR does not permanently assign locomotives to particular yards, and actual locomotives required for switching will vary from day to day depending upon rail traffic volume and locations, and depending on the availability of locomotives to meet operational needs. The ten-year period for each Converted Locomotive will start on the date that the Converted Locomotive is placed into revenue service. The CONTRACTOR shall not sell any Converted Locomotive until the Operating Period has passed or the Converted Locomotive has been determined to be damaged beyond repair or permanently inoperable.

2. **Reporting.**

- A. The CONTRACTOR shall submit required reports to the Division, as specified in Exhibit A hereto, by electronic mail (e-mail) and shall provide two copies of the reports in the e-mail with one in Microsoft Word format and the second in a PDF format. The CONTRACTOR shall submit a hard copy of the report upon the Division's request.
- B. The CONTRACTOR shall promptly report any credible evidence that a principal, employee, agent, sub-contractor, CONTRACTOR, subcontractor or other person has submitted false claims under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity, or similar misconduct involving funds provided under this grant funding.

3. **Method of Payment.**

- A. The funding provided by the Division shall not exceed eight hundred ninety nine thousand eight hundred twenty dollars (\$899,820). The CONTRACTOR shall provide at least the minimum 30% matching funds for the CMAQ funded portion,

amounting to three hundred and eighty-five thousand, seven hundred and fourteen dollars and twenty-nine cents (\$385,714.29) towards completion and administration of the Project. In the event that the total project cost is less than one million two hundred eighty five thousand five hundred thirty four dollars and twenty nine cents (\$1,285,534.29), the CONTRACTOR must only provide thirty percent of the total project cost in matching funds.

- B. The CONTRACTOR may invoice the Division upon completing any task as detailed in Exhibits A and B. The CONTRACTOR shall invoice no more than 70% of the total Project expenses to assure the CONTRACTOR has fulfilled the minimum in-kind match of up to 30% at all times. Invoices must be numbered consecutively and submitted quarterly, containing a detailed description of the labor, material, and equipment costs and any other expenses incurred. The invoice must explicitly state the eligible match paid by the CONTRACTOR for these expenses.
- C. With each invoice, the CONTRACTOR shall provide an updated list of all Project tasks along with itemized expenses incurred, the eligible match portion paid, any portions already paid by the grant, and the requested grant distribution. The CONTRACTOR shall prominently display the in-kind match percentage on the invoice that accounts for the requested distribution and all previous distributions associated with the Project.
- D. The CONTRACTOR shall return all governmental project funds paid as a part of this CONTRACT to the Division if the United States Department of Transportation or Georgia Department of Transportation requires the Division to return the Project funds due to the CONTRACTOR'S failure to satisfactorily complete any portion of this CONTRACT.

4. **Term and Termination.**

- A. Term. The "Term" of this CONTRACT will begin on the date noted on page one (hereinafter referred to as "Effective Date") and continue through 11/23/2015, unless terminated earlier under the provisions of this CONTRACT.
- B. Termination for Cause. If, through any cause other than force majeure, the CONTRACTOR shall fail to fulfill in a timely and proper manner its obligations under this Contract, or if the CONTRACTOR shall violate any of the covenants,

agreements, or stipulations of this Contract, the DIVISION shall thereupon have the right to terminate this Contract by giving written notice to the CONTRACTOR of such termination and specifying the effective date thereof, at least 30 days before the effective date of such termination.

- C. The Division and the CONTRACTOR may renew this Contract prior to its expiration upon terms, conditions, and compensations agreeable to both Parties.

5. **Additional Terms and Conditions.**

Additional terms and conditions governing this CONTRACT are listed below.

- A. The Parties will identify the project as –Rome, GA Locomotive Conversions and send written communications under this CONTRACT to the respective liaisons at the addresses as identified below:

The Division

Michelle Bergin, PhD
Georgia EPD, Air Protection Branch
Planning and Regulatory Dev. Unit
4244 International Parkway Suite 136
Atlanta, GA 30354
michelle.bergin@dnr.state.ga.us
404-362-4569

The Contractor

C. Douglas Corbin (contracts)
and Mark F. Duve (technical)
Norfolk Southern Railway Co.
Mechanical Dept. – Box 184
1200 Peachtree Street NE
Atlanta, GA 30309-3579
Doug.Corbin@nscorp.com 404-582-6730
Mark.Duve@nscorp.com 404-582-6743

B. **Drug-Free Workplace**

- 1) The CONTRACTOR hereby certifies that:
- (a) A drug-free workplace will be provided for employees during the performance of this CONTRACT; and
 - (b) It will secure from any subcontractor hired to work in a drug-free workplace the following written certification: "As part of the subcontracting agreement with (Contractor's Name), (Subcontractor's Name) certifies to the CONTRACTOR that a drug-free workplace will be provided for the subcontractor's employees during the performance of this CONTRACT pursuant to paragraph 7 of subsection B of Code Section 50-24-3."

- 2) The CONTRACTOR may be suspended, terminated, or debarred if it is determined that:
 - (a) The CONTRACTOR has made false certification hereinabove; or
 - (b) The CONTRACTOR has violated such certification by failure to carry out the requirements of O.C.G.A. 50-24-3.

- C. Obligations Owed to Third Parties. The CONTRACTOR represents and warrants that all obligations owed to third parties with respect to the activities contemplated to be undertaken by the CONTRACTOR pursuant to the CONTRACT are or will be fully satisfied by the CONTRACTOR so that the Division will not have any obligations with respect thereto.

- D. Funding. Notwithstanding any other provision of this CONTRACT, the CONTRACTOR hereto acknowledges that the Division, as an agency of the State of Georgia, is prohibited from pledging the State's credit. In the event that the source of payment no longer exists or is insufficient with respect to the Services, this CONTRACT shall terminate without further obligation of either Party as of that moment. The Division shall remain obligated to pay for Services performed and accepted by the Division prior to such termination. The DIVISION shall provide notice to CONTRACTOR as soon as it becomes aware that the source of payment no longer exists or is insufficient with respect to the services. The determination of the Division of the events stated above shall be conclusive.

- E. Any suit brought to enforce this CONTRACT or to determine any dispute under this CONTRACT may be brought only in the Superior Court of Fulton County, Georgia. The Parties agree to submit to the personal jurisdiction of the Superior Court of Fulton County.

- F. Trafficking Victims Protection Act of 2000 Prohibition Statement – The CONTRACTOR will not engage or allow employees, subcontractors, or subcontractor employees to engage in sever forms of trafficking in persons during the period of time that the award is in effect: procure a commercial sex act during the period of time that the award is in effect; or use forced labor in the performance of this CONTRACT.

- G. This CONTRACT constitutes the entire agreement between the Parties with respect to the subject matter of this CONTRACT and may be altered or amended only by a subsequent written agreement signed by each of the Parties hereto. This CONTRACT supersedes all prior agreements, negotiations, and communications

of whatever type, whether written or oral, between the parties hereto with respect to the subject matter of this CONTRACT. No waiver of any of the provisions of this CONTRACT shall be binding unless executed in writing by the Party making the waiver. No waiver of one provision shall constitute a waiver of any other provision nor shall any be deemed a continuing waiver.

- H. The headings of the paragraphs and subparagraphs hereof are for descriptive purposes only and do not modify or qualify any of the rights or obligations set forth in this CONTRACT.
- I. The CONTRACTOR will maintain an active and current registration in the Central Contractor Registration (www.ccr.gov) during this project.
- J. Single Audit Act. In accordance with OMB Circular A-133, the recipient hereby agrees to obtain a single audit from an independent auditor, if it expends \$500,000 or more in total Federal funds in any fiscal year. Within nine months after the end of a recipient's fiscal year or thirty days after receiving the report from the auditor, the recipient shall submit the SF-SAC and a Single Audit Report Package to the Division. More information can be found at <http://harvester.census.gov/fac/>
- K. The CONTRACTOR agrees that all work performed under this CONTRACT will comply fully with applicable administrative and other requirements established by applicable Federal and state laws, regulations and guidelines. The CONTRACTOR shall comply with all requirements or regulations of the Division that are currently applicable or become applicable during the term of this CONTRACT.

6. **Georgia Security and Immigration Compliance Act of 2006.**

- A. Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the CONTRACTOR understands and agrees that compliance with the requirements of O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1-.02 are conditions of this CONTRACT. The CONTRACTOR hereby warrants compliance with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act, O.C.G.A. § 13-10-90 *et. seq.*, by registering at <https://www.vis-dhs.com/EmployerRegistration> and verifying information of all new employees; and by executing any affidavits required by the rules and regulations issued by the Georgia Department of Labor set forth at rule 300-10-1-.01 *et. seq.* The

CONTRACTOR'S fully executed affidavit is attached hereto as Exhibit D and is incorporated into this CONTRACT by reference herein.

- B. The CONTRACTOR warrants that, in the event the CONTRACTOR employs or contracts with any subcontractor(s) in connection with this CONTRACT, the CONTRACTOR shall include a similar provision in all written agreements with any such subcontractor(s). The CONTRACTOR agrees to maintain records of any such written subcontractor agreements and submit to the Division upon request.

7. **New Restrictions On Lobbying as set forth in Title 40 CFR Part 34.** Funding provided in this CONTRACT are appropriated Federal funds in the form of a grant from the Congestion Mitigation and Air Quality Improvement (CMAQ) program.

- A. No appropriated funds may be expended by the recipient of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- B. Each person who requests or receives from an agency a Federal contract, grant, loan, or cooperative agreement shall file with that agency a certification, set forth in Exhibit F, that the person has not made, and will not make, any payment prohibited by paragraph A of this section.
- C. Each person who requests or receives from an agency a Federal contract, grant, loan, or a cooperative agreement shall file with that agency a disclosure form, set forth Exhibit E, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited if paid for with appropriated funds.
- D. The Disclosure of Lobbying Activities and the Certification Regarding Lobbying forms must be completed, signed, and returned with this CONTRACT in order for the CONTRACT to be valid. The forms are included in Exhibit E and F.

IN WITNESS WHEREOF, the Division and the CONTRACTOR have executed this CONTRACT to be given effect as of the date first above written.

ATTEST:

Department of Natural Resources
Environmental Protection Division

Cristal Sciles

BY:

Judson H. Turner
Judson H. Turner, Director

ATTEST:

Norfolk Southern Railway Company

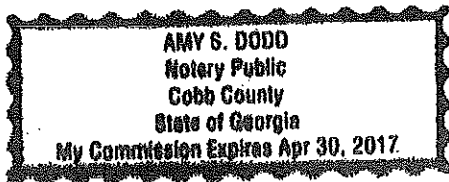
Amy S. Todd

BY:

C. D. Corbin
Name: Charles D. Corbin

Title:

AVP - Mechanical



EXHIBITS

- Exhibit A Scope of Work for the Switch-Duty Locomotive Conversions in Rome, Georgia
- Exhibit B Project Proposal and Supporting Information
- Exhibit C Request for Applications (RFA)
- Exhibit D CONTRACTOR's affidavits required by the Georgia Security and Immigration Compliance Act of 2006 rules and regulations issued by the Georgia Department of Labor set forth at rule 300-10-1-.01 *et. Seq*
- Exhibit E The Disclosure of Lobbying Activities (Disclosure form of any Lobbying using Nonappropriated Funds) and Certification Regarding Lobbying

Exhibit A

Norfolk Southern Railway Company Scope of Work for Switch-Duty Locomotive Conversions in Rome, Georgia

Scope of Work

Upon the Effective Date and continuing through the term of this contract, unless terminated early under provisions of the CONTRACT, CONTRACTOR will perform tasks as described the Project Proposal to reduce emissions from locomotives used for switching in Rome, GA for purposes of improving air quality in Georgia. These tasks include:

- A. Within 45 days of execution of CONTRACT, CONTRACTOR shall provide to the Division a project schedule with specific dates for completing each project related task that is consistent with timeline provided in the Project Proposal (Exhibit B);
- B. CONTRACTOR shall convert two 3000 hp locomotives with at least 5 years expected remaining life ("Original Locomotives") as described in the Project Proposal to a mother-slug unit with an advanced 12-710ECO 3000 hp locomotive engine meeting EPA Tier 3 switch-duty emission standards or better (i.e. with lower emissions) ("Converted Locomotives");
- C. The CONTRACTOR shall maintain the Converted Locomotives sufficiently to assure each Converted Locomotive remains operational for a period of ten years from the date after each Converted Locomotive is retrofitted (the "Operating Period") and shall operate the Converted Locomotives at least 80% of each Converted Locomotive's operational hours in and around the Rome, GA Rail Yard as described in the Project Proposal. The Operating Period and number of operational hours may be modified if the Converted Locomotive is damaged such that CONTRACTOR and the DIVISION mutually agree that it can be removed from service, in which event CONTRACTOR shall be deemed to have satisfied its obligations under this CONTRACT with respect to such Converted Locomotive(s). The Division acknowledges that the Converted Locomotives may leave the Rome Yard for 92-day Federal Railroad Administration inspections and other maintenance, for Positive Train Control installation, or for other logistical contingencies. The Division understands that the CONTRACTOR does not permanently assign locomotives to particular yards, and actual locomotives required for switching will vary from day to day depending upon rail traffic volume and locations, and depending on the availability of locomotives to meet operational needs. The CONTRACTOR shall inform the Division of all Converted Locomotives that are removed from the fleet due to damage or inoperability. The ten-year period for each Converted Locomotive will start on the date that the Converted Locomotive is placed into revenue service. The CONTRACTOR shall not sell any Converted Locomotive until the Operating Period has passed or the

Converted Locomotive has been determined to be damaged beyond repair or permanently inoperable.

- D. Initial Report: Before converting the locomotives, the CONTRACTOR shall submit an initial report containing the following information:
- (1) Work scope as provided in the Project Proposal.
 - (2) Estimated emissions reductions. This estimate may use data as provided in the Project Proposal if there have been no changes in emission levels of the original and converted locomotives from the Proposal.
- E. Post Conversion Report: The CONTRACTOR shall submit a post conversion report within one month (30 days) after each locomotive mother/slugs unit is placed into service in the Rome Yard. The report shall contain the following:
- (1) Estimated emissions levels, which may include regulatory tier requirements.
 - (2) Locomotive numbers for the Original Locomotives and the Converted Locomotives.
 - (3) Pictures showing major components installed during the conversion.
 - (4) Pictures of the completed Converted Locomotives and their emissions labels.
 - (5) Certification/assurance that emissions critical components were properly installed on the Converted Locomotives and are in working condition.
 - (6) If the proposed time for completing the conversion is exceeded, an explanation of the delay.
- F. Running reports will be submitted every 6 months for the first two years (commencing within 6 months after submission of the post conversion report) and annually for eight years thereafter. These reports may be combined for the locomotives converted under this CONTRACT. The running reports will contain the following information:
- (1) Estimated emissions and fuel consumption, which may include estimates or calculations based on known information including data from the Project Proposal.
 - (2) Description or confirmation of general operating patterns of the Converted Locomotives.
 - (3) Certification or assurance of proper operation and maintenance of the Converted Locomotives, in particular the emissions critical components.
- G. The CONTRACTOR shall submit any reports to the Division by electronic mail (e-mail) and shall provide two copies of the reports in the e-mail with one in Microsoft Word format and the second in a PDF format. The CONTRACTOR shall submit a hard copy of the report upon the Division's request.
- H. Notwithstanding anything to the contrary herein, in the Project Proposal or in the Request for Applications, CONTRACTOR shall have no obligation to conduct extra-operational studies or investigations or to generate data not generated in the normal course of business in order to compile the reports above or any other information requested by the Division under this CONTRACT. Further, the Division acknowledges the reporting limitations as set forth in the Project Proposal, and CONTRACTOR shall not be required

to prepare or submit any data or information that is contrary to those limitations. Specifically, but not by way of limitation, CONTRACTOR does not determine actual fuel usage by locomotive and as such cannot determine actual fuel used by each Converted Locomotive, and CONTRACTOR cannot determine or track actual duty cycle over the Operating Period for each Converted Locomotive. The CONTRACTOR will use estimates for such determinations and may use best available information, which may include engineering estimates based on knowledge and experience of such operations.

- I. Contract funds will cover up to 70% of the total costs of the Project and will be distributed to the CONTRACTOR incrementally (not more than once per annual quarter) following completion of conversion task(s), provided the match has been satisfied for the incremental distribution.

- J. The CONTRACTOR shall only invoice the Division for expenses eligible for award funding. As part of the invoice, the CONTRACTOR shall certify each task that has been completed. Upon completion of the Project, the CONTRACTOR shall submit a final invoice requesting up to the remaining funds for unpaid task expenses provided that the total grant distribution for this project does not exceed \$899,820.00. The final invoice shall provide all the information as requested in Method of Payment section of the CONTRACT.

- K. The CONTRACTOR shall only invoice the Division for eligible expense resulting from the Converted Locomotive conversions as part of completing tasks as described by the CONTRACTOR'S Project schedule (Exhibit B).

- L. The CONTRACTOR may not seek reimbursement or cost share consideration for certain ineligible cost, which would include management or similar fees used to accumulate and reserve funds for ongoing business expenses, unforeseen liabilities, or for other similar costs. The CONTRACTOR may not seek fees for consultants in excess of \$587.20 per day nor \$73.40 per hour

Exhibit B
Project Proposal and Supporting Information

Corrections to the application to Switch-Duty Locomotive Conversions in Rome, Georgia from the Norfolk Southern Railway Company. Documentation of these and for other questions are included as Supplemental Information.

1. Cover page: Total match proposed = \$1,452,000 rather than \$1,459,000
2. There are errors in the first table on page 5 in section 2, ii, n (annual and 10 year tons of NOx). The correct values are shown in the second table (8.42 tons NOx annual emissions savings, 84.24 tons NOx 10 year total savings.)
3. Page 6, section 2, iii, line 5. Two switcher locomotives will be retrofitted, not eight.
4. Also, as clarification, the emission comparison summary starting on page 5 (section 2, ii, o) and concluding at the end of the first paragraph on page 6 is for 5 years of 3 gensets and 10 years of 1 mother-slug.

Application Cover Page

Company Name **Norfolk Southern Railway Company**

Contact Information – Technical

Name **Mark F. Duve**
 Mailing Address **Mechanical Department – Box 184**
1200 Peachtree Street NE
Atlanta, GA 30309-3579
 Phone Number **404-582-6743**
 E-mail **Mark.Duve@nscorp.com**

Contact Information – Contracts

Name **C. Douglas Corbin**
 Mailing Address **Mechanical Department – Box 184**
1200 Peachtree Street NE
Atlanta, GA 30309-3579
 Phone Number **404-582-6730**
 E-mail **Doug.Corbin@nscorp.com**

Contact Information – Additional Contact (optional)

Name _____
 Mailing Address _____

 Phone Number _____
 E-mail _____

Application Summary

Total number of conversions	Two
Total funding requested	\$900,000
Total match proposed	\$1,459,000
Total project cost	\$2,352,000

Authorized Official

Name and Title **Donald D. Graab, Vice President - Mechanical**

I certify to the best of my knowledge that the information provided in this application is accurate. I agree that all of the minimum requirements have been or will be met to the extent feasible. Additionally, I understand the obligations and constraints associated with this proposal. I understand that completing this form simply enters me into the Locomotive Conversion funding competition and my final decision to accept the grant funding, if I were to be selected, would occur later.

Signature: _____ Date: _____

2) **Locomotive Rail yard/Location and Operation.**
i. **Rail Yard Location and Area of Operation**

Norfolk Southern Railway Company ("Norfolk Southern") proposes to convert two (2) traditional yard and local switcher locomotives to one (1) mother/slugg set using an advanced 12-710ECO engine manufactured by Electro Motive Diesel ("EMD"), with emissions achieving the Environmental Protection Agency's ("EPA") Tier 3 standards. The mother/slugg configuration consists of a single engine with four traction motors on one locomotive platform (the "mother") and a second platform with four additional traction motors but without an engine (the "slug"). The single engine therefore powers eight traction motors on two platforms, thus providing high initial tractive effort to move the train. The mother/slugg combination that will be placed into operation in the Rome, Georgia area under this funding arrangement will effectively perform the work of two earlier locomotives, given horsepower and tractive efforts of various locomotive models. The mother/slugg set funded by this project will be operated on Norfolk Southern's rail lines and yards that are located between Rome and Krannert, which are entirely within Floyd County that the GA Environmental Protection Division ("GA EPD") has categorized as the Rome PM_{2.5} State Implementation Plan ("SIP"). See attached maps in Appendix A.

ii. **Converted Locomotives**

(a)-(f) For required operating flexibility, specific locomotives do not typically stay for more than a month within the Rome area. Typically, the locomotives that service the yards and local industry are dropped off by an inbound freight train and stay within the Rome area for two to four weeks until they need servicing or are needed elsewhere on the system. At that time, a freight train will drop off two more locomotives and take those locomotives that were in the Rome area. It is for this reason that Norfolk Southern cannot provide specific identification of locomotives that are operating within the Rome area.

Currently two 3,000 hp four-axle locomotives are servicing the Rome to Krannert area yards and local industries. One of the locomotives is a high adhesion GE B32-8 and the other is a low adhesion GP40-2. Both units are certified to the EPA Tier 0 regulations as defined in 40 CFR Part 92. However, the GE B32-8 is certified by the manufacturer with emissions credits, and the GP40-2 is certified by use of an anti-idling device. There are currently no plans to overhaul these locomotives in the next five years. As stated above, the locomotives in the Rome area change out quite frequently, and the majority of the NS 3,000 hp four-axle switcher fleet that operates in the Rome SIP is also certified to Tier 0.

If awarded the funding requested in this application, Norfolk Southern will commit to put a policy in place such that the converted mother/slugs set will remain within the Rome SIP except for time away for servicing.

g. Locations of Locomotive Operation

These switcher locomotives operate in yard and local service to transfer rail cars or cuts of cars between the rail yard in Rome and the two yards in Krannert, as well as to and from local industries. These yards and industries are within the Floyd County SIP.

h. Duty Cycle Information

Currently, the locomotives are on call by local industries to switch the cars that are needed by the industries and sort the cars that are received inbound in the Rome yards. Given the demand for rail cars required by the large industries served in this area, it is not uncommon for these switcher locomotives to be operated 24 hours a day, seven days a week.

Since the locomotives are cycled through Rome quite frequently, it is not possible to obtain event recorder data to determine sample duty cycles. For this reason, the emissions calculations in this application use the EPA switcher duty cycle.

i. Kit Procedure for Conversion

The installation of the kit entails stripping the mother locomotive to its under frame, modifying the under frame to accept the new engine, installing the new engine, modifying the alternator to accept the new engine, modifying the locomotive body to accept the new engine and cooling system, replacing the electrical control cabinet and rewiring the locomotive. Norfolk Southern plans to apply the EMD 710ECO kit at its Juniata Locomotive Shop located in Altoona, PA. Norfolk Southern has experience in applying mother/slugs kits on other locomotives that were funded under American Recovery and Reinvestment Act Funding for the National Clean Diesel Funding Assistance Program (EPA-ARRA-OAR-OTAQ-09-06).

The manufacturing of the slug is similar to the re-power of an existing locomotive with the exception of instead of replacing the engine, a concrete block is installed where the engine would be and the fuel, oil and cooling systems are permanently removed.

j. Total Cost per Mother/Slug

The approximate estimated cost for each of the mother/slug conversion is as follows:

3000 HP Mother/Slug
\$1,389,000 Mother/Slug Kit
\$ 963,000 Norfolk Southern Provided Material and Labor
\$2,352,000

k. Years of Proposed Commitment to the Rome area.

Norfolk Southern proposes to operate the mother/slug set funded by this project in and around the Rome area, as discussed in (2)(g) above, for a period of 10 years after the locomotive is retrofitted.

l. Proposed Percent of Annual Operating Time Commitment to the Rome Area including Floyd County.

Norfolk Southern anticipates operating the mother/slug set funded by this project in and around Rome, Georgia, as discussed in (2)(g), at least 80% of each locomotive's operational hours. Norfolk Southern recommends this 80% regional operation due to the likelihood that the units will leave the Floyd County SIP for 92-day Federal Railroad Administration inspections and other maintenance or for other logistical contingencies.

m. Estimate of Annual Fuel Use Before and After Conversion.

Norfolk Southern does not have the ability to measure the fuel used in any one particular locomotive. Nor can it create that ability for this project. Rather, it measures fuel use on a system-wide basis. For this reason, this application relies on expert opinion to estimate approximate fuel use for a typical locomotive in switcher service in the Rome area. The Manager of Fueling Operations at Norfolk Southern has provided an estimate, based on his knowledge of and experience with locomotives and fueling operations. Based on this opinion, for purposes of this application and any subsequent reporting required by a grant of funds for this project, Norfolk Southern will use an average of approximately one thousand gallons of fuel per traditional switcher locomotive per week. Norfolk Southern will use a manufacturer's estimate of fuel usage for the converted mother/slug set in any reporting required by a funding arrangement for this project.

In addition to the fuel savings generated from shutdown of the mother locomotive engines due to the automatic start/stop feature, the mother locomotives reduce emissions by reducing idle time per engine as well as emissions in idle, and by using Tier 3 engines.

n. Calculated Project Emissions

The estimated annual project emissions reductions are as follows:

Total Estimated Project Emissions Reductions (tons)		
	NOx	PM
Total Annual Emissions Reductions	1.23	0.68
Total 10 Year Project Reduction	8.42	6.77

These total projected emissions reduction represents the sum of the locomotive replacement calculations provided below:

Emissions Comparison Summary - Existing 3000 HP Tier 0 vs. 12-710ECO Repower

	# of Locos	BSFC (bhp-hr/gal)	Activity Factor (gal/yr)	Emission Factors (g/bhp-hr)		Single Unit Emissions (tons/yr)		Total Emissions (tons/year)	
				NOx per Loco	PM per Loco	NOx	PM	NOx	PM
Pre-conversion 3000 HP Tier 0	2	15.19	52,000	8.26	0.42	7.20	0.36	14.40	0.73
Post-conversion 710ECO	1	17.19	45,000	7.00	0.06	5.97	0.05	5.97	0.05
Emission Reductions				Annual Emissions Savings		1.23	0.31	8.42	0.68
				10 Year Total Savings				84.24	6.77

*Most NS 3000 HP locomotive are overhauled to Tier 0 40 CFR Part 92 Emissions Regulations

Notes:

1. The calculations and emissions factors are found in Appendix B.
2. The DCBSFC is based upon the sample EPA switcher duty cycle.
3. The activity factor is based upon the estimated fuel consumption described in section 2(ii)(m), and is adjusted for the difference in fuel consumption between the mother/slugs and the locomotive that is being compared.

o. Emissions Compared to Gensets

Norfolk Southern has determined that the minimum requirements for trains between Rome and Krannert are 3000 hp with high adhesion capabilities, which the 3000 hp mother/slugs satisfies. Currently, there is no 3000 hp genset on the market. In addition, the grade between Rome and Krannert requires heavy locomotives in order to prevent train stalls during inclement weather. Therefore, it would take three 2000 hp gensets to be able to perform the same work as one 3000 hp high adhesion mother/slugs set. In addition, the genset life expectancy is shorter and Norfolk Southern will not commit to maintain a genset for more than five years. PM emissions savings for the genset over a five-year project life are estimated at 2.27 tons, as compared to 6.77 tons for the 710ECO mother/slugs. Therefore, the 710ECO mother/slugs solution results in better PM emissions reductions than the gensets.

Emission Comparison Summary - Existing 3000 HP Locomotive vs. 2000 HP NREC 3GS21B Genset

	# of Locos	BSFC (bhp-hr/gal)	Activity Factor (gal/yr)	Emission Factors (g/bhp-hr)		Single Unit Emissions (tons/yr)		Total Emissions (tons/year)	
				NOx per Loco	PM (per Loco)	NOx	PM	NOx	PM
Existing 3000 HP Tier 0*	2	15.19	52,000	8.3	0.42	7.20	0.36	14.40	0.73
3GS21B	3	18.52	45,000	2.50	0.10	2.30	0.09	6.90	0.28
Emission Reductions				Annual Emissions Savings		4.90	0.27	7.50	0.45
				5 Year Emissions Savings				37.49	2.27

***SD40-2s overhauled to Tier 0 40CFR Part 92 Emissions Regulations

iii. Timeline

The proposed schedule to implement the mother/slugs program is provided in the table below. Once CMAQ funding is approved, Norfolk Southern will order the required equipment. Each retrofit will take approximately 7 months from the date of commencement of that installation. As such, provided the GA EPD approves the project as proposed, the eight switcher locomotives will be retrofitted and emissions reductions will be achieved by approximately December 31, 2014. If the project approval or execution of a funding contract are delayed beyond the schedule contemplated by the GA EPD Request for Applications as shown in the

timeline below, the dates for completion of the mother/slugs conversions necessarily will be delayed commensurately.

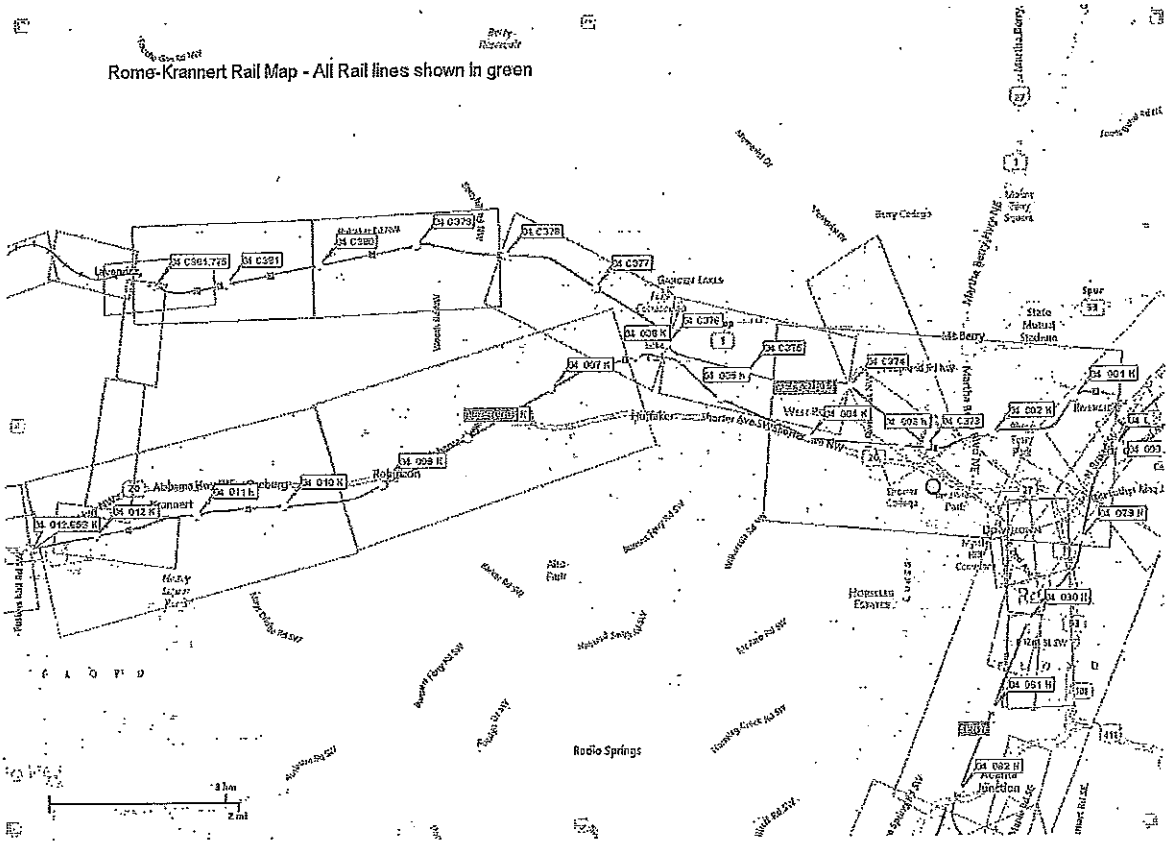
Date	Activity
April 2013	Finalize funding contract
May 2013	Order conversion equipment from OEM
March 2014	Begin strip and prepare first unit
May 2014	Receive first two conversion kits
December 2014	Complete mother/slugs set

The above schedule is based upon a one year lead time for the first 3000 hp mother/slugs conversion kit. The mother/slugs set is anticipated to be placed in service Rome area within approximately two weeks of completion.

3) Other Information and Comments

Norfolk Southern will use the fuel estimates provided herein for the baseline case, and will use a manufacturer's estimate of fuel usage for the converted locomotives in any reporting required by a funding arrangement for this project. Again, Norfolk Southern does not have the means to measure actual fuel use per locomotive – even for the converted locomotives – and cannot justify the capital cost associated with the necessary infrastructure that would be required to gain this ability. Further, in the event less funding is awarded than what is requested in this proposal, Norfolk Southern reserves the right to select the mix of locomotives that will be replaced or converted with such funding, and Tier 0 or pre-1973 may be replaced in the Rome area.

Appendix A



Appendix B

Baseline 16-645E3 Engine Data from www.epa.gov/certdata.htm#locomotive

T/N	BHP	Fuel Rate lb/hr	Cor Nox g/hr	PM g/hr	EPA SW DC	w-BHP	w-Fuel w- (lb/hr)	w-Nox w- (lb/hr)	w-PM w- (lb/hr)
8	3157	1185	24688	1484	0.80%	25.26	9.48	197.50	11.87
7	2648	994	22451	1218	0.20%	5.30	1.99	44.90	2.44
6	1976	745	15865	731	1.50%	29.64	11.17	237.98	10.97
5	1469	559	10957	587	3.60%	52.87	20.13	394.44	21.15
4	1015	395	6843	416	3.60%	36.55	14.23	246.34	14.99
3	666	269	4114	220	5.80%	38.61	15.58	238.63	12.74
2	376	163	2068	154	12.30%	46.25	20.04	254.38	18.96
1	120	61	1176	30	12.40%	14.88	7.50	145.82	3.72
idle	21	36	673	21	59.80%	12.56	21.29	402.61	12.81
DB-2	56	102	1818	42	0.00%	0.00	0.00	0.00	0.00
					0.00%	261.91	121.42	2162.61	109.64
					100%		DCBSFC	w-NOx	w-PM
							0.46	8.26	0.42
						DCBSFC*	15.19		

Appendix B (Continued)

3000 Hp Test Data as provided by EMD

T/N	BHP	Fuel	Cor	EPA		w-BHP	w-Fuel	w-Nox	w-PM
		Rate	Nox	PM	SW		w-	w-	w-
		lb/hr	g/hr	g/hr	DC		(lb/hr)	(lb/hr)	(lb/hr)
8	3200	1110	14144	192	0.80%	25.60	8.88	113.15	1.54
7	2750	993	10148	154	0.20%	5.50	1.99	20.30	0.31
6	2000	742	9160	80	1.50%	30.00	11.13	137.40	1.20
5	1500	566	7755	68	3.60%	54.00	20.36	279.18	2.43
4	1125	432	6233	48	3.60%	40.50	15.56	224.37	1.74
3	750	285	5175	39	5.80%	43.50	16.54	300.15	2.26
2	400	151	3032	24	12.30%	49.20	18.52	372.94	3.00
1	225	91	2142	17	12.40%	27.90	11.25	265.61	2.09
idle	38	46	878	11.2	19.90%	7.56	9.15	174.74	2.23
LIdle	25	25	665	6.2	19.90%	4.98	4.93	132.24	1.23
Electric Layover System					20.00%				
DB	30	42	1,113	14	0%	0.00	0.00	0.00	0.00
					100%	288.74	118.30	2020.07	18.03
							DCBSFC	w-NOx	w-PM
							0.41	7.00	0.06

*DCBSFC is based upon 7.043 lbs/gallon of fuel

DCBSFC* 17.19

Bergin, Michelle

From: Duve, Mark F. <mark.duve@nscorp.com>
Sent: Friday, March 22, 2013 10:53 PM
To: Michelle Bergin
Subject: Requested Information for Macon and Rome Applications
Attachments: Requested Additional Information on NS GA EPD Applications.pdf; Brosnan Yard
Macon.jpg; Train G02 Route.jpg; Trains G59 and G61 Route.jpg; Trains G36 and G4E
Route Map.jpg

2 files pertain to Rome

Hi Michelle,

The attached files contain the requested additional information for the Macon and Rome NS CMAQ Applications.

Regards,

Mark Duve

Mechanical Engineer - Locomotive Design
Norfolk Southern Corporation
Mechanical Department - Box 184
1200 Peachtree Street, NE
Atlanta, GA 30309-3579
Phone 404-582-6743
Mobile 404-989-6192

attachment to email from
NS (Mark Duce, 3/22/2013)
Rome discussion starts on pg 4

**Requested Additional Information on Applications to the GA EPD Railroad-Related Emission
Reductions Grant Program for Switch-Duty Locomotive Conversions**

The answers for the additional information are as follows:

Macon/Middle Georgia: 2 3000 hp 710 ECO mother-slugs and 3 3000 hp 710ECO repowers

1. Please provide more detailed maps of the railyard and surrounding area, indicating areas of usual locomotive activity and areas planned for operation of the 2 mother-slug sets and for the 3 repowers.

Norfolk Southern has three hump yard trains that assemble cuts of cars and push them over the hump, pull the cars from the bowl tracks of the humps and assemble trains. These three hump sets operate within the boundaries of Brosnan yard which are shown in the attached file: Brosnan Yard Macon.jpg.

Local trains G59 and G61 operate five days per week from Brosnan yard to just south of Unadilla, GA and return to Brosnan Yard. Each train can work up to 12 hours per day. The route for trains G59 and G61 is shown on the attached file: Trains G59 and G61 Route.jpg.

Local train G02 operates five days a week from the Brosnan Yard in Macon to Barnesville and returns to the Brosnan Yard. The train can operate up to 12 hours on a typical workday. The route for G02 is shown on the attached file: Train G02 Route. jpg.

2. Please provide locomotive IDs for potential conversion. Locomotives with similar emission characteristics (equivalent or higher emissions) may be substituted. Locomotives converted must have an expected remaining time in service of at least 5 years as this funding is not allowed to increase fleet size.

Norfolk Southern anticipates converting the locomotives listed below, although, we reserve the right to change this list to accommodate operational needs. In the event Norfolk Southern changes one or more locomotives specified below, Norfolk Southern will replace the listed locomotive(s) with locomotive(s) that are of the same or lower tier. All of the locomotives to be converted will be owned by Norfolk Southern. We also note that not all of these locomotives that are anticipated to be converted with this funding are currently operating in the Macon area. However, after conversion, the locomotives funded by this project will reside in the Macon region and will replace Tier 0 or pre-1973 locomotives that currently normally operate within the Macon area.

ID	Model	Built Date	Serial #	HP
NS 7065	GP50	11/22/1980	807008-2	3500
NS 7066	GP50	12/12/1980	807008-3	3500
NS 7068	GP50	12/15/1980	807008-5	3500
NS 7069	GP50	12/21/1980	807008-6	3500
NS 7073	GP50	5/15/1981	807054-16	3500
NS 7074	GP50	5/15/1981	807054-17	3500
NS 7077	GP50	6/15/1981	807054-20	3500

Some of these units have been listed on the Atlanta CMAQ application. However, the Atlanta application was not fully funded which leaves these units as candidates. It is anticipated without this repower program, these locomotives will run for another five to ten years.

3. How long a period did the sampled event recorder of the 3 Brosnan Yard mother locomotives cover? What time of year did it occur and do you expect that would have any impact on the results? The comparison with the EPA cycle is very interesting.

The sampled event recorder data was taken from three locomotives that have operated in the Brosnan Yard hump service over the last year. An event recorder will only store 48 hours of data before it starts rewriting over previously recorded data. Norfolk Southern will typically take a download every so often when the unit is shopped to verify that the event recorder is functioning. Most of the data in this study was taken in the October to January time frame, with one set taken in April. As these units operate the hump, and the hump is operated 24 hours per day, it is not expected that there will be drastic deviations from the data. As these hump units provide power to two slugs, and these units push trains up a hill most often, it is not surprising that the duty cycle is more demanding than the EPA switch duty cycle.

4. In Section 2) j.:

- o Why is the Mother/Slug Kit \$139,000 higher than the cost proposed in the Atlanta CMAQ application?

EMD originally gave a verbal quote over the phone for the Atlanta CMAQ application, and then followed up with a written quote which was only valid for the Atlanta application quantities. For the Macon and Rome applications, EMD requoted at a higher price. When questioned, EMD stated that they quoted too low on the Atlanta CMAQ program, but stated they would honor the quote for Atlanta only.

- The decimal in \$963.000 should be a comma.
Yes, the figure should be \$963,000.
- Does that cost (\$963k) include Norfolk Southern labor?
Yes, it includes the labor cost.
- The section title should include the repowers
Yes, it includes the repowers.
- The costs do not seem to add together correctly. I get a total of \$8,328,000 rather than \$8,331,000.

The error here is in the addition of the Mother Repowers the sum of the kit, material should be \$1,208,000, which leads to a total of 8,328,000 for the total project cost.

5. I think the paragraph at bottom of page 6 (section 2) m.) should refer to the Brosnan area and duty cycle.

Correct, it should read Brosnan Yard duty cycle.

6. Section 2) n., first table on page 7: I think the bottom row should be the Total 10 Year Project Reduction (and the NOx number is off.)

The table should read as follows:

Total Estimated Project Emissions Reductions (tons) using EPA Switcher Duty Cycle for converting the GP38 Series to 710ECO Mother/Slug Sets		
	NOx	PM
Total Annual Emissions Reductions	32.55	1.21
Total 10 Year Reduction	320.5	12.12

7. Why is the 710ECO fuel estimate lower than in the Atlanta application? (45,000 gal/year rather than 45,727 gal/year.)

This is actually a conservative estimate. There could be more even more fuel savings. The newer locomotives are equipped with electric assist parking brakes. If the parking brake is set, it will send an electrical signal to the control computer which will cause the auto start system to ignore the air reservoir pressure as a criterion for engine start up.

Without this feature, when the air reservoir pressure falls the engine restarts in order to maintain the air reservoir pressure for the air brakes.

8. The discussion of the emissions comparison with gensets (section 2) o.) should clarify that the ECO emission reduction is given for a 10-year project life, not 5 (particularly in the last line). Can explicitly state that, for the same level of funding, the proposed commitment for the ECO is 10 years and for the genset would be 5, therefore the comparison is between those two periods and not in equivalent years.

Correct, Norfolk Southern will commit to keeping the ECO engine in service for 10 years. However, Norfolk Southern's experience has shown that it is not economically feasible to keep the genset in the proposed service for 10 years. Therefore, the emissions savings period between the ECO and gensets are not equivalent.

9. Section 2) iii., please verify the timeline. The period is same as Rome (with the repowers included.) Will the schedule need to be extended if both applications are fully funded?

The schedule was originally drawn up to continue repowering locomotives once the Atlanta CMAQ funded locomotives were finished. However, now that the Atlanta Repowers are delayed until the "Buy America" issue is resolved the Macon and Rome schedule may be delayed a couple months.

10. Section 3) on page 12 at the end of the paragraph, please add that the locomotives that will be converted will have at least 5 years of additional service reasonably expected (the funding cannot be used to increase fleet size or slow down the nature fleet turnover to cleaner new engines.)

All locomotives that are candidates to be converted can at least expect to see five to ten more years of service.

Rome Application: 2 mother-slugs and 3 repowers

1. Please provide more detailed maps of the railyard and surrounding area, indicating areas of usual locomotive activity.

Norfolk Southern currently uses a set of 3000 horsepower locomotives on trains G36 and G4E. These trains together operate 24 hours per day, seven days a week on the Norfolk Southern's rail lines between Rome and Krannert, GA. These lines are shown on the attached file Trains G36 and G4E Route Map.jpg.

2. Please provide locomotive IDs for potential conversion. Locomotives with similar emission characteristics (equivalent or higher emissions) may be substituted. Locomotives converted must have an expected remaining time in service of at least 5 years as this funding is not allowed to increase fleet size.

Norfolk Southern anticipates converting the locomotives listed below, although, we reserve the right to change this list to accommodate operational needs. In the event Norfolk Southern changes one or more locomotives specified below, Norfolk Southern will replace the listed locomotive(s) with locomotive(s) that are of the same or lower tier. All of the locomotives to be converted will be owned by Norfolk Southern. We also note that not all of these locomotives that are anticipated to be converted with this funding are currently operating in the Rome area. However, after conversion, the locomotives funded by this project will reside in the Rome area and will replace Tier 0 or pre-1973 locomotives that currently normally operate within the Rome area.

ID	Model	Built Date	Serial #	HP
NS 7078	GP50	5/7/1981	807054-1	3500
NS 7079	GP50	5/7/1981	807054-2	3500

- How well do you think the EPA duty cycle represents switching activity in and around the Rome and Krannert area yards (time in notch)? How do you think it may differ? Any explanation of how switcher activity at/near Inman Yard, Brosnan Yard, and the Rome and Krannert area yards differ would be greatly appreciated.

The local trains drop off cars at the local yard in Rome, GA and the trains G36 and G4E take the cars to either the paper mill or the power plant in Krannert, GA. These Rome to Krannert trains are different than the operations in the Atlanta Terminal and the Brosnan Yard hump set locomotives in that the Rome to Krannert trains are true local trains by moving the cars a short distance, spotting the cars at the industries and then delivering cars from the industries back to the Rome yard. The switch jobs within Inman and Brosnan Yards just assemble trains from track to track and push cars over the hump. However, trains G36 and G4E might have a duty cycle such as the local trains that run out of Macon, trains G02, G59 and G61.

- In Section 2) j. why is the Mother/Slug Kit \$139,000 higher than the cost proposed in the Atlanta CMAQ, application?

EMD originally gave a verbal quote over the phone for the Atlanta CMAQ application, and then followed up with a written quote which was only valid for the Atlanta application quantities. For the Macon and Rome applications, EMD quoted at a higher price. When questioned, EMD stated that they quoted too low on the Atlanta CMAQ program, but stated they would honor the quote for Atlanta only.

5. Why is the 710ECO fuel estimate lower than in the Atlanta application? (45,000 gal/year rather than 45,727 gal/year.)

This is actually a conservative estimate. There could be more even more fuel savings. The newer locomotives are equipped with electric assist parking brakes. If the parking brake is set, it will send an electrical signal to the control computer which will cause the auto start system to ignore the air reservoir pressure as a criterion for engine start up. Without this feature, when the air reservoir pressure falls the engine restarts in order to maintain the air reservoir pressure for the air brakes.

6. The discussion of the emissions comparison with gensets (section 2) o.) should clarify that the ECO emission reduction is given for a 10-year project life, not 5 (particularly in the last line). Can explicitly state that, for the same level of funding, the proposed commitment for the ECO is 10 years and for the genset would be 5, therefore the comparison is between those two periods and not in equivalent years.

Correct, Norfolk Southern will commit to keeping the ECO engine in service for 10 years. However, Norfolk Southern's experience has shown that it is not economically feasible to keep the genset in the proposed service for 10 years. Therefore, the emissions savings period between the ECO and gensets are not equivalent.

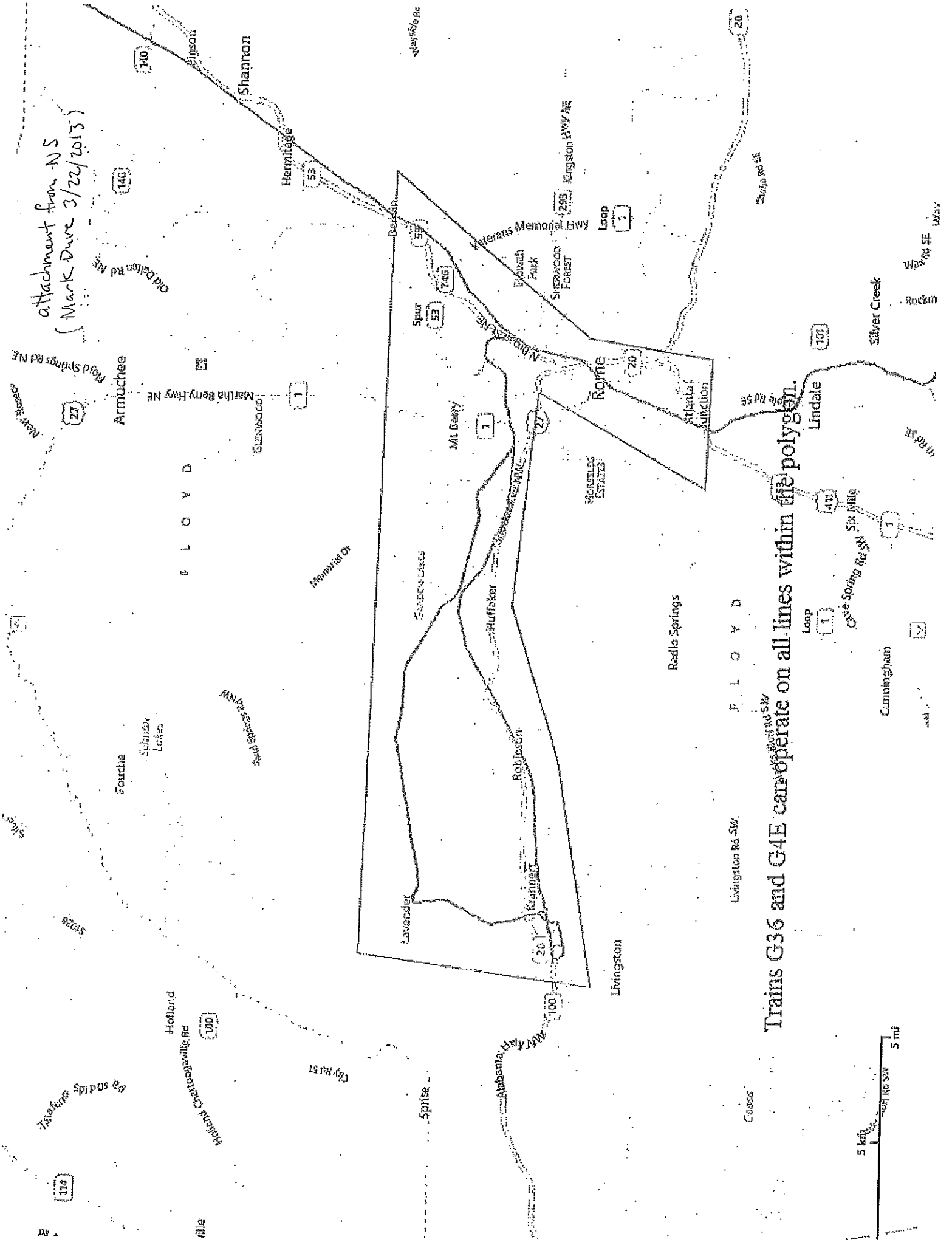
7. Section 2) iii., please verify the timeline. The period is same as Rome (with the repowers included.) Will the schedule need to be extended if both applications are fully funded?

The schedule was originally drawn up to continue repowering locomotives once the Atlanta CMAQ funded locomotives were finished. However, now that the Atlanta Repowers are delayed until the "Buy America" issue is resolved the Macon and Rome schedule may be delayed a couple months.

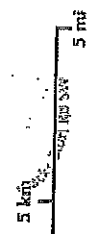
8. Section 3) on page 12 at the end of the paragraph, please add that the locomotives that will be converted will have at least 5 years of additional service reasonably expected (the funding cannot be used to increase fleet size or slow down the nature fleet turnover to cleaner new engines.)

All locomotives that are candidates to be converted can at least expect to see five to ten more years of service.

Attachment from NS
(Mark Drive 3/22/2013)



Trains G36 and G4E can operate on all lines within the polygon.



Bergin, Michelle

From: Duve, Mark F. <mark.duve@nscorp.com>
Sent: Thursday, May 16, 2013 9:18 PM
To: Michelle Bergin
Cc: James Kelly
Subject: RE: additional questions RE: Requested Information for Macon and Rome Applications

Hi Michelle,

I have worked through our Transportation Department and they have gone over train data from train G59, G60 and G02 since 2012. Based upon the data we have come up with the following answers for your question regarding the train routes and times the potential repowers will spend outside of the GA Middle Counties.

Norfolk Southern operates trains G59, G61 and G02 as local trains. A local train operates on a designated route out of a terminal. Local trains travel a short distance and have a number of cars such that the crew can switch out the cars and return to the terminal in the same day before the crew's federally mandated 12 hour service day is over. If there are more cars or customers than a crew can handle in a day, then another local train is assigned. This is the case of trains G59 and G61 in which they have the same route out of the Brosnan Yard Terminal. Each day, a local train is assigned a crew and either a locomotive or a locomotive consist. The crews and locomotive consists can vary from day to day depending upon the availability of crews and locomotives. Train crews must be qualified for each route. They must know the sidings, speed limits, clearance, issues etc. Because of the route qualification policy, it is Norfolk Southern's practice to set up local train farther than their actual routes such that when emergencies occur the local crew can assist the road crew. For instance, if a road freight has a locomotive that breaks down the local crew could continue farther and pull the road train back to the terminal, or if there is a minor derailment, the road crew could clear part of a train away that is not derailed. There are also special train moves for maintenance of way equipment etc. In the case of train G61, the route is set up such that the end of the route is in Pinehurst which is in Dooly County. Yet, there are no customers on the line between Clinchfield and Pinehurst; therefore, it is usually out of the ordinary that train G61 operates out of the Bibb and Houston Counties. In fact, NS's records has shown that since January of 2012 G61 has not operated past Clinchfield. The same is true for train G59, except G59's stated route ends at Clinchfield, which is in Houston County.

Train G02 route states that it operates to Barnesville. However, the customers in Barnesville are generally served by locals G09, G05 and G03 coming south from Griffin. In reviewing the records G02 has assisted the Griffin locals on several occasions. Norfolk Southern's records indicate that since G02 had operated to Barnesville only 50 times since January of 2012. Train G02 operates five days per week. Between January 2012 and now, G02 has operated over 375 times which means only 13% of the trains G02 has been outside of the GA Middle Counties. However, a majority of the switching performed by G02 is done in Smarr and Forsyth, which means more time is allocated in Monroe County than in Lamar County.

Rome Application Answers

- 1) The Rome application has a typo on the first page the match will be \$1,452,000.
- 2) Trains G36 and G4E do operate entirely in Floyd County. The only time the repowered loco and slug will leave Floyd County is for maintenance.

If there are any other questions, please do not hesitate to contact me.

Regards,

Mark Duve

Mechanical Engineer - Locomotive Design
Norfolk Southern Corporation
Mechanical Department - Box 184
1200 Peachtree Street, NE
Atlanta, GA 30309-3579
Phone 404-582-6743
Mobile 404-989-6192

From: Michelle Bergin [mailto:Michelle.Bergin@dnr.state.ga.us]
Sent: Thursday, April 18, 2013 1:14 PM
To: Duve, Mark F.
Cc: James Kelly
Subject: additional questions RE: Requested Information for Macon and Rome Applications

Hi Mark,

I have a few other (hopefully easy) questions on the Macon and Rome applications. On Rome, on the cover page, the requested funds plus match do not equal the total project cost. Can you let me know the correct numbers? Also, it appears from the map provided for trains G36 and G4E that the operation polygon is entirely within Floyd County. Is that correct?

My main Macon question also relates to the operation polygons and counties. I don't have a good way to compare % of operation time by county. The Macon funding is from 2 programs, one for Bibb County and the other for the 7 Middle GA counties. As best I can tell, your operation figures show some G02 operation in Lamar, and some G59 and G61 operation in Dooly. We need a way to estimate % of operation time per county, maybe by combining track length ratios with operation (for example, you listed G59 and G61 as operating 5 days/week in Brosnan (Bibb), so 2 days/week (2/7) as divided I think between Bibb, Peach, Houston, and Dooly which can be parceled by track length ratios or some similar metric). It would be most useful to see Bibb individually, the other Middle GA counties combined, and then the external counties.

We need to first be sure the % of time in operation in the counties meets the funding requirements (I believe it's 80% of operating time), and then see which locomotives may be funded from each source (CMAQ and HPP.) We can possibly combine the sources (I'll look into it) but will still need to show that the project meets the individual requirements of each funding source. Besides counties of operation, the sources also have different match requirements so we will need to be very clear about how that is fulfilled.

Also, we expect to have a draft contract for your review for the Atlanta projects soon. We are still looking into Buy America requirements/waivers with GDOT and FHWA, I'd be glad to hear if you all are making any progress on that.

Thank you, please let me know if you have any questions.

Best Regards,
Michelle

From: Duve, Mark F. [mailto:mark.duve@nscorp.com]
Sent: Friday, March 22, 2013 10:53 PM

Rome applciation

From: Michelle Bergin
Sent: Friday, May 31, 2013 4:01 PM
To: Mark F. Duve
Subject: Rome applciation

Mark,

For clarification on the Rome CMAQ locomotive conversion application (1/11/12), I believe the NOx values on the first table on page 5, section 2) ii. n. are incorrect, and that the correct values are in the table below: 8.42 tons annual emissions savings and 84.24 tons 10 year total savings. Is that right?

Thank you,
Michelle

Michelle S. Bergin, PhD
Sr. Environmental Engineer
GA Environmental Protection Division
Air Branch, Planning & Support

4244 International Pkwy
Suite 136 (1927)
Atlanta, GA 30354
Phone: 404-362-4569

RE Correction on NS GA EPD 2013 Rome Application
From: Michelle Bergin
Sent: Tuesday, June 04, 2013 2:43 PM
To: Duve, Mark F.
Subject: RE: Correction on NS GA EPD 2013 Rome Application

Thank you Mark!

From: Duve, Mark F. [mark.duve@nscorp.com]
Sent: Tuesday, June 04, 2013 2:26 PM
To: Michelle Bergin
Subject: Correction on NS GA EPD 2013 Rome Application

Michelle,

There is a typographical error on page 5 of Norfolk Southern's 2013 Rome Application for locomotive emissions retrofits. The Total Annual Emissions Reductions for NOx should be 8.42 tons per year, and the Total 10 Year Reduction should be 84.2 tons. The 1.23 tons Annual Emissions Reduction and 10 year Project Reduction of 8.42 as listed on the table are in error.

Thanks,

Mark Duve
Mechanical Engineer - Locomotive Design
Norfolk Southern Corporation
Mechanical Department - Box 184
1200 Peachtree Street, NE
Atlanta, GA 30309-3579
Phone 404-582-6743
Mobile 404-989-6192

Exhibit C
Request for Applications (RFA)

Request for Applications
Railroad-Related Emission Reductions Grant Program

Switch-Duty Locomotive Conversions in Rome, Georgia

Released November 16, 2012
Application due by January 11, 2012 (within 8 weeks after release)

GA Environmental Protection Division
Air Protection Branch
Planning and Support Program

The Georgia Environmental Protection Division (EPD) is requesting proposals to convert traditional locomotives performing switch duties in Floyd County, Georgia to 'Genset' locomotives or to an alternative switcher locomotive technology with equivalent or better emissions reduction to be used for switching. 'Genset' is a term used in the marketplace to describe a modern locomotive that meets EPA's stringent emission standards and can employ one or more engines. 'Switch-duties' include moving railcars around to assemble and disassemble trains, primarily within railyard limits.

\$900 thousand in funding from the U.S. Department of Transportation's Congestion Mitigation and Air Quality (CMAQ) Program has been awarded for these conversions to the EPD by the Georgia Department of Transportation. These funds will cover up to 70% of the cost of converting older, more emissive locomotives to lower emitting locomotives, requiring a minimum 30% match. Conversions must be completed within 24 months of the execution of funding contracts.

Project Goals

The major goals of this project are (1) to protect human health in the Rome area by reducing exposure to diesel combustion emissions and subsequent secondary air pollutants, especially PM_{2.5} (particulate matter of 2.5 microns in diameter and smaller), and (2) to facilitate attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The development of agreements associated with this project will incorporate any guidance received from the US EPA regarding necessary actions to ensure the applicability of the emission reductions resulting from this project to the Rome PM_{2.5} State Implementation Plan (SIP). The SIP is submitted to the US EPA by the State of Georgia to demonstrate its air quality management plan to attain or maintain the NAAQS.

Project Overview

Eligibility and Project Requirements

Owners of traditional diesel switch-duty locomotives operating in Floyd County are eligible for this funding assistance. Locomotives eligible for conversion include unregulated (pre-1973) or Tier 0 (1973-2001) diesel switchers that are currently in service and would have remained in service in the proposed railyard for at least five years from the application date. If EPD and the Grantee mutually agree that a switch locomotive operating outside of the proposed railyard is a more beneficial candidate for conversion than any locomotive operating as a switcher in the railyard, the alternative locomotive may be converted and used to replace a switcher normally operating in Floyd County, provided the locomotive conversion will result in the same or greater PM_{2.5} and NO_x emission reductions as if the switcher to be replaced were converted. In addition, if EPD and the Grantee mutually agree, the Grantee will be allowed to convert or replace a different locomotive from that identified in the application subject to, at a minimum, achieving the emission reductions presented in the application.

Emissions benefits must be calculated as the emission difference between the new converted locomotive(s) and the replaced or converted locomotive(s) previously operating in the designated railyard(s). This project must result in emission reductions that would otherwise not occur in the Rome area for the remaining useful life of the converted or replaced equipment (e.g., the project cannot be applied to increase a fleet size and emission reductions must be greater than what would have occurred due to fleet turnover and phased in regulatory emission limits in the railyard.) The original locomotive engine (before conversion) must be permanently retired or retrofitted to at least current emission standards that would be required for new engines. This subsequent retrofit cannot use funding from this project and is not eligible as part of the required match.

Proposals must commit the converted locomotive to at least 80% of their operating time within a designated distance of the proposed railyard(s) for a minimum of 10 years (or a similar commitment schedule) unless the locomotive becomes inoperable and is unable to be repaired or replaced with comparable equipment.

Grant funds will cover up to 70% of the total locomotive conversion cost and will be distributed to the grantee incrementally (not more than once per annual quarter) following completion of conversion task(s), provided the match has been satisfied for the incremental distribution. Payments shall be made after invoices are approved by the EPD.

Selection Criteria

Priority will be given to the projects with the highest cost effectiveness calculated as dollars per ton of PM_{2.5} reduced. This value is based on (a) the emission levels of the engines to be converted/replaced (Tier level or direct measurements), (b) the operating cycle of the locomotive to be converted/replaced, (c) the estimated length of remaining service of the locomotive to be

Switch-Duty Locomotive Conversions in Rome, Georgia
GA Environmental Protection Division
Air Protection Branch

converted /replaced, (d) the emission levels of the converted locomotive, (e) the proposed amount of time of operation and average duty cycle of the converted locomotive (possibly the same as (b)), and (f) the number of years (minimum 10) that the converted locomotive will remain in the Rome area. When calculating cost effectiveness, only funds to be awarded under this grant will be included.

EPD may fund individual projects for less than the requested amounts if the total amount of the proposals exceeds available funds. If the amount of funding provided to individual projects is less than that project's respective proposal, EPD may specify which switcher engines may be converted based on the cost effectiveness of the emissions reductions for each switcher converted as described above.

Penalties and/or contingencies for not meeting the terms of the contract will be specified in the funding contract in accordance with applicable requirements.

In the event that the applicant is offered funding less than the applicant proposed, and the applicant determines in its sole discretion that such allocation of funding is inadequate for its budgeting and finance purposes, then the applicant may withdraw its application in whole and reject any offer of funds without recourse from EPD. In addition, in the event the funding contract offered to the applicant includes provisions or incorporates documents that contain provisions with which the grantee does not agree, then grantee may withdraw its application in whole and reject any offered funds without recourse from EPD.

Reporting Requirements

Reporting requirements for each converted locomotive will include:

- (1) an initial report before the locomotive is converted,
- (2) a report within one month after completion of the conversion(s),
- (3) a report each 6 months for the first two years of operation of the converted locomotive,
and
- (4) a report once per year for the remaining period of commitment.

The reports will include the following components (details are given below):

- (1) Initial report:
 - a. Activity, emissions, and fuel use information for the locomotive to be converted and for the locomotive to be replaced.
 - i. The initial report may use data from the application if it meets all reporting criteria and if the replaced locomotive is the one converted.
 - ii. If a different locomotive will be converted than the locomotive specified in the application, a comparison of the two locomotives must be submitted for approval by the EPD at least 30 days prior to initiation of the conversion. The comparison must include information sufficient to

Switch-Duty Locomotive Conversions in Rome, Georgia
GA Environmental Protection Division
Air Protection Branch

determine that resulting emission reductions will be at least equivalent to what was included in the application.

- (2) Post conversion report:
 - a. A description of expected emission levels based on the equipment installed.
 - b. Certification/assurance that the equipment was properly installed and is in working condition.
 - c. A description of the provisions that ensure enforcement of warranty claims against vendors if problems arise.
 - d. If the proposed time for completing the conversion is exceeded, provide a description and explanation of the delay.
- (3) 6 months descriptive operation reports (4 reports; one each 6 months for the first 2 years of operation):
 - a. Activity, emissions, and fuel use information for the converted/replaced locomotive.
 - b. Description or confirmation of operating patterns.
 - c. Certification/assurance of proper operation and maintenance of the locomotive and emissions control equipment.
- (4) Annual normal operation reports:
 - a. Activity, emissions, and fuel use information.
 - b. Description or confirmation of operating patterns.
 - c. Certification/assurance of proper operation and maintenance of the locomotive and emissions control equipment.

Activity, emissions, and fuel use information

Activity and emissions data must be collected through the use of an event recorder or similar technology to calculate the average percentage of operating time in idle and each notch during normal operations for average or typical weekday and weekend day activity (e.g. 24 hour 'duty cycle' descriptions). Please state if activity is indistinguishable between weekdays and weekend days.

Information on monthly or seasonal differences in activity between reporting periods can be reported either through activity data or fuel use based on overall railyard activity level measured by indicators such as carloads handled or freight throughput and expert opinion. If the estimates of normal duty cycles and temporal patterns (e.g. weekly, seasonal) of the converted locomotive are unchanged after the first year of operation, activity, emissions and fuel use data from previous reports may be reused for up to 5 years.

EPA notch-specific emission factors may be used in conjunction with measured duty cycle activity to estimate emissions. Fuel use can be measured (logged) or calculated using location and locomotive-specific information. The emissions calculation method will be determined in cooperation between the EPD and the locomotive owner.

Switch-Duty Locomotive Conversions in Rome, Georgia
GA Environmental Protection Division
Air Protection Branch

It is understood that there is a wide range of variability in switching activity, and that some information is very difficult to measure. Expert opinion (e.g. from the lead railyard engineers and switch locomotive operators or maintenance engineers) may need to be utilized for some estimates. If the cycles are considered too erratic to estimate, please describe the range of possible cycles for the specific railyard with data supporting this assertion in the grant application (see Application Components section 2. ii(h) below).

This activity and fuel use information is important for determining if and how the main goals of this air quality improvement program are met. Because the current default duty cycle and fuel use estimates available for switch locomotives are outdated and designed to represent a very large, nationwide distribution of railyards and locomotives rather than specific in-use engines and conditions, a tailored estimate to location and locomotive, even if approximate, will be a much better indicator of historic emission levels and achieved improvement from this program. In addition, this information will aid in supporting the use of equipment and technologies that result in actual in-use emission reductions with reliable service rather than only supporting the use of equipment that will only reduce emissions under default duty-cycle use patterns, and will help prevent funding equipment that does not meet real-world operational requirements.

Description or Confirmation of Operating Patterns

All reports beginning with the first 6-month report of the first year of the converted locomotives operation, must confirm the use of the converted locomotives in the designated areas during the reporting period unless the locomotive became inoperable and was unable to be repaired, which must be reported within 60 business days after the final determination by the locomotive owner (Grantee). The report must explain if there have been significant performance or unanticipated maintenance difficulties.

“Designated areas” can include both the 80% operating time within a designated distance of assigned railyard(s) and up to 20% time that can include pre-determined standard maintenance or support locations outside the designated distance as well as outside operations. While the pre-determined standard maintenance or support locations are allocated to the 20% ‘out of area’ operation time, they do not need to be detailed in reports. Please list the proposed designated activities/locations in the grant application, specifying both in and out of area operations as expected to reduce reporting needs (see Application Components section 2. ii(g) below).

The reports must detail any changes in operating patterns that would cause significant differences in activity data since any previous reports.

Certification/Assurance of Proper Equipment Operation and Maintenance

All reports must include verification/assurance that the locomotives are being properly maintained in accordance with the manufacturer’s specifications and are being operated in accordance with the terms of the funding contract. This verification/assurance may be in the

Switch-Duty Locomotive Conversions in Rome, Georgia
GA Environmental Protection Division
Air Protection Branch

form of a representation by grantee. The report must detail if unexpected maintenance or repair beyond normal operation expectations was required that caused the locomotive to be removed from service beyond normal maintenance requirements (excluding travel time to and from repair shops).

All reports will be subject to review by the EPD, and any questions, reasonable requests for data, or concerns must be addressed before the project progresses. Any deviation from contractual agreements must be reported.

Verification and Enforcement

Verification and enforcement clauses will be included in any contracts as required for compliance with State and Federal procurement and subgrant procedures and for the Rome PM_{2.5} SIP. Grantee shall not be obligated to provide such verification/assurance during the years it provides the annual reports containing the same verification/assurance. If necessary, Grantee will take reasonable measures to protect its rights under any applicable vendor warranties in accordance with contractual rights and federal regulations. Any funding contract will ensure that funds will be returned for failure to complete the conversion of the locomotive(s).

Application Components

The application should address each of the following items. Please contact the EPD at the address below for clarification if needed.

1. Applicant and Project Overview, to be submitted on the Application Cover Page. Includes:
 - i) Company name.
 - ii) Primary technical contact.
 - iii) Primary contractual contact.
 - iv) Additional contact.
 - v) Total number of conversions proposed.
 - vi) Total funding requested.
 - vii) Total match proposed.
 - viii) Total project cost.
 - ix) Signature of authorized official and date of submittal.

2. Locomotive, Railyard/location, and Operation:
 - i) Railyard location and area of operation. Include map. Describe if more than one railyard or area will be assigned.
 - ii) Please give the following information for each locomotive to be converted, as applicable. If information pertains to more than one proposed conversion, provide the information for each locomotive to be converted.
 - (a) Locomotive identifier, including both the manufacturer's serial number and the owner assigned identifier
 - (b) Model/type
 - (c) Year of engine manufacture
 - (d) Tier certification
 - (e) Last date of rebuild
 - (f) Expected remaining years of service
 - (g) Estimates of location(s) of operation and percent of time at each location. Include daily, weekly, and seasonal schedules if applicable, or other expected use both inside (at least 80%) and outside (up to 20%) of the designated operating distances (such as scheduled maintenance in outside locations). Describe if locomotive will be used in specific areas of yard(s).
 - (h) Description of normal and occasional operation cycles/duties, with a description of how the duty cycle (weekday/weekend, seasonal) and actual fuel use will be measured or calculated and reported. Compare with the EPA default switch locomotive duty cycle. If more than one measurement/calculation option is available, describe options with the benefits and detriments of using each method.
 - (i) Kit or procedure for conversion (description of equipment and process, particularly as related to emissions reduction such as use of Tier 4 nonroad engines or diesel particulate filters.)
 - (j) Cost of conversion, including labor and materials
 - (k) Years of proposed commitment to specified railyard(s) or areas

Switch-Duty Locomotive Conversions in Rome, Georgia
GA Environmental Protection Division
Air Protection Branch

- (l) Proposed percent of annual operating time commitment to specified railyard(s) or areas
 - (m) Estimate of annual fuel use before and after conversion (may be in terms of percentage of expected reduction or direct measurement). If funded, more specific fuel use measurements may be required. Please give an explanation of how the current estimate is made and what can be done in the future.
 - (n) Calculated estimate of annual NO_x and PM_{2.5} emissions before and after conversion
 - (o) Description of any additional emission reductions or other benefits. If a technology other than multi-engine gensets is proposed, include a comparison showing that the alternative technology will achieve equivalent or better emission reductions (particularly for PM) than the use of Gensets under actual operating conditions.
- iii) Timeline detailing the schedule and maximum time period needed for converting the locomotive(s), including when locomotive(s) will be removed, when and if replacements are brought in and removed, and when the locomotive will be completed and in use. If the timeline is dependent on number of conversions awarded, provide other potential timelines.
3. Please list any other comments, information, or descriptions that may be useful in analysis of this proposal, including a description of the activity and fuel use data you can provide in the required reports.

Please submit the application electronically in either MS Word or as an Adobe pdf, and send a signed hardcopy through certified or tracked mail. Any expense incurred to prepare the application is not reimbursable and is the responsibility of the applicant. In addition, operating expenses, fuel costs, projects required by any law or other agreements, administrative costs, or work done or purchases prior to execution of a contract between EPD and the applicant are not reimbursable and are the responsibility of the applicant.

For more information and/or to submit proposals, please contact:

Michelle Bergin, PhD
GA Environmental Protection Division
Air Protection Branch, Planning and Support
4244 International Parkway
Atlanta, GA 30354

404-362-4569
michelle.bergin@dnr.state.ga.us

Application Cover Page

Company Name

Contact Information – Technical

Name	
Mailing Address	
Phone Number	
E-mail	

Contact Information – Contracts

Name	
Mailing Address	
Phone Number	
E-mail	

Contact Information – Additional Contact (optional)

Name	
Mailing Address	
Phone Number	
E-mail	

Application Summary

Total number of conversions	
Total funding requested	
Total match proposed	
Total project cost	

Authorized Official

Name and Title

I certify to the best of my knowledge that the information provided in this application is accurate. I agree that all of the minimum requirements have been or will be met. Additionally, I understand the obligations constraints associated with this proposal. I understand that completing this form simply enters me into the Genset Locomotive Conversion funding competition and my final decision to accept the grant funding, if I were to be selected, would occur later.

Signature: _____ Date: _____

Exhibit D

CONTRACTOR's affidavits required by the Georgia Security and Immigration Compliance Act of 2006 rules and regulations issued by the Georgia Department of Labor set forth at rule 300-10-1-.01 *et. Seq*

See Attached (For Electronic Copy, Double Click Below)



Microsoft Word
Document

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of (name of public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

160328
Federal Work Authorization User Identification Number

1/31/14
Date of Authorization

Norfolk Southern Corporation
Name of Contractor

CMAQ Rail Related Emission Grant; Switch Duty Loco Conversion NATL
Name of Project

DWR/EPD
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on Jan., 31, 2014 in Norfolk (city), VA (state).

Kimberly M. Ear
Signature of Authorized Officer or Agent

Corporate Recruiting Coordinator
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE 31 DAY OF January, 2014.

Rosalind McClean
NOTARY PUBLIC

My Commission Expires:

3/31/17

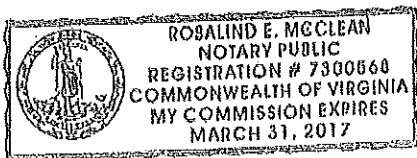


Exhibit E

The Disclosure of Lobbying Activities

(Disclosure form of any Lobbying using Nonappropriated Funds)

See Attached (For Electronic Copy, Double Click Below)



Adobe Acrobat
Document

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure.)

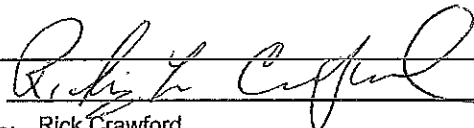
1. Type of Federal Action: <input checked="" type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. Status of Federal Action: <input checked="" type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known: Norfolk Southern Railway 3 Commerce Place Norfolk, VA 23510 Congressional District, if known:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: Congressional District, if known:	
6. Federal Department/Agency: US DOT - FHWA (CMAQ Funds to Georgia Department of Natural Resources, Environmental Protection Division)	7. Federal Program Name/Description: Congestion Mitigation and Air Quality Improvement Program CFDA Number, if applicable: _____	
8. Federal Action Number, if known:	9. Award Amount, if known: \$ 16,438,000.00	
10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI): None	b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI): None	
11. <small>ation requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</small>	Signature:  Print Name: Rick Crawford Title: Director - Public Projects, Government Relations Norfolk Southern Telephone No.: 202-675-8221 Date: 3-17-14	
Federal Use Only:		Authorized for Local Reproduction Standard Form LLL (Rev. 4/2012)

Exhibit F

Certification Regarding Lobbying

See Attached (For Electronic Copy, Double Click Below)



Adobe Acrobat
Document

CERTIFICATION REGARDING LOBBYING

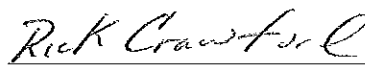
Certification For Contracts, Grants, Loans, And Cooperative Agreements

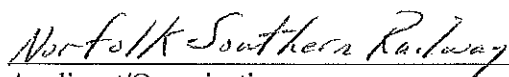
The undersigned certifies, to the best of his or her knowledge and belief, that:

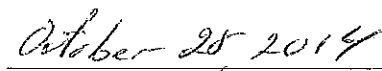
- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.


Signature/Authorized Certifying Official


Typed Name and Title


Applicant/Organization


Date Signed