

Clemson Area Transit
200 West Lane
Clemson, SC 29631
April 29, 2016

Dear Clemson Area Transit:

It is my pleasure to write a letter in support of the grant proposal Clemson Area Transit is submitting to the Low or No Emission Program (Lo-No Program) 2016 Funding Opportunities with the Federal Transit Administration. Deployment of these advanced technology vehicles offer benefits to the City of Clemson and its riders and to the community as a whole. As a public transportation provider, the City of Clemson has a vested interest in deploying the most fuel-efficient fleet in order to achieve the greatest reduction in energy consumption. Deployment of zero emission buses is also a key contributor to reducing local emissions and the quiet, clean operation serves to enhance the riders' experience.

I am interested in seeing environmentally friendly transit buses in our community and on the Clemson University Campus. If awarded, Clemson University would be the first university in the world with an all-electric zero emission public transit system. This is important because it would be a "scalable model" for all other universities and all public transit systems, and be a great educational tool and inspiration. The City of Clemson has set aside and dedicated funds in the amount of \$727,000 to the project. These funds are readily available as local match to fund the LoNo Grant.

I understand the main purpose of the Lo-No Program is to support the transition of the nation's transit fleet to the lowest polluting and most energy efficient transit vehicles.

If Clemson Area Transit were to be selected for this grant opportunity, they intend to purchase 12 electric zero emission buses and supporting infrastructure. Over the life of this project, 20,000,000 lbs. of carbon dioxide emissions will be reduced, which is the equivalent of planting 416,328 trees.

In conclusion, I fully support the efforts of Clemson Area Transit to build on Clemson's success in managing and operating a zero emission all electric public transit system, and I strongly recommend full federal funding coordination.

Sincerely,

JC Cook
Mayor of Clemson

CITY OF CLEMSON)
COUNTY OF PICKENS)
STATE OF SOUTH CAROLINA)

A RESOLUTION

Resolution: Authorizing submittal of application to Federal Transportation Administration Low or No Emission Grant Program 2016 Funding Opportunity

Whereas: City of Clemson and it's partner City of Seneca has successfully purchased, manage, and operate the world's first all-electric public transportation system in Seneca, SC

Whereas: Center for Transportation and the Environment (CTE) has documented the successful operation of electric buses in Seneca, SC and reduction of greenhouse gases.

Whereas: Clemson University has pledged financially to provide capital match in the amount of \$750,000 toward the purchase of electric buses in order to be the first university in the world with an all-electric zero emission public transit system as indicted in the letter from the university president Jim Clements to be included in the LoNo Grant Application. (Attachment 1)

Whereas: The City of Clemson has received the Department of Health and Environmental Control (DHEC) "Spare the Air Award 2016" for its environmental stewardship in managing and operating electric buses in Seneca.

Whereas: The City of Clemson is also pledging to provide an additional sum of \$727,000 local match toward the purchase of electric buses for its public transit system, as committed by Mayor JC Cook, mayor of Clemson, in the attached letter from April 28, in the year of 2016. (Attachment)

Whereas: The City of Clemson has vested interest in deploying the most fuel efficient fleet in order to achieve the greatest reduction in energy consumption.

Whereas: The City of Clemson has received letters of support and commitment for an all-electric public transit system model for the transit industry including but not limited to: Center for Transportation and the Environment (CTE), Department of Health and Environmental Control (DHEC), Clemson University, Southern Wesleyan University, Dan Boyle and Associates, David Lane (Clemson Area Chamber of Commerce), Greenville Pickens Area Transportation Study (GPATS), and members of the South Carolina Department of Transportation.

Whereas: The Federal Transit Administration LoNo Grant Funds meet the goals of the adopted Zero Emission Clean Air Initiatives.

Whereas: The main purpose of the LoNo Program is to support the transition of the nation's transit fleet to the lowest polluting and most energy efficient transit vehicles. The LoNo Program provides funding to state and local governmental authorities for the purchase or lease of zero emission and low emission transit buses, including acquisition, construction, and leasing of required supporting facilities.

NOW THEREFORE: Let it be resolved that the City of Clemson staff is authorized and directed to submit a LoNo grant application to the Federal Transit Administration on or before May 13, 2016 with appropriate support documentation.

This Resolution is hereby approved at a Regular Meeting of the City Council of the City of Clemson, South Carolina, and the Mayor is authorized to execute this Resolution this 2nd day of May 2016.

By: _____

Mayor J.C. Cook, III

Date: _____

Attest: _____

Beverly A. Coleman, City Clerk

LoNo Grant Project Options

Catbus: LoNo Application

Type	Units	Each	Total
Campus Electric Buses	6	\$750,000	\$4,500,000
City Electric Buses	6	\$750,000	\$4,500,000
Charger	12	\$45,000	\$540,000
Project Management		\$500,000	\$500,000
Total			\$10,040,000

Local Match

Local Share	
Clemson University Buses	\$698,000
Clemson University – Project Management	\$25,000
Clemson University – Charger	\$27,000
City of Clemson Buses	\$675,000
City of Clemson – Project Management	\$25,000
City of Clemson Charger	\$27,000

Local Match	
Clemson University	\$750,000
City of Clemson	\$727,000
SCDOT Vehicle Replacement Grant	\$2,750,000
Total	\$4,227,000

Local Match Share for Project:

Percentage of Local Match	
Local Match Total	\$4,227,000
Project Cost	\$10,040,000
Local Match Percentage	42%

Local Share

Buses: $\$8,250,000 \times 15\% = \$1,237,500$

Spares: $\$750,000 \times 15\% = \$112,500$

Charger: $\$540,000 \times 10\% = \$54,000$

Project Management: $\$500,000 \times 10\% = \$50,000$

LoNo Grant Project Options

Estimated Fuel Savings

West Route

Diesel Cost

53,208 annual miles/ 3.9 mpg = 13,643 gallons

13,643 gallons x \$2.00 a gallon = \$27,286

Electric Cost

\$27,286 x .22 = \$6,003

Electric versus Diesel Conversion Rule:

3.9 mpg/18mpg for Electric Buses = .22

Diesel Cost: \$27,286 – Electric Cost: \$6,003 = \$21,283 West Route Savings

*Source Data: Fiscal Year 2014-2015 Ridership Data

LoNo Grant Project Options

Estimated Fuel Savings

East Route

Diesel Cost

21,796 annual miles/ 3.9 mpg = 5,589 gallons

5,589 gallons x \$2.00 a gallon = \$11,178

Electric Cost

\$11,178 x .22 = \$2,459

Electric versus Diesel Conversion Rule:

3.9 mpg/18mpg for Electric Buses = .22

Diesel Cost: \$11,178 – Electric Cost: \$2,459 = \$8,719 East Route Savings

*Source Data: Fiscal Year 2014-2015 Ridership Data

LoNo Grant Project Options

Estimated Fuel Savings

Red Route

Diesel Cost

247,802 annual miles/ 3.9 mpg = 63,539 gallons

63,539 gallons x \$2.00 a gallon = \$127,078

Electric Cost

\$127,078 x .22 = \$27,957

Electric versus Diesel Conversion Rule:

3.9 mpg/18mpg for Electric Buses = .22

Diesel Cost: \$127,078 – Electric Cost: \$27,957 = \$99,121 Red Route Savings

*Source Data: Fiscal Year 2014-2015 Ridership Data

LoNo Grant Project Options

Estimated Maintenance Savings

Cost of Maintenance per mile:

Diesel: \$1.53

Electric: \$.55

Annual:

Diesel: $\$1.53 \times 332,806 = \$509,193$

Electric: $\$.55 \times 332,806 = \$183,043$

Difference: $\$509,193 - \$183,043 = \$326,150$

12 Years bus life:

Diesel: $\$1.53 \times 3,993,672 = \$6,110,318$

Electric: $\$.55 \times 3,993,672 = \$2,196,519$

Difference: $\$6,110,318 - \$2,196,519 = \$3,913,799$

Because 16 buses have reached and/or surpassed their useful life, maintenance cost per bus will likely increase.

LoNo Grant Project Options

Total Savings

Annual Fuel Cost Savings for all 3 Routes:

\$21,283 (West) + \$8,719 (East) + \$99,121 (Red) = \$129,123

Annual Maintenance Savings for 12 Bus Conversion:

\$326,150 – per year

Total Life Savings (Annualized Savings x 12 year bus life) 9 buses:

Fuel: \$165,542 annual x 12 years bus life = \$1,986,504

Electric Cost: \$36,419 x 12 years bus life = \$437,028

Fuel vs Electric Savings: \$1,986,504 - \$437,028 = \$1,549,476

Maintenance: \$326,150 annual x 12 years of bus life = \$3,913,800

Total - \$5,463,276

LoNo Grant Project Options

Sustainability: Environmental Impact

247,802 annual miles Red Route

21,796 annual miles East Route

53,208 annual miles West Route

Total annual miles = 332,806 x 12 years bus life = 3,993,672

3,993,672 / 100,000 (100,000 miles = 500,000 lbs. of carbon dioxide emissions) = 40

40 x 500,000 = 20,000,000 lbs. carbon dioxide

20,000,000 / 2000 = 10,000 tons of carbon dioxide emissions reducing the campus and red route carbon footprint.

Green Thumb: Environmental Impact

On average, two gallons of diesel fuel creates as many pounds of carbon dioxide as a tree sequesters in one year. Over the life of this LoNo Grant Project, 20,000,000 lbs. of carbon dioxide emissions will be reduced which is the equivalent of planting 416,328 trees.

20,000,000 lbs. of carbon dioxide / 75,700 = 264

(75,700 lbs. of greenhouse gases is equaled to 1,577 trees)

264 x 1,577 = 416,328 trees saved when operating electric buses.