

CMAP FY 2016-2020 CMAQ PROJECT APPLICATION

DIRECT EMISSIONS REDUCTION PROJECTS

I. PROJECT IDENTIFICATION				
Project Sponsor Chicago Transit Authority		Contact Information – Name, Title, Agency, Address, Phone, Fax, E-Mail		
Other Agencies Participating In Project N/A		Laura Fedak 567 W. Lake Street Chgo, IL 60661 Phone 312-681-4108 Fax 312-681-4197 E-mail lfedak@transitchicago.com (Project Manager Marc Manning)		
<input checked="" type="checkbox"/> New Project <input type="checkbox"/> Existing CMAQ Project <input type="checkbox"/> Add CMAQ to Existing Project	TIP ID if project already has one			
II. PROJECT LOCATION				
<ul style="list-style-type: none"> • Projects not readily identified by location must provide a title on the last line of this section • Attach a map sufficient to accurately locate this project in a GIS system 				
Location of Equipment or Facility to be Improved N/A		Marked Route # 1, 2, 7, 28, 29, 65, 121, 124, 126, 143, and 151		
Other Project Location Information or Project Title Purchase of Up To 25 Electric Buses and Charging Stations				
III. PROJECT FINANCING & CMAQ FUNDING REQUEST Please review the <u>instructions</u>.				
	Starting Federal Fiscal Year*	Total Phase Costs	(New) CMAQ Funds Requested	Other Federal Funds Including prior CMAQ awards
				Fund Type Amount
Engineering (For Implementation Projects)		\$	\$	\$
Implementation	2018	\$25,000,000	\$20,000,000	\$
*Phase must be accomplished within 3 years		\$25,000,000	\$20,000,000	
Total Project Costs:				
Source of Local Matching Funds:		RTA Bond funds		
If soft matching funds are intended to be used, please contact CMAP staff.				
Have Matching Funds Been Secured? (Provide Details):		Yes, matching funds will be provided through CTA Capital Funds		
IV. PROJECT EMISSIONS BENEFIT DATA Complete this section for each group of vehicles (type, engine, technology, etc.). Use additional sheets as needed.				
Vehicle Type: <input type="checkbox"/> School Bus <input checked="" type="checkbox"/> Transit Bus <input type="checkbox"/> Refuse Hauler <input type="checkbox"/> Short Haul <input type="checkbox"/> Long Haul <input type="checkbox"/> Delivery Truck (check one) <input type="checkbox"/> Emergency Vehicle <input type="checkbox"/> On-Highway <input type="checkbox"/> City/County Vehicle <input type="checkbox"/> Passenger Locomotive <input type="checkbox"/> Switch Engine <input type="checkbox"/> Other: _____ specify				
Vehicle Size: <input type="checkbox"/> Class 2b (8,501 - 10,000 lbs.) <input type="checkbox"/> Class 3 (10,001 - 14,000 lbs.) <input type="checkbox"/> Class 4 (14,001 - 16,000 lbs.) (check one) <input type="checkbox"/> Class 5 (16,001 - 19,500 lbs.) <input type="checkbox"/> Class 6 (19,501 - 26,000 lbs.) <input type="checkbox"/> Class 7 (26,001 - 33,000 lbs.) <input type="checkbox"/> Class 8a (33,001 - 60,000 lbs.) <input type="checkbox"/> Class 8b (60,001 and over) <input type="checkbox"/> School Bus <input checked="" type="checkbox"/> Transit Bus				
Horsepower <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/> 6 <input type="checkbox"/> 11 <input type="checkbox"/> 16 <input type="checkbox"/> 25 <input type="checkbox"/> 40 <input type="checkbox"/> 50 <input type="checkbox"/> 75 <input type="checkbox"/> 175 (check one) <input checked="" type="checkbox"/> 300 <input type="checkbox"/> 600 <input type="checkbox"/> 750 <input type="checkbox"/> 1000 <input type="checkbox"/> 1200 <input type="checkbox"/> 2000 <input type="checkbox"/> 3000				
Current Fuel Type: <input type="checkbox"/> LPG <input type="checkbox"/> LNG <input type="checkbox"/> CNG <input type="checkbox"/> Biodiesel 100 <input type="checkbox"/> Biodiesel 20 <input type="checkbox"/> Biodiesel 10 <input type="checkbox"/> Biodiesel 5 (check one) <input type="checkbox"/> E85 <input type="checkbox"/> Diesel, 3,400 ppm sulfur <input type="checkbox"/> Diesel, 500 ppm sulfur <input checked="" type="checkbox"/> Diesel, 15 ppm sulfur <input type="checkbox"/> Emulsion				
Model Year (all vehicles in a group should have the same model year): 2001				
Before project: Fuel Consumed (gallons per year of current fuel type for all vehicles in the group combined): 219,588 gallons				
After project: Fuel Consumed (gallons per year of current fuel type for all vehicles in the group combined): 0 gallons				
Before project Annual Vehicle Miles/vehicle in group: 32,938 miles Annual Idling Hours/vehicle in group: 792 hours				
After project Annual Vehicle Miles/vehicle in group: 32,938 miles Annual Idling Hours/vehicle in group: 0 hours				

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Technology to be Applied	# veh	Technology to be Applied	# veh
Diesel Oxidation Catalyst		Recalibration	
Diesel Oxidation Catalyst + Closed Crankcase Ventilation		Selective Catalytic Reduction	
Diesel Particulate Filter		Exhaust Gas Recirculation + Diesel Particulate Filter	
Hybrid Electric Replacement with Diesel Particulate Filter		Emissions Control Devices	
Partial Flow Filter		Other	25
Compressed Natural Gas (CNG) Replacement		Engine Repower	
Lean NOx Catalyst/Diesel Particulate Filter		Engine Replacement	

Post-Implementation Fuel Type: LPG LNG CNG Biodiesel 100 Biodiesel 20 Biodiesel 10 Biodiesel 5
 (check one) E85 Diesel, 3,400 ppm sulfur Diesel, 500 ppm sulfur
 Diesel, 15 ppm sulfur (non-road only) Emulsion **Electricity**

Diesel Vehicle Replacement Applicants

Expected remaining life of vehicles being replaced (years): **Vehicles being replaced are beyond their useful life of 12 years.**

Total Number of Vehicles (all groups combined): **1,899** vehicles

Indicate on the map the location of where vehicles will be in service. **Bus routes 1, 2, 7, 28, 29, 65, 121, 124, 126, 143, and 151**

Time of day that vehicles will be in operation (hour): **From 4:30 am to 12:30 am.**

Ridership Demographics (If vehicle is for transit service): % over 65 in age **9.6 %**, under 5 in age **N/A*** median household income **\$40,000-\$74,999**, % minority **48%**

*Children under 7 ride free with a fare-paying customer.

V. PROGRAM MANAGEMENT INFORMATION

Is Right-Of-Way Acquisition required for this project? Yes **No** If so, has it been acquired? Yes No

Estimated Completion Year/Year Vehicles in Service: **2019**

VI. PROJECT DESCRIPTION

1. Please describe improvements. Include links or other reference to the US EPA/CARB certification or verification.

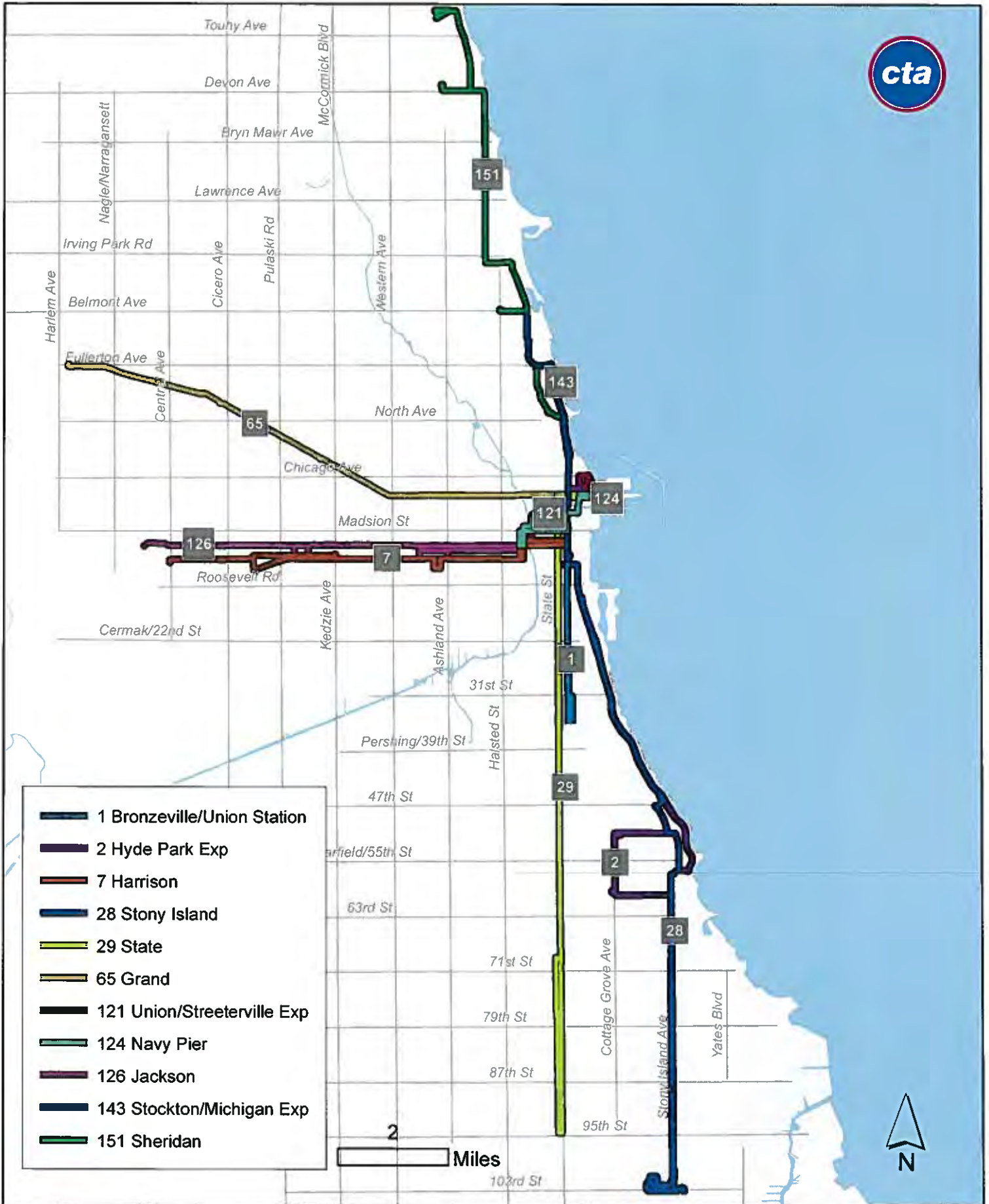
This project will provide for the purchase, engineering, training, training equipment, and inspection of up to 25 fully accessible electric buses and charging stations. Currently, CTA has a total of 479 Nova Low Floor Buses (6400 Series), with an average age of 13 years. These buses are equipped with Cummins ISC 250 engines that were under the certification family 2CEXH0505CAM. (See <http://tinyurl.com/lawo9ly>) Over the course of the next year, CTA will replace 300 of these buses with new Nova Low Floor Buses (7900 Series). These buses are equipped with Cummins ISL 280 engines that are under the certification family ECEXH0540LAT. (See <http://tinyurl.com/o9javpw>) Once the 300 buses are replaced, 179 of these older higher emission buses will remain in the fleet and continue to operate. In order to further reduce CTA's emission footprint and maintain the current level of service, CTA would replace up to 25 of the 6400 Series buses with electric buses. This deployment would compliment CTA's existing fleet of 2 electric buses. The addition of more electric buses would help accelerate the adoption of electric bus across the CTA fleet.

Since an electric bus would produce zero tailpipe emissions, a fleet of 25 buses would reduce the emissions in Chicago by the following:

Pollutant	Nova 6400 (tons/year)
CO	7.10
CO ₂	2437.43
HC	0.98
NO _x	14.55
PM _{2.5}	0.65

This would translate into \$1,300,000 in annual health benefits due to the reduction in PM_{2.5} in Cook County. Over the 12 year life expectancy of a transit bus, this project would save \$15,600,000 in annual health benefits. This would provide a cost benefit ratio of 0.624.

Potential Electric Bus Routes





All Electric New Flyer Buses

CTA Electric Buses entered into service in October of 2014, these battery-powered buses provide customers with a cleaner, quieter ride that reduces fuel costs and significantly decreases emissions, which means improved air quality for Chicagoland.

