



PROPOSED DISTRICT BUS PURCHASES and ELECTRIC VEHICLE INITIATIVE



**Central Square Central School District
October 7, 2024**


DID YOU KNOW?



- 🚌 Transportation aid is paid on general operations and on bus purchases.
- 🚌 All school districts are entitled to transportation aid, between 6.5% and 90% of their approved transportation expenses.
- 🚌 Central Square is an 88.1% aid District.
- 🚌 Districts must obtain voter approval for all bus purchases.
- 🚌 District bus purchases must also be approved by SED in order to generate Transportation Aid.
- 🚌 The net approved cost of each diesel bus is now aided according to an assumed amortization schedule of five (5) years established by the SED.
- 🚌 *The net approved cost of each school **electric bus vehicle** is now aided according to an assumed amortization schedule of twelve (12) years established by the SED. Currently, Legislation is processing to move this to eight (8) years.
- 🚌 Aid will be paid based upon two equal assumed semi-annual payments of principal and interest using a statewide average interest rate.
- 🚌 Aid begins 12 months after the purchase order date and will be calculated based upon the assumed debt service payments.

*** What would it look like if the District Purchased Electric Buses?**

BUS PURCHASE DEBT HISTORY

YEAR		DEBT HISTORY
2020 - 21		\$ 1,250,436
2021 - 22		\$ 1,133,059
2022 - 23		\$ 1,164,491
2023 - 24		\$ 1,483,540
2024 - 25		\$ 1,505,317
2025 - 26		(\$ 1,632,065 -\$1,956,955)

PROPOSED SCHOOL DISTRICT PLAN

\$ 1,632,064 Acquisition of Buses Diesel

Type	Quantity	Total Cost
65-Passenger (Full Size)	7 @ \$182,652	\$1,278,564
30-Passenger	2 @ \$110,761	\$221,522
30-Passenger (Wheelchair)	1 @ \$131,978	\$131,978
Total Acquisition		\$1,632,064



Total Debt would include interest over 5 years

PROPOSED SCHOOL DISTRICT PLAN

\$ 4,356,247 Acquisition of Buses **Electric**

Type	Quantity	Total Cost
65-Passenger (Full Size)	7 @ \$468,249	\$3,277,743
30-Passenger	2 @ \$353,893	\$707,786
24-Passenger (Wheelchair)	1 @ \$370,719	\$370,718
Total Acquisition		\$4,356,247



Total Debt would include interest over 8 -12 years



PROPOSED SCHOOL DISTRICT PLAN

\$ 1,956,991 Acquisition of Buses **Electric** After Estimated
NYSBIP Rebate Program

Type	Quantity	Rebate	Total Cost
65-Passenger (Full Size)	7 @ \$210,998	<\$257,250>	\$1,476,986
30-Passenger	2 @ \$154,393	<\$199,500>	\$308,786
24-Passenger (Wheelchair)	1 @ \$171,219	<\$199,500>	\$171,219
		Total Acquisition	\$1,956,991



Total Debt would include interest over 8 -12 years



HOW DO THEY COMPARE?

(REBATES ESTIMATED)

Type	Diesel	Electric	Electric After Rebate
65-Passenger (Full Size)	\$182,652	\$468,249	\$210,998
30-Passenger	\$110,761	\$353,893	\$154,393
24-Passenger (Wheelchair)	\$131,978	\$370,719	\$171,219



WHAT'S IN OUR FLEET?



- 🚌 **62** 65-Passenger Buses
(3 are Wheelchair Lift Equipped)
- 🚌 **22** 30-Passenger Buses
- 🚐 **2** 7-Passenger Grey Vans
- 🚐 **2** 6-Passenger Ford Explorers

88 VEHICLES

CURRENTLY...

Type C = 62 65-Passenger Buses

🚌 1 to 5 years old = **44**

🚌 6 to 9 years old = **18**

🚌 10 years or older = **0**

🚌 *Buses **with**
100 - 150,000 miles = **17***



Type A = 22 30-Passenger Buses

🚌 1 to 5 years old = **15**

🚌 6 to 9 years old = **7**

🚌 10 years old = **0**

🚌 *Buses **over** 150,00 miles = **0***

WHAT'S ON THE HORIZON...

ELECTRIC BUS VEHICLES?



- Legislation requires all newly purchased buses to be **zero-emissions** by 2027, with **100%** of all fleets transitioned by 2035.
- Approximately 50,000 school buses currently in use will have to be replaced by 2035.
- Girardin Energy provided the District with a fleet study which included fleet charging and infrastructure analysis. (March 2023)
- Polara (same people, new company name) provided an update to the fleet study. (May 2024)
- All these studies were shared with the architect and general contractor.



GIRARDIN ENERGY FLEET ASSESSMENT REPORT

March 2023 Summary

This report included a more comprehensive fleet study.

Fleet Details

Number of vehicles to be electrified in the coming years: 84 buses; the fleet includes 11 spare buses. The Fleet is using a single parking site located at 28 US RT 11, Central Square.

The total number of vehicles that can be electrified with today's technologies: 51 vehicles including 11 spares.

Electrification Needs at the Bus Depot Site

Minimum recommended electrical entrance: 4000 A @ 100%, 480 volts 3 phase (or equivalent).



SUMMARY

Central Square Central School District 248 US RT 11, Central Square, NY 13036
Fleet Details
<ul style="list-style-type: none"> Number of vehicles to be electrified in the coming years: 84 Bus, the fleet includes 11 spare buses. The Fleet is using a single parking site located at 248 US RT 11, Central Square, NY 13036. The total number of vehicles that can be electrified with today's technologies: 51 vehicles including 11 spares.
Electrification needs at the bus depot site
<ul style="list-style-type: none"> Dedicated electrical input needed to supply the required power: Yes Number of level 2 chargers that will be connected to the new infrastructure: 27 + 11 spare Recommended power for level 2 chargers: 19.2 kilowatts Number of level 3 fast chargers that will be connected to the new infrastructure: 8 Recommended power for level 3 fast chargers: 30 kilowatts Number of level 3 chargers that will be connected to the new infrastructure: 5 + 2 spare Recommended power for level 3 chargers: 60 kilowatts Total power connected to the installation in the long term: 1242 kilowatts Optimal power according to current routes: 1177 kilowatts An additional 1000kW to 1500kW of power should be added at the entrance to accommodate the runs that will become possible with anticipated advances in battery technology and the future expansion plans. Minimum recommended electrical entrance: 4000 A @ 100%, 480 volts 3 phase (or equivalent). Provide two additional level 3 chargers (22.5kW) in the garage for the maintenance service. It is recommended to install immediately the electrical distribution infrastructure that can supply the entire fleet, the chargers for the buses currently on order as well as the service chargers. The other chargers can be installed as the vehicles are electrified.
Design and implementation constraints at the bus depot site
<ul style="list-style-type: none"> Central Square CSD parking site has a possible connection to an electric pole (Overhead type). The ideal connection location should be evaluated and determined during engineering, based on site conditions gained from the drawings. Municipalities sometimes have requirements concerning electrical installations, to be considered in the ultimate choice of installation.

POLARA FLEET ASSESSMENT REPORT

May 2024 Summary

This report is an update to the comprehensive fleet study.

Fleet Details

Number of vehicles to be electrified in the coming years: 73 buses; the fleet does not include 11 spare buses. The Fleet is using a single parking site located at 28 US RT 11, Central Square.

The total number of vehicles that can be electrified with today's technologies: 21 vehicles.

Electrification Needs at the Bus Depot Site

Minimum recommended electrical entrance: 3500 A @ 100%, or 4000 A @ 80% 3 phase (or equivalent).



SUMMARY

NYBS - Central Square 248 US Route 11, Central Square	
Fleet Details	
<ul style="list-style-type: none"> Number of vehicles to be electrified in the coming years: 73 (21 at the principal site including 0 spares, 0 at a remote site, and 0 at the driver's home). Total number of vehicles that can be electrified with today's technologies: 21 vehicles 	
Electrification needs at the bus depot site	
<ul style="list-style-type: none"> Dedicated electrical input needed to supply the required power: Yes Number of level 2 chargers that will be connected to the new infrastructure: 16 + 1 spare(s) Recommended power for level 2 chargers: 19,2 kW Number of level 3 chargers that will be connected to the new infrastructure: 5 + 1 spare(s) Recommended power for level 3 chargers: 40 kW Number of level 3 (DCFC) chargers that will be connected to the new infrastructure: 0 + 1 spares(s) Recommended power for level 3 chargers: 60 kW Total power without power management: 563,4 kW Total power with power management: 216 kW An additional 2500 kW to 3000 kW of power should be added at the entrance to accommodate the runs that will become possible with anticipated advances in battery technology and the future expansion plans. Minimum recommended electrical entrance: 3500 A @ 100% or 4000 A @ 80%, 480 volts 3 phase (or equivalent). Provide 1 additional level 3 chargers (22.5kW or 30kW) in the garage for the maintenance service. It is recommended to install immediately the electrical distribution infrastructure that can supply the entire fleet, the chargers for the buses currently on order as well as the service chargers. The other chargers can be installed as the vehicles are electrified. 	
Design and implementation constraints at the bus depot site	
<ul style="list-style-type: none"> NYBS - Central Square parking site has a possible connection to an electric pole (Overhead type). The ideal connection location should be evaluated and determined during engineering, based on site conditions gained from the drawings. Municipalities sometimes have requirements concerning electrical installations, to be considered in the ultimate choice of installation. 	

TOPICS OF DISCUSSION

1. Who's paying for this?

- State Aid/Building Aid
- Transportation Aid
- NYSERDA Grants

The regulations continue to be worked out by the State and SED.

2. Is this initiative feasible?

No, not for our entire fleet at this time.

3. Voter Approval Required

- BOE and Admin will need to promote and educate the public
- A “no vote” is still something to be answered.

4. Lifts - do not need replacement.

5. Need to determine if we want to start the process of purchasing electric bus vehicles by December for voter approval in May. This will require BOE approval first.



TOPICS OF DISCUSSION – FOLLOW UP

6. As a reminder, current legislation requires all newly purchased buses to be **zero-emissions** by **2027**, with **100%** of all fleets transitioned by 2035.
- Two more years to buy diesel
 - Start slow, 1 or 2 65 passenger busses ?
 - Currently, under a 10 year replacement cycle, we would begin purchasing electric busses in “year 2027” within the given timeframe of the 8 year transition by “year 2035”.





Central Square Central Schools

248

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