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E C A S B

Erie County Association of School Boards

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ECASB Asks the Experts...

ECASB "Ask the Experts" is a monthly paper that brings ECASB and an expert in the field of education together to provide ECASB Board Members information about a variety of topics of interest to Board Members. If you have suggestions for future topics you would like to see featured, please let us know at ECASB

Experience With Electric Buses

The Lake Shore CSD is the first district in Western New York to have an electric bus. Many districts will be looking to Lake Shore for input based on their experience. This document provides information about Lake Shore's experience. Additional information may be able to be provided by the Lake Shore CSD.

The bus cost was \$370,665.97 and was purchased through New York Bus Sales. A grant in the amount of \$200,000 from NYSERDA (Volkswagen Emissions Settlement Case funding) brought the cost down to \$170,665.97. The cost of a comparable diesel powered school bus at the time was \$133,862.48. Without the advantage of the grant, an electric vehicle would have cost 2.77 times more than the diesel bus.

The delivery time on an electric bus is currently in the neighborhood of a 16-18 month lead time. Lake Shore ordered their bus when they applied for the grant, so it was already being built when the district received voter approval, thus cutting the amount of time that it took to take delivery of the bus.

In addition to the cost of the bus, there are other expenses, namely with ensuring the district has the ability to charge the bus. Lake Shore CSD purchased a dual unit charger at a cost of \$69,305.40. The unit will charge at a rate of 100 KW (or a 'fast charge') in 2 - 2.5 hours from a 0 charge to a full charge. The unit also allows for a 50 KW charge mode, which draws half the power but takes 5-6 hours to charge. This feature would allow the district the option of charging overnight for a full charge or charging a bus between a morning and afternoon run. In addition to the charger, there was a cost of \$45,000 that was paid to a company to for the installation of the charging unit. The cost included running conduit and wiring, and the installation of a large transformer unit that was required.

The bus is rated to travel 125 miles on a full charge. Thus far we

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have obtained 111 miles, but have not yet started using the bus on its scheduled route. The bus's initial charge was completed using a portable charger. It is estimated that when the bus is used daily and it is being charged on a fixed charging station, that the mileage may increase.

The bus has not been placed on the official route as the bus will travel through many different municipalities and first responder training needs to occur in each of the localities.

The vendor, New York Bus Sales trained the district personnel on the bus maintenance routines. The vendor also trained bus drivers that will be driving the electric bus. The district is arranging to have training for first responders throughout Erie, Chautauqua and Cattaraugus Counties before using the bus on its' daily route. Fire Departments and EMS personnel need to be familiar with the do's and don't of an emergency involving an electric vehicle. First responders will be trained on how to quickly cut the power from the batteries in the event of an accident and/or fire.

Currently the Lake Shore CSD is working on coordinating the training through the three County Emergency Services Coordinators and is tentatively scheduled in the next week or so. Once the training has been completed, the bus will be placed on it's daily route and will traverse through the towns and villages including Evans, Angola, Farnham, the Seneca Nation territory, Irving, Silver Creek, Sheridan, the town and city of Dunkirk, Pomfret, Fredonia, Stockton and Cassadaga.

Other towns will be included in the training, as they may be called upon to assist in mutual aid call.

As far as infrastructure changes, there have been no other than with the installation of the charger unit. The first charging unit was installed within the bus garage. As the fleet is changed over, additional charging stations will be placed in the bus parking lot. The cost addition charging stations will most likely be paid for through future capital projects.

One unique aspect about electric buses is the noise level. The bus that Lake Shore CSD purchased has air brakes so when the bus first starts out, you can hear an air compressor run for 10-20 seconds to build up the air pressure. Once the air pressure has built up, it shuts off, and the bus is extremely quiet.

At 0-20 mph the bus plays music that is supposed to sound like a harp, so that pedestrians will know the bus is moving.

The bus has all the other safety features that exist on the diesel buses.