

STAFF REPORT ON COMPATIBILITY OF ELECTRIC BUS FLEET CHARGING: CONNECTOR TRANSIT AND FAIRFAX COUNTY SCHOOLS

This report responds to a question from Supervisor Gross on April 25, 2023, regarding the compatibility between electric vehicle charging infrastructure for bus fleets, particularly the Fairfax Connector transit fleet and the school bus fleet operated by Fairfax County Public Schools (FCPS).

Although limited emergency charging service may be possible across the two vehicle platforms with the present plug-in technology, the longer term infrastructure solution for the Connector transit fleet will likely be incompatible with the FCPS bus charging needs due to the transit fleet's eventual use of overhead pantograph charging.

The primary challenge to compatibility is that transit buses are complex vehicles using larger batteries and more energy, requiring heavy-duty charging infrastructure, while school buses are classified as medium-duty vehicles with limited duty cycles.



At present both FCPS and Fairfax Connector use plug-in devices for their respective pilot programs. The photo above shows the plug-in charging installed for the first electric Connector buses at the West Ox bus operating division.

However, this method of charging for the Connector transit fleet will necessarily be replaced by overhead pantograph charging during scale up as a long-term solution due to power needs and space considerations. Overhead pantograph charging has not emerged as an option for electric school buses, as they have smaller charging needs. The photo below is an example of a pantograph charging method.



Please contact Dwayne Pelfrey via email at Dwayne.Pelfrey@fairfaxcounty.gov or 703-877-5609 or John Morrill (John.Morrill@fairfaxcounty.gov; 703-324-1792) with any questions.