



Case Study:

Propane Buses Put Millions of Dollars Back into Virginia School District's Budget

Company: Newport News Public Schools
Industry: Education
Location: Newport News, Virginia
Vehicles: Blue Bird Vision propane (153)
Fueling: Onsite propane autogas fueling stations

By the Numbers:

- 153 propane school buses
- 76% of routes run on propane autogas
- \$2 million saved in fuel and parts since 2017
- \$0.25+ cost savings per mile
- \$1.7 million in grants and incentives

Challenge

Frustrated with the maintenance requirements for diesel school buses, Newport News Public Schools began researching alternative fuels that could offer better air quality, lower costs and easier maintenance.

Result

District staff spent two years attending trade shows, meeting with bus manufacturers and speaking with school districts that use alternatively fueled buses to determine the right fit for their community. Propane was the clear winner. The district received its first round of propane buses in 2017. Today, 48% of the fleet is made up of propane school buses with the goal of transitioning entirely to propane.

District Background

Newport News Public Schools is an urban school district that educates approximately 26,500 students in 41 schools. The district transports around 24,000 students via 202 bus routes on which buses are required to navigate tight city roads and heavy stop-and-go traffic.

The district operates 317 total school buses; 153 of them are Blue Bird Vision propane buses equipped with ROUSH CleanTech fuel systems.

“For the past 20 years, Newport News Public Schools has increased its focus on environmentally friendly and practical actions that reduce carbon emissions and ensure

energy efficiency,” said Shay Coates, transportation executive director for the district. “The added benefits of economical and environmentally friendly operations, in comparison to diesel, made propane an easy choice for the school district.”

Powerful Data

With more than six years of propane bus operation under its belt, Newport News School District has seen dramatic cost savings when compared to diesel models. The district reported \$0.15 cost per mile savings for fuel and \$0.13 cost per mile savings for parts for an annual savings of \$952,000 for the 2022-2023 school year alone.

Coates said that in 2017, savings were smaller but with the big diesel price hike, the district has seen significant savings the past few years. “With at least \$0.25 per mile savings and nearly 8 million miles driven with our propane buses, we estimate over \$2 million in savings since 2017,” said Coates. “And that’s not including the alternative fuels tax refunds that we received.”

Coates reported that from 2018 through 2024, there has been an alternative fuels tax refund with the IRS that is about \$0.37 per gallon of propane autogas used.

In addition to fuel savings and tax credits, the district has also obtained funding through federal and local grants and rebates, including the Environmental Protection Agency. The district has received a total of \$1.7 million in incentives for operating propane school buses.

“The funding we received from rebates and grants has gone back into the transportation budget to fund the purchase of additional clean school buses and other transportation projects,” said Coates.

A Safer Environment for Everyone

Newport News School District is one of the largest employers in the region. The district provides jobs to approximately 4,200 teachers, administrators and support staff.

“With our school district transporting a large number of students and being one of the largest employers in Newport News, we feel the propane buses provide the best environmentally friendly product for our community,” said Coates. The district runs all of its primary daily routes, special needs routes and field trips on propane autogas.

“By reducing nitrogen oxides that are produced by diesel engines, we make a safer environment for our students, drivers, technicians and community,” Coates continued. “We know that NOx contributes to increased cases of lung disease found in students.”

School buses equipped with ROUSH CleanTech propane autogas engines, like the ones at Newport News School District, are 90% cleaner in NOx than the EPA’s strictest standard and 99% cleaner than diesel buses built before 2007. The district’s propane school buses emit fewer greenhouse gases, smog-producing hydrocarbons, nitrogen oxides and virtually eliminate particulate emissions compared with conventional fuels.

The district received the Clean Energy Award from the Propane Education & Research Council in 2019 for its propane school bus initiative.

Reliable, Flexible Infrastructure

The cost for propane fueling infrastructure is about two-thirds less expensive than electric, and local propane providers specialize in helping fleets choose the right fueling option based on the fleet size, routes, budget and facility space. Newport News School District staff elected to install two 18,000-gallon onsite fueling stations in 2017, and are in the process of constructing a third.

“Propane is safer for the environment compared to diesel or gasoline,” said Coates. “Therefore, we had less regulations to navigate for our onsite propane tanks.”

Once the third station is finalized (summer 2024), the district will be able to fuel five propane buses at a time.

The district’s propane school buses can travel long distances on a single fueling; however, when it comes to overnight field trips, district staff work with their propane supplier, Phillips Energy, Inc., to find sites for fueling. “We have 100-gallon tanks on our buses and are comfortable traveling up to 340 miles on a single tank,” said Coates. “However, it has been a challenge finding sites that are open on weekend trips. Our supplier has helped a lot with finding 24-hour stations that we can access while away from home.”

Delighted Drivers and Technicians

District drivers like Rosalind McCauley and Halley Washington enjoy driving the district’s propane buses. They appreciate that the 50% reduction in noise level allows for better student management. Drivers for the district also love that they are no longer surrounded by diesel exhaust fumes.

“I have seen many different buses and probably drove them all, but I really enjoy the propane buses,” said McCauley, a driver for the district with more than 18 years of experience. “The bus ride is very smooth and quiet. I get looks when sitting at lights at how quiet it runs. I like everything about my new bus and I’m proud when we get the looks and hear ‘that’s a propane bus.’”

“The bus handles well and travels smoothly,” said Washington, a driver for the district with 12 years of experience. “It’s so quiet that, at first, I wasn’t sure if it was running. Plus, the noise level from students has greatly decreased.”

When the buses first arrived, drivers and technicians received training from Blue Bird, ROUSH CleanTech and Phillips Energy. Training included fueling, maintenance and driving best practices. District technicians continue to have access to online training at no additional cost. They also attend yearly training hosted by the district’s bus dealer.

Ricky Grubbs, a district technician with 19 years of experience loves that “the buses are very quiet, and there are less emissions and fewer breakdowns.”

Technicians for the district report that engine maintenance and repairs are just like a standard gasoline engine outside of the fuel system. Fuel filters for the district's propane buses are smaller and less expensive than the larger filters typically used in diesel engines. Propane school buses use less than half the oil of a diesel bus, providing additional cost savings.

"Our technicians appreciate the lack of emission failures related to all the systems required on modern diesels such as DEF, DPF, SCR, EGR and VGT," said Coates.

The Best Choice

When Coates meets with transportation directors from other districts, he shares that working with propane school buses has been a positive experience. He recommends that fleets looking to migrate to an alternative fuel carefully consider the level of support and reliability of the fuel. He's grateful for the strong support from Blue Bird and ROUSH CleanTech over the years, stating: "Nobody else in our area can compare at this time with propane school buses."

Coates believes it's a great time for school districts to consider propane autogas. Grants, rebates and other incentive programs from public and private organizations are available to help with adoption, including the Environmental Protection Agency's [Clean School Bus Program](#) and the [federal alternative fuel excise tax credit](#).

Coates says the district is committed to operating a fully propane-powered fleet. "Propane autogas is the best choice for Newport News Public Schools because it is economical, safer, environmentally friendly and offers many bus maintenance advantages."

There are more than 22,000 propane-fueled school buses in over 1,000 school districts across the nation, including over 400 in Virginia.

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About Newport News Public Schools: Newport News Public Schools educates approximately 26,500 students in 41 schools: 3 early childhood centers, 24 elementary schools, 7 middle schools, 5 high schools, 1 middle/high combination school and a virtual learning academy. NNPS is a community of diverse learners: over 1,500 students speak a language other than English. NNPS employs approximately 4,200 teachers, administrators, and support staff. Each day in Newport News Public Schools the focus is on one mission: ensuring that all students graduate college, career and citizen-ready!

About ROUSH CleanTech: ROUSH CleanTech, an industry leader of advanced clean transportation solutions, is a division of the global engineering company Roush Enterprises. ROUSH CleanTech develops propane autogas technology for medium-duty Ford commercial vehicles and school buses. With more than 37,000 vehicles on the road, the Livonia, Michigan-based company delivers economical, emissions-reducing options for fleets across North America. Learn more at [ROUSHcleantech.com](https://www.ROUSHcleantech.com) or by calling 800.59.ROUSH.

(Case study completed in 2024)