



Crosby-Ironton
Transportation

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Case Study:

Decade-Old Propane School Bus Clocks in 250,000 Miles for Minnesota School District

Company: Crosby-Ironton Transportation
Industry: Education
Location: Crosby, Minnesota
Vehicles: (11) Blue Bird Vision propane; (1) Micro Bird propane
Fueling: Onsite propane autogas station

Challenge

To select an alternative fuel that can reliably transport students to and from school in extreme weather conditions, save on fuel and maintenance costs, and be gentle on the surrounding lakes and other natural resources in rural Minnesota.

By the Numbers

- 52% of the fleet operates on propane autogas.
- 248,695 miles logged on a propane bus.
- No cold start issues in -41 degrees Fahrenheit.
- 67% savings on fuel.

District and Fleet Background

Crosby-Ironton Transportation, Inc is the sole transportation contractor for two school districts in rural Minnesota: Crosby-Ironton School District and Crosslake Community School. The region, which has a population of 10,600, is known for its beauty and outdoor adventures, including crystal clear lakes, hiking and biking. As the company explored ways to manage daily operations in extreme weather and keep its budget in check while also protecting the surrounding landscape, propane autogas emerged as the most fitting fuel.

In 2013, Crosby-Ironton Transportation's owner, Josh Schiffler, purchased a 2011 Micro Bird Type A bus to add to the company's growing fleet. The bus — the third Micro Bird propane bus ever built — was a demo at a local dealership. Ten years later, that same bus

is operating daily with more than 248,000 miles on it. Since then, Schiffler has added 11 Type C Blue Bird Vision propane buses to the fleet.

“It Just Works”

Crosby-Ironton Transportation’s buses are used extensively, including for daily routes, special needs and extracurricular activities. “Our community and students have benefited greatly from our propane buses because they have no cold-start issues, so we can be confident that kids can continue attending school even when the weather turns to negative 40 degrees,” said Schiffler.

And, the community has benefited from the health benefits of propane because school buses that run on propane autogas emit fewer greenhouse gases, smog-producing hydrocarbons, nitrogen oxides and virtually eliminate particulate emissions compared with gasoline or diesel. Nitrogen oxide emissions are federally regulated due to their negative impact on human health and the environment. They can trigger health problems, such as asthma, bronchitis and other respiratory issues, especially in the developing lungs of children.

Propane autogas is a nontoxic fuel that poses no harm to groundwater or soil, so the surrounding landscape and lakes are protected, too.

Between the overall savings on fuel and maintenance costs, the reliability of the engine and the health benefits, Schiffler says about adopting propane school bus technology: “It’s common sense. It just works.”

Superior Serviceability

Schiffler also serves as Crosby-Ironton Transportation’s only technician; he performs all of the preventative maintenance on all of the vehicles. The propane buses, which Schiffler calls “virtually maintenance free,” are equipped with ROUSH CleanTech propane autogas technology.

To highlight how economical and easy-to-maintain the propane school buses have been, Schiffler listed on one hand the work that’s been needed over the course of the Micro Bird’s lifetime to date. In 10 years, the quarter-million-mile propane bus still has the original transmission and has only required one fuel pump, one radiator, a headlight replacement, spark plugs and tank recoating.

Propane school buses are easier to maintain than diesel buses, especially when operating in extreme weather like Crosby-Ironton Transportation's fleet. Propane removes the complexity and cost of after-treatment measures since it doesn't require additional fluids or filters; exhaust after-treatment or diesel emissions fluids; particulate trap systems; turbochargers or intercoolers. Propane fueling is a closed-loop system; that means that maintenance technicians avoid the frequent spills and diesel odor on their clothes and hands.

Engines powered by propane require less oil by volume, too. For example, an oil change for a Blue Bird Vision Propane bus uses about seven quarts compared with 25 to 30 quarts for a typical diesel engine.

There is no need for modifications to the maintenance building when incorporating propane buses into existing fleets. Requirements are generally the same as those for conventionally fueled vehicles, helping keep costs low. Ventilation requirements for propane autogas are the same as those for gasoline and diesel fuel. This includes ventilation for all workspaces including floor areas, pits, below-grade areas and subfloors.

Longevity, Reliability and Safety

Crosby-Ironton Transportation's 2011 propane-fueled Micro Bird has logged a quarter of a million miles and remains in operation. Schiffler says he uses all of the company's propane school buses for long distance travel, including field trips across the state and even up to the Canadian border.

Propane autogas school buses are reliable and ideal for rural areas and long distances because they can achieve a range of up to 400 miles on a single fueling. They also retain equivalent horsepower, torque, towing capacity and warranty coverage as their gas and diesel counterparts.

Schiffler noted that the propane buses have no cold start issues and can reliably get students to and from school. Propane autogas buses require no extra steps or costly equipment to keep the fuel operating when temperatures drop below freezing — which is helpful from a budgeting and staffing perspective. Diesel buses, on the other hand, have several additional requirements to operate in cold weather, including being plugged in overnight, installing a block heater in the coolant system, and needing fuel additives. The risk of a complete operational shut down is much higher with diesel buses than with propane buses.

One of Crosby-Ironton Transportation's drivers, Fred, has been with the company for eight years, driving 220,000 miles on the Micro Bird bus. He says they're much quieter than diesel buses, and they warm up quickly. Buses fueled by propane autogas reduce noise levels by producing sound 11 decibels lower than diesel fueled buses, resulting in about 50% less noise and an overall improved student and driver experience.

Fueling and Infrastructure

Schiffler elected to install an 18,000-gallon onsite fueling station on its property, which is serviced by Beaudry Oil & Propane. Propane infrastructure is affordable and scalable; in fact, installing a propane autogas station costs less than any other transportation energy source — conventional or alternative.

Propane autogas fueling is easy, quick and inexpensive for Crosby-Ironton Transportation staff. Propane school buses use a quick-connect nozzle that reduces fugitive emissions and resembles gasoline and diesel in ease of fueling. And, its drivers can fuel a propane school bus in about the same time it takes to fuel a gasoline or diesel bus (10 to 12 gallons per minute).

More than 90% of the United States propane autogas supply is produced domestically, with an additional 7% from Canada. That helps keep fuel prices low. On average, propane autogas costs about 50% less than diesel and about 40% less than gasoline. Crosby-Ironton Transportation pays \$1.67 per gallon for propane and over \$5 for diesel, resulting in a 67% savings for its propane-powered buses.

A Fleet That Lasts

Between the superior long-term serviceability and substantial fuel and maintenance savings Crosby-Ironton Transportation has experienced with its propane buses, Schiffler believes propane autogas makes the most sense for the company and its customers. "We'll continue to purchase propane school buses going forward," he said.

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About Crosby-Ironton Transportation: Located in Crosby, Minnesota, Crosby-Ironton Transportation has provided Crosby-Ironton School District and Crosslake Community Schools with safe, reliable student transportation since 1989. The company has operated low-emission propane-fueled buses since 2013. Learn more at www.ci.k12.mn.us/page/bus-info or <https://www.crosslakekids.org/bussing--attendance.html>.

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.

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