

**Green** meets the **road**.

 FerrellAutogas

**Propane Autogas Infrastructure Overview**

**Clean. Domestic. Abundant. Safe. Inexpensive. Proven.**



# Ferrellgas

- Family owned company started in 1939 by A.C. Ferrell
- One of the Largest Propane Retailers in the U.S. with more than 4,500 employees
- Over 600 retail outlets
- 185,000,000 Gallons of Storage Across the USA
- Fleet of more than 4,000 vehicles
- Serving nearly 1 million Customers
- Delivering nearly 1,000,000,000 (1 Billion) gallons per year
- NYSE listed: FGP



 FerrellAutogas

## Traditional Operations

## Midstream Operations

### Retail

### Procurement

### Cylinder Exchange

### Bridger Logistics

### Sable Environmental

- Ferrellgas
- Largest division
- Retail / End-User Sales and Support
- Residential, Ag, Industrial, Commercial, National Accounts and Autogas
- Full service installer and fuel supplier
- 1,600 Bobtails

- Ferrell North America
- Comprehensive Procurement Management
- Risk Protection
- Supply Management
- Wholesale
- National Distribution
- 146 Transport Tractors

- Blue Rhino
- Largest LPG tank exchange company in the U.S.
- Over 46,000 retail selling locations nationally
- Acquired Mr. Bar-B-Q, a leading provider of high quality bbq tools
- Builds Allocation

- Headquartered in TX
- “2014 Midstream Energy Co. of the Year” – O&G Awards
- Services include trucking, terminaling, pipeline, rail, and maritime.
- Inc. Magazine’s “Fastest Growing Energy Company” in 2013

- Headquartered in TX
- Midstream Energy
- Saltwater Disposal Facilities
- Permitted Throughput of 150,000 bbl / day



# Infrastructure Overview





# Example Transit Authority

- Fleet Usage and Fuel Costs:

<b>150</b>	Miles per Day
<b>260</b>	Operating Days per Year
<b>6</b>	Years in Service
<b>5</b>	Unleaded Para Transits Replaced
<b>10</b>	Diesel (ULSD) Para Transits Replaced
<b>7.0</b>	Unleaded MPG
<b>8.5</b>	ULSD MPG
<b>2.30</b>	2015 Unleaded Avg. CPG
<b>2.61</b>	2015 ULSD Avg. CPG

# Autogas Fueling Recommendation

## ~97,500 Gallons of Propane per Year

- Two (2) 1,000 Gallon Storage Tanks
- Digital Autogas Dispenser
- Fuel Management System Integration
- Pumping Rate  $\geq$  Gas / Diesel
- Built in Safety
- Remote Tank Monitoring / Automatically Dispatch Deliveries
- Fuel Filtration
- Ongoing Safety Training



# Dispensing Station Footprint

## Site Prep

- **Agency Responsibility**
  - Concrete Pad
  - Electrical: 3 Phase
  - Crash Bollards
- **Supplier Responsibility**
  - Permitting
  - Maximize Space
  - Optimal Tank Sizing
  - Delivery Schedule

Average Large Transit Bus: 40'7" L x 8'6" W

Average ParaTransit (PT) Bus: 23'L x 8'W





# Setback Requirements

Container Size	Distance Requirement
501-2,000 gallons	At least 25 feet from Important Buildings, or property lines that can be built upon.
More than 2,000 gallons	At least 50 feet from important buildings, or property lines that can be built upon.
Condition	Action to Take
Combustible Materials (ex: woodpiles, dry grass / tall weeds, brush or chaparral)	Maintain at least 10' clearance around container
Exterior Sources of Ignition (ex: opening into direct vent appliances, mechanical ventilation air intakes, etc)	Maintain at least 10' clearance around container
Overhead electric Lines more than 600 volts -typical electric wires from poles to buildings are 230 volts	Maintain 6' Horizontal clearance from container. (imagine dropping a plumb bob straight down to the ground, now measure 6' away from this point. The container must be at least this far back. )





# Infrastructure Cost Example

- 1) Agency Owned: Pay \$37,853 + site Prep and <\$1.00 per gallon
- 2) Supplier Owned: Pay site Prep only and ~\$1.00+ per gallon

Propane Autogas Example Infrastructure Pricing				
Quantity	Item	Cost per Unit	Project Cost	Comments
1	Dispenser	\$11,008	\$11,008	Single 18' Hose. Powder Coated. Digital Meter. FMS Capability. Temp Compensated.
1	Pump/Motor	\$5,467	\$5,467	HD. Will fill Autogas Buses in Any Climate ~10GPM (3 Phase Required).
2	1,000 Gal Tank	\$4,063	\$8,125	1,000 wGal Skid Mounted ASME Steel Storage Tank
2	Tank & Skid Plumbing	\$2,404	\$4,807	Plumbing kit for connecting motor/pump to Tank & Dispenser with Included Safety Connections
1	FMS Tower	\$5,749	\$5,749	Fuel Master (FMS) Tower offering Fuel Management Capability and Controlled Access
1	Blue Moon Filters	\$1,398	\$1,398	Blue Moon Fuel Filters to remove any potential contaminants prior to entering vehicle tank
1	Freight	\$1,300	\$1,300	Freight for Equipment to Installation Site
		<b>TOTAL</b>	<b>\$37,853</b>	
<b>Miscellaneous Items</b>				
1	Safety Training	\$0	\$0	Training for Staff, Management, Drivers, and Fuelers. Ongoing training included in partnership
1	FMS Tower / Hookup	\$0.00	\$0.00	FMS Tower Hookup and Communication
		<b>TOTAL</b>	<b>\$0.00</b>	
		<b>Project Total:</b>	<b>\$37,853.40</b>	
Contact: Rob Little      Email: <a href="mailto:RobertLittle@Ferrellgas.com">RobertLittle@Ferrellgas.com</a> Phone: 469.571.4970				

Site Prep NOT Included in Estimate Above







# Additional Considerations



# Scalability



One (1) 1,000 Gal Vertical Tank



One (1) 2,000 Gal Tank



Three (3) 1,000 Gal Tanks



One (1) 18,000 Gal Tank



# Contingency Planning

## Autogas Contingency / Emergency Plan

1. Equipment Failure Identified by Customer
2. Call put into Call Center or Emergency Contact
  - a. Your 24/7, Live Emergency Contact will be provided at launch
3. Emergency Call Center to Dispatch Most Effective and Timely Fuel Support
  - a. Example: Temporary Fueling Solution



- b. Example: Splash Fill from Bobtail or Transport Vehicle (Wet-Hose)



- c. Example: Local Public Fueling Site / Service Center



4. We have the ability to employ emergency filling services until your equipment is back in operation or until this service is deemed no longer necessary by Customer and FerrellAutogas officials.

## • You'll Be Prepared For:

- Natural Disasters
- Power Outages
- Emergency Evacuations
- Fuel Supply Shortages

# Safe

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# Clean

- **Storage Tank Strength**
  - Highly Puncture Resistant, Ductile Steel
- **Low Operating Pressure**
  - 120-300 psi
- **Narrow Flammability Range**
  - Ratios for air to fuel ignition (rich limit ÷ lean limit):
    - Propane: 4.5:1
    - Diesel: 12.5:1
    - Gasoline: 5.5:1
- **Auto ignition Temp (in Farenheit):**
  - Propane: 850°
  - Diesel: 600°
  - Gasoline: 495°

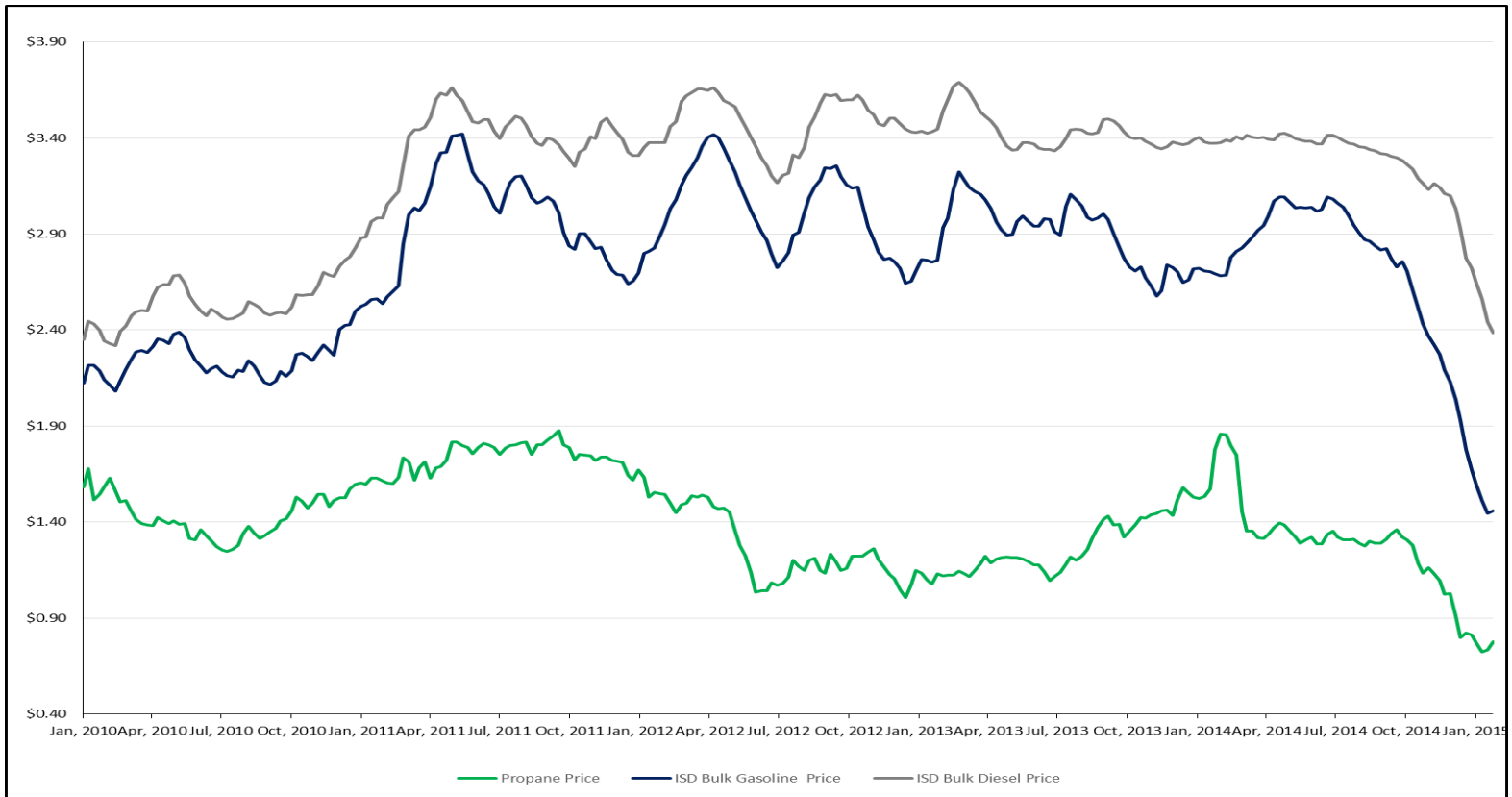
- **Clean Fueling**
  - Non-EPA Regulated
  - Non-Carcinogenic
  - Not a Groundwater Contaminate
  - Zero Emission Fill Nozzle
  - Zero Risk of Spillage





# Historically Inexpensive

- Average 60 Month Savings vs. Gasoline: 49% less expensive
- Average 60 Month Savings vs. Diesel: 56% less expensive





# Decisive Value in Propane Autogas

**Robert C. Little**

Autogas Sales Manager

469-571-4970

[RobertLittle@Ferrellgas.com](mailto:RobertLittle@Ferrellgas.com)

