

Propane Autogas Infrastructure Overview Clean. Domestic. Abundant. Safe. Inexpensive. Proven.



- 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







### **Traditional Operations**

### Midstream Operations

#### Retail

- 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



#### **Procurement**

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



### Cylinder Exchange

- 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



## **Bridger Logistics**

- 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



#### Sable Environmental

- 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:

150	Miles per Day
260	Operating Days per Year
6	Years in Service
5	Unleaded Para Transits Replaced
10	Diesel (ULSD) Para Transits Replaced
7.0	Unleaded MPG
8.5	ULSD MPG
2.30	2015 Unleaded Avg. CPG
2.61	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 ≥ 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 Cost per Unit Proiect Cost Comments Quantity Dispenser \$11,008 \$11,008 Single 18' Hose. Powder Coated. Digital Meter. FMS Capability. Temp Compensated. 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 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 TOTAL \$37,853 Miscellaneous Items Training for Staff, Management, Drivers, and Fuelers. Ongoing training included in partnership Safety Traning FMS Tower / Hookup \$0.00 \$0.00 FMS Tower Hookup and Communication TOTAL \$0.00 **Project Total:** \$37,853.40 Contact: Rob Little Phone: 469.571.4970

Site Prep NOT Included in Estimate Above

	Gasoline	Propane Autogas		Diesel	Propane Autogas
Fuel Co	nsumption		Fuel Con	sumption	
Annual Miles	39,000.00	39,000.00	Annual Miles	39,000.00	39,000.00
Years in Service	6	6	Years in Service	6	6
Total Miles over Service Life	234,000.00	234,000.00	Total Miles over Service Life	234,000.00	234,000.00
Average MPG	7.00	5.95	Average MPG	8.50	5.95
Gallons Consumed Annually	5,571.43	6,554.62	Gallons Consumed Annually	4,588.24	6,554.62
Gallons Consumed Total	33,428.57	39,327.73	Gallons Consumed Total	27,529.41	39,327.73
Gasoline Price Per Gallon	\$2.30		Gasoline Price Per Gallon	\$2.61	
Propane Price per Gallon		\$0.95	Propane Price per Gallon	0	\$0.95
Maintenanc	e Comparison			e Comparison	0.000
Oil Interval	6,000.00	6,000.00	Oil Interval	3,500.00	6,000.00
Oil Capacity	7.00	7.00	Oil Capacity	17.00	7.00
Oil Filter Cost	\$20.00	\$20.00	Oil Cost per Quart	\$25.00 \$1.50	\$5.00 \$1.50
Oil Cost per Quart	\$1.50	\$1.50	Oil Cost per Quart  DEF Gallons (2%)	\$1.50 550.59	\$1.50 0.00
DEF Gallons (2%)	0.00	0.00	DEF Gallons (2%) DEF Cost per Gallon	\$2.50	\$0.00
22. 34.6.13 (276)	2.30	\$0.00	DEF Cost per Gallon	\$∠.50	\$0.00
Savings Estimate:		39	Carrida	Entire	
savings E	estimate:	1	Savings	Estimate:	\$30.00
	000	\$30.00			50,000
\$197	,000	50,000	\$39.	5,000	\$100.00
		\$100.00			5
vs Unl	eaded	5	vs ULSD		
VS CIII	caaca		VSC		\$39,603.84
TOTAL Cod to Organita		\$40,188.84	Absolute	Absolute Savings	
TOTAL Cost to Operate \$79,635.21  Absolute Savings		<b>Ψ4</b> υ, 188.84	Annual Cost to Operate	\$13,192.71	\$6,600.64
		<b>#0.000.44</b>	Annual Savings vs. Diesel	\$0.00	\$6,592.07
Annual Cost to Operate	\$13,272.54	\$6,698.14 \$6,574.20	Minimum Operational Savings	*	552.39
Annual Savings vs. Diesel	\$0.00	\$6,574.39			
Minimum Operational Savings	\$39,4	46.37			
	Gacalina	Dronana Ata			
Unloaded Units Banksond with LDC	<b>Gasoline</b> 5	Propane Autogas		Diesel	Propane Autogas
Unleaded Units Replaced with LPG		\$33,490.70	Diesel Units Replaced with LPG	10	10
Annual Cost to Operate	\$66,362.68		Annual Cost to Operate	\$131,927.06	\$66,006.41
8		\$71.97	Annual Savings with LPG		920.65
Total Cost to Operation	\$398,176.07	\$200,944.22	Total Cost of Operation	\$791,562.35	\$396,038.45
Operational Savings with Propane	\$ <b>197,</b>	<b>231.85</b>	Operational Savings with Propane	\$395,	523.91
Confidential ⊚ Estralines I. P					

## Additional Considerations

# Scalability



One (1) 1,000 Gal Vertical Tank



Three (3) 1,000 Gal Tanks



One (1) 2,000 Gal Tank



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. <u>Gasoline</u>: 49% less expensive

Average 60 Month Savings vs. <u>Diesel</u>:

56% less expensive





# Decisive Value in Propane Autogas

Robert C. Little

Autogas Sales Manager 469-571-4970

RobertLittle@Ferrellgas.com

