

HIGLEY UNIFIED SCHOOL DISTRICT NO. 60



**GOVERNING BOARD MEETING
AGENDA**

Pursuant to A.R.S. § 38-431.01, notice is hereby given to members of the Higley Unified School District No. 60 Governing Board and to the general public that the Higley Unified School District No. 60 Governing Board will hold a Board Meeting.

The Governing Board reserves the right to move into executive session for legal advice with its attorneys for any item listed on the agenda, in person or by telephone, pursuant to A.R.S. § 38-431.03(A)(3).

Members of the Governing Board will attend either in person or by telephone conference call.

Regular Meeting
Tuesday, December 18, 2012
District Office – Governing Board Meeting Room
2935 S. Recker Road
Gilbert, Arizona 85295

5:30 P.M. Work Study Session

- CNG Buses – Josh Crosby
- Review Agenda Items

6:30 P.M. Regular Meeting

- 1.0 Call to Order**
- 2.0 Roll Call**
- 3.0 Moment of Silence**
Pledge of Allegiance
- 4.0 Approval of Agenda**

5.0 Music Performance

- 5.1 Musical Performance by Williams Field High School Band Students Under the Direction of Bob Edgar**

6.0 Request to Speak to the Governing Board, A.R.S. § 38-431.01.G.

We value input from our constituents. This time has been set aside for anyone from the audience who wishes to address the Board. Please remember, this is not an appropriate venue to evaluate, discuss, or criticize district personnel.

Members of the Board may not discuss items that are not specifically identified on the agenda. Therefore, pursuant to A.R.S. § 38-431.01(G), action taken as a result of public comment will be limited to directing staff to study the matter, responding to any criticism or scheduling the matter for further consideration and decision at a later date. Please limit your remarks to three minutes.

GOING GREEN



***Exploring CNG as
an alternative
fuel for HUSD***

Comparing CNG to existing Diesel
and Unleaded Fuels

What Alternative Fuels are Available in Student Transportation?

- * Compressed Natural Gas (CNG)
- * Propane (LP)
- * Electric
- * Diesel Hybrid Electric
 - * Not a viable option financially

Our Current Fleet

- * Our current fleet breaks down as follows:

- * Diesel Buses – 57 total (includes 8 retired buses)

- * 84 passenger – 20 buses
 - * 72 passenger – 18 buses
 - * 28 passenger Sped - 2 buses
 - * 20 passenger Sped – 8 buses
 - * 15 passenger Sped – 5 buses
 - * 10 passenger Sped – 4 buses

- * Gasoline Buses – 5 total

- * 10 passenger Sped – 5 buses

- * Alternate Fuel Buses – 0 total

- * Support Fleet – 53 Gasoline vehicles

Old CNG vs. New CNG

- * In the late 90's there was a big CNG push for buses and it didn't go well. Existing engines were converted to CNG and they ran hot and had short life spans.
- * Now engine manufactures are building CNG engines from the ground up. All previous issues are resolved.
- * New CNG engines are proven reliable perform equal to the diesel counterparts.
- * CNG engines require less frequent oil changes and last longer due to decreased carbon in the system.

Why not propane?

- * Propane must be trucked in and stored on site
- * Propane is over \$2.00/ gallon
- * Propane is more volatile
- * Propane only produces 90,000 BTU's vs. 125,000 for CNG
- * Seminole County, FL has propane buses and claimed no savings over diesel, and are now considering CNG.

Comparing CNG to Other Fuels

Why CNG?

- * CNG vs. Propane
 - * Safer – less volatile/ explosive.
 - * Cheaper – cost per gallon 75% less
 - Less maintenance required
 - Infrastructure improvements are minimal
 - * Convenient – We are sitting on a 24 inch, 500 PSI supply line
 - * Greener – Less pollution/ smaller carbon footprint
 - * Proven – Many large fleet operations/ years of experience
 - * Incentivized – Incentives may be up coming
 - * No on-site fuel storage

Comparing CNG to Other Fuels

Why CNG?

- * CNG vs. Diesel
 - * Safer – less volatile/ explosive.
 - * Cheaper – cost per gallon \$0.56 vs. \$3.68 (87.5% less)
 - Less maintenance required
 - Infrastructure improvements are minimal
 - * Convenient – We are sitting on a 24 inch, 500 PSI supply line
 - * Greener – Less pollution/ smaller carbon footprint
 - * Proven – Many large fleet operations/ years of experience
 - * No On-site fuel storage

Comparing CNG to Other Fuels

Why CNG?

- * CNG vs. Unleaded Gasoline
 - * Safer – less volatile/ explosive.
 - * Cheaper – cost per gallon \$0.56 vs. \$3.37 (85.1% less)
 - Less maintenance required
 - Infrastructure improvements are minimal
 - * Convenient – We are sitting on a 24 inch, 500 PSI supply line
 - * Greener – Less pollution/ smaller carbon footprint
 - * Proven – Many large fleet operations/ years of experience
 - * No on site fuel storage

CNG is Green too!

- * CNG vehicles produce 22% less greenhouse gas than diesel and 29% less than gasoline.
- * Natural gas also emits very low levels of particulates and nitrogen oxides, thereby lowering the formulation of smog in the atmosphere.

Is CNG Safe??

- * CNG is safer than liquid fuel.
- * Unlike liquid fuels that can pool on the ground in the event of an accident or leak, CNG dissipates harmlessly into the air.
- * With a very narrow range of flammability to be combustible and nearly twice the ignition temperature of gasoline, it's also less likely to cause a fire.

Initial Costs

- * CNG buses are priced roughly \$30,000 more than their diesel counterparts
- * A non-redundant CNG fuelling station sized to meet our needs into the future is roughly \$514,000 plus site improvements
- * Additional minor modifications to our shop would cost around \$75,000

Rebates/Incentives

- * \$0.50 per GE rebate on CNG, if enacted would be retroactive to 1/1/2012- likely to pass
- * Proposed \$30,000 rebate on CNG vehicles over 26,001 lbs. (including school buses)- not currently enacted

Galleleo Infrastructure

- * Additional Considerations:
 - * Increased electrical usage
 - * Monthly maintenance around \$450/month



COMPRESSION SYSTEMS

www.cleanfuelconnection.com

MICROBOX®

Microbox is Galleleo's original and exclusive line of "Plug-and-Play" CNG refueling stations. This enclosed, explosion-proof module, saves major construction costs and delays. Start up of this unit only requires connection to utility services.

Its compact design and simple reconnection, facilitates eventual expansion, relocation and financing of this equipment.

Microbox contains all the components required to regulate, measure, compress and deliver CNG in the safest and most effective manner. Its capacity utilization, efficiency, reliability and ease of operation are unmatched in the industry.



Maximum flow-rates up to 2000 SCFM depending on inlet pressure - 3800 SCFM for the Gigabox version.

Microbox® Includes:

- Gas Inlet Measuring System
- Suction Blow Down
- Explosion-Proof Compressor Cabinet
- Electric Control Panel
- 11,290 SCF Built-In Storage At 4500 psi
- Active Safety Systems
- Priority Panel
- Compressor Driven Electric Motor (Direct Coupling)
- Touch Screen Control Panel & Modem Data Transmission
- Explosive Atmosphere Detection Systems
- Fire Extinction Systems
- Inter-Stage Air Cooling
- Inter-Stage Pulse Damping System
- Inter-Stage Hydrate Bleed System
- Gas Detection & Shut Off



Where electricity is expensive or unavailable, a Microbox® powered by a natural gas motor is the appropriate solution.





Existing 500 PSI,
24 inch gas line.

Proposed CNG
island with two fast-
fill nozzles
(expandable)

Empty, existing
Electrical Stub-out
connected to utilities.

Existing Diesel &
Unleaded furl island
with four nozzles.



Questions?

