

City of Riverside

Celebrating An Alternative Fuels Success Story

Presented by

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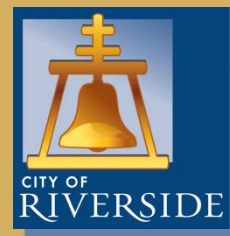
Background – The Beginning

- **The Vision Begins:** In 1994 Riverside began plans for alternative fuels.
- **First Zero Emission Vehicle:** In 1994 had a Chevrolet S10 converted to electric drive.
- **First CNG Vans Purchased:** In 1994 three Dodge 12-Passenger CNG vans purchased.
- **Clean City Designation:** 1997 by Department of Energy.



Background – The Beginning

- **Electric Charging Stations:** 1998 installed several Public Access Charging Stations.
- **First CNG and Electric Vehicles Purchased:** 1998 14 CNG vehicles purchased, including Honda's, F150's, Dodge Vans, dual-fuel Contours, and 1 EV Ford Ranger.
- **Support of SCAQMD Proposed Fleet Rules:** 2000 Council went on record supporting 1190 Series of rules.
- **Funding and Rebates:** To date the City of Riverside has obtained over 6 Million in grant funding towards vehicles, maintenance facilities, CNG and Hydrogen fueling station projects.



CNG Refueling Station

- **CNG Station Funding:** In 2000 Riverside was successful in obtaining a \$385,000 CMAQ grant to construct a 24/7 Public Access CNG station.
- **CNG Station Construction:** In January 2004, Grand Opening Celebrations were held.



CNG Station Statistics

CNG The Most Cost-Effective Fuel

- **February 2004:** When station opened, dispensed 4,000 gallons per month.
- **August 2012:** Dispensed 81,819 gallons, of which 38,297 was to Public Access.
- **Fossil Fuel Displaced:** This means a reduction of over 929,744 gallons per year of burnt high carbon fossil fuel.
- **Average Fuel Prices 2011:**

| | |
|------------|--------------------------|
| Diesel | \$4.05 per gallon |
| Gasoline | \$3.77 per gallon |
| CNG | \$1.33 per gallon |
- **Annual savings 2011:** CNG vs Diesel is **\$2,305,766** to both City and Public.



CNG Mobile Refueler

- The City of Riverside was the 1st to design and build a mobile truck that can provide CNG fuel to vehicles that have run out of fuel, or to provide fuel during emergencies.



CNG Powered Mobile Refueler

- The City of Riverside is currently building a CNG powered multi-compartment fuel truck, which will provide LPG, Diesel, Unleaded, and E85 to vehicles. Truck should be completed by November 2012.



Hydrogen Refueling Station

The Cleanest Fuel For The Future

- **Five City Hydrogen Project:** In 2005 Riverside was selected to participate in the SCAQMD Five City Hydrogen project.
- **Toyota Prius Conversions:** Five Toyota Prius were converted by Quantum to run on hydrogen.
- **Hydrogen Station Constructed:** On February 1, 2006 Grand Opening Celebrations were held for the Hydrogen Generation and Refilling station which is a 24/7 Public Access station.



Fleet Composition

- 1,294 Units are assigned in the Fleet
- 540 Units are “Light-Duty” vehicles, sedans, pickups, and vans.



- 754 Units are “Heavy-Duty” vehicles, sweepers, refuse, and other utility trucks, trailers, and other construction equipment



Fueling Platforms

- There are eight fueling platforms in use:
 - 427 Gasoline
 - 20 Flex Fuel E85
 - 234 Diesel
 - 104 Gasoline-Electric Hybrid
 - 248 Compressed Natural Gas
 - 28 Propane
 - 2 Hydrogen-Electric Hybrid
 - 92 Electric

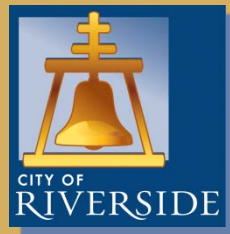
Includes ALL vehicles and equipment except PD

Light-Duty Fleet

- “Light-Duty” refers to sedans and pickup trucks
 - 154 Units are CNG-powered
 - 55 Units are Electric-powered (includes NEV)
 - 12 Units are Propane-powered
 - 2 Units are Hydrogen-Electric-Hybrid-powered
 - 104 Units are Gasoline-Electric-Hybrid-powered
 - 20 Units are E85 “flex-fuel”
 - 251 Units are gasoline-powered

Heavy-Duty Fleet

- “Heavy-Duty” refers to any Unit larger than a one-ton pickup truck, or construction equipment.
 - 77 Units are CNG-powered trucks
 - 3 Units are Electric-powered equipment
 - 20 Units are Propane-powered trucks and equip
 - 63 Units are Gasoline-powered trucks
 - 160 Units are Diesel-powered trucks
- Equipment, trailers and generators are not included



Targeted Fleet Percentage

- **Sedans:** 93% of the fleet is AFV or Clean
- **Pickups & SUV:** 96% of the targeted pickups are AFV or Clean
- **Yard Trucks:** 74% of yard, park and plant scooters electric
- **Refuse Trucks:** 68% are CNG
- **Street Sweepers:** 80% are CNG
- **Utility Trucks:** 28% of utility trucks are CNG
- **Dump Trucks:** 28% of HD dump trucks are CNG

- **Alternative Fuel Vehicles: 449 Total, 70% of Targeted Fleet**

- **Clean Vehicles Total: 629 Total, 89% of Targeted Fleet**

- AFV include Electric, CNG, or LPG
- Clean include Gas Electric Hybrids, or E85

What Else Is Being Done?

- **CNG Time Fills:** Currently the majority of the HD vehicle fleet fuels from 98 time-fills during off peak utility hours, reducing both cost and the need for additional power plants.
- **CNG Storage:** In June 2012 MSRC Match grant funds allowed us to double CNG storage, reducing the number of compressor starts, reducing utility cost and demands, and the need for additional power plants.
- **CNG Maintenance Facility:** Were nearing completion of a new Federally grant funded CNG Bus Maintenance Facility.
- **CNG Station:** MSRC and CEC Grant funding has been secured, and bid specifications are being prepared for the installation of a 2nd Public Accessible CNG station at the Water Quality Control Plant on Acorn Street off of Jurupa. This station will not only provide CNG fast-fill, but will include time-fill for fueling Public Works Heavy-Duty vehicles at night.

What Else Is Being Done?

- **LPG Propane Dispenser:** Clean Fuel USA dispenser has been installed at Public Access AFV Station. This is for not only existing LPG vehicles, but for future purchases of the Roush Ford F250 and F350 once CARB approved.
- **Fuel Island Canopy:** A fuel island canopy is in design to not only cover Public Access AFV station, but will be designed to include photo-voltaic panels.
- **Alternative Fuel Information and Comfort Center:** We've budgeted for and are planning for an area which will have not only a restroom, vending machines, but will have electronic AFV fueling and safety videos and kiosk for vendors to display their AFV information.
- **EV Charging Stations:** In April 2012 DOE grant funds allowed us to install and celebrate the opening of 11 Public Accessible EV Charging stations at 7 locations around the City.

What Else Is Being Done?

- **Clean Car / Clean Air Program:** The City developed a Clean Car incentive program that provided up to *\$2,500 for residents that purchase CNG, Electric and Hybrid vehicles at a Riverside dealership.

Go Green, Go Clean

Natural Gas Vehicle Benefits

"The Los Angeles Times article titled 'Incentives Offered to Refuel at Home' states that according to South Coast Air Quality Management District natural gas vehicles are one of the cleanest and most cost-effective options available. With the home fueler, natural gas is becoming more attractive as an alternative fuel vehicle option for commuting. Additionally many CNG vehicles are eligible for the single occupant carpool lane discount."

NGV Fueling Options

Natural gas vehicle owners now have the option of refueling at home. Fuelmaster Corporation is marketing a natural gas home refueling appliance (HRA) called "Patri" which is designed for use with consumer vehicles in residential environments. It uses either 120 or 240 volt of electrical supply for power and as an installation the City Company offers a flat gas rate for residential fueling. "Patri" is ideal for vehicle refueling. Be sure to read information on the back panel of this brochure.

Local Public Access Alternative Fuel Facilities

City of Riverside Corporation Fuel - Riverside - SoCalGas Co.
 4488 Howard Ave. #100 (at College)
 Riverside, CA 92504
 951-881-8877
 CNG_munity@riverside.ca.gov

Additional alternative fuel locations can be found at www.cleanairimages.com





Photo: natural gas home refueling appliance



Vehicles and Facilities

Please check with Riverside dealers for the availability of qualified vehicles


Join the Drive for Cleaner Air and a Cleaner Community

Getting On the Road to Clean Driving

The following websites may be helpful for finding more information relating to fuel efficient vehicles and infrastructure:

www.arb.ca.gov
www.riversideairca.gov
www.cleanairimages.com
www.arb.ca.gov
www.epa.gov
www.fuelnet.org

Natural gas home refueling information:
www.socalgas.com
www.fuelnet.com
socialgas.com/business/programs/fueling.asp




"Cash In" on Cleaner Driving

Clean Car/Clean Air Program

A Clean/Green Vehicle Rebate Program for City of Riverside Employees

HYBRID

NGV



Be Part of a Cleaner Future

What is the Clean Car/Clean Air Rebate Program?

It is an employee incentive program designed to encourage the purchase of hybrid or alternative fuel vehicles, and to increase awareness of its advantages in driving clean and green vehicles. The City of Riverside is committed to improving the air quality in the South Coast Air Basin and to reducing our environmental footprint. This program provides a rebate to employees who purchase a qualified vehicle. This brochure is a introduction to the program.

Why should I purchase a hybrid or natural gas vehicle?

More energy efficient cars can create huge environmental benefits, the serious deterioration of air quality. Regulators now require cleaner vehicles. Mobile source emissions are one of the top causes of global warming. Every gallon of gasoline burned emits 22 pounds of carbon dioxide. Carbon dioxide and other vehicle emissions account for up to 40% of air pollution.

Benefits of Hybrid Vehicle Ownership

Hybrid electric vehicles combine an internal combustion engine with a battery and electric motor to maximize fuel economy and produce fewer emissions. Hybrids certified as the Air Resources Board (ARB) Advanced Technology Partial Zero Emission Vehicle standard will significantly reduce ozone precursor emissions and global-warming pollutants by a half, and future models show promise of cutting emissions by even more.

Hybrid vehicles have a better cost of ownership than comparable non-hybrid vehicles tested over a five-year or 70,000-mile period. Besides fuel costs, factors considered beyond the initial out-of-the-door price includes resale value, maintenance, loaning and insurance.

* From L.A. Times article and a study by hybrid.com
 ** From Driveclean.ca.gov an Air Resources Board (ARB) website

Cleaner Vehicles Cleaner Air


What vehicles qualify for the rebate?

The cleanest and most fuel efficient hybrid vehicles which meet California's advanced technology partial zero emission vehicles (AT-PZEV) standard for criteria pollutant emissions qualify for the rebate. Qualifying Hybrid vehicles must achieve 40 miles per gallon or better in highway fuel economy. In addition to the Hybrids listed, Natural Gas Vehicles (NGV) also qualify.


Contact Chris Durham in Public Works Administration at 828-5283 or cdurham@riversideca.gov for more information

Remember: Qualifying vehicles must be purchased at a reputable City of Riverside auto dealer.


Examples of some popular choices



Toyota Prius Hybrid



Honda Civic Hybrid



Honda GX-NGV

Fuel for Thought:

*** The amount of fuel consumed by every vehicle in the United States each year is enough to cover a regular-size toilet at full to depth for about 40 years.

Reap the Rewards

What is the amount of the rebate offered by the City?

The City is offering employees \$2000 for new and \$1000 for qualified used hybrid or natural gas vehicles. Vehicles may be purchased from a reputable City of Riverside auto dealer. Funding is on a first-come, first-served basis and is limited to the total program funds allocated annually.

Who qualifies for the rebate?

Any full-time, fully benefited City of Riverside employee having completed 12 consecutive months of full-time employment with the City and who agrees to use the vehicle as a primary means of commuting to and from work. A limit of one vehicle per employee per three years of consecutive employment applies.

How do I collect the rebate?

- 1) Complete the appropriate forms secured from the Public Works Department.
- 2) Submit completed forms for signature and approval to the Public Works Department within 30 days of vehicle purchase for processing and reimbursement.

Details are outlined in the City of Riverside Clean Car/Clean Air Incentive program policy and application packet.

Eligible: Federal law states that monetary rebates presented to any employee will be included on the employee's annual statement of wages.

What other Clean Fuel benefits are available?

Participants automatically become active in the City's Clean Commuter Employee Incentive Program and are eligible to enter the Clean Commuter Quarterly Reward Drawing, and other incentives available in the Clean Commuter Incentive Program. For more information contact the City's Clean Commuter Employee Incentive Program coordinator Chris Durham at (951) 828-5283.

The City encourages participants to contact the IRS or a tax advisor to determine if tax credits apply to their choice of clean fuel vehicle or home refueler.

- * In July 2012 went to \$2,500 for EV, \$1,500 for NGV or Hybrid.

Questions for Panel

- 1. Why did your fleet start looking into alternative fuel technologies? Were you heavily impacted by regulations or was it environmental concerns? Did peer pressure have anything to do with it?

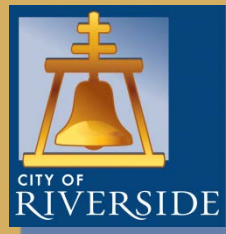
Answer: Riverside has a long term goal that began many years ago, especially as the Inland Empire has the dirtiest air in the region. Some such as EPCACT92 and SCAQMD rules, but no peer pressure, as we were already moving on the right track.

- 2. What is the most critical piece of advice you can give to someone who is on the fence about getting started with a NGV program, and, in trying to figure out what technology is best for them?

Answer: Make sure before purchasing that you have planned for fueling infrastructure for whatever AFV platform you've chosen.

- 3. With so many advanced technology vehicles available and none of them really playing a more dominant role than the other, why should a fleet adopt natural gas now rather than wait until it becomes mature and more widely accepted?

Answer: CNG is one of the best alternative fuels available for many reasons, abundance, reduces our dependency on foreign oil, and less expensive.



Questions for Panel

- 4. Can you share your number one tip to either small or large business looking to integrate NGVs into their fleets without compromising their bottom line?

Answer: Hire staff or consultants to take advantage of grant and tax opportunities.

- 5. What are some of the challenges your fleet has experienced moving to natural gas? What did you need to do to prepare in advance and how did you overcome some of the unforeseen challenges?

Answer: Training is one of the keys to success with a natural gas fleet, not only for departments and managers, but mechanics and operators as well.

- 6. What are the reasons your agency went with this fuel type versus another type of alternative fuel?

Answer: Natural Gas is the “**Best Alternative Fuel**” available, but don’t put all your eggs in one basket and look at other platforms as well such as E85, LPG, Electric, and perhaps Hydrogen in coming years.

Questions for Panel

- 7. You have all made great strides in implementing natural gas vehicles into your operations. When do these technologies become the predominant choice for new purchases? What will it take for that to occur, or has it already?

Answer: When manufacturers produce OEM vehicles in CNG. You can have vehicles converted to natural gas, but it's more cost effective to buy them OEM.

- 8. If you could pick one single thing that would really get the NGV market moving, in one sentence or less, what would that be?

Answer: More OEM production of NGV, such as pickups; Ford F150, Chevrolet 1500, and in the small SUV the Honda CR-V, or Ford Escape would be great!

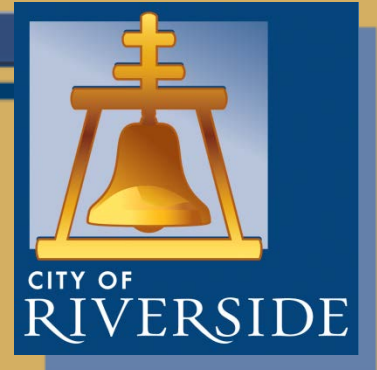
- 9. Tells us what your fleet looks like in 2025? How about 2050?

Answer: Depends upon OEM's but I would say at the current trend;

2025: 100% of our HD fleet will be CNG with exception of Fire Emergency vehicles, and in LD, probably 50% CNG and 25% Electric.

2050: 100% of our HD fleet will be CNG, and in LD, probably 50% CNG, 25% Electric, and 25% Hydrogen.





Questions?

Thank You

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