



## SAN FRANCISCO MUNICIPAL RAILWAY

1145 Market Street, 3rd FLOOR, SAN FRANCISCO, CA 94103-1547  
Phone: (415) 934-3953 FAX: (415) 934-3930



December 20, 2001

### REQUEST FOR INFORMATION

The San Francisco Municipal Railway Department (Muni) requests information about the possible construction/conversion, operation, and maintenance of a compressed natural gas (CNG) fueling facility on Muni property. Muni has embarked on a pilot program to test the efficacy of CNG and other transit buses powered by alternative fuels. Whether Muni ultimately decides to invest in CNG will depend on the results of that pilot program and the decision of policymakers.

Muni is requesting information from firms that design and construct CNG fueling stations, or convert existing diesel fueling stations into CNG facilities, CNG fuel providers, and other vendors who may provide infrastructure for a CNG fueling station. Several providers of CNG infrastructure and fuel have communicated to Muni their willingness to design, construct, convert an existing fuel station to, and/or operate a CNG facility at no cost to Muni. By this letter, Muni requests more information about the feasibility of any such arrangement.

If you have experience in any aspect of the design, construction, conversion or operation of a CNG fueling facility, please respond with a letter no later than January 25, 2003. Your responses will not be scored or otherwise ranked. However, they will enable Muni to make an informed decision about whether to issue and how to structure a Request for Proposals. Your letter should provide answers to the following questions, and feel free to address issues that you feel are relevant but are not expressly stated below:

1. What service(s) can you provide (e.g., design or construct a facility, provide CNG fuel, etc.)?
2. What is the estimated cost of these service(s) (e.g., facility design or construction, CNG fuel operation)? Can you provide services at no cost to Muni (e.g. no cost facility construction and/or conversion in exchange for an operation/maintenance agreement)?
3. If so, what are the conditions or minimum requirements that you would request of Muni (e.g. minimum fleet requirement, public access to fueling facility, etc.)?
4. If there are costs associated with your services, please estimate the cost range of those services for a fueling facility that would serve 15 buses. Please also estimate the cost range of those services for a fueling facility that would serve 80 buses.
5. Provide an estimate of how long it would take to design and construct a CNG facility (include estimates for both a construction or conversion alternative).

Thank you for considering this request for information. The details that you provide will help to inform the decisions of policymakers, who must decide whether and how much to invest in CNG technology. Please send your response to the attention of Sara Procacci; San Francisco Municipal Railway; 1145 Market Street, 3<sup>rd</sup> Floor; San Francisco, CA 94103-1547 **by January 25, 2002**. You may also fax her at (415) 934-3930. By phone, she may be reached at (415) 934-3952.

Please note that this is not a Request for Proposals (RFP). Muni, at its sole discretion, will determine if an RFP may be issued at a later date. It is not a requirement to participate in this RFI in order to be considered for any RFP arising out of this process. Participation in this process is strictly voluntary and Muni will not reimburse participants for any costs in connection therewith.

**Pacific Gas and Electric Company™  
Clean Air Transportation**

January 25, 2002

San Francisco Municipal Railway  
1145 Market Street, 3<sup>rd</sup> Floor  
San Francisco, CA 94103-1547

Dear Sara Procacci:

I am writing in response to your request for information (RFI) received on January 7<sup>th</sup>, 2002 regarding CNG fueling facility services available from Pacific Gas and Electric Company.

First, it is important to emphasize that Pacific Gas and Electric Company is not in the business of building natural gas fueling stations for its customers, as this would compete with the private marketplace. Pacific Gas and Electric Company does own and operate over 30 natural gas fueling stations installed to meet the fueling needs of our own fleet and we do extend access to the public at many of those sites. We have gained a great deal of insight and expertise in the maintenance and operation of natural gas fueling stations over the last 15 years as a result.

It is this experience that we offer to MUNI through our customer education programs on the safe and efficient use of natural gas and electricity in the transportation marketplace and would welcome the opportunity to work more closely with MUNI staff to ease your transition to a cleaner, natural gas fueled fleet.

Specifically we are able to assist MUNI staff in reviewing any draft RFP to make sure it adequately provides enough information for potential bidders. We have recently supported SFO along these lines, working closely with SFO staff on their RFP and evaluation of bids received. Feel free to contact Roger Hooson of SFO Landside operations at 821-6511 regarding our support on the project.

We can also provide information on other successful transit district operations and serve as a clearinghouse of information on all aspects of natural gas and electric vehicles to interested customers, whether they be large fleet operators or a private individual interested in a neighborhood electric vehicle to charge at home.

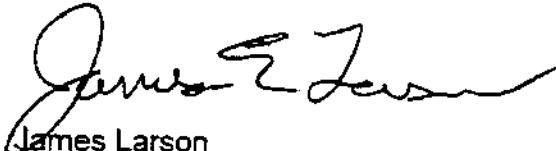
Specifically, Pacific Gas and Electric Company will need to provide electric and natural gas service connections to any fueling facility MUNI installs. There are standard service connection and engineering fees associated with this aspect of any new construction project and while these charges cannot be waived, they can be rolled into any turnkey service provider fees. At this point, we are unable to estimate potential costs of service connection, as we have no information on

September 10, 1994

the potential project. Normally, potential bidders on an RFP contact us to estimate service connection costs as part of preparing their bid.

I am confident the private marketplace will respond enthusiastically to MUNI's RFI regarding turnkey fueling facility services. The most valuable service I can offer you is that of, experience in, and information about, the options and opportunities available to MUNI in the natural gas transportation fuels marketplace. Please contact me; I welcome the opportunity to work more closely with MUNI on this effort!

Sincerely,



James Larson  
Senior Program Manager  
Clean Air Transportation Program  
Pacific Gas & Electric Company

3030 Old Ranch Parkway, Suite 280  
Seal Beach, California 90740  
562.493.2804 fax: 562.493.4532  
888.732.NGVS

**ENRG** January 15, 2002

Ms. Sara Procacci  
San Francisco Municipal Railway  
1145 Market Street, 3<sup>rd</sup> Floor  
San Francisco, CA 94103-1547

RE: Expression of interest - CNG fueling infrastructure

Dear Ms. Procacci:

As the foremost provider of natural gas as a vehicle fuel in North America, ENRG is indeed interested in assisting MUNI in its efforts to develop high quality and cost effective fueling infrastructure for its compressed natural gas (CNG) bus fleet. ENRG offers a portfolio of services encompassing design, construction, operation and marketing that few companies can match. And we continue to build on these strengths by a constant focus on quality improvement and innovation that ensures MUNI's natural gas fueling infrastructure will meet its fleet needs now, and for many years into the future.

ENRG, headquartered in Seal Beach, California is the largest supplier of natural gas as a transportation fuel in North America. Through its predecessor companies, Pickens Fuel Corp. and eFuels, ENRG has been in business since the early 1990's and now offers over 150 years of employee experience in the natural gas vehicle (NGV) business providing natural gas to more than 25,000 vehicles. Today, ENRG owns and operates more than 85 CNG and LNG fueling stations in California, Arizona, British Columbia and Ontario. In the past three years ENRG has constructed over 25 natural gas fueling stations providing public and/or private service to municipal, transit, taxi, airport, waste hauler, street sweeper and other customer fleets. This experience and diversity uniquely positions ENRG in the NGV industry. As further example of the companies' scope, by next year, ENRG will own and/or operate fourteen stations serving eleven different transit properties, nine other stations at seven different airports, and twelve additional stations fueling a variety of refuse haulers. ENRG clearly understands the critical nature of providing high-level customer service to meet the daily demands of fleet operations. As such, our reliable station design, construction, and operations have always met our customers' daily rollout expectations.

On behalf of ENRG's predecessor company Pickens Fuel Corp., I was quite active in January of 2001 during the comprehensive hearings held by the MUNI board on the California Air Resources Board's (CARB) Transit Rule. Although I don't believe we met then, I did speak on various occasions with Mr. Streeter and Ms. Spangeon regarding what PFC could offer to MUNI, in addition to directly addressing the MUNI board of

Ms. Sara Procacci  
Expression of interest

directors. At that time, we provided detailed and substantive information regarding the feasibility of building CNG fueling infrastructure at a MUNI maintenance and fueling depot, most likely at the MUNI compound at Islais Creek. Furthermore, I provided information developed by Sunline Transit and Sacramento Regional Transit regarding the favorable operating metrics of CNG buses versus diesel. In the intervening year, CNG has maintained and improved its advantage to diesel in operating and maintenance cost and emissions performance. Natural gas commodity prices, a huge factor in MUNI's deliberations last year, have stabilized and will remain extremely competitive with low sulfur diesel fuel for at least the next five years, and likely the next ten, while offering superior particulate matter and oxides of nitrogen (NOx) emissions reductions.

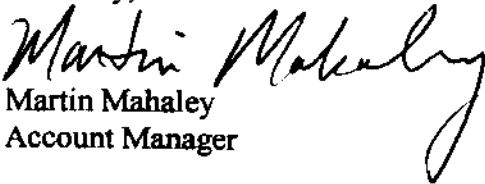
Responding specifically to your questions;

1. **Scope of services:** ENRG offers comprehensive turn-key natural gas fueling solutions to a variety of public and private sector heavy-duty fleets throughout the U.S. and Canada. Our business model focuses on an integrated approach in which ENRG owns, constructs, and operates fuel stations (including natural gas supply and risk management) that has proven successful in many large-scale transit and private projects. ENRG does not offer proprietary technology; we choose the best technology based on customer needs and design and engineer the station based on performance specifications.
2. **Estimated cost and project finance:** For a proposed fleet of eighty buses, we estimate a cost range of \$750,000 to \$1,250,000 for a station capable of providing 750 to 1,000 diesel gallon equivalents per hour. This is a very rough estimate of course. If a fueling station is to be incorporated into planning and design for a new Islais Creek facility, the design costs may be mitigated somewhat. ENRG generally finances its projects on a project finance basis, at no initial cost to the facility host fleet. Our capital investment is amortized and recovered through a ten-year fueling agreement. We do ask that any grant funds secured by MUNI and earmarked for station development be provided to ENRG to offset our costs.
3. **Conditions/minimum requirements:** ENRG asks for a minimum eighty bus deployment in one location. This ensures optimal efficiency. However, we believe favorable economics do exist for a fleet deployment down to 30 buses and we would definitely not rule out small-scale stations. If MUNI is amenable to public access, ENRG will conduct marketing and outreach campaigns to other public and private CNG fleets. Additional fuel sales can potentially lower fuel costs to MUNI through royalty agreements or preferred fuel pricing.
4. **Costs based on fleet size:** We believe this has been addressed in Items 2 and 3. A fifteen bus deployment is not efficient for a dedicated station. I would offer our station at 3<sup>rd</sup> and 23<sup>rd</sup> Streets, very close to the Woods Maintenance Facility for fueling a fifteen bus deployment.
5. **Time schedule:** Design, engineering, and construction of a 1,000 gallon per hour fuel station can be accomplished in six to nine months independent of a larger facility project. I would need more information before providing any time estimates for a conversion project.

Ms. Sara Procacci  
Expression of interest

Ms. Procacci, I hope this letter is responsive to your immediate needs. Again, numerous factors influence the ultimate success of a fueling station development project and we will need to speak in greater detail about MUNI's specific performance requirements. In the meantime, I would be happy to put you in contact with several of our current transit customers, including Sunline Transit and Tempe Transit to discuss their satisfactory experience with natural gas fueling. If you have any questions, please call me at (916) 427-8506. I look forward to speaking with you soon.

Sincerely,

  
Martin Mahaley  
Account Manager



December 27, 2001

Ms. Sara Procacci  
San Francisco Municipal Railway  
1145 Market Street, 3<sup>rd</sup> floor  
San Francisco, CA 94103-1547

Dear Ms. Procacci:

**Request for Information**

Thank you for your letter of December 20, requesting information on a potential CNG fueling facility for transit buses on Muni property. Trillium already has the pleasure of serving Muni in your CNG pilot program, as we provide CNG fuel to the Muni buses in this program from our existing CNG fueling station at San Francisco International Airport. Although this station was not designed for transit buses, it is the highest-capacity CNG station in Northern California and, as far as we understand, is serving well your pilot program needs.

These are our answers to your questions:

*1. What service(s) can you provide?*

Trillium is a turnkey provider of CNG fueling service, and specialized in transit bus applications.

Traditionally, transit agencies have been acquiring their CNG fueling facilities in the same way as other facility construction, by writing a hardware and construction specification (often assisted by the local gas utility) and purchasing from the lowest bidder. The results mostly have been less than desirable: inadequate fueling performance, low reliability and availability, lack of vendor support, and high service costs, all causing problems for bus operations.

This certainly was true for one of the largest users of CNG buses, the Los Angeles County MTA (LACMTA). However, in 1999 they changed their CNG fueling concept to one based on Trillium designing, building, owning and operating, for ten years, three sites, under a strictly performance-based specification and in a public/private partnership arrangement. Prices are firm and include everything except the gas commodity.

The first two sites, for 200+ transit buses, became operational last December 1 and February 1, respectively, in record time, six months from contract award and months ahead of the contracted schedule. The third, optional, site was operational by April 1, 2001, three months ahead of schedule.

This approach was proven to produce results cheaper, faster, and more efficient than LACMTA's internal alternative. Also, Trillium now has been providing CNG fueling service to the LACMTA for over two calendar years and a total of 56 site-months, without any CNG fueling downtime caused by Trillium.



New York City Transit (NYCT) has similar experiences from their first CNG station in Brooklyn, acquired the traditional way. Their following project, in the Bronx, was done with the same approach as at LACMTA and Trillium is nearing completion of this station. Further, effective December 1, 2001, Trillium took over the NYCT Brooklyn station, while in operational service, and is now modifying and upgrading this station for improved service, under a five-year operational contract.

We recommend that you only consider a turnkey CNG fueling service for your CNG buses. CNG fueling is a specialty business, far more complicated than a diesel fueling facility. Trillium's approach relieves the transit operator from all the typical headaches associated with owning, maintaining and operating such a specialist operation.

Trillium is uniquely positioned to deliver under this concept. See the attached document "Project and Customer References".

It is important that an RFP with this concept is made strictly on operational performance parameters and the turn-key delivery includes designing, building, operating (except for the actual bus fueling) and maintaining the CNG compressor station, including modifications to any existing diesel fueling area to accommodate CNG dispensing. Submittals to Muni would be for site layout and safety/code review only. The station performance, including availability, would be guaranteed by financial penalties for failure.

What should not be included are any modifications to a bus maintenance building, as these vary tremendously in scope also due to secondary effects such as upgrading existing installations to modern general building codes. These modifications are best done through traditional construction procurement.

Please also see the enclosed document "Required Definitions for an RFP for CNG Fueling Services for Transit Bus Operators".

*2. What is the estimated cost of these service(s)? Can you provide services at no cost to Muni?*

Of course, a CNG station for Muni would have to be paid for by Muni, in one way or another. There are basically three ways to pay for the investment part of the station, all of which can be offered by Trillium. Combinations between these alternatives are also possible:

- The investment price is paid over the operational contract term, 10 years, through a capital lease program. A municipal lease, arranged by Trillium, achieves the best rates. This model is used by LACMTA.
- The investment price is paid as a lump sum on completion of the station. This may be to prefer if Muni has grant or other investment money available. This model is used by NYCT.
- The investment price is included in the recurring charge for the CNG delivered to the buses. As far as known, this model has not been used by any transit operator but is common for smaller stations and customers, such as school districts.

The costs are discussed under question No. 4, below.

3. *If so, what are the conditions or minimum requirements that you would request of Muni?*

All turnkey CNG fueling service contracts require a minimum annual volume guarantee on a take-or-pay basis. Above that minimum, the recurring portion of a price could vary in steps, subject to actual volume delivered.

Public access (in a separate area) would not be a requirement from Trillium, but an advantage to Trillium's other customers, to supplement Trillium's existing stations in the Bay Area, at San Francisco International Airport and in Berkeley.

4. *If there are costs associated with your services, please estimate the cost range of those services for a fueling facility that would serve 15 buses (80 buses)?*

The investment cost is totally determined by the key performance parameters applicable to Muni, primarily the fueling pattern, i.e. how much fuel into how many buses within what fueling window in how many fueling lanes in parallel. Please see the document "Required Definitions for an RFP..." For instance, the investment for 15 buses could be modest, if they were time-filled while parked overnight and there was no requirement to cost-effectively upgrade the station to serve considerably more buses. For redundancy reasons, two compressor skids still would be a minimum. The guestimated price for such an installation is \$1.5 M. On the other hand, fueling 80 CNG buses mixed with diesel fueling of other buses, in three lanes with maximum five minutes per bus would be more in the \$4.5 M range.

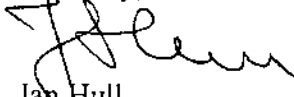
The recurring charge for operation and maintenance also would depend on absolute volume, as many of its cost elements are fixed. The likely range would be \$0.30 - \$0.60 per gasoline gallon equivalent (GGE), plus the cost of the gas commodity (today approximately \$0.50 per GGE).

5. *Provide an estimate of how long it would take to design and construct a CNG facility (include estimates for both a construction or conversion alternative)?*

If the design/build process is done as described above and there are no special delaying circumstances (soil conditions, special external approval processes), a station by Trillium can be done in seven months, guaranteed. There is basically no difference between construction and conversion, as the only area affected by this distinction is the fueling area. Building a new such area or modifying one used for diesel fueling makes no difference. Our experience shows that any modifications to a maintenance building (which would not be a part of a fueling service contract) might be a more time-critical part of the process.

Thanks for this opportunity to provide you with input. For any questions, please call or e-mail me (janhull@trilliumusa.com).

Sincerely,



Jan Hull  
President

## **PROJECT AND CUSTOMER REFERENCES**

### **RECENT PROJECTS COMPLETED**

From 1998 through 2001, Trillium completed a total of three transit size CNG fueling stations that are presently owned, operated, and maintained by Trillium. A fourth one is almost complete. A fifth transit station was taken over to modify and operate and a sixth transit station was designed/built for the customer to operate.

Additionally, Trillium currently operates nine non-transit CNG fueling stations, seven of which were built in the same time period.

The various categories of stations are listed below in the order of descending relevance for transit bus projects.

### **Modify/Upgrade/Operate/Maintain Transit Fast-Fill CNG Fueling Facilities**

The following large-capacity CNG fueling station was originally built and operated by others. Its operation was taken over by Trillium on December 1, 2001. It is currently undergoing major modifications and upgrades by Trillium, while in operation, to correct key deficiencies, as well as upgrade, and allow integration into Trillium's remote monitoring and control system.

New York City Transit 130 Livingston Street Brooklyn, NY 11201	Design/build/modify, manage and operate transit CNG station Jackie Gleason Depot Andrew Janusas      718-871-7170 Take-over of an existing station with simultaneous modifications under a maximum six-month schedule.
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### **Design/Build /Operate/Maintain Transit Fast-Fill CNG Fueling Facilities**

Three large-capacity CNG fueling stations were finished by Trillium as design/build transit fueling facilities. A fourth large-capacity such facility is currently under late-stage construction and scheduled to be completed in January 2002.

The station users, locations, points of contact, and completion schedules for Trillium's design/build transit fueling station projects are as follows:

Los Angeles County MTA One Gateway Plaza Los Angeles, CA 90012	Design, build, own and operate three transit CNG stations Los Angeles (2) and North Hollywood Don Ott      213-922-6664 Two stations were constructed in parallel and all three completed in six to seven months, one to three months ahead of contract schedules.
New York City Transit 130 Livingston Street Brooklyn, NY 11201	Design, build, manage and operate transit CNG station Coliseum Depot Demetrios Milonas      646-252-4127

This station is under construction and on track for scheduled completion in January 2002 (subject to likely delays by the main depot Superstructure contractor).

### **Design/Build Transit Type Fast-Fill CNG Fueling Facilities**

One large-capacity CNG fueling station was finished by Trillium as a design/build transit fueling facility, to be operated by the customer:

MTA Long Island Bus 700 Commercial Avenue Garden City, NY 11530	Design/build transit CNG station Rockville Centre Depot John Susino 516-542-0100 Ext 4416 Station was completed in 15 months, later than expected due to delays resulting from revised bus delivery schedules.
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### **Other Trillium Design/Build /Operate/Maintain CNG Fueling Stations**

The station users, locations, and points of contact for seven non-transit fueling stations currently owned, operated, and maintained by Trillium are as follows. These stations all were completely new and designed and built by Trillium from 1998 through 2001. Two others, not listed here, were built in 1996 and 1997.

LA Unified School District 18263 Hoover Street Gardena, CA 90243	Transportation Center CNG station Antonio Rodriguez 323-227-4400
San Francisco International Airport 423 Broadway #523 Millbrae, CA 94030	Airport shuttle bus and taxi CNG station Roger Hooson 650-794-6511
City of Berkeley 1101 Second Street Berkeley, CA 94710	City vehicle and shuttle van CNG station Patrick T. Keilch 510-644-6620
United Parcel Service 1800 North Main Street Los Angeles, CA 90031	Express courier CNG station Bob Paulsen 323-276-2563
Team Systems 30-17 40 <sup>th</sup> Avenue Long Island City, NY 11101	Taxi fleet CNG station Ted Strauel, Jr. 718-786-0643
Southwest Gas Co. 5705 S. Kyrene Road Tempe, AZ 85283	Kyrene Service Center CNG station Ed Hempelman 602-391-5575
City of Scottsdale 9191 E. San Salvador Dr. Scottsdale, AZ 85285	Fleet Service Center CNG station Carl Golnik 480-312-5567



## Required Definitions for an RFP for CNG Fueling Services for Transit Bus Operators

This document defines the areas that, as a minimum, must be addressed in a Request For Proposal (RFP) for CNG Fueling Services. This is where a CNG fleet owner desires (the option) to outsource the providing of CNG fuel for his fleet to a private partner that will build, own and operate the required CNG fueling station under the partner's own technical and commercial responsibility. This arrangement allows the fleet owner to concentrate on his primary business of moving people and leave the specialty of making CNG fuel to a specialist provider.

This document only addresses the basic performance and some site issues, while other scope-of-work issues as well as commercial issues and contractual terms and conditions are excluded. Nor does it address provider qualifications, which naturally should include directly relevant experience, supported by solid customer references.

### Scope-of-Work Issues

Key to the scope-of-work for CNG fueling services is that the requirements are **strictly performance oriented**. This leaves the service provider with the opportunity to design an efficient system that maximizes the potential savings by balancing investment and operational costs, which will result in the lowest customer life-cycle cost.

Accordingly, the RFP should **not specify** technical data or requirements for the CNG station, such as number of compressors, CNG flow rate, type of compressor driver, compressor lubrication principle, type of control system, or size and arrangement of CNG storage. This is unnecessary because the provider has a strong incentive to configure the equipment to be able to perform, as he only gets paid when he delivers.

- The CNG station's **functional and capacity requirements** are determined by the fueling pattern of the vehicles it is meant to serve. The following data are to be specified in the RFP:
  - the type(s) of buses (and any light vehicles) that will be served by the station,
  - the volume in cubic feet of gas or (gasoline or diesel) gallon equivalents of fuel that constitutes a typical average fill for the buses that will be serviced on the site, and the expected maximum fill volume in practice.
  - the nominal vehicle fill pressure(s), normally 3,600 psig for buses.
  - the types of CNG fueling connectors required, normally transit type (Sherex 5000) for buses, NGV-1 for any light vehicles
  - the diameter size of the receptacle-to-tank piping in the buses, unless the buses are standard CNG OEM buses
  - how many buses per day that will fill at the CNG station during weekdays and weekend days.

- the fueling pattern per hour during the day, i.e. the expected distribution of the fueling demand, or the fueling window
- for a fast-fill application: number of parallel fueling lanes, i.e. the maximum number of buses that need to be simultaneously hooked up to a dispensing hose,
- the throughput requirements, i.e. how many vehicles need to be fueled in how many hours, including hook-up and unhook procedures,
- the allowable fuel time (fueling only) for an average, typical fill with all lanes in use
- whether the throughput time is affected by other, parallel or sequential services to the vehicles, such as vacuum cleaning,
- for a time-fill application: maximum number of buses hooked-up and physical location of each parking stall (to determine types of fill posts)
- the details of the performance test(s), if any, that will determine that the station meets its requirements and is accepted for use, including the characteristics and availability of the test vehicles
- **Site and construction items** to be defined as follows, at a minimum. Some of these could be addressed or detailed also at a site-walk:
  - the area available for the compressor compound, to hold compressor skids, dryer, high-pressure (storage) vessels, spares (and possibly controls) structure, and any power generator,
  - the area and layout requirements for dispenser island(s), dispensing hoses, and any authorization terminal,
  - the intended location of the gas company meter set, and definition of the available gas supply: gas pressure (including typical, best and worst pressure cases, desirable to be in the 150 - 200 psig range) available flow rates (depend on peak demand criteria) and gas specification (specifically moisture content),
  - the location and availability of electric power (phases, voltage, amperage)
  - adjustment or removal of any hazardous items which would interfere with fire code and electric code rules, specifically overhead power lines,
  - the location and availability of telephone lines for the provider's remote control and communication with the site,
  - any required tie-in with existing information, alarm and/or fuel management system,
  - any immediately CNG-related building, pavement or fencing adjustments required, and
  - any requirement for operation under total electric power outage.

# PINNACLE CNG COMPANY

P. O. Box 2499  
Midland, Texas USA 79702  
Office: (915) 686-7002  
Fax: (915) 686-1557

Gregory E. Vlasak  
*Regional Manager  
of Government Relations,  
Sales Representative*

January 25, 2002

Ms. Sara Procacci  
San Francisco Municipal Railway  
1145 Market Street, Third Floor  
San Francisco, CA 94103-1547

FAX: (415) 934-3930

Dear Ms. Procacci:

**Re: Request for Information (RFI) on CNG Fueling Services**

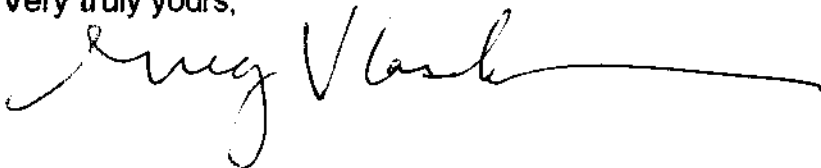
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Thank you for inviting Pinnacle CNG Company to respond to this RFI for CNG fueling. Pinnacle is one of the leading providers of CNG fuel services in California and the U.S. for fleet fueling operations. We are very interested in the opportunity to provide fuel services for the MUNI transit CNG station(s) you are contemplating.

Our responses to your five general questions about our services are attached. I have tried to be both complete and succinct in my reply. Of course, there is a tremendous amount of supporting documentation available that we will be happy to provide to you upon request.

Thank you again. We look forward to the opportunity to compete for MUNI's CNG fuel service program.

Very truly yours,



6324 Sutter Avenue  
Carmichael, California USA 95608-2723

California Office:

Telephone: (916) 944-4094  
Fax: (916) 944-4632

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**Response to San Francisco Municipal Railway  
Request For Information (RFI) on  
Compressed Natural Gas (CNG) Fueling Services**

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*1. What service(s) can you provide (e.g., design or construct a facility, provide CNG fuel, etc.)?*

Pinnacle CNG Company (Pinnacle) is a complete turnkey provider of CNG fueling services. We provide full design, engineering, construction, start-up, operation and maintenance for every station we build. Pinnacle is the only turnkey fuel provider in the CNG industry that has developed, obtained U.S. patents for, and is the exclusive service provider for its own fully integrated CNG compression and dispensing technology.

Pinnacle is a Classification A General Contractor licensed by the California State Contractors Licensing Board.

Utilizing its exclusive, patented PVT (for "pressure-volume-temperature") technology, Pinnacle is able to guarantee its customers the most complete and precisely monitored CNG fuel fills available in the industry. This translates to a guarantee of maximum vehicle range for the fleet operator. Pinnacle also guarantees an electric cost savings of 10% over competing systems, due to the inherent thermal and mechanical efficiencies of our compression design. Technical information on these and other patented Pinnacle technologies is readily available at our website: [www.pinnaclecng.com](http://www.pinnaclecng.com)

Pinnacle also offers its customers fully integrated fleet data management services that include station maintenance, station efficiency, vehicle operation, vehicle maintenance, accounting, reporting and billing functions.

Pinnacle was organized in 1992 with the charter of developing and marketing a more efficient, more reliable CNG fast-fill compression system than was available in the industry. Pinnacle built its first CNG station for United Parcel Service in



San Ramon, California in 1995. That station is now in its seventh year of operation without a lost fueling day. Our current CNG stations and projects are listed in Table I.

Table I. Pinnacle CNG Current Stations and Projects

Site	Opened	Customer(s)	Status
San Ramon, CA	1995	United Parcel Service	Operating
San Jose, CA	1998	San Jose Unified School District	Operating
West Sacramento	1998	United Parcel Service	Operating
Sacramento, CA	1999	Folsom Cordova Unified School District	Operating
Fresno, CA	2000	United Parcel Service	Operating
Thousand Oaks, CA	2001	City of Thousand Oaks/ TO Transit	Operating
Lancaster, CA	2001	Southern California Gas Co.	Operating
Concord, CA	2002	Mt. Diablo Unified School District	Construction
Santa Clara, CA	2002	Specialty Solid Waste & Recycling	Construction
Diamond Bar, CA	2002	South Coast Air Quality Mgmt. District	Construction
Livermore, CA	2002	Lawrence Livermore National Laboratory	Awarded
Reno, NV	2002	Sierra Pacific Power/ B&D Taxi	Awarded
Santa Ana, CA	2002	Ware Refuse Disposal Co.	Awarded
S. Lake Tahoe, CA	2002	Tahoe Transit/ City of S. Lake Tahoe	Awarded

2. *What is the estimated cost of these service(s) (e.g., facility design or construction, CNG fuel operation)? Can you provide these services at no cost to Muni (e.g., no cost facility construction and/or conversion in exchange for maintenance/operation agreement)?*

The capital cost of CNG fueling service is highly dependent on the fueling requirements of the individual fleet. Generally, the shorter the available fueling window, the more expensive the CNG compression system required. A fleet of 15 buses that consumes 900 gallons of diesel per day would consume approximately 120,000 standard cubic feet (scf) of CNG per day. This demand

could be met with a 200 scfm compressor over a ten hour (i.e., time-fill) period<sup>1</sup> or with a 2,000 scfm compression system in one hour. The capital cost range for these systems is \$500,000 to \$2 million. The advantage of the latter (larger) system is that it could fuel many more buses continuously at five minute intervals.

Pinnacle's turnkey fueling service requires no capital expenditure by Muni. We are able to fully finance the design, engineering and construction of the station, and recover our costs through a long-term fueling agreement with Muni. This is Pinnacle's preferred arrangement with its customers. Pinnacle would also work with Muni to identify and obtain all available clean fuel infrastructure grants that would defray the per-therm fuel price paid under the fueling agreement.

*3. If so, what are the conditions or minimum requirements that you would request of Muni (e.g., minimum fleet requirement, public access to fueling facility, etc.)?*

Pinnacle's preferred minimum term is ten years. The term could be for a longer or shorter period at Muni's discretion but the same amortization would apply based on the number of years of the term.

During the term of the agreement, Muni would commit to purchasing a minimum quantity of CNG. The minimum quantity would depend on the compression capacity required to meet Muni's fueling schedule, but would in no case be less than two million therms (equivalent to approximately 400,000 therms per year, or the fuel requirement of 15 buses at 63 diesel gallons per day, six days a week, for five years).

Pinnacle prefers – but does not require – that transit CNG stations be available for public access. We routinely install separate public access dispensers at fuel sites wherever feasible, and return a portion of third party sales to the host fleet in the form of a monthly rebate.

*4. If there are costs associated with your services, please estimate the cost of those services for a fueling facility that would serve 15 buses. Please also estimate the cost range of those services for a fueling facility that would serve 80 buses.*

In either case, no capital outlay would be required of Muni for the design, engineering or construction of the station. As noted above, Muni and Pinnacle

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<sup>1</sup> Thousand Oaks Transit currently fuels its fleet of seventeen full size transit buses with a customized Pinnacle CNG Company station that features both time-fill and fast-fill capability.

would execute a long-term fueling agreement incorporating minimum fuel usage requirements, incentives to Muni for higher usage, and a scheduled compression service fee or fees. For the per-therm compression service fee, Pinnacle provides all fuel system management services and a 100% parts and labor warranty for the term of the contract. The compression service fee is dependent on several customer-specific factors (e.g., contract fuel requirement, grant funds available, station load profile) Compression service fees for Pinnacle customers currently range from \$0.32 to \$0.62 per therm (\$0.44 to \$0.85 per diesel gallon equivalent).<sup>2</sup>

The compression service fee rate is less effected by the size of the Muni's CNG fleet than by: 1) the availability of infrastructure grant funds to defray Pinnacle's capital cost, and 2) the flexibility of Muni's fueling schedule (longer fueling times mean less expensive installed compression capacity.) However, economies of scale for a larger fleet will have some beneficial cost impact that can be calculated in a specific formal proposal.

*5. Provide an estimate of how long it would take to design and construct a CNG facility (include estimates for both a construction or conversion alternative.)*

In Pinnacle's experience, the actual time requirements are 60 days to design and 60 days to construct the CNG compression installation itself. However, many factors invariably extend project schedules, notably permitting, conformity approvals (with master plans, etc.) utility service planning and coordination of related site improvements. Project schedules can be minimized through proper planning and early collaboration between interested parties. Normally, CNG fuel providers allow from six months to a year from the date a contract is executed for the completion of the CNG station.

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<sup>2</sup> Compression service fee does not include utilities (electrical power and uncompressed natural gas) which are directly passed through by Pinnacle, or applicable taxes.

December 27, 2001

Ms. Sara Procacci  
San Francisco Municipal Railway  
1145 Market Street, 3<sup>rd</sup> Floor  
San Francisco, CA 94103-1547

Re: Request for Information – CNG Fueling Facility

Dear Ms. Procacci:

In response to the Request for Information dated December 20, 2001, Bevilacqua-Knight, Inc. (BKI) hereby submits its answers to Muni's questions:

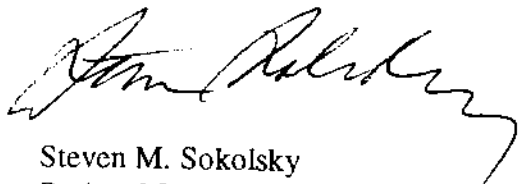
1. BKI develops specifications for the construction and operation of compressed natural gas (CNG) fueling facilities. In particular, BKI specializes in the development of "performance specifications" and performs the actual drafting of Requests for Proposals for the station. As opposed to detailed construction specifications, performance specifications take the transit agency's fueling needs and translate them into a series of minimum requirements that the builder/operator of the fueling station must meet. This process involves collecting the fuel use patterns of the fleet, examining current conditions at the proposed station site, extrapolating future expansion trends, and setting standards for the contractor. In this manner, the builder/operator is given the latitude to build and operate the station in the most efficient manner. We have worked with public agencies that are inexperienced in the use of CNG and helped them determine their operational needs vis-à-vis CNG. For example, we would collect from Muni the following information: number of vehicles; daily range (in miles) of each vehicle; what time of day does fueling take place; number of vehicles to be fueled during a specific timeframe (i.e. six-hour time period); fleet expansion plans; station ownership situation; and the need for public access. We then draft a comprehensive set of requirements that the builder/operator of the station must meet. We will also include all relevant safety code information. This information is normally included in the agency's regular RFP package. We have also assisted agencies in the evaluation of bids and proposals. Finally, BKI can provide other services outside the immediate purview of the RFI. These include overall CNG program development, outreach, vehicle procurement, and assistance in grant writing.

2. BKI usually contracts with agencies on a "not to exceed" basis and invoices on the actual amount of labor and materials. The cost for developing specifications will depend on the amount of time needed to acquire all pertinent information, internal review requirements at Muni, and the bid review process. Our initial estimate is that developing performance specifications, drafting an RFP, and assisting in the evaluation of proposals would cost approximately \$12,000. Unfortunately, none of our services are translatable into free or in-kind services for Muni.
3. Not applicable. See answer #2.
4. The cost of our services is not dependent on the size of the fleet. Since we develop performance specifications and write RFPs for the agency, the actual size of the fleet or the fueling facility has little affect on the time we would need to perform our research and writing activities.
5. In our experience, the time needed to specify, design, and construct a full-size CNG facility ranges from seven to fourteen months. Much depends on the internal review process, the conditions at the proposed site (especially as they pertain to the current utility set-up and the need for site civil work), and the permitting process. The conversion of an existing diesel fueling station will not change that timeframe substantially. The same CNG equipment needs will be in effect and the removal of existing equipment may in fact lengthen the process as they may be subject to California Environmental Quality Act (CEQA) regulations.

I would like to reiterate that BKI sees itself as providing specification and RFP-writing services to Muni for its CNG station. Our services would be provided at the outset of the station development process. We have worked with many of the leading CNG fuel providers and station builders and have provided insights into their inner workings to several agencies.

We appreciate the opportunity to respond to your Request for Information and hope that we can be of assistance to Muni in the future.

Sincerely,



Steven M. Sokolsky  
Project Manager