Final

BURBANK HYDROGEN FUELING STATION PROJECT

Initial Study/Negative Declaration/Environmental Assessment

Prepared for:
City of Burbank and
US Department of Energy

August 2008

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August 6, 2008

DOE/EA 1620

FINDING OF NO SIGNIFICANT IMPACT FOR THE PROPOSED BURBANK HYDROGEN FUELING STATION PROJECT, BURBANK, CALIFORNIA

AGENCY: Department of Energy, Golden Field Office

ACTION: Finding of No Significant Impact

SUMMARY: The U. S. Department of Energy (DOE), in coordination with the City of Burbank, California, conducted a joint Environmental Assessment (EA)/Initial Study (IS)/Negative Declaration (ND), that analyzed the potential impacts associated with the proposed construction and operation of an updated hydrogen fueling station, located at 124 S. Lake Street in the City of Burbank, California, in Los Angeles County (the specific address for the project site is 145 West Verdugo). All discussion, analysis and findings related to the potential impacts of construction and operation of the proposed Hydrogen fueling Station are contained in the Final EA. The Final EA/IS/ND is hereby incorporated by reference.

Project proponents include Chrysler LLC, BP America Inc and the City of Burbank. Chrysler LLC has a cooperative agreement in place with DOE. This agreement (Award DE-FC36-04GO14285) is a part of DOE's "Hydrogen to the Highways" program and will provide funding for the construction and operation of the project. The project is proposed by the City of Burbank, with design and construction being provided by BP America Inc, who is a sub-recipient to Chrysler LLC.

The proposed Burbank hydrogen fueling station will involve the removal and replacement of the currently existing hydrogen fueling station equipment in order to utilize updated technology and meet a limited increase in demand for hydrogen fuel. The upgraded fueling station would add a steam methane reformer (SMR) hydrogen generator (to replace the existing electrolyzer unit), a hydrogen storage system, vehicle dispensing apparatus for both 350 bar and 700 bar, and necessary associated equipment. The upgraded station would be capable of storing and dispensing approximately 108 kg/day of hydrogen, and would consist of five primary modules: 1)

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108 kg/day SMR Hydrogen Generator and low pressure surge vessel; 2) 350 bar (5,000 psig) Compression system; 3) Gaseous buffer storage (~240 kg); 4) 700 bar (10,000 psig) Booster Compressor; 5) Automated Dispenser / Cooling System. The hydrogen generation, compression, storage and dispensing systems will be monitored to assure no gas leaks or fires, through the use of safety features that have been engineered into the project design. The proposed Hydrogen Fueling Station is designed to be fully automated and planned for 24/7 operation with minimal attention. The hydrogen produced would be for use in privately and publicly owned fuel cell vehicles and hydrogen-internal combustion engine (ICE) vehicles. Vehicle operators using the station for refueling would also be trained in the Emergency Response, and Safety and Dispenser Operation prior to being allowed to access the site.

In accordance with applicable regulations and policies, DOE sent scoping letters to potentially interested local, State and Federal agencies, including the State Historic Preservation Office. The scoping letters described the Proposed Action and requested assistance in identifying potential issues that could be evaluated in the EA. DOE also sent scoping letters to other potentially interested agencies, organizations, and individuals announcing the availability of the Draft EA for public comment. Additionally, DOE mailed a scoping notice out to adjacent contiguous property owners and posted the notice on the DOE Golden Field Office reading room website. In response to the scoping notice, DOE received no public comments or comments from individuals or organizations raising any specific objections or concerns about the proposed action. The environmental document was also duly noticed to adjacent contiguous property owners, interested parties as identified by the City of Burbank, and was posted on the DOE Golden Field Office reading room website. During the public review period for the draft document, DOE received only one comment from an individual who did not raise any specific objections about the proposed action but wanted to be sure the effects on air quality were thoroughly addressed in the assessment.

DETERMINATION: DOE determines that providing funding to support the construction and initial operation of the proposed Hydrogen Fueling Station in Los Angeles County, California, would not constitute a major federal action significantly affecting the quality of the human environment, as defined by the National Environmental Policy Act. Therefore, the preparation of an environmental impact statement is not required and DOE is issuing this Finding of No Significant Impact.

All discussions and findings related to the project site and the Proposed Action are contained within the Final EA. Copies of the Final EA are available at the following locations:

DOE Golden Field Office Website:
http://www.eere.energy.gov/golden/

DOE Golden Field Office Public Reading Room Website:
http://www.eere.energy.gov/golden/Reading_Room.aspx

City of Burbank Planning Division
333 East Olive Avenue
Burbank, California 91502
Burbank Planning Website:
http://www.burbankca.org/planning/envirodocs.shtml

For further information of the DOE NEPA process contact:

Office of NEPA Policy and Assistance
U. S. Department of Energy
1000 Independence Avenue. S. W
Washington, DC 20585
(202) 586-4600 or 1-800-472-2756

Issued in Golden, Colorado this 11th day of August, 2008.

Rita L. Wells
Manager

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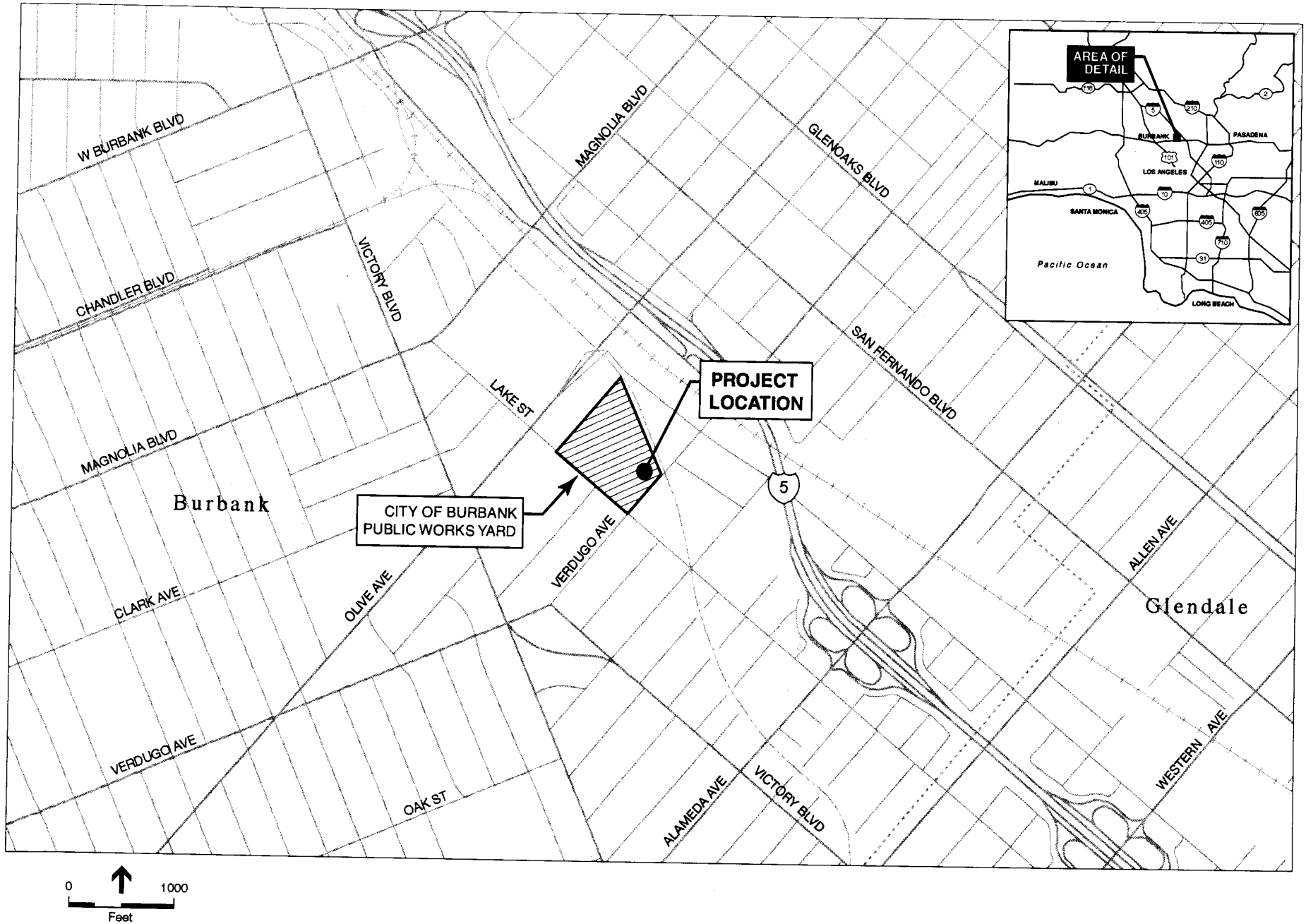
CHAPTER 1
Project Description

1.1 Overview

The City of Burbank currently operates a 12 kilogram per day (kg/day) 350 bar hydrogen generation and fueling station at its public works yard, located at 124 South Lake Street, Burbank, California (**Figure 1-1,** Regional Location Map). The specific address for the project site is 145 West Verdugo Avenue. The proposed Burbank hydrogen fueling station involves removal and replacement of the existing hydrogen fueling station equipment in order to utilize updated technology and meet a limited increase in demand for hydrogen fuel. The upgraded fueling station would add a steam methane reformer[1] (SMR) hydrogen generator (to replace the existing electrolyzer[2] unit), a hydrogen storage system, vehicle dispensing apparatus for both 350 bar and 700 bar, and necessary associated equipment. The upgraded station would be capable of storing and dispensing approximately 108 kg/day of hydrogen. The hydrogen produced would be for use in privately and publicly owned fuel cell vehicles and hydrogen-internal combustion engine (ICE) vehicles. The project is proposed by the City, with design and construction to be provided by BP America, Inc. (BP America).

Chrysler LLC has a cooperative agreement in place with the United States Department of Energy (DOE), "Hydrogen to the Highways" project[3] (Award DE-FC36-04GO14285). The fueling station proposed by BP America is part of the aforementioned project and BP America is a sub-recipient to Chrysler LLC on this project. DOE is considering providing matching funds toward the total project cost. The current project schedule anticipates construction beginning by July 31, 2008, the station start-up in late-October, and testing of operations in time for opening in early-November. BP America intends to operate the station until September 30, 2009, the date its DOE commitment expires. Following this date, station ownership would likely be transferred to the City, which would continue to operate the site indefinitely.

1 Steam reforming converts methane (and other hydrocarbons in natural gas) into hydrogen and carbon monoxide by reaction with steam over a nickel catalyst.
2 An electrolyzer separates hydrogen from oxygen by applying an electrical current to water.
3 The full name of the program is "DOE Hydrogen to the Highways Program – Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project."



SOURCE: ESA, 2008.

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Figure 1-1
Regional Location and
Project Vicinity Map

1.2 Purpose, Need and Objectives

Determinations under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are being completed in order to fulfill the following goals and objectives for this project:

1. Test hydrogen infrastructure on a larger scale utilizing an SMR hydrogen generator and provide high pressure dispensing, while still attending to the needs of low pressure vehicles.
2. Change the production method from electrolysis to an SMR hydrogen generator.
3. Increase capacity of the Burbank hydrogen station to meet increasing demand.
4. Support national, state and City goals of exploring alternative fuels, including DOE Hydrogen to the Highways Program – Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project objectives.

National, state and City goals and programs for hydrogen fueling stations and vehicles, which the project would support, are described below.

DOE Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project

The Chrysler project, of which the Burbank Hydrogen Fueling station is a critical component, was one of four teams selected under a 2004 competitive selection with the intent to create a government/industry partnership that would address the national challenge of ensuring reliable, domestic, diverse energy sources while reducing US dependence on foreign oil and protecting the environment.[4]

In April 2004, DOE selected the teams to participate in "learning demonstrations" that include testing, demonstrating, and validating hydrogen fuel cell vehicles and infrastructure. Validation project teams are led by automobile manufacturers or energy companies and made up of hydrogen suppliers, fuel cell suppliers, utility or gas companies, fleet operators, system and component suppliers, small businesses, universities and government entities.

Each validation project includes a comprehensive safety plan; an activity to assist in developing codes and standards; and a comprehensive, integrated education and training campaign. Lead organizations will work with their teams to demonstrate integrated and complete system solutions operating in real world environments. These demonstrations are intended to assess the research program's progress toward meeting the goal of achieving a technology readiness milestone by 2015.

[4] DOE web site, http://www1.eere.energy.gov/hydrogenandfuelcells/tech_validation/fleet_demonstration.html, accessed May 29, 2008.

The learning demonstration objectives include the following:[5]

Record, collect and report data from fuel cell vehicles and the hydrogen fueling operations to validate 2009 DOE targets of: a) fuel cell stack durability: 2,000 hours, b) vehicle range: 250+ miles, and c) hydrogen cost at the station: $3.00/gallon gas equivalent (gge).

- Demonstrate the safe installation of hydrogen fueling stations and fuel cell service facilities as well as the safe operation of all fuel cell vehicles.
- Raise public awareness of hydrogen technology and fuel cell vehicles.
- Establish an initial hydrogen infrastructure network to support a small fleet to fuel cell vehicles across a metropolitan area.
- Conduct market research that will assist in the development of the next generation of vehicles and communication activities.
- Explore cost and commercial feasibility of renewable-based hydrogen generation.

California Hydrogen Highway Network

Adoption of Executive Order S-7-04 by the governor of California in January of 2004[6] designated California's 21 interstate freeways as the "California Hydrogen Highway Network" (sometimes abbreviated CA H2 Net). The order also called for applicable state agencies, including the California Environmental Protection Agency, to work with state legislators and other key stakeholders (such as local and regional government organizations, energy provides and automakers, fuel cell products suppliers, etc.) to build a network of hydrogen fueling stations along these roadways and in urban centers that they connect, so that by 2010 Californians will have access to hydrogen fuel. The California Hydrogen Blueprint Plan, mandated by the executive order, presented a phased approach, with a Phase I goal of providing 50 to 100 publicly accessible hydrogen fueling stations to serve an estimated 2,000 hydrogen vehicles by 2010.[7]

City of Burbank Hydrogen Fueling Station

The existing station on-site was installed in February 2006 as a state-of-the-art fast-fill hydrogen fueling station, and was considered a milestone in the City's plan to improve the region's air quality.[8] The opening of this station marked the City of Burbank's participation in a five year hydrogen fuel infrastructure and fleet vehicle demonstration project sponsored by the South Coast Air Quality Management District (SCAQMD). Burbank was one of five cities in the region partnering with SCAQMD to demonstrate five hydrogen fueling stations and a total of 30 hybrid Priuses (five per city) with internal combustion engines that have been modified to burn gaseous hydrogen. The other cities included in the over $7 million SCAQMD program were Ontario, Riverside, Santa Ana and Santa Monica. In addition the City has a clean fuel bus that is serviced at the station.

5 http://www.hydrogen.energy.gov/pdfs/progress07/vi_a_1_bonhoff.pdf, accessed May 29, 2008.
6 California Executive Order S-7-04, Governor Arnold Schwarzenegger, January 6, 2004.
7 California Hydrogen Blueprint Plan, California Environmental Protection Agency, May 2005.
8 http://www.ci.burbank.ca.us/publicworks/Fleetpercent20andpercent20Building/Hydrogenpercent20Station.htm, accessed on May 29, 2008.

1.3 Project Location and Surrounding Environment

The area immediately surrounding the project site developed with industrial and commercial uses. Surrounding land uses consist of the Public Works site to the north and west, West Verdugo Avenue on the south, and the concrete-lined Burbank Western Channel to the east. West Verdugo Avenue is located generally to the southeast of the project site, South Lake Street is located to the southwest, West Olive Avenue is located to the northwest and South Flower Street is located to the northeast of the site. The public works yard includes maintenance and storage facilities for City vehicles, as well as fueling station for City Police cars (conventional gasoline). Other industrial uses in the immediate vicinity include a City of Burbank Power Station (northwest corner of W Olive Avenue and Lake Street), automobile sales and repair, recreational vehicle storage, self storage, a steel and metal operation, a Metrolink Station, and entertainment industry-related uses (e.g., Nickelodeon on West Olive Street) . The Golden State Freeway (Interstate 5) is located approximately 1,000 feet to the east, beyond the flood control channel.

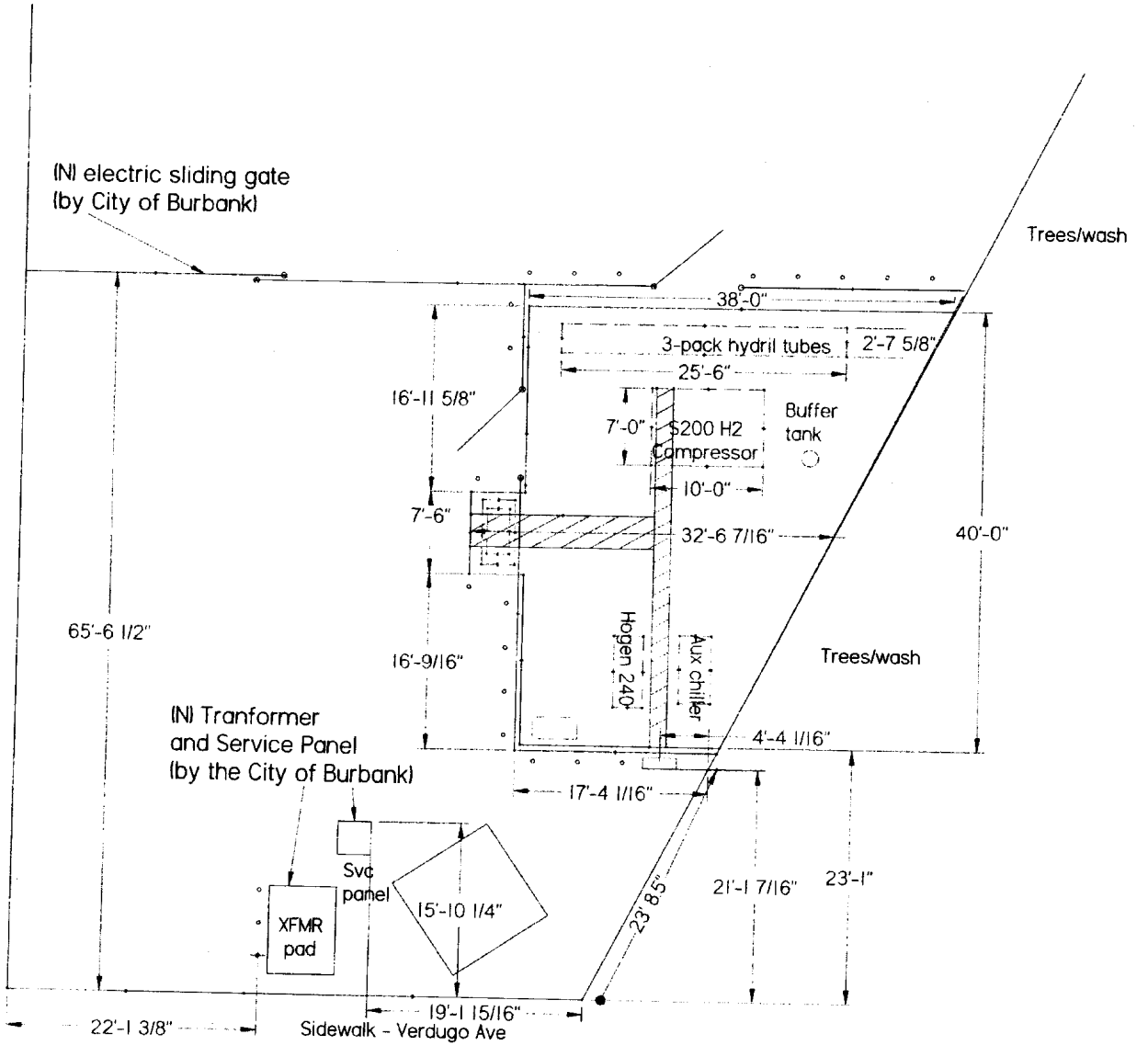
Commercial uses and residential uses are located beyond the immediately adjacent uses. The closest residential uses are on the southeast corner of West Verdugo Avenue and South Lake Street, approximately 450 feet from the proposed facility.

1.4 Current Site Description

The existing Burbank hydrogen fueling site is currently home to a 12 kg/day 350 bar hydrogen station that was funded by South Coast Air Quality Management District (SCAQMD) and started operation in February 2006. The Burbank station, located at its City public works yard at 124 South Lake Street, Burbank is not large enough to accommodate two hydrogen stations and all parties (City of Burbank, DOE, BP America and SCAQMD) have agreed that the best course of action would be to remove the existing equipment, have SCAQMD deploy it elsewhere, and construct and install the upgraded system. The new Burbank station would be sited in the same northeast corner of the public works yard (using "true north" this would be southeast corner – please see Figure 1-1 for clarification), but would encompass an area slightly larger that the old station footprint. The footprint would increase from 1,926 sq. ft. (fenced area) to 2,896 sq. ft. (fenced area), which includes the 792 sq. ft. tube trailer enclosure. Time to complete demolition of the old station and construction of the new station is currently estimated at about 2.5 months following project approval.

Figure 1-2 depicts the existing station layout, showing equipment and concrete that would be removed to make room for the new station. Construction of the new facility would require demolition/dismantling of existing station facilities.

Figure 1-3, Demolition Plan, shows the existing station layout (in dashed lines) with the new station layout superimposed to show demolition/dismantling requirements and to give a comparison of existing as compared to proposed facilities. **Figure 1-4**, Sweeper Pit Demolition, shows in close-up the sweeper pit that must be moved to accommodate the new station. **Figure 1-5**, New Station Layout, shows the proposed facility as it would appear when constructed and ready for operation.



SOURCE: Air Products, 2008.

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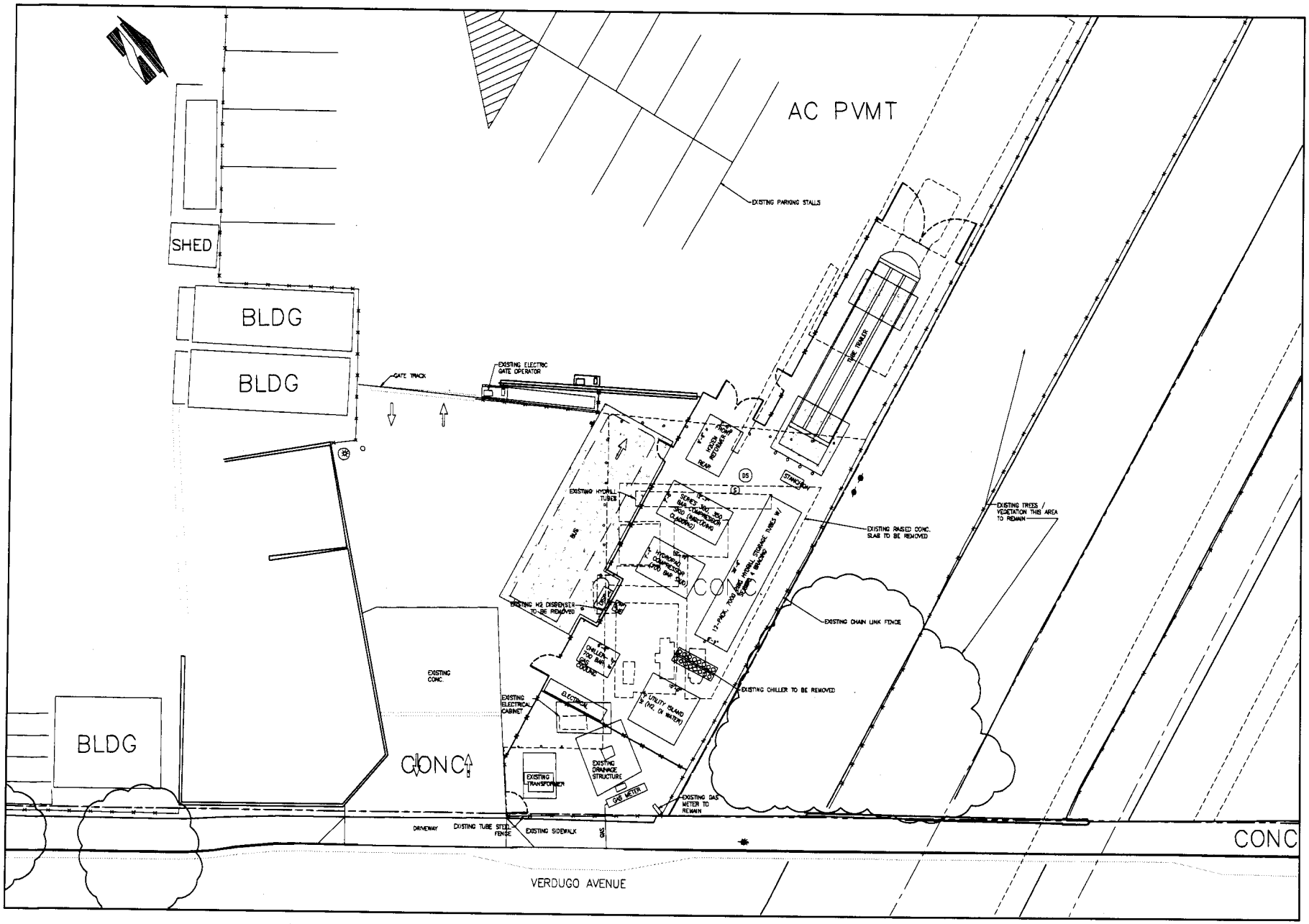
Figure 1-2
Existing Station Layout



SOURCE: Barghausen, 2008.

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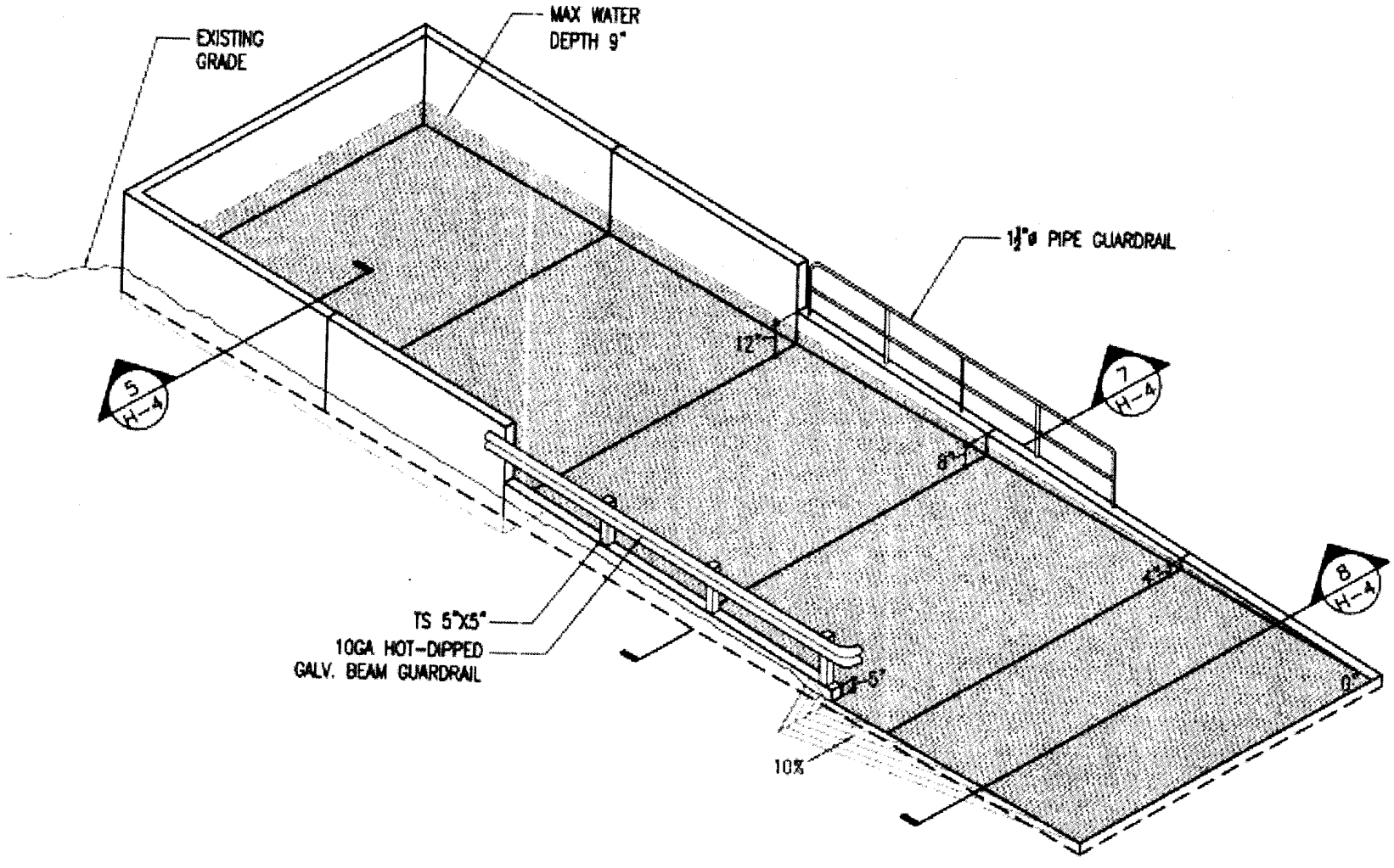
Figure 1-3
Demolition Plan



SOURCE: BP America, 2008.

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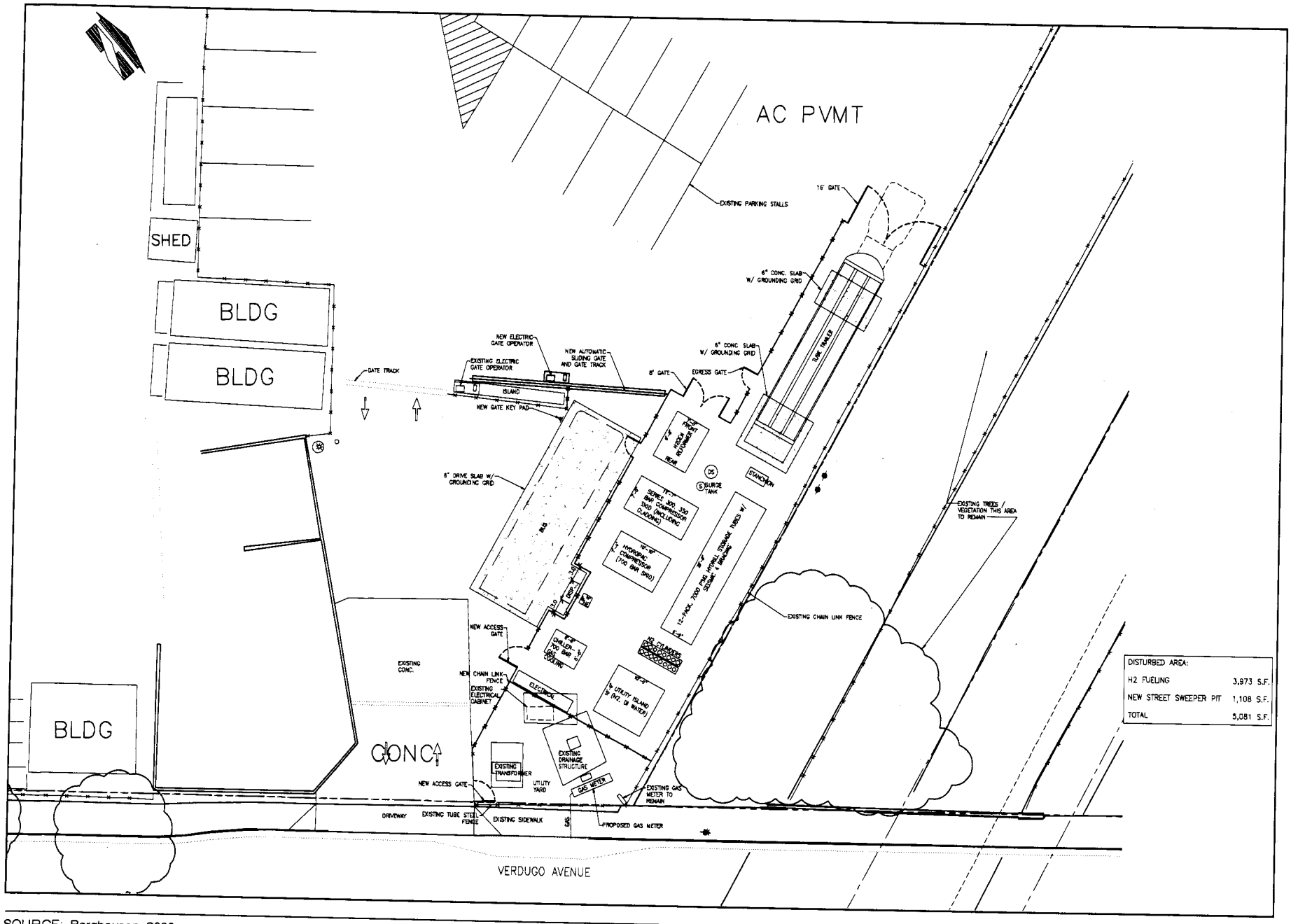
Figure 1-4
Sweeper Pit Demolition



SOURCE: Barghausen, 2008.

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Figure 1-5
New Station Layout

1.5 Project Construction

Construction of the proposed hydrogen fueling facility would consist of the following activities:

- Removal and relocation of existing street sweeper pit to accommodate an additional gate to allow safe and efficient refueling of Burbank's new fuel cell powered bus.
- Purging, isolation, and removal of existing hydrogen equipment.
- Breaking out and removing existing concrete pad foundation.
- Saw cutting and removing asphalt pavement.
- Trenching and installing underground utilities.
- Constructing concrete foundations for equipment.
- Constructing concrete walkway and utility trench.
- Setting equipment and installing interconnecting piping.
- Connecting utilities.
- Placing concrete driveways.

Site preparation would involve removal of the existing concrete pad and equipment and installation of new paving, foundations and equipment. The existing site is one large concrete pad on which all the equipment has been mounted. Due to the slight slope of the land on which it sits, the pad is about nine-inches thick on the north and about 24-inches thick on the south. Most of this concrete pad is above grade. To install the existing station, the site was excavated down to about 12 inches below surface, compacted fill was applied, and the concrete installed on the fill. Additionally, a three-foot (36 inches) deep trench was dug around the perimeter to install an electrical grounding system.

The new station is using a different type of design. Each piece of equipment will have a separate foundation, with the depth of each determined by applicable engineering calculations. As shown on detailed foundation drawings on file with the City of Burbank, most of the foundations will be about 13 inches deep. The storage tube foundations are the deepest at 24 inches. The remainder of the station would be covered with a four-inch concrete pad that would follow the slope of the land. Electrical grounding would again be required for the new equipment, in a similar manner as required for the existing station.

Typically, 10-12 workers would be at the construction site. A staging area occupying the area north of the projects and 8 parking spaces would be used. Access for parking and neighboring businesses would be maintained at all times. Equipment needs are expected to be:

- Backhoe
- Crane
- Dump Truck
- Jackhammer
- Concrete Delivery Trucks
- Flatbed Delivery Trucks

Existing site components, consisting of the existing fueling station equipment (e.g., electrolyzer, fuel dispenser, hydrogen storage tubes) will be returned to SCAQMD for deployment elsewhere.

Since a site for relocation has not yet been selected, this document does not evaluate environmental impacts of re-utilizing the equipment elsewhere. When re-location and installation is proposed, the appropriate lead agency(s) for that project will undergo CEQA review for that proposed project.

1.6 Detailed Project Description

Site Layout

Figure 1-6, Station Equipment Layout, depicts the layout of the proposed new station. The main differences between the existing and proposed new station include:

- Twelve hydrogen storage tubes compared to three today.
- An SMR hydrogen generator with a separate utility skid compared to the one existing electrolyzer.
- Two compressor skids compared to one today.
- The addition of a cooling block.
- A dispenser with two hoses compared to one hose today.
- The provisions for hydrogen tube trailer (i.e., by truck) delivery for times when the SMR hydrogen generator cannot provide hydrogen for dispensing.
- Relocation of the existing public works sweeper pit to accommodate the new station.
- The addition of a new electrically operated gate to accommodate Burbank's new larger hydrogen fueled bus.

As stated earlier in this Chapter, the footprint for the proposed new station would be slightly larger than the previous one (an increase of approximately 970 square feet).

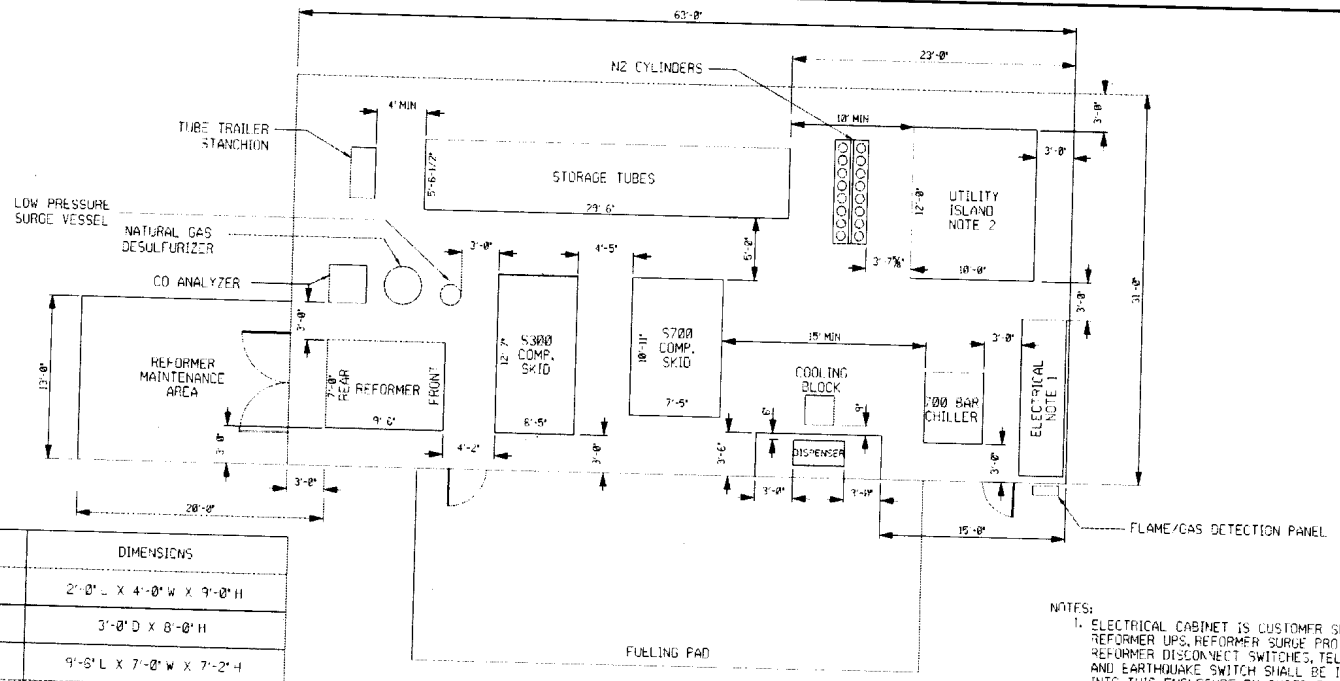
Process Description

The heart of the proposed hydrogen station is a factory-built SMR hydrogen generator system that automatically converts natural gas and deionized water to hydrogen. The system includes a built-in gas cleanup system that provides up to 99.999 percent pure hydrogen at flow rates up to 108 kg/day. Pure hydrogen is generated by the Hydrogen Generation Module (HGM)[9] through the following steps:

1. Steam reforming of natural gas.
2. Shift reaction of carbon monoxide.
3. PSA (Pressure Swing Adsorption) purification.

The natural gas is mixed with steam generated in the HGM from de-ionized water and passed through the reformation vessel. The reformation of methane and higher hydrocarbons typically

[9] The HGM-2000 is capable of 2000 standard cubic feet per hour (SCFH) or 108 kg/day of hydrogen production.



EQUIPMENT LIST	WEIGHT	DIMENSIONS
TUBE TRAILER STANCHION	200 LBS	2'-0" L X 4'-0" W X 9'-0" H
NATURAL GAS DESULFURIZER	3400 LBS	3'-0" D X 8'-0" H
REFORMER	10,000 LBS	9'-6" L X 7'-0" W X 7'-2" H
CO ANALYZER	TBD	3'-0" L X 3'-0" X 6'-0" H
LOW PRESSURE SURGE VESSEL	750 LBS	1'-9" D X 5'-3" H
S300 COMPRESSOR SKID	6000 LBS	12'-7" L X 6'-5" W X 6'-10" H
STORAGE TUBES	96,000 LBS	29'-6" L X 5'-6-1/2" W X 7'-1" H
S700 COMPRESSOR SKID	9000 LBS	10' 11" L X 7'-5" W X 9' 8" H
COOLING BLOCK	1100 LBS	2' 4" L X 2'-4" W X 2'-4" H
DISPENSER	1000 LBS	4'-2" L X 2'-0" W X 7'-10" H
UTILITY ISLAND	4500 LBS	12'-0" L X 10'-0" W X 7'-6" H
700 BAR CHILLER	1400 LBS	5'-8" L X 4'-9" W X 4' 1" H
FLAME & GAS DETECTION PANEL	TBD LBS	2'-0" W X 0' 8 3/4" D X 2'-2 1/4" H
REFORMER UPS	763 LBS	2'-3" W X 2'-7-1/2" D X 5'-10-1/2" H
REFORMER SURGE PROTECTION	500 LBS	2'-3-1/4" W X 2'-2-1/4" D X 2'-8" H
REFORMER DISCONNECT SWITCHES	TBD	TBD
TELEMETRY	5 LBS	7" W X 4" D X 11" H
EARTHQUAKE SWITCH	9 LBS	8" W X 9" D X 5" H

NOTES:
1. ELECTRICAL CABINET IS CUSTOMER SUPPLIED. REFORMER UPS, REFORMER SURGE PROTECTION, REFORMER DISCONNECT SWITCHES, TELEMETRY, AND EARTHQUAKE SWITCH SHALL BE INCORPORATED INTO THIS ENCLOSURE BY CUSTOMER.
2. UTILITY ISLAND IS COMPOSED OF RO/DI WATER SYSTEM, INSTRUMENT AIR COMPRESSOR, AND COOLER.

SOURCE: Air Products, 2008.

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Figure 1-6
Station Equipment Layout

found in natural gas in the presence of steam is governed by the following reactions in the top section of the HGM reactor:

A) $Cm\ Hn + mH_2O - mCO + (m + n/2)\ H_2$

For methane (m=1 & n=4) this reaction becomes:

B) $CH_4 + H_2O - CO + 3\ H_2$

Carbon monoxide, produced by the reformation reaction, mixes with additional steam at a lower temperature to produce carbon dioxide and more hydrogen as follows:

C) $CO + H_2O - CO_2 + H_2$ (the water-gas shift reaction).

The reformulated gas produced by the above reactions is approximately 75 percent hydrogen by volume, on a dry basis. After cooling the impurities including CO_2, CO, CH_4, N_2 and water are removed using a built-in pressure swing adsorption (PSA) purification system. The purge stream from the PSA (containing some hydrogen plus CO and CH_4 fuel) is burned and the heat produced provides most of the energy required for the overall reaction, which is endothermic.

- Inputs (at 100 percent capacity):
  - Natural gas at 1060 SCFH.
  - Potable water at 1.6 gpm.
  - Electricity at 480 VAC, 60 hertz, 300 amps.
  - Periodic / temporary hydrogen fuel may be input under certain circumstances.
- Output (at 100 percent capacity):
  - Hydrogen fuel at 108 kg/day.
- Waste:
  - Waste water at 1.4 gpm.
    - Biological Oxygen Demand: ~200 mg/L.
    - Chemical Oxygen Demand: ~270 mg/L.
    - pH in water: ~4.3 pH (due to dissolved CO_2. As the CO_2 comes out, the pH will become more neutral).
    - Total Dissolved Solids (TDS): ~60 mg/L.
    - Total Petroleum Hydrocarbons: Not Detectable mg/L.
  - Flue gas exhaust with a typically composition of 73 percent Nitrogen, 14 percent Oxygen, 6 percent CO_2, 6 percent Water, and trace amounts of Nitrogen Oxide (NO at 4ppm), Carbon Monoxide (CO at 50ppm). There is typically no detection of Nitrogen Dioxide (NO2), Sulfur Dioxide (SO_2), Hydrogen Sulfide (H_2S) and Volatile Organic Compounds (VOC) pollutants at full production capacity. The total amount of NO that can be potentially produced if the SMR hydrogen generator is operated continuously for 365 days at full capacity (241SCF/minutes total exhaust flow)

would be about 49 lbs. The SMR hydrogen generator fully complies with all Clean Air Act Title III hazardous air pollutant requirements or any more stringent state or local requirements.

Figure 1-7, Process Flow Diagram, depicts a flow diagram of the process for production and dispensing hydrogen fuel at the proposed updated hydrogen station.

Major Components

MAJOR EQUIPMENT SUMMARY

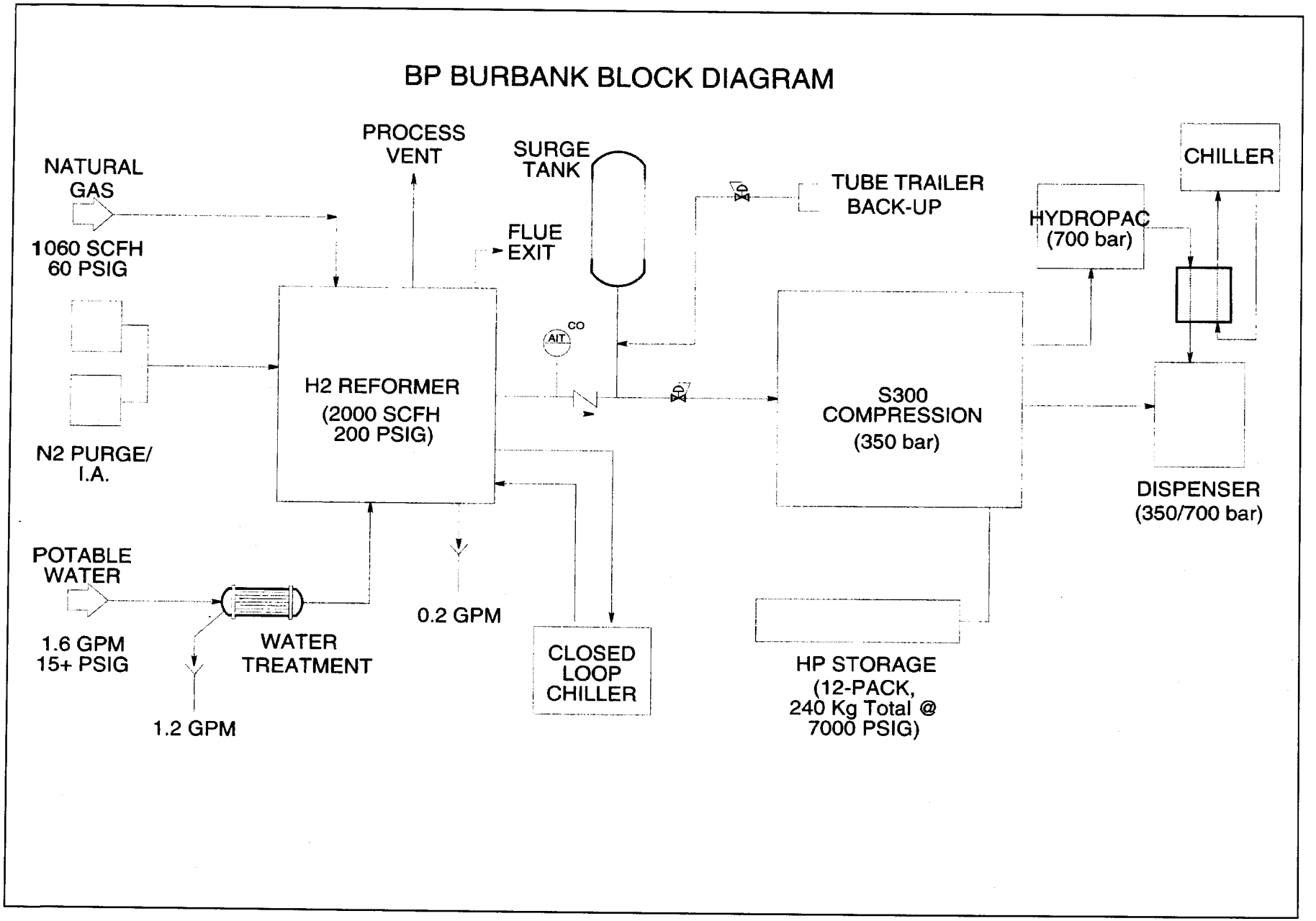
Quantity	Description
One Series 300 Hydrogen Fueling Station, consisting of:	
1	350 bar (5,000 psig) Compressor Skid with two (2) Gaseous Hydrogen Compressors
12	Gaseous Hydrogen Storage Vessels
1	Automated Dual 350/700 bar (5,000/10,000 psig) Gaseous Hydrogen Dispenser
1	Integrated Control System
One Hydrogen Tube Trailer Discharge Stanchion, consisting of:	
1	Tube Trailer Discharge Stanchion
One Hydrogen Supply System, consisting of:	
1	Steam Methane Reformer (SMR) Hydrogen Generator
1	Low pressure surge vessel
1	Natural Gas Desulfurizer
1	Utility Island (N2 supply, Water purification, cooler, Inst air)
1	Electrical Transfomer/Surge Protector, and UPS
1	Telemetry Remote Monitoring System
One 700 bar (10,000 psig) Booster Compression System, consisting of:	
1	60 hp Booster Compressor
1	Integrated Cooling System

SOURCE: BP America and Air Products, 2008.

HYDROGEN SUPPLY EQUIPMENT DETAILS

Mode of Supply:	Steam Methane Reformer (SMR)
Capacity:	Up to 2000 SCFH (60-108 kg/day)
Supply Pressure:	125 psig–200psig
Quality Assurance Requirements:	CO analysis

SOURCE: BP America and Air Products, 2008.



SOURCE: Air Products, 2008.

Burbank Hydrogen Fueling Station . 208194

Figure 1-7

Process Flow Diagram

Hydrogen Compression System Equipment Details

AIR PRODUCTS S300 SKID

Type of Compression:	Diaphragm, with dual O-ring heads
Number of Compressors:	2
Suction Pressure:	125–175 psig
Discharge Pressure:	7,000 psig
Flow at supply pressure (psig):	2.4 kilograms per hour per compressor (4.8 kg/hr total)
Drive:	Electric, 20 HP each
Coolant	Integrated closed loop cooling water system

SOURCE: BP America and Air Products, 2008.

AIR PRODUCTS 700 BAR (10,000 PSIG) BOOSTER SKID

Type of Compression:	Positive Displacement
Number of Compressors:	1
Suction Pressure:	5,500 psig to 7,000 psig
Discharge Pressure:	12,690 psig maximum
Flow at suction pressure:	50 kilograms per hour
Drive:	Electric, 60 HP
Coolant	Closed loop cooling system

SOURCE: BP America, and Air Products, 2008.

DISPENSING AND VEHICLE INTERFACE REQUIREMENTS

Dispenser Type:	One Standalone outdoor dual 350/700 bar (5,000/10,000 psig)
Number of Hose(s) and Supply Pressure:	One at 350 bar (5,000 psig), one at 700 bar (10,000 psig)
Nozzle Geometry:	SAE J2600 for 350 Bar; and , SAE J2799 for 700 Bar.
Breakaway:	Each hose connection includes a breakaway.
Communication Type(s):	IR and Cable
Pressure Rating:	Mechanical components rated to 1,034 bar (14,770 psig). 350 bar (5,000 psig) dispensing hose rated to 520 bar (7,430 psig) using a 6:1 safety factor. Nozzle rated to 350 bar (5,000 psig). 700 bar (10,000 psig) dispensing hose rated to 1,034 bar (14,770 psig) using a 6:1 safety factor. Nozzle rated to 700 bar (10,000 psig).
Grounding Provisions:	Grounding cable included with communication cable; however, vehicles should be grounded via tires and concrete foundation (steel reinforced concrete).
Filters:	One 5- µm filter upstream of the fueling nozzle

DISPENSING AND VEHICLE INTERFACE REQUIREMENTS (cont.)

User Interface:	Electronic display assessable with a personal identification number (PIN)
Display:	Total sale and accumulated total kilograms are displayed. Filling progress, pressure or percent full as applicable, are displayed during fill

SOURCE: BP America, and Air Products, 2008.

STORAGE EQUIPMENT DETAILS

Type: LP Surge Vessel	Gaseous Vessel
Quantity:	1
Operating Pressure:	Nominally 125 psig
Total Storage at Operating Pressure:	Nominally 1.95 kilograms total
Seismic Bracing:	Zone 4 Compliant
Material of Construction:	Carbon Steel
Design Compliance:	ASME Boiler and Pressure Vessel Code, Section VIII
Type: HP Storage	Gaseous Vessels
Quantity:	12
Operating Pressure:	Nominally 7,000 psig
Total Storage at Operating Pressure:	Nominally 240 kilograms total
Assembly:	Includes steel framing suitable for permanent installation and operation when stacked 3 long by 4 high.
Seismic Bracing:	Zone 4 Compliant
Material of Construction:	SA 372, Grade J, Class 70 vessel material
Design Compliance:	ASME Boiler and Pressure Vessel Code, Section VIII
Type: Hauled-In (Back-Up Supply to be used for start-up and any operations disruptions)	Gaseous Tube Trailer
Maximum Allowable Working Pressure:	2640 Psig
Operating Pressure:	2450 Psig
Total Storage at Operating Pressure:	300 kilograms

SOURCE: BP America, and Air Products, 2008.

1.7 Project Operational Characteristics

The proposed Hydrogen Fueling Station is designed to be fully automated and planned for 24/7 operation with minimal attention. Vehicle operators using this station for refueling would be trained in the Emergency Response, Safety and Dispenser Operation prior to being allowed to access the site and issued a personal identification number (PIN). All transactions would be

authorized via a system interlocked PIN system. The proposed Hydrogen Fueling Station would consist of five primary modules:

- 108 kg/day SMR Hydrogen Generator and low pressure surge vessel.
- 350 bar (5,000 psig) Compression system.
- Gaseous buffer storage (~240 kg).
- 700 bar (10,000 psig) Booster Compressor.
- Automated Dispenser / Cooling System.

The SMR hydrogen generator is designed for continuous operation. Hydrogen production can be manually adjusted between 55 percent and 100 percent capacity (~60 to 108 kg/day). During periods of low demand or abnormal product purity, the excess hydrogen is vented to atmosphere. This action alleviates the need to cycle the SMR on and off, which would shorten the life of the unit. Start-up of the generator is fully automated, but requires a technician on-site to initiate the process. A CO analyzer would be provided to monitor the purity of the hydrogen produced by the reformer.

The Fill Compression System would typically be in a "standby" mode with the buffer storage filled to nominally 7,000 psig. When a vehicle driver initiates a 350 bar (5.000 psig) fill at the dispenser, the pressurized gas from the storage vessels would fill the vehicle. A 350 bar vehicle should fill in three to five minutes, and a 700 bar vehicle should fill in five to nine minutes. When an operator initiates a 700 bar (10,000 psig) fill at the dispenser, a 350 bar (5,000 psig) fill is first completed followed by the pressurized gas from the storage vessels supplied through the Booster Compressor which would fill the vehicle to the final 700 bar (10,000 psig) pressure. Between fills, the Fill Compressor would refill the buffer storage, then stop, and go into "standby" mode.

The hydrogen generation, compression, storage and dispensing systems will be monitored to assure no gas leaks or fires. A gas detection feature is incorporated into the dispenser equipment. Three special cameras, pointed at the station and monitored remotely, provide flame detection. The system would be mechanically protected by pressure relief valves that relieve to a vent stack. Safety features have been engineered into the project design. Safety assurance is described and evaluated in more detail in Chapter 2, Section 7, Hazards and Hazardous Materials.

The new fueling station includes a provision for hydrogen delivery via tube trailer as a backup to the SMR hydrogen generator. However, this is only intended to be used as back-up supply during start-up or during any SMR difficulties and would not be used on a day-to-day basis.

The system would vent under the following normal conditions:

- The 350 bar compressors unload after each run cycle. Maximum flow rate of hydrogen unloaded through each S300 compressor is ~12.8 kg/hr (90 scfm) based on critical flow through the unloader orifice. Total volume that is unloaded is ~.0024kg (1scf). Note that there are two compressors on the S300 skid.
- Hydrogen is used as the actuation gas and therefore under normal conditions <0.7 kg/hr (5 scfm) would be vented from the 350 bar and 700 bar compression skids.
- About 0.01 scf of hydrogen would be vented each time 350 bar dispensing in completed.

- About 1 scf of hydrogen would be vented each time 700 bar dispensing is completed.
- All venting hydrogen is directed to vent stacks.

Also the system would vent under the following relieving conditions:

- All equipment (S300, S700, dispenser) and piping is protected by proportional lift relief devices; the outlet of these relief devices are directed to vent stacks.

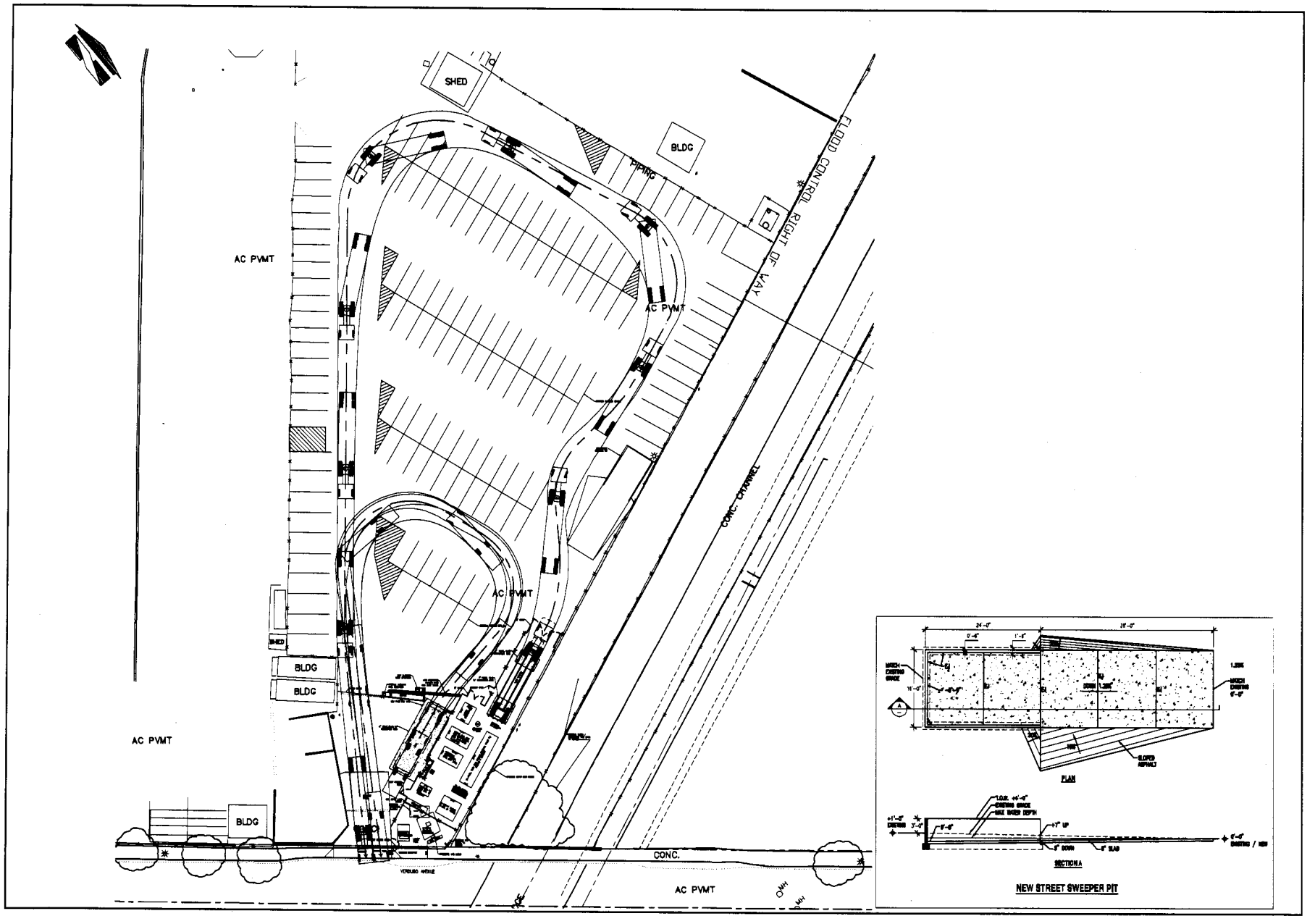
The fueling station includes an integrated control system with the following features:

- Control valves are pneumatically operated and all control valves fail in the safe direction after loss of utility power or instrument supply.
- Hose overpressure detection with automatic shutoff and alarm.
- Hose leak detection with automatic shutoff and alarm.
- Local (on dispenser) and remote emergency stop switches (red palm buttons) that can be operated by the vehicle driver or others to stop the filling process.
- Redundant automatic shutoff valves that would close and stop the filling process in an emergency.
- All system alarms and shutdowns are displayed on the control panel face; critical alarms are hard wired in addition to being connected through the PLC.
- Automatic restart of the compressor would not occur after abnormal, or "alarm condition" shut down to ensure safety of onsite personnel.
- UL listed dispenser and compressor control panel suitable for Class 1 Division 2 Group B or Zone 2 locations (with IEC IP code).
- Continuous telemetry system that dials a central operator for immediate attention in the event of non-normal operations.
- Data Collection / Archiving.

Logistics (transportation of input and output, including waste and required utilities, etc.)

The primary logistical considerations for this fueling station involve accommodating larger vehicles, consisting of Burbank's hydrogen fuel bus, which will refuel at the site, and hydrogen tube trailers, which would be used during initial start-up of the fueling station and in the event on an extended SMR outage. **Figure 1-8,** Large Vehicle Circulation Plan, demonstrates the anticipated flow of traffic for large vehicles (the larger loop demonstrating the tube trailer route). Note that tube trailer deliveries are expected to occur after normal business hours when the public works yard parking lot is empty. As shown, the site and existing adjacent parking lot would allow for sufficient access and turn-around areas for all vehicles associated with the project.

Approximately 60 to 75 vehicles per week would refuel at the new Burbank fueling station initially, whereas the existing station serves about 10 vehicles per week. Current and anticipated users of the site include City of Burbank, SCAQMD, Daimler, Chrysler, GM, Toyota, Honda and



SOURCE: Air Products, 2008.

Burbank Hydrogen Fueling Station . 208194

Figure 1-8

Large Vehicular Circulation Plan

possibly Ford. This would not create logistics issues on the public works yard for the following reasons: 1) the vehicles are well away from the flow of other traffic coming and going from the yard (other traffic include other City vehicles, such as police cars, trash trucks and others), and a separate driveway on Verdugo Avenue is provided for the fueling station, 2) the number of vehicles accessing this site would be minor compared the normal flow of traffic through the public works yard, and 3) deliveries would be infrequent, would occur at night, and have plenty of room for maneuvering, as shown on the Large Vehicle Circulation Plan (Figure 1-8).

The existing hydrogen fueling station currently uses water and electricity at greater volumes than needed for the proposed station, and likewise, the wastewater flow from the new station will be less than the existing fueling station. Therefore, the utilities required for the new station currently exist in sufficient capacity underground in the immediate area (see Chapter 2, Section 17, Utilities). For these utilities, the new equipment would be simply tied into the existing services. There would be minimal impact in connecting to these utilities during construction and no logistics impact during normal operations. Routine maintenance of the facility, estimated at one day per month, would be required. This would involve one or two technicians and one vehicle. Natural gas line would be provided to the proposed fueling station via a line that runs from Verdugo Avenue to an unused flare adjacent to the Public Works building and follows the property line adjacent to the fueling station site. The gas company has confirmed this location layout, and has confirmed that the volume of gas that can be supplied through the line, is well within the fueling station demands.[10]

1.8 Project Approvals

This combined CEQA/NEPA environmental document may be utilized for all discretionary and ministerial approvals for the proposed project, which include but may not be limited to the following:

- Partial funding through the United States Department of Energy (DOE) Hydrogen to the Highways Program, Award DE-FC36-04GO14285 (discretionary).
- Consent approval of the project Negative Declaration (MND) and license agreement by the City of Burbank City Council (discretionary).
- Potential consent approval of lease of fueling station site to BP America (discretionary).
- Plan check approval and demolition and building permit approvals from the City of Burbank (ministerial).

In addition, the following codes and standards would be used in the equipment fabrication and the fueling station construction:

- ASME Boiler and Pressure Vessel Code Section 8.
- ASME B31.3 Process Piping Code.
- NFPA 70 National Electric Code.

[10] Dean Fry, BP America, communications with the Southern California Gas Company, 2008.

- NFPA 496 Purged Enclosure(s).
- NFPA 497M Classification of Gases, Vapors, Dusts for Electrical Equipment in Hazardous (Classified) Location(s).
- NFPA 55 Storage, Use and Handling of compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks.
- NFPA 52 Vehicle Fuel System Code.
- SAE J2600.
- Local and state fire and building codes.
- BP America and Air Products safety requirements.
- SCAQMD air permit application.

1.9 Cumulative Projects Analysis

Records from the City of Burbank show three proposed projects within a quarter mile of the proposed project site:

124 South Lake Street - Upgrade of the existing CNG fueling station on the public works yard. Expansion of the existing station currently utilized for fueling of City vehicles, including police cars (approximately 300 to 400 feet away northwest of the hydrogen fueling station site).

160 W Olive Avenue– 12 story office building and a seven level parking garage. Corner of Lake and Olive, adjacent to City public works yard and Boorman Steel. The property is zoned BCCM, Burbank Center Commercial Manufacturing.

164 West Magnolia Boulevard – Burbank Water and Power. Development Review to construct a replacement service center/warehouse, and a new security office which is a total of 36,645 square feet. There will also be a new vehicle wash rack and employee surface parking added to the site. The existing warehouse, line section field offices, covered parking sheds, and an outdated electrical substation will be demolished which is a total of 20,817 square feet of demolition. The property is zoned M-2, General Industrial.

Analysis of cumulative impacts is provided in Chapter 2, Section 19, and where relevant in the analysis of individual environmental topics (Sections 1-18). As summarized in Section 19, cumulative impacts were not found to be substantial.

1.10 Alternatives to the Proposed Action

Several alternatives were considered, but eliminated from further review by the City of Burbank. These are discussed below.

On-Site Alternatives

One potential alternative to the proposed new fueling station would be to upgrade the existing facility (hardware). This could be accomplished by adding a 700 bar compressor skid, a cooling block and 700 bar dispenser. However, this alternative would fall short of one of the DOE's goals for this demonstration program, the desire to test an SMR hydrogen generator. Additionally, the fueling station would be considerably undersized to meet the expected and growing demand for hydrogen fuel.

Other locations on the public works yard were considered, but since the existing location provides a separate access that can accommodate a security gate with code key entry, and no other separate gated area exist on-site that would be as well situated or configured, other locations on the yard were not explored further.

Off-Site Alternatives

Other areas were briefly considered for siting of the proposed facility. However, given that the current site was already in use for a hydrogen fueling station, it was decided that keeping the project at the current site would have the least impact on the surrounding areas.

CHAPTER 2

Initial Study / Negative Declaration / Environmental Assessment

2.1 Project Data, Contact Information and Summary of Impacts

The following data is provided pursuant to the City of Burbank's requirements under the California Environmental Quality Act - and the US Department of Energy's requirements under the National Environmental Policy Act. To be completed by the lead agency(ies).

PROJECT DATA:

1. **Project Title:** Burbank Hydrogen Fueling Station Project.

2. **Lead Agency Names and Addresses:**

City of Burbank (CEQA lead)
City of Burbank Planning Division
275 East Olive Avenue
Burbank, California 91502
Attn: Patrick Prescott, Senior Planner

US Dept. of Energy (DOE) (NEPA lead)
Golden Field Office
Mail Stop 1501 / 1617 Cole Boulevard
Golden, Colorado 80401
Attn: Laura Margason, NEPA Specialist

3. **Contact Persons and Phone Numbers:**

Patrick Prescott, (818) 238-5250

4. **Project Location:**

The project site is located within the City of Burbank public works yard at 124 South Lake Street. The project site is located in the southeastern portion of the yard, on West Verdugo Avenue. The specific address for the hydrogen fueling station project site is 145 West Verdugo.

5. **Project Sponsor's Name and Address:**

City of Burbank (see above).

6. **City of Burbank General Plan Designation:**

Public Facilities.

7. **City of Burbank Zoning:**

Burbank Center Commercial Manufacturing (BCCM).

8. **Description of Project:** (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

Please refer to **Chapter 1, Project Description**.

9. **Surrounding Land Uses and Setting: Briefly describe the project's surroundings:** The project site is located on the City of Burbank Public Works Yard. Surrounding land uses consist of public/industrial uses in the remainder of the public works yard to the north, West Verdugo Avenue on the south, and the concrete-lined Burbank Western Channel on the east. The public works yard includes maintenance and storage facilities for City vehicles, as well as a compressed natural gas (CNG) fueling station for City Police cars. The CNG fueling station is located approximately 300-400 feet north of the proposed project site. Other manufacturing, commercial and industrial uses in the immediate vicinity include a City of Burbank Power Station (northeast corner of West Olive Avenue and South Lake Street), automobile sales and repair, recreational vehicle storage, self storage, a steel and metal operation, a Metrolink Station, and entertainment industry-related uses (e.g., Nickelodeon on West Olive Street) . The Golden State Freeway (Interstate 5) is located approximately 1,000 feet (0.2 miles) to the east, beyond the flood control channel.

Commercial uses and residential uses are located beyond the immediately adjacent uses. The nearest residential uses are zoned High Density Residential (R-4) along the west side of South Lake Street, approximately 450 feet southwest of the proposed project site.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).** Discretionary and ministerial approvals required for the proposed project, which include but may not be limited to the following:

- Partial funding through the United States Department of Energy (DOE) Hydrogen to the Highways Program, Award DE-FC36-04GO14285 (discretionary).
- Consent approval of the project Negative Declaration (ND) and license agreement by the City of Burbank City Council (discretionary).
- Potential consent approval of lease of fueling station site to BP America (discretionary).
- Plan check approval and demolition and building permit approvals from the City of Burbank (ministerial).

A NEPA scoping notice for the project was issued and is provided in **Appendix A** of this ND/EA.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality	☐ Land Use / Planning
☐ Mineral Resources	☐ Noise	☐ Population / Housing
☐ Public Services	☐ Recreation	☐ Storm Water
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Greg Herrmann by Prescott

Signature

June 30, 2008

Date

Greg Herrmann, City Planner,
Chief Assistant Community Development Director

Printed or Typed Name

City of Burbank

EXPLANATION OF ENVIRONMENTAL IMPACT EVALUATION:

CEQA CHECKLIST QUESTIONS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites for each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced). Where all impacts can be mitigated to below the significance level, a Mitigated Negative Declaration is appropriate.

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR, or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion. (See Section 2.3 for a Bibliography.)

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) The significance criteria or threshold, if any, used to evaluate each question; and
b) The mitigation measure identified, if any, to reduce the impact to less than significance

NEPA CHECKLIST QUESTIONS

1) Additional DOE NEPA checklist questions are included in the checklist below. Responses are either "Yes" or "No." Justification is provided for each response; these responses incorporate by reference the analysis provided in the CEQA analysis on the same topics. *Please note that phrasing of the questions vary, such that "Yes" does not always signify a significant impact, and "No" does not always signify no impact.* Where the question does not apply to the project an "N/A" (not applicable) notation has been made in the checklist.

2.2 Environmental Checklist Questions and Responses

1. AESTHETICS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a, c) **Less than Significant.** Generally, scenic resources include areas that are visible to the general public and are considered visually attractive and designated as such in adopted plans or policies. There are no views of the project site that are designated as scenic vistas[1].

The project site is located within the City of Burbank Public Works Yard. **Figure 2-1, Public Works Yard Photos**, provides photographs of the various uses, equipment and vehicles on the yard, and **Figure 2-2, Fuel Site and Existing Equipment Photos**, provides photographs of the existing hydrogen fueling station. These photographs establish on-site visual character of the public works yard and the project site.

The lot and surrounding area is relatively level in relation to surrounding properties. The new/upgraded station would be comparable to the existing station in terms of height (i.e., height of equipment and fencing) with a slight increase in bulk (i.e., more pieces of equipment). As shown in the project graphics (see Project Description Graphics, and Figure 2-2), the fueling station equipment and fencing is and would continue to be low profile, and lower in height than a single-story structure. The project site and facilities would not be visible from the residential portion of West Verdugo.

When viewed from the industrial/commercial manufacturing portion of West Verdugo, the site is only visible directly across from the project site. As shown in **Figure 2-3**, which depicts West Verdugo Street land uses in the vicinity of the site, the visual character of the area is one of a industrial/commercial manufacturing, with equipment, vehicles, fencing and little landscaping aside from street trees.

From these limited, nearby views from West Verdugo, the view of the site would not change substantively from current conditions, and would be compatible in character with the commercial/industrial uses in the vicinity. All proposed facilities would fit within the character of the surrounding industrial/commercial manufacturing land uses. As such, views are not expected to be substantively changed, and no significant views would be affected. The proposed project would have less than a significant impact on a scenic vista.

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[1] City of Burbank, *City of Burbank General Plan*, Open Space/Conservation Element and Land Use Element, December 1972.

a

b

c

d

e

f

g

h

SOURCE: ESA, 2008.

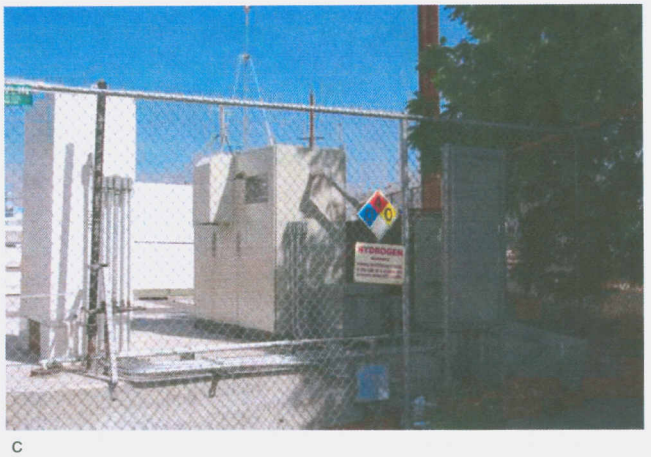
Burbank Hydrogen Fueling Station . 208194

Figure 2-1

Public Works Yard Photos

a

b



c

d

e

f

SOURCE: ESA, 2008.

Burbank Hydrogen Fueling Station . 208194

Figure 2-2

Fuel Site and Existing Equipment Photos

a

b

SOURCE: ESA, 2008.

Burbank Hydrogen Fueling Station . 208194

Figure 2-3

Surrounding Land Use Photos

b) **Less than Significant.** Currently, a tree exists adjacent to the hydrogen station. This tree will not be disturbed at any time during construction or operation of the new station. A variety of buildings exist on-site, including City building and public storage among other uses commercial and industrial related uses. However, these buildings are of recent industrial architecture and do not constitute historic or scenic resources (see also Section 5, Cultural Resources). The site does not contain any rock outcroppings or other scenic resources within its boundary. There are three highway segments within the vicinity of the project site. Interstate 5 is located approximately 1,000 feet (0.2 miles) east of the project site; State Route 134 is located 1.3 miles southwest of the project site; and, State Route 170 is located four miles west of the project site. The California Department of Transportation does not identify any of these routes as an eligible or officially designated scenic highway[2]. Given the location of the site, the existing uses on the site and the proposed uses, the expansion and development of the hydrogen fueling station would have a less than significant impact on a State designed scenic highway or a local scenic resource.

d) **Less than Significant.** The project site currently has lighting installed to illuminate the existing hydrogen fueling station. The fueling station designers have determined that the current lighting is inadequate to accommodate a 24/7 refueling station. The existing light is on the far side of the entry drive and the vehicle being refueled has the potential to block light from reaching the dispenser. This is a manageable issue with small vehicles, however, the new version fuel cell vehicles from GM and the new Burbank bus would block a majority of the current light from reaching the dispenser. The plan for the new station involves three new 250W sodium halide lights; one each at the dispenser, the southeast corner of the station, and the northeast corner of the station.

These lights are consistent with existing lighting in the area, and not out of character with the commercial manufacturing zoning and uses in the area. Therefore, the proposed project would not create a substantial new source of light. In addition, the proposed structures would not be constructed with reflective materials that create glare. All project lighting will conform to the Burbank Municipal Code with regard to reduction of glare onto adjacent properties. No adverse impacts would occur.

2. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

[2] California Department of Transportation, official website, www.dot.ca.gov, accessed May 23, 2008.

2. AGRICULTURE RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

a-c) **No Impact.** The City of Burbank does not contain farmland resources, nor any land zoned for agricultural use, and the site is not designated as farmland on state farmland maps. The current City zoning for the project site is BCCM[3], Burbank Center Commercial Manufacturing, and the General Plan has designated the property for Public Facilities[4]. In addition, the project site has been previously graded and paved with asphalt and concrete and is in use as a hydrogen fueling station. There are no agricultural uses within the project site. Implementation of the proposed project will not have an impact on agricultural resources.

3. AIR QUALITY – **Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:**	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Result in a temporary increase in the concentration of criteria pollutants (i.e., as a result of the operation of machinery or grading activities)?	☐	☐	☒	☐
e) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
f) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
Additional NEPA Questions:	**Yes**		**No**	
g) Have all potential effects to ambient air quality been identified for the proposed action under both normal and accident conditions?	☒		☐	
h) Have all potential effects to human health and the environment been identified from exposure to radiation and hazardous chemicals in emissions?	☒		☐	
i) Would the proposed action be in compliance with all	☒		☐	

3 City of Burbank, *Burbank Municipal Code*, Chapter 31, Zoning, updated May 28, 2008.

4 City of Burbank, *City of Burbank General Plan*, Land Use Map, August 2007.

3. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
National Ambient Air Quality Standards?				

Additional NEPA Questions:	**Yes**	**No**
j) Would the proposed action be in compliance with the State Implementation Plan?	☒	☐
k) Would the proposed action affect any area designated as Class I under the Clean Air Act?	☐	☒
l) Would the proposed action be subject to New Source performance Standards?	☐	☒
m) Would the proposed action be subject to National Emissions Standards for Hazardous Air Pollutants?	☐	☒
n) Would the proposed action be subject to emissions limitations in the Air Quality Control Region?	☐	☒

Additional Climate Change/Greenhouse Gas Question:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
o) Result in a substantial increase in greenhouse gas emissions.	☐	☐	☒	☐

a) **No Impact.** The proposed new hydrogen fueling station would not conflict with or obstruct implementation of the applicable air quality attainment plan. The City of Burbank, including the project site, is located within the South Coast Air Basin (Basin). The South Coast Air Quality Management District (SCAQMD) regulates air emissions in the Basin. Pursuant to the Clean Air Act (CAA), the SCAQMD is required to reduce emissions of criteria pollutants for which the Basin is in non-attainment status. Strategies to achieve emissions reductions are developed in the 2007 Air Quality Management Plan (AQMP) prepared by SCAQMD for the region. Southern California Association of Governments (SCAG) has established the assumptions for growth in the area, in terms of demographic growth and associated air quality impacts, and these assumptions are utilized in SCAQMD's 2007 AQMP (SCAQMD, 2007a). The 2007 AQMP is designed to meet both state and federal CAA planning requirements for all areas under SCAQMD jurisdiction. The 2007 AQMP focuses on reduction strategies for ozone and particulate matter and sets procedures for measurements, control strategies, and air quality modeling.

The proposed hydrogen fueling station would not result in population growth and would not cause an increase in currently established population projections. The facility would not include residential development or local or regional employment centers and thus, would not result in significant population or employment growth that could increase pollutant emissions in the region. In addition, the 2007 AQMP identifies the development of hydrogen technology and infrastructure as a possible approach for a long-term pollutant control measure (SCAQMD, 2007a). Consequently, implementation of the proposed project would be consistent with the 2007 AQMP. In summary, development of the proposed project would not conflict with, or obstruct implementation of the applicable AQMP. Therefore, no impact would occur.

b, d) **Less than Significant.** Project-related construction and operational emissions are evaluated in relation to the SCAQMD's mass emissions significance thresholds, which are designed to identify projects that could result in a violation of an air quality standard or potential air quality violation.

Construction Emissions

Construction of the proposed hydrogen fueling station would generate air pollutant emissions due to the use of heavy-duty on-site construction equipment, as well as offsite truck trips that would be required to deliver materials to the site and auto trips generated by construction workers commuting to and from the project site. Fugitive dust emissions would result from minor site preparation activities, such as trenching. It is anticipated that on-site heavy construction equipment would include one backhoe, one crane, and one dump truck. The assessment of construction impacts considers all of these potential sources.

Construction exhaust emissions were estimated using emission factors derived by SCAQMD using the California Air Resources Board (CARB)'s Off-Road Model and EMFAC 2007 (v2.3) BURDEN Model (SCAQMD, 2008). Construction equipment inventory and scheduling assumptions provided by the Applicant were applied to the applicable emission factors to estimate exhaust emissions. Fugitive dust emissions were estimated using the worst-case default fugitive dust emission factor identified by the URBEMIS emissions model (Ripo Associates, 2007).

Daily mass emissions that are estimated to result during construction of the proposed hydrogen fueling station are presented in **Table 2-1**. Construction activities would occur five days a week for 2.5 months. For the worst-case daily emissions estimate, it is assumed that each heavy piece of on-site construction equipment would operate concurrently, eight hours a day, 12 workers would commute to the site, and 10 deliver truck trips would be required. As indicated in Table 2-1, maximum estimated daily construction emissions would not exceed the SCAQMD significance thresholds for volatile organic compounds (VOC), nitrogen oxides (NOx), carbon monoxide (CO), particulate matter (PM10), or fine particulate matter (PM2.5). (See **Appendix B** for each assumption and emission factor used to estimate construction emissions.) Therefore, the temporary increases in criteria pollutants would not result in a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. Impacts would be less than significant.

TABLE 2-1
MAXIMUM CONSTRUCTION EMISSIONS

Emission Source	Estimated Emissions (lbs/day)				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
On-site	3.9	40.3	10.5	1.4	1.3
Offsite	2.7	19.2	20.1	0.7	0.6
Fugitive Dust	---	---	---	9.6	2.0
Maximum Total	6.6	59.5	30.6	11.7	3.9
Significance Threshold	75	100	550	150	55
Significant Impact?	No	No	No	No	No

SOURCE: ESA 2008.

With regard to fugitive particulate emissions, it should be noted that it is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for fugitive dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, re-establishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Because ground disturbance activities associated with construction of the project would be limited, several of the Rule 403 control requirements may not be applicable.

Implementation of applicable Rule 403 control requirements would reduce regional PM10 and PM2.5 emissions to levels that are less than those presented in Table 2-1. The project construction contractor would be required to comply with Rule 403, where applicable.

Project-related construction emissions would not exceed the SCAQMD's mass emissions significance thresholds. Therefore, construction of the proposed hydrogen facility would not violate an air quality standard or contribute to an existing or projected air quality violation.

Operational Emissions

Air pollutant emissions sources associated with proposed project operations would consist of the hydrogen steam methane reformer flue gas exhaust as well as from hydrogen tube truck delivery trips. **Table 2-2** shows the long-term estimated project operational emissions. See Appendix B for each assumption and emission factor used to estimate long-term operational emissions. As presented in Table 2-2, daily operational emissions would be negligible and would not exceed the SCAQMD significance thresholds. Therefore, long-term increases in criteria pollutants would not result in a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. Impacts would be less than significant.

TABLE 2-2
MAXIMUM OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)				
Emission Source	**VOC**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
On-site	<0.1	0.1	1.6	<0.1	<0.1
Offsite	0.2	2.2	0.7	0.1	0.1
Maximum Regional Total	0.2	2.3	2.3	0.1	0.1
Regional Significance Threshold	55	55	550	150	55
Significant Impact?	No	No	No	No	No

SOURCE: ESA 2008.

Project-related operational emissions would not exceed the SCAQMD's mass emissions significance thresholds. Therefore, operation of the proposed hydrogen facility would not violate an air quality standard or contribute to an existing or projected air quality violation.

c) **Less than Significant.** The SCAQMD's approach for assessing cumulative operational impacts is based on its forecasts of attainment of National Ambient Air Quality Standards (NAAQS) in accordance with the requirements of both the federal and California CAAs. This forecast also takes into account SCAG's forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the project is consistent with forecasted future regional growth. If a project is consistent with the regional population, housing, and employment growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of both the NAAQS and the California Ambient Air Quality Standards (CAAQS), and a significant cumulative air quality impact would not occur. No population growth would occur as a result of the proposed project. In addition, the proposed project would improve hydrogen generation infrastructure in the area, which is consistent with long-term control measures identified in SCAQMD's 2007 AQMP. Therefore, the proposed project would be consistent with the underlying growth assumptions on which the AQMP is based and the cumulative operational impact would be less than significant.

With regard to short-term emissions, cumulatively considerable impacts would occur if construction emissions associated with the proposed hydrogen station would result in emissions that exceed the SCAQMD regional significance thresholds. Since construction emissions are below the SCAQMD regional significance thresholds, cumulative construction impacts would be less than significant.

e) **Less than Significant.** Impact significance related to sensitive receptor exposure to localized construction and operational pollutants was determined based on the SCAQMD's Local Significance Thresholds (LST) Methodology document (SCAQMD, 2003). The LST screening tables provided in Appendix B of the document were used to determine if daily emissions for proposed construction or operational activities would result in significant localized air quality impacts.

The proposed project site is located in the East San Fernando source receptor area (SRA), therefore, LST allowable emissions for SRA No. 7 were selected to evaluate local air quality impacts associated with the proposed project. The nearest sensitive receptors are residences along South Lake Street, approximately 450 feet (approximately 137 meters) southwest of the proposed project site. Allowable PM10, PM2.5, NOx, and CO emissions rates are available for one, two, and five acre sites at distances of 25, 50, 100, 200, and 500 meters from the nearest receptor. Therefore, the estimated maximum on-site construction and operations emissions of PM10, PM2.5, NOx, and CO were compared to the allowable emissions rates for a one acre site at 100 meters from the nearest sensitive receptor. As presented in **Table 2-3**, the estimated on-site emissions are less than the allowable emissions thresholds. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations and localized air quality impacts would be less than significant. See Appendix B for each assumption and emission factor used to estimate construction and operations emissions.

f) **Less than Significant.** Emissions from project construction equipment, such as diesel exhaust, may generate odors. However, these odors would be temporary in nature, would be mostly restricted to the project site and immediate area which is commercial/manufacturing in nature (not a sensitive receptor), and would not be expected to affect a substantial number of people. The types of uses proposed as part of the project are not anticipated to result in significant objectionable odors in the area during operations. The project impact would be less than significant during both construction and operations.

TABLE 2-3
LOCALIZED EMISSIONS

Pollutant	Estimated Emissions (lbs/day)	Allowable Emissions Threshold	Significant Impact?
	Construction		
PM_{10}	11.1	26	No
$PM_{2.5}$	3.3	8	No
NO_X	40.3	148	No
CO	10.5	1,086	No
	Operations		
PM_{10}	<0.1	7	No
$PM_{2.5}$	<0.1	2	No
NO_X	0.1	148	No
CO	1.6	1,086	No

SOURCE: ESA 2008.

g) **Yes.** For potential impacts to ambient air quality that would be associated with normal conditions under the proposed project, see discussions a) through f), above. For potential impacts to ambient air quality that would be associated with accident conditions, see Section 7, Hazards and Hazardous Materials, below,.

h) **Yes.** For potential impacts to human health associated with exposure to hazardous chemicals, see discussion e), above and Section 7, Hazards and Hazardous Materials, below. There would be no impacts to human health due to radiation exposure associated with the proposed project; the issue of radiation is not applicable to the project.

i, j) **Yes.** Pursuant to the 1990 Federal CAA Amendments, the US Environmental Protection Agency (USEPA) passed two separate federal conformity rules to ensure that air pollutant emissions associated with federally approved or funded activities do not exceed emission budgets established in the applicable State Implementation Plan (SIP) or not otherwise interfere with the state's ability to attain and maintain the NAAQS in areas working to attain or maintain the standards. The rules were incorporated as Section 40 CFR Parts 51 and 93 and include Transportation Conformity, which applies to transportation plans, programs, and projects, and General Conformity, which applies to all other non-transportation-related projects. The proposed project would be subject to the General Conformity rule because federal funding administered by DOE is proposed for the project. A detailed General Conformity determination is required pursuant to Section 40 CFR Part 51, Subpart W when federal actions or funding of non-transportation related activities show that pollutant emissions associated with those activities do not conform to SIPs by meeting specific criteria. The emissions must occur in an area designated as non-attainment for one or more of the NAAQS and they must exceed specific *de minimis* threshold levels applicable to the class of non-attainment.

The Basin, which includes the project area, is classified as a severe non-attainment area of the federal 8-hour NAAQS for ozone and a serious non-attainment area of the federal NAAQS for PM10 (USEPA, 2008). Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving VOC and NOx. VOC and NOx are known as precursor compounds for ozone. Because ozone is not directly emitted to the atmosphere, USEPA has set its General Conformity *de minimis* levels for ozone precursors rather than

for ozone. From a conformity standpoint, areas classified as severe ozone non-attainment areas are exempt from conformity if emissions of VOC or NOx are less than 25 tons per year and areas classified as serious PM10 non-attainment areas are exempt from conformity if emissions of PM10 are less than 70 tons per year.

Operational phase emissions associated with the proposed project would be negligible and would primarily be associated with hydrogen tube truck deliveries, which would be infrequent at an estimated ten times annually. Annual NOx, VOC, and PM10 emissions associated with operational sources would each be minimal (i.e., less than 0.1 ton) compared to the applicable *de minimis* thresholds. Therefore, the focus of this conformity analysis is on construction emissions that would be associated with the project. **Table 2-4** provides the estimated maximum annual tons of NOx, VOC, and PM10 emissions that would be generated as a result of the proposed project. See Appendix B for each assumption and emission factor used to estimate annual construction and operations emissions. As illustrated in Table 2-4, estimated annual emissions of NOx, VOC, and PM10 are well below the *de minimis* threshold levels applicable to the project area. Consequently, the proposed project would be in compliance with the NAAQS and the SIP.

TABLE 2-4
ANNUAL CONSTRUCTION EMISSIONS

	Estimated Emissions (tons/year)		
	NOx	**ROG**	**PM10**
Emissions (tons/year)	1.3	0.2	0.2
de minimis thresholds	25	25	70
Conformity Determination required?	No	No	No

SOURCE: ESA 2008.

k) **No.** The proposed hydrogen fueling station would not affect any area designated as Class I under the Clean Air Act. As described under b) and c) above. Short-term and long-term emissions associated with the project would be minimal and the nearest Class I area is the San Gabriel Wilderness Area, located approximately 10 miles north of the proposed site (CARB, 2008).

l, m, n) **No.** Annual operational phase emissions associated with the proposed project would be negligible (i.e., less than 0.3 ton) for each criteria pollutant. Therefore the proposed project would not be subject New Source performance standards and would not be subject to any emissions limitations. For discussion related to hazardous air pollutants, see Section 7, Hazards and Hazardous Materials, below, which determines that no substantial project impact would occur.

o) **Less Than Significant Impact:** At the present time, there are neither guidelines nor defined levels of significance for greenhouse gases (GHG) recognized by the State of California or the South Coast Air Quality Management District (SCAQMD) available to evaluate potential impacts from a proposed project. Such guidance is expected to be available by mid 2009. Consequently, it is not definitely possible to define if emissions of GHGs from the proposed project are or are not significant. What can

be safely stated is that the proposed project when compared to the existing facility, would have increased GHGs above the essentially zero GHG emissions from the existing hydrogen fueling facility. It is estimated that total construction and operational emissions from the proposed project would be 607 metric tons of CO_2e (carbon dioxide equivalent) emissions annually (or about 481 metric tons of CO_2e annually for operations only, see Appendix B for details).

Based on the most resent information available from SCAQMD and a white paper from the California Air Pollution Control Officers Association (CAPCOA), several levels of significance are being considered for project evaluation, these are 900, 10,000, and 25,000 metric tons of CO_2e for annual emissions. Again, while none of these levels are formally adopted, all levels are well above the proposed project's annual operational emissions of 481 metric tons of CO_2e. Based on this, the City concludes that GHG emissions from the proposed project are less than significant for CEQA purposes. Furthermore, because the facility produces hydrogen for fuel in City buses and vehicles, it is also likely that there would be a net reduction of GHGs from use of the hydrogen fuel which would offset emissions from conventionally fueled diesel and gas vehicles.

4. BIOLOGICAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

4. BIOLOGICAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Additional NEPA Questions:		**Yes**		**No**
g) If the proposed project could potentially affect threatened or endangered species and/or critical habitat, has consultation with the USFWS or NMFS been concluded, and have candidate species been identified and addressed?		☐(N/A)		☐
h) If state-listed species have been identified, have the results of the state consultation been documented?		☐(N/A)		☐
i) Are potential effects (including cumulative effects) analyzed for fish and wildlife other than threatened and endangered species and for habitats other than critical habitats?		☐(N/A)		☐
j) Have all potential effects on the biodiversity of the affected ecosystem, including genetic diversity and species diversity been identified?		☐(N/A)		☐
k) Have all affected habitat types been identified based on the amount of habitat lost or adversely affected?		☐(N/A)		☐

a) **Less than Significant.** The project site has been previously graded and paved with asphalt and concrete. Little to no vegetation or bare ground exist on-site nor does the site contain any abandoned buildings that could potentially be used for bat roosts. Currently, a tree exists adjacent to the hydrogen station. This tree will not be disturbed at any time during construction or operation of the new station. The site is located within an urbanized area. There are no open space areas or significant habitat areas surrounding or within the vicinity of the project site[5]. The site operates as a hydrogen fueling station within the City of Burbank Public Works Yard, which is fully paved and has few trees or shrubs. Maintenance activities and truck activity occur throughout the day. The site is therefore highly unlikely to provide habitat for candidate, sensitive, or special status species. In addition, the surrounding area is highly developed with industrial and commercial uses, with residential uses beyond, and the adjacent channel is concrete-lined. The surrounding area is also considered highly unlikely to provide habitat for candidate, sensitive, or special status species. Therefore, no significant biological resource impacts would occur as a result of the project.

b) **No Impact.** The proposed project site does not contain riparian habitat or any other sensitive natural communities. As mentioned above, the project site has been previously graded and paved with asphalt and concrete. There are no local or regional plans, policies or regulations that identify any area on the project site as a sensitive natural community. Therefore, no significant impacts would occur as a result of the project.

c) **No Impact.** There are no existing wetlands on or within the vicinity of the project site nor does the project propose any activity that would result in hydrological interruption of an existing wetland. Therefore, the project would have a less than significant impact on federally protected wetlands.

[5] City of Burbank, *City of Burbank General Plan*, Open Space/Conservation Element, December 1972.

d) **No Impact.** The project site has been developed and contains little to no vegetation, bare ground, or aquatic habitat areas. Therefore, the site is not capable of hosting any native resident or migratory fish or wildlife species or native wildlife nursery sites. Also, the project site is surrounded by urban development and is not located in an area significant to any established native resident or migratory wildlife corridors. No significant impacts would occur as a result of the project.

e) **No Impact.** Currently, there are no local policies or ordinances regarding biological resources that are applicable to the proposed project site[6]. The site has been previously developed and contains an unsubstantial amount of habitat if any. No significant impact is proposed.

f) **No Impact.** The project site is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The only area of the City that has biological provisions is in the Verdugo Mountains area (significantly east of the project site). No significant impact would occur from the proposed project.[7]

g-k) **Not Applicable.** As mentioned above, the project site has been previously graded and paved with asphalt and concrete. No natural habitat exists on-site. Therefore, it is highly unlikely the project site contains any threatened or endangered species and/or critical habitat, or that the site development would affect any biodiversity including genetic diversity and species diversity The proposed project would not require consultation with the USFWS or NMFS. No adverse impact would occur.

The proposed project would not require an analysis of the effects on fish and wildlife. No natural habitat exists on-site. Therefore, it is highly improbable that any wildlife could exist on-site. The project site does not contain waters or wetlands, and therefore no fish occur on-site. In addition, the project site is surrounded by urban development. Thus, it is unlikely that project implementation could have any cumulative effects on fish and wildlife. No adverse impact would occur.

5. CULTURAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
Additional NEPA Questions:		**Yes**		**No**
e) Has a SHPO been consulted for the proposed action?		☒		☐
f) Has mitigation been included in the event that unanticipated archaeological materials are encountered?		☐		☒

6 *Ibid.*

7 *Ibid.*

a, b, c, d) **Less than Significant.** The project site has been previously graded and paved with asphalt and concrete. There are existing structures on-site. The only structures or objects on the site are fueling equipment, fences, utilities and block walls. These are of recent industrial design and are not designated as a historical resource. There are no built historical resources that would be impacted by the proposed project and no mitigation is necessary for historical resources. The proposed project site (area of potential effect - APE) is a total of 2,896 square feet; however the area of proposed project soil disturbance would be a smaller portion of that area. Site preparation would involve removal of the existing concrete pad and equipment and installation of new paving, foundations, utilities and equipment to an approximate maximum depth of 24 inches. Prior grading for the existing fueling station is estimated at 12 inches depth, with some areas having been graded to 36 inches depth. New grading is not required over the entire site APE, but would occur over a small portion required for footings and possibly utilities. As detailed records do not exist on the extent of past fill and/or previously disturbed soils, the potential for cultural resources was investigated further, as a precaution.

A cultural resources records search was performed for in June, 2008, at the California Historical Resources Information System - South Central Coastal Information Center (CHRIS-SCCIC) for the project area and a 0.5-mile radius surrounding the project area. No cultural resources were identified for the immediate project area. Six cultural resources were found within the 0.5 area. One of these was the Magnolia Power Plant site, less than .25 miles from the Burbank Hydrogen Fueling site: included historic refuse dating from the late 1890s to the present, which was determine by the archaeologist reporting that resource was likely brought in as fill dirt from another site and therefore was out of context and not significant. Artifacts found include fragments of ceramics, bottle glass, brick, concrete, metal, saw-cut bones, intact bottles, and ceramic tiles. The site materials were likely brought in from other locations to be used as fill material during the construction of the plant during the 1940s and 1950s.

The other five resources were historic buildings or structures, consisting of the 1929 Burbank Depot, constructed in 1929, which is described in the 1992 site record as "a burned out and abandoned structure" and which appears to have been razed, 1902 Union Pacific Railroad track components (i.e., a "wye" and rail spurs), a 1927 Union Pacific Railroad concrete culvert associated with the aforementioned track components, and two historic buildings – the Burbank City Hall and US Post Office building, both on Olive Street. None of these resources are adjacent to the site and none would be affected by the proposed project.

On June 26, 2008, an ESA archaeologist visited the project site. The project site is entirely paved and built upon, and no cultural resources were observed during the course of the field visit.

The State Native American Heritage Commission (NAHC) was contacted in order to perform a Sacred Lands File search for the project area. The results of this search failed to indicate the presence of Native American cultural resources in the immediate project area (this would include artifacts or burials).

Based on the research summarized above, no significant surface or sub-surface archaeological resources are anticipated, and no historic resources would be affected.

Paleontological resources are the fossilized evidence of past life found in the geologic record. The scientific information they can provide are considered highly significant records of ancient life. Rock formations that are considered of paleontological sensitivity are those rock units that have yielded

c) **No Impact.** The proposed project site has been previously disturbed, graded and developed. The proposed project would require removal of concrete and asphalt surfaces, repaving, and also some minimal trenching for utilities may be required.

e) **Yes.** As noted above (a,b,d), given the characteristics of the existing site, the surrounding land uses and the proposed project, significant impacts are not anticipated. A letter was received by California's Office of Historic Preservation on July 28, 2008 concurring with the determination that no significant surface or sub-surface archaeological resources are anticipated, and no historic resources would be affected.

f) **No.** Based on the analysis provided in Responses "5 a-e", above, no mitigation measures are required.

6. GEOLOGY AND SOILS – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
Additional NEPA Question:	**Yes**		**No**	
f) If the proposed action involves the disturbance of surface soils, have erosion control measures been properly addressed?	☒		☐	

a-i) **Less than Significant.** The Verdugo Fault runs through the upper northern portion of the City; it traverses and slopes from west to east. The Verdugo Fault Zone is considered a surface rupture hazard due to an active segment according to a California Geologic Survey[8] but has not yet been recognized as an active fault by the State as an Alquist-Priolo zone.[9] Regardless, the proposed project site is located approximately two miles south of the Verdugo Fault and is not located within a special hazards zone delineated by the Alquist-Priolo Special Studies Zone Act. Therefore, the project site has a low potential for experiencing fault rupture and would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map, and there would be a less than significant impact specific to fault rupture. It is also noted that the new station will be equipped with a seismic switch to shut-down the station in the event of an earthquake, as well as the entire station will be designed and constructed to local seismic rating.

a-ii) **Less than Significant.** The project site is located in Southern California, which contains both active and potentially active faults and is considered a region of high seismic activity.[10] **Table 2-5** describes the major fault zones in the project vicinity. There is only one active fault within the City of Burbank, as mentioned above. The closest fault to the project site is the Verdugo Fault. The Verdugo Fault runs through the upper northern portion of the City sloping from west to east, approximately two miles north of the project site. Other faults within the surrounding southern California area include Northridge, San Fernando, Hollywood, Raymond, and Sierra Madre.

TABLE 2-5
FAULT ZONES IN THE PROJECT VICINITY

Fault Zone	Location from the City of Burbank	Estimated Maximum Magnitude
San Andreas	North of the City of Burbank	7.5
San Fernando	North of the City of Burbank	6.6-7.5
Sierra Madre	East of the City of Burbank	8.5
Hollywood	South of the City of Burbank	6.4
Verdugo	Within the City of Burbank	6.7-8.0

SOURCE: City of Burbank, General Plan Safety Element.

The proposed project would be required to comply with the 2007 California Building Code and any local building code additions which are designed to protect improvements from significant damage in the event of an earthquake. A geotechnical investigation would be required for the project which would determine the potential seismic hazards at the project site and provide recommendations to mitigate

8 Jennings, Charles W., California Division of Mines and Geology, *Fault Activity Map of California and Adjacent Areas,* 1994.

9 California Geological Survey, *Fault Rupture Hazard Zones in California,* Special Publication 42, Interim Revision 2007.

10 An active fault is defined by the state of California as a fault that has had surface displacement within Holocene time (approximately the last 28,750 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. Sufficiently active is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

them. Implementation of these recommendations, as required by the Building codes would reduce the potential impact from groundshaking to less than significant levels.

a-iii) **Less than Significant.** Liquefaction is a phenomenon in which soil, in the presence of high groundwater, loses its shear strength for short periods of time during an earthquake. During sufficient ground shaking there is a loss of grain-to-grain contact due to a rapid increase in pore water pressure, causing the soil to behave as a fluid for short periods of time. The effects of liquefaction could include excessive differential settlement for the structure supported on the liquefying soils. The amount of settlement is dependent, in part, on the thickness of the liquefiable layer. Portions of the City of Burbank are prone to liquefaction. These potential liquefaction areas include approximately 340 acres; 200 of which are adjacent to the Los Angeles River and approximately 140 run parallel to Interstate 5.[11] According to the California Geological Survey, the project site is located within a Seismic Hazard Zone for liquefaction.[12] The project would not involve any substantive grading but would require the construction of some new foundation pads (concrete and asphalt would be removed and replaced, and minimal trenching for utilities may be required). However, the site was previously disturbed, graded, paved, and heavily modified prior to the proposed project. A geotechnical investigation for the site would be required to mitigate any remaining liquefaction hazards, if present, in accordance with the Seismic Hazard Mapping Act. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of liquefaction and is considered a less than significant impact.

a-iv) **No Impact.** The project site is located on the City of Burbank Public Works Yard. Surrounding land uses consist of the Public Works site to the north and west, West Verdugo Avenue on the south, and the concrete-lined Burbank Western Channel on the east. Commercial and industrial uses are located in the immediate surrounding. Residential and other commercial uses are located beyond the immediately adjacent uses. Surface topography of the project site and the surrounding area is flat. The potential for landsides is minimal. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides and there would be no impact.

b) **Less than Significant.** The site was previously disturbed, graded, paved, and heavily modified prior to the proposed project. The project would not involve any substantive grading or earthwork. The potential for soil erosion on the proposed project site is therefore generally low.

c) **Less than Significant.** As discussed above, the project site has previously been developed and as a result the subsurface soils have been engineered to support the above ground improvements. In addition, the project site is relatively flat and would not be subjected to significantly greater loading as a result of the project. Regardless, the project would be required to prepare a geotechnical evaluation of site conditions for the proposed improvements to ensure that site conditions are suitable for the proposed improvements. Therefore, the proposed project would not be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse and a less than significant impact is anticipated.

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[11] City of Burbank, General Plan Safety Element.

[12] California Geological Survey, *Seismic Hazard Zones, Burbank Quadrangle,* March 25, 1999.

d) **Less than Significant.** The project site has been previously graded and prepared for development. As such, the site is likely underlain by engineered fill materials that are not susceptible to expansion. The geotechnical evaluation for the proposed improvements that require new foundations would include either placement of new engineered fill or reuse of existing soils; if suitable (i.e. their expansion potential is determined to be very low). Therefore, the potential for expansive soils to impact the project is low.

e) **No Impact.** The proposed project does not contain any septic systems or alternative waste water disposal system. No adverse impact would occur.

f) **Yes.** The site was previously disturbed, graded, paved, and heavily modified prior to the proposed project. The project would not involve any substantial grading and would not require substantive erosion control measures. Therefore, the proposed project would not involve substantial disturbance of surface soils. No substantial impacts are anticipated.

7. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

7. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Additional NEPA Questions:		Yes		No
i) Have all susceptible populations been identified, including involved workers, noninvolved workers, and the public (including minority and low income communities, as appropriate)?		☒		☐
j) Has a period of exposure been established (e.g. 30 years or 70 years) for exposed workers and the public?		☒		☐
k) Have all potential routes of exposure been identified?		☒		☐
l) Have all quantitative estimates of impacts been identified in terms of current does-to-risk factors that have been adopted by cognizant health and environmental agencies?		☒		☐
m) Has a spectrum of accident scenarios that could occur over the lifetime of the proposed action been identified?		☒		☐

a, b) **Less than Significant.** This analysis was based upon research and communications with the City Department of Public Works staff that oversees the public works yard, BP America, Air Products, City of Burbank Planning Department, City Fire Department and DOE staff, as well as review of plans and hazards reports prepared for the proposed project.

Safety and accident prevention for the hydrogen fueling station begin with a rigorous engineering design that meets all applicable codes and standards (see Chapter 1, Project Description, for list of code and regulation compliance requirements). The design is then subject to various safety reviews, such as the Hazard and Operability (HAZOP) and Hazard Identification (HAZID) studies and processes. The equipment, systems and safety logic are subject to testing and start-up procedures to ensure equipment is fabricated properly and the facility is constructed properly.

Following start-up, an Operations and Maintenance plan is in place which specifies the frequency of all work needed to keep the facility operating safely and efficiently. Frequencies of inspection and testing are governed by applicable codes as well as an accumulated history at other hydrogen fueling stations. Additionally, customers are required to be trained in vehicle refueling and on hydrogen safety, which includes instruction on how to shut-down the fueling station with the Emergency Stop button located adjacent to the dispenser and at four other locations around the site (drawings on file at the City of Burbank). A hydrogen leak sensor is located in the dispenser and if a leak is detected the station is shut-down and Air Product's 24 hour call center is automatically contacted. A technician is then required to check and correct any deficiency before the station can be returned to service. The station will remain down until the root-case of the problem has been identified and corrected.

The station also has 100 percent flame detection coverage provided by three hydrogen flame detectors (drawings on file at the City of Burbank). Two of these cover the station itself and one covers the hydrogen tube trailer delivery and hook-up area. If a flame is detected, the station will be shutdown automatically, the fire department call will be triggered, and Air Product's 24-hour call center will be automatically contacted. Additionally, all area emergency responders will be trained on the hydrogen station so they are familiar with the facility prior to any emergency.

As required, a HAZOP Study was carried out for the proposed Burbank hydrogen fueling station to identify operations that could result in an accidental release of a flammable substance. Safety features of the system design, as identified above, were verified during reviews of the detailed drawings in the HAZOP study. In addition a HAZID workshop was conducted for the proposed facility on May 29, 2008 and was reviewed by ESA staff on June 24, 2008. The HAZID is part of an overall safety process to assure the integrity of the facility and to manage the overall risks from the facility. It is intended to supplement the HAZOP, and it focuses on site level issues rather than detailed subsystems at the facility, and it determines whether design changes or additional risk control measures should be added to minimize risks from operations. A HAZID report summary, prepared by ESA, is located in **Appendix C** of this ND/EA.

The site occupies part of the City of Burbank Public Works Yard, and it contains an existing hydrogen fueling station that uses electrolysis to generate hydrogen from water and dispenses 12 kg/day of compressed hydrogen at 350 bar pressure for fuel cell vehicles. The project site and immediate vicinity is zoned for commercial and manufacturing uses. The nearest sensitive receptors are approximately 450 feet southwest of the proposed project site; these are residential uses, located along South Lake Street. A CNG fueling station exists on the public works yard, approximately 300-400 feet north of the proposed project site.

A search for potentially contaminated sites near the project site was conducted on the Department of Toxic Substances Control (DTSC) Envirostor site[13]. Four sites were identified within 0.25 miles of the project site, and are located at 205 South Flower Street, at 164 West Magnolia Boulevard, at 170 West Providencia Avenue, and at 315 South Flower Street.

Construction Impacts

During construction, heavy-duty equipment would be used to break up the existing concrete foundation and pads and surrounding asphalt (driveway, etc.), to trench and install underground utilities, and to construct new concrete foundations and pads and lay down new asphalt. In evaluating the potential for hazards release and other hazardous materials events, a worst case or accident case situation must be anticipated. Accidents may occur from natural (e.g., earthquake or wildfire) or manmade events (e.g., accidental release during handling or equipment error). Accordingly, the following construction-phase accidents could potentially occur:

- **Accidental spill of project materials during construction:** During these activities, minor spills of fuel and other oils and lubricants could potentially occur from ruptured fuel and hydraulic lines. If an accidental spill occurs during these activities the construction team shall clean up the spill immediately and report as required by, and in accordance with, applicable federal, state and local requirements.

- **Discovery of existing contamination during project construction:** If evidence of contaminated materials is encountered during construction, activities shall cease immediately and applicable requirements shall be followed, such as requirements of the Comprehensive Environmental Release Compensation and reliability Act (CERCLA) and the California Code of Regulations (CCR) Title 22 regarding the disposal of wastes.

[13] California Department of Toxic Substances Control (DTSC), http://www.envirostor.dtsc.ca.gov/public/, accessed May 29, 2008.

As effective corrective measures are in place under existing government regulations, these potential impacts would therefore be less than significant. No project-specific mitigation measures would be required.

Operational Impacts

During project operations the following incidents could occur as a result of natural or manmade causes:

- **Accidental spill of hydrogen from tube trailer transport:** Hydrogen is not classified as a pollutant, but is considered an acutely hazardous substance by state and federal regulations because of its flammability. It is subject to state and federal regulations only if the quantity stored or used at a site exceeds 10,000 pounds. It is also considered a Class 2.1 hazardous substance during transportation by the US Department of Transportation (USDOT) because of flammability, and only trained personnel are permitted to transport the substance in vehicles approved by USDOT. However, hydrogen shipment to the site would be infrequent, since it would only be transported to the site for initial purging activities, and in the infrequent event that the SMR unit is down (e.g., for maintenance of repair) and therefore temporarily cannot produce hydrogen for vehicle refueling. A gaseous tube trailer in compliance with USDOT regulations would be used to transport hydrogen to the site at startup. The transport system is designed to prevent accidental releases, and transporters must comply with the safety codes identified in Chapter 1, Project Description. Also, truck operators are trained in the safe handling and shipment of hydrogen to eliminate accidental releases.

  As effective corrective measures are in place under existing government regulations, the impacts from the shipment of hydrogen to the site would therefore be less than significant. No project-specific mitigation measures would be required.

- **A leak during operations resulting in a fire:** It is important to note that hydrogen has certain safety advantages over liquid fuels like gasoline. If a gasoline tank leaks or bursts, the gasoline would pool, creating a risk of a fire from a spark, or the gasoline can spray outward, posing a greater risk of spreading a fire. However, if hydrogen were to be accidentally leaked, it would diffuse rapidly into the atmosphere because of its gaseous properties, thus preventing it from maintaining the level needed to support ignition. If a hydrogen leak would occur, the system is configured in an open environment which would allow air to flow throughout the structure and to rapidly dilute the hydrogen to below levels needed for combustion.

  The facility will have a number of detection systems and automatic shutoff valves to prevent a release of flammable hydrogen into the environment. These safety features that are identified in the Project Description are also identified below:

  - Control valves are pneumatically operated and all control valves fail in the safe direction (closed) after loss of utility power or instrument supply.
  - Hose overpressure detection with automatic shutoff and alarm.
  - Hose leak detection with automatic shutoff and alarm.
  - Local (on dispenser) and remote emergency stop switches (red palm buttons) that can be operated by the vehicle driver or others to stop the filling process.

- Redundant automatic shutoff valves that will close and stop the filling process in an emergency.
- All system alarms and shutdowns are displayed on the control panel face; critical alarms are hard wired in addition to being connected through the PLC.
- Automatic restart of the compressor will not occur after abnormal, or "alarm condition" shut down to ensure safety of on-site personnel.
- UL listed dispenser and compressor control panel suitable for Class 1 Division 2 Group B or Zone 2 locations (with IEC IP code).
- Continuous telemetry provides for direct alert to the central operator in the event of an emergency event.

The only on-site supply of flammable substance in sufficient quantity would be the hydrogen contained in the storage tubes. These tubes will be American Society of Mechanical Engineers (ASME)-coded vessels with thick steel walls of sufficient strength to not fracture. As effective design process safeguards are in place to avoid chances of a leak, and effective design safeguards are in place in the unlikely event a leak occurs, the project impacts would be less than significant. No project-specific mitigation measures would be required.

- **Break in a line and possible jet fire:** The only credible accident identified during the HAZID workshop was a break in a line and a possible jet fire. However, as indicated in Chapter 1, Project Description, the facility would be equipped with flame and gas detection devices that will immediately shut down all systems. In this mode, the gas would be locked in the storage tubes, putting out any flame and preventing offsite impacts from occurring. A possible cause of such an incident could be from a tube truck accidentally backing into the units. The HAZID states that the six-inch bollards around the units would prevent this from occurring. Wheel stops will also be provided to prevent collision with the bollards and prevent truck damage.

  As effective design process safeguards are in place to avoid chances of a leak, and effective design safeguards are in place in the unlikely event a leak occurs, the project impacts would be less than significant. No project-specific mitigation measures would be required.

The HAZID report concludes that no major accident that could cause off-site consequences (including public works yard or neighborhood impacts) would occur over the life of the project. Because of the design features of the system and the safety procedures to be followed by the operators, the HAZID concludes that any accidental release will be minimized and the impact to public safety would be less than significant.

c) **No Impact.** The proposed project would not release acutely hazardous materials, and there are no schools within one quarter mile of the project site. No project impact would occur.

d) **Less than Significant.** A search was conducted on the DTSC Envirostor site to identify any contaminated sites within 0.25 miles of the project site, and there were three sites within that distance. One site is located at 205 South Flower Street, one is at 315 South Flower Street, and one is at 170 West Providencia Street. The proposed project site and the reminder of the public works yard were not identified on the DTSC list. However, should project construction reveal contaminated, activities will

cease immediately, and soil cleanup activities shall be implemented, as required by state and local regulations. Cleanup activities would be required to be designed to avoid spreading of hazardous materials to previously unaffected sites. With implementation of existing laws and regulations, no significant project impact would occur.

e) **No Impact.** There are no airports within two miles of the proposed facility. The nearest airport is Burbank International Airport in which the closest distance is three miles away. Therefore, there would be no impact.

f) **No Impact.** The project is not located within the vicinity of a private airstrip. Therefore there would be no impact.

g) **Less than Significant.** The proposed project design and procedural safeguards (see Response "7. a, b" above) would contribute towards the effectiveness of on-site public works yard safety and emergency response plans and procedures. Implementation of the project would not significantly affect the emergency response plan or procedures of neighboring facilities, because any emergencies at the facility would be minor and should not affect surrounding properties (see Response "7. a, b" above). In addition, the facility exit is near Verdugo Street, allowing for easy egress from the site in case of an accident. In addition, the City of Burbank has a comprehensive Safety Element of its General Plan, and the City Fire Department, which is responsible for addressing emergency situations in the area, is rated as a Class 2 operation. This rating can be equated to "very good" and is capable for addressing any emergency situations that might occur from the project. Thus, the impacts from the project would be less than significant.

h) **No Impact.** The risk of wildfires in the vicinity of the project would be very low, because the site is located in a developed area with no wildlands nearby. The site is well within the urbanized area, for which an adequate system of fire hydrants is available. Therefore, no impact would occur.

Additional NEPA Questions:

i) **Yes.** As evaluated in Response "7. a, b" above, impacts to populations including involved workers, noninvolved workers, and the public (including minority and low income communities, as appropriate) would not be substantially affected by project operations or potential accident scenarios.

j, k, l) **Yes.** All applicable potential hazards scenarios for the proposed project site have been evaluated in the HAZID (see Response "7. a, b" above). No significant impacts of exposure would occur; therefore an extended exposure analysis or additional risk analysis is not warranted.

m,) **Yes.** All applicable potential hazards scenarios for the proposed project site have been evaluated in the HAZID (see Response "7. a, b" above).

8. HYDROLOGY AND WATER QUALITY – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

8. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Result in temporary modifications to existing drainage patterns that may increase the flow rate of stormwater, violate water quality discharge requirements, or result in substantial erosion on or off-site due to construction activities?	☐	☐	☒	☐
g) Otherwise substantially degrade water quality?	☐	☐	☒	☐
h) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
i) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
k) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
Additional NEPA Questions:	**Yes**		**No**	
l) Have all potential water quality effects been identified for the proposed action under both normal operation and accidental conditions?	☒		☐	
m) Would the proposed action comply with the National Interim Primary Drinking Water Regulations, as well as all National Secondary Drinking Water Regulations?	☒		☐	

8. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Additional NEPA Questions:	Yes			No
n) Would the proposed action include work in, under, over, or have an effect on navigable water of the United States?	☐			☒
o) Would the proposed action include the discharge of dredged or fill material into any waters of the United States?	☐			☒
p) Would the proposed action include the deposit of fill material or an excavation that alters or modifies the course, location, condition, or capacity of any navigable waters of the Unites States?	☐			☒
q) Would the proposed action require a Rivers and Harbors Act Section 10 permit, or a Clean Water Act (Section 402 of Section 404) permit?	☐			☒
r) Have all potential effects to groundwater quantity and quality (including aquifers) been identified under both normal operations and accident conditions?	☒			☐
s) Would the proposed action, including all alternatives, affect municipal or private drinking water supplies?	☐			☒

a) **Less than Significant.** The project site is currently paved with impervious surfaces (i.e., asphalt and concrete) and the new station would also be covered with asphalt and concrete. Project implementation would generate wastewater due to sewage and stormwater runoff. However, the amount of wastewater generated with the proposed project would be similar to the amount generated at the existing facility. The existing station uses storm drains to collect stormwater. The stormwater then enters the City's drainage infrastructure and is released into the Burbank Western Channel, which ultimately discharges the runoff into the Los Angeles River where it is routed to the Pacific Ocean. Sewage produced on-site is disposed of in the City's sewage infrastructure and is treated at the Burbank Wastewater Reclamation Plant (BWRP). The proposed project would continue to use the City's infrastructure for sewage and stormwater disposal. Therefore, the project would not substantively change the existing wastewater discharges and consequently it would not violate any water quality standards or waste discharge requirements. No significant impacts would occur as a result of the project.

b) **Less than Significant.** Burbank Water and Power would serve the project with potable water. No groundwater extraction at the project site is proposed. In addition, the net change of groundwater recharge would be zero, as the site would continue to be covered in impervious surfaces. The proposed office and steam reforming process are the primary uses that would require water service. The existing station uses water to produce hydrogen through the process of electrolysis. The proposed station would no longer use electrolysis. However, steam would be used to produce hydrogen from methane. The project would not create a substantial increase in water demand when compared to the existing demand on-site. No significant impacts would occur as a result of the project.

c, d, f) **Less than Significant.** The project site is currently paved with asphalt, and the proposed project would also be paved with an impervious surface such as asphalt or concrete. The proposed structures would

not be of a size or shape that could affect the existing drainage pattern. There are no streams or rivers on the project site. However, the Burbank Western Channel abuts the project site on the eastern property boundary. The project does not propose to alter any streams or rivers or the existing channel. Overall, the existing drainage pattern would remain the same after project implementation. Construction activities could require demolition of some areas such as the existing fueling station pad, however, the total area of disturbance will be less than one acre. During this time, any stockpiled soils would be susceptible to erosion, though based on the area of disturbance which is less than one acre, the potential for erosion or siltation offsite would be minimal. Otherwise, the proposed project would not significantly alter the existing drainage pattern on-site. The potential impacts from changes to drainage patterns are considered less than significant.

e) **Less than Significant.** As described above, the net change in impervious surfaces and thus stormwater runoff is negligible. Therefore, the project would not provide substantial additional sources of polluted runoff. As such, project implementation would not generate an amount of runoff water that could exceed the capacity of existing or planned stormwater drainage systems. No significant impacts would occur as a result of the project.

g) **Less than Significant.** The project would produce polluted water related to sewage, stormwater runoff, and construction activities. The project does not propose any other activity that could substantially degrade water quality. The project would be served by the BWRP to treat sewage, stormwater runoff would continue to outfall in the Burbank Western Channel, and the project would disturb a relatively small area (less than one acre) during construction activities. Therefore, no significant impacts would occur as a result of the project.

h-j) **No Impact.** The Safety Element of the Burbank General Plan affirms that flooding is not a significant danger in the City. The only 100-year flood hazard area in Burbank is located just outside the cannel confines along the City of Burbank's southernmost boundary line. As such, the project site is not located within a 100-year flood hazard area. In addition, the project site is not located in an area that could be affected by the failure of levees or dams nor is any housing proposed as part of the project. No impacts would occur as a result of the project.

k) **No Impact.** The project site is not located near a body of water capable of causing inundation by seiche or tsunami nor is the site located near any of the City's hillsides that have the potential to convey mudflows. The project site is not located along a potential mudflow path. No impacts would occur.

l) **Yes.** All potential water quality effects have been identified for the proposed project under both normal operational and accidental conditions. The project's water quality impacts are limited to sewage, stormwater runoff and potential erosion and siltation resulting from construction activities. The project would be served by the BWRP to treat sewage, stormwater runoff would continue to outfall in the Burbank Western Channel, and the project would not disturb a significant area of site soils. No adverse impacts would occur.

m) **Yes.** The project's impacts to water quality are not substantial and would not affect drinking water in any way. Therefore, the project would comply with the National Interim Primary and Secondary Drinking Water Regulations. No impacts would occur.

n) **No.** The proposed project does not involve navigable waters of the United States, and would therefore have no effect on such waters. No impacts would occur.

o) **No.** The proposed project does not involve any activity that would require the discharge of dredged or fill material into any waters of the United States.

p) **No.** The project does not propose any activity that could affect navigable waters of the United States including the deposit of fill material or excavation. No impacts would occur.

q) **No.** The proposed project does not involve rivers or harbors, and would not affect any waters of the United States. Therefore, a Rivers and Harbors Act Section 10 permit or a Clean Water Act (section 402 of section 404) permit is not required. No impacts would occur.

r) **Yes.** The project's potential effects on groundwater have been analyzed. The proposed demand for water supply would not differ substantially from the existing station's demand. In addition, both the proposed and existing demand for water supply is relatively small and would not be capable of substantially affecting groundwater quantity. The project does not propose any activity that could adversely affect groundwater quality. No impacts would occur.

s) **No.** The existing water supply in Burbank is very limited. The proposed project would have a small demand on water quality when compared to other land uses. In addition, the project's water demand would not differ substantially from the existing station's demand. Therefore, the project would not substantially affect municipal water supplies. No substantive impacts would occur.

9. LAND USE AND PLANNING – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a-c) **No Impact.** The proposed project would replace the existing hydrogen fueling station with an expanded and more advanced station on the same site. The site is zoned Burbank Center Commercial Manufacturing (BCCM)[14], and designated in the General Plan as Public Facilities.[15] Surrounding land uses include a variety of commercial and industrial/manufacturing businesses. At the public works yard on which the site sits, there are various City office, storage and maintenance buildings, a CNG fueling station, and parking areas, which lie to the north of the project site. In addition there are

[14] City of Burbank, Burbank Municipal Code, Chapter 31, Zoning, updated May 28, 2008.
[15] City of Burbank, City of Burbank General Plan, Land Use Element and Map, August 2007.

commercial/manufacturing uses adjacent to the public works yard, including car repair and public storage enterprises to the west, RV storage space to the far west, and a steel and metal work business to the far north. The eastern boundary of the project site is directly bordered by the concrete-lined Burbank Western Channel.

The City General Plan and zoning are the applicable and governing documents for the project site. The project proposes to increase the existing hydrogen dispensing capabilities on-site. The proposed project use would be consistent with the existing zoning and General Plan classifications, is compatible with surrounding land uses, and does not involve the development of infrastructure or other facilities in an area that might divide an existing community. The project site is not located in an area that is part of a Habitat Conservation Plan or other plan intended for the protection of natural or wildlife resources. Implementation of the proposed project would have no adverse impact on land use and planning.

10. MINERAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a-b) **No Impact.** The project site is located in an urbanized area that is not recognized or designated for mining or other mineral recovery uses. [16] [17] No mineral resource activities are being conducted on-site. Construction of the project would therefore not have an adverse environmental impact. These findings were made subject to, and in compliance with, the Surface Mining and Reclamation Act (SMARA) of 1975 as amended.[18]

11. NOISE – Would the project result in:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

[16] Ibid.

[17] California Division of Mines and Geology, Mineral Land and Classification Map, May 25, 1979.

[18] Ibid.

11. NOISE – Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity due to construction activities above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

a, c, d) **Less than Significant.** The proposed project would result in noise generated during construction and operation of the updated fueling station. To evaluate project noise impacts, a comparison must be made to existing noise conditions at the site and in the surrounding area.

The proposed project site is located in an urban area of central Burbank that is zoned Burbank Center Commercial Manufacturing (BCCM). The proposed project site is completely surrounded by either BCCM or General Industrial (M-2) land use zones and the Golden State Freeway (Interstate-5) is located approximately 1,000 feet (0.2 miles) east of the site. West Verdugo Avenue defines the southern perimeter of the proposed project site. These surrounding land uses and roadways are existing noise sources. The project area experiences moderate to high noise levels.

The nearest noise sensitive area is a residential area zoned High Density Residential (R-4) along the west side of South Lake Street, approximately 450 feet southwest of the proposed project site. Other manufacturing/industrial noise sources closest to the site are at a distance of approximately 100 feet.

Ambient average noise exposure level (Leq) and instantaneous maximum noise level (Lmax) measurement data was collected to determine noise levels in the proposed project area. **Table 2-6** presents the short-term measurements that were taken at two locations along South Lake Street; adjacent to residential uses. Ambient Leq noise levels in the vicinity of project area were measured to be between 71.4 and 66.3 decibels (dBA).

TABLE 2-6
MEASURED AMBIENT NOISE LEVELS IN THE PROJECT AREA

Measurement Location	Time	L_{eq}	L_{max}	Predominant Noise Sources
South Lake Street, approximately 100 feet north of West Verdugo Avenue, adjacent to residential uses.	9:12 a.m.	71.4	93.5	Semi-tractor and trash trucks passed by frequently. L_{max} was a result of a sports car passing by the location. Golden State Freeway was audible in the distance.
South Lake Street, approximately 100 feet south of West Verdugo Avenue, adjacent to residential uses.	9:33 a.m.	66.3	77.0	Semi-tractor and trash trucks passing by. L_{max} was a result of a pick-up truck driving by the location.

NOTE: Short-term (ten minute) measurements were collected on May 29, 2008.

Construction Impacts

Construction of the proposed project would require the use of a variety of noisy construction equipment, including a backhoe, crane, jackhammer, and several types of delivery and haul trucks. Proposed project construction activities are expected to last for a period of approximately 2.5 months. During the construction period, noise levels generated by project construction would vary depending on the particular type, number, and duration of use of various pieces of construction equipment.

Typical noise levels at 50 feet from the pieces of construction equipment that would be required to construct the proposed project range between 80 and 88 dBA (see **Table 2-7**). Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined noise level would be 53 dBA, not 100 dBA.

TABLE 2-7
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Backhoe	80
Crane	83
Jackhammer	88
Truck	88
Combined Equipment	**92**

SOURCE: FTA, 2006.

The combined noise level of all the pieces of equipment listed in Table 2-7 would be 92 dBA. Although unlikely, because of construction activity phasing, it is possible that construction activity at the proposed project site could result in noise levels up to 92 dBA at 50 feet.

The nearest residential properties to the proposed project site (approximately 450 feet to the southwest) are along the 300 block of South Lake Street. Several buildings and structures exists between the proposed project site and the residential properties along South Lake Street, which would attenuate the construction noise levels at the residences by at least 10 dBA. Therefore, construction noise levels at the residential properties along South Lake Street could experience noise levels up to 63 dBA, which is below the range of ambient conditions measured in the area (see Table 2-6).

Construction noise sources are typically regulated on the local level through enforcement of noise ordinances and implementation of general plan policies, and imposition of conditions of approval for permits. The City of Burbank Noise Element indicates that construction noise impacts that occur during daytime are considered minimal for no more than two or three months of activity; however, late night and weekend construction activity could be considered significant when experienced by nearby residential locations (City of Burbank, 1992).

Therefore, pursuant to City of Burbank Municipal Code Section 21-209 (a), all construction activities that require a building permit from the City and that would occur within 500 feet of any residentially

zoned property, shall occur only between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and/or 8:00 a.m. to 5:00 p.m. on Saturday, and no construction activity is allowed to occur on Sunday. Section 21-209 (b) requires that the times and days during which construction activities are permitted to be posted on the site during the construction period (City of Burbank, 2008). The project applicant would be required to comply with Municipal Code Section 21-209 construction activity time restrictions because the residentially zoned properties along South Lake Street are within 500 feet of the site.

Short-term construction activities would be in compliance with the City's General Plan Noise Element as well as the City's municipal codes related to construction noise exposure. In addition, construction noise levels would not substantially increase ambient noise levels at the residential properties along South Lake Street. Therefore, potential noise impacts related to proposed construction activities would be less than significant.

Operational Impacts

The proposed project would result in additional stationary and mobile noise sources at the site. The primary stationary sources would be the proposed SMR generator, the 350 bar compression system, and the 700 bar booster compressor. **Table 2-8** lists these pieces of equipment with corresponding estimated maximum noise levels. Maximum noise levels of the individual pieces of equipment would range between 59 and 75 dBA at 50 feet. When all of the equipment would operate simultaneously, the combined maximum noise level would be up to 77 dBA at 50 feet. Accounting for the buildings and other structures that exist between the site and South Lake Street, proposed project maximum stationary noise source levels at the South Lake Street residences would be up to 48 dBA. Maximum noise levels at adjacent manufacturing/industrial uses approximately 100 feet from the site would be up to 71 dBA. In addition to stationary sources, approximately 65 additional vehicles per week would refuel at the proposed new hydrogen station, compared to approximately 10 vehicles per week that are currently serviced at the existing station. This equates to approximately 10 additional vehicles per day, which would result in a negligible increase in noise levels.

TABLE 2-8
MAXIMUM PROPOSED HYDROGEN FUELING STATION EQUIPMENT NOISE LEVELS

Stationary Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Steam Methane Reformer (SMR)	59
Compressor Skid – 350 bar	71
Compressor Skid – 700 bar	75

SOURCE: Derived from single equipment maximum noise levels at 10 feet obtained from BP (BP, 2008).

Although the proposed 700 bar compressor would typically be in standby mode (i.e., not compressing), for the purposes of this analysis it is assumed that it would operate concurrently with the SMR and the 350 bar compressor for a total of up to four hours over a 24-hour period. It is assumed that during the other 20 hours the SMR unit would operate concurrently with the 350 bar compressor. As mentioned above, operation of both compressors with the SMR would result in maximum noise levels of 77 dBA at 50 feet. When only the 350 bar compressor and the SMR unit are in operation, the combined noise level would approximately 71 dBA at 50 feet. The 24-hour average noise level would be approximately 73 dBA at 50 feet.

Municipal Code Section 21-208 (a) and (b) indicates that all machinery and equipment should not exceed ambient noise levels by more than five dBA and that all ambient noise levels should be deemed to be the following base levels during the times shown, notwithstanding a lower reading (City of Burbank, 2008):

- Residential: 45 dBA nighttime and 55 dBA daytime;
- Commercial: 65 dBA anytime; and
- All other zones: 70 dBA anytime.

As described above, proposed project maximum stationary noise source levels at the nearest residences would be up to 48 dBA and maximum noise levels at adjacent manufacturing/industrial uses would be up to 71 dBA. In addition, the 24-hour average noise level at the site would be approximately 73 dBA. These levels would not result in an increase of more than five dBA above the base levels identified in Municipal Code Section 21-208 (a) and (b).

Long-term operational activities would be in compliance with the City's municipal codes related to noise exposure. In addition, permanent noise levels would not substantially increase ambient noise levels at the residential properties along South Lake Street or the nearby manufacturing/industrial uses. Therefore, potential noise impacts related to proposed operational activities would be less than significant.

b) **Less than Significant.** Operations of the proposed project would not generate excessive groundborne noise or vibrations. Vibration levels from construction equipment and activities might be perceptible in the immediate vicinity of the construction site. The activity that would most likely cause groundborne vibration would be the removal of existing concrete foundations, which would likely require the use of a jackhammer. The impact from construction-related groundborne vibration would be short-term and confined to only the immediate area around the activity (within about 25 feet). Because the project components are more than 25 feet from the nearest sensitive receptor, no residences would be exposed to excessive vibration, and the impact would be less than significant.

e, f) **No Impact.** The proposed project site is not located within an airport land use or within two miles of an airport or a private landing strip (the project site is three miles from the Burbank Airport) and would not expose people residing or working in the project area to excessive airport noise levels.

12. POPULATION AND HOUSING – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a-c) **No Impact.** Residential units do not exist on the site, nor are any proposed as a part of the project. The present land use on-site consists of an existing hydrogen fueling station within the City of Burbank Department of Public Works Yard. The expanded facility would not displace any residential dwellings. The project is designed to provide additional alternative fueling opportunities to the City of Burbank and the surrounding communities. It is anticipated that the majority of the project's patrons already reside within the surrounding area. The project proposes to increase the existing hydrogen dispensing capabilities on-site; no new businesses, homes or extended infrastructure are proposed. Therefore, project implementation would not induce substantial population growth in the area on-site. Therefore, the project would not displace existing housing or substantial numbers of people. No adverse impacts to population and housing would occur.

13. PUBLIC SERVICES	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

a) **Less than Significant.** The proposed project would not construct new residences or generate substantial numbers of people. Therefore, the project would not adversely impact school facilities or parks. The City of Burbank police and fire departments currently serve the existing hydrogen fueling station on-site. The project would not create a substantial increase in demand for police and fire services over what is presently being provided. The site would meet all state and local fire regulations and be equipped with flame and hydrogen gas detection equipment. Potential accident scenarios, including those resulting in fire, were evaluated in Section 7, Hazards and Hazardous Materials, below. The analysis found no significant project impacts with regard to accidental fire scenarios. The facility would also be secured with a seven-foot high chain link fence and benefit from continual presence of police officers accessing the public works yard to reach the CNG fueling station pumps at the yard. In addition, the proposed project would be consistent with the existing zoning and General Plan land use designation[19]. Therefore, the project would be consistent with the anticipated General Plan build-out. The project would not create a need for new public facilities as listed above. Therefore, the proposed project would have less than a significant impact to public services.

[19] City of Burbank, *City of Burbank General Plan*, Land Use Element and Map, August 2007.

14. RECREATION	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, including state or national parks, forests, or conservation areas, such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a-b) **No Impact.** The project does not involve the construction of new residences and would not generate substantial numbers of people in the area. Therefore, the project would not impact recreational facilities or require the expansion of existing recreational facilities and will not create an increased demand for (or use of) existing parks or recreational areas, particularly at levels that deteriorate facilities. No adverse impacts would occur.

15. STORM WATER – Would the proposed project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Storm water system discharges from areas for materials storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage delivery or loading docks or other work areas?	☐	☐	☒	☐
b) A significantly environmental harmful increase in the flow rate or volume of storm water runoff?	☐	☐	☒	☐
c) A significantly environmentally harmful increase in erosion of the project site or surrounding areas?	☐	☐	☒	☐
d) Storm water discharges that would significantly impair the beneficial uses of receiving waters or areas that provide water quality benefits (e.g., riparian corridors, wetlands, etc.)?	☐	☐	☒	☐
e) Harm to the biological integrity of drainage systems and water bodies?	☐	☐	☒	☐

a) **Less than Significant.** The project would generate wastewater related to sewage and stormwater runoff. Project related sewage would be treated at the Burbank Water Reclamation Plant (BWRP) and stormwater would be collected on-site and discharged into the Burbank Western Channel. The project would comply with all applicable components of the National Pollutant Discharge Elimination System (NPDES) which regulates discharge into waters of the United States. In general, the stormwater runoff generated from the proposed project would not significantly change compared to existing conditions. Therefore, the potential impact from storm water system discharges is less than significant.

b, c, e) **Less than Significant.** The proposed project would not substantially increase the amount of wastewater or stormwater generated on-site. The quantity of sewage generated would remain substantially the same

after project implementation. Therefore, it is anticipated that the BWRP has adequate capacity to serve the project. In addition, the proposed project would result in approximately the same amount of impervious surface area that presently exists on-site. As such, project related stormwater runoff would be generated at the same quantity and rate that presently occurs on-site. Therefore, the project would not substantially increase wastewater or stormwater runoff generation such that the construction of new or expanded wastewater treatment or drainage facilities would be required.

d) **Less than Significant.** As stated previously, the proposed project would not significantly change the drainage patterns of the project site and therefore would not significantly impair the beneficial uses of receiving waters.

16. TRANSPORTATION/TRAFFIC – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Result in the temporary street or lane closures that would result in either a change of traffic patterns or capacity that is substantial in relation to the existing traffic load and capacity of the street system during construction activities (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
c) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
d) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
e) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
f) Result in inadequate emergency access?	☐	☐	☐	☒
g) Result in inadequate parking capacity resulting in an impact on traffic or circulation?	☐	☐	☐	☒
h) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒
Additional NEPA Questions:	**Yes**			**No**
i) Have all reasonable foreseeable transportation links (e.g. overland transport, port transfer, marine transport, global commons) been analyzed?	☐(N/A)			☐
j) Have both routine transport and reasonable foreseeable accidents been addressed?	☒			☐

16. TRANSPORTATION/TRAFFIC – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
k) Have the annual, total, and cumulative impacts of all DOE and non-DOE transportation been addressed for specific routes associated with the proposed action?		☐(N/A)		☐

a-c) **Less than Significant.** The project site is located on the City of Burbank Public Works Department yard. Regional access to the project area is provided by Interstate 5 and Highway 134. Access to the fueling station is provided off of West Verdugo Avenue. Approximately 60 to 75 vehicles per week would refuel at the new Burbank station initially, whereas the existing station sees about 10 vehicles per week. Routine maintenance of the facility, estimated at one day per month, would be required. This would involve one or two technicians and one vehicle. These increases in vehicular trips are well below the City threshold of 50 trips per day (average daily traffic, or ADT). Refueling activity times occur generally throughout the day on an as needed basis. Roadway peak hours are typically between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. Given the minimal increase in cars, even at peak hours, these traffic effects would be negligible, and the proposed project would not substantially increase traffic volumes beyond existing street capacity during peak traffic hours. Therefore, the proposed project will have less than a significant impact on traffic conditions and road capacity. Implementation of the proposed project would not create logistics issues as the vehicles are well away from the flow of traffic coming and going from the public works yard (this is true for the bus as well). Additionally, the number of vehicles accessing this site would be minor compared the normal flow of traffic through this area. As seen in the Chapter 1, Project Description, Figure 1-8, Large Vehicle Circulation Plan, adequate access and turn-around configurations would be provided. The larger loop demonstrates the turning radius needed for the occasional hydrogen tube trailers (the largest trucks that would access the facility) that enter the site. The smaller look demonstrates the bus turning radius.

During construction, approximately 10 to 12 workers would be anticipated at the construction site. A staging area owned by the City of Burbank occupies the area to the north of the project site would be used. The proposed project would not require lane or street closure. The level of service would not be substantially affected by the minor amount of traffic generated by the proposed project. A less than significant impact would occur.

d) **No Impact.** The Burbank airport is located approximately three miles away from the site. Neither construction nor operation of the proposed hydrogen fueling station expansion would affect air traffic or flight patterns. Therefore, the proposed project would not pose a safety risk through substantially increased traffic levels. No adverse impacts would occur.

e-f) **No Impact.** The main logistical considerations for the proposed station expansion involves accommodating Burbank's new hydrogen bus when refueling as well as the period delivery of hydrogen tube trailers that will be used during initial start-up of the station. The proposed project is an expansion and development of an existing hydrogen fueling station. The proposed layout of the station and building are designed with convenient existing driveway access off of West Verdugo Avenue, with good roadway visibility (driveways located on a non-curving portion of the roadway). Emergency access is also provided off of West Verdugo Avenue. The proposed project is located in an industrial/commercial area and would not pose hazards due to design features. Please see Transportation

and Traffic response "a" and "b" above for additional details on design circulation plan. Therefore, the proposed project will have no adverse effect in either design hazards or emergency access.

g) **No Impact.** During construction, approximately 10 to 12 workers would be anticipated at the construction site. Adequate area for project construction staging will be provided on the public works yard to the north of the project site. This area contains numerous excess parking spaces where construction works would be able to park. Operation of the proposed project would not require the use of (or additional of) parking spaces. The purpose of the project is to provide expanded capacity for refueling. Given the limited number of participants (approximately 60 to 75 a week), on-site parking is not required. Access for parking and neighboring businesses would be not be obstructed by the project. The proposed project would have less than a significant impact on parking.

h) **No Impact.** The proposed project would expand and develop a hydrogen fueling station on City property adjacent to industrial and commercial land uses. The purpose of the project is to serve the surrounding neighboring communities. The project would not conflict with any adopted policies, plans or programs supporting alternative transportation. Therefore, the proposed project would have no adverse effect on policies or plans supporting alternative transportation.

i, k) **Not Applicable.** As discussed in Responses "a-c" above, a negligible increase in traffic would occur with the project. Therefore, additional analysis of local and regional transportation links and cumulative traffic is not warranted or applicable. No adverse impact would occur.

j) **Yes.** Section 7, Hazards and Hazardous Materials, evaluates potential accident scenarios for the project. The analysis concludes that effective design safeguards along with relevant government regulations would be in place to avoid chances of any accident scenario resulting in substantial harm on or beyond the project site.

17. UTILITIES AND SERVICE SYSTEMS – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has	☐	☐	☒	☐

17. UTILITIES AND SERVICE SYSTEMS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐
Additional NEPA Questions:		**Yes**		**No**
h) Have pollution prevention and waste minimization practices been applied for the proposed action and alternatives (e.g. is pollution prevented or reduced at the source when feasible; would waste products be recycles when feasible; would waste products that cannot be prevented or recycled be treated in an environmentally safe manner when feasible; is disposal only used as a last resort)?		☐(NA)		☐
i) If waste would be generated, have the human health effects and environmental impacts of managing that waste, including waste generated during decontamination and decommissioning, been identified?		☐(NA)		☐
j) Have all waste materials been characterized by type and estimated quantity, where possible?		☐(NA)		☐
k) Have all RCRA/CERCLA issues relating to the proposed action and alternatives been identified?		☐(NA)		☐

a) **Less than Significant.** The proposed project is presently developed with an existing hydrogen fueling station. The utilities required for the new station currently exist in sufficient capacity underground in the immediate area. The only solid waste generated by the proposed project would be during routine and periodic maintenance activities. The technicians involved in these maintenance activities will haul away and dispose of any solid waste generated. All the utilities required for the new station are either currently being used by the existing station or they exist underground in the immediate area. Connection of these utilities is not expected to cause any local disruptions. The utilities required by the new station (at 100% capacity) as are follows:

- Natural gas at 1060 SCFH.
- Potable water at 1.6 gpm.
- Electricity at 480 VAC, 60 hertz, 300 amps.
- Waste water at 1.4 gpm.

The project would generate wastewater related to sewage and stormwater runoff. Project related sewage would be treated at the BWRP and stormwater would be collected on-site and discharged into the Burbank Western Channel. The project would comply with all applicable components of the National Pollutant Discharge Elimination System (NPDES) which regulates what can be discharged into waters of the United States. In addition, the project is required to prepare and implement an SWPPP to control

erosion during construction activities[20]. Proper treatment of project related sewage and compliance with the NPDES and SWPPP permit would ensure that the Regional Water Quality Control Board wastewater treatment requirements are not exceeded.

b, c, e) **Less than Significant.** The proposed project would not substantially increase the amount of wastewater or stormwater generated on-site. The quantity of sewage generated would remain substantially the same after project implementation. Therefore, it is anticipated that the BWRP has adequate capacity to serve the project. In addition, the proposed project would result in approximately the same amount of impervious surface area that presently exists on-site. As such, project related stormwater runoff would be generated at the same quantity and rate that presently occurs on-site. Therefore, the project would not substantially increase wastewater or stormwater runoff generation such that the construction of new or expanded wastewater treatment or drainage facilities would be required.

d) **Less than Significant.** The proposed project would be served by Burbank Water and Power and would require potable water at a rate of approximately 1.6 gallons per minute. The project's water demand volume would be relatively small when compared to other land uses and is not expected to aversely affect the local water supply. As such, the less than one-acre hydrogen fueling station project would have sufficient water supplies available through Burbank Water and Power.

f) **Less than Significant.** The project would not generate substantive amounts of hazardous or non-hazardous waste. The project would recycle any removed asphalt and concrete to the degree feasible, and the existing equipment will be removed and reutilized (recycled) elsewhere. Small amounts of non-hazardous trash would be generated during construction and maintenance. This increase is minimal and would not impact landfill capacity.

g) **Less than Significant.** The proposed project would generate a relatively small amount of solid waste (see discussion above) and would comply with all federal, state and local statutes and regulations related to solid waste including all recycling programs provided by the City of Burbank.

h-k) **Not Applicable.** As stated in Response "f" above, the project would not generate substantive amounts of hazardous or non-hazardous waste. The project would recycle any removed asphalt and concrete to the degree feasible, and the existing equipment will be removed and reutilized (recycled) elsewhere. Small amounts of non-hazardous trash would be generated during construction and maintenance. This increase is minimal and would not require additional diversion efforts beyond those currently proposed.

Additional NEPA Questions:

18. SOCIOECONOMIC CONSIDERATIONS –

Would the proposed project:	**Yes**	**No**
a) Have potential effects on land use patterns, as well as consistency with applicable land use plans, and compatibility with nearby uses, been addressed?	☒	☐
b) Have all possible changes in the local population due to the proposed action been considered?	☒	☐

[20] United States Environmental Protection Agency, National Pollution Discharge Elimination System, *Stormwater Pollution Prevention Plans for Construction Activities*, official website, www.cfpub.epa.gov, accessed May 27, 2008.

Additional NEPA Questions:

18. SOCIOECONOMIC CONSIDERATIONS – Would the proposed project:	**Yes**	**No**
c) Have all potential economic impacts been considered, such as effects on jobs and housing, particularly in regard to disproportionate adverse effects on minority and low income communities?	☒	☐
d) Have all potential effects on public water and wastewater services, stormwater management community services and utilities been identified?	☒	☐
e) Have all potential noise effects if the proposed action been identified and applied to community noise level standards?	☒	☐

a) **Yes.** As evaluated in Section 9, Land Use and Planning, the proposed project use is consistent with the existing General Plan and zoning designations, and no adverse effects would occur. Surrounding uses are commercial/manufacturing, compatible with the proposed project.

b) **Yes.** The analysis in Section 12, Population and Housing, concludes that no changes or adverse effects to population or housing would occur. The project site does not contain any residential uses. The site is presently developed with a hydrogen fueling station. No residential uses or people would be displaced. Implementation of the proposed project would not directly or indirectly create an increase in population within the City of Burbank.

c) **Yes.** The proposed project does not contain a residential component and would not be expected to increase population or change the demographic character of the community. The project would generate short-term employment opportunities during construction activities and a minimal increase in potential long-term employment opportunities for maintenance of the expanded facility. No adverse impacts to employment or income are expected.

d) **Yes.** The analysis of Public Services, Recreation, Storm Water, and Utilities and Services (in Sections 13, 14, 15, and 17, respectively) found no significant changes or adverse effects to the community or to community services would occur with the project. The project would not add or remove residential units, would not divide or disrupt the community, and would not require substantial new public services or utilities that would impact the community.

e) **Yes.** Potential noise impacts of the proposed project are evaluated in detail in Section 11. While the project is surrounded by commercial/manufacturing uses, there are residential uses (R-4 zoning) 450 feet to the west of the project site. Noise impacts during both construction and operational phases were evaluated and compared to measured ambient noise levels. Project increases to ambient noise levels in the area would not exceed City of Burbank community noise standards. Impacts would remain within these standards.

19. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐
Additional NEPA Questions:		**Yes**		**No**
d) Have cumulative impacts been considered?		☒		☐

a) **Less than Significant.** As evaluated in Sections 1 through 18, above, all impacts of the project would be below significant levels.

b) **Less than Significant.** Three related projects are known in the project area. As all of the proposed project impacts are either less than significant, the proposed project would not have a cumulatively considerable contribution to area impacts. Cumulative impacts would be less than significant (see also response "d", below.

c) **Less than Significant.** All of the proposed project impacts are less than significant. Thus the proposed project would not have substantial adverse effects on human beings either directly or indirectly.

d) **Yes. Cumulative impacts were considered, as described below for each environmental topic.** This analysis is based on the Cumulative Projects List provided in Chapter 2, Project Description.

Aesthetics

Any potential individual aesthetics, visual, and light and glare impacts of the related projects, if any, would be addressed on an individual project basis. Each would be subject to planning and zoning requirements, as well as design review by the City to ensure that project design is consistent with City standards. Where potential impacts could occur, the City would require appropriate environmental review and analysis, as necessary. However, as stated, these impacts would not be additive to the project's impact. The proposed project would be of a low profile can largely obscured by fencing and other structures and not readily visible from the nearby community. The related projects would not pose an added negative visual impact when combined with the proposed project, given the low visibility of

the proposed project and the considerable distance between the projects. The closest related project is the CNG station on the City of Burbank Public Works Yard, but this facility is also of low profile and not readily visible from the nearby community. The intensification at the project site would be aesthetically consistent with the character and uses in the surrounding area. Therefore, the proposed project, in conjunction with the listed projects, would not have a cumulatively adverse aesthetic impact.

Agricultural Resources

When considered alone, the proposed project would not significantly impact agricultural resources. The City of Burbank does not contain farmland resources, nor any land zoned for agricultural use. Therefore, neither the related projects alone, nor the proposed project in conjunction with the related projects, would result in an adverse agricultural resource impact.

Air Quality

Cumulative air quality impacts are reflected in the SCAQMD Air Quality Management Plan. That plan incorporates local and regional growth projects. The proposed project, as well as the related projects are consistent with existing plans and would not require General Plan Amendments. No substantive cumulative impacts beyond those anticipated and provided for in the long range planning process would occur.

Biological Resources

The existing plus proposed area of development is surrounded by commercial and industrial development. The existing environment in the project area is almost completely developed with buildings. Current and foreseeable future planned developments are limited in number and would be subject to the requirements for preservation of existing open space areas and goals, policies and objectives set out in the City of Burbank General Plan to protect areas of native plants and animals, as well as environmental review under CEQA and other protective laws described in the regulatory discussion earlier. As the related project sites are in developed areas and are not adjacent to natural open space, the related project impacts are likely to be less than considerable, particularly if mitigation is applied as needed on individual project level. As such, the proposed project with the other proposed developments would not provide a cumulatively considerable impact.

Cultural Resources

There are no other known related projects in the proposed project vicinity with the potential to affect cultural resources. The incremental effects of the proposed project are also not cumulatively considerable. Each related project will be evaluated by the lead agency under the CEQA review process to determine if potential for impacts could occur and whether mitigation measures would be required to reduce impacts. Neither the related projects, nor the proposed project combined with the related projects, would have a substantial cumulative impact.

Geology and Soils

The impact of the proposed project on geology and soils is localized and is would not result in substantive impacts. The proposed project would not affect the immediate vicinity surrounding the

proposed project area. The proposed project and the related projects would all be constructed in accordance with the most recent version of the California Building Code seismic safety requirements. Therefore, incremental impacts to area geology and soils resulting from construction and operation of the proposed project or the related projects would not contribute to any cumulatively considerable impacts.

Hazards and Hazardous Materials

Hazardous material impacts typically occur in a local or site-specific context versus a cumulative context combined with other development projects. It is possible, however, for combined effects of transporting and disposal of hazardous materials to be affected by cumulative development. The development of the proposed project, including safety features and law/code compliance would assure no substantial hazardous materials impact to the public or the environment within the vicinity of the project area. Other foreseeable development within the area would be required to comply with appropriate safety regulations. This includes federal and state regulatory requirements for the transport, storage and handling hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials. Therefore, the effect of the project on hazardous materials, in combination with other foreseeable projects, would not be considerable.

Hydrology and Water Quality

As with the proposed project, all related are subject to the same regulations that protect water quality and water resources. These regulations include NPDES permit requirements, implementing stormwater pollution prevention plans, and post-development stormwater quality and quantity requirements. All of these regulations are designed to address the incremental effects of individual projects such that they do not cause a cumulatively considerable impact. Therefore, despite the potential for the related projects to alter drainage patterns and runoff conditions, the adherence to the aforementioned requirements would ensure that they do not result in considerable impacts related to sedimentation, flooding, water quality, drainage system capacity, flood hazard areas, failure of a levee or dam, seiche, tsunami, or mudflows. Therefore, when considered in combination with other developments similarly bound by the same regulations, the proposed project's incremental contribution to water quality and quantity impacts would not be cumulatively considerable.

Land Use and Planning

Implementation of the proposed project would have no adverse impact on land use and planning. The project is consistent with current zoning and the City General Plan and would be compatible with neighboring uses. Related projects must be assessed for zoning and plan consistency, and mitigation measures applied where any land use impacts might be expected. With mitigation (if needed) the related projects would not have a substantial impact. Also, the proposed project in conjunction with the other proposed developments would not have a cumulatively considerable impact.

Mineral Resources

The proposed project would not result in the loss of a known mineral resource that would be of value to the region or the loss of a locally–important mineral resource recovery site. Neither the project nor the related projects are anticipated to result in a substantial loss of mineral resources. Therefore, the

proposed project in conjunction with the other proposed developments would not have a cumulatively considerable impact.

Noise

Because of the combining nature of noise, any project that would individually have a major noise impact would also be considered to have a cumulative noise impact. When considered alone, the proposed project would generate noise from adding more, but very minimal amounts of traffic to the area. The project equipment would also generate noise, but at acceptable levels considering site zoning.. Other anticipated projects would contribute to noise in the area due to increased traffic volumes and other operational increases. With individual project mitigation measures applied where needed, no substantial cumulative impact would occur.

Population and Housing

The proposed project would not directly impact population growth in the surrounding community nor does the project contain a residential component. The proposed project and related non-residential projects would increase infrastructure to serve the existing and planned population in the area. Therefore, the proposed project, taken together with the related projects, would not have a substantial impact on population and housing.

Public Services

Like the proposed project, each related project would be subject to review by the Fire and Police Departments, and would undergo the appropriate level of environmental review by the City. Preparation of an appropriate CEQA document would be required if potentially significant impacts are anticipated (i.e., IS, ND, MND, or EIR). Any environmental documents for those projects must discuss project impacts and individual project mitigation measures may be required to reduce environmental impacts to police, fire and emergency services. Individual project conditions can also be applied to reduce security and fire hazards. The proposed project does not have a major impact on fire or police services, and would not have a cumulatively considerable contribution to these services. Similarly, with departmental review and modifications to project design (or with the application of mitigation measures), the related projects would not have a substantial cumulative impact on police, fire and emergency services in the area.

Recreation

The proposed project would not increase the use of existing neighborhood and regional parks or any other recreational facilities. Neither the proposed project nor the related projects not contain a residential component, and therefore would not need to construct or expand recreational facilities in the area. No cumulatively considerable impacts would occur.

Traffic and Transportation

Each project on the related projects list would be responsible for implementation of project level mitigation measures, where necessary, to reduce the level of impact. The proposed project would not have an individually substantial incremental effect on traffic; nor would it make a cumulatively

considerable contribution to any roadways. With mitigation on the part of individual related projects where warranted, a cumulatively considerable impact would not occur.

Utilities

As with the proposed project, each of the related projects would be required to incorporate utility requirements into project design and obtain the necessary or capacity assurance from affected providers. In the event of a related project impact, each project would implement mitigation measures to reduce that impact. Therefore, cumulative projects would not result in a substantial cumulative impact related to utilities, with or without project impacts.

Socioeconomic Considerations

As described earlier in this cumulative impacts section, neither the proposed nor related projects would result in land use, planning, population, housing or recreational impacts. Agency review of related projects would assure appropriate design features and mitigation measures (where needed) are applied to assure public services and utilities would be adequate to service the projects. Cumulatively considerable impacts would not occur.

2.3 Preparers, Persons Consulted and Bibliography

PREPARERS AND PERSONS CONSULTED

Lead Agencies

CEQA:
City of Burbank (CEQA lead)
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Woodland Hills, California, 91367
Attn: Laura Kaufman, AICP, Director

Development Team

BP America, Inc.
Air Products

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2.4 Acronyms

ADT	Average Daily Trips
APE	Area of Potential Effect
ASME	American Society of Mechanical Engineers
AQMP	Air Quality Management Plan
BCCM	Burbank Center Commercial Manufacturing
BWRP	Burbank Wastewater Reclamation Plant
CEQA	California Environmental Quality Act
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAA	Clean Air Act
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Release Compensation and reliability Act
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CNG	Compressed Natural Gas
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO2e	Carbon Dioxide Equivalent
dBA	Decibels
DOE	United States Department of Energy
DTSC	State of California Department of Toxic Substances
e.g.	exempli gratia "for example"
ESA	Environmental Science Associates
FTA	Federal Transit Association
i.e.	id est "that is"

IP	Internet Protocol
GHG	Green House Gases
HAZID	Hazard Identification
HAZOP	Hazard and Operability
HGM	Hydrogen Generation Module
IEC	International Electrotechnical Commission
lbs	Pounds
Leq	Ambient Average Noise Exposure Level
Lmax	Instantaneous Maximum Noise Level
LST	Local Significance Thresholds
M-2	General Industrial
MND	Mitigated Negative Declaration
N/A	Not Applicable
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NEPA	National Environmental Policy Act
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
PLC	Programmable Logic Controller
PM2.5	Fine Particulate Mater 2.5 micrometers in diameter or less
PM10	Particulate Matter 10 micrometers in diameter or less
PRC	Public Resources Code
Psig	Pounds per Square Inch Gauge (gauge pressure)
R-4	High Density Residential
SCAG	Southern California Association of Governments
SCCIC	South Central Coastal Information Center
SCFH	Standard Cubic Feet per Hour

SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMR	Steam Methane Reformer
SRA	Source Receptor Area
UL	Underwriters Laboratories
URBEMIS	"Urban Emissions" (air quality software)
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

APPENDIX A
Scoping Notice

May 19, 2008

TO: Distribution List

SUBJECT: Request for Public and Agency Scoping Comments on the Environmental Assessment for the Proposed Construction and Operation of a Hydrogen Fueling Station for the City of Burbank, California

The U.S. Department of Energy (DOE) in compliance with the National Environmental Policy Act (NEPA) of 1969, will be preparing an Environmental Assessment (EA) for the proposed construction and operation of an updated hydrogen fueling station, located at 124 S. Lake Street in the City of Burbank, California, in Los Angeles County. Pursuant to the requirements of the NEPA, the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021), DOE is preparing a draft Environmental Assessment (EA) to:

- Identify environmental effects of implementing the proposed action.
- Evaluate viable alternatives to the proposed action, including a no action alternative.
- Describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.
- Characterize any irreversible and irretrievable commitments of resources that would be involved should this proposed action be implemented.

DOE is proposing (pending completion of the NEPA process) to provide funding to Chrysler, LLC., under the Hydrogen to the Highways Program (Award DE-FC36-04GO14285) to construct and operate an upgraded hydrogen fueling station to replace the existing hydrogen fueling station currently in use at the City of Burbank Public Works Yard located in Burbank, California (124 S. Lake Street). The site is located approximately 1,000 feet southwest of Interstate-5, and is bordered by West Olive Avenue to the west, South Varney Street to the north, South Lake Street to the south, and West Providencia Avenue to the east. (See **Figure 1-1: Regional Location and Project Vicinity Map**, attached.) There is currently a 12 kg/day 350 bar station at the proposed project site, which was funded by the South Coast Air Quality Management District (SCAQMD) and began operations in February 2006. As the Burbank property is not large enough to accommodate two hydrogen fueling stations, the existing AQMD equipment would be removed and deployed elsewhere. The deployment location is not currently known; the EA will discuss this issue in further detail. The proposed upgraded Burbank hydrogen fueling station would encompass an area roughly equivalent to the current station footprint and would be located in the same area (northeast corner) of the City of Burbank Public Works Yard. Demolition of the old station and construction of the new station is currently estimated to take approximately 2.5 months.

Pending completion of the NEPA process and approval of DOE funding to Chrysler, LLC., British Petroleum (BP) would design, construct and operate a hydrogen fueling facility capable of storing and dispensing approximately 108 kg of hydrogen per day for use in fuel cell vehicles and hydrogen-ICE vehicles at the project site. The hydrogen fueling station would be fully automated and designed for 24/7 operation. The station would consist of the following five primary modules:

- 108 kg/day steam methane reformer (SMR) hydrogen generator and low pressure surge vessel
- 350 bar Compression system
- Gaseous buffer storage (~240 kg)
- 700 bar Booster Compressor
- Automated Dispenser / Cooling System

The SMR Hydrogen Generator is designed for continuous operation, with hydrogen production that can be manually adjusted between 55 percent and 100 percent capacity (~60 to 108 kg/day). The Compression System would typically be in a "standby" mode with the buffer storage filled to approximately 7,000 pounds per square inch guage (psig). The hydrogen generation, compression, storage and dispensing system would be monitored by a flame detection system and the dispenser would also be monitored by a gas detection system. In addition, the system would be mechanically protected by pressure relief valves that relieve to a vent stack.

Construction of the proposed project would begin by July 31, 2008. Station start-up is anticipated to begin in late-October, with debugging and lining-out of operations potentially extending into early-November. BP) proposes to operate the station until September 30, 2009, until which time the station ownership would be transferred to the City of Burbank, which would continue to operate the site indefinitely. The main scope of this project is to test hydrogen infrastructure on a larger scale while utilizing an SMR and providing high pressure dispensing, while still attending to the needs of low pressure vehicles.

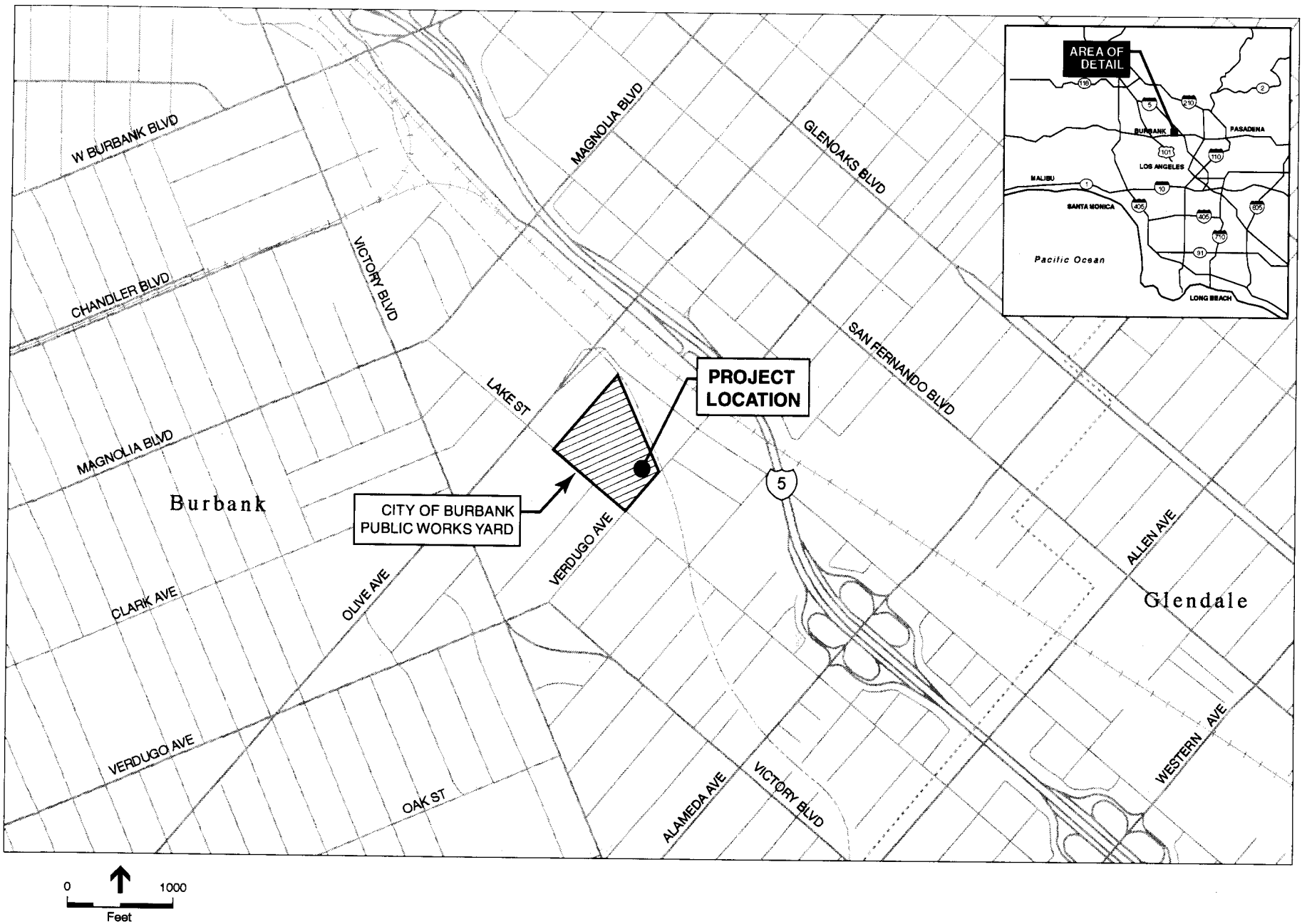
DOE is the lead agency under NEPA for this EA, and other federal, state, and local agencies are invited to participate in the environmental documentation process. DOE is requesting public input on the proposed NEPA process, proposed actions and alternatives, and the environmental issues to be addressed in the EA. Given the location of the proposed project in California, DOE will also coordinate with the California Environmental Quality Act (CEQA) requirements with the City of Burbank as lead agency under CEQA, as appropriate.

Please direct all written comments and pertinent information to the environmental consultant:

Environmental Science Associates (ESA)
21650 Oxnard Street, Suite 1680
Woodland Hills, California 91367
Attn: Laura Kaufman
lkaufman@esassoc.com

In addition, DOE plans to distribute the Draft EA for public review and comment when complete. This letter and the Draft EA, when available, will be posted on the DOE Golden Field Office electronic reading room at www.eere.energy.gov/golden/reading_room.aspx.

Please provide your input regarding the proposed project **on or before June 18, 2008**. Thank you and we look forward to hearing from you.



SOURCE: ESA

Burbank Hydrogen Fuel Station . 208194

Figure 1-1
Regional Location and
Project Vicinity Map

APPENDIX B
Air Quality Calculations

CONSTRUCTION EMISSIONS ESTIMATES

ONSITE EMISSIONS

			Emission Factor lbs/hour								Worst-Case Emissions							
	Hours/day	Days	VOC	CO	NOx	SOx	PM10?	PM2.5*	CO2	CH4	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Equipment																		
Backhoe (250 hp) - 1	8	40	0.16	0.45	1.79	0.00	0.06	PM10*0.92	171.74	0.01	1.28	3.56	14.35	0.02	0.48	0.44	1373.90	0.12
Crane (250 hp) - 1	8	40	0.14	0.39	1.39	0.00	0.05	PM10*0.92	112.16	0.01	1.11	3.10	11.09	0.01	0.43	0.39	897.27	0.10
Dump Truck (250 hp) - 1	8	40	0.18	0.48	1.86	0.00	0.07	PM10*0.92	166.55	0.02	1.46	3.84	14.89	0.01	0.53	0.49	1332.36	0.13
									Onsite Total (lbs/day)		**3.85**	**10.51**	**40.34**	**0.04**	**1.43**	**1.32**	**3603.53**	**0.35**
									Onsite Total (tons/year)		**0.08**	**0.21**	**0.81**	**0.00**	**0.03**	**0.03**	**72.07**	**0.01**

Sources: SCAQMD, 2008. 2008 calendar year.
*Estimated using SCAQMD, 2006
Note: Total of 54 days of construction (2.5 months, five days a week).

OFFSITE EMISSIONS

				Emission Factor lbs/mile								Worst-Case Emissions							
	trips/day	miles/trip	Days	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Passenger Vehicles	12	20	54	0.001079193	0.0105	0.00110288	1.1E-05	8.51E-05	5.2928E-05	1.09953	9.46E-05	0.26	2.53	0.26	0.00	0.02	0.01	263.89	0.02
Delivery Trucks	10	80	54	0.002992704	0.0219	0.02371258	2.6E-05	0.000856	0.00073933	2.71943	0.000148	2.39	17.56	18.97	0.02	0.68	0.59	2175.55	0.12
										Offsite Total (lbs/day)		**2.65**	**20.09**	**19.23**	**0.02**	**0.71**	**0.60**	**2439.43**	**0.14**
										Onsite Total (tons/year)		**0.07**	**0.54**	**0.52**	**0.00**	**0.02**	**0.02**	**65.86**	**0.00**

Sources: SCAQMD, 2008. 2008 calendar year.
*Estimated using SCAQMD, 2006

FUGITIVE DUST

EF (pounds/acre-day)	acres disturbed	days		PM10	PM2.5*
38.5	0.25	40	**(lbs/day)**	**9.63**	**2.00**
			(tons/year)	**0.1925**	**0.04**

Sources: URBEMIS 2007 Version 9.2.4. Most conservative fugitive dust default emission factor.
*Estimated using SCAQMD, 2006
Note: Total of 54 days of construction (2.5 months, five days a week).

TOTOAL EMISSIONS	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Total (lbs/day)	6.50	30.60	59.57	0.06	11.76	3.93	6042.96	0.49
Total (tons/year)	0.15	0.75	1.33	0.00	0.24	0.08	137.94	0.01

Scenario Year: **2008**

All model years in the range 1965 to 2008

Passenger Vehicles (pounds/mile)	
CO	0.01054844
NOx	0.00110288
ROG	0.00107919
SOx	0.00001075
PM10	0.00008505
PM2.5	0.00005293
CO2	1.09953226
CH4	0.00009465

Delivery Trucks (pounds/mile)	
CO	0.02194915
NOx	0.02371258
ROG	0.00299270
SOx	0.00002565
PM10	0.00085607
PM2.5	0.00073933
CO2	2.71943400
CH4	0.00014769

Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Passenger Vehicles & Delivery Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)

Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:

Passenger Vehicles (<8500 pounds) & Delivery Trucks (>8500 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:

Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

SCAB Fleet Average Emission Factors (Diesel)

Off-road EFs

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	MaxHP	ROG	CO	NOX	SOX	PM	CO2	CH4
Cranes	50	0.1466	0.3359	0.2624	0.0003	0.0320	23.2	0.0132
	120	0.1261	0.3807	0.7275	0.0006	0.0664	50.1	0.0114
	175	0.1345	0.4936	1.0417	0.0009	0.0589	80.3	0.0121
	250	0.1392	0.3881	1.3867	0.0013	0.0535	112	0.0126
	500	0.2012	0.7762	1.9878	0.0018	0.0771	180	0.0182
	750	0.3409	1.3011	3.4224	0.0030	0.1310	303	0.0308
	9999	1.2096	4.8072	13.0905	0.0098	0.4143	971	0.1091
Cranes Total		0.1778	0.6011	1.6100	0.0014	0.0715	129	0.0160
Off-Highway Truck	175	0.1962	0.7669	1.4779	0.0014	0.0867	125	0.0177
	250	0.1822	0.4799	1.8617	0.0019	0.0659	167	0.0164
	500	0.2727	0.8739	2.6600	0.0027	0.0984	272	0.0246
	750	0.4454	1.4136	4.4516	0.0044	0.1621	442	0.0402
	1000	0.7106	2.4058	7.9819	0.0063	0.2445	625	0.0641
Off-Highway Trucks Total		0.2730	0.8499	2.7256	0.0027	0.0989	260	0.0246
Tractors/Loaders/B	25	0.0237	0.0716	0.1396	0.0002	0.0086	15.9	0.0021
	50	0.1537	0.3831	0.3222	0.0004	0.0362	30.3	0.0139
	120	0.1083	0.3703	0.6510	0.0006	0.0595	51.7	0.0098
	175	0.1405	0.5903	1.1212	0.0011	0.0634	101	0.0127
	250	0.1598	0.4453	1.7937	0.0019	0.0598	172	0.0144
	500	0.2897	0.9591	3.1387	0.0039	0.1102	345	0.0261
	750	0.4409	1.4353	4.8706	0.0058	0.1681	517	0.0398
Tractors/Loaders/Backhoes Total		0.1204	0.4063	0.7746	0.0008	0.0599	66.8	0.0109

OPERATIONAL EMISSIONS

ONSITE EMISSIONS

flow			ppm	mol weight	r minute ma g/m	daily mass g/day	annual mass g/year	daily lb / day	annual mass ton / year
300	scfm								
		CO2	59000	44.01005	913.36715	1315248.696	480065774	2,899.64	529.18
		NO	4	30.0061	0.0422193	60.7957961	22190.4656	0.13	0.02
351.756	gmol/minute								
		CO	50	28.01055	0.492644	709.4072899	258933.661	1.56	0.29

OFFSITE EMISSIONS

				Emission Factor lbs/mile							
	trips/day	miles/trip	Days	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
HHDT	1	50	10	0.0035	0.0136	0.0446	0.0000	0.0022	0.0019	4.2107	0.0002

Notes: Heavy-Heavy Duty Truck (HHDT) trips are associated with 10 annual hydrogen tube truck deliveries.

	Worst-Case Emissions							
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
	0.18	0.68	2.23	0.00	0.11	0.09	210.53	0.01
pounds/day	0.18	0.68	2.23	0.00	0.11	0.09	210.53	0.01
tons/year	0.00	0.00	0.01	0.00	0.00	0.00	1.05	0.00

TOTAL EMISSIONS

	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
pounds/day	0.18	2.24	2.36	0.00	0.11	0.09	3110.18	0.01
tons/year	0.00	0.29	0.04	0.00	0.00	0.00	530.24	0.00

Burbank H2 Station Emissions

flow		ppm	mol weight	per minute mass g/m	daily mass g/day	annual mass g/year	daily lb / day	annual mass lb / year	Conversions of CO2 to metric tons annual mass metric tons	plus construction emissions	
300 scfm											
	CO2	59000	44.01005	913.3671497	1315248.7	480065773.9	2900	1,060,000	480.7	125.3	606.0
									480.9416957		606.3
	NO	4	30.0061	0.042219303	60.795796	22190.46558	0.13	49			
351.756 gmol/minute											
	CO	50	28.01055	0.492643951	709.40729	258933.6608	1.56	571			

Source: BP, 2008

530.24	0.00
137.94	0.01

APPENDIX C
Hazards and Hazardous Materials

Appendix C – Hazards and Hazardous Materials

Summary of the HAZOP and HAZID for the Proposed Burbank Hydrogen Fueling Station

This Appendix C summarizes the Hazard and Operability (HAZOP) and the Hazard Identification (HAZID) studies that were prepared for the proposed Burbank Hydrogen Fueling Station, and it is based on notes taken by Environmental Science Associates (ESA) after review of documents supplied by BP on June 24, 2008. The documents were returned to BP the same day of the review. The memorandum supplements the information contained in the Hazards Section of the ND/EA for the proposed facility.

The documents that were reviewed include:

- Burbank Hydrogen Fuelling Facility Hazard Identification (HAZID) Workshop, prepared by MMI Engineering, Ltd., May 28, 2008.
- Burbank Hydrogen Fuelling Facility Site-level HAZID, Prepared by MMI Engineers, Ltd., June 16, 2008.
- BP Burbank S300/S700 Hydrogen Fueling Station Process Hazards Analysis Report, Issued June 23, 2008.
- HAZOP Worksheets for the Reformer Equipment, Issued May 29, 2008, and the Fueling Station Equipment, Issued March 26, 2008.
- Piping and Instrumentation Diagrams (P&IDs) for the proposed facility
- Process Flow Sheets.

A Hazard and Operability Study (HAZOP) is a systematic qualitative technique to identify process hazards and potential operating problems that could occur. It relies on a series of guide words that allow the HAZOP team to study process deviations. Typical guide words could be: more flow, less floe, more temperature, less temperature, etc. The HAZOP for the proposed Hydrogen Fueling Station was conducted in three sessions, each one covering a different part of the facility operations. The sessions were conducted on 3/26/08, 5/15/08, and 5/29/08. All or parts of the sessions were attended by representatives of the following firms involved with the project: BP, Air Products, Inc., Burbank Public Works Department, Barghausen Consulting Engineers, Burbank Fire Department, MMI Engineering, Ltd., and ESA.

Subsequent to the HAZOP sessions, a Process Hazards Analysis (PHA) report was prepared by BP on June 23, 2008 which summarizes the results of the HAZOP sessions. The PHA reported that the safety review of the equipment was broken down into two different sets of HAZOPs: 1.) covering all equipment downstream of and including the tube trailer supply and S300 compressor skid, and 2.) the CNG supply, the reformer, utility island and CO analyzer.

For the first set of HAZOP worksheets, 24 nodes in the system were considered when addressing possible hazards, and for the second set, 22 nodes were considered, dealing mainly with the reformer. During the three HAZOP sessions, all possible deviations were considered, and at the end of the sessions, the team made recommendations on possible changes to the system that

would result in safer operations. The team then approved the system as safe for operations provided that the recommendations are implemented.

Subsequent to the HAZOP study, a HAZID was prepared to ensure the overall integrity of the facility and to manage the overall risk presented by the facility. The HAZID is intended to supplement the HAZOP, as it focuses on the site level issues rather than the detailed systems/subsystems components. The HAZID identifies hazards which are attributed to the local environment in which the hydrogen systems are located and it determines the associated risk. It also determines whether additional risk control measures and design changes would be required to minimize the overall risk from the facility.

A HAZID workshop was conducted on May 29, 2008, led by MMI Engineers, Ltd , with the same participants as those attending the HAZOP sessions. After review of design of the facility and operations procedures, the HAZID team concluded the following:

- The facility is located within a well managed site and is well protected from external impacts with a drainage channel acting as a buffer from offsite locations;
- The facility is placed in a set-back position on the Public Works Department (PWD) site to further isolate it from neighboring locations; and
- The type of equipment chosen for the facility is designed to minimize risks, as the facility benefits from other facilities built and operated elsewhere.

With these design features in mind, the HAZID focused on specific site level hazards that possibly could occur at the Station located within the PWD site in Burbank. The HAZID team considered sixteen possible scenarios and found no medium or high risk hazards that could occur at the facility. Only four low risk hazards were identified, mainly because the facility benefits from experience gained at other similar facilities. The four low risk scenarios considered were:

1. Tube trailer backing up and colliding with the units – frequency 3 (0.03/yr), likely to happen over the life of the project, but offsite consequence low.
2. External fire – frequency 2 (0.0003/yr), unlikely to happen within the life of the project.
3. Fire within the reformer – frequency 2 (0.0003/yr), unlikely to occur within the life of the project and offsite impact low because of limited inventory.
4. Small torch fire from incoming natural gas supply – frequency 1 (0.0001/yr) unlikely to occur within the life of the project; offsite impact would be low because gas-line pressure is relatively low and fire would be limited.

Of the four events considered, only the first one had a frequency high enough that could occur during the life of the facility. As a result design changes were proposed to eliminate this event. The installation of wheel stops was added to prompt the driver that the backup limit had been reached, thus preventing a collision of the tube trailer with the facility. In addition, to prevent the tube trailer from continuing backward if the driver becomes suddenly ill, additional bollards will be installed well short of the units.

With these project changes, the HAZID concluded that all possible accident scenarios would be eliminated, and the facility would be operated safely.