

Gas Safety
Public Education Strategic Plan

March 2005

Prepared by the
Public Awareness Subcommittee
**British Columbia Gas Industry Safety Advisory
Committee**

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Introduction

In the spring of 1995, the Minister of Municipal Affairs and Housing launched the Safety Systems Review (SSR) – an independent, public-private sector review of the safety system in British Columbia. The SSR identified the need for clarity in defining the roles and responsibilities of all participants in the delivery of public safety. It also recognized that the public has a role in managing their personal safety. An informed public will enhance the effectiveness of the provincial safety system and minimize the potential for accidents.

In May 2003, the Province of British Columbia established the British Columbia Safety Authority (BCSA), a not-for-profit corporation to administer the service delivery components of the *Safety Standards Act*. The BCSA commenced operations on 1 April 2004 to deliver services that apply to work and products related to natural gas and propane systems and equipment.

The 8 April 2004 edition of this plan was submitted to the Ministry of Community, Aboriginal and Women's Services and the BCSA. The Minister responded that as part of the delegation of administration of the Safety Standards Act on 1 April 2004, 'the responsibility for public safety education in British Columbia was delegated to the British Columbia Safety Authority'.

The BCSA has been delegated a significant leadership role in public safety education. While responsibility for safety policy continues to rest with the government; the stand-alone BCSA will deliver safety services.

The Public Awareness Subcommittee has operated continuously since January 1998 and has developed an understanding that public awareness of the risks, and actions that people can take to mitigate risks, will reduce the probability for and impact of incidents.

This strategic plan was developed by the Subcommittee to provide guidance to the BCSA, the Ministry, and industry stakeholders in the continued development and delivery of gas safety public education activities. It should be maintained by regular updating to address changes in public knowledge and technological advances. The BCSA Business Plan indicates a strategy to partner with clients, stakeholders and other safety authorities and jurisdictions. The BCSA Consultation Plan, approved by their Board in December 2004, enables continued development and implementation of this Gas Safety Public Awareness Strategic Plan.

The principles and processes utilized in the gas discipline may have relevance to other BCSA disciplines (e.g. electrical).

Mission Statement

The British Columbia Gas Safety Public Awareness Program enhances activities that will promote public safety by increasing customer and public knowledge about the delivery and use of natural gas and propane.

Regulatory Jurisdiction and Applicable Codes

The British Columbia Safety Authority and the Oil and Gas Commission have been delegated provincial regulatory authority and responsibility for gas safety. The province adopts Canadian Standards Association national standards as minimum requirements for installation, operation and maintenance.

British Columbia Safety Authority (BCSA)

- B149 Propane and Natural Gas appliances, piping, and vents
- B149 Propane and Natural Gas vehicle conversions
- B149 Propane plants, refilling stations, tank and cylinder installations
- Z662 Utility piping 700 kpa (100 psig) or less

Oil and Gas Commission (OGC)

- Z662 Utility piping over 700 kpa (100 psig)
- Z662 Transmission pipe

Background

The Public Awareness Subcommittee was established by the Gas Safety Advisory Committee in January 1998 to address public awareness recommendations of the juries at the coroner's court inquests into two high profile gas incidents:

- January 1997 propane gas explosion in Kamloops that resulted in two deaths
- April 1997 natural gas explosion in Quesnel that resulted in six deaths

The coroner's recommendations included:

- More emphasis on PUBLIC AWARENESS for the safe handling of usage of LPG through demonstrations in public seminars, schools, and home shows.
- A comprehensive educational awareness program regarding natural gas and propane to include adults, young adults, and school children, including:
 - visits to schools
 - visits to RV parks and campsites
 - on-going campaigns
 - province-wide demonstrations to all of the public
 - mall displays at least twice a year before fall servicing of natural gas appliances and before spring barbecues
 - multi media, multi-linguistic exposure

The coroner's recommendations suggested the need for a comprehensive public education and awareness program for propane and natural gas. While the government and industry had historically distributed safety information and devoted personnel to educate and respond to customer and public safety issues, the recommendations indicated that members of the coroner's juries did not perceive that the efforts by individual organizations were collectively delivering an effective comprehensive province-wide safety awareness program. The incidents increased awareness that gas safety events can affect members of the public who are not necessarily gas customers and regular gas users.

Objectives

- Enhance community safety by increasing public awareness of gas safety risks and actions that can be taken to minimize potential for accidents.
- Assist in delivery of the Ministry of Community, Aboriginal and Women's Services' mission to work in partnerships to support safe, secure and healthy communities.
- Assist British Columbia Safety Authority to prepare and deliver a comprehensive gas safety public education program.
- Advocate for and monitor the effectiveness of sustainable joint industry / government gas safety public education programs.
- Update the provincial gas safety public education strategy to reflect transition to new regulatory model.
- Provide messaging which shapes a positive view for development of provincial gas exploration, transmission and natural gas and propane gas distribution businesses.

Significant Activities of the Public Awareness Subcommittee

- Facilitated greater sharing of information and more consistency in government and industry communications (content and timing).
- Initiated greater use of media advisories by government and industry.
- Instigated increased activity in radio and newspapers.
- Facilitated expanded safety information on industry and government web sites.
- Developed standard natural gas safety (scratch and sniff) and carbon monoxide brochures in three languages -- English, Punjabi and Chinese -- for distribution by Fire Services, BCSCA, natural gas utilities, and community groups.
- Developed propane safety brochure for distribution by Fire Services, BCSCA, propane marketers, propane utilities, and community groups.
- Partnered with the Fire Services to create a series of seven posters to complement and increase awareness of the brochures.
- Partnered with Fire Services to develop gas safety component in provincial curriculum (Getting to Know Fire).
- Provided materials for local fire departments to distribute gas safety messages at schools and community events.
- Authored the Gas Safety Public Education Strategy 1998/99.
- Recommended communication strategies for issues identified by other Gas Industry Safety Advisory Committee (GISAC) subcommittees.
- The Public Awareness Subcommittee meets regularly to discuss issues and remedial actions that can be taken and carries forward recommendations to the GISAC.

The initial Gas Safety Public Education Strategy (1998/99) resulted in substantial industry and government activity to improve public gas safety knowledge. In order to build upon the successes of the Public Awareness Subcommittee and the previous plan, the Subcommittee has prepared this revised plan.

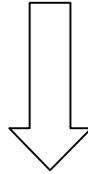
Situational Analysis

- While natural gas and propane have excellent safety records when compared to other energy sources, an incident can place both individuals and property at risk.
- As gas users or customers, individuals have an active role in gas public safety.
- The general public and other 3rd parties also have a role. While they may not directly be a natural gas or propane customer, they may reside, work, or occupy buildings that are served by gas.
- Informed public and customers who understand the risk and actions to take in an emergency can reduce the probability for and the consequences of an accident. Aware individuals will have fewer accidents.
- A natural gas or propane accident could adversely affect the reputation of the industry and the province.
- A number of government Ministries, agents, designates and corporations deliver information on gas safety to customers and the public. Co-ordination of the activities by the government or its designate will result in a comprehensive provincial gas safety awareness program with consistent messages.
- An effective and sustainable comprehensive program requires a strategic plan including delivery, budget, responsibilities and measurement.
- A good safety record is an enabler and facilitator for gas exploration, transmission, and distribution businesses. The provincial Ministry of Energy is forecasting a record \$2 billion in oil and gas revenue for the current fiscal year. If the public does not perceive that gas is safe or an acceptable risk, the ability to expand the industry and government revenues may be compromised.
- Gas transmission and utility gas pipes (natural gas or propane) are installed in right-of-ways and road allowances in most communities. Utility service pipes lead to individual buildings. There is a risk that excavation contractors will damage these pipes and cause gas leakage, fire, or explosion.
- In areas not served by underground natural gas or propane underground utility systems, propane is available by the use of on-site tanks or portable cylinders. The on-site tanks are refilled from a propane bulk truck, or portable cylinders are refilled at depots and service stations.
- Customer owned gas appliances and piping systems are installed in buildings. Customers require information on installation, operation and maintenance, and how to recognize an abnormal or upset condition.

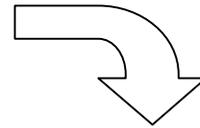
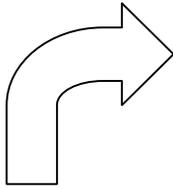
- Incomplete combustion of natural gas or propane can result in carbon monoxide. Gas customers or the public may encounter carbon monoxide.
- Because of its portability and convenience, propane is used in barbecues, heating torches, camping equipment, recreational vehicles and boats.
- Natural gas and propane are both used as transportation fuels. Trucks and cars are refilled at service stations accessible to the public.
- Hydrogen gas is being introduced as a transportation fuel and may be featured fuel for 2010 Olympics
- Individuals who are not gas customers or users may become involved should there be gas leakage or improper operation of appliances and equipment (gas leakage may be outside, or they may reside, work or visit buildings that have gas service).
- Non-English speaking population is increasing. Safety information in English may not reach or be understood.

PROCESS FLOW CHART

Establish Administration and Support

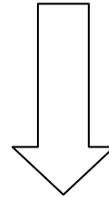
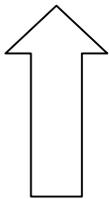


Identify Stakeholder
Audiences



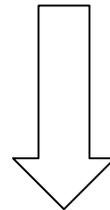
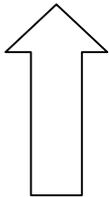
Evaluate Program and
Implement Continuous
Improvement

Determine Messages



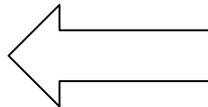
Implement Program
and Track Progress

Establish the
Frequencies



Assess Need For
Program Enhancement

Establish the
Delivery Methods
and Participants



Key Messages

- Gas is a safe, efficient, clean and reliable fuel.
- Gas safety is everyone's responsibility.
- Natural gas & propane gas smell like rotten eggs or sulphur.
- When you smell gas, act fast.
- Know how to use gas safely.
- Call before you dig.

Gas Safety Topics

The following is an alphabetic list of gas safety topics. They are not prioritized.

Call Before You Dig

Excavation contractors, municipalities and the public need to be aware of the requirement to call for gas line location information before excavating. The gas line location must be confirmed by hand digging before using mechanical equipment.

Carbon Monoxide

Carbon monoxide is produced when fuels are burned incompletely. Improperly installed, operated or poorly maintained appliances may create unsafe levels of CO. The public needs to be aware of symptoms of carbon monoxide. This includes users of propane camping equipment, recreational vehicle occupants, and boat operators. The public needs information on the selection of carbon monoxide alarms and health monitors.

Corrugated metal appliance ‘Flex’ connectors

Potential for damage during appliance movement for cleaning, etc.

Customer Owned Appliance Operation and Maintenance

Operators or owners of gas appliances need to know how to operate appliances and that they require periodic maintenance. This includes tenants who may not be the gas customer.

Customer Owned Piping Inspection and Maintenance

The public needs to know that their buried metallic fuel lines beyond the outlet of the gas meter or propane tank may corrode and need periodic maintenance and inspection. Pipes may be coated or provided with cathodic protection to minimize the potential for corrosion.

Emergency Preparedness

Public should be aware of actions to prepare for earthquakes, floods, fire, etc. and what to do should any of these occur. An example is securing water heaters to prepare for an earthquake.

Flammable Vapours and Combustibles

Flammable vapours and combustibles should not be stored or used in the vicinity of gas appliances as they can be ignited by appliance pilots or burners (e.g. gasoline, solvents).

Gas Leak Recognition and Response

Public and gas customers need to know the odour of natural gas and propane gas. Individuals should leave the area and contact the gas supplier or emergency services if a gas leak is suspected.

Gas Meter Access

Gas meters must be accessible for emergency responders. Customers need to know that meters should not be enclosed or built over. Accumulated snow and ice should be removed.

Gas Pipe System Awareness

Public needs to be aware that underground gas pipes are located in right-of-ways, public road allowances, and in private property to transport gas from northern B.C. and Alberta to gas customers.

Hot Water Scalding

Children and seniors are vulnerable to hot water scalding. Measures can be taken to reduce the risk (education, tempering valves, and turning down heater temperature control). This also applies to electric water heaters.

Hydrogen

Hydrogen gas is being introduced as a transportation fuel. Companies in British Columbia are leading the development of hydrogen fuel cells and other applications.

Technology Introduction

Public and involved stakeholders need to know how to safely use new technologies and products that are becoming available.

Permits, Inspection, Codes and Standards

Public and other stakeholders need to know role of BCSA, products and services that are regulated, need for permits, inspection practices, and relevant codes and standards.

Propane Cylinder Refill and Transport

Propane and butane are portable fuels used in recreational vehicles, camping equipment, barbecues, boats, etc. Most appliances and cylinders are not intended for inside use and clearances to combustibles must be maintained. Propane and butane cylinders are connected and disconnected by consumers and transported from point of sale and to refill stations or exchange centers. Propane cylinders must be transported securely and upright in ventilated spaces.

Propane and Natural Gas Dispensing

Self-service of propane and natural gas for vehicle use requires that vehicle operators understand proper procedures for dispensing fuel. This will apply to hydrogen as it is introduced for motor fuel purposes.

Propane Recreational Vehicle Refueling

Vehicle owners and filling station staff need to take precautions to shut off appliances and other sources of ignition before commencing refueling.

Qualified Personnel

Only qualified personnel should install and service gas equipment. Owners and operators of gas equipment should be encouraged to seek out licensed gas contractors who employ gas fitters and to ask for proof that they are registered with the BCSA.

Right of Way Identification and Restrictions

Landowners and those working around pipelines need to be aware of limitations on activities on a gas pipeline right-of-way.

Stakeholders

The following industry stakeholders may provide gas safety information to the public. The list is alphabetical and not prioritized.

- Accredited Standards Organizations
- Appliance and equipment manufacturers and distributors
- Approved Inspecting Contractors
- BC ONE CALL
- British Columbia Safety Authority
- British Columbia Utilities Commission
- Building Contractors
- Certification Laboratories
- Engineers, Architects, Designers
- Excavation Contractors
- Fire Services
- First Nations
- Gas Brokers
- Gas Safety Advisory Committee and it's subcommittees
- Gas Transmission Companies
- Gas Users
- Gas Utilities
- Holders of Gas Certificates of Qualification
- Hydrogen Industry
- Industry Associations
- Licensed Gas Contractors
- Media
- Ministry of Community, Aboriginal and Women's Services
- Ministry of Energy and Mines, Oil and Gas Commission
- Operating Permit Holders
- Provincial Emergency Program
- Propane Distributors
- Propane Transporters
- Public
- Real Estate Boards
- Training Institutes

Primary Audiences

- Affected Public
- Emergency and Public Officials
- Installation and Service Providers and Retailers
- Excavators

Secondary Audiences

Each primary audience can be broken down into components. The following lists are representative and do not necessarily include all secondary audiences.

Affected Public

- Existing natural gas and propane customers
- New natural gas and propane customers who may not have previously used the products (includes new immigrants who may not have had access to these products and may not read or speak English)
- Individuals who may notice a gas odour indoors or outside
- Individuals who live adjacent to gas transmission, gas distribution and sour gas pipes
- Public building owners and maintenance personnel
- Community organizations
- Strata Councils
- School children
- Babysitters and occasional care givers

Emergency and Public Officials

- BCSA and OGC staff
- Provincial Emergency Program (PEP)
- Other provincial government Ministries and agencies
- Emergency Responders (Fire, Police and Ambulance)
- Elected Representatives
- Planning and land use officials
- Health care workers (identification of carbon monoxide poisoning)
- Fire Department Public Educators
- Building owner / tenants emergency response teams

Installation and Service Providers and Retailers

- Appliance and equipment manufacturers, distributors and retailers
- Gas installation and service contractors and gas fitters

Excavators

- General contractors
- Excavation contractors and equipment operators
- Municipal installation and maintenance crews
- Utility planning and excavation personnel

Delivery Channels

- Appliance and equipment manufacturers and distributors
- BC ONE CALL
- BC Safety Authority
- Certification laboratories
- Community organizations
- Fire department public educators
- Gas contractors
- Gas fitters
- Gas transmission pipeline companies
- Government Ministries, agents and delegates
- Industry associations
- Media (print, radio, TV, community)
- Natural gas and propane utilities
- Oil and Gas Commission
- Operating permit holders
- Propane marketers
- Recreational vehicle sales and service
- Rental companies (excavation equip, portable heaters)
- Retail stores
- Schools
- Training institutes

Evaluation

Periodic evaluation is required in order to maintain and enhance this strategic plan.

The responsibility for public safety education in British Columbia has been delegated to the British Columbia Safety Authority. Policies and procedures are necessary to properly document its Public Awareness Program and retain those key records for purposes of program evaluation.

Purpose and scope of evaluation:

- Assess whether strategic plan has been communicated and implemented
- Assess whether activities are effective in meeting the objectives of the strategic plan
- Provide information to enhance the strategic plan

2005 Strategic Initiatives

1. Strategic Plan Ownership and Administration

Strategic Plan Ownership and Administration		
TASK DESCRIPTION	ACTION	TIME LINE
Establish BCSA Gas Safety Public Awareness Ongoing Ad Hoc Issue Group	BC Safety Authority	March / April 2005
Accept or Update March 2005 Gas Safety Public Education Strategic Plan	BC Safety Authority	
Develop BCSA policies and procedures for program documentation and evaluation	BC Safety Authority	
Complete tabulation of all activities and stakeholder activities that comprise the provincial gas safety public education program	BC Safety Authority Gas Safety Public Awareness Issue Group	

2. 2005 Gas Safety Key Messages

2005 Gas Safety Key		
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Messages		
TASK DESCRIPTION	ACTION	TIME LINE
2005 priority messages as recommended at 17 February meeting of Gas Safety Public Awareness Subcommittee: <ul style="list-style-type: none"> • Carbon monoxide safety • Natural gas / propane odour & response • Appliance and vent maintenance • Vehicle refueling (propane recreational and motor fuel) 	BC Safety Authority Gas Safety Public Awareness Issue Group	
Establish timing for delivery of each message	BC Safety Authority Gas Safety Public Awareness Issue Group	
Explore opportunities for partnerships with appropriate community and corporate sources to deliver the messages	BC Safety Authority Gas Safety Public Awareness Issue Group	
Co-ordinate activities so that available resources can be most effectively utilized	BC Safety Authority Gas Safety Public Awareness Issue Group	

3. BCSA Web Site Enhancement

BCSA Web Site		
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TASK DESCRIPTION	ACTION	TIME LINE
Enhance safety education component on the Authority internet site	BC Safety Authority	
Increase public knowledge that safety information is posted on the BCSA web site	BC Safety Authority	

4. Sour Gas Leakage

Sour Gas Pipelines		
TASK DESCRIPTION	ACTION	TIME LINE
Review need for public information on sour gas pipelines in affected communities. Draft and circulate message to stakeholders for review and comment	BC Safety Authority Oil and Gas Commission Gas Safety Public Awareness Issue Group	May 2005