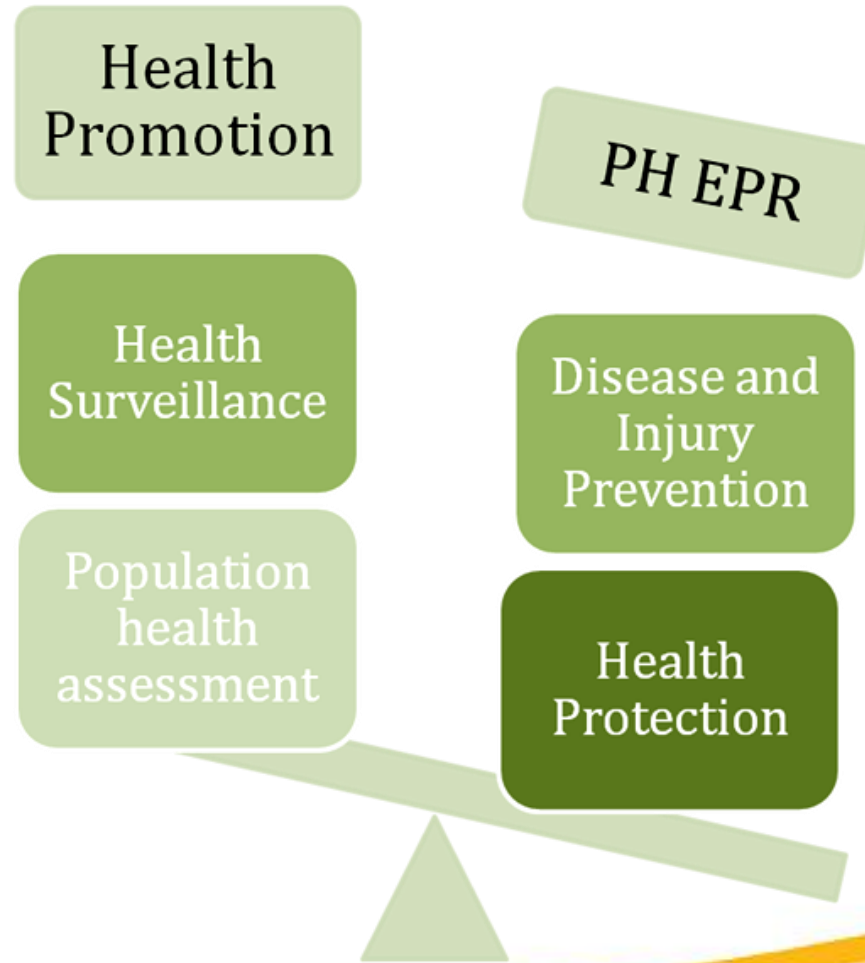


6 Core Functions of Public Health



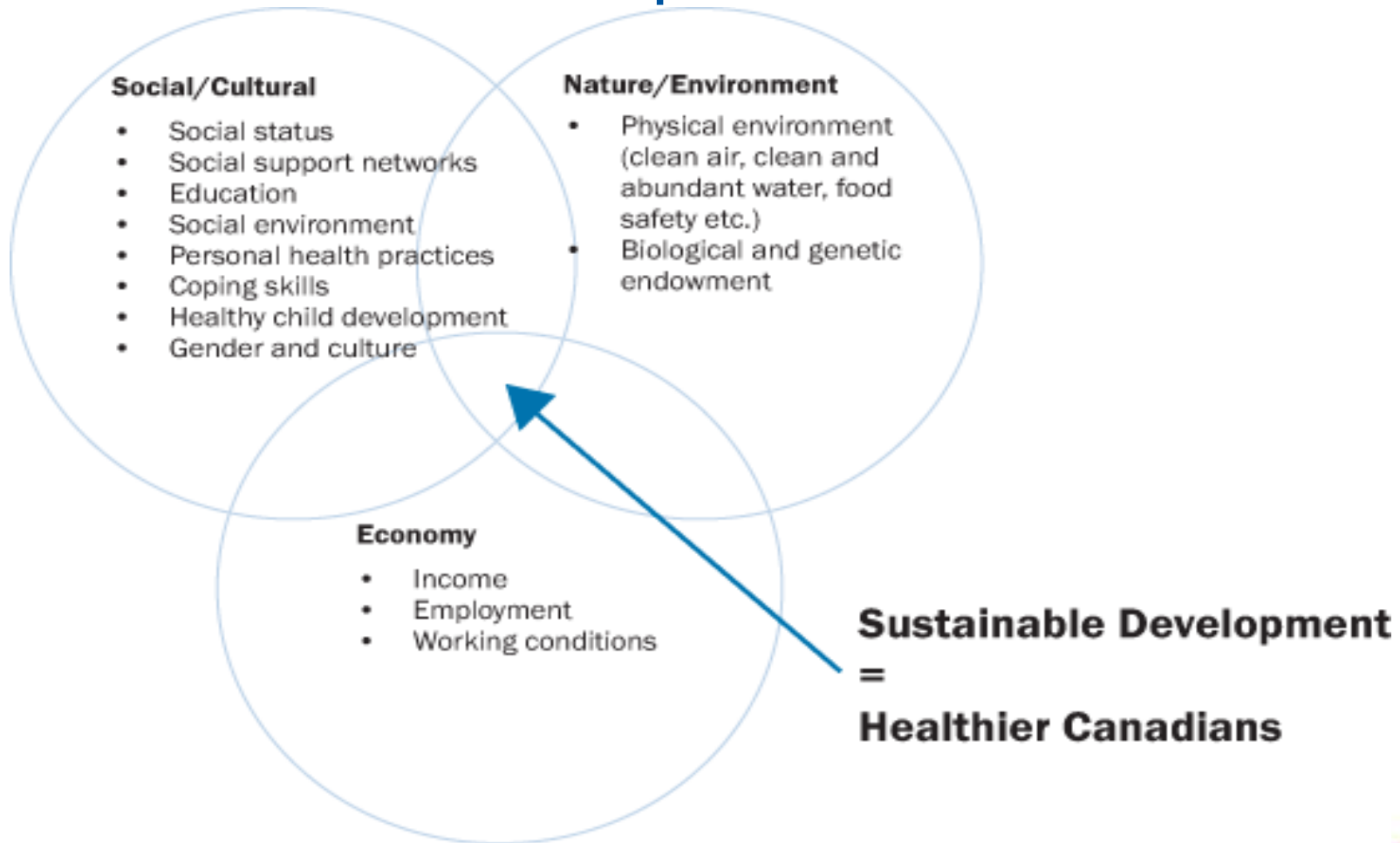
Prerequisites for Health

The Ottawa Charter for

Health Promotion 21 November 1986

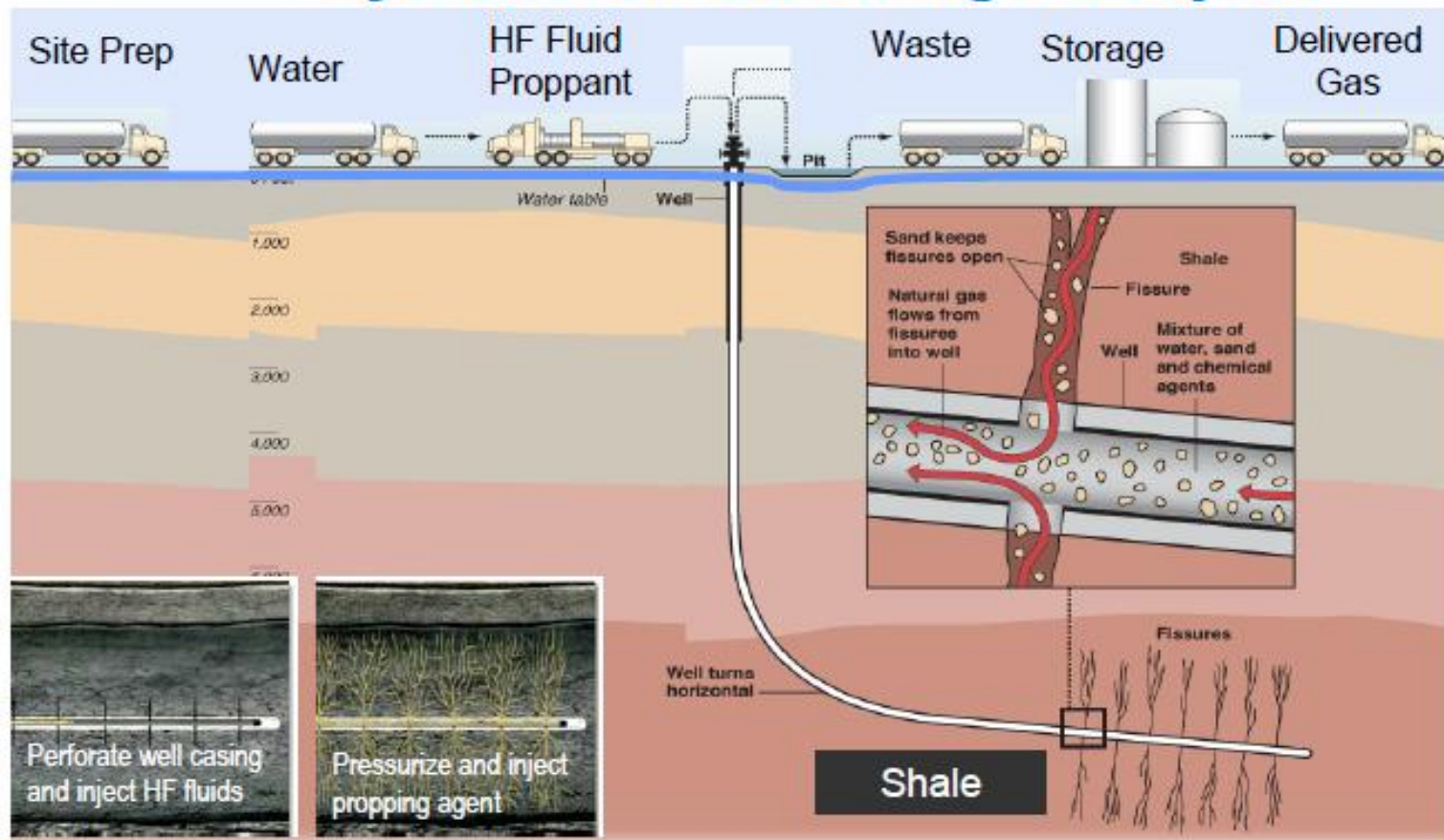
- **peace,**
- **shelter,**
- **education,**
- **food,**
- **income,**
- **a stable eco-system,**
- **sustainable resources,**
- **social justice, and equity.**

Relationship between Key Determinants of Health and the Three Pillars of Sustainable Development



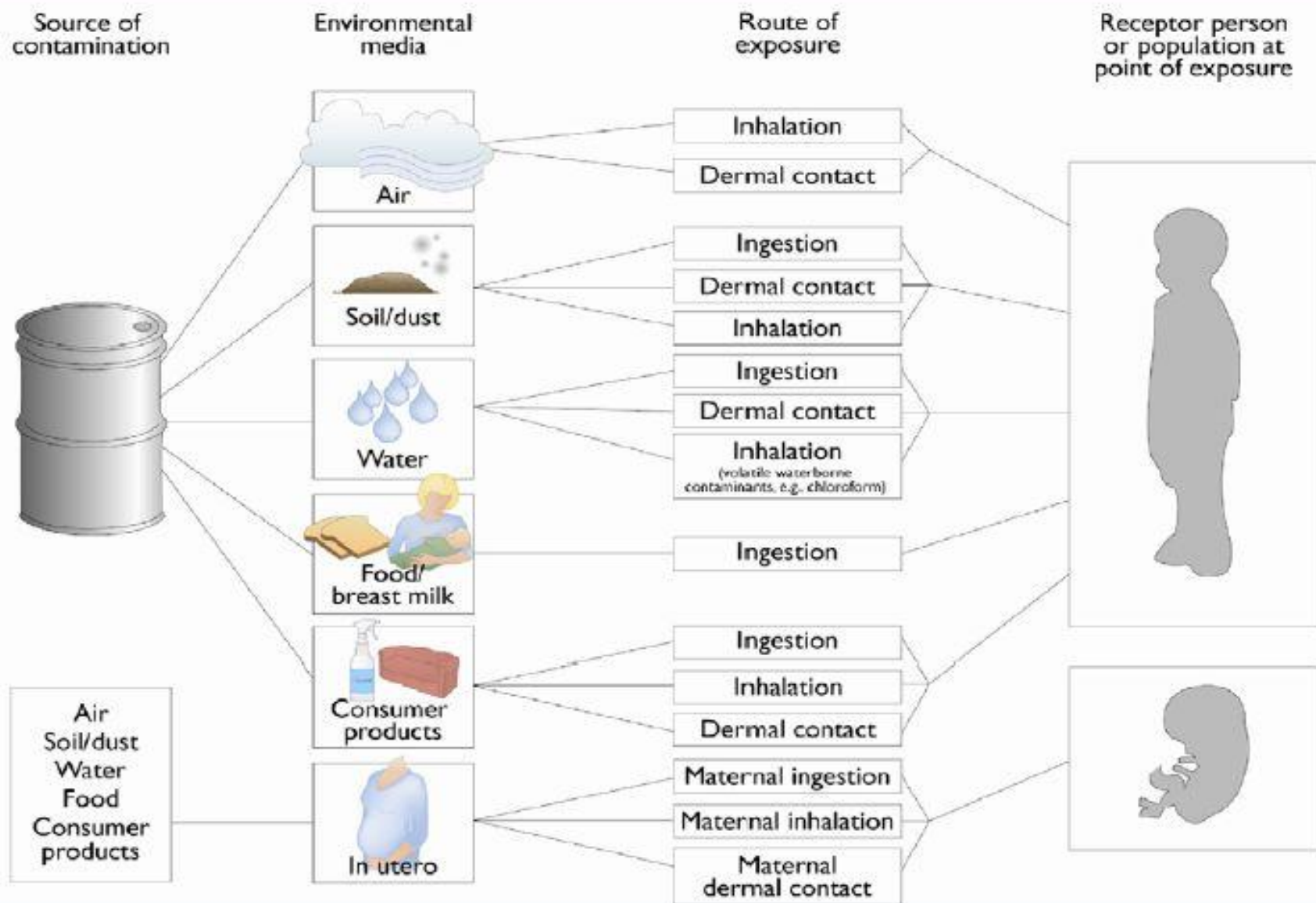
www.phac-aspc.gc.ca/about_apropos/sd-dd/health-sante-eng.php

Definition of Hydraulic Fracturing Lifecycle



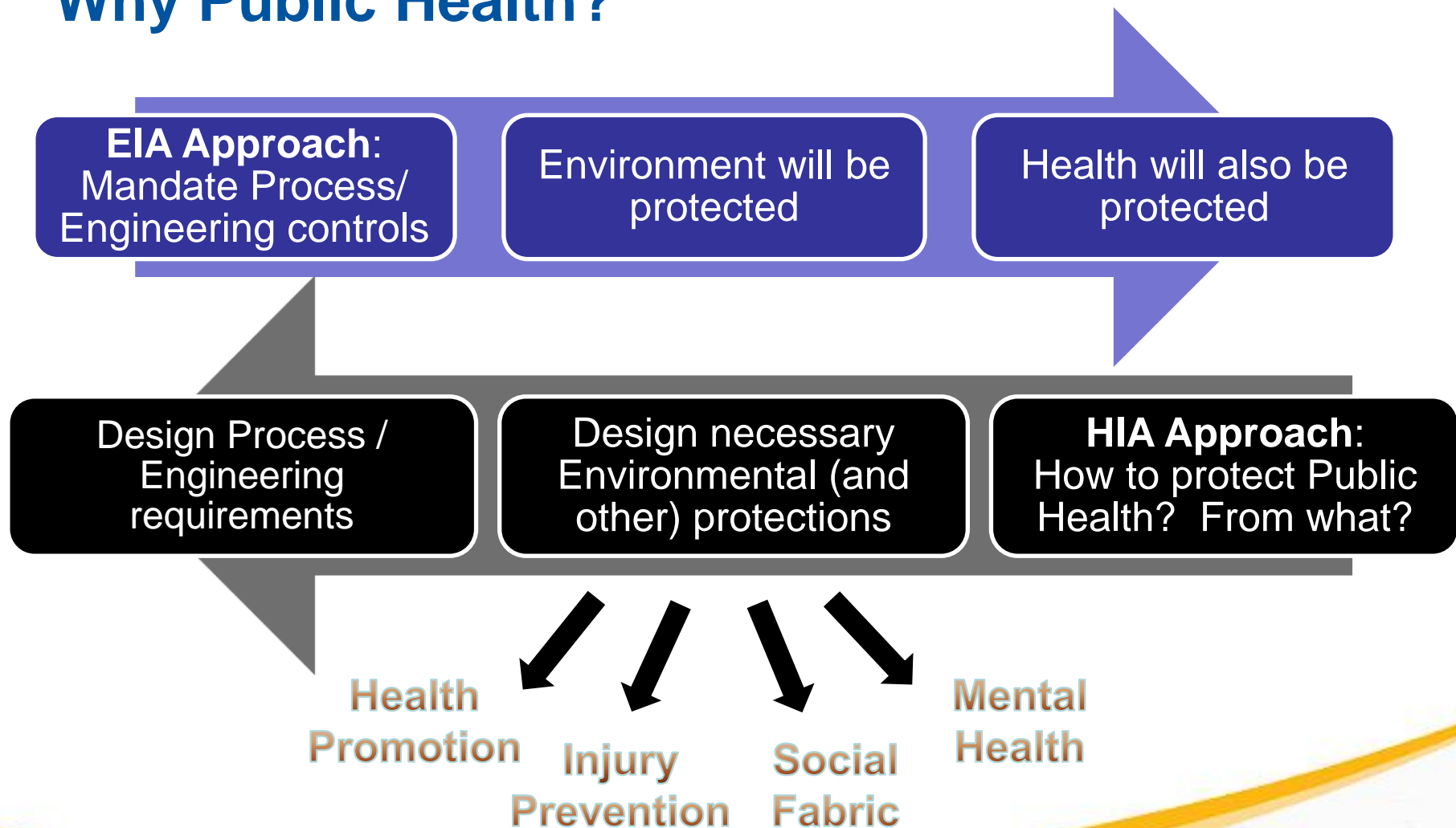
Adapted from Graphic by Al Granberg

Figure 2: Major Pathways of Human Exposure to Environmental Contaminants



Source: Adapted from Health Canada, 1998.

Isn't Shale Gas just an Environmental Issue? Why Public Health?



Just because it can happen – will it?

- Risk = $f(\text{hazard, exposure})$
- Depends on how well its planned for
- Depends on the controls put in place, how well rules are followed, enforced
- If we don't look we wont know if there are problems
- If we don't know what's normal - we won't know what's different

Objectives of the Report

- **To highlight the need to consider human health issues**
- **To make recommendations on protecting and promoting health**
- **Provide information to the public and all who have a role to play in protecting public health**

Note...

- *The assumptions made are the most appropriate possible given the limitations in the information available*
- *Assumed a time frame of 3 -5 years before development*
- *Focus on health (not other potential positive and negatives)*

What is not included in the report

- comprehensive health impact assessment of the shale gas industry
- A itemized list of what to do and when
- A commentary on the technical aspects of shale gas development
- Input from public

What We Know and Don't Know

- **There are significant data gaps that limit the ability to thoroughly assess risks to public health**
 - *No standard approach to planning for social impacts of development*
 - *Lack of population health status studies to date*
 - *Lack of Health Impact Assessments to date*
 - *Chemical toxicity information on products used by the industry*
 - *Chemical toxicity information on wastes*
 - *Lack of exposure data*
 - *Difficulty in forecasting the extent, locations and rate of development*
 - *Little information on cumulative or full life-cycle effects*

What We Know and Don't Know (2)

- **There are some common themes regarding types of potential hazards to public health**
 - *Physical (accidents), environmental (air and water quality), socioeconomic (community cohesion), mental health, others*
- **The public discussion on shale gas has been dominated to date by chemical toxicity concerns**
 - *many other factors of potential concern to public health need more attention as a result*
 - *the focus of the public debate will likely change*
- **Public Health officials and experts have often been late to the table or absent from discussions about shale gas regulation in most jurisdictions**

What We Know and Don't Know (3)

- There have been economic benefits associated with expansion of the industry, but this may come with socioeconomic risks that can adversely impact individual and community wellbeing
- There can be inequitable distribution of risk and reward to the local populace
- More discussion is needed on the potential cumulative impacts of the industry over its lifetime

Themes for Protection of Public Health

- **Protection of Health and Community Wellbeing Related to Changes in the Social Environment**
- **Protection of Health Related to Changes in Both the Social and Physical Environments**
- **Protection of Health Related to Changes in the Physical Environment**
- **Protection of Future Generations**
- **Implementation and Oversight**

**Once recommendations are
accepted then...**

Need to set up....

- Transparent consultative process with the public and stakeholders on how these recommendations should be implemented.
- Establish a group to oversee the implementation of these recommendations
- Establish an on-going dialogue between communities, government, academics and the shale gas industry
- Create a multi-disciplinary advisory committee to Cabinet.
- Support NB research including health studies, potential health effects, social impacts, etc

Need to identify processes to enable

- a role for local governments in planning the location of gas industry infrastructure
- a role for Public Health in community planning
- Planning with consideration of First Nations
- Public reporting of environmental/health/chemical data
- a more balanced distribution of the potential health risks and financial rewards of shale gas development and revenue sharing

Develop mechanisms...

- for doing project based and strategic health impact assessments
- For monitoring health/ environmental impacts
- To promote use of least toxic alternatives
- appropriate emergency response training
- To promote and protect employee health
- To reduce human exposures to physical, social and mental health hazards with particular attention for vulnerable populations

Do some planning for...

- How to best use our land and water resources
- How to protect areas that should not be developed