The Big Picture – The Need and the Why for Action on Safety

Through

Working Together: Making a Difference

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Purpose of the Pilot Project

The purpose of "The Big Picture" is to communicate:

- "Why" Alberta school districts need to take action on Safety. Alberta school districts are one of the important stakeholders in developing safety conscious citizens and are therefore ideal places through their Career and Technology Studies Program to initiate a structured critical thinking strategy which addresses learning to be safe at home, on the farm, in the workplace, on the road, and at play.
- The importance of improving the safety capability of our young citizens through the use of a structured critical thinking strategy to be safe in the workplace, at home, on the farm, on the road and at play. Once our younger generation embraces learning this important strategy of applying structured critical thinking, we will be able to improve on our present rates of predictable and preventable injuries and deaths in future years.
- The broad scope for a Career and Technology Studies (CTS) safety project proposal. The proposed pilot project would be funded through the Alberta Initiative for School Improvement (AISI) in Alberta Education. The Proposal would be developed collaboratively with interested Alberta School Districts and collaborative planning will occur throughout 2011 for the next AISI cycle planned for 2012 to 2015. Collaborative planning support will also be sought from Alberta Employment and Immigration which has responsibility for occupational health and safety. Alberta Agriculture and Rural Development where currently they are developing a parallel and related safety initiative for Alberta farm producers. Alberta Advanced Education and Technology will also be contacted in the collaborative planning process.

A Few Facts Supporting the Need for Action

The following facts provide insight into the crucial need for **improving safety thinking** in today's society. These facts, drawn from information compiled by provincial and territorial workplace compensation boards, community organizations like Alberta Centre for Injury Control and Research (ACICR), and government departments highlight the need for **a structured critical thinking safety strategy**.

Workplace Deaths and Injuries in Canada

- In 2006 a total of 976 workers in Canada were killed on the job from work-related causes.
- In 2007 a total of 1,055 workers in Canada were killed on the job from work-related causes. This was an increase of 79 workers from the year before. During the last decade these numbers have continued to trend upward.
- Nearly three Canadian workers are killed each day in the peaceful pursuit of earning a living. Recently three more persons were killed in their workplace on three successive days in Alberta—October 14, 15, and 16, 2010. These deaths

resulted in huge sorrow for three more extended families, three more employers and many fellow workers. We have the capability to do better for the youth joining our workforce in the future!

- Our country has reached a rate of 10,000 workplace deaths per decade.
- Each year in our country, over one million people are injured at their workplace and thousands become sick or diseased by their work.
- On Alberta farms we average 18 + deaths/year based on the past 10 years and about 1,000 serious injuries/year as recorded by Alberta hospitals.

Preventable Deaths and Injuries in Alberta

Information compiled by the Alberta Centre for Injury Control and Research (ACICR), School of Public Health at the University of Alberta illustrates the significant number of preventable deaths and injuries in Alberta for two years—2006 and 2008.

Table 1

2006
Alberta Predictable and Preventable Deaths and Injuries from Hazardous Situations

Deaths	Hospital Admissions Resulting from Injuries	Emergency Department Visits Resulting from Injuries
1,727	51,280	433,129

Moving two years forward the ACICR data shows:

Table 2

2008
Alberta Predictable and Preventable Deaths and Injuries from Hazardous Situations

Deaths	Hospital Admissions Resulting from Injuries	Emergency Department Visits Resulting from Injuries
1,777	52,400	436,935

Note the upward trend illustrated between Table 1 (2006) and Table 2 (2008) in all three categories. From 2006 to 2008 the number of predictable and preventable deaths rose by 50 persons. Hospital admissions resulting from injuries rose by 1,120 persons and emergency department visits resulting from injuries rose by 3,806 persons. The total increase in all three areas adds up to 4, 976 persons—a number approximately equal to the population of Vermilion, Alberta!

Now some might say there was increased economic activity and we should therefore expect a rise in the number of persons injured and killed. But I ask, “Should we accept the idea that increased economic activity will automatically result in more injuries and deaths?” Why should economic activity be a justification for injuries and death? Why do

we continue to accept predictable and preventable deaths and injuries as an acceptable outcome of our busy lives? Why don't we "think our way out of" our high injury and death rates?

A 10 Year Projection
To get a longer-term view and a stronger sense of the continuing future problem, we can project these Alberta numbers over a 10-year period (2008 to 2018). By multiplying the 2008 numbers from Table 2 by ten years we see the following scenario (10 year period):

Table 3 - Projection

2008 to 2018 (10-year period we are living in) **Alberta Predictable and Preventable Deaths and Injuries from Hazardous Situations**		
Deaths	Hospital Admissions Resulting from Injuries	Emergency Department Visits Resulting from Injuries
17,770	524,000	4,369,350

Do we want to continue to accept this number of deaths (17,770) and hospital admission resulting from injuries (524,000) over the 10-year time period (2008-2018)? Given this number of deaths in a 10-year period, we are killing all the people in three Alberta communities every ten years. Let's use the populations of Peace River (6,315), Devon (6,534) and Coaldale (6,943), Alberta to illustrate the problem. Using the population of Peace River, Devon and Coaldale as a basis nearly all of the people of these three Alberta communities would be killed every ten years. Imagine killing nearly all the residents of three Alberta communities the size of Peace River every 10 years! Imagine that we will have hospital emergency department visits resulting from injuries (4,369,350) that are approximately equivalent to four cities the size of metropolitan Edmonton or Calgary! Imagine the huge cost we will pay for these predictable and preventable deaths and injuries through our health care, social support systems and our own personal family support systems! Imagine the immeasurable sorrow and sadness that family members will experience as a result of 17,770 deaths and 524,000 injuries requiring hospital admission! Imagine the billions in lost revenue to our Federal, Provincial and Municipal governments from fatal injuries, not to mention the huge costs we as taxpayers will pay each year to support the recovery of the injured! With our human and financial resources we have the capability to change this elephant size problem. The problem is like the elephant in the room that no one wants to talk about! I believe we can think our way out of this problem.

What Can We Do?

In response to the clear societal need for improving safety thinking, evidenced by the high number of injuries and injury-related deaths in Alberta, HDC Human Development Consultants Ltd. has developed the SafeThink strategy, a structured critical thinking strategy.

A few years ago we at HDC came to the conclusion that the high number of injuries and injury-related deaths illustrates a very clear need to develop our human capability to "be safe" throughout life. Being safe is a lifelong responsibility for each and every person and it is important to begin to "educate the mind" as early in our life journey as possible. As a human development company, we also realize it is never too late to begin this development for each person. Being able to identify and predict hazardous situations using a structured critical thinking strategy enables our youth and adults to establish controls to "be safe" at home, on the farm, in the workplace, on the road and at play.

Presently this human capability to apply a structured critical thinking strategy has not been fully developed in our youth and a significantly large number of our adult population across Alberta and Canada. We must develop this capability so that we can halt the increase in predictable and preventable injuries and deaths. We at HDC strongly believe that we can significantly reduce injuries and injury-related deaths at our workplaces, at our homes and farms, on the road, and at play by helping Albertans to develop an internalized safety thinking strategy. That safety thinking strategy is SafeThink and it has the potential to create stronger safety cultures in schools, organizations and communities in Alberta.

SafeThink is a cognitive safety strategy that provides experienced and inexperienced workers, youth through to seniors, with a **structured critical thinking strategy** to keep themselves safe in the workplace, at home, on the farm, on the road and at play. SafeThink is an innovative safety program developed through the collaborative efforts of HDC Human Development Consultants Ltd. and Alberta industry from 2003 to 2007. See the SafeThink philosophy and benefits at www.safethink.ca for more information.

Benefits of a Structured Critical Thinking Strategy

As a former elementary and secondary teacher, teacher educator (former professor at University of Alberta) and adult education specialist involved in teaching thinking skills, I know we can significantly improve upon a student's ability to be safe in the work place and other places by learning a structured critical thinking safety strategy in their high school years. Eventually this safety strategy could be started in junior high or middle schools and elementary education and be progressively developed much as we presently do with language arts and math programs in Alberta schools.

Structured critical thinking strategies give us frameworks to deal with the constantly changing situations in our lives.

For example math multiplication skills taught in elementary and secondary classrooms are an example of a structured thinking strategy. We apply the math multiplication framework (e.g. 4 items x $4 each = $16) to the math related tasks we do each and every day. Just like the math multiplication framework helps us deal with the math related tasks we face as adults every day, a structured safety thinking strategy provides a framework to help us stay safe doing our tasks throughout the day.

The following illustrate ways that a structured critical thinking safety strategy assists youth and adults:

- Reduces overlooking hazardous situations
- Useful when working alone and with others
- Provide a means to easily think about having more control over their own health and safety
- A strategy to use continually and "on the fly" at home, on the farm, in the workplace, on the road and at play
- Helps organize our safety thinking in a way that is easy to use in all of our daily tasks
- Provides our thinking with additional questions we wouldn't normally consider while doing our daily tasks.

Each student will have many work and life experiences where having a structured critical thinking safety strategy will enable them to identify and predict hazardous situations and, in turn, put controls in place to minimize the risk of injury or death for themselves and others.

Safety Strategy as a Learning Organizer

As educators know, having advance organizers for learning is hugely important to the learning process. Advance organizers help students make sense of new information.

It is a short period of time before our high school students become productive adult workers and in some cases they are already working part time jobs or within work experience programs under the supervision of Alberta school districts. In these jobs it is important for a student's safety to have a clearly **internalized safety strategy** so that when they are trained by their employer the students can more effectively learn new safety information from their employer. Having a safety strategy they can use to organize new safety information into their internalized safety thinking framework significantly facilitates learning safety information that is important to their well-being.

Often safety content is provided to the learner or employee on the job without an overarching strategy to use as an organizer or a strategy to make sense of continually increasing new safety information or content. Without an advance organizer or a strategy to apply safety information to, personal safety often isn't controlled effectively. Further to this, the learning of new safety information is ongoing throughout a person's life as new tools, machines, materials, processes, and technologies are continuously developed.

It is important for students to have an opportunity to learn critical thinking safety skills that provide them with a lifelong structure in which to organize the safety information (content) they are provided over the many career positions they will likely hold.

Opportunities and Places to Learn and Practice a Safety Strategy
There are key places that will provide learning engagement opportunities for our youth to internalize a structured critical thinking safety strategy once they learn the strategy. These include but are not limited to:

- student's family, home / family farm
- CTS work experience program through their school
- CTS school based learning laboratories including:
  - BIT: Business, Administration, Finance & Information Technology
  - HRH: Health, Recreation & Human Services
  - MDC: Media, Design & Communication Arts
  - NAT: Natural Resources
  - TMT: Trades, Manufacturing & Transportation
- a part time job in the community
- their driving and movement between places in the community

All of these places are important to the development of the student's safety strategy. The key idea behind a safety strategy, which has been internalized in one's mind, is that it is taken with a person to each place they go. With many CTS students we have several years to help them develop a safety strategy to serve them throughout their lives**.** The proposed AISI project would provide the time opportunity to develop the strategy for each student involved in the project**.** The school districts or schools that engage with the pilot project will learn how to sustain the safety strategy for future school years.

Proposed Pilot Project with CTS Teachers and Alberta High School Students

This project seeks to create a beginning for having a structured critical thinking safety strategy that has been internalized into the thinking of a group of CTS teachers and their students for an immediate application to the fast-paced, technology-oriented workplaces of today and the future.

Outcomes
The pilot project would involve multiple school districts with groups of secondary CTS students learning the SafeThink strategy. In some districts only one school and one program may be involved. Curriculum, learning material and resources will be developed to support the learning. These learning materials will be based on three recently approved Alberta Education safety courses (HCS 3000, HCS 3010 and AGR 3000) and the existing SafeThink strategy. The CTS teachers will have the opportunity to guide the development of the curriculum and learning materials for the students.

Each teacher and CTS student involved in the project will become stronger critical thinkers with respect to their safety in multiple environments each day. This development project will also help students start a personal journey to move towards other important goals like: 1) zero injury and illness; 2) reducing our continually escalating health care costs that result from predictable and preventable injuries at work, at home, on the farm, on the road and at play. As we saw in Table 3, we have a long road ahead of us to

improve upon the projected number of deaths and injuries Alberta could experience from 2008 to 2018. We can make a start to change the horribly high number of deaths and injuries by beginning with a pilot project that first involves a pilot project group of CTS teachers and then involvement of secondary CTS students taught by these teachers.

Since research is an important feature of an AISI project, the project will incorporate a research component on the learning of the SafeThink strategy by the teachers and students. More on the importance and methodology of the research component will be included in the 2011/2012 collaborative proposal developed for the AISI 2012 to 2015 cycle. Interested Alberta Universities will be able to participate with the research component.

Proposed General Timeline for the AISI Project

Planning for the pilot project begins in 2011 with the collaborative development of a proposal by interested Alberta school districts. Several Alberta school districts may elect to have involvement in this pilot project and in fact one foundation in Calgary has given a tentative indication of support for this proposed project. HDC plans to facilitate the collaborative planning required for interested school districts to develop the AISI pilot project(s) proposal for consideration by Alberta Education.

2009 / 2010 School year – Pilot testing the idea with a few organizations, individuals and students.

2010 / 2012 School years – Identifying and contacting CTS teachers, school districts, foundations, 4 Alberta Provincial Government Departments, selected Municipal Governments to gage their interest and possible support and other interested, supporting organizations. Alberta Provincial Government Departments to be contacted include:

- Alberta Education
- Alberta Agriculture and Rural Development
- Alberta Employment and Immigration
- Alberta Advanced Education and Technology

Prospective AISI Education Partners will also be contacted with respect to their interest in the proposed project.

2012 / 2013 School year – Teachers participate in Structured Critical Thinking Safety Strategy Workshops and collaborate with other members of the project management team in the development of learning strategies and learning materials for their high school students. A research plan and methodology will be developed in partnership with interested Alberta universities.

2013 / 2014 School year – Teachers continue to participate in Structured Critical Thinking Workshops. Students and teachers participate as co-collaborators in the project with support from the project management team. The project management team including a project leader will be drawn from interested and established school district AISI Coordinators, industry partners, learning materials design and development team, and workshop leaders.

20114 / 2015 School year – Students and teachers participate as co-collaborators in the project with support from the project management team and workshop leaders.

2015 / 2016 School year – Students and teachers participate as co-collaborators in the project with support from the project management team workshop leaders. Research data will have been gathered and the project will conclude.

2016 / 2017 School year – A sustainable and ongoing structured critical thinking strategy will continue to operate with the participating CTS Programs in the school districts. The project team leaders can assist with implementation of the structured critical thinking strategy in other school districts as resources permit.

Budget
While the development of the project budget will be dependent on the number of school districts, CTS teachers, and students served by the project, the project will be developed so it is sustainable for the resources of the participating Alberta school districts. The project budget will be created out of the collaborative planning process with participating school districts.

In Conclusion

The importance of a **structured critical thinking strategy** that is internalized into one's thinking is being recognized in some organizations and Alberta workplaces. Provincial departments, like Alberta Agriculture and Rural Development, see the importance of using a structured critical thinking safety strategy that every farm producer can use "on the fly". Currently Alberta Agriculture and Rural Development and HDC are developing the SafeThink Strategy for farm producers. In the current form, it has been named: **SafeThink Agriculture – Alberta** and will be launched in the Spring of 2012 with Alberta farmers and ranchers.

Having a safety strategy "we can take with us" wherever we go and continuously apply to situations makes logical sense for keeping youth and adults safe over a lifetime. An internalized safety thinking strategy can significantly reduce the number of injuries and deaths on Alberta's highways, at our workplaces, in and around our homes, on our farms, and the numerous other places where predictable and preventable injuries and deaths occur in Alberta.

We strongly believe one of the key places to start, is with our youth who are enrolled in Alberta high school Career and Technology Studies Programs. I believe we can make a difference!

With Respect, for our injured and those who have been killed,

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Data Source for Tables:

Alberta Centre for Injury Control & Research (ACICR) Report. *Injuries in Alberta* for 2006 and 2008.
ACICR is located in the School of Public Health, University of Alberta in Edmonton, Alberta. Canada

Statistics Canada Population Census Data was used for the Alberta communities of Peace River, Devon and Coaldale. Statistical years used: 2006 for Peace River and 2009 for Devon and Coaldale.

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