



CORONER'S REPORT INTO THE DEATH OF

Table with 2 columns: Surname (KUTTNER) and Given Names (ELIZA WING MUN)

Of District of North Vancouver, British Columbia (Municipality of Residence)

I, Tom Pawlowski, a Coroner in the Province of British Columbia, have investigated the death of the above named, which was reported to Coroner S. Fonseca on the 19th day of January, 2005, and as a result of such investigation have determined the following facts and circumstances:

Gender: [] Male [X] Female Date of Death: 19 January, 2005
Age: 43 years Time of Death: 0330 Hours
Place/Municipality of Death: District of North Vancouver
Municipality of Illness/Injury: District of North Vancouver

MEDICAL CAUSE OF DEATH

(1) Immediate Cause of Death: a) Suffocation and Traumatic Asphyxia

Antecedent Cause if any: Due to or as a consequence of b) Burial in a Landslide

Giving rise to the immediate cause (a) above, stating underlying cause last. Due to or as a consequence of c)

(2) Other Significant Conditions Contributing to Death:

By What Means Occupant of a residential building buried in a landslide.

Classification of death [X] Accidental [] Homicide [] Natural [] Suicide [] Undetermined

Date Signed: 20 June 2008

Handwritten signature of Tom Pawlowski

Tom Pawlowski, Coroner, Province of British Columbia





CORONER'S REPORT
INTO THE DEATH OF

KUTTNER

SURNAME

ELIZA WING MUN

GIVEN NAMES

SUMMARY OF EVENTS

At approximately 0330 hrs on January 19, 2005, a landslide initiated at the top of a steep hillside in the backyard of a property at 2175 Berkley Avenue in the District of North Vancouver. The landslide descended approximately 90 metres before flowing onto the property at 2440 Chapman Way. It destroyed the private residence located on that property and injured two occupants. The injuries sustained by Eliza Wing Mun Kuttner were fatal. Her body was discovered among the debris at approximately 1330 hours.

POST MORTEM EXAMINATION

The autopsy documented left-sided rib fractures, pelvic fractures and various superficial blunt force injuries. Extensive petechial hemorrhages were observed on the face and upper chest. The presence of petechiae, along with the rib and pelvic fractures, suggested a component of mechanical asphyxia. Abundant dirt and mud were contained in the nostrils and were also found in the trachea and bronchi, suggesting occlusion of the nose and mouth.

The lungs were edematous. Microscopic examination of the lungs revealed numerous fat emboli, indicating that there was at least some degree of blood circulation after the skeletal injuries occurred.

Death was attributed to suffocation and traumatic asphyxia.

INVESTIGATIVE FINDINGS

The British Columbia Coroners Service conducted an investigation into this death and retained the services of a professional engineer for the purpose of providing an analysis of the geologic factors involved in the incident and an overview of related hazard management issues. The consultant engineer's key findings and conclusions have been incorporated into this report.

The area where the landslide occurred is located in the Seymour River watershed and is known as the Berkley-Riverside Escarpment. The terrain consists of a flat terrace at approximately 135 metres above sea level and a lower terrace, along the Seymour River, at approximately 85 metres above sea level. The two terraces are joined by a broadly concave wooded slope which averages 30° but is steeper near the top terrace. The top of the escarpment, which is formed by the west edge of the upper terrace, is not uniform, and in places consists of shallow draws and small drop-offs.

Berkley Avenue is located at the top of the escarpment, and runs parallel to it, typically about 30 to 40 metres east of the break in slope. More than 20 houses are located between the street and the escarpment. Their westerly property lines and backyards are located near the break in slope. Chapman Way, the street where Ms. Kuttner's residence was located, is situated at the bottom of the escarpment, near the base of the slope.

The natural surficial material along the Berkley-Riverside Escarpment consists of various glacial deposits. A six metre thick layer of relatively loose and permeable sand and weathered silt makes up the surface unit on the upper terrace. This surface unit sits on top of a less permeable silt layer, which in turn, overlies a very thick and dense sandy till that makes up most of the slope, and extends down to the lower terrace.



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Resting on top of the natural soils on the upper terrace are variable quantities of relatively loose and permeable fill introduced through residential development activities. This anthropogenic fill is often mixed with organic material that was most likely left on site at the time of the first land clearing activities in the 1920's. The fill was added along the original escarpment by property owners, mainly for the purpose of increasing the size of utilizable land. In some cases, retaining walls were built out onto the slope in order to contain the fill.

Landslides may occur when a sufficiently large mass of loose surficial material, which is capable of becoming detached, is resting on a sufficiently steep slope, and enough water is present, both to add weight to the soil mass, and also to reduce its resistance to sliding. The fatal 2005 landslide indicates that all three conditions were present at the time of the incident. The landsliding event was preceded by an unusually heavy storm rainfall.

Landslide activity had been documented in the Berkley-Riverside Escarpment area prior to January, 2005. Since 1972, four storm events triggered at least six landslides. Three of these slides occurred in December of 1979, causing structural damage to houses located at the base of the escarpment and damages to patios and backyards at the crest of the escarpment.

Following the 1979 slides, the District of North Vancouver commissioned two studies to assess the stability of this area. The first study, by the engineering firm of Golder Associates was completed in January of 1980. It concluded that the slides were triggered primarily by heavy precipitation and were initiated through failure of loose fill at the crest of the slope. The study recommended remediation work to stabilize the existing slide areas and noted that other areas had potential for future slides under adverse precipitation and ground water conditions.

In May of 1980, the District of North Vancouver engaged Klohn Leonoff Consultants Limited to complete a geotechnical appraisal of the potential for slide activity in a study area which included a segment of the Berkley-Riverside Escarpment. The study was intended to determine the nature and location of landslide hazards to properties at the top and bottom of the escarpment.

Klohn Leonoff looked at a total of 69 properties at the crest of the slope and concluded that 12 of them had moderate to high risk of serious instability. The other 24 properties had a low risk of major instability, and the remaining 33, a very low risk of major instability. The report noted that "there is danger of future surface slides during periods of heavy rainfall and that the greatest danger of future sliding is at locations where slumping and cracking has occurred during previous storms and where over-steepened fill soils and debris have been placed at the crest of the natural slope". The report further stated that the "greatest danger from future sliding is to the properties at the base of the slope".

Klohn Leonoff's assessment included the property at 2175 Berkley Avenue, located at the top of the slope where the fatal 2005 landslide initiated. The study determined that the house sitting on that property was founded on fill, however, it was concluded that the house was located at a sufficient distance from the potentially unstable zone at the crest of the slope. It was also noted that the backyard was partially made of fill supported by a concrete cantilever retaining wall. The retaining wall, fill, and the house, all showed signs of settlement. Other signs of movement included cracking of rockwalls and slumping of fill near a septic tank. This property was assessed as being at a low risk of major instability.

The report recommended a number of risk reduction measures, such as the removal of fill and improvement of drainage for all properties, including those with low and very low risk ratings. It appears that very little, if any, of this preventive work was carried out prior to the event which resulted in Ms. Kuttner's death.



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In the aftermath of the fatal incident, the District of North Vancouver embarked on a number of landslide hazard management initiatives. These included control and remediation projects such as the construction of drainage works and of a debris basin at the bottom of the slide area. Also undertaken were upgrades to the existing storm sewer system, with mandatory drainage connections from private property lines along the escarpment. Eight high risk properties in the vicinity of the landslide were acquired by the District in the fall of 2005.

In October of 2005, the District commissioned BGC Engineering Inc. (BGC) to carry out an assessment of landslide risk in the Berkley-Riverside Escarpment during periods of heavy rainfall. BGC also examined risk control options and made recommendations related to risk management. The study was completed in May of 2006. Landslide hazard assessments were also undertaken for other areas of the District.

The BGC study of the Berkley-Riverside area employed quantitative risk assessment (QRA) method. The assessment involved the development of an inventory of landslide hazards which was combined with the known history of landslide activity to provide an estimate of the annual probability of landslides along the escarpment. The likelihood and consequence of landslides were then assessed in order to arrive at estimates of the risk of loss of life. Subsequently, an attempt was made to compare those estimated risks against risk acceptability thresholds, or maximum risk that the society would tolerate. Since no quantitative risk acceptance criteria for landslides had been developed for the province of British Columbia or the District of North Vancouver, the study compared risk estimates against standards developed in other jurisdictions, namely Hong Kong and Australia. Both of these jurisdictions have considerable experience managing landslide risk and both utilize a societal risk acceptability threshold of 10^{-4} *per annum*, or a 1 in 10,000 chance of fatality per year.

BGC concluded that when considered against the Hong Kong and Australian standards, 22 of the 75 properties assessed in the Berkley-Riverside Escarpment posed unacceptable risk levels. In addition, 37 other properties were in need of control efforts in order to reduce risk to a level as low as reasonably practicable.

In addition to site specific assessments and control measures, the District also implemented general landslide hazard management strategies. It initiated a District Natural Hazard Management Program in the fall of 2005, and established a Natural Hazard Task Force to study and recommend acceptable risk tolerance criteria for the entire District, using input from residents. Another notable measure was the development of a Geographical Information System (GIS) linked natural hazard databank.

In a report prepared for the B.C. Coroners Service, Baumann Engineering concluded that the January 19, 2005 landslide was caused by:

1. The presence of development at both the top and bottom of the 50 metre high Berkley-Riverside escarpment, which is made of glacial drift deposits located along the Seymour River in North Vancouver.
2. The presence of loose anthropogenic fill at the crest of the Berkley-Riverside escarpment that had been pushed over this slope since the area was first developed in the 1920's.
3. The presence of a permeable soil unit near the top of the escarpment, and an underlying much less permeable unit, that concentrated surface water runoff and directed it to the steep, upper slope area of the escarpment.

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4. The presence of a steep slope and gully immediately below the property at 2175 Berkley Avenue, and the presence of an inhabited house at the base of this slope at 2440 Chapman Way.
5. The occurrence of an unusually heavy rainstorm prior to January 19, 2005 that saturated the ground near the top of the escarpment area, and created high pore water pressures, that initiated the failure.
6. The presence of water-saturated and loose soils on the slope between the top and bottom of the escarpment that allowed this material to become mobilized and entrained in the moving mass of the landslide after it initiated.

The Baumann report stated that "potential landsliding in the Berkley-Riverside area was both predictable and preventable, but the perception that there was an unacceptable risk was not recognized by government or the residents of this area, and therefore nothing was done to deal with this problem, which directly led to the occurrence of the fatal landslide". Furthermore, Baumann noted that there are numerous other escarpments in North Vancouver and the Lower Mainland where homes are located in similar circumstances in proximity to escarpments.

Population growth pressures will likely result in more residential developments encroaching onto steeper slopes in many parts of the province. Whenever development occurs on sufficiently steep ground, as was the case with the Berkley-Riverside Escarpment, some degree of risk to human life and property will always be present. Even though such risk cannot be fully eliminated, it is possible to assess the level of risk and apply appropriate control measures, if that level of risk is deemed unacceptable.

Various pieces of provincial legislation address the issue of landslide safety. For example, section 86(1)(d) of the *Land Title Act*, dealing with subdivision approvals, states that "if the approving officer considers that the land is, or could reasonably be expected to be, subject to flooding, erosion, land slip or avalanche, the approving officer may require, as a condition of consent to an application for subdivision approval, that the subdivider do either or both of the following:

- (i) provide the approving officer with a report certified by a professional engineer or geoscientist experienced in geotechnical engineering that the land may be used safely for the use intended
- (ii) enter into one or more covenants under section 219 in respect of any of the parcels that are being created by the subdivision."

The concept of safety is similarly referenced in section 56(2) of the *Community Charter*:

"If

- (a) a bylaw regulating the construction of buildings or other structures is in effect, and
- (b) a building inspector considers that construction would be on land that is subject to or is likely to be subject to flooding, mud flows, debris flows, debris torrents, erosion, land slip, rockfalls, subsidence or avalanche,

the building inspector may require the owner of land to provide the building inspector with a report certified by a qualified professional that the land may be used safely for the use intended."

Neither legislation defines what "safely" means. In fact, there are no provincially defined risk acceptance criteria for landslides.



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The Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) in *Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia (March 2006)*, adopts the Canadian Standards Association's definition of hazard as "a source of potential harm, or a situation with a potential for causing harm, in terms of human injury; damage to health, property, the environment, and other things of value; or some combination of these". Within the definition of landslide hazard, the *Guidelines* include an estimate of "likelihood or probability of occurrence of a landslide" or "factor of safety of a slope" combined with an estimate of landslide runout. Landslide risk is defined as "an estimate of landslide hazard and potential consequences to an element at risk". Level of landslide safety is defined as "level of safety from the effects of landslides, including levels of acceptable landslide hazard and landslide risk".

Landslide assessments consist of recognition, characterization and estimation of hazard, and may include an estimate of potential consequences. The results of these analyses are then compared with a level of landslide safety. This comparison enables a qualified professional to confirm whether a given level of landslide safety is acceptable relative to a previously defined level of safety. The levels of landslide safety, therefore, are an expression of how much risk is considered acceptable or tolerable. If the estimated risk exceeds the established criteria, control measures can be implemented to reduce the risk to a tolerable level.

APEGBC states, in the *Guidelines*, that engineers and geoscientists who have acquired appropriate education, training and experience have the technical ability to conduct landslide analyses; however, the Association proposes that it is not the role of these professionals to define the levels of landslide safety and that such levels of safety ought to be established by local governments or the provincial government, on the basis of societal values.

If defined and legislated, such levels or standards could be relied upon by regulatory bodies, professionals, or developers, in assessing whether a proposed development, or changes brought on by modifications to an existing development, meet society's expectations with regard to exposure to landslide risk.

In the absence of province-wide standards, some local governments have developed their own levels of landslide safety for proposed residential development. The capacity to address the issues of landslide safety varies considerably between different local governments across the province. Attempts at development of levels of landslide safety in individual jurisdictions would likely result in an inconsistent and fragmented effort at ensuring the safety of British Columbians.

CONCLUSION

I find that Eliza Wing Mun Kuttner died on January 19, 2005, in the District of North Vancouver as a result of suffocation and traumatic asphyxia due to being buried in a landslide. I classify this death as accidental.



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RECOMMENDATIONS

Pursuant to Section 16 of the Coroners Act, the following recommendations are forwarded to the Chief Coroner of the Province of British Columbia for distribution to the appropriate agency:

To: Honourable John van Dongen
Minister of Public Safety and Solicitor General
PO Box 9053, Stn Prov Govt
Victoria V8W 9E2

1. That the Province of British Columbia develop a comprehensive Landslide Hazard Management Strategy focused on prevention and mitigation of risk.
2. That the Province of British Columbia, with input from local governments, coordinate the development of provincial Landslide Safety Levels for proposed and existing residential developments.
3. That the Province of British Columbia consider establishing a legislated provincial standard for how landslide assessments for existing and proposed residential development should be conducted, by referencing APEGBC *Guidelines for Legislated Landslide Assessments for Proposed Residential Development*, in pertinent regulations.
4. That the Province of British Columbia coordinate the development of a provincial guideline to assist local governments in recognizing when an assessment of landslide risk should be carried out.
5. That the Province of British Columbia coordinate the development and administration of provincially standardized training and education for approving officers, building inspectors, local government planners and councils, in identification of landslide hazard and risk, and interpretation of risk assessments prepared by qualified professionals.
6. That the Province of British Columbia work jointly with local governments to develop an Internet based databank which would allow for depositing, storage, universal access, retrieval and effective use of landslide hazard and risk information, in order to facilitate informed decision-making and effective risk management by all stakeholders, including regulatory bodies, qualified professionals, property owners and the public.
7. That the Province of British Columbia provide leadership and work jointly with local governments towards the development of a strategy for prioritizing, collection, storage and use of landslide hazard information.
8. That the Province of British Columbia create an inter-ministry technical working group tasked with overseeing the implementation of recommendations arising out of this report.



CORONER'S REPORT
INTO THE DEATH OF

KUTTNER

SURNAME

ELIZA WING MUN

GIVEN NAMES

To: Director Susan Gimse, President,
Union of British Columbia Municipalities
Suite 60, 10551 Shellbridge Way
Richmond, BC V6X 2W9

9. That the Union of British Columbia Municipalities, and its members, consider developing a framework through which external qualified professionals are retained to examine local governments' internal procedures for reviewing landslide assessment reports, evaluating landslide risk and implementing mitigation measures in a timely manner.
10. That the Union of British Columbia Municipalities create a forum where local governments can share their knowledge and lessons learned with respect to natural hazard risk prevention and mitigation.

To: Honourable John van Dongen
Minister of Public Safety and Solicitor General
PO Box 9053, Stn Prov Govt
Victoria V8W 9E2

and

To: Mr. Derek Doyle, P.Eng
Executive Director
Association of Professional Engineers and Geoscientists of British Columbia
200, 4010 Regent Street
Burnaby, BC V5C 6N2

11. That the Province of British Columbia, jointly with the Association of Professional Engineers and Geoscientists of British Columbia, consider the development of a provincial standard, referenced in legislation, which sets specific qualification requirements for professionals conducting landslide analyses and assessments. A consideration should also be given to the development of a professional designation for qualified professionals conducting landslide analyses and assessments.



CORONER'S REPORT
INTO THE DEATH OF

KUTTNER

SURNAME

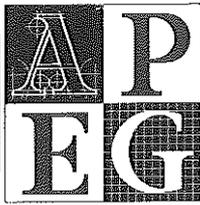
ELIZA WING MUN

GIVEN NAMES

To: Mr. Derek Doyle, P.Eng
Executive Director
Association of Professional Engineers and Geoscientists of British Columbia
200, 4010 Regent Street
Burnaby, BC V5C 6N2

12. While it is acknowledged that members of the Association of Professional Engineers and Geoscientists of British Columbia are obligated, in relation to work they carry out on behalf of their clients, to keep confidential all information unless disclosure is authorized by the clients, the APEGBC may wish to encourage its members, and their clients, to support initiatives related to the development and maintenance of a publicly accessible landslide information databank.

.....
Tom Pawlowski, Coroner, Province of British Columbia



Professional Engineers
and Geoscientists of BC

Building progress through innovation every day

200 - 4010 Regent Street, Burnaby, BC V5C 6N2
T. 604-430-8035 | F. 604-430-8085 | 1-888-430-8035
www.apeg.bc.ca

RECEIVED

October 2, 2008

RECEIVED OFFICE OF THE CHIEF CORONER

Date: Oct 02/08

OCT 07 2008

Refer to: Terry / mouj MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

Comments: Logged as N & P.

Mr. Tom Pawlowski, Coroner
BC Coroner's Office
Metrotower II
Suite 800, 4720 Kingsway
Burnaby BC V5H 4N2

cc T. Pawlowski

cc O. Cant

Dear Mr Pawlowski:

Re: Recommendations 11 and 12 in the Coroner's Report of the death of Eliza Kuttner

On behalf of the Council of the Association of Professional Engineers and Geoscientists of BC (APEGBC), I am pleased to provide the following response to Recommendations 11 and 12 of the Coroner's Report on the death of Eliza Kuttner.

APEGBC Council considered their response to these recommendations at their September meeting.

Recommendation 11:

That the Province of British Columbia, jointly with the Association of Professional Engineers and Geoscientists of British Columbia, consider the development of a provincial standard, referenced in legislation, which sets specific qualification requirements for professionals conducting landslide analyses and assessments. A consideration should also be given to the development of a professional designation for qualified professionals conducting landslide analyses and assessments.

APEGBC Council's Response:

APEGBC Council recommends that the current APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in BC represent the appropriate level of guidance for qualified professionals carrying out landslide assessments in two ways:

- i) the level of effort, due diligence and standard of care that is required.
- ii) the appropriate level of education, training and experience of the practitioner.

APEGBC Council is confident that items i) and ii) above provide an adequate response to Recommendation 11. Based on the guidance provided in these two areas APEGBC Council recommends that when considered together, the appropriate level of education training and experience and the level of due diligence and standard of care detailed in the Guideline provide an adequate level of protection in deterring unqualified practitioners from providing services in this field of practice.

APEGBC Council does not recommend the development of further qualification requirements or consideration of a professional designation for qualified professionals conducting landslide analysis and assessments.

Recommendation 12:

While it is acknowledged that members of the Association of Professional Engineers and Geoscientists of British Columbia are obligated, in relation to work they carry out on behalf of their clients, to keep confidential all information unless disclosure is authorized by the clients, the APEGBC may wish to encourage its members, and their clients, to support initiatives related to the development and maintenance of a publicly accessible landslide information databank.

APEGBC Council's Response:

APEGBC Council supports having landslide assessment reports that have been submitted and accepted by an Approval Authority being made available for review by other qualified professionals working in the area (refer to page 16, paragraph 1 of the APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in BC, 2006).

In addition, the bottom two paragraphs of page 7 of the APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in BC, 2006 recommends how qualified professionals can address potential disclosure issues. APEGBC will recommend to its members working in this field of practice, that they include in their contract for services a clause providing them with authorization from their clients so their reports can be used to develop and maintain a publicly accessible landslide information database.

In considering their response to these Recommendations, APEGBC Council also saw fit to provide the following feedback on this important public safety issue:

- APEGBC encourages the BC government to establish and adopt well-defined, province-wide levels of landslide safety for residential development which would address such issues as existing versus proposed residential development; different types of residential development; and the protection of property versus human life. This would eliminate different levels of landslide safety being implemented in various municipalities and regional districts in the province.
- APEGBC recognizes that while there is provincial legislation that initiates landslide assessments for proposed residential development, further efforts could be made in the areas of:
 - more education and training on landslides for Approving Officers, Building Inspectors, and Planners and Councils of local government (collectively referred to as Approving Authorities), and;
 - additional guidance to assist Approving Authorities in recognizing when further landslide assessment work should be carried out (e.g. the preparation of landslide hazard maps where warranted by the potential landslide risk).
- APEGBC reinforces that the current APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC (2006, revised in 2008) represents the appropriate level of guidance for qualified professionals carrying out landslide assessments for proposed residential development. The APEGBC Guidelines can also be appropriately applied to existing residential development.

Mr. Tom Pawlowski, Coroner

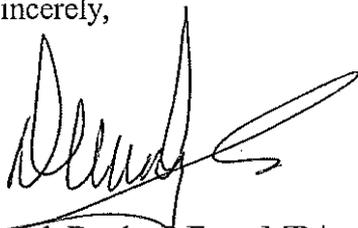
October 2, 2008

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As the regulatory body for the professions of engineering and geoscience, our primary mandate is the protection of the public interest in the practice of professional engineering and professional geoscience.

APEGBC's Council sincerely appreciates the opportunity to respond to and provide feedback on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Derek Doyle', with a long horizontal flourish extending to the right.

Derek Doyle, P.Eng., MBA
Executive Director and Registrar

RECEIVED

AUG 19 2008

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

RECEIVED OFFICE OF THE CHIEF CORONER

August 15, 2008

Terry P. Smith
Chief Coroner
Office of the Chief Coroner
Metrotower II
Suite 800 - 4720 Kingsway
Burnaby, B.C.
V5H 4N2

Date: AUGUST 19 2008

Refer to: Terry P. Smith

Comments: Logged as 'P'

✓ cc Tom Pawlaszki

✓ cc Owen Carr

Dear Mr. Smith:

Re: Coroner's Report - North Vancouver District Landslide

The UBCM Executive met on July 18, 2008 and discussed the Coroner's report into the landslide that took place in North Vancouver District in 2005 and the two recommendations that referenced UBCM:

Recommendation 9: That the Union of British Columbia Municipalities, and its members, consider developing a framework which external qualified professionals are retained to examine local government's internal procedures for reviewing landslide assessment reports, evaluating landslide risk and implementing measures in a timely fashion.

Recommendation 10: That the Union of British Columbia Municipalities create a forum where local government can share their knowledge and lessons learned with respect to natural hazard risk and mitigation.

The UBCM Executive is concerned about the role of local government in assessing landslide risk hazards. The UBCM will work with the Municipal Insurance Association and the other professional associations concerned with this issue, once a provincial regulation is in place, to make local governments aware of the measures they should consider in relation to landslide issues. A clinic on landslide hazard assessment will be held this year at the UBCM Convention. ✓

Thank you for forwarding a copy of your report to the UBCM Executive.

Sincerely,

Susan Gimse
President

UNION OF
BRITISH
COLUMBIA
MUNICIPALITIES

Suite 60
10551 Shellbridge Way
Richmond
British Columbia
Canada V6X 2W9
604.270.8226
Fax 604.270.9116
Email: ubcm@civinet.bc.ca

PRESIDENT
SUSAN GIMSE

EXECUTIVE DIRECTOR
GARY MACISAAC



RECEIVED

AUG 05 2008

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

Letter dated
Aug 15/08
to be used
instead of

July 24, 2008

UNION OF
BRITISH
COLUMBIA
MUNICIPALITIES

Terry Smith
Chief Coroner
Province of British Columbia
Parliament Buildings
Victoria, B.C.
V8V 1X4

Dear Mr. Smith:

Re: Coroner's Report - North Vancouver District Landslide

2005-0255-
0076

The UBCM Executive met on July 18, 2008 and discussed the Coroner's report related to the landslide in North Vancouver District and the two recommendations in the report directed at the UBCM:

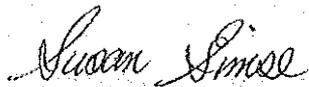
Recommendation 9: That the Union of British Columbia Municipalities, and its members, consider developing a framework which external qualified professionals are retained to examine local government's internal procedures for reviewing landslide assessment reports, evaluating landslide risk and implementing measures in a timely fashion.

Recommendation 10: That the Union of British Columbia Municipalities create a forum where local government can share their knowledge and lessons learned with respect to natural hazard risk and mitigation.

The Executive agreed to work with the Municipal Insurance Association and other professional associations once a provincial regulation/policy is in place to make local governments aware of the measures they should consider in relation to landslide issues - best practice approach. The Executive also agreed to hold a clinic at the 2008 UBCM Convention on the landslide hazard assessment issue.

Thank you for informing UBCM of the results of your investigation.

Sincerely,



Susan Gimse
President

Suite 60
10551 Shellbridge Way
Richmond
British Columbia
Canada V6X 2W9
604.270.8226
Fax 604.270.9116
Email: ubcm@civicnet.bc.ca

PRESIDENT
SUSAN GIMSE

EXECUTIVE DIRECTOR
GARY MACISAAC





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SEP 30 2008

MINISTRY OF SOLICITOR GENERAL
OFFICE OF THE CHIEF CORONER

September 29, 2008

RECEIVED OFFICE OF THE CHIEF CORONER

Date: Sept 30/08

Refer to: Terry / maj. MP

Comments: Logged as A.P.P.A.A.A.P.P.A.

cc T. Pawlowski

cc O. Court.

Mr. Terry P. Smith
Chief Coroner
Office of the Chief Coroner
Metrotower II
800 – 4720 Kingsway
Burnaby BC V5H 4N2

Dear Mr. Smith:

Re: **Coroner's Report into the death of:
KUTTNER, Eliza Wing Mun
Case File 2005-0255-0076**

I am responding to your June 26, 2008 letter and copy of the Coroner's Report into the death of Eliza Wing Mun Kuttner.

We appreciate the opportunity to respond to the recommendations in the report, as they relate to the Ministry of Public Safety and Solicitor General. Please find below our general comments concerning the recommendations which have been directed to my Ministry.

The Ministry of Public Safety and Solicitor General agrees to facilitate discussions, and coordinate a forum of ministry partners and other stakeholders, to review the recommendations presented in this report. It must be acknowledged, however, that land development is largely the responsibility of local governments and the processes under which bare land is turned into residential development flows through local government. This includes processes such as Official Community Plan development, building permitting, zoning changes, studies and public hearings. Slope and soil stability assessment falls within the domain of professional engineers and geoscientists (Association of Professional Engineers and Geoscientists of British Columbia - APEGBC). Discussions and agreement on the implementation of new processes, standards and guidelines cannot take place in the absence of local government and the appropriate professional associations.

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It is important to also draw a distinction between practices which existed 25 to 30 years ago and those which exist today. Over that time frame, we believe that there has generally been an improvement in how local governments address landslide risks related to new residential development. In order to move forward and make improvements, it is important to have a clear understanding of current processes.

To the extent that the Ministry of Public Safety and Solicitor General is able to provide specific responses based on our current level of knowledge, we have provided those responses below. As some of the recommendations in this report fall outside of the expertise and jurisdiction of the Ministry, those broader discussions referenced above will have to occur before a response can be provided. Specifically, we are unable to provide responses to Recommendations 1, 4, 5, 6 and 11 at this time.

In terms of the recommendations 2, 3, 7 and 8, our responses are as follows:

Recommendation 2

The Ministry of Public Safety and Solicitor General agrees that the absence of a specified province wide guideline of “*acceptable risk*” for landslide hazard, leads to a lack of continuity in the risk assessment practices which should occur when bare land is being considered for residential development. The Ministry agrees to facilitate the discussions with the Union of British Columbia Municipalities (UBCM), provincial Ministries, the Association of Professional Engineers of British Columbia (APEGBC) and other stakeholders, with a purpose of defining an appropriate guideline of “*acceptable risk*” for landslide hazards.

Recommendation 3

In 2005, the Ministry of Public Safety and Solicitor General, through the Provincial Emergency Program (PEP), provided \$50,000 in funding to the APEGBC to produce the Guidelines referenced in Recommendation 3. These guidelines are currently being updated by the Association. We believe this document serves as an appropriate guide for professionals who undertake the work of landslide risk assessments. The Province supports the concepts of “professional reliance” and “due diligence” within professional associations. Associations ensure best practices and safety standards are adhered to by their professional members. Associations are responsible to ensure best practices are updated and reflect current science and knowledge that fall within their purview. The Ministry agrees to lead discussions with the APEGBC to explore this recommendation. As well, the Ministry agrees to review and discuss the APEGBC guideline revisions with the Association.

Recommendation 7

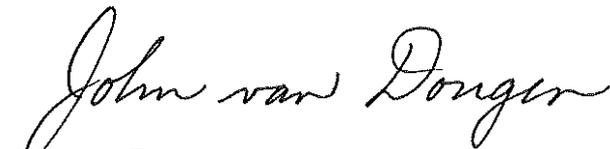
In 2005, the Ministry of Public Safety and Solicitor General, through PEP, provided \$60,000 in funding to the Cariboo Regional District (CRD) to conduct a broad survey/archive of landslide risk areas within the CRD boundaries. That study, directed by the local government, allowed them to focus the assessment work in areas of highest priority within their jurisdiction. The information collected serves as a reference document and a high level strategic hazard analysis to guide further and more detailed study of landslide risks for future development. In our opinion, this model appears to fit the needs of the local government to broadly assess areas of potential risk and to guide risk assessment processes for future development. The Ministry agrees to meet with CRD and UBCM members to review this and other products to develop a model for other local governments to follow.

Recommendation 8

The Ministry of Public Safety and Solicitor General agrees to coordinate the formation of a technical working group to review and discuss Recommendation 2, 3 and 7, as well as the other recommendations. We believe this working group should engage a broader group of stakeholders than suggested, as the impacts of these recommendations will fall on local governments, professional associations, homeowners, developers and others.

Thank you for the opportunity to reply to the Coroner's Recommendations. Please feel free to contact Mr. Wes Shoemaker, Associate Deputy Minister at 250 953-4083 should you have any questions regarding our response.

Yours sincerely,



John van Dongen
Solicitor General

pc: Mr. Wes Shoemaker