

Blueridge Escarpment Mitigation Committee

Minutes: January 31, 2006

DNV Hall, 355 W Queens Rd

Attendees: Bill Maurer, Nancy Van Insberghe, Sandra Seres, Richard Wohl, Marianne Lobel, Lana Webb, Henry Reisner, William Schuurman, Keith Errington, Ian Stabler, Marg Rankin, Russ Curtis, Dave & Anne Davey, Jim & Renee Porter, Mike Little, Peter Tallman, Alf Cockle, Phil Holland, Gavin Joyce, Jozsef Dioszeghy, Mike Porter

1. General

Meeting Notes: Will Schuurman

Meeting called to order at 7:00 p.m.

In attendance:

Chair:	Bill Maurer
Residents:	Approximately 20 (see sign in sheet that follows)
District NV Engineering staff:	Jozsef Dioszeghy: District's Engineering Director Gavin Joyce: Community Liaison officer for the Berkley Landslide Risk Management Project
BGC Engineering:	Mike Porter: BGC Engineering is the author of the Berkley Landslide Risk Management Phase 1 Risk Assessment report. Mike Porter presented findings at the Jan 16 th presentation at Centennial Theatre.
District Council:	Councillor Mike Little

Meeting format: General Q&A following Agenda Items (see below). These notes attempt to capture the general discussion.

2. Opportunity to comment on minutes of last meeting:

Sept 21, 2005 Minutes accepted as written.

3. Introduction:

District staff and BGC Engineer members were introduced and their roles explained.

4. BGC Reports & Other Items:

This took the form of Q&A.

Risks that were excluded from the Phase 1 Risk Report: The scope of the report limited examination of slide origins to crest area only because of historical data – previous slides appear to have originated in fill (see Table 2 of Phase 1 Report). Studying undercutting at the base was out of scope. Although there is one known historic slide originating at the base, the risk of this is considered low. The mid slope was examined generally to an area from the crest to 10-15 meters down the crest not stopping at of private property boundaries. The intention was to

determine the extent of loose fill near the top. Location of many of the auger holes is on District Land. Water sources were not explicitly reported on (one resident noted that they saw a stream/spring source at mid slope in late summer well after the raining season) but has been considered. The report does not mention the risk of a slide blocking a creek and causing a debris torrent when released causing property damage. Although the Phase I report does not discuss debris torrent, it has been considered and risk deemed low.

What is the Colouring Algorithm for Red/Yellow base properties in Phase I:

This is a function of 1) the location of a property on the runout angles 19 – 25 degree zones 2) being in a potential flow path of one or more slide originating above. Follow-up meetings with residents will go into more detail.

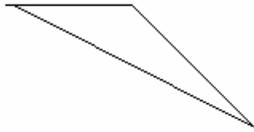
Phase I Community Q&A meetings: 4 meetings are planned to allow residents to ask BGC property specific questions. A letter will go out with info Feb 1st. Meetings will require RSVP so that groups are limited to 25-30 residents. Initial planned dates are Feb 7, 9, 15, 16. Residents can request to attend a meeting even if they don't receive a specific invitation.

Phase II Remedy Report Timeline and Goal: Expected to be released in April/Early May. The Report will examine remedies to specific previously identified risks and provide cost estimate for implementing the remedy and also look into what the remedy would do to reduce risk. The goal is to look at every possible practical remedy.

Phase II Remedy Mitigation: It is unknown and this time if risks can be totally eliminated but one resident expressed the desire to remove risks introduced by man. It will be difficult to compare risks levels to other communities in the province as we are one of the 1st communities that are studying and publishing risks in such detail – there is not comparative data available other than in Hong Kong or Australian communities. It is anticipated that the community will have to determine tolerances towards risks. One resident asked if tolerance will be decided by a vote, another stated concerning about the community determining the level of risks that they will live with when they as an individual have no means to remedy other than transferring that risk to someone else through a sale of the property where the buyer will demand compensation (a lower price) to assume the risk.

Phase II Mitigation Implementation Costs: Residents discussed what it might cost to implement fixes so we can start examining options for relief if cost is too high for a resident to bear. As an example, the highest cost for with implementing recommended remedies in the Klohn Leonoff report of 1980 was \$50,000 then, inflation adjusted alone today that is about \$140,000. Could this be the upper limit in phase II? For comparison, the resident who has been ordered by the District to implement remedies to their property that involves removal of fill and decrepit retaining walls was asked to provide an estimate of that cost of having contractor do the work. Estimates were not available as costing has not been done. Another resident asked what would happen to costs if building structures had to be removed. At this time, expected costs are speculative only.

It was stated that if removal of fill is suggested, the extent of the removal will likely be limited to 2 to 4 meters in from the crest. Loose fill areas tend to be triangular shaped such as:



It was also suggested that other remedies such as compaction of soils may be considered.

Phase II Mitigation Implementation who pays: So far all indications are the property owner where the risks resides will have to pay to remedy a risk. Many residents expressed concern that costs will cause unacceptable hardship on many residents and that relief is highly desirable. Specific relief options were not discussed, but it is the understanding of there is another group in the community forming that will look hard at all avenues of relief. One resident expressed frustration that the District has ruled out further property buyouts before costs and remedial action is known.

One resident asked that potential loss of property values be carefully examined when examining costs of remedial work – loss of property values could be in the 10's of millions of dollars.

Phase II Mitigation Implementation Priority: one resident stated that implementing fixes must be done in the 'emergency measure' style timeline. Homes that were listed for sale prior to Phase I report being released are seeing that there is little to no buyer interest until fixes are implemented and the future more deterministic.

Impact of Phase II on Future Policy: It is anticipated that council will make policy decisions following the report. It is important at this time for all involved to understand the implications of how third parties like insurance companies, mortgage writers and developers will react to what might be deemed an acceptable risk. Understanding of implications will help council determine policy after the report

Impact of Phase II on Future Building Policy: Another resident asked what kind of policy we can expect with respect to what will be allowed to be built in different zones in the future. The BGC presentation on Jan 16th stated that Hong Kong implemented a policy regarding building that went something like this:

Risk level	Hong Kong Policy
Exceeding 10 ^{**} -4 (Red Zone?)	Unacceptable. No one should live in with this level of risk.
Between 10 ^{**} -4 and 10 ^{**} -5 (Yellow Zone?)	Acceptable for existing homes but not acceptable to introduce new building in the risk level. i.e. not future building in this zone
Less than 10 ^{**} -6 (White zone?)	Acceptable to introduce new people into this zone, i.e. future development is allowed.

Specific What-if questions were asked:

- If I'm in the red zone and remedial work gets me only to yellow, will a future developer be allowed to tear down my home and build a new one in its place?
- If my redzone home burnt down today, would I be able to rebuild?
- What will the removal of fill do to allowable building allowances?

The answer to these questions was *that "we just don't know at this time"*

A base resident stated that they recently built their home (in the last 10 years) and were required to spend tens of thousands of dollars on GeoTech reports and retaining walls to ensure their property was safe. It is not acceptable for them to live in a zone that is considered any thing but safe after they were required to do all this work.

Phase II Remedy Implementation Timeline: hopefully mitigation work will begin immediately after the report is released in May and be completed by the end of September but this will depend on what is practical.

Phase II Peer Review: The same review plan is in place for Phase II as was done in Phase II – Dr. Mortenstern who is very well respected will offer advice and approve the report before release. There was concern raised that since Dr. Mortenstern provides input into the report that he might have a conflict with respect to critiquing it. It was stated inputs stems from regular reviews and that peer review is not mandatory - the District is satisfied with the level of peer review that is occurring.

Pre-Phase II Storm Sewer hookup now required: The Berkley Escarpment Drainage Works Connection Bylaw was passed by council Jan 30th. If residents do not hook up by May 31st the District will immediately begin hookups after June 1st – no other approval is required by council – the work is pre-authorized. Residents will be billed not only for physical labour and materials, but also for administrative costs of managing the work. One resident expressed concerned that the \$500 fine per day for non-connection was dropped in case a system is not maintained or is decommissioned after connection. It was stated by Councillor Little that standard bylaw enforcement action can be taken to ensure compliance.

Pre-Phase II Storm Sewer hookup cost estimates: Ball park costs for hooking up:

Technique	Cost to resident
Do it yourselfers	\$3,000 - \$4,000
Resident contracts out to Drainage services companies	\$7,000 - \$15,000
Resident waits for District to do the work	To be determined but cost will also include Admin overhead

One resident mentioned that some residents were unable to do the work themselves and also unable to manage contractors. This was later clarified stating that one resident was having trouble finding a contractor to take on the work, but since then has found contractors willing to do the work.

The District stated that they have helped many residents understand the requirement; there have been 13 inspection meetings with residents where the District explains the process and even assists with permitting application. They will advise for free, but they will not manage the project for homeowners or do the work for free.

One resident asked that the District help reduce costs by putting in inspection chambers which determine where to tie in – installation of inspection chambers is currently the responsibility of the homeowner. It was stated that some residents have had to do a lot of extra work to locate unmarked tie ins. Another resident stated that when he did his work and had trouble locating the tie-in point, that the District was very cooperative and came out to assist within hours. It was also mentioned that inspection chambers have been included by the district at the 20 new laterals installed last summer.

One resident was concerned that do-it yourselfers might take on the work, but are not qualified and will result in unsafe hookups. The District said the permit inspection process will ensure that all work meets acceptable standards.

One resident at the base stated that they spent \$22,000 on connecting their roof gutters and foundation weeping tiles to the storm sewers after the 2005 slide. Another resident stated they spend \$30,000 on removal of fill recently in order to build a structure in their backyard on a proper base.

Pre-Phase II Storm Sewer hookup: What about the east side homes

One resident questioned if east side home (east of crest roadways) will be required to hookup to the Storm Drainage system – after all doesn't much of Blue Ridge flat drain down the slope to the Seymour River. It was reported that the West side is the priority. The impact of east side drainage is being examined. BGC is finding that front yards of crest homes contain only 1-2 meters of loose materials before impermeable glacial till is hit. Since many of the utilities under roads are well into till below this level, that they likely serve as a trough and direct runoff southward rather than westward down the escarpment. But this is being examined in the Phase II report.

Pre-Phase II Piezometers and Monitoring. Approximately 20 Piezometers that will measure soil water levels are being installed this week, work will complete next week. They are being added to the 7 already installed in the area around the Jan 2005 slide. Residents are cooperating and the Piezometer Installation Authority Bylaw has been passed Jan 30th to ensure access is given in cases where property owners object. The new Piezometers will be manually read in the future – there will be no real time reporting as with the seven current ones.

Monitoring demo. The software system developed by BGC which enables the District to monitor rainfall on the escarpment and water levels at the 7 piezometers was demo'ed. We could see that 5 mm of rain fell on the slope in the hour before the demo. We could see where we were presently at on the Alert Graph that plots 2 data points: accumulated rain fall in the last rain event (Y axis) and accumulated rain fall in the trailing 4 week period (X Axis). We learnt that accumulated rain fall in the last rain event gets reset to zero after 6 hours of non rain and we saw how water levels drop and raise at piezometers during after and during rains. We heard how pages are sent to staff and BGC if unacceptable threshold are detected. The monitoring program is web based AND the District will make the data available on www.dnv.org some time in the future. One resident was assured that the monitoring system data recorders were on their own power supply in case of failure.

Project Status 2430 Chapman & 1593 Lennox: The District could not comment on these cases. The owner of 1593 Lennox stated that he has received notice that work will commence to remove fill from his property on Feb 13th weather permitting and that he will be responsible for paying not only of the work, but for separate

detailed Geotech report that the District commissioned to ensure that the work they do does not jeopardize the integrity of the home on the property.

Evacuation: We did not get to this agenda item before time expired.

Meeting adjourned at 9:10 p.m.

Attendees

Name	Address
1 Bill Mauer	2403 Riverside 2430 CHAPMAN
2 NAUCY VAN INSBURGHE	
3 Sandra Seres + Richard Wohl	1880 Riverside Dr.
4 MARIANNE LOBEL	1838 RIVERSIDE
5 LANA WEBB (TONLAN@SHAW.ca)	1730 RIVERSIDE
6 HENRY REISNER	2180 CHAPMAN
7 WILLIAM SCHURMAN	1916 Rivergrove Place -
8 KEITH ERRINGTON	2454 HAYSEED.
9 ZAN STABLEK	1593 LENNOX
10 MARG RANKIN	1557 LENNOX
11 RUSS CURTIS	1810 RIVERSIDE DRIVE
12 DAVE & ANNE DAVEY	2249 BERKLEY
13 SIM & RENEE PORTER	2223 BERKLEY
14 Mike Little	3684 Garibaldi Drive
15 PETER TALLMAN	1978 RIVERGROVE PLACE
16 ALF COCKRE	2130 BERKLEY AVE