

AGENDA ITEM NO: 7-H-4

MEETING DATE: November 21, 2017

STAFF REPORT – COVER SHEET

SUBJECT:	Official Community Plan and Zoning Bylaw Amendments – Marble Hill Area	DATE:	November 10, 2017
DEPARTMENT:	Planning & Strategic Initiatives OCP00031/ RZ001130	PREPARED BY:	Karen Stanton

1. SUMMARY OF ISSUE:

On April 4, 2017, Council received a staff report regarding continuing ground movement in the Marble Hill area, and directed staff under section 463 (2) of the Local Government Act to begin the preparation of bylaw amendments that, if adopted, would prohibit development within an expanded Marble Hill development moratorium area. Amendments to the City's Official Community Plan and Zoning Bylaw are now presented for Council's consideration.

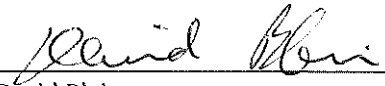
2. RECOMMENDATION:

Recommendation that "Official Community Plan Bylaw Amendment Bylaw 2017, No. 4450", a proposed text amendment to the Eastern Hillside Comprehensive Area Plan, Maps and Policies to restrict subdivision and development in Development Permit Area 2, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

Recommendation that "Official Community Plan Bylaw Amendment Bylaw 2017, No. 4451", which proposes to re-designate certain parcels of land in the City in accordance with the Maps and Policies within the Eastern Hillside Comprehensive Area Plan, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

Recommendation that "Zoning Bylaw Amendment Bylaw 2017, No. 4452", a proposed text amendment to the RSV1 Zone to include two new areas, (gsa-HCA) "Geologically Sensitive Area-Hinkley Creek Area" and (gra) "Geologically Restricted Area" and to establish permitted uses and development criteria required for development in these areas, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

Recommendation that "Zoning Bylaw Amendment Bylaw 2017", No. 4453", which proposes to rezone certain parcels of land in the City to restrict subdivision and development as a result of rock fall hazard, landslides, earthflow and generally unstable ground conditions, be given first and second reading; and further that a Public Hearing be called for December 5, 2017.



David Blain
Director of Planning & Engineering

**3. CHIEF ADMINISTRATIVE OFFICER'S
RECOMMENDATION/COMMENTS:**

Supports recommendation.



Peter Monteith
Chief Administrative Officer

STAFF REPORT ON REZONING APPLICATION OCP00031 / RZ001130

PREPARED BY: Karen Stanton DATE: November 10, 2017

POSITION: Manager, Long Range Planning DEPARTMENT: Planning & Strategic Initiatives

1. DEFINITION OF ISSUE:

On April 4, 2017, Council received a staff report regarding continuing ground movement in the Marble Hill area, and directed staff under section 463 (2) of the Local Government Act to begin the preparation of bylaw amendments that, if adopted, would prohibit development within an expanded Marble Hill development moratorium area. Amendments to the City's Official Community Plan and Zoning Bylaw are now presented for Council's consideration

2. FACTORS/BACKGROUND:

2.1 The Marble Hill Development Moratorium Area was established in 2004 in response to geotechnical instability that resulted in significant residential property settlement and home damage, and in three cases, the demolition of homes on safety grounds.

2.2 Since then, annual monitoring of ground movement has been undertaken within an expanded area, to confirm presence or absence of movement. In 2014, the geotechnical firm of KCB analyzed the ground movement survey data and found ground movement in excess of two metres in some locations. In 2016, the firm produced a landslide map, identifying three geographic areas where they recommended:

- (a) No development in the Ridge Crest rock fall hazard area (Areas A1 and A2)
- (b) Moratorium on further development in the Hinkley Creek suspect slide area Area B; and
- (c) No development in the earthflow area, Areas C1, C2, and C3

A map illustrating the location of these areas is included in Appendix 1 of this report.

2.2 On April 4, 2016, Council received a staff report (attached Appendix 2) regarding continuing ground movement in the Marble Hill area, and directed staff under section 463 (2) of the Local Government Act to begin the preparation of bylaw amendments that, if adopted, would prohibit development within the affected area.

2.3 Since then, city staff and consultants have worked to verify map boundaries, and identify required bylaw amendments to clearly reflect permitted land uses and development requirements for the affected areas, which can be summarized as follows:

- a) Amendments to the Eastern Hillisides Comprehensive Area Plan Land Use Plan to
 - a. rename the "Subject to No Build Moratorium" Area as "No Build Area" and expand this area to include Areas C1, C2 and C3

- b. establish a new designation, “Geologically Sensitive” area to include areas A1, A2, and area B;
- b) Amendments to Development Permit Area 2 geotechnical report requirements to ensure, where development is permitted, it will not be endangered by rock fall hazard, landslides, earthflow, or other slope or foundational instability;
- c) Text amendments to RSV1 (Limited Use Reserve) Zone to establish two new types of areas, with different land use restrictions, as follows:
 - i) “Geologically Restricted Area (gra) ”
 - applies to C1, C2, and C3 earthflow area
 - only a single wide mobile home that can be moved and adjusted as necessary to accommodate ongoing ground movement, and limited ancillary use (e.g. deck or shed) permitted, subject to geotechnical reports and development permit approval, and connection to a private sewage disposal system
 - as a condition for approval, a restrictive covenant will be required with an indemnity clause for the City
 - ii) “Geologically Sensitive Area – Hinkley Creek Area (gsa-HCA)”
 - applies to Areas A1, A2 and B
 - may allow for a single family detached home, and ancillary uses, subject to geotechnical reports and development permit approval. Significant geotechnical requirements are anticipated as noted in the previous staff report.

No cutting of trees would be permitted in either of these areas, except in accordance with a development permit issued by Council. Restricted agriculture may be permitted, provided no tree clearing is required to support this use; and

- d) Rezoning of affected properties to RSV1 (Limited Use Zone) – gra or RSV1-gsa-HCA according to the geographic area in which they are located, as indicated in the previous section.

2.4 Following introduction of the bylaw amendments, a letter and copy of geotechnical reports will be sent to all affected property owners as part of the bylaw amendment notification process. An information sheet has also been prepared to answer anticipated questions.

3. RECOMMENDATION & SUBSTANTIATION:**Recommendation:**

Recommendation that “Official Community Plan Bylaw Amendment Bylaw 2017, No. 4450”, a proposed text amendment to the Eastern Hillside Comprehensive Area Plan, Maps and Policies to restrict subdivision and development in Development Permit Area 2, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

Recommendation that “Official Community Plan Bylaw Amendment Bylaw 2017, No. 4451”, which proposes to re-designate certain parcels of land in the City in accordance with the Maps and Policies within the Eastern Hillside Comprehensive Area Plan, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

Recommendation that “Zoning Bylaw Amendment Bylaw 2017, No. 4452”, a proposed text amendment to the RSV1 Zone to include two new areas, (gsa-HCA) “Geologically Sensitive Area–Hinkley Creek Area” and (gra) “Geologically Restricted Area” and to establish permitted uses and development criteria required for development in these areas, be given first and second reading; and further, that a Public Hearing be called for December 5, 2017.

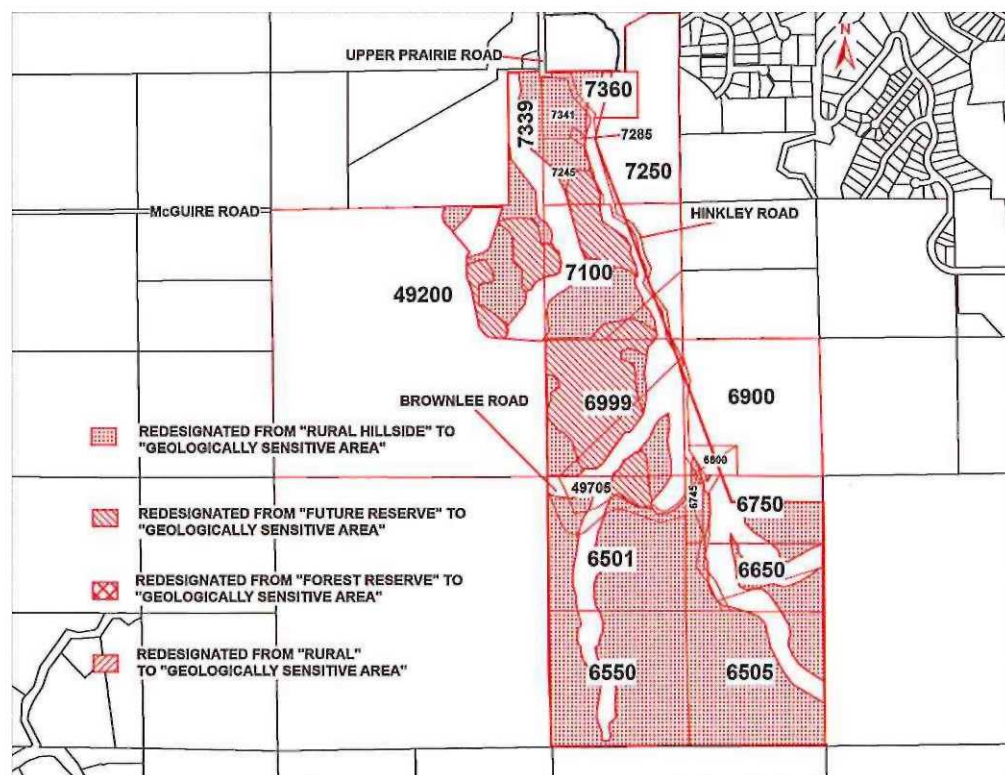
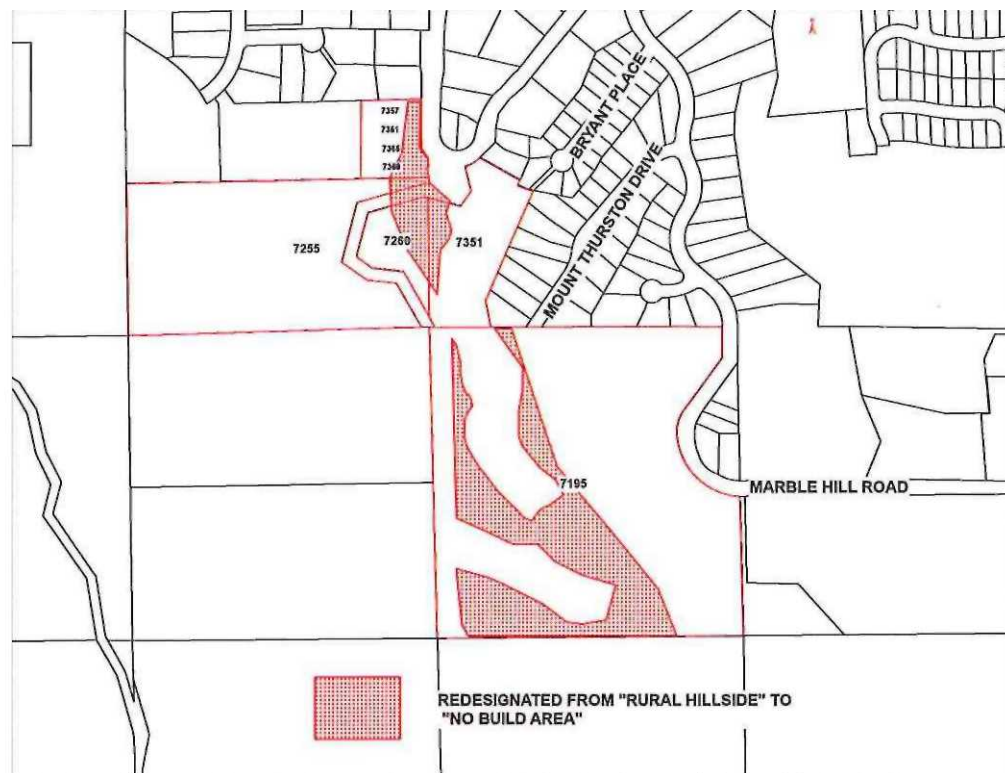
Recommendation that “Zoning Bylaw Amendment Bylaw 2017”, No. 4453”, which proposes to rezone certain parcels of land in the City to restrict subdivision and development as a result of rock fall hazard, landslides, earthflow and generally unstable ground conditions, be given first and second reading; and further that a Public Hearing be called for December 5, 2017.

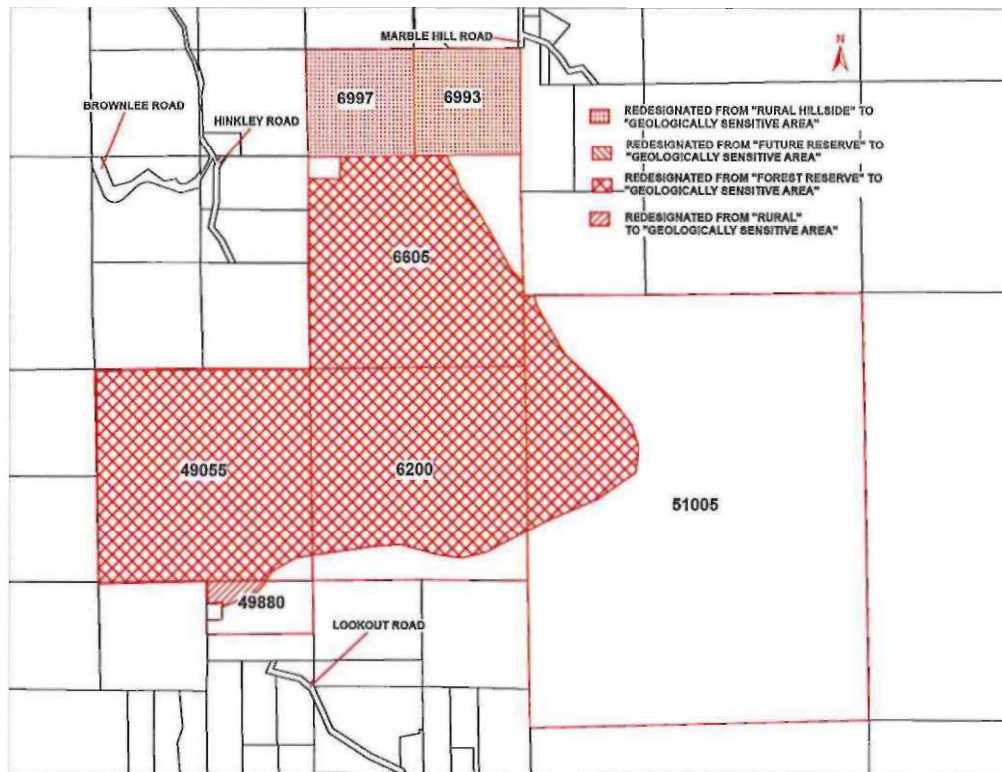
Substantiation:

The proposed bylaw amendments are required to provide clarity to property owners and the public with respect to permitted land uses, and development approval requirements, to protect future development from rock fall, landslide, or earthflow with unstable soil conditions.

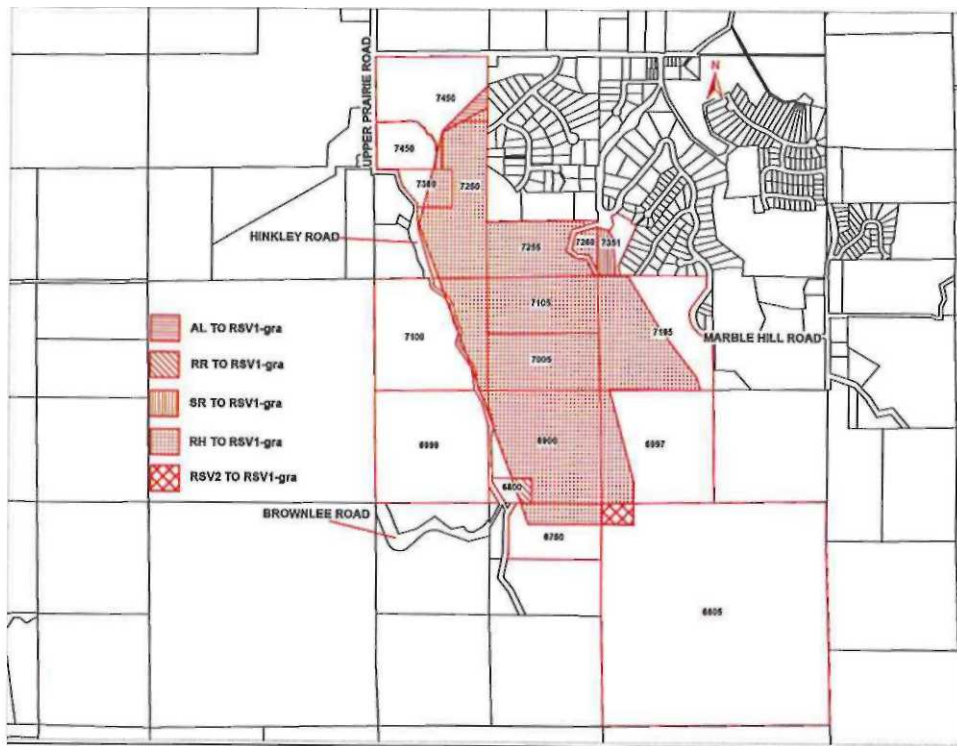
4. SOURCES OF INFORMATION:

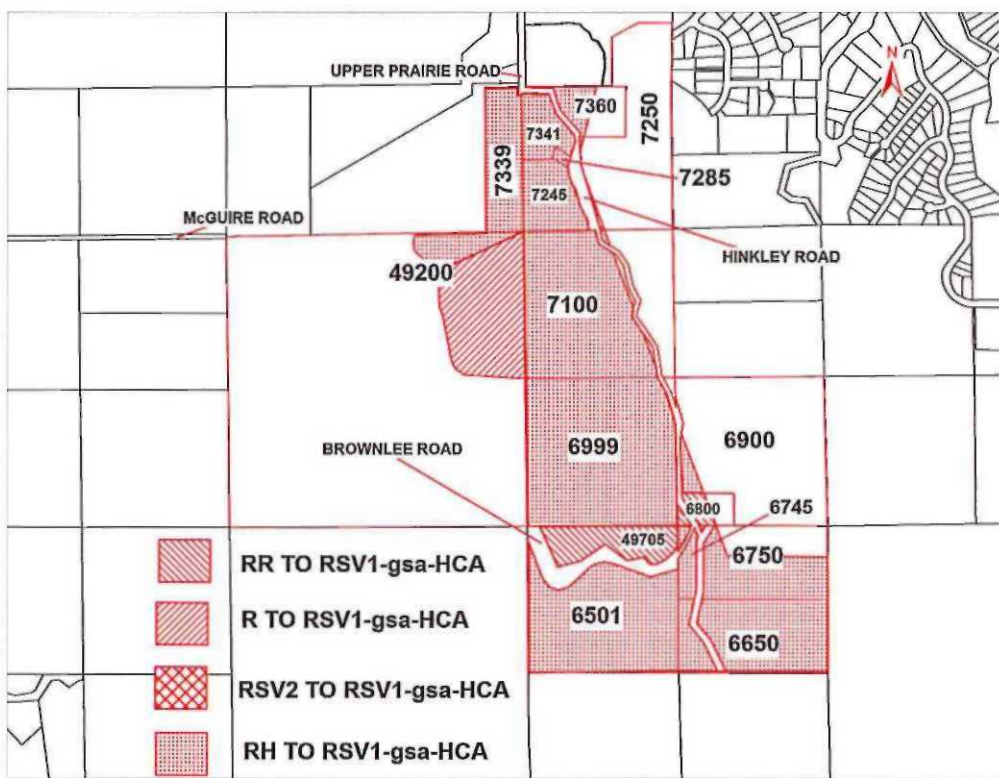
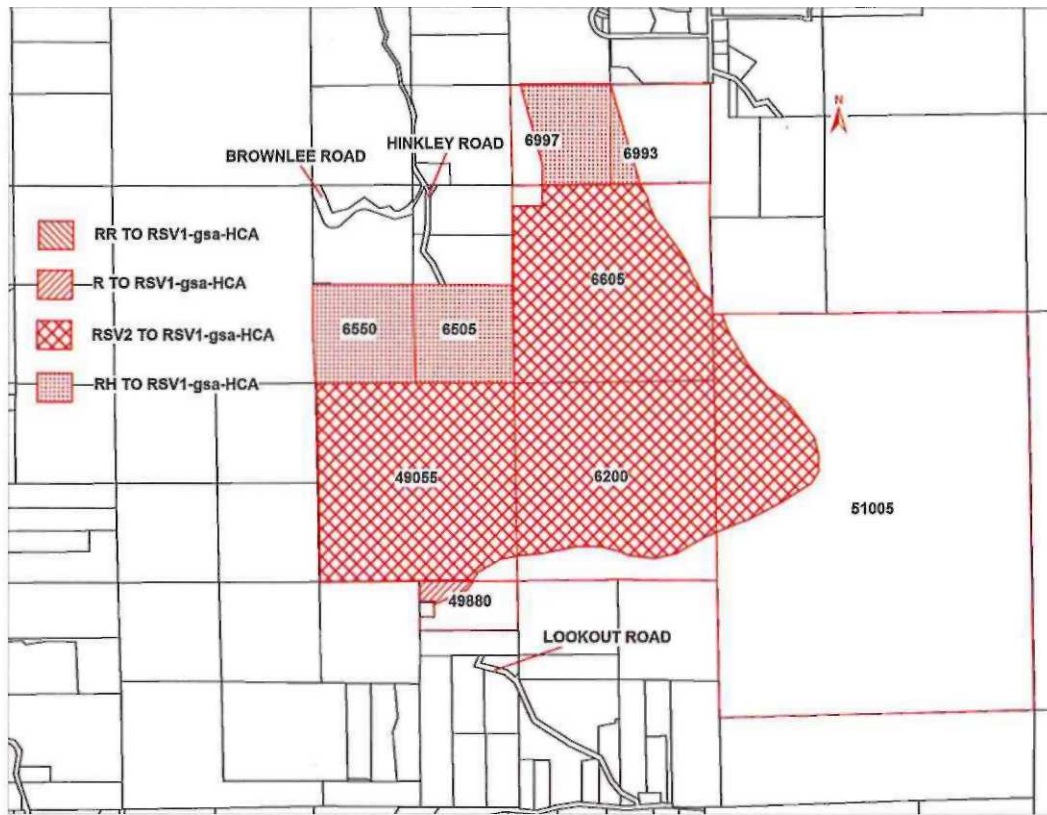
Staff Report dated March 15, 2017 and accompanying geotechnical reports from Klohn Crippen Berger

Proposed OCP Amendments



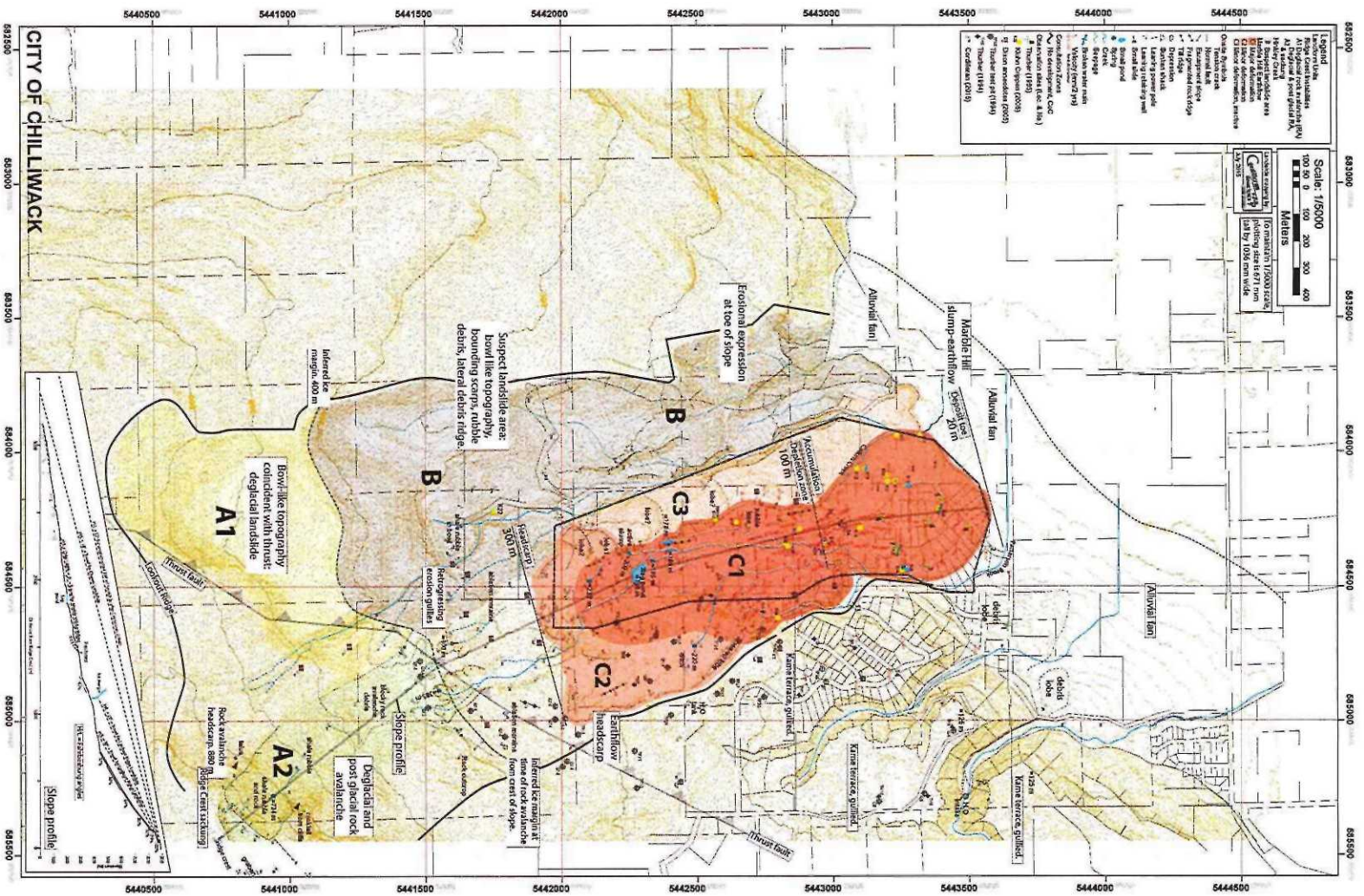
Proposed Zoning Amendments





Appendix 1:

**Cordilleran Geoscience terrain map,
Marble Hill Landslide Mapping Project, Eastern Hillsides
As referenced in letter from Klohn Crippen Berger, August 3, 2016**



APPENDIX 2:

AGENDA ITEM NO: 7-B-2

MEETING DATE: April 4, 2017

STAFF REPORT – COVER SHEET

SUBJECT: Marble Hill Development Moratorium Area DATE: March 15, 2017

DEPARTMENT: Engineering PREPARED BY: R.E.G Sanderson

1. SUMMARY OF ISSUE:

In 2004 Chilliwack City Council put in place a Development Moratorium in the Marble Hill area, since 2004 considerable ground movement monitoring work has been completed. This ground movement data, as well as ground truthing has resulted in a geo-technical recommendation to enlarge the Development moratorium area.

2. RECOMMENDATION:

Recommendation that Council direct staff under section 463(2) of the *Local Government Act* to begin the preparation of a zoning amendment bylaw and ancillary draft policies that will have the effect, if adopted, of prohibiting development of any building or structure on land located:

- a) in the Ridge Crest rockfall hazard area, Areas A1 and A2;
 - b) in Hinkley Creek suspect landslide area, Area B; and
 - c) in the earthflow area, Areas C1, C2 and C3;
- as shown on the map contained within the Staff Report dated March 15, 2017.

and further, that the City expand its GPS Monitoring Program to cover the entire mapped earthflow area.


D. A. Blain, Director of Planning and Engineering

**3. CHIEF ADMINISTRATIVE OFFICER'S
RECOMMENDATION/COMMENTS:**

Supports recommendation.


Peter Monteith, CAO

STAFF REPORT ON

MARBLE HILL DEVELOPMENT MORATORIUM AREA

PREPARED BY:	<u>Rod Sanderson</u>	DATE:	<u>March 15, 2107</u>
POSITION:	<u>Deputy Director of Engineering</u>	DEPARTMENT:	<u>Engineering</u>

1. DEFINITION OF ISSUE:

In 2004 Chilliwack City Council put in place a development moratorium in the Marble Hill area, since 2004 considerable ground movement monitoring work has been completed. This ground movement data, as well as ground truthing has resulted in a geo-technical recommendation to enlarge the development moratorium area.

2. BACKGROUND:

- 2.1 The moratorium area was created in response to geotechnical instability that resulted in residential property settlement and home damage. So severe was the settlement in two cases that the homes were demolished on safety grounds.
- 2.2 The geotechnical instability is caused by a land slide mass consisting mostly of broken shale that settles and shifts in response to the penetration of ground water.
- 2.3 The original moratorium or potential movement area was created based on the best information available at that time. Since then, we have expanded the data gathering area to confirm presence or absence of movement.

3. FACTORS:

- 3.1 The original 2004 Development Moratorium map is attached in Appendix A and includes Panorama Drive, Allison Place, Ridgeview Street and Ridgeview Place.
- 3.2 The geotechnical firm of the Klohn Crippen Berger (KCB) has been analyzing the ground movement survey data for over a decade. Their most recent report from 2014 found ground movement in excess of two (2) metres in some locations. The July 2014 report is attached in Appendix B.
- 3.3 In response to the decade of movement data results, KCB recommended we conduct a review of the existing moratorium area map and update as required. That moratorium area map review is now complete and the summary of the report is attached in Appendix C, dated August 3, 2016. In addition to the new mapping resource, the August 3rd report makes 4 key recommendations repeated here for convenience:

With reference to the attached Cordilleran Geoscience terrain map, we have the following recommendations (the areas are shown on the last page of the report):

- a) No development in the Ridge Crest rockfall hazard area Areas A1 and A2 noted;
 - b) Moratorium on further development in Hinkley Creek suspect landslide area, Area B; and
 - c) No development in the earthflow area, Areas C1, C2 and C3;
- as shown on the map contained within the Staff Report dated September 28, 2016.
And further, that the City expands its GPS monitoring program to cover the whole mapped earthflow area.

3.4 Areas A1 and A2 are inaccessible so there will be no impact on development.

Area C1 is the existing moratorium area. Due to their proximity to C1, any development application in areas C2 and C3 are already subject to rigorous geotechnical investigation. The proposed moratorium area will formalize that process.

Area B includes some existing homes along Hinkley and Development Cell 13 in the Eastern Hillside Comprehensive Area Plan (identified as future reserve). Extension of the moratorium to this area will affect the development potential of the property but based on the information received it would be prudent for the City to require extensive geotechnical evaluation before any development application in the area is considered. Extending the hub monitoring network will provide background information for both the City and a development applicant.

3.5 To assist property owners and the public in interpretation of the new map, our GIS Department simplified the KCB updated map boundary. This new simplified map is attached in Appendix D.

3.6 The no development recommendation refers to rezoning and subdivision. If a property owner within the original or proposed moratorium area wishes to build a home or structure, there is a geotechnical investigation methodology prescribed by the City to determine if movement or landslide shale is present on the property. The extent of the work required will depend on the proposal. The geotechnical work required will depend on the location, and may include but not be limited to, GPS hub installation and long term monitoring, subsurface material investigation by drilling and subsurface water table investigation by piezometer tube installation.

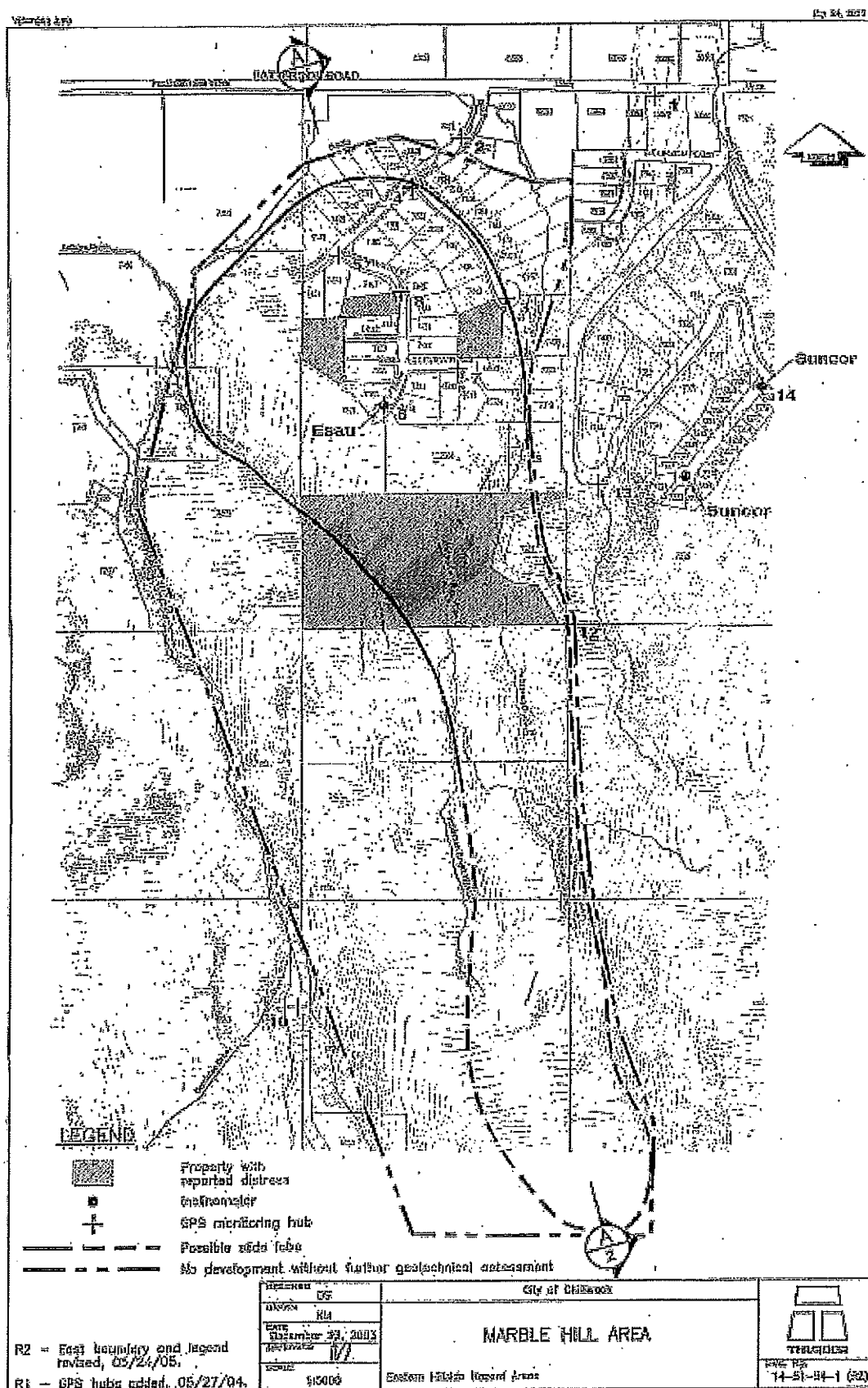
4. RECOMMENDATION & SUBSTANTIATION:

Recommendation that Council direct staff under section 463(2) of the *Local Government Act* to begin the preparation of a zoning amendment bylaw and ancillary draft policies that will have the effect, if adopted, of prohibiting development of any building or structure on land located:

- a) in the Ridge Crest rockfall hazard area, Areas A1 and A2 noted;
 - b) in Hinkley Creek suspect landslide area, Area B; and
 - c) in the earthflow area, Areas C1, C2 and C3;
- as shown on the map contained within the Staff Report dated March 15, 2017.

and further, that the City expand its GPS Monitoring Program to cover the entire mapped earthflow area.

APPENDIX A



APPENDIX B



July 14, 2014

City of Chilliwack
8550 Young Road
Chilliwack, British Columbia
V2P 8A4

Mr. Rod Sanderson, A.Sc.T.
Manager of Transportation and Drainage

Dear Mr. Sanderson:

Panorama/Ridgeview Subdivision
2012-2013 Ground Movement Data Review

We have reviewed the 2012-2013 ground surface movement monitoring data provided by the City of Chilliwack for the Marble Hill area that includes the Panorama/Ridgeview Subdivision in Chilliwack, BC. This letter summarizes the movement monitoring history and our interpretation of the data trends, as well as recommendations for further monitoring and data analysis.

1 MONITORING HISTORY

The enclosed Figure A shows a site plan with locations of the hubs that are being monitored in the Marble Hill area. Ground surface movement monitoring started in 2004. Since 2011, Underhill Geomatics Ltd. has taken readings at approximately three to four monthly intervals, using either GPS (Global Positioning System) technique or total station survey where tree cover obstructed satellite signals. The hubs were installed at different times and monitored by various firms as described below:

- Hubs 2 to 14, located mostly in the Panorama/Ridgeview Subdivision, were established in February 2004 by Thurber Engineering and McElhanney Consulting Services, and monitored by McElhanney during 2004-2005, by the City during 2007-2008, by various surveying firms during 2009, and finally by Underhill since 2010.
- Hubs 20 to 94, located at 7105 Marble Hill Road (Park property), were installed by Thurber and McElhanney between December 2005 and April 2007 and monitored by McElhanney until December 2007, then by Underhill since 2010.
- Hubs 100 to 150, 161 and 162, located throughout the Marble Hill area, were installed by Wedler Engineering in August 2009, and monitored by Wedler Engineering, Tunbridge & Tunbridge, and McElhanney during 2009, and finally by Underhill since 2010.
- Hubs 15 and 18, located in the adjacent east subdivision, were monitored by Underhill since 2010.

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City of Chilliwack
Panorama/Ridgeview Subdivision

2012-2013 Ground Movement Data Review

- Hubs 151 to 160, and 163, also located mostly in the adjacent east subdivisions, were installed and monitored by Underhill since March 2011.
- New Hubs 1101 to 1112 and 2016, referred to as Fortis Monuments in Fig. A and located mostly in lot 49936 at the northeast end of Ridgeview Place, were installed and monitored by Underhill since July 2013.

2 DATA PLOTS AND TRENDS

The attached Figures 1 to 5 summarize the measured cumulative hub movements to the north (downslope) plotted against time for all available monitoring data. The GPS data are grouped and plotted as follows:

- Fig. 1 (a) – Panorama/Ridgeview Subdivision - 2004 Hubs
- Fig. 1 (b) – Panorama/Ridgeview Subdivision - 2009 Hubs
- Fig. 2 (a) – 7360/7365 Properties South of Ridgeview Street – 2009 Hubs
- Fig. 2 (b) – 7255 Marble Hill Road (Dixon Property) – 2009 Hubs
- Fig. 3 (a) – 7105 Marble Hill Road (Park Property) – 2005-2007 Hubs
- Fig. 3 (b) – 7105 Marble Hill Road (Park Property) - 2009 Hubs
- Fig. 4 (a) – 7195 Marble Hill Road (Rempel Property) – 2009 Hubs
- Fig. 4 (b) – Adjacent East Subdivisions – 2010-2011 Hubs
- Fig. 5 – New Fortis Monuments – 2013 Hubs

Note that not all hubs shown on the same graph were started at the same time, and some hubs were not regularly surveyed during the entire period shown on the graph. The erratic readings obtained in 2009 were due to different surveying equipment and techniques used by three different companies that performed the surveys in 2009. The subsequent 2010 to present readings, all surveyed by one company, were relatively more consistent. However, the September 2011 and December 2011 surveys also contained some erratic readings.

Figure B shows the horizontal movement vectors (magnitude and direction) of the hubs for the two year period from March 2012 to February 2014. Figure C shows the corresponding vertical movement vectors, also for the same two-year period. Figure D presents the north trending movement rates of the hubs, as well as inferred contours of movement rates. The movement rates (mm per month) shown are averages over the last five years of readings.

The ground surface movement data indicate the following trends:

1. Ground surface movements to the north are continuing at relatively constant, but different, rates in the Marble Hill area that includes the Panorama/Ridgeview Subdivision;

City of Chilliwack
Panorama/Ridgeview Subdivision

2012-2013 Ground Movement Data Review

2. The highest horizontal movements continue to occur at 7105 Marble Hill Road (Park property) and 7255 Marble Hill Road (Dixon property), with rates of up to 26 mm per month.
3. At the Panorama/Ridgeview Subdivision, movement rates are 1 to 10 mm per month, and have been consistent over the last ten years.
4. The 2011 hubs installed mostly in the east subdivisions have not indicated any reliable movement trends.
5. Very limited readings from the new 2013 Fortis hubs installed at the lot on the northeast end of Ridgeview Place suggest north movements of up to 8 mm per month and settlement of up to 5 mm per month. Future readings will provide more definitive trends at this lot.

3 RECOMMENDATIONS

We recommend that the current hub monitoring survey program, with reading frequency at three-month intervals, should continue. The monitoring data should be forwarded to Klohn Crippen Berger for review as they become available.

Assuming the current constant rates of movement trends continue and if the City would like to reduce the frequency of readings, we recommend:

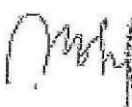
- Selected hubs with relatively large movement rates and representative of various zones across the Marble Hill area be surveyed at four-month intervals, and
- All other hubs be surveyed at least annually.

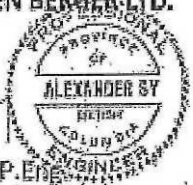
The existing piezometers and TDR cables in the Subdivision and Dixon property were last read more than five years ago, in January 2008. We recommend that the conditions of these instruments be assessed, and any available data be downloaded. The data from these instruments can provide valuable information in detecting changes in groundwater levels and movements below ground surface that would be useful in interpreting the surface movement data at the site.

We trust this meets your requirements. Please contact us if you have any questions.

Yours truly,

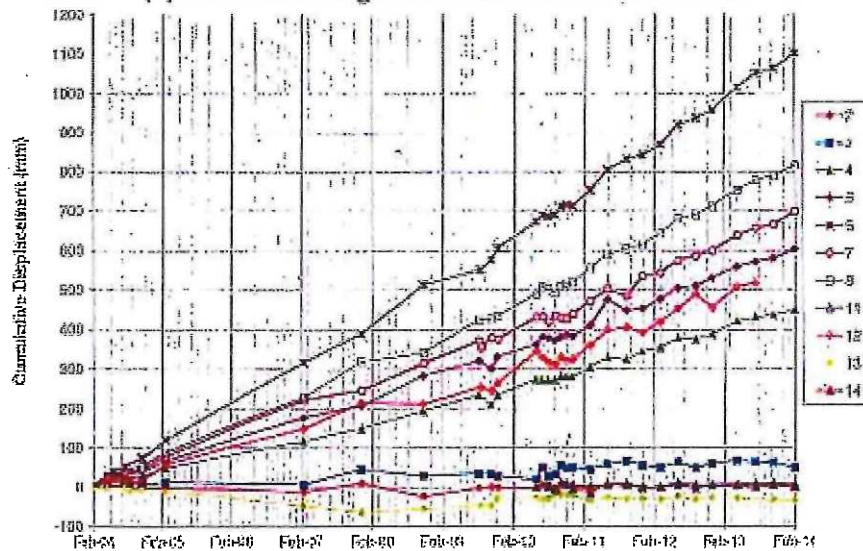
KLOHN CRIPPEN BERGER LTD.


Alex Sy, Ph.D., P.Eng.
Project Manager

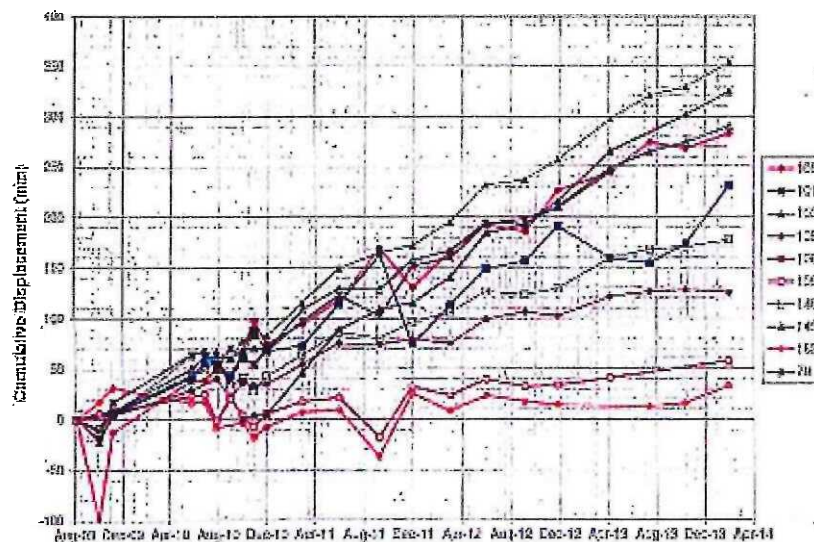


Encls. Figures 1 to 5 - Ground surface north movements vs. time plots
Figures A to D - Site plans showing movement vectors and rates

(a) Panorama/Ridgeview Subdivision - 2004 Hubs



(b) Panorama/Ridgeview Subdivision - 2009 Hubs



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NOTES:

1. Positive displacements to the north.
2. For Hub 79, available readings from October 2010 are plotted.

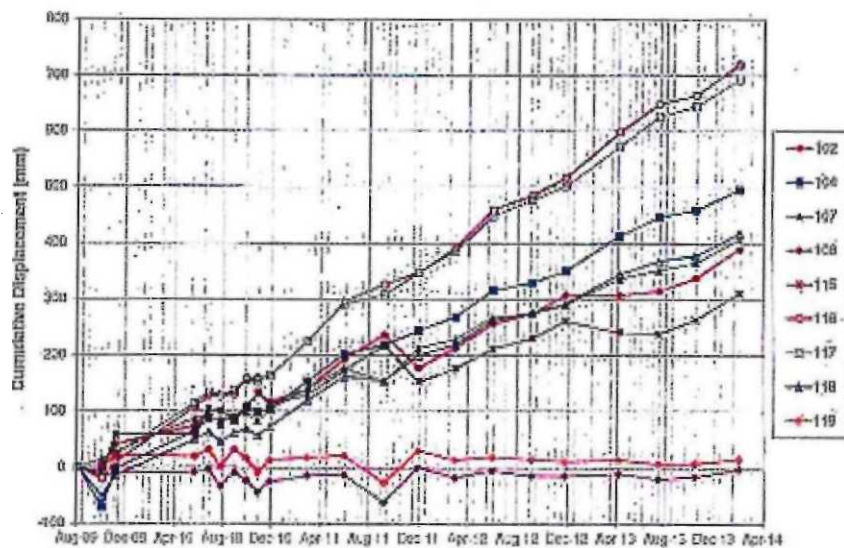
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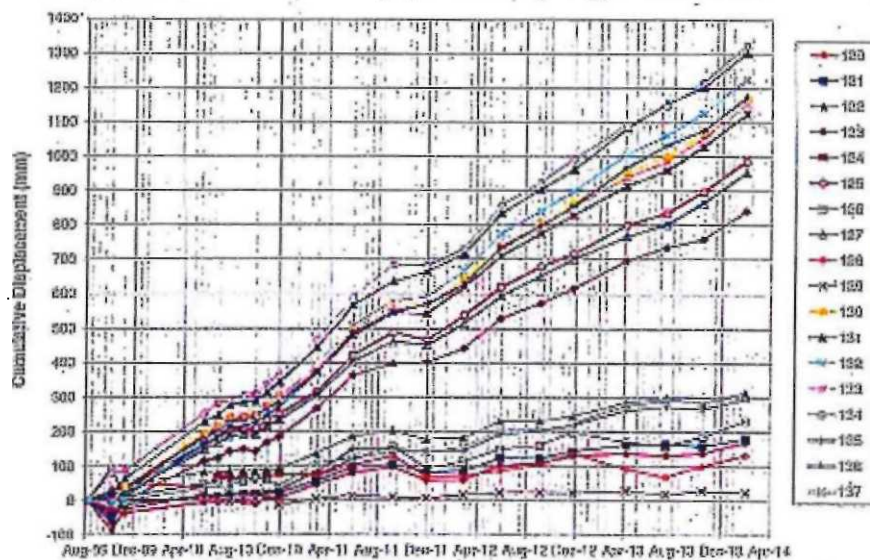
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PROJECT PANORAMA/RIDGEVIEW SUBDIVISION CHILLIWACK, BC			
TITLE GROUND SURFACE NORTH MOVEMENTS VERSUS TIME SET 1 OF 3			
DATE IN PRESS JUL 2014	PROJECT NO. P09177A04	FIGURE NO. FIGURE 1	SCALE
APPROVAL AS			

(a) 7360/7365 Properties South of Ridgeview Street - 2009 Hubs



(b) 7255 Marble Hill Road (Dixon Property) - 2009 Hubs



AN AWARD, PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE GUARANTEED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AFTER PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REQUIRING OUR REPORT AND DRAWINGS IS RESERVED FROM OUR WRITTEN APPROVAL.

NOTES:
Positive displacements to the north

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CITY OF CHILLIWACK

PANORAMA / RIDGEVIEW SUBDIVISION
CHILLIWACK, BC

GROUND SURFACE NORTH MOVEMENTS VERSUS TIME
SET 2 OF 5

DATE OF ISSUE

JUL 2014

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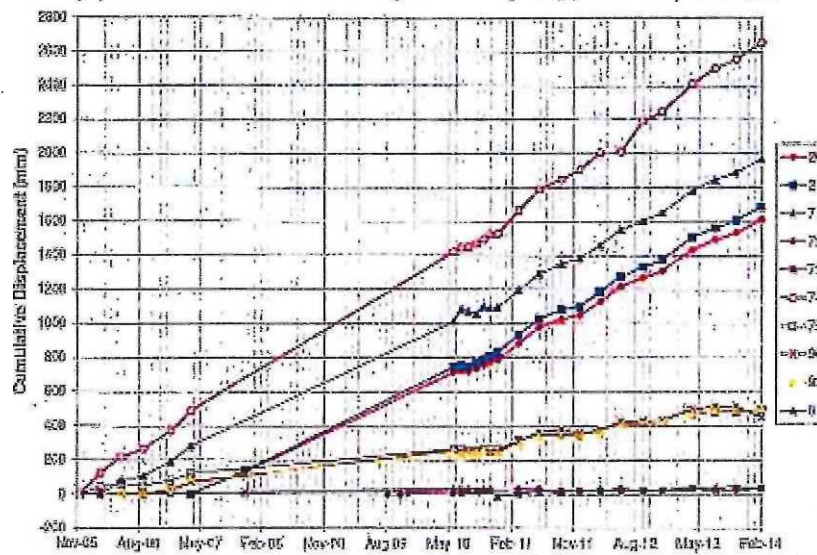
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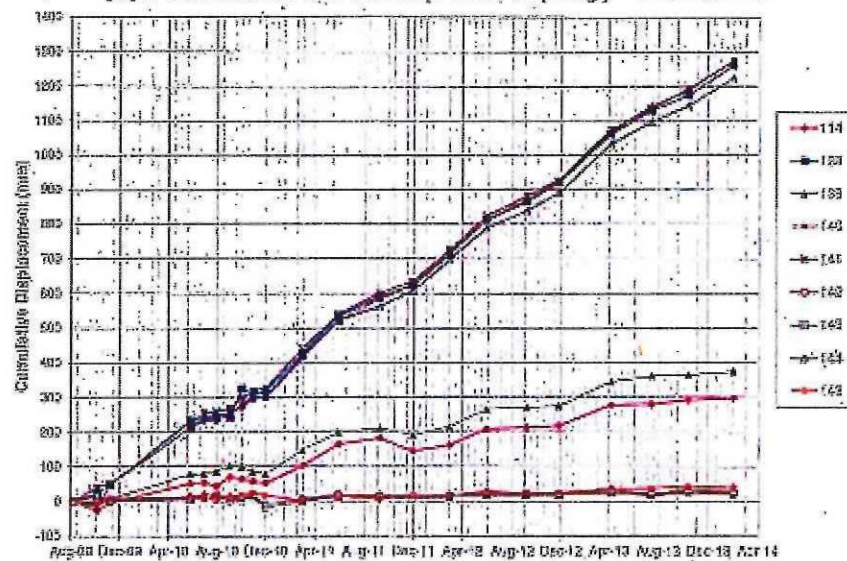
FIGURE 2

DATE

(a) 7105 Marble Hill Road (Park Property) 2005-2007 Hubs




(b) 7105 Marble Hill Road (Park Property) - 2009 Hubs



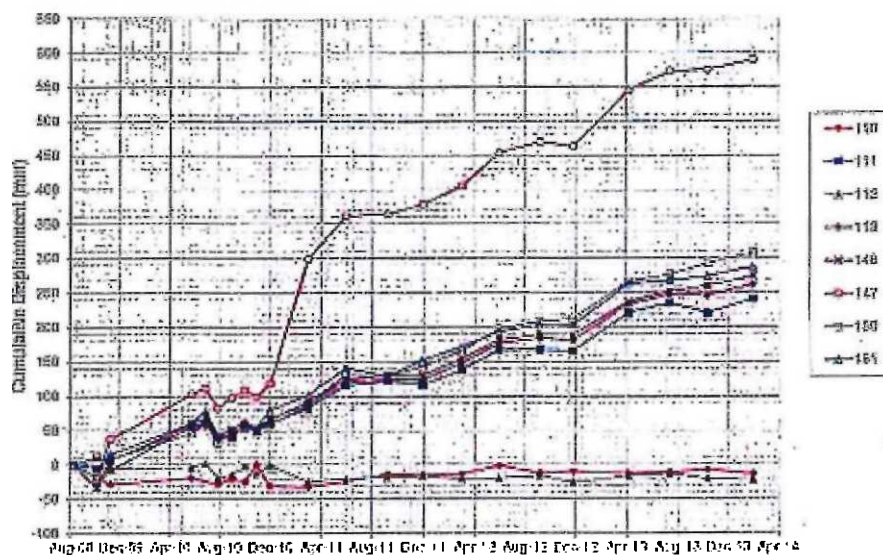
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NOTES:
Positive displacement is to the north.

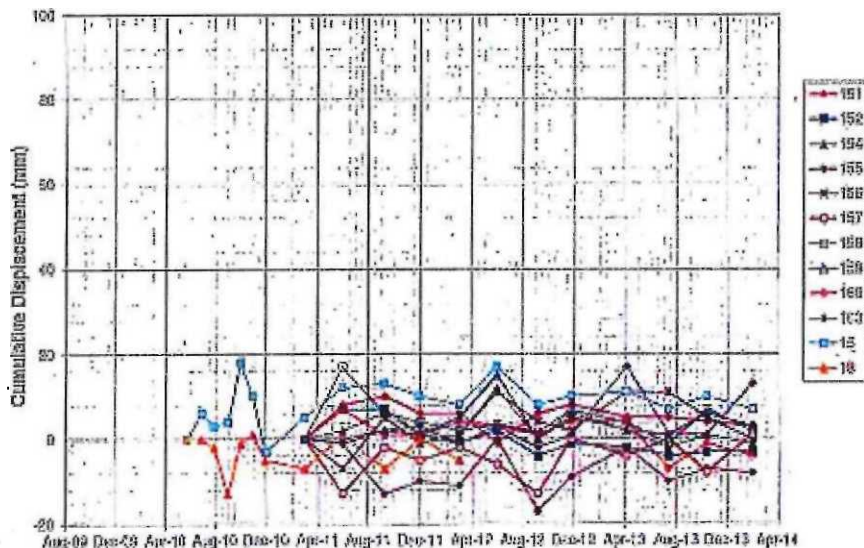
TO BE READ WITH KLOHN CRIPPEN BERGER REPORT DATED JUL 2014

 <p>Klohn Crippen Berger</p>	<p>PROJECT: PANORAMA RIDGEVIEW SUBDIVISION CHILLIWACK, BC</p>			
<p>CITY OF CHILLIWACK</p>	<p>TITLE: GROUND SURFACE NORTH MOVEMENTS VERSUS TIME SET 3 OF 5</p>			
	<p>DATE OF ISSUE: JUL 2014 APPROVAL: AB</p>	<p>PROJECT NO.: PD9177A04</p>	<p>FIGURE NO.: FIGURE 3</p>	<p>REV:</p>

(a) 7195 Marble Hill Road (Reimpel Property) - 2009 Hubs



(b) Adjacent East Subdivisions - 2010-2011 Hubs



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NOTES:
Positive displacements to the north

TO BE READ WITH KLOHN CRIPPEN BERGER REPORT DATED JUL 2014



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PANDRAMA / RIDGEVIEW SUBDIVISION
CHILLIWACK, BC

GROUND SURFACE NORTH MOVEMENTS VERSUS TIME
SET 4 OF 8

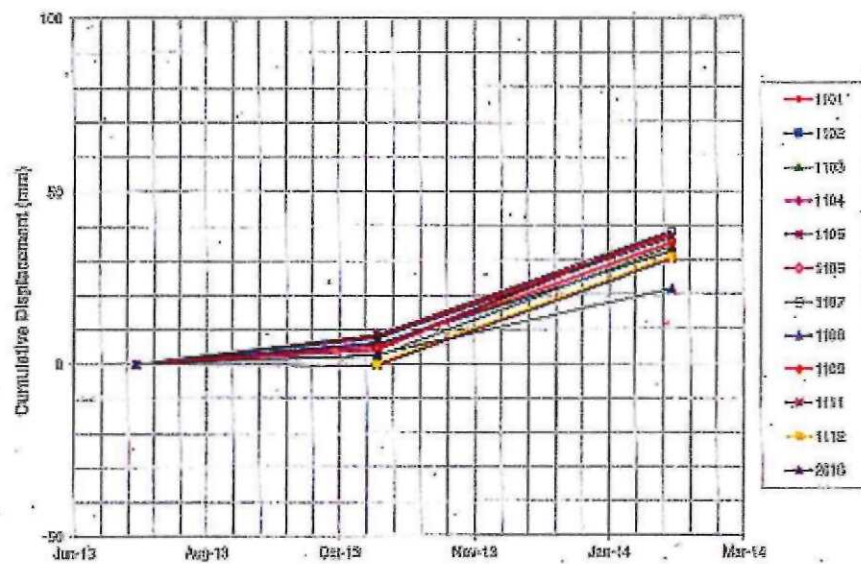
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FIGURE 4


New Fortis Monuments - 2013 Hubs

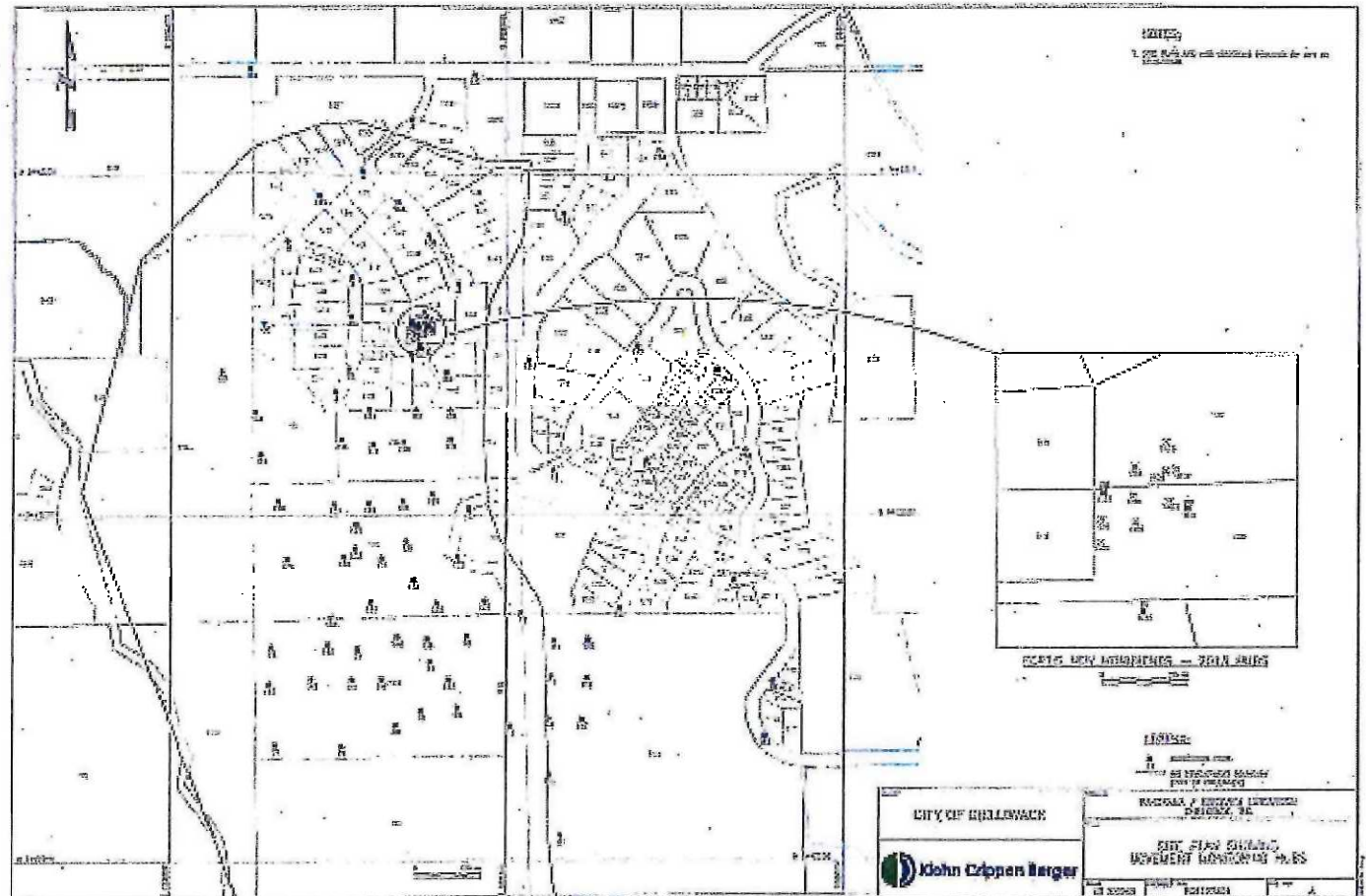


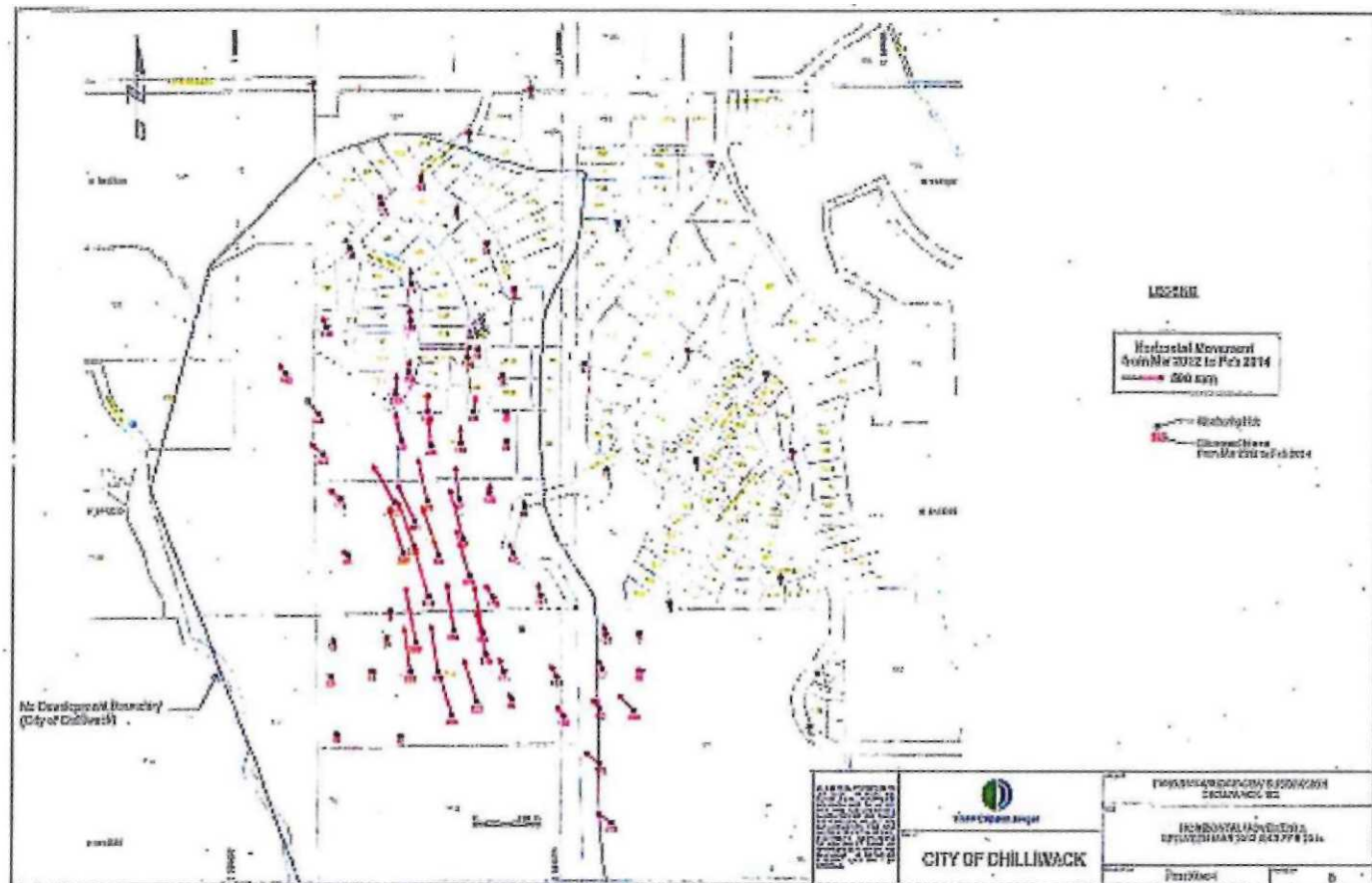
AS A MINIMUM, INFORMATION TO CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR REPRODUCTION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OUR DRAWINGS, CLIENTS AND CRAWLERS IS RESERVED FOR THE CLIENT'S APPROVAL.

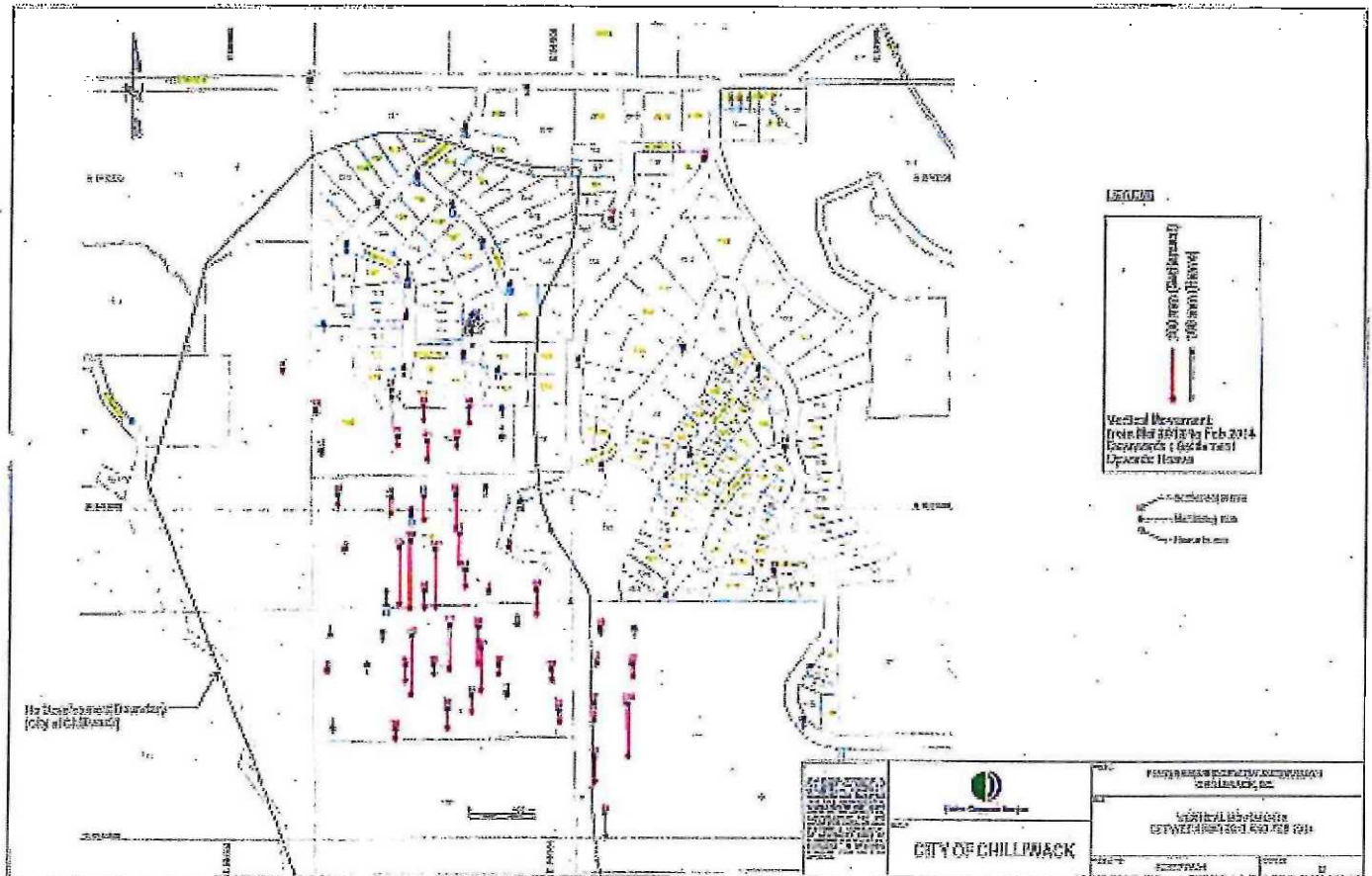
NOTE:
Positive displacements to the north

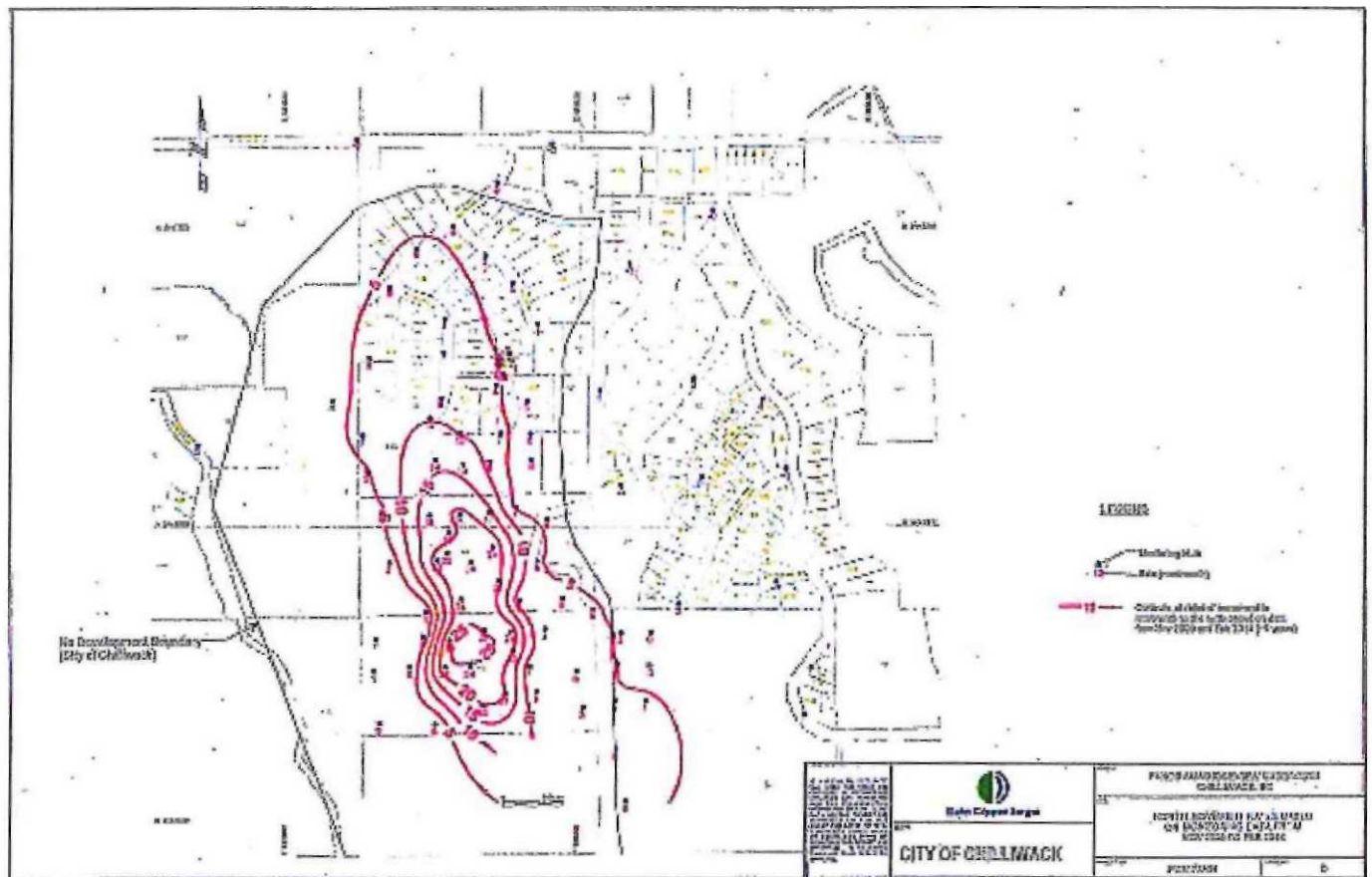
TO BE READ WITH KLOHN CRIPPEN BERGER REPORT DATED JUL 2014

 Klohn Crippen Berger	PROJECT: PANORAMA / RIDGEVIEW SUBDIVISION CHILLIWACK, BC			
	TITLE: GROUND SURFACE NORTH MOVEMENTS VERSUS TIME SET 5 OF 5			
CLIENT: CITY OF CHILLIWACK	DATE OF ISSUE: JUL 2014 REVISION: A5	PROJECT NO.: P09177A04	DRAWING NO.: FIGURE 5	









APPENDIX C



August 3, 2016

City of Chilliwack
8550 Young Road
Chilliwack, British Columbia
V2P 8A4

Mr. Rod Sanderson, A.Sc.T.
Deputy Director of Engineering

Dear Mr. Sanderson:

Panorama Subdivision - Marble Hill, Chilliwack, BC
Updated Landslide Map

This letter presents the results of a study to update the existing landslide map in the Panorama Subdivision-Marble Hill area in Chilliwack, BC. The City requested this study to extend and update their current No-Development zoning map because of the discovery of shale-derived landslide material in a borehole conducted by Thurber Engineering in November 2014 at 6650 Hinkley Road, which lies outside the City's current No-Development boundaries, as shown on the attached plan.

1 SCOPE OF MAPPING STUDY

We engaged Mr. Pierre Friele, MSc, P.Geo., Senior Geoscientist of Cordilleran Geoscience in Squamish, BC, to do the mapping work. The scope of work is as follows:

1. Background Information review;
2. Interpretation of 2 m contour Lidar base map to delineate likely extent of landslide mass;
3. Field mapping to identify possible evidence of the landslide activity; and
4. Preparation of terrain map with updated extent of landslide mass and report documenting the study.

2 RESULTS

The results of this study are presented in the attached report prepared by Mr. Friele titled "Marble Hill Landslide Mapping Project, Eastern Hillside, Chilliwack, BC" dated November 27, 2015, with an accompanying terrain map. In the map, Mr. Friele identified three distinct geomorphic areas (or landform units) as follows:

1608031.Chilliwack Mapping Study.docx
P09177909

City of Chilliwack
Panorama Subdivision-Marble Hill, Chilliwack, BC

Updated Landslide Map

1. Ridge crest sacking and potential rockfall hazard area, which encompasses the generally steep sloping area below Lookout Ridge (labelled A1 and A2 on the map);
2. Hinkley Creek suspect landslide area, generally to the west of Hinkley Road (labelled B on map); and
3. Marble Hill earthflow, which is subdivided into (1) Major Deformation Area that includes the Panorama-Ridgeview subdivision (labelled C1 on map), (2) Minor Deformation Area (C2 on map), and (3) Minor/Inactive Area (C3 on map).

3 LIMITATIONS OF THIS STUDY

Please note the following limitations on the results of this study:

- The terrain map prepared by Cordilleran Geoscience is based primarily on LIDAR map interpretation of ground surface expressions, field observations of possible evidence of landslide activity, available geotechnical reports, and existing movement monitoring data in the subdivision area;
- Landform unit or zone boundaries shown on the map are estimates only;
- No confirmatory subsurface drilling investigation was carried out for this study;
- Mechanism of ground movements in the Panorama-Ridgeview subdivision is not fully understood; and
- It is not possible to predict if ground movement will occur in future on a landslide mass that is currently not moving.

4 RECOMMENDATIONS

With reference to the attached Cordilleran Geoscience terrain map, we have the following recommendations:

1. No development in the ridge crest rockfall hazard area immediately downslope of Lookout Ridge, including Areas A1 and A2 noted on the map, most of which is underlain by steep slopes (> 30%). We recommend the City engages a Qualified Professional as suggested in the Cordilleran Geoscience report to review rockfall hazard and potential for a large magnitude rock slide that could potentially impact existing development downslope.
2. Moratorium on further development in Hinkley Creek suspect landslide area (Area B on map). New GPS hubs should be installed and monitored to evaluate ground movements, if any. We also recommend that City considers doing a few Sonic core drill holes to investigate the presence or absence of landslide mass in this area.
3. No development in the earthflow area (Areas C1, C2 and C3 on map), most of which is already within the City's No-Development Zone that includes the Panorama-Ridgeview subdivision.

City of Chilliwack
Panorama Subdivision-Marble Hill, Chilliwack, BC

Updated Landslide Map

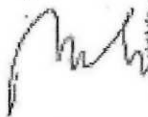
We recommend the City expands its GPS monitoring program to cover the whole mapped earthflow area.

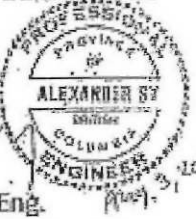
4. We recommend the City compiles available geotechnical information and creates a geotechnical database of existing and future drill holes in Eastern Hillside.

We trust this letter meets your requirements. Please call if you have any questions.

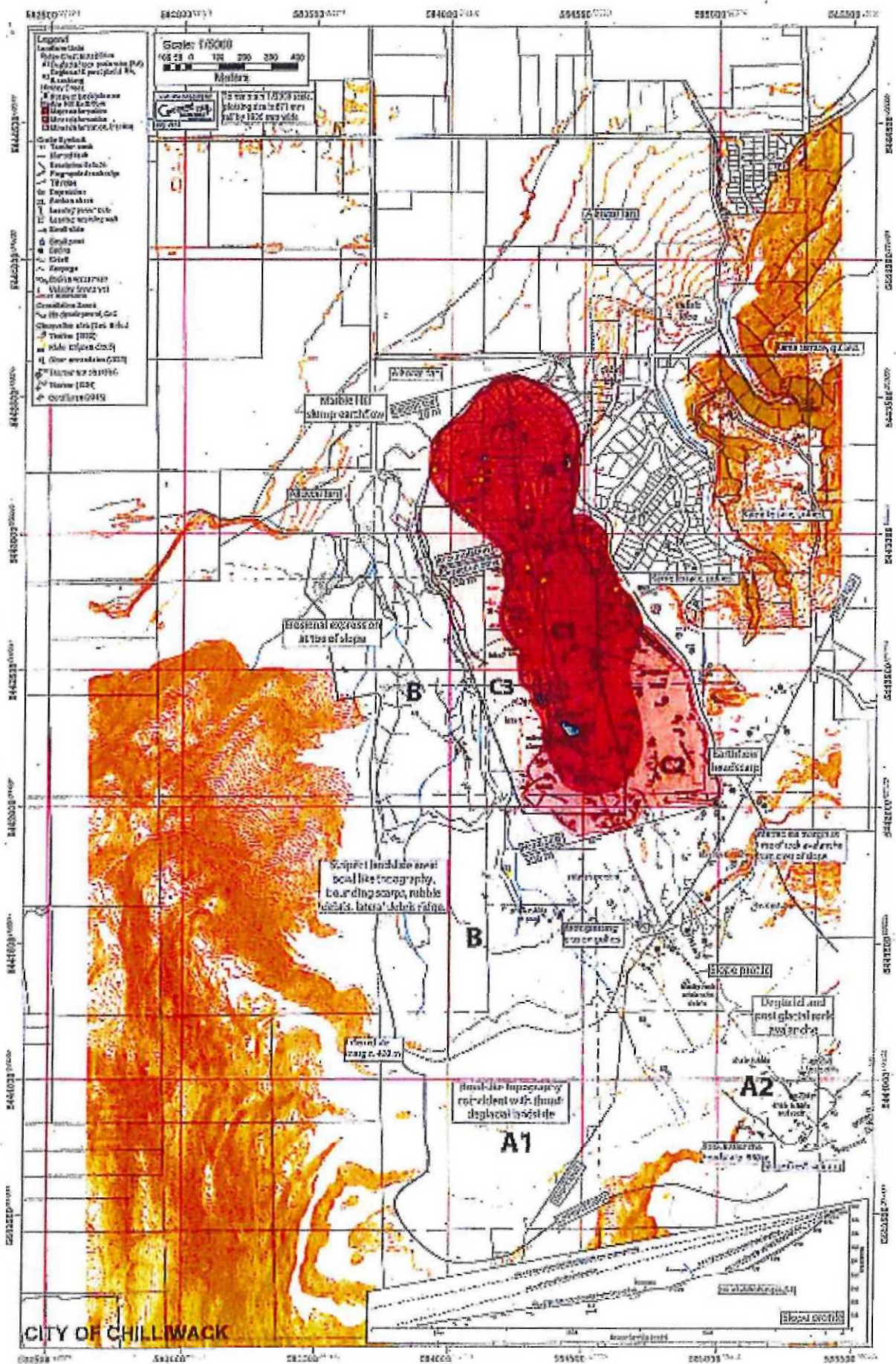
Yours truly,

KLOHN CRIPPEN BERGER LTD.

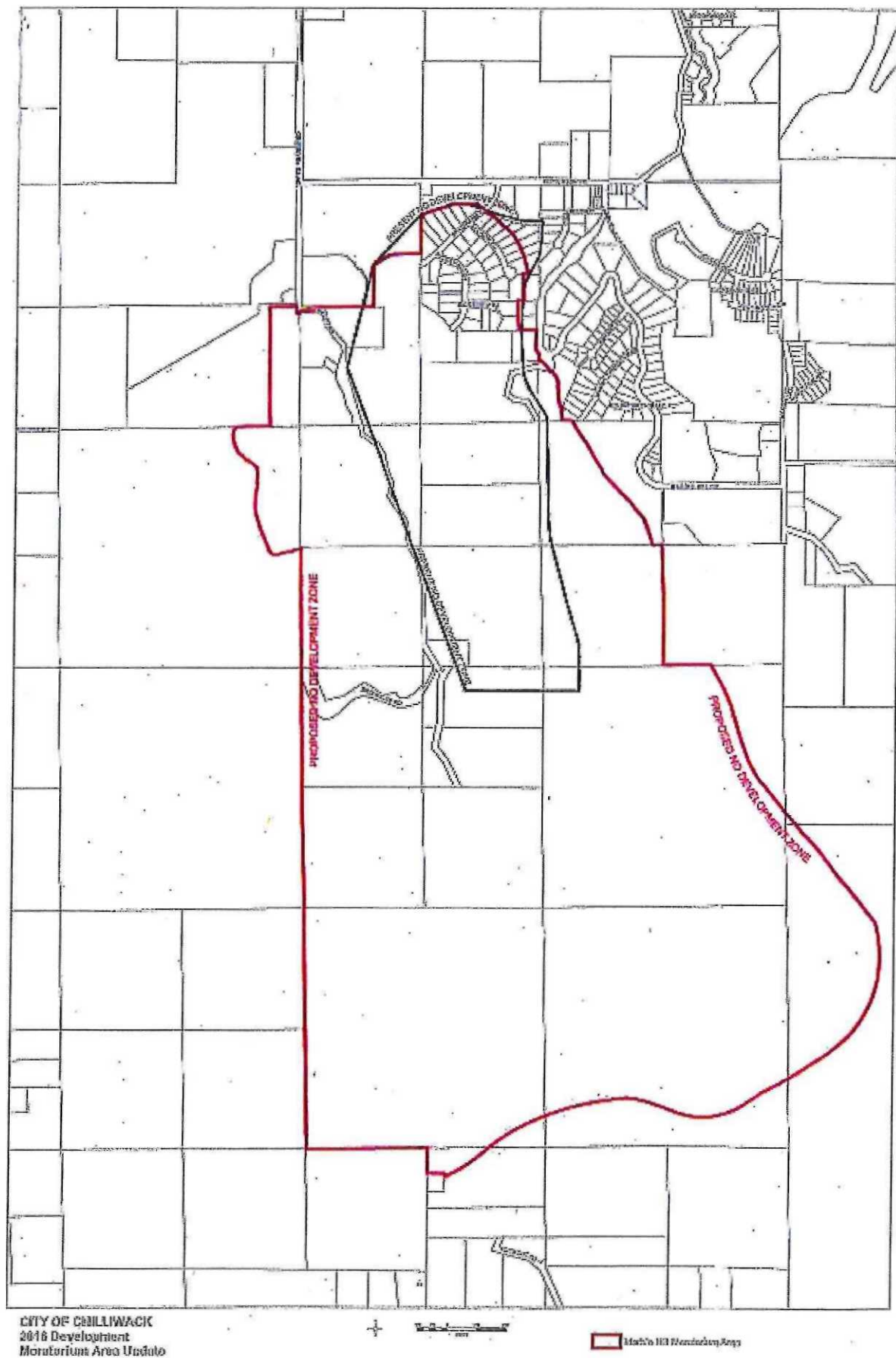

Alex Sy, Ph.D., P.Eng.
Project Manager



Encls: Plan showing City's No-Development Zone,
Cordilleran Geoscience Report "Marble Hill Landslide Mapping Project" November 27, 2015



APPENDIX D



municipal sanitary sewer system. 23.

Where a municipal sanitary sewer system is not available residential sewage shall be conveyed to an on-site private sewage disposal system which must include, but is not limited to, a two-stage septic system, a large capacity tank and a gate valve before infiltration to subsurface. The two-stage system shall be designed by a Qualified Environmental Professional and shall consist of a separate tank where the sludge is digested and will prohibit mixing of digested sludge with incoming sewage.

24. New commercial, industrial and institutional facilities with an on-site sewage disposal system are not permitted.

Guidelines Specific to Surface Water Sources
Map 1B Volkert Creek; Map 1D Elk Creek and
Dunville Creek)

1. All developments shall be designed to minimize water quality degradation to the requirements of the City.
2. An applicant for a development permit must provide, at his or her expense, a plan certified by a Professional Engineer with experience in the protection of ground and surface water, which clearly shows how to control storm water drainage and avoid the deterioration of water quality.
3. Non-residential structures for the purpose of storage or handling materials in quantities sufficient to pollute water supply should not be located in this DPA. If such a location cannot be avoided, the structure shall be designed and constructed to ensure that spills can be properly contained and handled without causing pollution.
4. New roads and septic fields should not be permitted within this DPA. If such a location cannot be avoided, then a qualified

professional should supervise the design and construction of the road or septic field to satisfy the objectives and guidelines of this DPA.

5. For subdivisions that create additional lots, any new lots, roads, building sites, septic fields and driveways must be positioned, designed and constructed to meet the objectives and guidelines of this DPA.

Development Permit Area 2 - Hillside and Upland Areas

Description and Exemptions

Pursuant to Section 919.1(1)(a) and (b) of the *Local Government Act*, the areas as shown on DPA Maps 2A, 2B, 2C and 2D are designated as Development Permit Area 2 (DPA 2) for the protection of fish and fish habitats, wildlife and vegetation, and development from natural hazards.

In areas where development is permitted, a Development Permit is required for the subdivision of land; the construction of, addition to, or alteration of a building or structure on the land; or the alteration of land, including the following:

- ✓ Removal of trees with a trunk diameter greater than 30 cm measured 1.5 m above ground;
- ✓ Removal of vegetation in a wetland;
- ✓ Installation of a septic field within 61 m of the natural boundary of a lake;
- ✓ Any works or installation of structures within a stream or below the natural boundary of a lake; and
- ✓ The subdivision of land parcels that creates additional lots within this DPA.
- ✓ Construction of a building greater than 100 m².

The following activities are exempted from the requirement to obtain a DP:

- Forest management activities related to timber production and harvesting in the

Forest Land Reserve;

- Fish habitat enhancement work approved by the Department of Fisheries and Oceans or the Ministry of Environment, Lands and Parks;
- The emergency removal of a hazardous tree;
- Emergency works to prevent flood damage to structures or repair to public service utilities;
- The subdivision of land parcels where a conservation covenant satisfactory to and in favour of the City of Chilliwack has already been registered for the maintenance of natural drainage and protection of environmentally sensitive and hazardous areas; or
- Tree removal required for surveying, road construction, and utility servicing by the City of Chilliwack.

- iv. This DPA may be subject to high forest fire risks. Adequate forest fire interface shall be identified and carefully managed through a Fire Risk Assessment Analysis Report.

Objectives

1. To protect the quality of drinking water supplies, including safeguarding the water supply of private wells.
2. To protect fish, wildlife and vegetation, particularly sensitive riparian habitat.
3. To ensure development remains compatible with the natural environment.
4. To protect development from potential landslides, debris torrents and other unstable conditions.
5. To reduce the potential forest fire risks.

Guidelines

- i. Lakes and streams, including ephemeral watercourses, provide natural habitats for fish and wildlife. Many also supply drinking water to individual wells, water license holders or community water supply systems. If not carefully managed, development in this Area could result in the degradation of water quality to the detriment of the fish and wildlife populations. It could also incur high costs of remedial water treatment.
- ii. This DPA contains habitats for many different species and is particularly susceptible to disturbance. Development could lead to losses of, or high stresses on, a disproportionately large number of native plant and animal species.
- iii. Land in this DPA has been identified as having serious hazards due to slope instability or soil erosion. If not carefully managed, disturbance of the land in this Area could result in significant soil erosion and increased hazards to developments.

1. Stream bank vegetation shall remain undisturbed together with a green strip of at least 30 meters from the top of banks of fish bearing or fish habitat streams.
2. Fencing shall not be allowed in areas where it would interfere with the movement of wildlife.
3. The Tree Management (Land Development) Bylaw is considered critical to the implementation of this DPA's guidelines.
4. The Development Approval Information Bylaw is an essential part of this DPA's implementation.
5. No development shall be allowed in areas subject to high risks from debris torrents, flooding or erosion unless properly engineered floodproofing and protection measures are incorporated and certified by a Professional Engineer with experience in hydrogeology.
6. A Professional Engineer with experience in hydrogeology is required to certify site development on hillside and upland areas, and may recommend conditions or requirements for

the issuance of the permit. The certification must clearly show how to control storm drainage, flood hazard and erosion, and to protect groundwater, including:

- ✓ preserving natural channels to the maximum extent possible;
 - ✓ utilizing detention or retention ponds and minimize impervious surface;
 - ✓ establishing interceptor ditches above steep slopes, where required, in such a way to not saturate soil, and the intercepted water should be conveyed in a pipe or other appropriate manner to a municipal storm sewer system or to the bottom of a ravine or bluff;
 - ✓ utilizing discharge point stabilization for natural drainage path; and
 - ✓ providing a control mechanism to minimize erosion and siltation.
7. Development proposals shall be accompanied by a hydro-geotechnical study that identifies the hazardous nature of the subject area, including:
- ✓ vegetation types;
 - ✓ ecologically sensitive areas;
 - ✓ view vistas;
 - ✓ soil types;
 - ✓ soil and terrain stability;
 - ✓ rock outcroppings;
 - ✓ specific hazard area; and
 - ✓ protective and mitigating measures to be used during and after construction and development.
8. A Professional Engineer with experience in geotechnical engineering shall submit a geotechnical study in accordance with the landslide assessment guidelines published by APEGBC (Associated Professional Engineers and Geoscientists of BC) and the City of Chilliwack Guidelines for Geohazard Assessment and Investigation **indicating that the development will not be endangered, or that the measures have been taken to ensure that the development will not be endangered, by rock fall hazard, landslides,**
- earthflow or other slope or foundational instability.**
9. A storm water management plan must be submitted to the satisfaction of the Director of Engineering and must provide on-site drainage so as not to adversely affect adjacent properties. Further, all post development water flows into the storm drainage system must not exceed pre-development flows in accordance with the City of Chilliwack Policy and Design Criteria Manual for Surface Water Management.
10. Stream crossings and roadway construction adjacent to streams shall obtain all necessary approvals and be designed to accommodate flows and retain the streambed in a natural condition.
11. A Qualified Professional is required to supervise all excavations or placement of fill in natural slope areas.
12. Road design should minimize the potential danger of erosion, landslide and flooding. The following techniques may apply where appropriate:
- ✓ follow contours;
 - ✓ allow split level, one-way streets;
 - ✓ allow flexibility in the placement of lot lines to accommodate "traversing driveways"; and
 - ✓ employ narrow pavement widths, within the limits of public safety, by the use of off-street parking in bays and clusters.
13. Hillside and upland development should employ environmentally sound techniques in engineering and architecture such as:
- ✓ grading to complement natural land forms to minimize terracing (cut and fill);
 - ✓ using indigenous materials in landscaping;
 - ✓ placing, grouping and shaping of man-made structures to complement the natural landscape; and
 - ✓ encouraging a variety of building types clustered to maximize the amount of open space and natural features.

14. Hillside and upland development should complement or enhance the aesthetic qualities of the natural landscape. Where possible, skylines and ridgetops, and tree and shrub masses should be preserved, and all man-made structures should be properly positioned, scaled and designed so as not to dominate the general hillside and upland landscape. A site plan addressing these concerns shall accompany the development permit application

15. Development shall be restricted in areas subject to occurrence or high susceptibility of rock fall hazard, landslide or earthflow with unstable soil conditions in accordance with requirements stipulated in the Zoning Bylaw.

Development Permit Area 3 - Riparian Area

Description and Exemptions

All lands within the boundaries of the City of Chilliwack are designated as Development Permit Area 3 (DPA 3) for the protection of the natural environment, its ecosystems and biological diversity, and in particular fish and fish habitats and riparian habitats, pursuant to Section 919.1(a), (b) and (i) of the Local Government Act.

Rationale for DPA Establishment

This DPA defines riparian assessment areas for the protection of fish habitats, based on the information of OCP Maps 8A and 8B, the Fish Protection Act and the Riparian Areas Regulation. It enables a site-specific, science-based assessment protocol for Qualified Environmental Professionals to establish consistent and appropriate requirements, conditions and standards regarding development within riparian assessment areas.

Objectives of this Development Permit Area

1. To protect the biological functioning of riparian areas; and
 2. To clarify the responsibilities of landowners regarding development of riparian areas.
- Definitions:
- For the purpose of this Development Permit Area, the following definitions shall apply:
1. "Active floodplain" means an area of land within a boundary that is indicated by visible high water mark or the water level of a stream that is reached during annual flood events.
 2. "Development" means any of the following:
 - a. removal, alteration, disruption or destruction of vegetation
 - b. disturbance of soils
 - c. construction or erection of buildings and structures
 - d. creation of nonstructural impervious or semi-pervious surfaces
 - e. flood protection works
 - f. construction of roads, trails, docks, wharves and bridges
 - g. provision and maintenance of sewer and water services
 - h. development of drainage systems
 - i. development of utility corridors
 - j. subdivision under the *Land Title Act* or the *Strata Property Act*
 3. "Qualified Environmental Professional" (QEP) means an applied scientist or technologist, acting alone or together with another qualified environmental professional.
 - a. The individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association;
 - b. The individual's area of expertise is recognized in the assessment methods

Figure 2 Land Use Plan

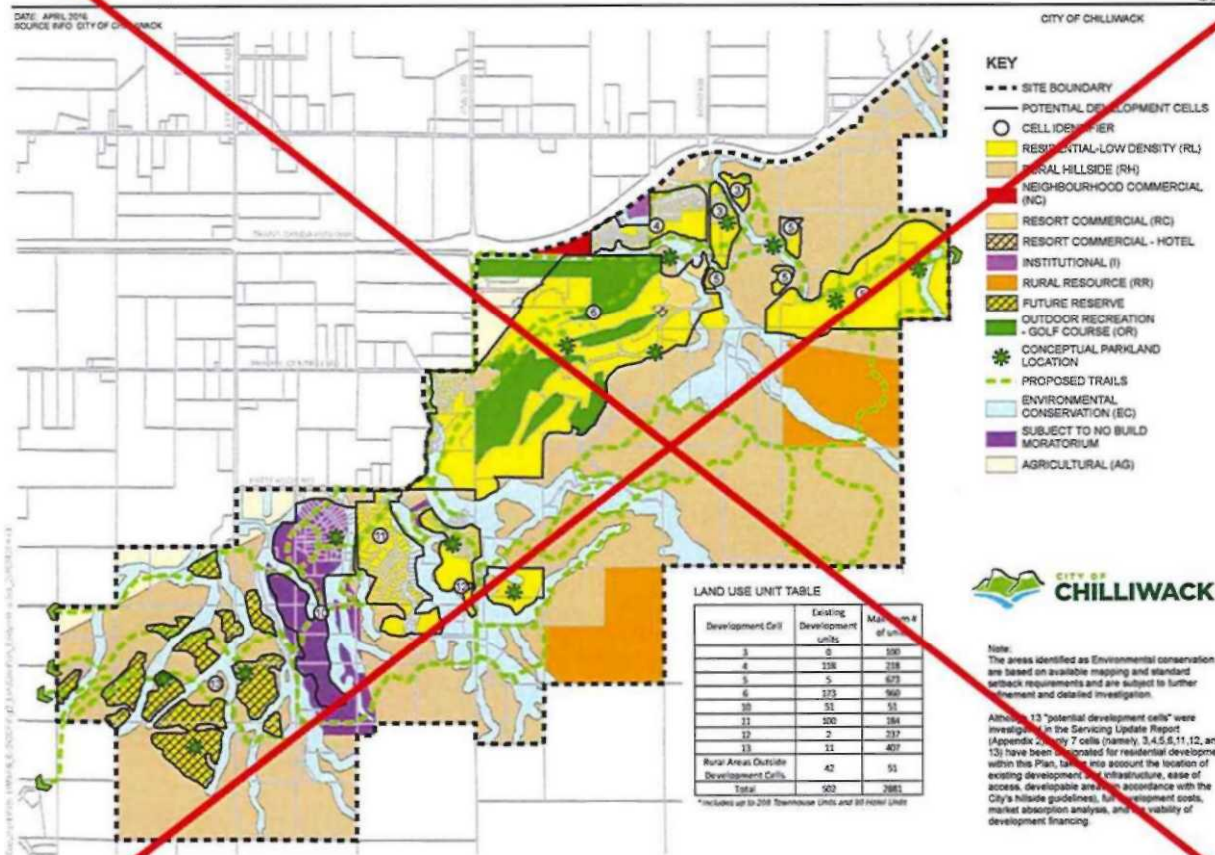


Figure 4 Geotechnical Constraints

URBANSYSTEMS.

DATE: APRIL 2012
 SOURCE AND THUMBPRINT: URBANSYSTEMS LTD., 2011 EASTERN HILLSIDE HAZARD AREAL CHILLIWACK GEOTECHNICAL ASSESSMENT REPORT TO CITY OF CHILLIWACK

CITY OF CHILLIWACK

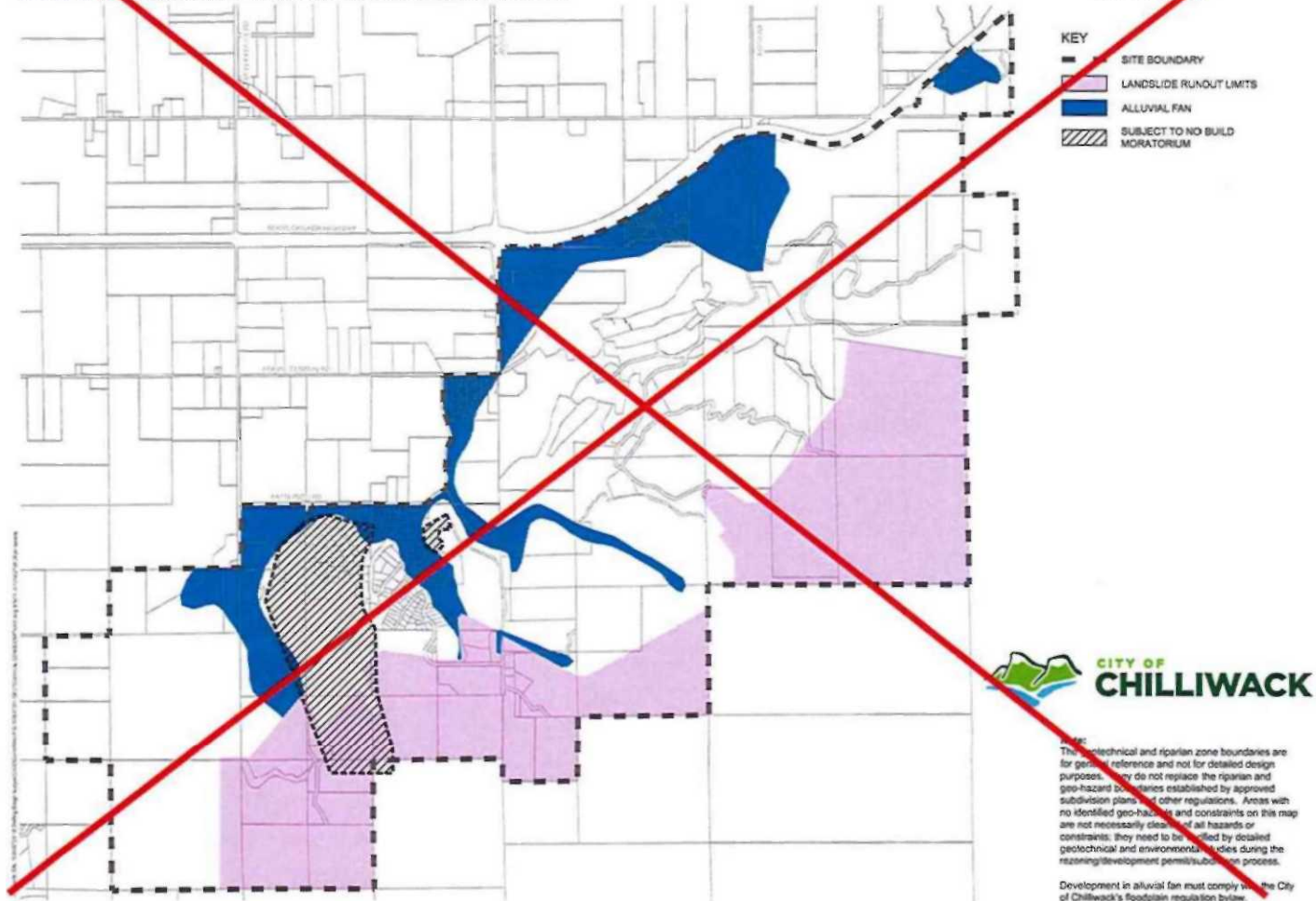


Figure 5 Environmental Constraint Overlays and Development Cells

URBANSYSTEMS.

DATE: APRIL 2012
SOURCE: INFO: CITY OF CHILLIWACK



CITY OF CHILLIWACK

- KEY**
- SITE BOUNDARY
 - POTENTIAL DEVELOPMENT CELLS
 - ① CELL IDENTIFIER
 - LANDSLIDE RUNOUT LIMITS
 - SUBJECT TO NO BUILD MORATORIUM
 - SLOPE < 30%
 - SLOPE > 30%
 - RIPARIAN AREAS
 - ALLUVIAL FAN
 - AGRICULTURAL LAND RESERVE (ALR)
 - WATERCOURSE
 - HIGHWAY
 - LOCAL
 - COLLECTOR
 - ARTERIAL

NOTE:
Development in alluvial fan must comply with the City of Chilliwack's floodplain regulation bylaw.

The slope condition in the recently annexed area of cell 5 is based on general contour mapping and is subject to further investigation prior to advancement.

The geotechnical and riparian zone boundaries are for general reference and not for detailed design purposes. They do not replace the riparian and geo-hazard boundaries established by approved subdivision plans and other regulations. Areas with no identified geo-hazards and constraints on this map are not necessarily cleared of all hazards or constraints; they need to be verified by detailed geotechnical and environmental studies during the rezoning/development permit/subdivision process.

Although 13 "potential development cells" were investigated in the Servicing Update Report (Appendix 2), only 7 cells (namely, 2, 4, 5, 6, 11, 12, and 13) have been designated for residential development within this Plan, taking into account the location of existing development and infrastructure, ease of access, developable areas (in accordance with the City's hillside guidelines), full development costs, market absorption analysis, and the viability of development financing.



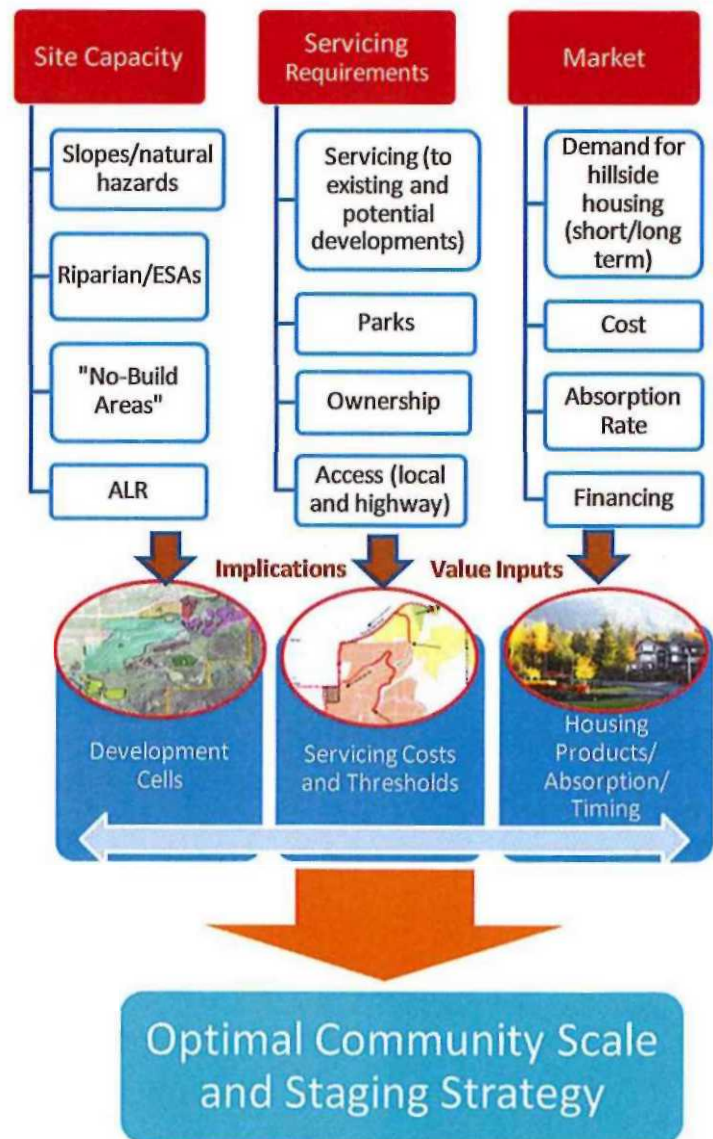
In the first half of 2011, the technical process clarified the future direction of growth for the Eastern Hillside and focussed on two scenarios: 4,000 population and 6,000 population – away from the higher targets of the previous servicing studies. Staff and consultants devoted much resource to identifying the options' detailed costs, tested their market feasibility, and explored various financing scenarios. They also sought input from outside agencies such as the School District, the Fraser Valley Regional District, the Department of Fisheries and Oceans, Ministry of Environment and the Ministry of Health. This multi-disciplinary process led to the adoption of a plan conducive to building an optimally scaled community.

Methodology

The “optimal” community scale is based on three previously noted technical studies: site capacity, future housing markets, and servicing, each of which provides a special lens to define the “optimum”. The recommended “optimal scale” in this Plan therefore represents a composite threshold that satisfies a broad range of criteria, signifying the best course of action for the Eastern Hillside in the foreseeable future.

The site capacity study identifies excessive slopes/natural hazards, environmentally sensitive areas, the City's No Build **Moratorium** Area, and the Agricultural Land Reserve within the Eastern Hillside. From these constraint overlays, areas with development potential emerge and they are grouped into larger, viable “development cells” (see Figure 5) for servicing considerations, which include all utilities (water, sewers and storm drainage),

Multi-Disciplinary Approach



- 5.16 Limit development in areas outside the recommended development cells and environmental-geotechnical constraint areas to low-impact estate and outdoor recreational uses.
- 5.17 Maintain the Eastern Hillside in the Development Permit Area No. 2 of the Official Community Plan for protection against geotechnical hazards.
- 5.18 Enforce information/site-specific study requirements of Development Permit Area 2 of the City's Official Community Plan during the rezoning process, including:
- a) A concept plan of the overall development proposal;
 - b) A site plan of the proposed development that demonstrates Development Permit Area 2 compliance;
 - c) A design that complies with the City's Hillside Development Guidelines, especially in regard to geo-hazards and steep slopes;
 - d) A hydro-geotechnical/geo-hazard study, including the protocols of working with hazards during and after construction;
 - e) A plan to address potential development impact on all watercourses;
 - f) A plan for any diversion or work within and/or adjacent to a watercourse that requires provincial and federal approvals, and an environmental report that helps implement it within the best practices; and
 - g) A report from a B.C. Licensed Professional Forester where land clearing or tree harvesting is involved.
- 5.19 Maintain the current No Build **Moratorium** Area as identified on Figure 4.
- 5.20 Ensure that developments in areas identified as Alluvial Fan on Figure 4 comply with the requirements of the City's Floodplain Protection Regulation in force from time to time.
- 5.21 Continue to build up a comprehensive geotechnical data base through:
- Site-specific studies in course of development application;
 - Future comprehensive geotechnical studies of the Planning Area; and
 - Continuous monitoring of any ground movement

recommended in Schedule 2, Eastern Hillside Servicing Report).

- ✓ Rural Hillside (RH)
 - Location criteria: sites outside the recommended development cells and where the concerned terrains, on-site conditions (for a building site and on-site servicing), and rural roadways permit
 - Appropriate use:
 - ✓ Large residential acreage
 - ✓ Retreat centre (subject to on-site servicing)
 - ✓ Outdoor recreation camp
 - Minimum lot size: 4 to 8 ha
- ✓ Rural Resource (RR)
 - Location criteria: crown and private forest lands governed by the BC Forest and Range Practices Act
 - Appropriate use
 - ✓ Forestry uses under the BC Forest and Range Practices Act
- ✓ Environmental Conservation (EC)
 - Location criteria: major riparian zones, dedicated areas of high environmental value or sensitivity, areas with known geotechnical concerns and other natural hazards, public trails, and areas recommended by detailed environmental reviews as part of the rezoning requirements
 - Appropriate uses
 - ✓ Conservation, appropriately designed trail use and other very low-impact, related activities
- ✓ Outdoor Recreation – Golf Course (OR)
 - Location criteria: existing golf course
 - Appropriate uses:
 - ✓ Golf course and auxiliary uses
- ~~✓ No Build Moratorium Zone~~
 - ~~○ Location: the boundaries of the No Build Moratorium Area as established by the City on October 1, 2004; and former Marble Hill Road (slide)~~
 - ~~○ Appropriate uses:~~
 - ~~✓ Residential uses as existing on October 1, 2004³¹~~
 - ~~✓ No new construction or reconstruction of the existing homes~~

³¹ Through a resolution on October 1, 2004, Council adopted the current Development Moratorium (No Build Area) boundaries. It encloses development cell 10, namely the Panorama/Ridgeview Subdivision and extends further uphill. GPS monitoring of ground movements is ongoing.

- ✓ No Build Area
 - Location: boundaries of the earthflow area, Areas C1, C2, and C3 as identified in geotechnical reports from the engineering firm of Kohn Crippen Berger dated August 3, 2016; and former Marble Hill Road (slide)
 - Appropriate uses:
 - ✓ Existing residential uses; no new construction or reconstruction of existing homes
- ✓ Geologically Sensitive Area
 - Location: boundaries of the Ridge Crest rockfall area, Areas A1 and A2; and Hinkley Creek suspect landslide area, Area B, as identified in geotechnical reports from the engineering firm of Kohn Crippen Berger, dated August 3, 2016
 - Appropriate uses:
 - ✓ residential uses, in accordance with a development permit issued by Council; no tree cutting shall be permitted except in accordance with a development permit issued by Council.

(1) DESCRIPTION

The RSV 1 (LIMITED USE RESERVE) ZONE consists of privately owned land on which USES are restricted due to the presence of a suspected physical hazard or a need to protect environmental quality.

Within the RSV 1 ZONE the following types of areas are specifically identified:

- (cwa) Community Water Supply Area consists of the catchment: areas of various COMMUNITY WATER SYSTEMS.
- (gsa) Geologically Sensitive Area consists of steep slopes, areas subject to rock fall, landslide and areas with suspected unstable soil conditions.
- (gsa-HCA) *Geologically Sensitive Area-Hinkley Creek Area consists of steep slopes, areas subject to rock fall hazard, landslide and areas with suspected unstable soil conditions in the Hinkley Creek Area.*
- (gra) *Geologically Restricted Area consists of areas subject to occurrence or high susceptibility of rock fall hazard, landslide, or earthflow with unstable soil conditions in the Marble Hill area*
- (fha) Flood Hazard Area consists of those areas within the FLOODPLAIN not protected by 200 year standard dykes.
- (wla) Water Lot Area consists of those areas below the mean high water of a river or lake.
- (rem) *Remnant Area preserved in a natural state due to the presence of a suspected physical hazard or a need to protect environmental quality. (AB#4071)*

(2) PERMITTED USES

The following USES shall be the only USES permitted in this ZONE unless specifically permitted or prohibited elsewhere in this BYLAW by GENERAL or SPECIAL REGULATIONS:

- (a) GENERAL AGRICULTURE (subject to Special Regulation)
- (b) CONDITIONAL AGRICULTURE (subject to Use Regulation)
- (c) RESTRICTED AGRICULTURE (subject to Special Regulation)
- (d) INCIDENTAL AGRICULTURAL SALES
- (e) ONE FAMILY RESIDENTIAL (subject to Special Regulation)
 - (i) single family detached dwelling
 - (i) manufactured home
- (f) TEMPORARY ACCESSORY DWELLING (subject to Special Regulation)
 - (i) secondary suite
 - (ii) manufactured home

- (iii) park model trailer
 - (iv) residential conversion structure
 - (g) RURAL ANCILLARY USE (subject to Special Regulation)
 - (h) ACCESSORY HOME OCCUPATION (*subject to Special Regulation*) (AB#4071)
 - (i) COTTAGE INDUSTRY (subject to *Special Regulation*) (AB#4071)
 - (j) RESOURCE USE (subject to Special Regulation)
 - (k) *SUPPORTIVE RECOVERY HOME USE (subject to Special Regulation)* (AB #3950) (AB#4071)
 - (l) RESOURCE USE (subject to Special Regulation)
 - (m) *SUPPORTIVE RECOVERY HOME USE (subject to Use Regulations)* (AB#3950)
- (3) LOT SIZE (minimum)
- (a) 8ha Within the areas designated (cwa) Community Water Supply Area and (fha) Flood Hazard Area, where land is excluded from the ALR or approved for subdivision within the ALR pursuant to the *Agricultural Land Reserve Act*;
 - (b) 4ha Within the areas designated (gsa) “geologically sensitive area,” (gsa-HCA) “geologically sensitive area – Hinkley Creek Area,” or (gra) “geologically restricted area,” where land is excluded from the ALR or approved for subdivision within the ALR pursuant to the *Agricultural Land Reserve Act*;
 - (c) N/A Within the areas designated (wla) Water Lot Area;
 - (d) 1ha where created by "boundary adjustment" between 2 or more adjacent parcels to allow for the more efficient use of land or better utilization of buildings.
 - ~~(d)~~(e) N/A within areas designated as (rem). (AB#4071)
- (4) LOT DIMENSIONS (minimum)
- (a) Where a parcel being created by subdivision fronts on a road or highway, the minimum frontage on the road or highway shall be 10% of the perimeter of the lot or greater unless exempted by the Approving Officer.
- (5) DENSITY (maximum) N/A
- (a) *Shall not exceed one structure for ONE FAMILY RESIDENTIAL USE per lot. (AB#3897)*
- (6) LOT COVERAGE (maximum)

- (a) within the areas designated as (cwa) or (gsa), or (gsa-HCA) total all buildings and structures (AB #3769) 5%
- (b) within the areas designated as (fha), 150m² structures for residential use
- (c) within the areas designated as (fha), all structures for non-residential use (AB #3769) 5%
- (d) within areas designated as (gra) "geologically restricted area", total all buildings and structures:
- (i) manufactured home (single wide mobile home) 91 m²
- (ii) rural ancillary uses 10 m²
- (e)
- (7) FLOOR AREA RATIO (maximum) N/A
- (8) SETBACKS (minimum distance to) FLL RLL ISLL ESLL
- (a) RESIDENTIAL 7.5 7.5 3.0 7.5
- (b) animal enclosures
- (i) not exceeding 10m² in area 7.5 3.0 3.0 7.5
- (ii) not exceeding 100m² in area 7.5 7.5 7.5 7.5
- (iii) exceeding 100m² in area 15.0 15.0 15.0 15.0
- (c) Manure storage facility 30.0 30.0 30.0 30.0
- (d) Other buildings 7.5 7.5 3.0 7.5
- (e) Roadside stands 3.0 15.0 7.5 6.0
- (9) SITING
- (a) Dwelling Units and Animal Enclosures shall be separated by a minimum distance of 15m.
- (10) BUILDING HEIGHT (maximum)
- (a) Residential Use 10m
- (b) RURAL ANCILLARY USE 6m
- (c) animal enclosures/other agricultural buildings N/A
- (d) roadside stands 5m
- (11) OFF-STREET PARKING (minimum) N/A
- (12) OFF-STREET LOADING (minimum) N/A
- (13) AMENITY AREA (minimum) N/A

(14) FENCING, SCREENING & LANDSCAPING

- (a) Fencing, screening and landscaping shall be provided in accordance with the requirements of Section 5.05 of this BYLAW.

(15) SIGNS

- (a) Shall be located and constructed in accordance with the City Sign Bylaw, in force from time to time.

(16) SPECIAL REGULATIONS

- (a) A ONE FAMILY RESIDENTIAL or TEMPORARY ACCESSORY DWELLING shall only be allowed under the following conditions:

(i) within the area indicated as (gsa) "geologically sensitive area", or (gsa-HCA) "geologically sensitive area-Hinkley Creek Area." subject to a satisfactory independent geotechnical report indicating that the siting of the proposed structure and associated features will not be endangered by rock fall hazard, landslides, earthflow, or other slope or foundational instability;

(ii) within the area indicated as (cwa) "community water supply area" subject to the approval of the City Engineering Department;

(iii) within the area indicated as (fha) "flood hazard area", single section manufactured home designed to be movable from its

(iv) foundation in event of high water warning and only if approved by the City Engineering Department and/or Regional Water Manager.

(v) notwithstanding (iii) above, within the area indicated as (fha) "flood hazard area" that is within the area north and east of Shefford Slough, south of Cartmell Road and west of Young Road, a permanent single-family dwelling may be constructed, subject to requirements of the current Floodplain Regulation Bylaw, in force from time to time.

(vi) Within the areas designated as (gra) "geologically restricted area", a ONE FAMILY RESIDENTIAL shall only be allowed subject to a satisfactory independent geotechnical report indicating that the siting of the proposed structure and associated features will not be endangered by rock fall hazard, landslides, earthflow, or other slope or foundational instability. No more than one ONE FAMILY RESIDENTIAL USE shall be permitted, subject to the following:

1. A manufactured home limited to a single wide mobile home shall be permitted
2. Any residence must be supported by a PRIVATE SEWAGE DISPOSAL SYSTEM; and
3. Any development of a parcel shall require a suitably-worded covenant that is acceptable to the Director of Planning and Engineering for the City of Chilliwack (or any individual appointed or designated by Council to act in their place) and that is registered against title to the land and that includes a release

is registered against title to the land and that includes a release and indemnity of the City from any loss caused by any rock fall hazard, landslide, or earthflow with unstable soil conditions on the land.

- (b) A RURAL ANCILLARY USE shall meet the following requirements:
 - (i) within the area indicated as (cwa) "community water supply area" it shall not include the keeping of pets other than within the dwelling unit;
- (c) within the area indicated as (gsa) "geologically sensitive area" structures for said use exceeding 60m² in floor area shall require a satisfactory independent geotechnical report indicating that the siting of the proposed structure will not be endangered by slope or foundation instability;
- (d) within the area indicated as (fha) "flood hazard area" the location of structures for said use shall be subject to the approval of the City Engineering Department.
- (e) A GENERAL AGRICULTURE USE shall only be allowed in areas indicated as (fha) "flood hazard area".
- (f) A RESTRICTED AGRICULTURE USE shall only be allowed in areas indicated as (gsa) "geologically sensitive area," (gsa-HCA) "geologically sensitive area-Hinkley Creek Area" or (gra) "geologically restricted area," provided that no tree clearing is required to support this use."
- (g) A RESOURCE USE shall only be allowed in the area indicated as "water lot area" and shall be limited to gravel extraction and/or storage and log storage and/or sorting.
- (h) A Conditional Agriculture Use shall not be permitted in an area designated as (cwa) "community water supply area".
- (i) Within the area indicated as (rem) the following uses are prohibited:
 - (i) General Agriculture
 - (i) Conditional Agriculture
 - (ii) Restricted Agriculture
 - (iii) Incidental Agriculture Sales
 - (iv) One Family Residential
 - (v) Temporary Accessory Dwelling
 - (vi) Rural Ancillary Use
 - (vii) Accessory Home Occupation
 - (viii) Cottage Industry
 - (ix) Resource Use
 - (x) Supportive Recovery Home Use

j) Within areas designated as (gra) "geologically restricted area," or (gsa-HCA) "geologically sensitive area-Hinkley Creek Area" no cutting of

trees shall be permitted except in accordance with a development permit issued by Council.

(k) Within the areas designated as (gra) "geologically restricted area", the following uses are prohibited:

(i) TEMPORARY ACCESSORY DWELLING

(ii) RESOURCE USE

(ii) SUPPORTIVE RECOVERY HOME USE

(iii) ACCESSORY HOME OCCUPATION

(iv) COTTAGE INDUSTRY

City of Chilliwack

Bylaw No. 4450

A bylaw to amend the “Official Community Plan Bylaw 2014, No. 4025”

WHEREAS the Council of the City of Chilliwack has adopted “Official Community Plan Bylaw 2014, No. 4025” as amended (the “**Official Community Plan**”);

AND WHEREAS the Council of the City of Chilliwack has adopted the Eastern Hillside Comprehensive Area Plan, Maps and Policies (the “**Area Plan**”) under the Official Community Plan;

AND WHEREAS the Council of the City of Chilliwack has considered an application to amend its Official Community Plan and Area Plan to restrict subdivision and development in Development Permit Area 2 as a result of rock fall hazard, landslides, earthflow and generally unstable ground conditions;

NOW THEREFORE, the Council of the City of Chilliwack in open meeting assembled enacts as follows:

1. This bylaw may be cited as “**Official Community Plan Bylaw Amendment Bylaw 2017, No. 4450**”.
2. “Official Community Plan Bylaw 2014, No. 4025”, is hereby further amended in SECTION 5, IMPLEMENTATION GUIDE, Development Permit Area 2 – Hillside and Upland Areas, Description and Exemptions, in the second paragraph, by inserting the words “In areas where development is permitted,” before the words “a Development Permit”.
3. Said Bylaw is hereby further amended in SECTION 5, IMPLEMENTATION GUIDE, Development Permit Area 2 – Hillside and Upland Areas, Guidelines, Paragraph 8, by adding the words “indicating that the development will not be endangered, or that the measures have been taken to ensure that the development will not be endangered by rock fall hazard, landslides, earthflow or other slope or foundational instability” after the words “Geohazard Assessment and Investigation”.
4. Said Bylaw is hereby further amended in SECTION 5, IMPLEMENTATION GUIDE, Development Permit Area 2 – Hillside and Upland Areas, Guidelines, by adding a new Paragraph as follows:
 - “15. Development shall be restricted in areas subject to occurrence or high susceptibility of rock fall hazard, landslides or earthflow with unstable soil conditions in accordance with requirements stipulated in the Zoning Bylaw.

5. Said Bylaw is hereby further amended in Schedule D – Eastern Hillside Comprehensive Area Plan, by deleting Figure 2 “Land Use Plan”, Figure 4 “Geotechnical Constraints”, and Figure 5 “Environmental Constraint Overlays and Development Cells” as attached thereto, in their entirety and substituting with new Figure 2 “Land Use Plan”, Figure 4 “Geotechnical Constraints”, and Figure 5 “Environmental Constraint Overlays and Development Cells”, attached hereto and forming part of this bylaw.
6. Said Bylaw is hereby further amended in Schedule D – Eastern Hillside Comprehensive Area Plan, Methodology, by deleting the word “Moratorium” after the words “City’s No Build” and before the word “Area”.
7. Said Bylaw is hereby further amended in Schedule D – Eastern Hillside Comprehensive Area Plan, Goal 2 – Geotechnical Considerations, Policies/Strategic Actions, Policy 5.19, by deleting the word “Moratorium” after the words “current No Build” and before the words “Area as identified”.
8. Said Bylaw is hereby further amended in Schedule D – Eastern Hillside Comprehensive Area Plan, Goal 3 – Land Use, Policies/Strategic Actions, Policy 5.27, by deleting the existing provision for No Build Moratorium Zone in its entirety and substituting with the following:

“No Build Area

 - Location: boundaries of the earthflow area, Areas C1, C2, and C3 as identified in geotechnical reports from the engineering firm of Kohn Crippen Berger dated August 3, 2016; and former Marble Hill Road (slide)
 - Appropriate Uses:
 - ✓ Existing residential uses
 - ✓ No new construction or reconstruction of existing homes”
9. Said Bylaw is hereby further amended in Schedule D – Eastern Hillside Comprehensive Area Plan, Goal 3 – Land Use, Policies/Strategic Actions, Policy 5.27, by adding the following new provision:

“Geologically Sensitive Area

 - Location: boundaries of the Ridge Crest rock fall area, Areas A1 and A2; Hinkley Creek suspect landslide area, Area B, as identified in geotechnical reports from the engineering firm of Kohn Crippen Berger, dated August 3, 2016.
 - Appropriate Uses:
 - ✓ Residential uses, in accordance with a development permit issued by Council
 - ✓ No tree cutting shall be permitted except in accordance with a development permit issued by Council”

Received first and second reading on the
Public hearing held on the
Received third reading on the
Consultation Process considered by Council on the
Received adoption on the

Mayor

Deputy City Clerk

Figure 2 Land Use Plan

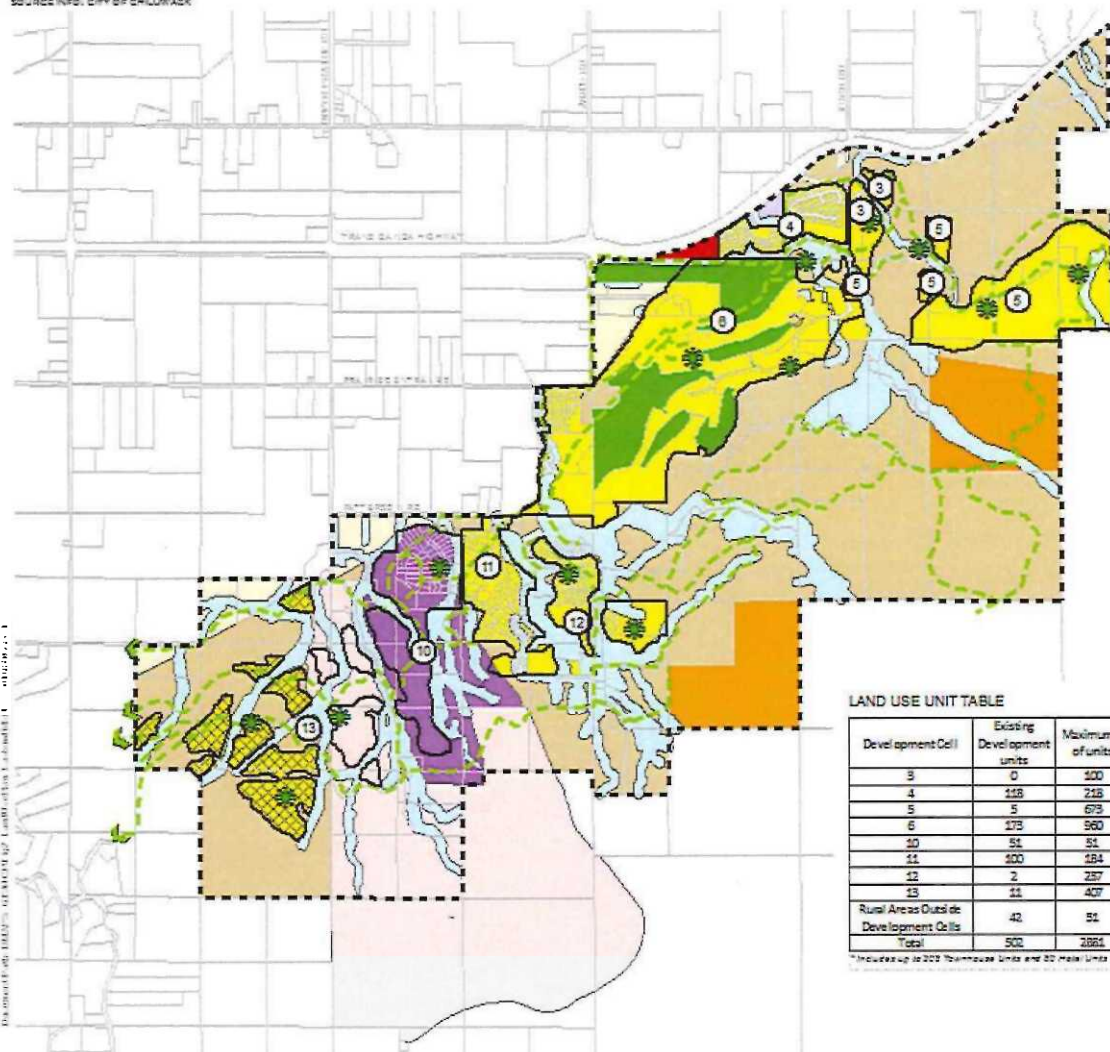
DATE: OCTOBER 2017
SOURCE INFO: CITY OF CHILLIWACK

CITY OF CHILLIWACK



KEY

- SITE BOUNDARY
- POTENTIAL DEVELOPMENT CELLS
- CELL IDENTIFIER
- RESIDENTIAL-LOW DENSITY (RL)
- RURAL HILLSIDE (RH)
- NEIGHBOURHOOD COMMERCIAL (NC)
- RESORT COMMERCIAL (RC)
- RESORT COMMERCIAL - HOTEL
- INSTITUTIONAL (I)
- RURAL RESOURCE (RR)
- FUTURE RESERVE
- OUTDOOR RECREATION - GOLF COURSE (OR)
- CONCEPTUAL PARKLAND LOCATION
- PROPOSED TRAILS
- ENVIRONMENTAL CONSERVATION (EC)
- AGRICULTURAL (AG)
- NO BUILD AREA
- GEOLOGICALLY SENSITIVE AREA



LAND USE UNIT TABLE

Development Cell	Existing Development units	Maximum # of units
3	0	100
4	118	218
5	5	673
6	173	960
10	51	51
11	100	184
12	2	257
13	11	407
Rural Areas Outside Development Cells	42	51
Total	502	2861

* Includes up to 200 Townhouse Units and 50 Mobile Units



Note:
The areas identified as Environmental conservation are based on available mapping and standard setback requirements and are subject to further refinement and detailed investigation.

Although 13 "potential development cells" were investigated in the Servicing Update Report (Appendix 2), only 7 cells (namely, 3, 4, 5, 6, 11, 12, and 13) have been designated for residential development within this Plan, taking into account the location of existing development and infrastructure, ease of access, developable areas (in accordance with the City's policies guidelines), full development costs, market absorption analysis, and the viability of development financing.

Figure 4 Geotechnical Constraints

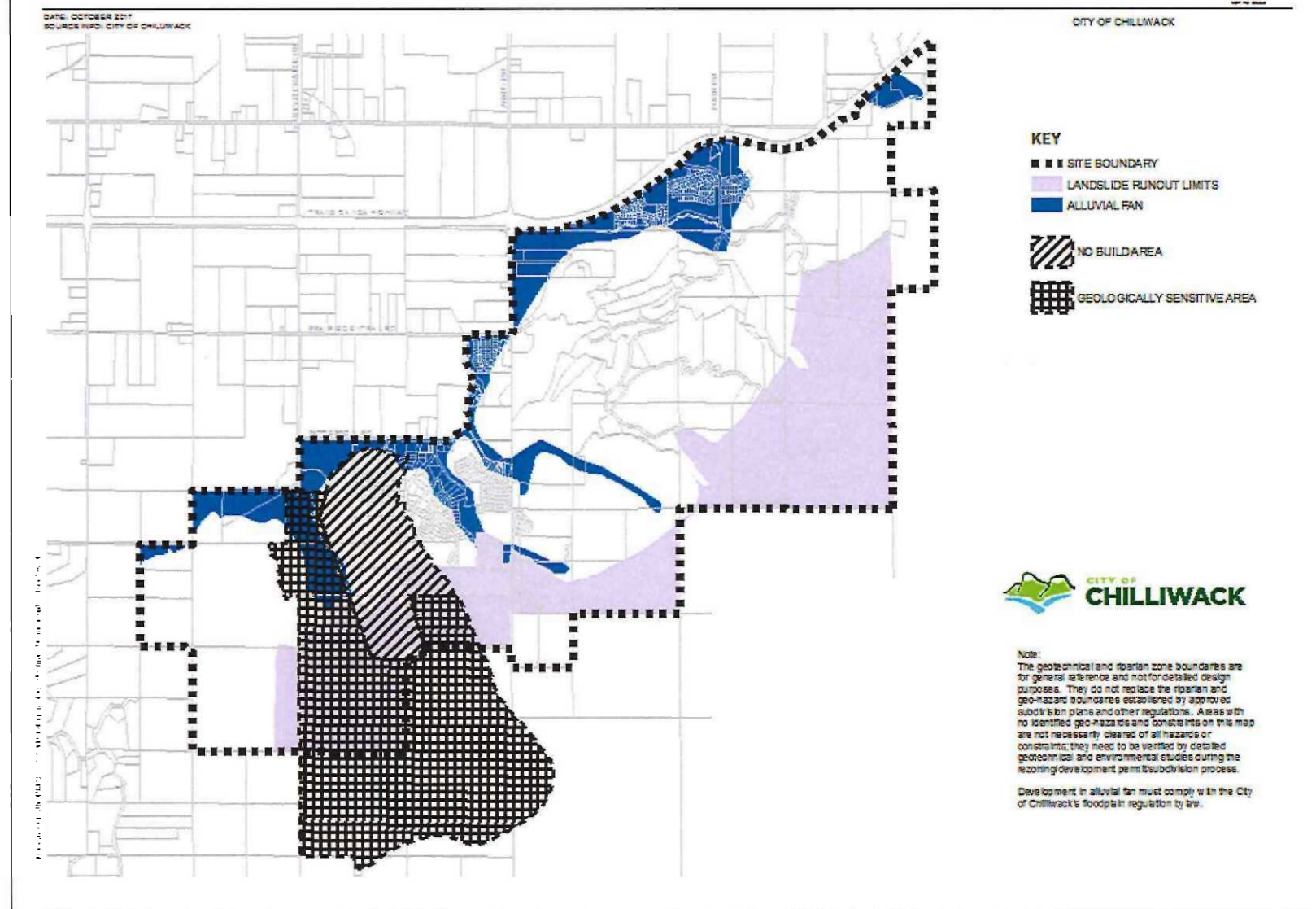
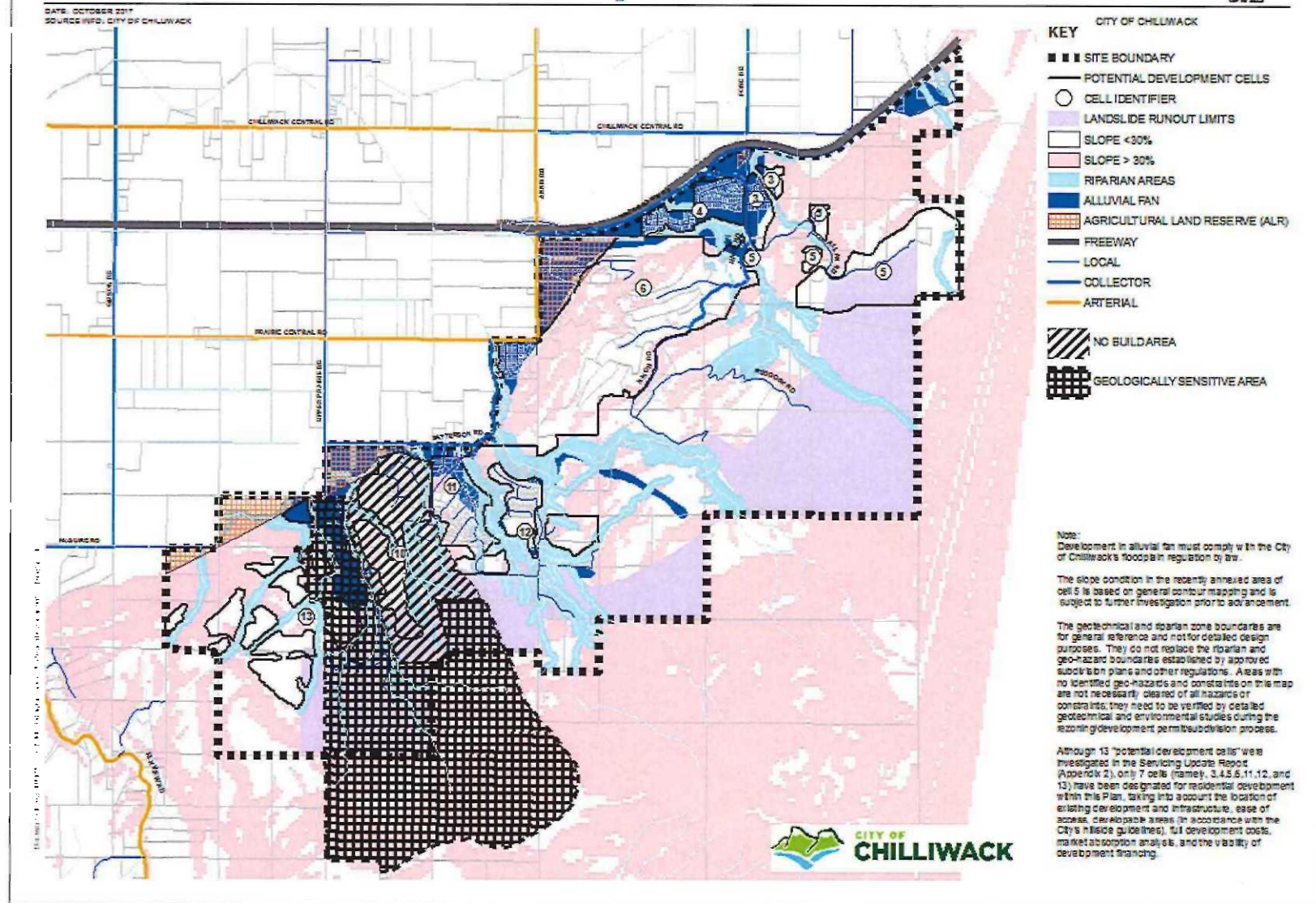


Figure 5 Environmental Constraint Overlays and Development Cells



City of Chilliwack

Bylaw No. 4451

A bylaw to amend the “Official Community Plan Bylaw 2014, No. 4025”

The Council of the City of Chilliwack in open meeting assembled enacts as follows:

1. This bylaw may be cited as **“Official Community Plan Bylaw Amendment Bylaw 2017, No. 4451”**.
2. “Official Community Plan Bylaw 2014, No. 4025”, is hereby further amended by redesignating properties described as:
 - (1) PID: 004-653-882, South East Quarter of the North West Quarter of Section 13 Township 26 New Westminster District Except: Part Subdivided By Plan 72440 (portion of 6900 Hinkley Road)
 - (2) PID: 013-512-528, South Half of the North East Quarter of the North West Quarter Section 13 Township 26 New Westminster District (portion of 7005 Hinkley Road)
 - (3) PID: 017-961-246, Lot 1 South West Quarter Section 24 Township 26 New Westminster District Plan LMP6931 (portion of 7250 Hinkley Road)
 - (4) PID: 013-512-463, North Half of the North East Quarter of the North West Quarter Section 13 Township 26 New Westminster District (portion of 7105 Marble Hill Road)from “Environmental Conservation” to “Geologically Sensitive Area”, as shown on Schedule “A” attached hereto and forming part of this bylaw.
3. Said Bylaw is hereby further amended by redesignating properties described as:
 - (1) PID: 006-737-897, Lot 2 Section 13 Township 26 New Westminster District Plan 73881 (6501 Hinkley Road)
 - (2) PID: 013-512-897, South East Quarter of the South West Quarter Section 13 Township 26 New Westminster District (6505 Hinkley Road)
 - (3) PID: 013-512-960, South West Quarter of the South West Quarter Section 13 Township 26 New Westminster District (6550 Hinkley Road)
 - (4) PID: 006-029-663, Lot 2 Section 13 Township 26 New Westminster District Plan 46162 (6650 Hinkley Road)

- (5) PID: 002-743-019, Lot 3 Except: Part Dedicated Road on Plan LMP32167, Section 13 Township 26 New Westminster District Plan 46492 (6745 Hinkley Road)
- (6) PID: 003-845-630, Lot 1 Except: Part Subdivided by Plan 46492, Section 13 Township 26 New Westminster District Plan 46162 (portions of 6750 Hinkley Road)
- (7) PID: 004-976-355, Lot 1 Section 13 Township 26 New Westminster District Plan 72440 (portions of 6800 Hinkley Road)
- (8) PID: 013-523-422, Parcel “A” (Reference Plan 8591) South West Quarter Section 24 Township 26 Except: Firstly: Parcel “One” (Reference Plan 14645) Secondly: Part Subdivided By Plan 38332, New Westminster District (7341 Hinkley Road)
- (9) PID: 006-320-597, Lot 8 Section 24 Township 26 New Westminster District Plan 48566 (portions of 7360 Hinkley Road)
- (10) PID: 007-510-021, Parcel “One” (Reference Plan 14645) of Parcel “A” (Reference Plan 8591) South West Quarter Section 24 Township 26 New Westminster District (7285 Hinkley Road)
- (11) PID: 008-881-995, Lot 1 Section 23 Township 26 New Westminster District Plan 26646 (7339 Upper Prairie Road)

from “Rural Hillside” to “Geologically Sensitive Area”, as shown on Schedule “A” attached hereto and forming part of this bylaw.

4. Said Bylaw is hereby further amended by redesignating properties described as:

- (1) PID: 013-512-731, South West Quarter of the North West Quarter Section 13 Township 26 New Westminster District (portion of 6999 Hinkley Road)
- (2) PID: 006-508-995, North West Quarter of the North West Quarter Section 13 Township 26 New Westminster District (portions of 7100 Hinkley Road)
- (3) PID: 006-737-871, Lot 1 Section 13 Township 26 New Westminster District Plan 73881 (49705 Brownlee Road)
- (4) PID: 006-509-223, North East Quarter Section 14 Township 26 New Westminster District (portions of 49200 Mcguire Road)

from “Rural Hillside”, and “Future Reserve” to “Geologically Sensitive Area”, as shown on Schedule “A” attached hereto and forming part of this bylaw.

5. Said Bylaw is hereby further amended by redesignating property described as:
- (1) PID: 008-517-479, Lot 5 Section 24 Township 26 New Westminster District Plan 38332
(7245 Hinkley Road)
- from “Rural Hillside” and “Forest Reserve” to “Geologically Sensitive Area”, as shown on Schedule “A” attached hereto and forming part of this bylaw.
6. Said Bylaw is hereby further amended by redesignating properties described as:
- (1) PID: 013-512-854, South East Quarter of the North East Quarter Section 13 Township 26 New Westminster District
(6993 Marble Hill Road)
 - (2) PID: 013-512-820, South West Quarter of the North East Quarter Section 13 Township 26 New Westminster District
(6997 Marble Hill Road)
- from “Rural Hillside” to “Geologically Sensitive Area”, as shown on Schedule “B” attached hereto and forming part of this bylaw.
7. Said Bylaw is hereby further amended by redesignating property described as:
- (1) Section 13 Township 26 New Westminster District Plan G101125e Part SE1/4.
(portion of 6605 Elk View Road)
- from “Forest Reserve” to “Geologically Sensitive Area”, as shown on Schedule “B” attached hereto and forming part of this bylaw.
8. Said Bylaw is hereby further amended by redesignating properties described as:
- (1) Section 9 Township 2 Range 29 New Westminster District Meridian W6
(portion of 51005 Bench Road)
 - (2) Section 12 Township 26 New Westminster District Plan G101125E Part NE1/4
(portion of 6200 Hinkley Road)
 - (3) Section 12 Township 26 New Westminster District Part NW1/4
(portion of 49055 Lookout Road)
- from “Forest Reserve” to “Geologically Sensitive Area”, as shown on Schedule “B” attached hereto and forming part of this bylaw.
9. Said Bylaw is hereby further amended by redesignating property described as:
- (1) PID: 007-603-959, North Half Legal Subdivision 6 Section 12 Township 26
Except: Part Shown on Plan 15974, New Westminster District
(portion of 49880 Lookout Road)
- from “Rural” to “Geologically Sensitive Area”, as shown on Schedule “B” attached hereto and forming part of this bylaw.

10. Said Bylaw is hereby further amended by redesignating properties described as:

- (1) PID: 013-512-757, North West Quarter of the North East Quarter Section 13 Township 26 New Westminster District Except: Firstly; Part Dedicated Road on Plan LMP34671, Secondly; Part Subdivided by Plan LMP34672
(portions of 7195 Marble Hill Road)
- (2) PID: 008-861-242, Lot 4 Section 24 Township 26 New Westminster District Plan 26857
(portions of 7255 Marble Hill Road)
- (3) PID: 024-304-387, Lot A Except Portions in Plans BCP1623 and BCP23801 Section 24 Township 26 New Westminster District Plan LMP39972
(portions of 7351 Marble Hill Road)
- (4) PID: 024-195-987, Strata Lot 4 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portions of 7357 Marble Hill Road)
- (5) PID: 024-195-979, Strata Lot 3 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portions of 7361 Marble Hill Road)
- (6) PID: 024-195-961, Strata Lot 2 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portions of 7365 Marble Hill Road)
- (7) PID: 024-195-952, Strata Lot 1 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portions of 7369 Marble Hill Road)
- (8) PID: 000-907-359, Lot 2 Section 24 Township 26 New Westminster District Plan 6201
(portion of 7260 Marble Hill Road)

from “Rural Hillside” to “No Build Area”, as shown on Schedule “C” attached hereto and forming part of this bylaw.

Received first and second reading on the
Public hearing held on the
Received third reading on the

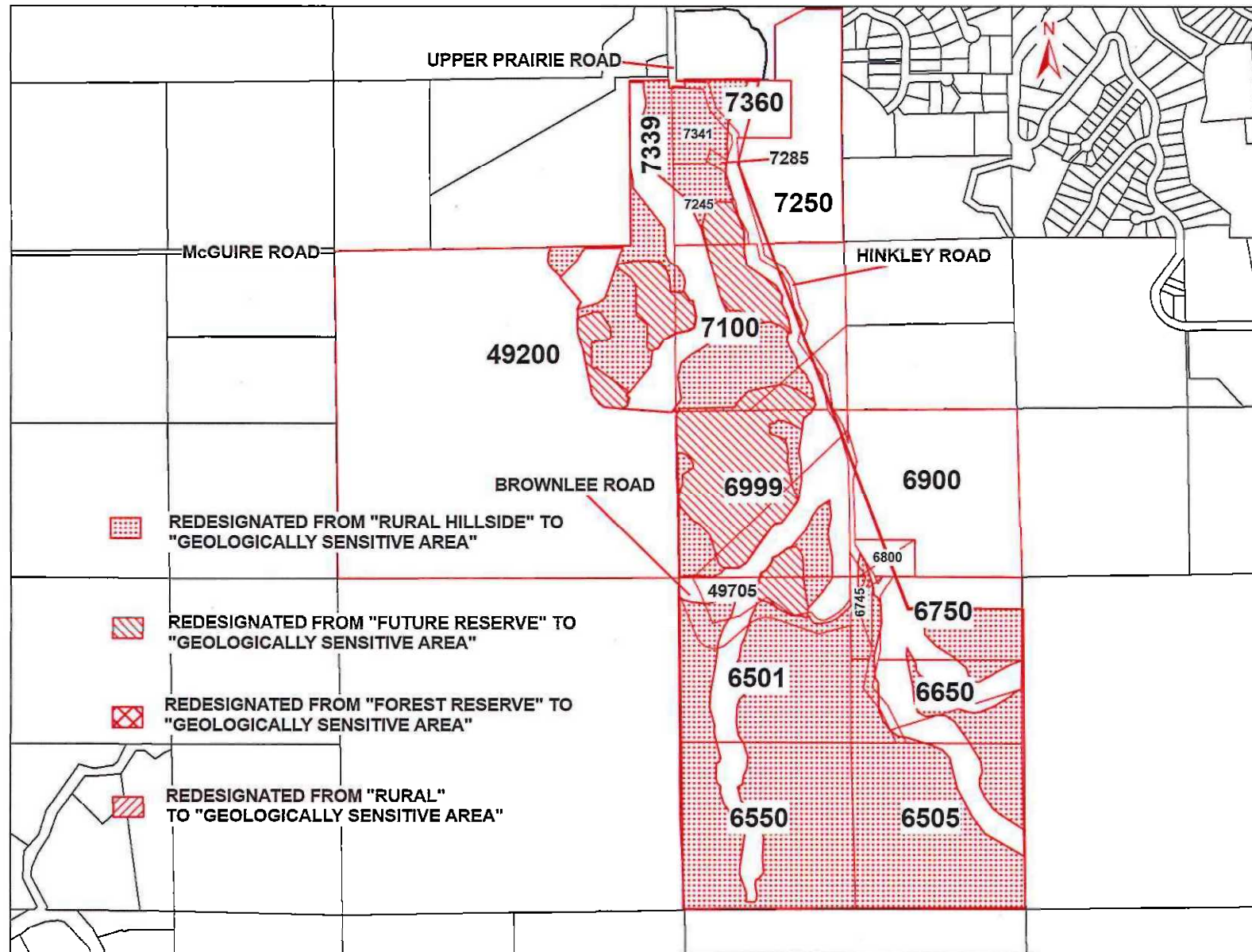
Consultation Process considered by Council on the 7th day of November, 2017.

Received adoption on the

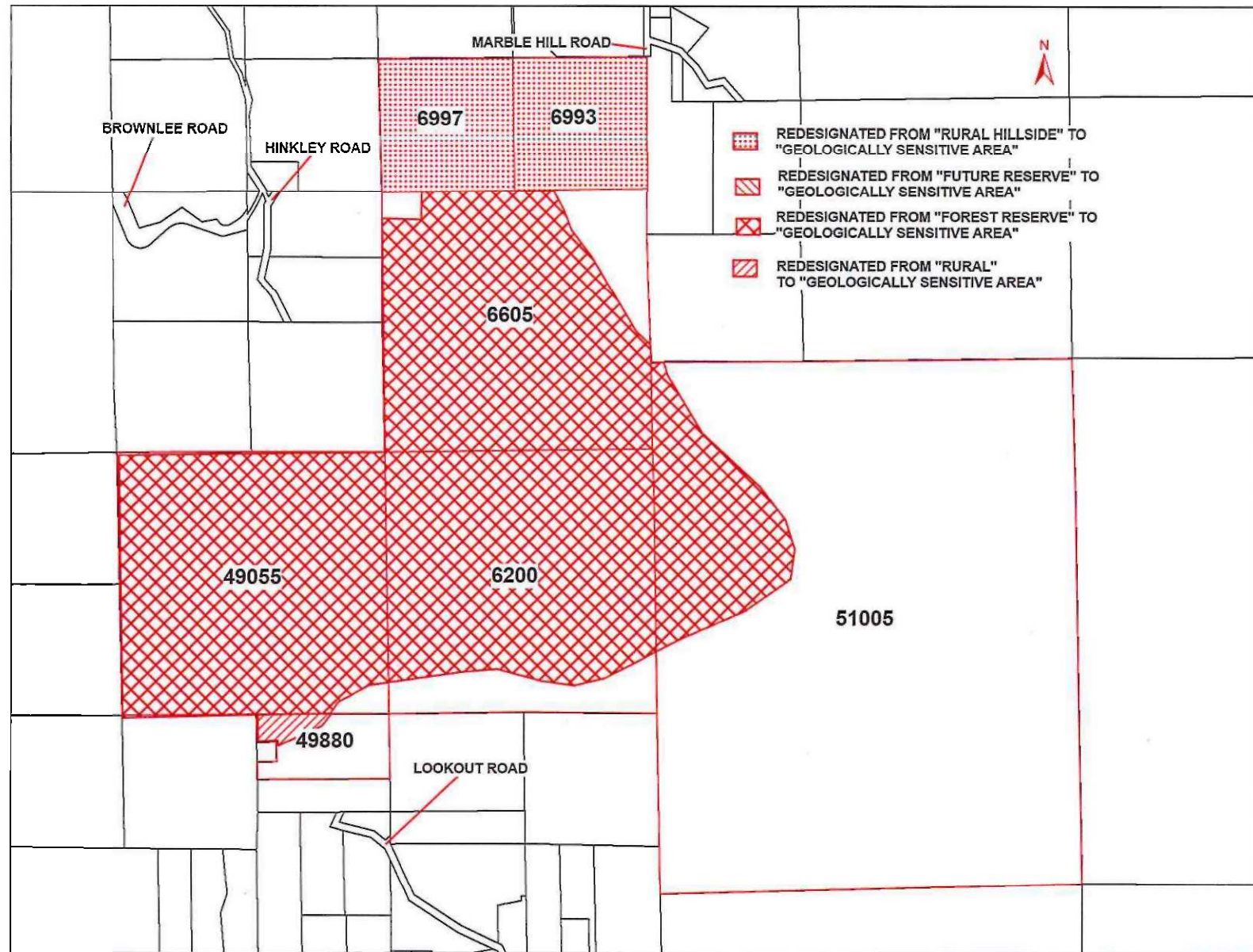
Mayor

Deputy Clerk

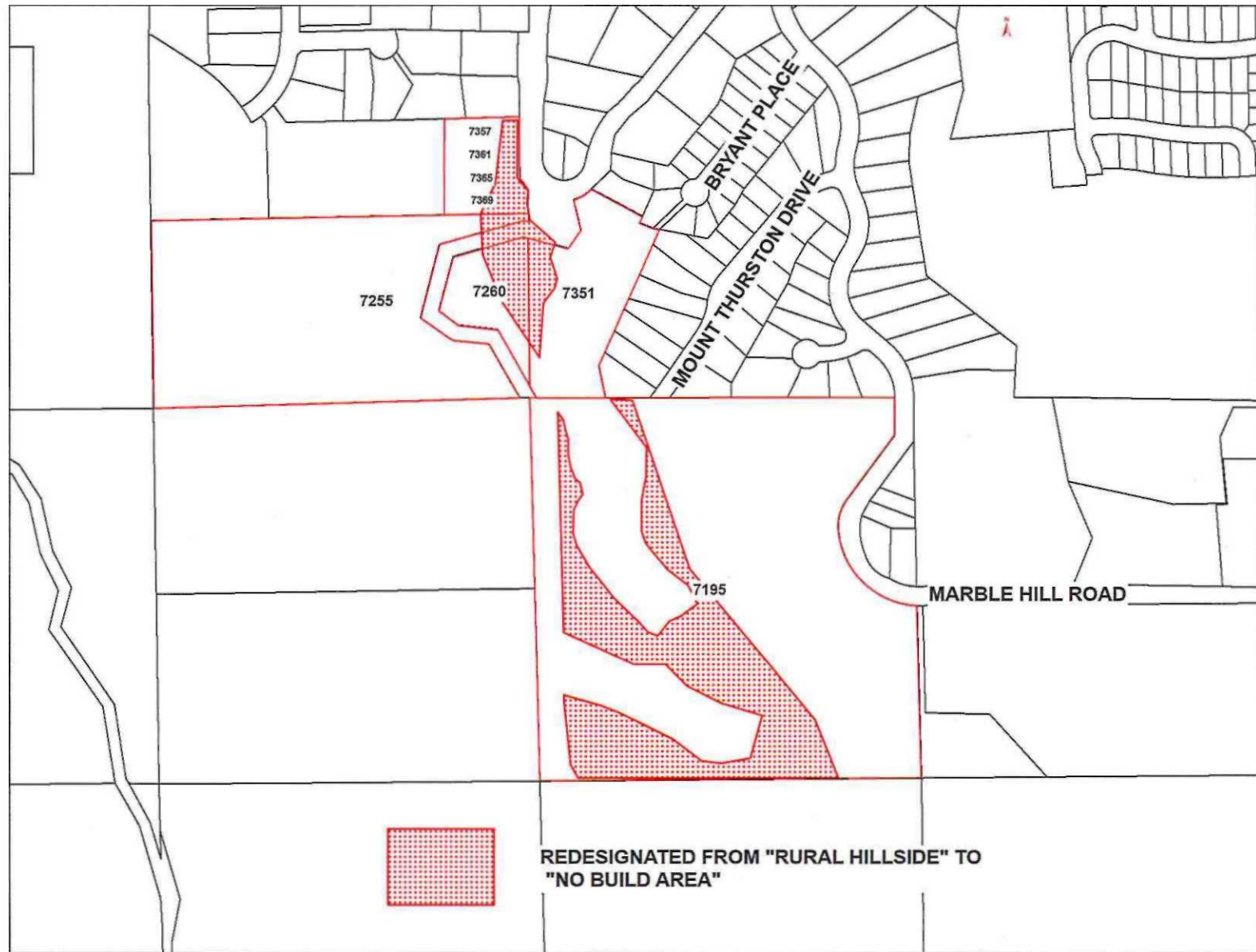
Schedule "A"



“Schedule “B”



Schedule “C”



City of Chilliwack

Bylaw No. 4452

A bylaw to amend the "Zoning Bylaw 2001, No. 2800"

WHEREAS the Council of the City of Chilliwack has adopted "Zoning Bylaw 2001, No. 2800" as amended (the "**Zoning Bylaw**");

AND WHEREAS the Council of the City of Chilliwack has considered an application to amend the RSV1 Zone to include two new areas, (gsa-HCA) "Geologically Sensitive Area –Hinkley Creek Area" and (gra) "Geologically Restricted Area" and to establish permitted uses, and development criteria, including minimum lot sizes, lot coverage, geotechnical reporting and covenants required for development in these areas.

AND WHEREAS the proposed zoning bylaw amendment is consistent with "Official Community Plan Bylaw 2014, No. 4025" as amended;

NOW THEREFORE, the Council of the City of Chilliwack in open meeting assembled enacts as follows:

1. This bylaw may be cited as "**Zoning Bylaw Amendment Bylaw 2017, No. 4452**".
2. "Zoning Bylaw 2001, No. 2800" is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (1) DESCRIPTIONS, by inserting the following new areas:
 - "(gsa-HCA) Geologically Sensitive Area-Hinkley Creek Area consists of steep slopes, areas subject to rock fall hazard, landslide and areas with suspected unstable soil conditions in the Hinkley Creek area.
 - (gra) Geologically Restricted Area consists of areas subject to occurrence or high susceptibility of rock fall hazard, landside, or earthflow with unstable soil conditions in the Marble Hill area."
3. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (3) LOT SIZE (minimum), Subparagraph (b), by inserting the words "(gsa-HCA) geologically sensitive area-Hinkley Creek Area," or (gra) "geologically restricted area", after the words "geologically sensitive area", and before the words "where land is".
4. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONE, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (6) LOT COVERAGE, Paragraph (a) by adding the words "or (gsa-HCA)" after the words "(cwa)" and before the words "total all buildings".

6. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (6) LOT COVERAGE (maximum), by adding the following new Subparagraph:
- “(d) within areas designated as (gra) “geologically restricted area”, total all buildings and structures:
- | | | |
|------|---|--------------------|
| (i) | Manufactured home (single wide mobile home) | 91m ² |
| (ii) | rural ancillary uses | 10m ² ” |
7. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (16) SPECIAL REGULATIONS, Subparagraph (a), by deleting Clause (i) in its entirety and substituting with the following new Clause:
- “(i) within the area indicated as (gsa) “geologically sensitive area”, or (gsa-HCA) “geologically sensitive area-Hinkley Creek Area,” subject to a satisfactory independent geotechnical report indicating that the siting of the proposed structure and associated features will not be endangered by rock fall hazard, landslides, earthflow, or other slope or foundational instability;”
8. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (16) SPECIAL REGULATIONS, Subparagraph (a), by adding the following new Clause:
- “(vi) Within the areas designated as (gra) “geologically restricted area”, a ONE FAMILY RESIDENTIAL shall only be allowed subject to a satisfactory independent geotechnical report indicating that the siting of the proposed structure and associated features will not be endangered by rock fall hazard, landslides, earthflow, or other slope or foundational instability. No more than one ONE FAMILY RESIDENTIAL USE shall be permitted, subject to the following:
1. A manufactured home limited to a single wide mobile home shall be permitted;
 2. Any residence must be supported by a PRIVATE SEWAGE DISPOSAL SYSTEM; and,
 3. Any development of a parcel shall require a suitably-worded covenant that is acceptable to the Director of Planning and Engineering for the City of Chilliwack (or any individual appointed or designated by Council to act in their place) and that is registered against title to the land and that includes a release and indemnity of the City from any loss caused by any rock fall hazard, landslide, or earthflow with unstable soil conditions on the land.”
9. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (16) SPECIAL REGULATIONS, Subparagraph (f), by adding the words “(gsa-HCA) “geologically sensitive area-Hinkley Creek Area” or (gra) “geologically restricted area,” provided that no tree clearing is required to support this use.” after the words “geologically sensitive area”.

11. Said Bylaw is hereby further amended in SECTION 13 – MISCELLANEOUS ZONES, Subsection 13.01 RSV1 (Limited Use Reserve) Zone, Paragraph (16) SPECIAL REGULATIONS, by adding the following new Subparagraphs:

- “(j) Within areas designated as (gra) “geologically restricted area”, or (gsa-HCA) “geologically sensitive area-Hinkley Creek Area”, no cutting of trees shall be permitted except in accordance with a development permit issued by Council.
- (k) Within the areas designated as (gra) “geologically restricted area”, the following uses are prohibited:
 - (i) TEMPORARY ACCESSORY DWELLING
 - (ii) RESOURCE USE
 - (iii) SUPPORTIVE RECOVERY HOME USE
 - (iv) ACCESSORY HOME OCCUPATION
 - (v) COTTAGE INDUSTRY”

Received first and second reading on the
Public hearing held on the
Received third reading on the
Received adoption on the

Mayor

Deputy City Clerk

City of Chilliwack

Bylaw No. 4453

A bylaw to amend the “Zoning Bylaw 2001, No. 2800”

WHEREAS the Council of the City of Chilliwack has adopted “Zoning Bylaw 2001, No. 2800” as amended (the “**Zoning Bylaw**”);

AND WHEREAS the Council of the City of Chilliwack has considered an application to amend its Zoning Bylaw to rezone certain parcels of land in the City to restrict subdivision and development as a result of rock fall hazard, landslides, earthflow and generally unstable ground conditions;

AND WHEREAS the proposed zoning bylaw amendment is consistent with “Official Community Plan Bylaw 2014, No. 4025” as amended;

The Council of the City of Chilliwack in open meeting assembled enacts as follows:

1. This bylaw may be cited as “Zoning Bylaw Amendment Bylaw 2017, No. 4453”.
2. “Zoning Bylaw 2001, No. 2800” is hereby further amended by rezoning properties described as:
 - (1) PID: 006-737-897, Lot 2 Section 13 Township 26 New Westminster District Plan 73881
(6501 Hinkley Road)
 - (2) PID: 006-029-663, Lot 2 Section 13 Township 26 New Westminster District Plan 46162
(6650 Hinkley Road)
 - (3) PID: 002-743-019, Lot 3 Except: Part Dedicated Road on Plan LMP32167, Section 13 Township 26 New Westminster District Plan 46492
(6745 Hinkley Road)
 - (4) PID: 003-845-630, Lot 1 Except: Part Subdivided by Plan 46492, Section 13 Township 26 New Westminster District Plan 46162
(portion of 6750 Hinkley Road)
 - (5) PID: 004-653-882, South East Quarter of the North West Quarter of Section 13 Township 26 New Westminster District Except: Part Subdivided by Plan 72440
(portion of 6900 Hinkley Road)
 - (6) PID: 013-512-731, South West Quarter of the North West Quarter Section 13 Township 26 New Westminster District
(portion of 6999 Hinkley Road)

- (7) PID: 006-508-995, North West Quarter of the North West Quarter Section 13 Township 26 New Westminster District
(portion of 7100 Hinkley Road)
- (8) PID: 008-517-479, Lot 5 Section 24 Township 26 New Westminster District Plan 38332
(7245 Hinkley Road)
- (9) PID: 017-961-246, Lot 1 South West Quarter Section 24 Township 26 New Westminster District Plan LMP6931
(portion of 7250 Hinkley Road)
- (10) PID: 007-510-021, Parcel “One” (Reference Plan 14645) of Parcel “A” (Reference Plan 8591) South West Quarter Section 24 Township 26 New Westminster District
(7285 Hinkley Road)
- (11) PID: 013-523-422, Parcel “A” (Reference Plan 8591) South West Quarter Section 24 Township 26 Except: Firstly: Parcel “One” (Reference Plan 14645) Secondly: Part Subdivided by Plan 38332, New Westminster District
(7341 Hinkley Road)
- (12) PID: 006-320-597, Lot 8 Section 24 Township 26 New Westminster District Plan 48566
(portion of 7360 Hinkley Road)
- (13) PID: 008-881-995, Lot 1 Section 23 Township 26 New Westminster District Plan 26646
(7339 Upper Prairie Road)

from an RH (Rural Hillside) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “A” attached hereto and forming part of this Bylaw.

3. Said Bylaw is hereby further amended by rezoning property described as:

- (1) PID: 006-509-223, North East Quarter Section 14 Township 26 New Westminster District
(portions of 49200 Mcguire Road)

from an RH (Rural Hillside) Zone and an R (Rural) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “A” attached hereto and forming part of this Bylaw.

4. Said Bylaw is hereby further amended by rezoning properties described as:

- (1) PID: 006-737-871, Lot 1 Section 13 Township 26 New Westminster District Plan 73881
(49705 Brownlee Road)
- (2) PID: 004-976-355, Lot 1 Section 13 Township 26 New Westminster District Plan 72440
(portion of 6800 Hinkley Road)

from an RR (Rural Residential) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “A” attached hereto and forming part of this Bylaw

5. Said Bylaw is hereby further amended by rezoning property described as:

- (1) PID: 013-512-854, South East Quarter of the North East Quarter Section 13 Township 26 New Westminster District
(portion of 6993 Marble Hill Road)
- (2) PID: 013-512-820, South West Quarter of the North East Quarter Section 13 Township 26 New Westminster District
(portion of 6997 Marble Hill Road)
- (3) PID: 013-512-897, South East Quarter of The South West Quarter Section 13 Township 26 New Westminster District
(6505 Hinkley Road)
- (4) PID: 013-512-960, South West Quarter of the South West Quarter Section 13 Township 26 New Westminster District
(6550 Hinkley Road)

from an RH (Rural Hillside) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “B” attached hereto and forming part of this Bylaw.

6. Said Bylaw is hereby further amended by rezoning properties described as:

- (1) Section 9 Township 2 Range 29 New Westminster District Meridian W6
(portion of 51005 Bench Road)
- (2) Section 12 Township 26 New Westminster District Plan G101125E Part NE1/4
(portion of 6200 Hinkley Road)
- (3) Section 12 Township 26 New Westminster District Part NW1/4
(portion of 49055 Lookout Road)

from an RSV2 (Public Use Reserve) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “B” attached hereto and forming part of this Bylaw.

7. Said Bylaw is hereby further amended by rezoning property described as:

- (1) PID: 007-603-959, North Half Legal Subdivision 6 Section 12 Township 26
Except: Part Shown on Plan 15974, New Westminster District
(portion of 49880 Lookout Road)

from an R (Rural) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gsa-HCA) “Geologically Sensitive Area-Hinkley Creek Area”, as shown on Schedule “B” attached hereto and forming part of this Bylaw.

8. Said Bylaw is hereby further amended by rezoning properties described as:

- (1) PID: 013-512-528, South Half of the North East Quarter of the North West Quarter Section 13 Township 26 New Westminster District
(7005 Hinkley Road)

- (2) PID: 017-961-246, Lot 1 South West Quarter Section 24 Township 26 New Westminster District Plan LMP6931
(portion of 7250 Hinkley Road)
- (3) PID: 006-320-597, Lot 8 Section 24 Township 26 New Westminster District Plan 48566
(portion of 7360 Hinkley Road)
- (4) PID: 013-512-820, South West Quarter of the North East Quarter Section 13 Township 26 New Westminster District
(portion of 6997 Marble Hill Road)
- (5) PID: 013-512-463, North Half of the North East Quarter of the North West Quarter Section 13 Township 26 New Westminster District
(7105 Marble Hill Road)
- (6) PID: 013-512-757, North West Quarter of the North East Quarter Section 13 Township 26 New Westminster District Except: Firstly; Part Dedicated Road on Plan LMP34671, Secondly; Part Subdivided by Plan LMP34672
(portion of 7195 Marble Hill Road)
- (7) PID: 008-861-242, Lot 4 Section 24 Township 26 New Westminster District Plan 26857
(portion of 7255 Marble Hill Road)
- (8) PID: 000-907-359, Lot 2 Section 24 Township 26 New Westminster District Plan 6201
(7260 Marble Hill Road)
- (3) PID: 004-976-355, Lot 1 Section 13 Township 26 New Westminster District Plan 72440
(portion of 6800 Hinkley Road)

from an RR (Rural Residential) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gra) “Geologically Restricted Area”, as shown on Schedule “C” attached hereto and forming part of this Bylaw

9. Said Bylaw is hereby further amended by rezoning property described as:

- (1) Section 13 Township 26 New Westminster District Plan G101125E Part SE1/4
(portion of 6605 Elk View Road)

from RSV2 (Public Use Reserve) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gra) “Geologically Restricted Area”, as shown on Schedule “C” attached hereto and forming part of this Bylaw.

10. Said Bylaw is hereby further amended by rezoning property described as:

- (1) PID: 017-961-254, Lot 2 South West Quarter Section 24 Township 26 New Westminster District Plan LMP6931
(portions of 7450 Upper Prairie Road)

from an AL (Agriculture Lowland) Zone and an RH (Rural Hillside) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gra) “Geologically Restricted Area”, as shown on Schedule “C” attached hereto and forming part of this Bylaw.

11. Said Bylaw is hereby further amended by rezoning properties described as:

- (1) PID: 018-010-202, Lot 12 Section 24 Township 26 New Westminster District Plan LMP7391
(7426 Allison Place)
- (2) PID: 018-010-229, Lot 14 Section 24 Township 26 New Westminster District Plan LMP7391
(7435 Allison Place)
- (3) PID: 018-010-181, Lot 10 Section 24 Township 26 New Westminster District Plan LMP7391
(portion of 7442 Allison Place)
- (4) PID: 018-010-237, Lot 15 Section 24 Township 26 New Westminster District Plan LMP7391
(7443 Allison Place)
- (5) PID: 018-010-172, Lot 9 Section 24 Township 26 New Westminster District Plan LMP7391
(7458 Allison Place)
- (6) PID: 018-010-245, Lot 16 Section 24 Township 26 New Westminster District Plan LMP7391
(7465 Allison Place)
- (7) PID: 018-010-164, Lot 8 Section 24 Township 26 New Westminster District Plan LMP7391
(7470 Allison Place)
- (8) PID: 018-010-105, Lot 7 Section 24 Township 26 New Westminster District Plan LMP7391
(7482 Allison Place)
- (9) PID: 018-010-253, Lot 17 Section 24 Township 26 New Westminster District Plan LMP7391
(7487 Allison Place)
- (10) PID: 018-010-091, Lot 6 Section 24 Township 26 New Westminster District Plan LMP7391
(7494 Allison Place)
- (11) PID: 018-010-083, Lot 5 Section 24 Township 26 New Westminster District Plan LMP7391
(7506 Allison Place)
- (12) PID: 018-010-261, Lot 18 Section 24 Township 26 New Westminster District Plan LMP7391
(7509 Allison Place)

- (13) PID: 018-010-075, Lot 4 Section 24 Township 26 New Westminster District Plan LMP7391
(7518 Allison Place)
- (14) PID: 018-010-270, Lot 19 Section 24 Township 26 New Westminster District Plan LMP7391
(7523 Allison Place)
- (15) PID: 018-010-067, Lot 3 Section 24 Township 26 New Westminster District Plan LMP7391
(portion of 7530 Allison Place)
- (16) PID: 018-408-320, Lot 5 Section 24 Township 26 New Westminster District Plan LMP11808
(portion of 7493 Dickinson Place)
- (17) PID: 018-408-311, Lot 4 Section 24 Township 26 New Westminster District Plan LMP11808
(portion of 7509 Dickinson Place)
- (18) PID: 018-408-303, Lot 3 Section 24 Township 26 New Westminster District Plan LMP11808
(portion of 7523 Dickinson Place)
- (19) PID: 018-408-290, Lot 2 Section 24 Township 26 New Westminster District Plan LMP11808
(portion of 7537 Dickinson Place)
- (20) PID: 024-195-987, Strata Lot 4 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portion of 7357 Marble Hill Road)
- (21) PID: 024-195-979, Strata Lot 3 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portion of 7361 Marble Hill Road)
- (22) PID: 024-195-961, Strata Lot 2 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portion of 7365 Marble Hill Road)
- (23) PID: 024-195-952, Strata Lot 1 Section 24 Township 26 New Westminster District Strata Plan LMS3296 together with an interest in the common property in proportion to the unit entitlement of the Strata Lot as shown on Form 1
(portion of 7369 Marble Hill Road)
- (24) PID: 018-750-320, Lot 1 Section 24 Township 26 New Westminster District Plan LMP16177
(portion of 7379 Marble Hill Road)

- (26) PID: 018-750-338, Lot 2 Section 24 Township 26 New Westminster District Plan LMP16177
(portion of 7389 Marble Hill Road)
- (27) PID: 018-010-199, Lot 11 Section 24 Township 26 New Westminster District Plan LMP7391
(portion of 7405 Marble Hill Road)
- (28) PID: 018-010-431, Lot 34 Section 24 Township 26 New Westminster District Plan LMP7391
(7452 Panorama Drive)
- (29) 018-010-423, Lot 33 Section 24 Township 26 New Westminster District Plan LMP7391
(7464 Panorama Drive)
- (30) PID: 018-010-440, Lot 35 Section 24 Township 26 New Westminster District Plan LMP7391
(7473 Panorama Drive)
- (31) PID: 018-010-458, Lot 36 Section 24 Township 26 New Westminster District Plan LMP7391
(7485 Panorama Drive)
- (32) PID: 018-010-296, Lot 21 Section 24 Township 26 New Westminster District Plan LMP7391
(7488 Panorama Drive)
- (33) PID: 018-010-466, Lot 37 Section 24 Township 26 New Westminster District Plan LMP7391
(7497 Panorama Drive)
- (34) PID: 018-010-288, Lot 20 Section 24 Township 26 New Westminster District Plan LMP7391
(7506 Panorama Drive)
- (35) PID: 018-010-474, Lot 38 Section 24 Township 26 New Westminster District Plan LMP7391
(7509 Panorama Drive)
- (36) PID: 018-010-482, Lot 39 Section 24 Township 26 New Westminster District Plan LMP7391
(7521 Panorama Drive)
- (37) PID: 018-010-491, Lot 40 Section 24 Township 26 New Westminster District Plan LMP7391
(7533 Panorama Drive)
- (38) PID: 018-010-504, Lot 41 Section 24 Township 26 New Westminster District Plan LMP7391
(portion of 7545 Panorama Drive)

- (40) PID: 018-010-059, Lot 2 Section 24 Township 26 New Westminster District Plan LMP7391
(portion of 7562 Panorama Drive)
- (41) PID: 018-750-371, Lot 6 Section 24 Township 26 New Westminster District Plan LMP16177
(49910 Ridgeview Place)
- (42) PID: 018-750-362, Lot 5 Section 24 Township 26 New Westminster District Plan LMP16177
(49918 Ridgeview Place)
- (43) PID: 018-750-354, Lot 4 Section 24 Township 26 New Westminster District Plan LMP16177
(49924 Ridgeview Place)
- (44) PID: 018-750-346, Lot 3 Section 24 Township 26 New Westminster District Plan LMP16177
(49930 Ridgeview Place)
- (45) PID: 018-010-211, Lot 13 Section 24 Township 26 New Westminster District Plan LMP7391
(49936 Ridgeview Place)
- (46) PID: 024-195-928, Lot 2 Section 24 Township 26 New Westminster District Plan LMP38512
(7360 Ridgeview Street)
- (47) PID: 018-750-443, Lot 11 Section 24 Township 26 New Westminster District Plan LMP16177
(7365 Ridgeview Street)
- (48) PID: 018-750-397, Lot 8 Except: Part Subdivided by Plan LMP38512, Section 24 Township 26 New Westminster District Plan LMP16177
(7378 Ridgeview Street)
- (49) PID: 018-750-419, Lot 9 Section 24 Township 26 New Westminster District Plan LMP16177
(7383 Ridgeview Street)
- (50) PID: 018-750-389, Lot 7 Section 24 Township 26 New Westminster District Plan LMP16177
(7390 Ridgeview Street)
- (51) PID: 018-990-860, Lot B Section 24 Township 26 New Westminster District Plan LMP19390
(7395 Ridgeview Street)
- (52) PID: 018-010-351, Lot 27 Section 24 Township 26 New Westminster District Plan LMP7391
(7407 Ridgeview Street)

- (54) PID: 018-010-342, Lot 26 Section 24 Township 26 New Westminster District
Plan LMP7391
(7412 Ridgeview Street)
- (55) PID: 018-990-851, Lot A Section 24 Township 26 New Westminster District Plan
LMP19390
(7415 Ridgeview Street)
- (56) PID: 018-010-377, Lot 29 Section 24 Township 26 New Westminster District
Plan LMP7391
(7423 Ridgeview Street)
- (57) PID: 018-010-334, Lot 25 Section 24 Township 26 New Westminster District
Plan LMP7391
(7424 Ridgeview Street)
- (58) PID: 018-010-385, Lot 30 Section 24 Township 26 New Westminster District
Plan LMP7391
(7431 Ridgeview Street)
- (59) PID: 018-010-326, Lot 24 Section 24 Township 26 New Westminster District
Plan LMP7391
(7436 Ridgeview Street)
- (60) PID: 018-010-393, Lot 31 Section 24 Township 26 New Westminster District
Plan LMP7391
(7445 Ridgeview Street)
- (61) PID: 018-010-318, Lot 23 Section 24 Township 26 New Westminster District
Plan LMP7391
(7448 Ridgeview Street)
- (62) PID: 018-010-300, Lot 22 Section 24 Township 26 New Westminster District
Plan LMP7391
(7460 Ridgeview Street)
- (63) PID: 018-010-407, Lot 32 Section 24 Township 26 New Westminster District
Plan LMP7391
(7467 Ridgeview Street)
- (64) PID: 024-304-387, Lot "A" Except: Part Subdivided by Plans BCP1623 and
BCP23801 Section 24 Township 26 New Westminster District Plan LMP39972
(portion of 7351 Marble Hill Road)

from an SR (Suburban Residential) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gra) “Geologically Restricted Area”, as shown on Schedule “D” attached hereto and forming part of this Bylaw.

12. Said Bylaw is hereby further amended by rezoning property described as:

- (1) PID: 013-523-309, Parcel "C" (Reference Plan 12165) North East Quarter of the South West Quarter and of the South East Quarter Section 24 Township 26 New Westminster District
(portion of 49996 Patterson Road)

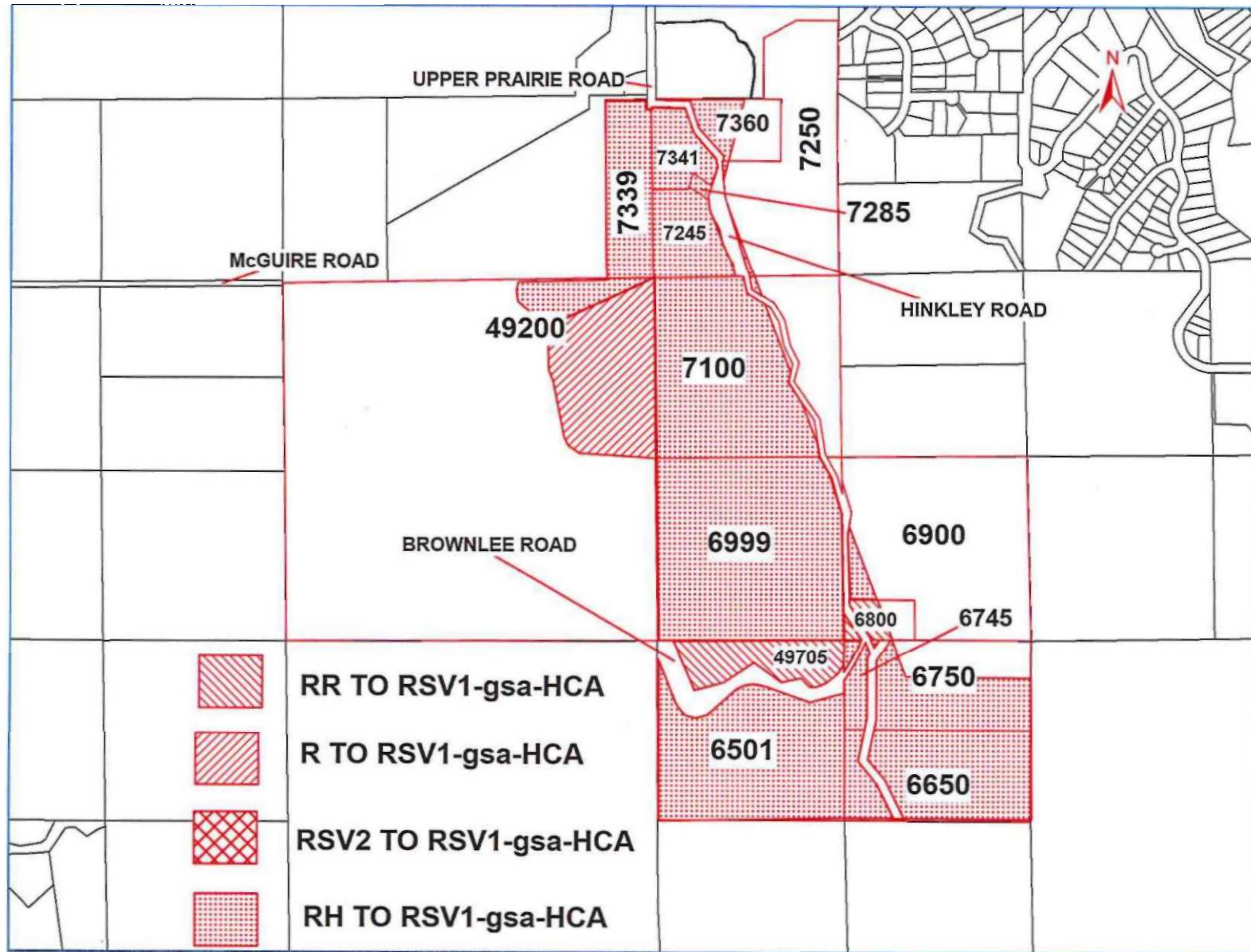
from an RH (Rural Hillside) Zone to an RSV1 (Limited Use Reserve) Zone, an area specified as (gra) "Geologically Restricted Area", as shown on Schedule "D" attached hereto and forming part of this Bylaw.

Received first and second reading on the
Public hearing held on the
Received third reading on the
Received adoption on the

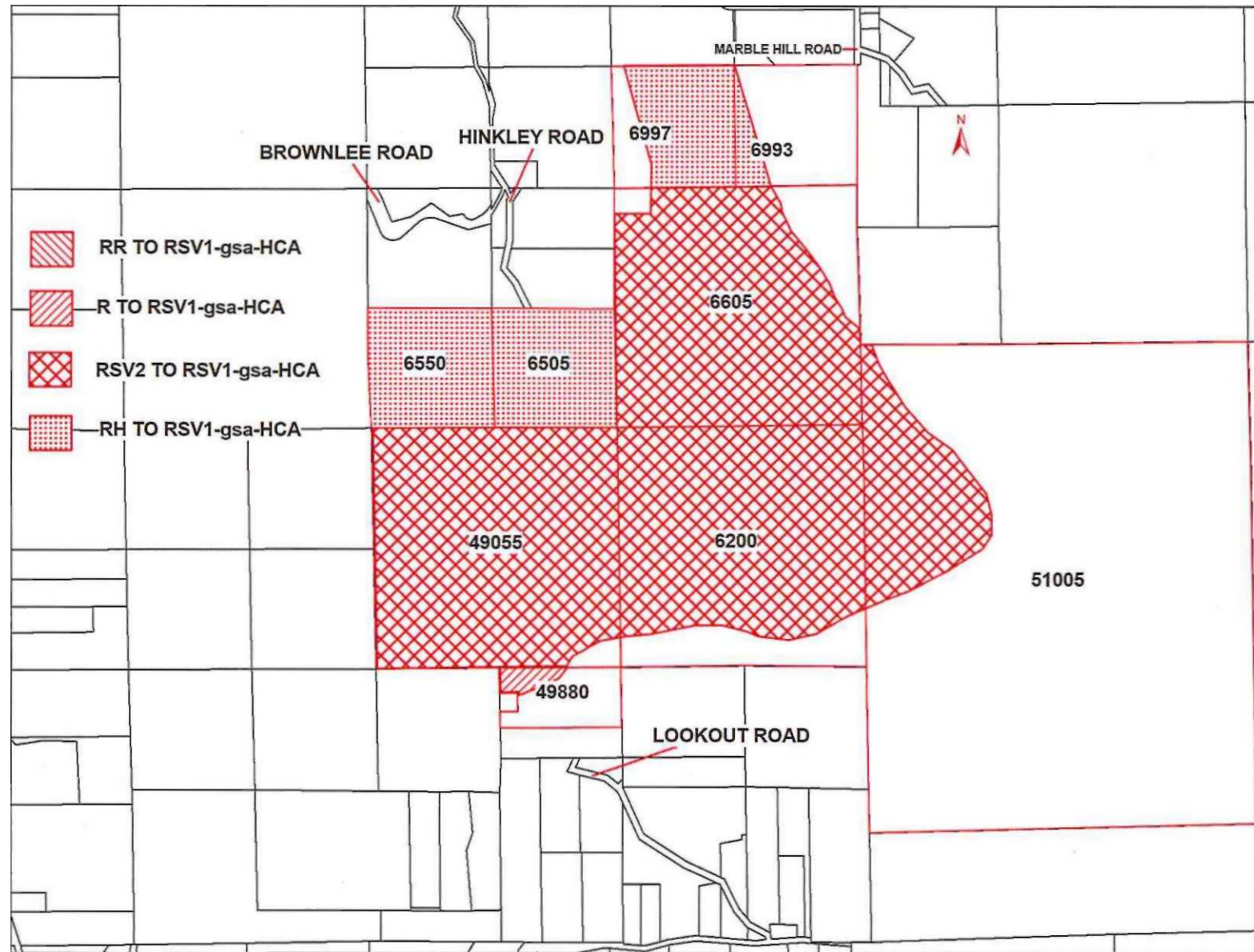
Mayor

Deputy City Clerk

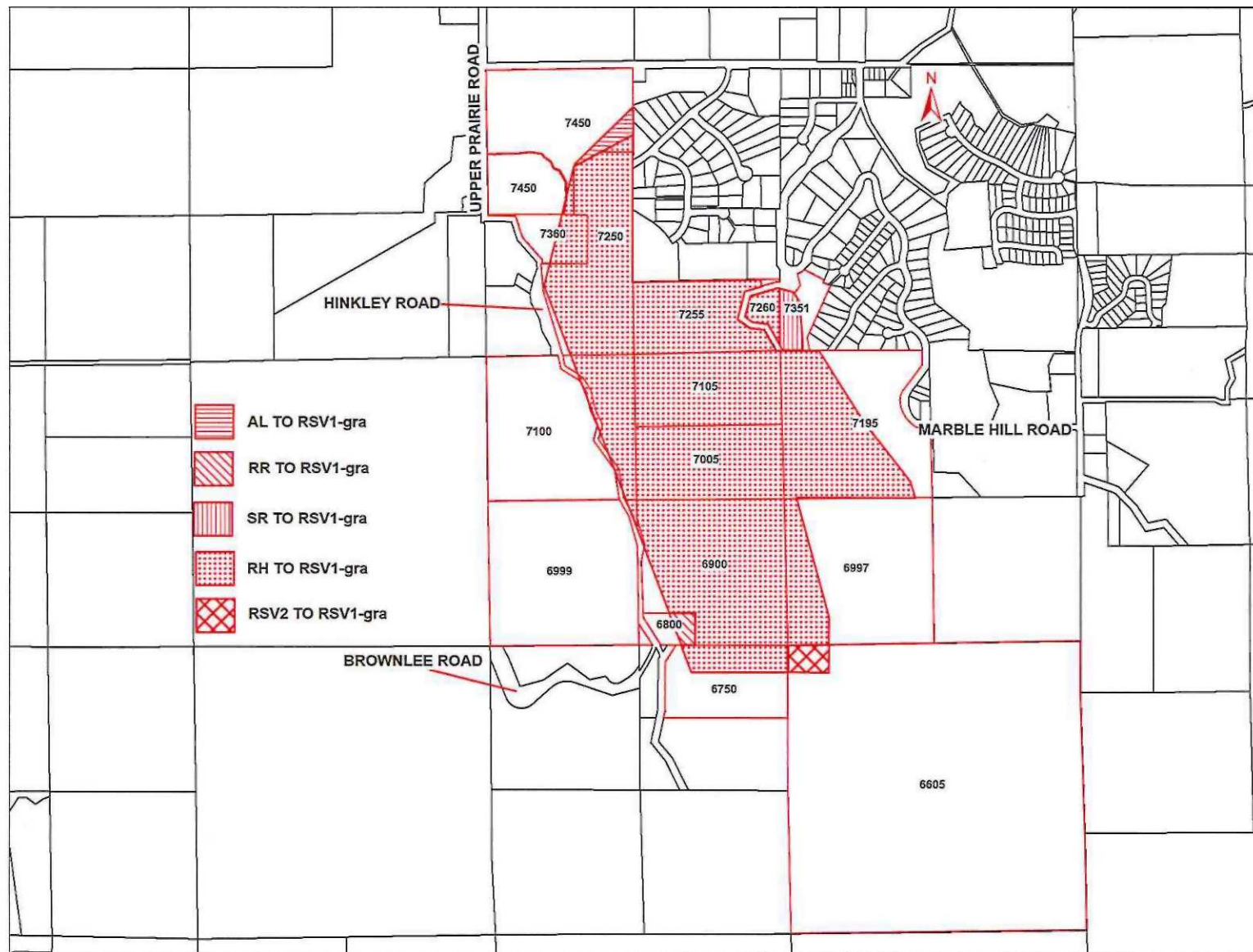
Schedule "A"



Schedule "B"



Schedule "C"



Schedule "D"

