

Factual Report on Hong Kong Rainfall and Landslides in 2016

GEO Report No. 342

R.C.T. Wai, R.W.H. Lee & V.W.W. Kong

**Geotechnical Engineering Office
Civil Engineering and Development Department
The Government of the Hong Kong
Special Administrative Region**

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Preface

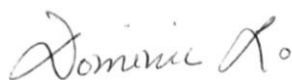
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W.K. Pun
Head, Geotechnical Engineering Office
December 2018

Foreword

This report presents a summary of the factual information on rainfall and landslides in Hong Kong throughout 2016. Details of the landslides were obtained from records of landslide incidents reported to the Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD). Supplementary information was collected from the Agriculture, Fisheries and Conservation Department, Architectural Services Department, Drainage Services Department, Highways Department, Housing Department, Lands Department, Water Supplies Department, and the GEO's landslide investigation consultants. The Hong Kong Observatory provided weather and rainfall information. The Standards and Testing Division of the GEO carried out a review of the available rainfall records as well as rainfall analyses, and prepared Section 2 of this report. All contributions are gratefully acknowledged.



Dominic O.K. Lo
Chief Geotechnical Engineer/LPM 1

Abstract

This report presents a summary of the factual information on rainfall and landslides in Hong Kong throughout 2016. Rainfall information was obtained from the Hong Kong Observatory (HKO) to supplement the information available in the Geotechnical Engineering Office (GEO). Details of the landslides were obtained from records of landslide incidents reported to the GEO. Supplementary information was collected from the Agriculture, Fisheries and Conservation Department, Architectural Services Department, Drainage Services Department, Highways Department, Housing Department, Lands Department, Water Supplies Department, and the GEO's landslide investigation consultants, namely Fugro Hong Kong Limited and AECOM Asia Company Limited.

Rainfall recorded in 2016 at the HKO's Principal Raingauge at Tsim Sha Tsui amounted to 3,026.8 mm, a surplus of 26 percent comparing to the mean rainfall of 2,398.5 mm between 1981 and 2010. One Black Rainstorm Warning was issued on 19 October 2016. Seven Red Rainstorm Warnings and 33 Amber Rainstorm Warnings were issued between 10 May and 19 October 2016, and between 5 January and 19 October 2016 respectively.

Two Landslip Warnings were issued on 2 August and 19 October 2016. A total of 257 incidents were reported to the Government in 2016. Of these, 226 were classified as genuine landslides and 21 of them were designated as major failure (i.e. with a failure volume of 50 m³ or more, or where a fatality has occurred).

There were 23 landslides in 2016 with notable consequences. Of these landslides, one resulted in damage of the ceiling and a supporting beam of a covered car park and a parked car as well as temporary evacuation of the lowest three floors of a residential building, one led to temporary evacuation of a squatter dwelling and one resulted in three parked cars partially buried by landslide debris. The remaining 20 landslides resulted in temporary closure of roads. Other landslides in 2016 affected open areas, footpaths or minor access roads and catchwaters without any significant direct or indirect consequence. No injury or fatality was reported as a result of the 2016 landslides.

Contents

	Page No.
Title Page	1
Preface	3
Foreword	4
Abstract	5
Contents	6
List of Tables	8
List of Figures	9
1 Introduction	10
2 Rainfall	10
2.1 The Raingauge System	10
2.2 Rainfall Records	10
2.3 Rainstorms in 2016	14
2.4 Warnings Issued by the Hong Kong Observatory	14
3 Landslides	25
3.1 Landslides in 2016	25
3.2 Consequence of Landslides	26
3.3 Types of Slope Failures	26
3.4 Landslide Volume Distribution	30
4 Notable Landslides	32
4.1 General	32
4.2 The 17 August 2016 Rockfall from the Hillside behind Swiss Towers, 113 Tai Hang Road (Incident No. 2016/08/1896)	32
4.3 The 19 October 2016 Landslide on the Natural Hillside behind Greenville Gardens, Nos. 14-17 Shiu Fai Terrace (Incident No. 2016/10/1941)	33
4.4 The 21 May 2016 Landslide on the Natural Hillside above Sai Kung Sai Wan Road, Sai Kung (Incident No. 2016/05/1823)	33

	Page No.
4.5 The 7 September 2016 Landslide on Slope No. 13NE-A/C78 at South Lantau Road, Lantau (Incident No. 2016/09/1917)	34
5 Conclusion	35
6 References	35
Appendix A: Some Selected Rainfall Parameters for the 18 Rainstorms with Daily Rainfall Exceeding 100 mm in 2016	37
Appendix B: List of Landslide Incidents Reported to the Government	62

List of Tables

Table No.		Page No.
2.1	Rainfall and Landslides in 2016 and Selected Previous Major Rainstorms	21
2.2	Warnings Issued by the Hong Kong Observatory in 2016	24
3.1	Breakdown of Landslides in 2016 Reported to Government Departments	25
3.2	Breakdown of Landslides by Types of Affected Facilities	27
3.3	Breakdown of Landslide Consequences by Types of Slope Failures	28
3.4	Breakdown of Facility Groups Affected by Major Landslides	29
3.5	Breakdown of Landslides by Types of Slope Failures	29
3.6	Landslide Volume Distribution with Respect to Geographical Locations	30
3.7	Landslide Volume Distribution with Respect to Types of Slope Failures	31

List of Figures

Figure No.		Page No.
2.1	Locations of GEO Raingauges and Raingauges Operated by HKO and Other Government Departments	11
2.2	Cumulative Rainfall for 2016 at the Hong Kong Observatory and its Recorded Highest, Mean and Lowest Cumulative Rainfalls	15
2.3	Monthly Rainfall Distribution in 2016	16
2.4	Annual Rainfall Distribution and Locations of Reported Landslides in 2016	20
4.1	Views of the 17 August 2016 Rockfall from the Hillside behind Swiss Towers (Incident No. 2016/08/1896)	32
4.2	Views of the 19 October 2016 Landslide on the Natural Hillside behind Greenville Gardens (Incident No. 2016/10/1941)	33
4.3	Views of the 21 May 2016 Landslide on the Natural Hillside above Sai Kung Sai Wan Road (Incident No. 2016/05/1823)	34
4.4	General View of the 7 September 2016 Landslide on Slope No. 13NE-A/C78 at South Lantau Road (Incident No. 2016/09/1917)	35

1 Introduction

This report summarises the factual information on rainfall and reported landslides in Hong Kong throughout 2016. Rainfall information was obtained from the Hong Kong Observatory (HKO) to supplement the information available in the Geotechnical Engineering Office (GEO). Details of the landslides were obtained from records of landslide incidents reported to the GEO. Supplementary information was collected from the Agriculture, Fisheries and Conservation Department (AFCD), Architectural Services Department (ArchSD), Drainage Services Department (DSD), Highways Department (HyD), Housing Department (HD), Lands Department (LandsD), Water Supplies Department (WSD), and the GEO's landslide investigation consultants, namely Fugro Hong Kong Limited and AECOM Asia Company Limited under Agreement Nos. CE 45/2015 (GE) and CE 46/2015 (GE) respectively.

In this report, a landslide is defined as the detachment or excessive displacement of soil or rock mass, and includes failure of a fill slope, cut slope, retaining wall, natural hillside, or disturbed terrain, as well as rockfall and boulder fall. A 'major' landslide is defined as a failure in which the estimated/recorded volume of the detached or displaced mass is $\geq 50 \text{ m}^3$, or where a fatality has occurred. A 'very minor' landslide is defined as a failure that is small in scale (i.e. $\leq 5 \text{ m}^3$ for failures involving soil, or $\leq 0.1 \text{ m}^3$ for rockfalls / boulder falls) and does not give rise to any significant public nuisance or notable consequences (e.g. casualty, near-miss, evacuation of buildings or squatter dwellings, road closure, etc.). Landslides that are not classified as 'major' or 'very minor' are taken as 'minor'.

2 Rainfall

2.1 The Raingauge System

The GEO, in collaboration with the HKO, operates an automatic raingauge system that transmits rainfall data through 3G mobile network, viz. a wireless transmission technology, to the GEO and the HKO at 5-minute intervals. The system comprises 90 GEO raingauges and 31 raingauges owned by HKO and other government departments. The raingauges are of the tipping-bucket type, tipping for every 0.5 mm of rainfall. The locations of the automatic raingauges are shown in Figure 2.1.

2.2 Rainfall Records

The rainfall data from the raingauge system are checked, verified and stored by the GEO in a database, from which they can be extracted for analysis. This report presents a selection of rainfall parameters for the whole year of 2016, as well as individual months and individual rainstorms.

The weather in 2016, as described by the HKO (2017), is excerpted as follows:

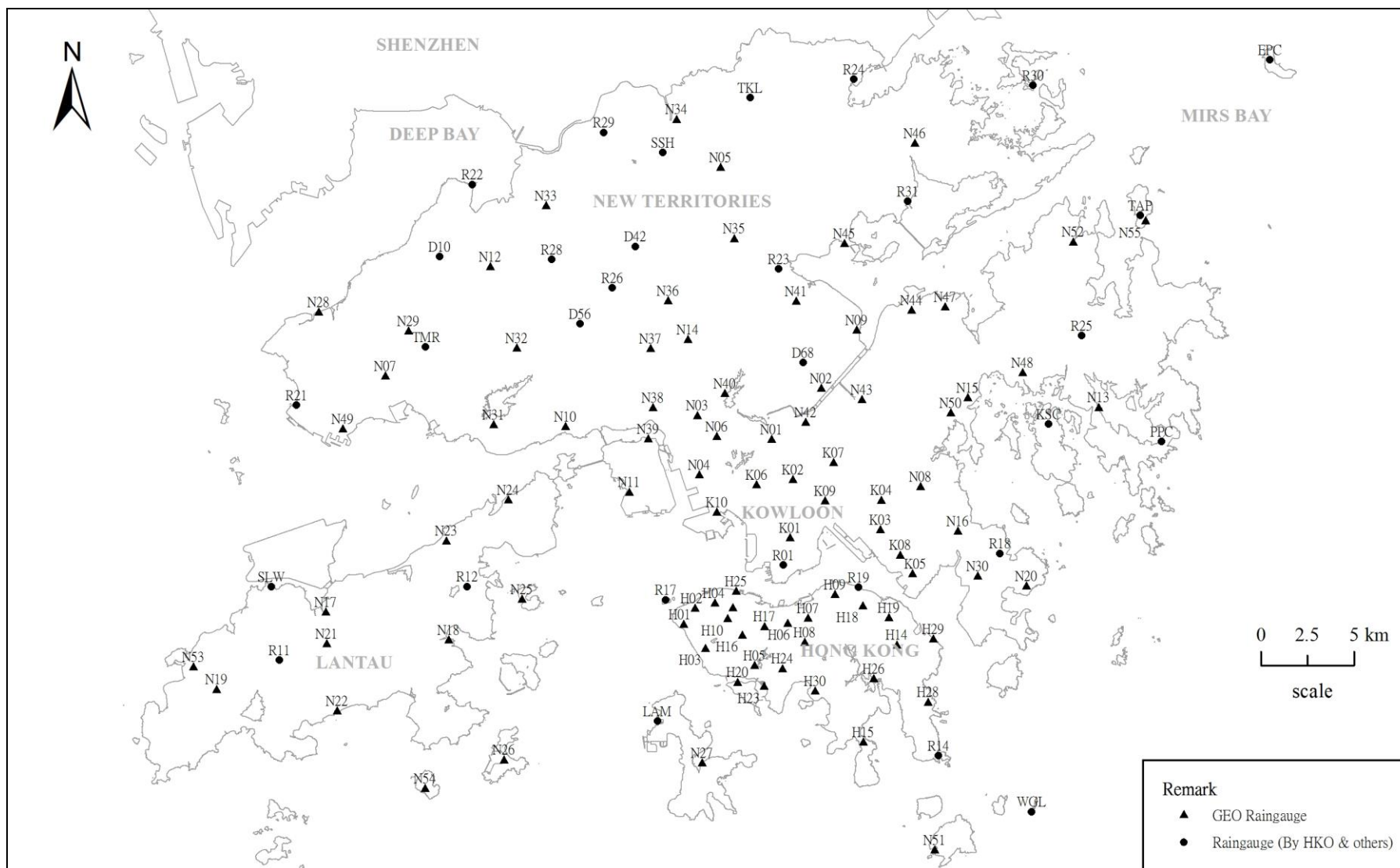


Figure 2.1 Locations of GEO Raingauges and Raingauges Operated by HKO and Other Government Departments

"The year 2016 brought more rain than normal in Hong Kong. With a record-breaking autumn rainfall of 1,078.8 millimetres, the annual total rainfall amounted to 3,026.8 millimetres, a surplus of 26 percent comparing to the 1981-2010 normal of 2,398.5 millimetres (or about 37 percent above the 1961-1990 normal) and ranking the ninth highest on record. On 19 October, torrential rain induced by the combined effect of a tropical cyclone (Sarika) and the northeast monsoon necessitated the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992."

"A total of 28 tropical cyclones occurred over the western North Pacific and the South China Sea in 2016, less than the long-term (1961-2010) average of around 30. There were 13 tropical cyclones reaching typhoon intensity or above during the year, less than the long-term average of about 15, and seven of them reached super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre). In Hong Kong, nine tropical cyclones necessitated the issuance of tropical cyclone warning signals, higher than the long-term average of about six in a year. The No. 8 Gale or Storm Signals were issued during the passage of Nida in August and Haima in October."

The following are excerpts from the HKO's Monthly Weather Summary describing the weather condition when the most intense rainstorms occurred in the wet season (i.e. between April and September 2016) and in October 2016. Further details on the monthly weather are available on the HKO Website (<http://www.hko.gov.hk/wxinfo/pastwx/mws.htm>).

"An area of intense rain and thunderstorms associated with a trough of low pressure swept across the Pearl River estuary on 10 May. More than 70 millimetres of rainfall were generally recorded in Hong Kong, and rainfall over Shatin and Sai Kung even exceeded 150 millimetres. Red Rainstorm Warning Signal was twice issued that morning."

"Affected by a trough of low pressure over the coast of Guangdong, local weather deteriorated with heavy showers and squally thunderstorms on 20 and 21 May. The rainstorm episode in the early morning on 21 May brought more than 70 millimetres of rainfall to many places, with rainfall exceeding 200 millimetres in Sai Kung where a few landslides were reported."

"The trough continued to linger over the coastal areas and maintained a fortnight-long spell of unsettled weather in Hong Kong. During the period, outbreaks of heavy rain on 6 and 11

June brought daily rainfall of more than 70 millimetres to most parts of the territory. The lowest temperature of the month, 24.1 degrees, occurred early in the morning on 8 June during another episode of heavy rain that dumped more than 50 millimetres of rainfall over Hong Kong Island."

"Under the influence of the outer rainbands of Nida, local weather was showery on 1 August with strengthening winds that night. Southerly gales swept in over the territory as Nida made landfall near Dapang Peninsula and moved across Shenzhen just north of Hong Kong on the morning of 2 August. With Nida weakening and moving away, local winds moderated gradually during the day. However, the weather remained overcast with heavy squally showers. More than 100 millimetres of rainfall fell over the territory that day, with rainfall amount even exceeding 200 millimetres in some parts of Lantau Island. The rainy conditions continued over the next couple of days with some heavy showers affecting Lantau Island and Tai Po."

"Under the combined effect of Sarika and the northeast monsoon over southern China, local weather became windy with squally showers on 17-19 October. The convergence between the northeast monsoon and the southerly airstream associated with Sarika triggered prolonged periods of heavy rain and thunderstorms on 18 and 19 October. The rain was most intense on the afternoon of 19 October, with more than 100 millimetres of rainfall falling generally over Hong Kong and rainfall even exceeding 200 millimetres over the urban areas, Shatin and Tai Po, necessitating the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992. The hourly rainfall of 78.7 millimetres recorded at the Hong Kong Observatory between 3 and 4 p.m. that day was also the highest in October since records began in 1884."

"Haima weakened gradually into a typhoon as it edged towards the coast of eastern Guangdong and made landfall near Shanwei around noon on 21 October. With the approach of Haima, local winds strengthened significantly and reached gale force in many places during the day. The rainbands of Haima also brought squalls and heavy rain to Hong Kong. More than 100 millimetres of rainfall fell over Kowloon City, Wong Tai Sin and the eastern part of the New Territories. As Haima moved further inland, local weather improved with sunny periods and a few isolated showers over the next three days."

The rainfall recorded at the HKO in the first quarter of 2016 is 440.4 mm (171% above the normal rainfall). The total rainfalls recorded in the second and third quarter are

792.4 mm (15% below normal) and 1,031.7 mm (9% below normal) respectively. For the last quarter of 2016, the total rainfall is 762.3 mm (356% above normal). The annual rainfall for 2016 is 3,026.8 mm, about 26 percent higher than the annual normal of 2,398.5 mm recorded between 1981 and 2010. The cumulative rainfall for 2016 is compared with the highest, lowest and mean rainfall in Figure 2.2.

Figure 2.3 shows the monthly rainfall distribution in 2016. Figure 2.4 shows the annual rainfall distribution in 2016, together with the locations of the reported landslides.

2.3 Rainstorms in 2016

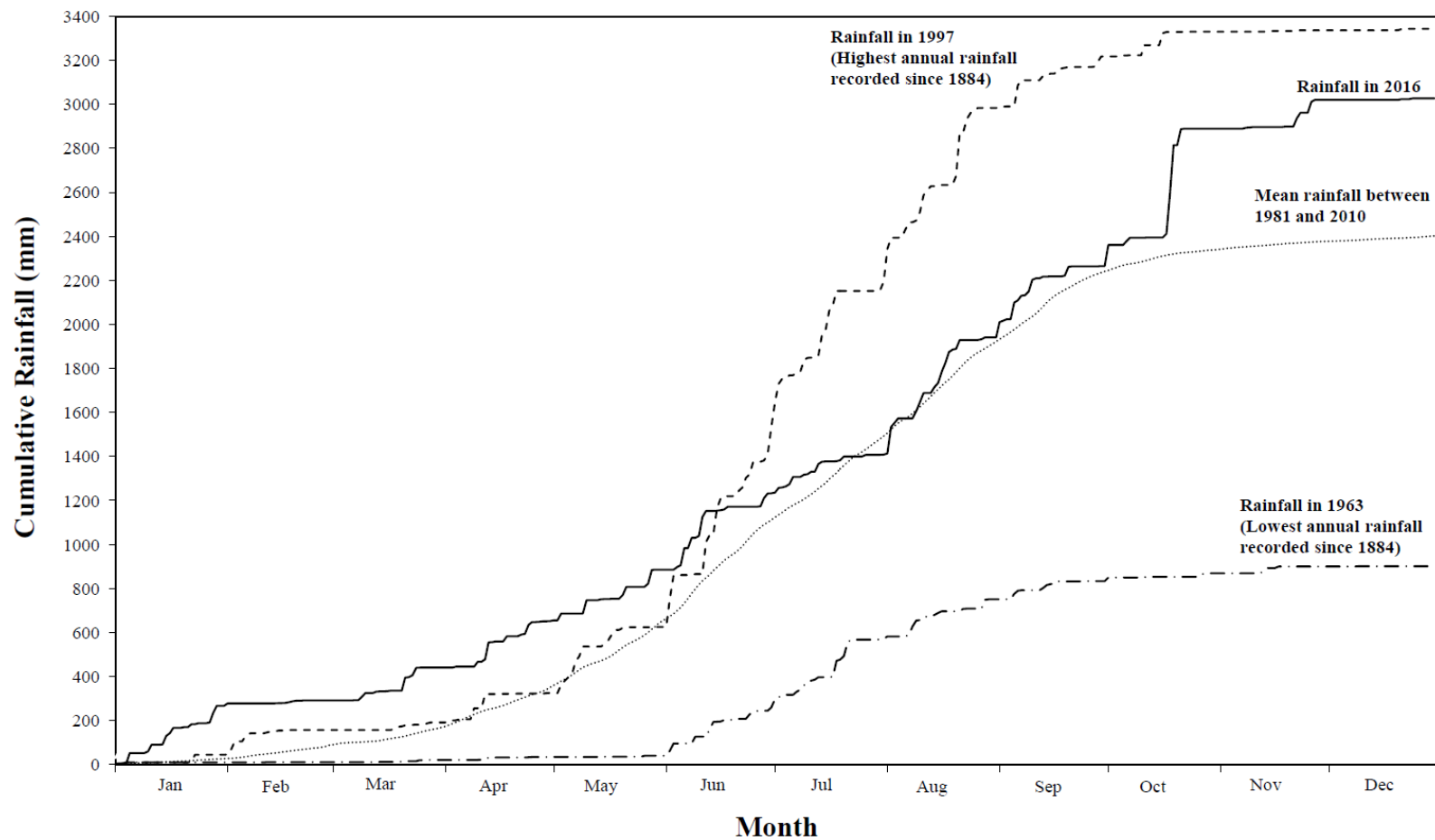
Table 2.1 tabulates the rainfall parameters for 18 rainstorms in 2016, during which the daily rainfall exceeded 100 mm at HKO's Principal Raingauge or any of the GEO raingauges. The parameters include the maximum 24-hour, 4-hour and 1-hour rolling rainfalls (based on 5-minute rainfall data). Table 2.1 also includes the 4-day and 15-day antecedent rainfalls at the HKO's Principal Raingauge. Similar data for selected major rainstorms in previous years are included in Table 2.1 for comparison. Other rainfall parameters for the above 18 rainstorms are also shown in Table A1 of Appendix A.

Figures A1 to A18 of Appendix A show the isohyets of the maximum rolling 24-hour rainfall during the above 18 rainstorms, together with the locations of reported landslides with incident date or incident reported date that can be attributed to the rainstorm event, and the locations and values of maximum rolling rainfall for durations ranging from five minutes to 48 hours.

The rainstorms of 20-22 May 2016 and 17-23 October 2016 had caused 33 and 24 reported landslides respectively. Each of the other rainstorms in 2016 resulted in less than ten reported landslides.

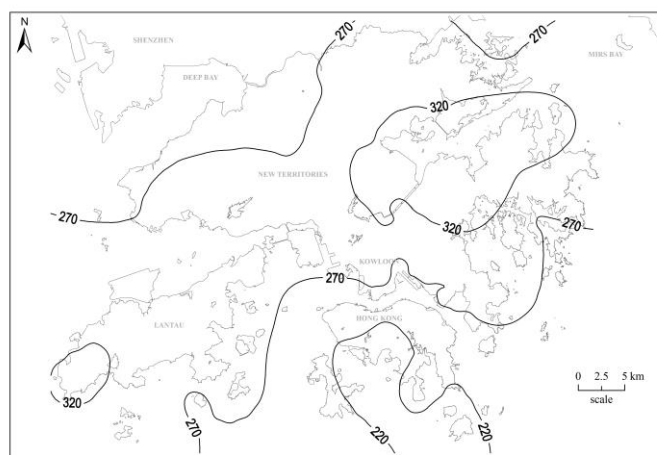
2.4 Warnings Issued by the Hong Kong Observatory

Table 2.2 summarises the details of the Thunderstorm, Flooding, Landslip, Tropical Cyclone and Rainstorm Warnings issued by the HKO in 2016. One Black Rainstorm Warning was issued on 19 October 2016. Seven Red Rainstorm Warnings and 33 Amber Rainstorm Warnings were issued between 10 May and 19 October 2016, and between 5 January and 19 October 2016 respectively. Two Landslip Warnings were issued on 2 August 2016 and 19 October 2016.

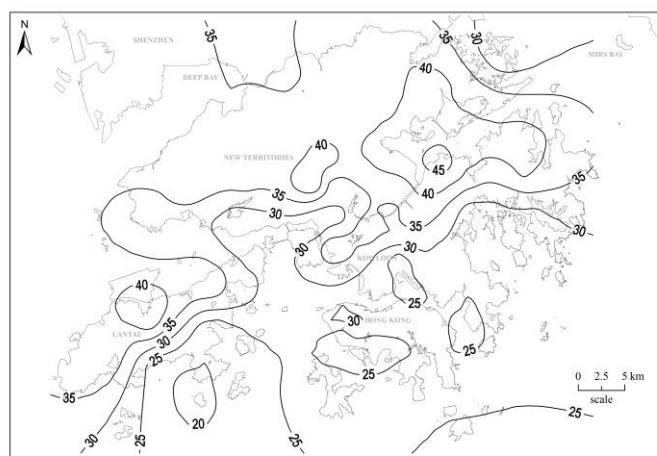


Note: Rainfall recorded at Hong Kong Observatory, Tsim Sha Tsui.

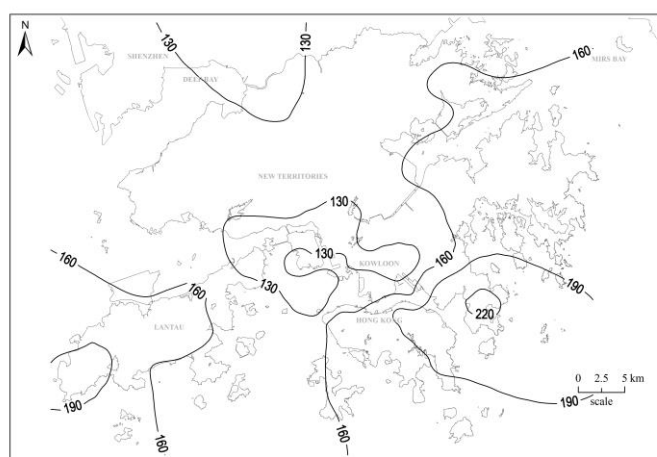
Figure 2.2 Cumulative Rainfall for 2016 at the Hong Kong Observatory and its Recorded Highest, Mean and Lowest Cumulative Rainfalls



January 2016



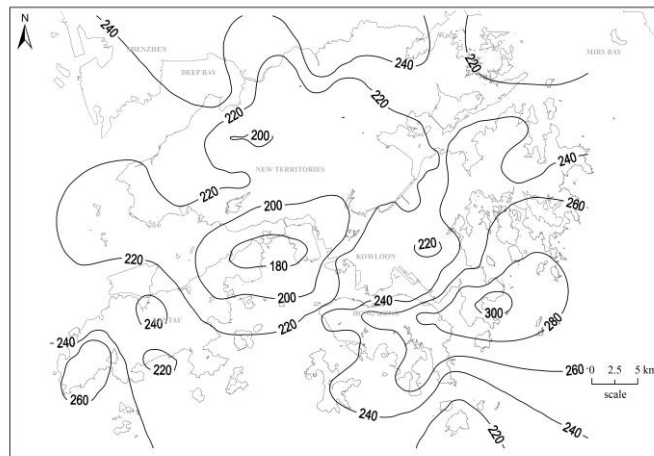
February 2016



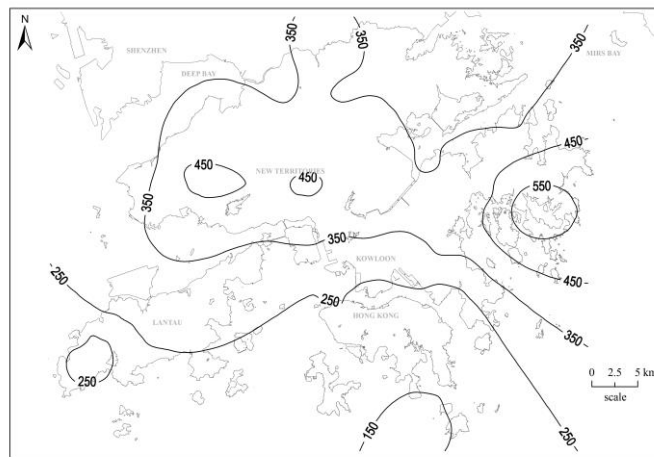
March 2016

Note: Isohyets are based on the GEO and HKO raingauges.

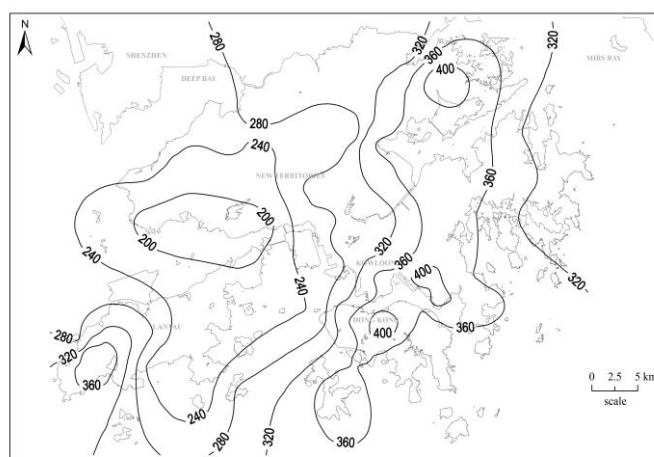
Figure 2.3 Monthly Rainfall Distribution in 2016 (Sheet 1 of 4)



April 2016



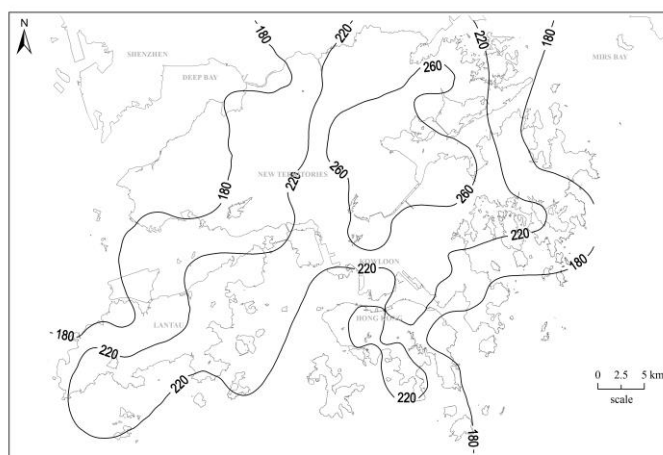
May 2016



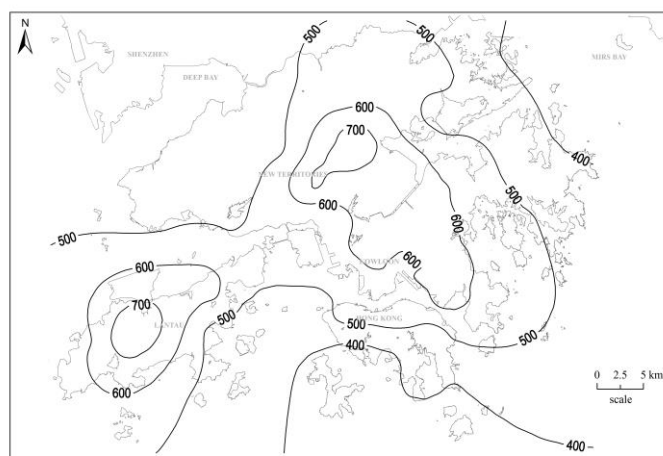
June 2016

Note: Isohyets are based on the GEO and HKO raingauges.

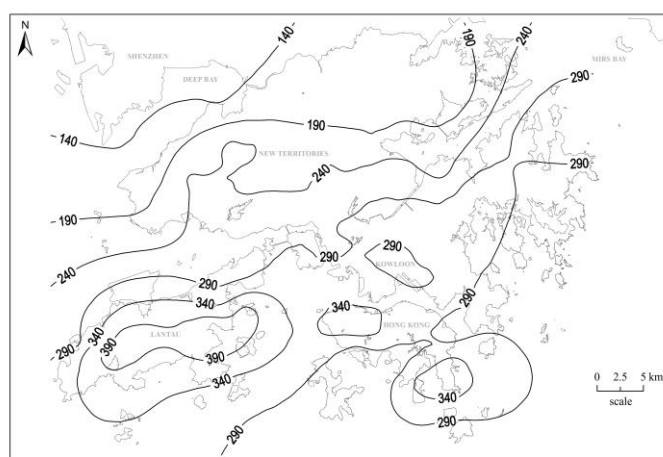
Figure 2.3 Monthly Rainfall Distribution in 2016 (Sheet 2 of 4)



July 2016



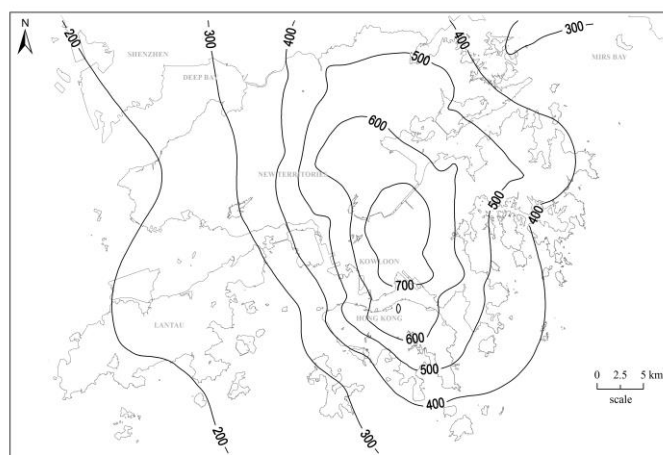
August 2016



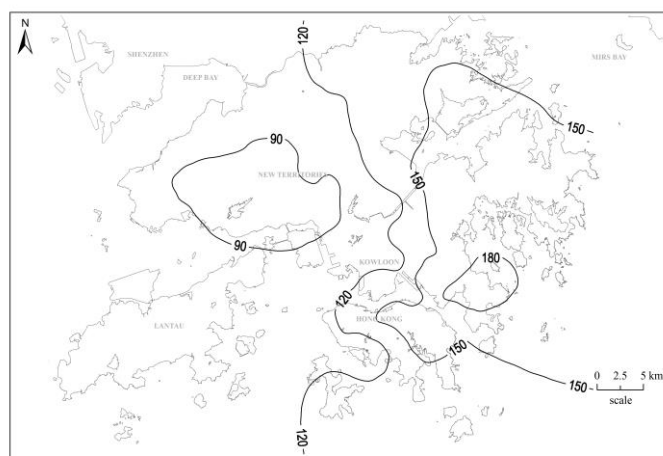
September 2016

Note: Isohyets are based on the GEO and HKO raingauges.

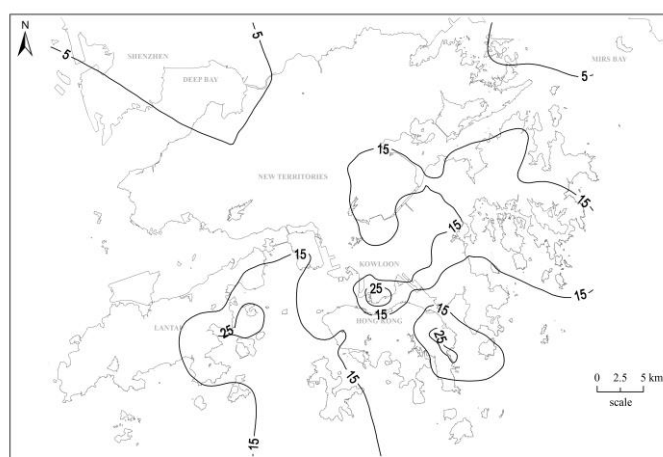
Figure 2.3 Monthly Rainfall Distribution in 2016 (Sheet 3 of 4)



October 2016



November 2016



December 2016

Note: Isohyets are based on the GEO and HKO raingauges.

Figure 2.3 Monthly Rainfall Distribution in 2016 (Sheet 4 of 4)

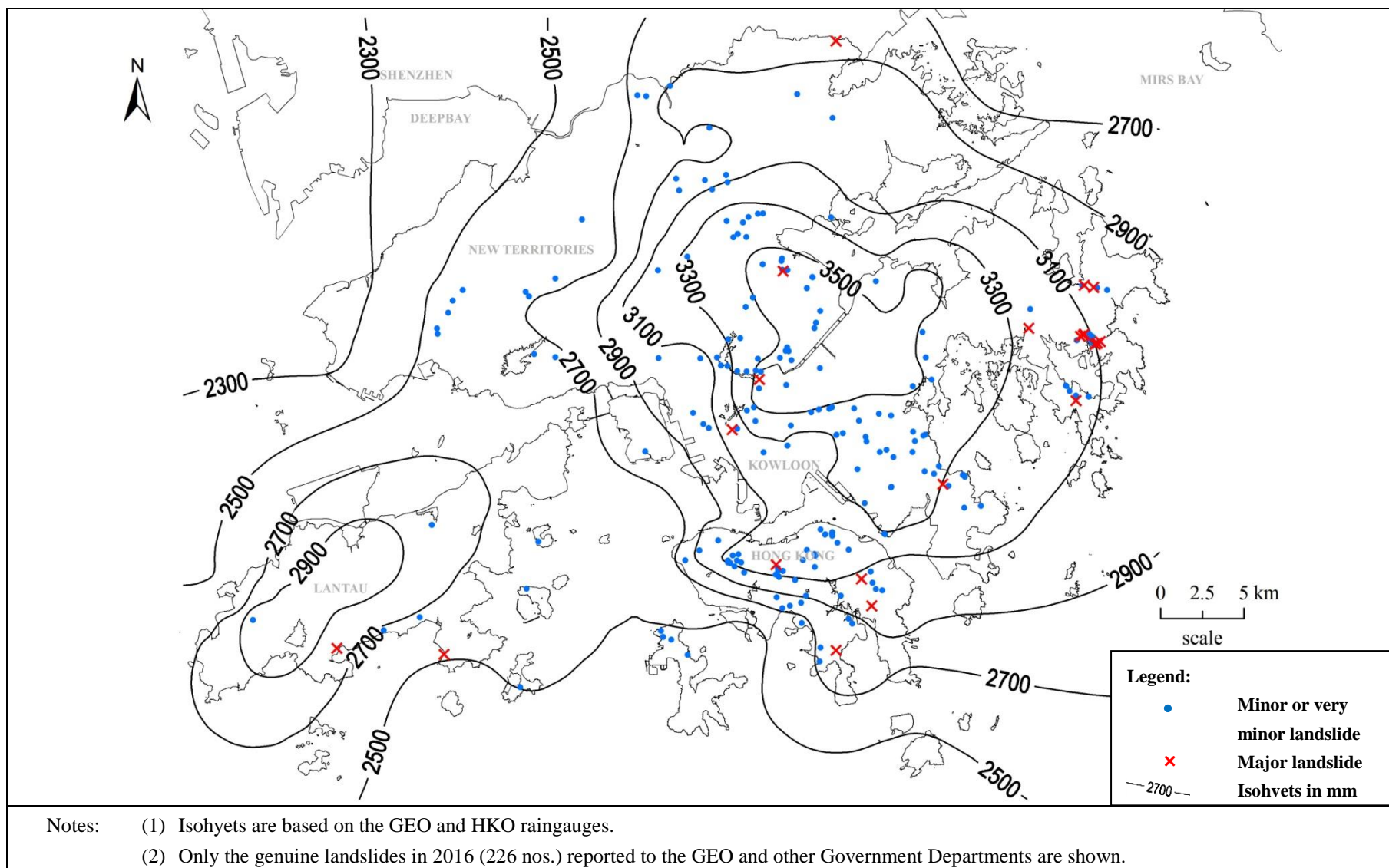


Figure 2.4 Annual Rainfall Distribution and Locations of Reported Landslides in 2016

Table 2.1 Rainfall and Landslides in 2016 and Selected Previous Major Rainstorms (Sheet 1 of 3)

Date of Rainstorm Event ⁽¹⁾	Maximum Rainfall (mm) ⁽²⁾								Number of Landslides Reported ⁽⁴⁾
	Hong Kong Observatory (HKO)					GEO Raingauges ⁽³⁾			
	24-hr	4-hr	1-hr	Antecedent		24-hr	4-hr	1-hr	
				4-day	15-day				
17-23 Oct 2016	263.5	164.5	82	0	37	353 (K07)	211 (H09)	106.5 (H09)	24
1-5 August 2016	122	73	24	1	32.5	299 (N17)	164.5 (N17)	51.5 (N17)	6
10-13 June 2016	89.5	39	27.5	124	222	151 (N19)	118.5 (N19)	69 (N19)	3
4-8 Sept 2016	83.5	64	25	76	133	139 (H02)	105.5 (N22)	61 (N19)	3
12-14 April 2016	82	69.5	33.5	23.5	29	112.5 (N20)	87.5 (H26)	61 (N51)	1
5-8 June 2016	78.5	51.5	22.5	13	126	135.5 (N47)	112 (N47)	62.5 (N52)	3
16-20 August 2016	77.5	31	17.5	46	288	107.5 (K07)	57.5 (N20)	36 (H09)	7
28-30 Jan 2016	65	18.5	5.5	8	103	156 (N19)	57.5 (N19)	27 (N19)	1
9-12 May 2016	63	62.5	48.5	0	93.5	177 (N42)	139 (N41, N42)	97 (N41)	2
31 Aug – 3 Sept 2016	63	23.5	14.5	13	210	134 (N19)	60.5 (N19)	38 (N19)	2
27-30 May 2016	62.5	61	39	0	62	123.5 (N39)	110.5 (N39)	77 (N39)	0
19-23 May 2016	53.5	29	16	2.5	71	409 (N13)	280 (N13)	104.5 (N13)	33
9-12 Sept 2016	51.5	43	26.5	110	199	172.5 (N55)	123.5 (N15)	83.5 (N55)	0

Notes: (1) Rainstorms are arranged in order of the rolling 24-hour rainfall at the Hong Kong Observatory in Tsim Sha Tsui.

(2) The maximum rainfalls are calculated using 5-minute rainfall as the basic unit, except those recorded at the HKO, for which the rolling rainfall is calculated using one-clock hour rainfall as the basic unit.

(3) The maximum rainfalls are selected from the 90 GEO Raingauges for the rainstorms. The GEO Raingauge reference number is shown in brackets.

(4) Reported number of landslides refer to those genuine landslides that can be attributed to the rainstorm events.

Table 2.1 Rainfall and Landslides in 2016 and Selected Previous Major Rainstorms (Sheet 2 of 3)

Date of Rainstorm Event ⁽¹⁾	Maximum Rainfall (mm) ⁽²⁾								Number of Landslides Reported ⁽⁴⁾
	Hong Kong Observatory (HKO)					GEO Raingauges ⁽³⁾			
	24-hr	4-hr	1-hr	Antecedent		24-hr	4-hr	1-hr	
				4-day	15-day				
22-24 Nov 2016	45.5	13	6.5	2.5	11.5	112 (N30)	40 (N30)	21 (K05)	0
9-12 August 2016	42.5	40	22	0	170	155.5 (N09)	140.5 (N09)	120.5 (N09)	4
5-8 July 2016	41	20	9.5	23	85.5	113.5 (H15)	97.5 (H15)	63.5 (H15)	1
26-30 August 2016	13	9.5	3.5	0.5	283.5	143.5 (K02)	142.5 (K02)	107.5 (K02)	3
30 Sept – 3 Oct 2016	*	*	*	1	48.5	156 (K02)	152 (K02)	94 (K02)	0

Legend:

* Incomplete data

Notes: (1) Rainstorms are arranged in order of the rolling 24-hour rainfall at the Hong Kong Observatory in Tsim Sha Tsui.

(2) The maximum rainfalls are calculated using 5-minute rainfall as the basic unit, except those recorded at the HKO, for which the rolling rainfall is calculated using one-clock hour rainfall as the basic unit.

(3) The maximum rainfalls are selected from the 90 GEO Raingauges for the rainstorms. The GEO Raingauge reference number is shown in brackets.

(4) Reported number of landslides refer to those genuine landslides that can be attributed to the rainstorm events.

Table 2.1 Rainfall and Landslides in 2016 and Selected Previous Major Rainstorms (Sheet 3 of 3)

Date of Rainstorm Event	Maximum Rainfall (mm) ⁽¹⁾								Number of Landslides Reported ⁽²⁾
	Hong Kong Observatory (HKO)					GEO Raingauges ⁽³⁾			
	24-hr	4-hr	1-hr	Antecedent		24-hr	4-hr	1-hr	
				4-day	15-day				
Selected Major Rainstorms in Previous Years (for comparison only)									
20-21 May 1989	387.8	119.3	37.3	27.9	41.7	566 (N14)	194.5 (N14)	61.5 (N14)	378
7-9 May 1992	324.7	195	109.9	4.2	9.1	386.5 (H10)	243 (H10)	144.5 (H19)	314
15-16 June 1993	155.1	122.3	54.1	155.8	296.1	285 (N13)	191.5 (N13)	111 (H13)	123
4-5 November 1993	106.6	27.8	9.4	0	0	745 (N17)	285 (N17)	114 (N17)	394
21-25 July 1994	310.2	141.9	70.4	18.7	310.1	956 (N14)	365 (N14)	211.5 (N14)	208
3-11 August 1994	74.1	44.9	27.1	8.1	759.1	381 (N14)	187.5 (N14)	103.5 (N14)	46
11-15 August 1995	325.7	109.1	43.8	5.1	436.9	468 (H08)	223.5 (H14)	106 (N14)	110
3-5 June 1997	150.2	83.7	46.4	0.9	33.6	367.5 (N04)	262.5 (N04)	128.5 (N04)	81
1-4 July 1997	148.8	106.7	45.4	33.5	362.7	800 (N09)	249.5 (N09)	125 (N01)	150
8-9 June 1998	428.4	152.4	71.7	86.6	246.8	562 (N15)	218.5 (N15)	98 (N09)	96
22-26 August 1999	313.1	127.4	50.7	6.8	170.3	565 (N14)	230.5 (N10)	120.5 (N10)	269
16-21 August 2005	416.4	122.9	39.1	110.7	214.1	570 (N01)	173.5 (N18)	82 (N25)	229
6-9 June 2008	417.6	246.3	145.5	99.9	242.5	622.5 (N19)	384 (N19)	153.5 (N21)	363

- Notes:
- (1) The maximum rainfalls are calculated using 5-minute rainfall as the basic unit, except those recorded at the HKO, for which the rolling rainfall is calculated using one-clock hour rainfall as the basic unit.
 - (2) Reported number of landslides refer to those genuine landslides that can be attributed to the rainstorm events.
 - (3) The maximum rainfalls are selected from all the available GEO Raingauges for the rainstorms. The GEO Raingauge reference number is shown in brackets.

Table 2.2 Warnings Issued by the Hong Kong Observatory in 2016

Month	Monthly Total Rainfall (mm)	Dates on which Warnings ⁽¹⁾ were in Effect				
		Thunderstorm ⁽²⁾	Flooding	Landslip ⁽³⁾	Tropical Cyclone ⁽⁴⁾	Rainstorm
January	266.9	5, 28, 29	-	-	-	5 (Amber)
February	24.8	-	-	-	-	-
March	148.7	9, 19, 21, 22, 23, 24	-	-	-	-
April	211.4	4, 10, 11, 12, 13, 18, 22, 23, 24, 25, 26, 27	-	-	-	4 (Amber), 10 (Amber), 13 (Amber), 22 (Amber)
May	233.6	3, 4, 6, 10, 12, 15, 20, 21, 28, 29, 30	10, 21	-	26-27 (1-3, No name)	3 (Amber), 10 (3 x Amber), 10 (2 x Red), 21 (Amber), 28 (Amber)
June	347.4	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 24, 25, 26, 27, 28, 29, 30	-	-	-	6 (2 x Amber), 8 (Amber), 11 (Amber)
July	175.9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 19, 20, 26, 27, 30, 31	-	-	26 (1, MIRINAE) 31 (1, NIDA)	6 (Amber), 9 (Amber), 13 (Amber)
August	532.7	2, 3, 4, 7, 8, 9, 10, 13, 14, 15, 19, 20, 21, 26, 27, 28	2, 10, 28	2	1-2 (1-8, NIDA) 17-18 (1-3, DIANMU)	2 (Amber), 9 (Amber), 10 (2 x Amber), 10 (Red), 21 (Amber), 28 (2 x Amber), 28 (Red)
September	323.1	1, 2, 3, 5, 6, 8, 9, 10, 11, 13	-	-	14-15 (1, MERANTI) 28 (1, MEGI)	1 (Amber), 9 (Amber), 10 (Amber)
October	624.4	1, 4, 6, 7, 19	18, 19	19	6-9 (1, AERE) 16-18 (1-3, SARIKA) 20-21 (1-8, HAIMA)	1 (2 x Amber), 1 (Red), 18 (Amber), 19 (2 x Amber), 19 (2 x Red), 19 (Black)
November	131.3	-	-	-	-	-
December	6.6	-	-	-	-	-
Total	3,026.8	163 Warnings	7 Warnings	2 Warnings	9 Warnings	41 Warnings (33 x Amber, 7 x Red, 1 x Black)

- Notes:
- (1) Warnings and signals were based on the information from the HKO.
 - (2) More than one Thunderstorm Warning may have been issued within a day but have only been shown once for clarity.
 - (3) Landslip Warning was issued after consultation between the GEO and the HKO.
 - (4) Tropical Cyclone Warning signal number hoisted is shown in the bracket followed by the name of the tropical cyclone.

3 Landslides

3.1 Landslides in 2016

Landslide incidents occurring in 2016 and reported to the GEO and other government departments are summarised in Table 3.1.

Table 3.1 Breakdown of Landslides in 2016 Reported to Government Departments

Department	Reported Number of Landslides	Genuine Landslides
Agriculture, Fisheries and Conservation Department	11 (0)	11 (0)
Architectural Services Department	9 (2)	8 (2)
Drainage Services Department	0	0
Geotechnical Engineering Office, Civil Engineering and Development Department	208 ⁽¹⁾	184 ⁽¹⁾
Highways Department	41 (39)	41 (39)
Housing Department	0	0
Lands Department	2 (0)	2 (0)
Water Supplies Department	34 (7)	28 (7)
Total	305 (48) ⁽²⁾	274 (48) ⁽²⁾

Legend:

34 (7) Thirty-four incidents were reported to the government department concerned, seven of which were also reported to the GEO separately by other parties (i.e. duplicate cases)

Notes: (1) A total of 208 landslide incidents that occurred in 2016 (discounting duplicate cases) were reported to the GEO, of which 184 were classified as genuine landslides.
(2) The number of reported landslide incidents that occurred in 2016 (discounting duplicate cases) is **257** [305 - 48]. The number of genuine landslides is **226** [274 - 48].

A total of 257 landslide incidents that occurred in 2016 were reported to various government departments. These include 208 incidents (discounting duplicate cases) reported to the GEO. Another 49 incidents were reported to other government departments (i.e. AFCD, ArchSD, HyD, LandsD and WSD). Of these 257 reported incidents, 226 were genuine landslides (see details in Appendix B). The other reported incidents were non-landslide events such as tree falls and flooding.

Of the 226 genuine landslides, 21 (9.3%) were major landslides (see Table B1 in Appendix B), 144 (63.7%) were minor landslides and 61 (27.0%) were very minor landslides

with negligible consequences (see Section 1).

Selected notable landslides are presented in Section 4 and illustrated in Figures 4.1 to 4.4. For those landslide incidents inspected by the GEO, the information on the landslides was recorded in incident reports prepared by the GEO. For those landslide incidents attended to by other government departments responsible for slope maintenance, landslide incident reports were prepared by the respective departments. The above information is available in the Slope Information System (SIS). Further details of these slope failures can be found in the relevant files of the three District Divisions and the Landslip Preventive Measures Division 1 of the GEO.

Wherever possible, the dates and times of the landslides were assessed by geotechnical professionals. Of the 226 landslides, the timing of occurrence was determined to within one day for 60 incidents based on the reported date of failure given in the incident reports. For the remaining landslide incidents, the timing of occurrence could not be ascertained due to lack of information or that the incidents were not reported to the GEO or other government departments until several days or even weeks after occurrence.

3.2 Consequence of Landslides

The consequence of landslides in terms of the types of facilities affected (e.g. buildings, roads, registered squatter dwellings, catchwaters, construction sites, etc.) in different regions is summarised in Table 3.2. In regard to the landslides with significant consequences (e.g. casualties, injuries, evacuation of buildings or squatter dwellings, temporary closure of roads, etc.), they are classified with respect to the types of slope failures, as shown in Table 3.3. The facility groups affected by the major landslides are presented in Table 3.4. Further descriptions of some selected notable landslides of 2016 are given in Section 4 below.

3.3 Types of Slope Failures

Landslides reported to the GEO and other government departments have been classified into five major types of slope failures, i.e. fill slopes, cut slopes, retaining walls, natural hillside and registered disturbed terrain. The breakdown of different types of slope failures is shown in Table 3.5.

Table 3.2 Breakdown of Landslides by Types of Affected Facilities

Types of Affected Facilities	Hong Kong Island	Kowloon	New Territories and Outlying Islands	All
Buildings (including village houses)	4 (1)	0	6 (0)	10 (1)
Registered Squatter Dwellings	0	1 (0)	10 (0)	11 (0)
Roads	20 (3)	4 (0)	25 (4)	49 (7)
Transportation Facilities (e.g. railways, tramways, etc.)	0	0	0	0
Pedestrian Pavements/Footways	1 (0)	2 (0)	4 (0)	7 (0)
Minor Footpaths /Access Paths / Access Roads	14 (0)	4 (1)	69 (10)	87 (11)
Construction Sites	0	0	0	0
Open Areas	1 (0)	2 (0)	15 (1)	18 (1)
Catchwaters	3 (0)	0	2 (0)	5 (0)
Others (e.g. carpark, parks, playgrounds, gardens, backyards, etc.)	3 (0)	3 (0)	14 (1)	20 (1)
Nil	5 (0)	1 (0)	16 (0)	22 (0)
Total	51 (4)	17 (1)	161 (16)	229 (21)

Legend:

69 (10) Sixty-nine landslides of which ten were major failures

- Notes:
- (1) Incidents that were not genuine landslides have been excluded.
 - (2) A given landslide may affect more than one type of facility.
 - (3) Nil consequence refers to incidents where the landslide debris came to rest on the slopes, not affecting any facilities.

Table 3.3 Breakdown of Landslide Consequences by Types of Slope Failures

Types of Slope Failures		Number of Squatter Dwellings ⁽¹⁾ Evacuated		Number of Floors, Houses or Flats Evacuated or Partially Closed	Number of Incidents Involving Closure			Deaths	Injuries reported to GEO
		Permanent	Temporary		Roads	Pedestrian Pavements	Footpaths, Alleyways or Private Access Paths		
Fill Slopes		0	0	0	2	0	1	0	0
Cut Slopes	Soil	0	0	0	8	2	7	0	0
	Soil/Rock	0	0	3 ⁽³⁾	2	1	2	0	0
	Rock	0	0	0	3	0	1	0	0
Retaining Walls		0	1 (1)	0	0	0	1	0	0
Natural Hillside		0	0	0	5	0	7	0	0
Registered Disturbed Terrain		0	0	0	0	0	2	0	0
Total		0	1 (1)	3	20	4	21	0	0

Legend:

1 (1) Number of squatter dwellings evacuated, with the number of tolerated squatter structures evacuated shown in brackets

- Notes:
- (1) A squatter dwelling is defined as a place of residence that contains one or more tolerated squatter structures, i.e. all structures registered in 1982 Housing Department's Squatter Structure Survey (GEO, 2010).
 - (2) A failure may give rise to more than one type of consequence.
 - (3) Incident No. 2016/08/1896 refers (see Section 4.2 for details).

Table 3.4 Breakdown of Facility Groups Affected by Major Landslides

Types of Major Landslides	Facility Group Affected by Major Landslides (Group No.)						
	1a	1b	2a	2b	3	4	5
All Major Landslides	1	0	0	1	2	5	12
Major Landslides on Man-made Slopes	0	0	0	0	1	1	3
Major Landslides on Registered Disturbed Terrain	0	0	0	0	0	0	0
Major Landslides on Natural Hillside	1	0	0	1	1	4	9

Notes: (1) Facility groups are classified in accordance with the GEO Technical Note No. 15 (GEO, 2007).
 (2) A given landslide may affect more than one type of facility.

Table 3.5 Breakdown of Landslides by Types of Slope Failures

Types of Slope Failures		Number	Percentage (%)
Fill Slopes		19 (3)	8.4
Cut Slopes	Soil	101 (2)	44.7
	Soil/Rock	25 (0)	11.1
	Rock	14 (0)	6.2
Retaining Walls		12 (0)	5.3
Natural Hillside		53 (16)	23.4
Registered Disturbed Terrain		2 (0)	0.9
Total		226 (21)	100

Legend:

19 (3) Nineteen landslides, three of which were major failures

Note: Where a landslide involved more than one type of failure, the predominant type of failure has been considered in the above classification.

3.4 Landslide Volume Distribution

Tables 3.6 and 3.7 show the distribution of failure volumes for all the reported landslides. A total of 143 landslides (63.3%) involved less than 5 m³ of material. There were 21 major landslides (with a failure volume of 50 m³ or more), 16 of which occurred on natural hillside and the other five occurred on man-made features. The largest incident occurred on the natural hillside above Sai Kung Sai Wan Road with an estimated source volume of about 2,100 m³. Detail description of the landslide is given in Section 4.4.

Table 3.6 Landslide Volume Distribution with Respect to Geographical Locations

Volume of Failure (m ³)	Hong Kong Island	Kowloon	New Territories and Outlying Islands	All
< 5	36	11	96	143 (63.3%)
≥ 5 to < 10	6	0	17	23 (10.2%)
≥ 10 to < 20	4	1	16	21 (9.3%)
≥ 20 to < 50	1	3	14	18 (8.0%)
≥ 50 to < 200	4	1	9	14 (6.2%)
≥ 200 to < 500	0	0	6	6 (2.6%)
≥ 500 to < 1,000	0	0	0	0 (0%)
≥ 1,000	0	0	1	1 (0.4%)
Total	51	16	159	226 (100%)

Legend:

21 (9.3%) Twenty-one landslides, which amount to 9.3% of the total 226 genuine landslides reported to the Government

Table 3.7 Landslide Volume Distribution with Respect to Types of Slope Failures

Volume of Failure (m ³)	Fill Slopes	Cut Slopes			Retaining Walls	Natural Hillside	Registered Disturbed Terrain	Total
		Soil	Soil/Rock	Rock				
< 5	10	71	16	12	7	26	1	143 (63.3%)
≥ 5 to < 10	0	13	5	0	1	3	1	23 (10.2%)
≥ 10 to < 20	2	7	1	2	4	5	0	21 (9.3%)
≥ 20 to < 50	4	8	3	0	0	3	0	18 (8.0%)
≥ 50 to < 200	3	1	0	0	0	10	0	14 (6.2%)
≥ 200 to < 500	0	1	0	0	0	5	0	6 (2.6%)
≥ 500 to < 1,000	0	0	0	0	0	0	0	0 (0%)
≥ 1,000	0	0	0	0	0	1	0	1 (0.4%)
Total	19	101	25	14	12	53	2	226 (100%)

Legend:

23 (10.2%) Twenty-three landslides, which amount to 10.2% of the total 226 genuine landslides reported to the Government

Note: Where a landslide involved more than one type of failure, the predominant type of failure has been considered in the above classification.

4 Notable Landslides

4.1 General

Of the 226 genuine landslides reported to the Government that occurred in 2016, four incidents are described in more detail below. These four incidents have been selected on the basis of their consequences and scales.

4.2 The 17 August 2016 Rockfall from the Hillside behind Swiss Towers, 113 Tai Hang Road (Incident No. 2016/08/1896)

At about 4:00 a.m. on 17 August 2016, a rockfall incident occurred on the hillside behind Swiss Towers, 113 Tai Hang Road (Figure 4.1). The rockfall, with an estimated failure volume of about 9 m³, impacted the podium damaging the ceiling and a supporting beam of the covered car park underneath. Detached concrete fragments from these structural elements resulted in damage of a parked car. The residents in the lowest three floors of Block GH of Swiss Towers were temporarily evacuated. No casualty was reported as a result of the incident.

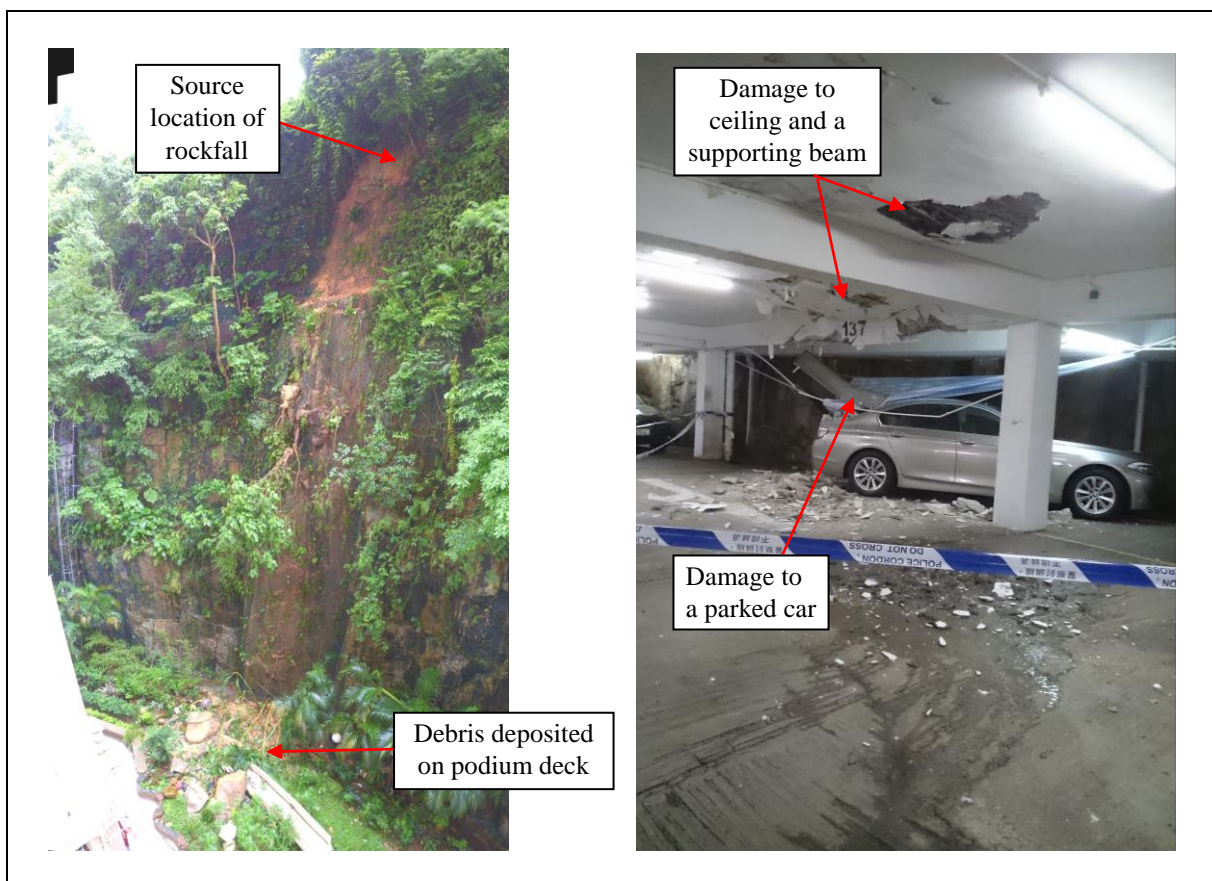


Figure 4.1 Views of the 17 August 2016 Rockfall from the Hillside behind Swiss Towers (Incident No. 2016/08/1896)

4.3 The 19 October 2016 Landslide on the Natural Hillside behind Greenville Gardens, Nos. 14-17 Shiu Fai Terrace (Incident No. 2016/10/1941)

At about 4:09 p.m. on 19 October 2016 when both Landslip Warning and Black Rainstorm Warning were in effect, a landslide occurred on the natural hillside behind Greenville Gardens, Nos. 14-17 Shiu Fai Terrace (Figure 4.2). The landslide involved an estimated failure volume of about 65 m³. The landslide debris largely deposited behind Block B of Greenville Gardens and partially buried three parked cars. No casualty was reported as a result of the landslide.



Figure 4.2 Views of the 19 October 2016 Landslide on the Natural Hillside behind Greenville Gardens (Incident No. 2016/10/1941)

4.4 The 21 May 2016 Landslide on the Natural Hillside above Sai Kung Sai Wan Road, Sai Kung (Incident No. 2016/05/1823)

In the morning of 21 May 2016, a landslide occurred on the natural hillside above Sai Kung Sai Wan Road, Sai Kung (Figure 4.3). The landslide involved a planar rock slide with an estimated source volume of about 2,100 m³. The detached material travelled a distance of about 500 m down the hillside eventually coming to rest in a natural drainage line above High Island Reservoir. Sai Kung Sai Wan Road was completely blocked with debris and the fill slope (Slope No. 8SE-A/F34) supporting Sai Kung Sai Wan Road was severely eroded resulting in road closure for more than three months. Some outwash debris was transported into the reservoir. No casualties were reported as a result of the landslide.

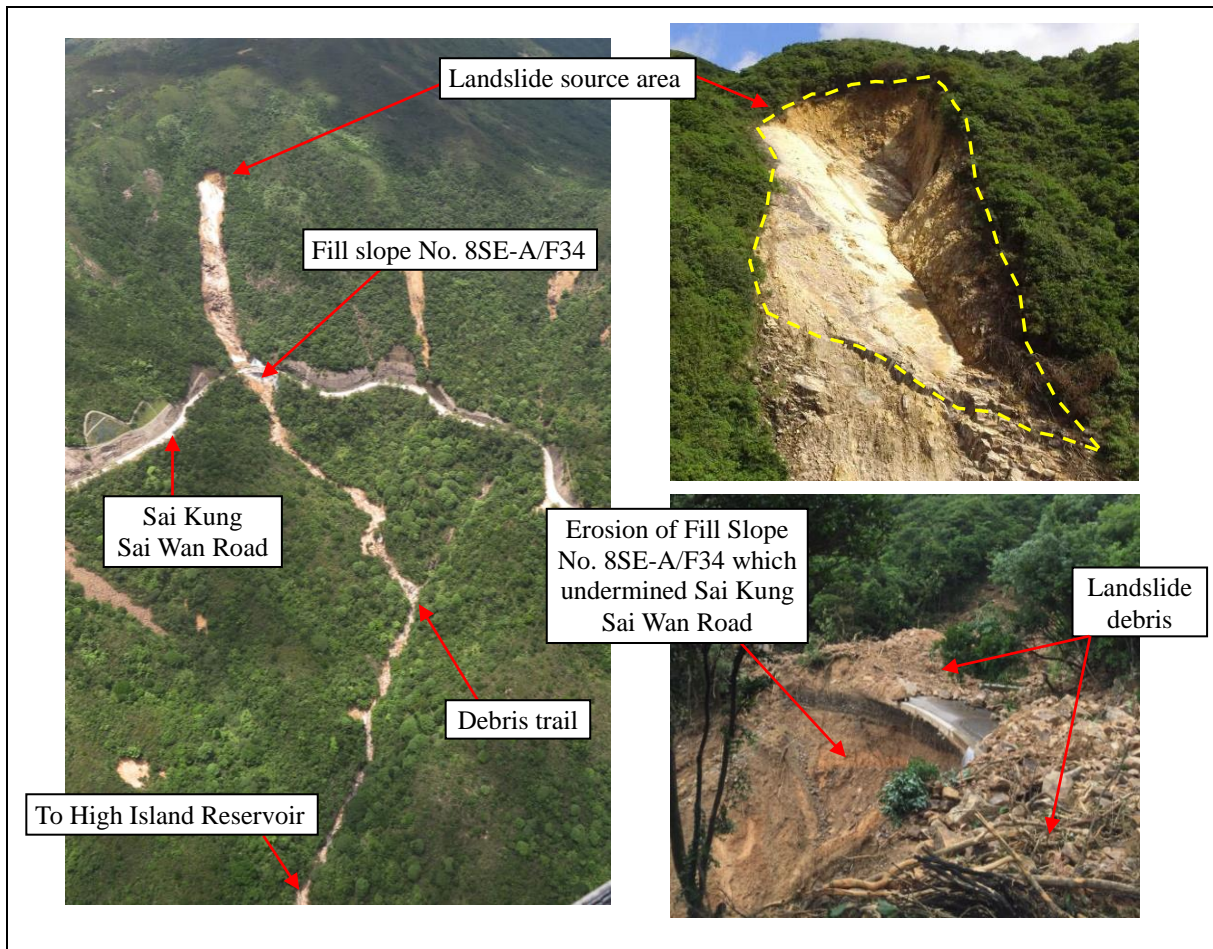


Figure 4.3 Views of the 21 May 2016 Landslide on the Natural Hillside above Sai Kung Sai Wan Road (Incident No. 2016/05/1823)

4.5 The 7 September 2016 Landslide on Slope No. 13NE-A/C78 at South Lantau Road, Lantau (Incident No. 2016/09/1917)

At about 12:15 p.m. on 7 September 2016, a landslide occurred on a soil cut slope (Feature No. 13NE-A/C78) at South Lantau Road, Lantau (Figure 4.4). The landslide involved an estimated failure volume of about 100 m³ with the debris blocked both lanes of South Lantau Road. As a result of the landslide, the affected section of road was completely closed for several hours which had resulted in substantial traffic disruption. The land traffic connection between Tai O and Tung Chung was suspended for hours and the public had to rely on ferry or cable car services to travel in and out of Tai O. One of the traffic lanes was re-opened several hours following the incident and the whole section of the road was subsequently re-opened on 10 September 2016. The incident was widely reported by the mass media. No casualty was reported.



Figure 4.4 General View of the 7 September 2016 Landslide on Slope No. 13NE-A/C78 at South Lantau Road (Incident No. 2016/09/1917)

5 Conclusion

Rainfall recorded at the HKO's Principal Raingauge at Tsim Sha Tsui amounted to 3,026.8 mm in 2016, a surplus of 26 percent comparing to the 1981-2010 normal of 2,398.5 mm. In 2016, two Landslip Warnings and one Black Rainstorm Warning were issued between 2 August and 19 October 2016. Of the 226 genuine landslides, 21 were major failures, 144 were minor failures and 61 were very minor failures with negligible consequences.

There were 23 landslides in 2016 with notable consequences. Of these landslides, one resulted in damage of the ceiling and a supporting beam of a covered car park and a parked car as well as temporary evacuation of the lowest three floors of a residential building, one led to temporary evacuation of a squatter dwelling and one resulted in three parked cars partially buried by landslide debris. The remaining 20 landslides resulted in temporary closure of roads. Other landslides in 2016 affected open areas, footpaths or minor access roads and catchwaters without any significant direct or indirect consequence. No injury or fatality was reported as a result of the 2016 landslides.

6 References

GEO (2007). *GEO Technical Guidance Note No. 15 (TGN 15) – Guidelines for Classification of Consequence-to-Life Category for Slope Features*. Geotechnical Engineering Office, Hong Kong, 14 p.

GEO (2010). *GEO Circular No. 3 – Non Development Clearance (Slope Safety) of Squatters*. Geotechnical Engineering Office, Hong Kong, 20 p.

Hong Kong Observatory (2017). *The Year's Weather - 2016*. Hong Kong Observatory, Hong Kong, 7 p.

Appendix A

Some Selected Rainfall Parameters for the 18 Rainstorms
with Daily Rainfall Exceeding 100 mm in 2016

List of Tables

Table No.		Page No.
A1	Some Selected Rainfall Parameters for the 18 Rainstorms with Daily Rainfall Exceeding 100 mm in 2016	41

List of Figures

Figure No.		Page No.
A1	Maximum Rolling 24-hour Rainfall Distribution for the Period between 28 Jan (00:00) and 30 Jan 2016 (24:00) and Locations of Landslides	44
A2	Maximum Rolling 24-hour Rainfall Distribution for the Period between 12 April (00:00) and 14 April 2016 (24:00) and Locations of Landslides	45
A3	Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 May (00:00) and 12 May 2016 (24:00) and Locations of Landslides	46
A4	Maximum Rolling 24-hour Rainfall Distribution for the Period between 19 May (00:00) and 23 May 2016 (24:00) and Locations of Landslides	47
A5	Maximum Rolling 24-hour Rainfall Distribution for the Period between 27 May (00:00) and 30 May 2016 (24:00) and Locations of Landslides	48
A6	Maximum Rolling 24-hour Rainfall Distribution for the Period between 5 June (00:00) and 8 June 2016 (24:00) and Locations of Landslides	49
A7	Maximum Rolling 24-hour Rainfall Distribution for the Period between 10 June (00:00) and 13 June 2016 (24:00) and Locations of Landslides	50
A8	Maximum Rolling 24-hour Rainfall Distribution for the Period between 5 July (00:00) and 8 July 2016 (24:00) and Locations of Landslides	51
A9	Maximum Rolling 24-hour Rainfall Distribution for the Period between 1 August (00:00) and 5 August 2016 (24:00) and Locations of Landslides	52
A10	Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 August (00:00) and 12 August 2016 (24:00) and Locations of Landslides	53
A11	Maximum Rolling 24-hour Rainfall Distribution for the Period between 16 August (00:00) and 20 August 2016 (24:00) and Locations of Landslides	54

Figure No.		Page No.
A12	Maximum Rolling 24-hour Rainfall Distribution for the Period between 26 August (00:00) and 30 August 2016 (24:00) and Locations of Landslides	55
A13	Maximum Rolling 24-hour Rainfall Distribution for the Period between 31 August (00:00) and 3 September 2016 (24:00) and Locations of Landslides	56
A14	Maximum Rolling 24-hour Rainfall Distribution for the Period between 4 September (00:00) and 8 September 2016 (24:00) and Locations of Landslides	57
A15	Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 September and 12 September 2016 (24:00) and Locations of Landslides	58
A16	Maximum Rolling 24-hour Rainfall Distribution for the Period between 30 September (00:00) and 3 October 2016 (24:00) and Locations of Landslides	59
A17	Maximum Rolling 24-hour Rainfall Distribution for the Period between 17 October (00:00) and 23 October 2016 (24:00) and Locations of Landslides	60
A18	Maximum Rolling 24-hour Rainfall Distribution for the Period between 22 November (00:00) and 24 November 2016 (24:00) and Locations of Landslides	61

Table A1 Some Selected Rainfall Parameters for the 18 Rainstorms with Daily Rainfall Exceeding 100 mm in 2016 (Sheet 1 of 3)

Rainstorm		5-min		10-min		15-min		30-min	
		Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station
1	28-30 Jan 2016	6.5	N19	11.5	N19	15	N19	18	N19
2	12-14 April 2016	13.5	K02, N13	25.5	N13	36	N47	47	K02
3	9-12 May 2016	17.5	N41	32.5	N41	45	N41	72.5	N41
4	19-23 May 2016	13	N13	23	N13	32	N13	56.5	N13
5	27-30 May 2016	11.5	N39	21	N03	29	N11	47.5	N11
6	5-8 June 2016	15	K08	24.5	K01	29.5	K01, K02, K09	43.5	N52
7	10-13 June 2016	12	N19	22	N19	29.5	N19	46.5	N19
8	5-8 July 2016	12	N19	28.5	H15	37	N19	52	N22
9	1-5 August 2016	11.5	N31	18	N26	22	H02, H03, N26	31.5	N34
10	9-12 August 2016	16.5	N09	32	N09	45.5	N09	82.5	N09
11	16-20 August 2016	12	N51	17.5	H18	22	H09	26	K05
12	26-30 August 2016	8	H07	15.5	H07	20.5	H07	65.5	K02
13	31 Aug – 3 Sep 2016	12.5	N19	18	N09	22.5	N36	30.5	N19
14	4-8 Sept 2016	9	K10	15.5	N22	21.5	N22	32.5	N19
15	9-12 Sept 2016	14.5	N55	27.5	N55	39.5	N55	62.5	N55
16	30 Sept – 3 Oct 2016	16	H12	28	H04	34	H04	60	H07, H12
17	17-23 Oct 2016	18	N51	28.5	N51	37.5	H15	62	H09
18	22-24 Nov 2016	3.5	K05	5.5	K05, K08	8	K05, K08	14	K05

Table A1 Some Selected Rainfall Parameters for the 18 Rainstorms with Daily Rainfall Exceeding 100 mm in 2016 (Sheet 2 of 3)

Rainstorm		1-hr		2-hr		4-hr		5-hr		6-hr	
		Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station
1	28-30 Jan 2016	27	N19	36	N05, N19	57.5	N19	71.5	N19	74.5	N19
2	12-14 April 2016	61	N51	79.5	N51	87.5	H26	88.5	H26	89.5	H26
3	9-12 May 2016	97	N41	110	N41	139	N41, N42	172	N42	176.5	N42
4	19-23 May 2016	104.5	N13	196.5	N13	234.5	N13	306	N13	346	N13
5	27-30 May 2016	77	N39	97.5	N39	110.5	N39	117.5	N39	117.5	N39
6	5-8 June 2016	62.5	N52	90	N52	112	N47	115.5	N47	116	N47
7	10-13 June 2016	69	N19	86.5	N19	118.5	N19	125	N19	127.5	N19
8	5-8 July 2016	63.5	H15	82	H15	97.5	H15	100	H15	102	N19
9	1-5 August 2016	51.5	N17	97.5	N17	164.5	N17	197	N17	222	N17
10	9-12 August 2016	120.5	N09	134	N09	140.5	N09	141.5	N09	142	N09
11	16-20 August 2016	36	H09	41	H09	57.5	N20	61.5	N20	62	N42
12	26-30 August 2016	107.5	K02	138.5	K02	142.5	K02	143	K02	143.5	K02
13	31 Aug – 3 Sep 2016	38	N19	45.5	H15	60.5	N19	77	N19	80	N19
14	4-8 Sept 2016	61	N19	89	N22	105.5	N22	107	N22	107	N22
15	9-12 Sept 2016	83.5	N55	93	N18	123.5	N15	128	N15	129	N15
16	30 Sept – 3 Oct 2016	94	K02	129.5	K02	152	K02	153.5	K02	153.5	K02
17	17-23 Oct 2016	106.5	H09	170	H09	211	H09	231	H09	242	H09
18	22-24 Nov 2016	21	K05	28	N30	40	N30	46	N30	51	N30

Table A1 Some Selected Rainfall Parameters for the 18 Rainstorms with Daily Rainfall Exceeding 100 mm in 2016 (Sheet 3 of 3)

Rainstorm		8-hr		12-hr		18-hr		24-hr		48-hr	
		Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station	Max. rainfall (mm)	Raingauge Station
1	28-30 Jan 2016	83.5	N19	114	N19	130	N19	156	N19	179.5	N19
2	12-14 April 2016	91	H26	94	H26	106.5	N20	112.5	N20	119	N20
3	9-12 May 2016	177	N42	177	N42	177	N42	177	N42	177	N42
4	19-23 May 2016	362	N13	371.5	N13	404.5	N13	409	N13	409.5	N13
5	27-30 May 2016	118	N39	118	N39	123.5	N39	123.5	N39	133.5	N39
6	5-8 June 2016	125	N47	130.5	N47	132	N47	135.5	N47	185	N44
7	10-13 June 2016	133.5	N19	139.5	N19	140	N19	151	N19	194.5	N27
8	5-8 July 2016	107	N19	110.5	N19	110.5	N19	113.5	H15	123.5	N19
9	1-5 August 2016	246	N17	286.5	N17	298.5	N17	299	N17	362	N17
10	9-12 August 2016	143	N09	143	N09	143	N09	155.5	N09	157.5	N09
11	16-20 August 2016	66.5	K03	77.5	N42	100.5	N42	107.5	K07	197	K05
12	26-30 August 2016	143.5	K02	143.5	K02	143.5	K02	143.5	K02	143.5	K02
13	31 Aug – 3 Sep 2016	99	N19	106.5	N19	116	N19	134	N19	163.5	H15
14	4-8 Sept 2016	107.5	N22	108	N22	108	N22	139	H02	156	N18
15	9-12 Sept 2016	129	N15	129	N15	129	N15	172.5	N55	237	N55
16	30 Sept – 3 Oct 2016	153.5	K02	155	K02	155	K02	156	K02	156	K02
17	17-23 Oct 2016	260	H09	270.5	H09	305	H09	353	K07	541	K07
18	22-24 Nov 2016	62.5	N30	82	N30	99.5	N30	112	N30	145.5	N30

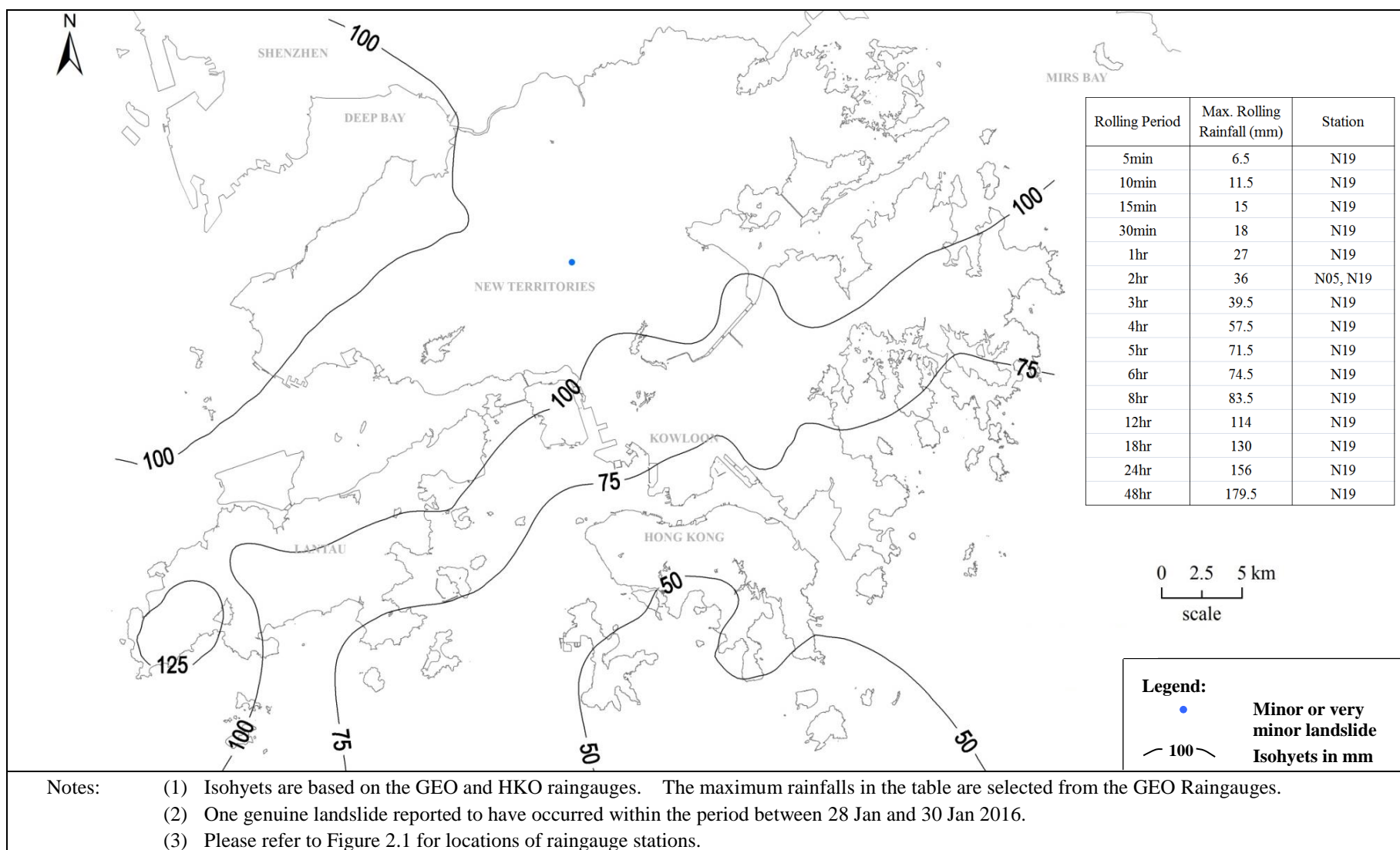


Figure A1 Maximum Rolling 24-hour Rainfall Distribution for the Period between 28 Jan (00:00) and 30 Jan 2016 (24:00) and Locations of Landslides

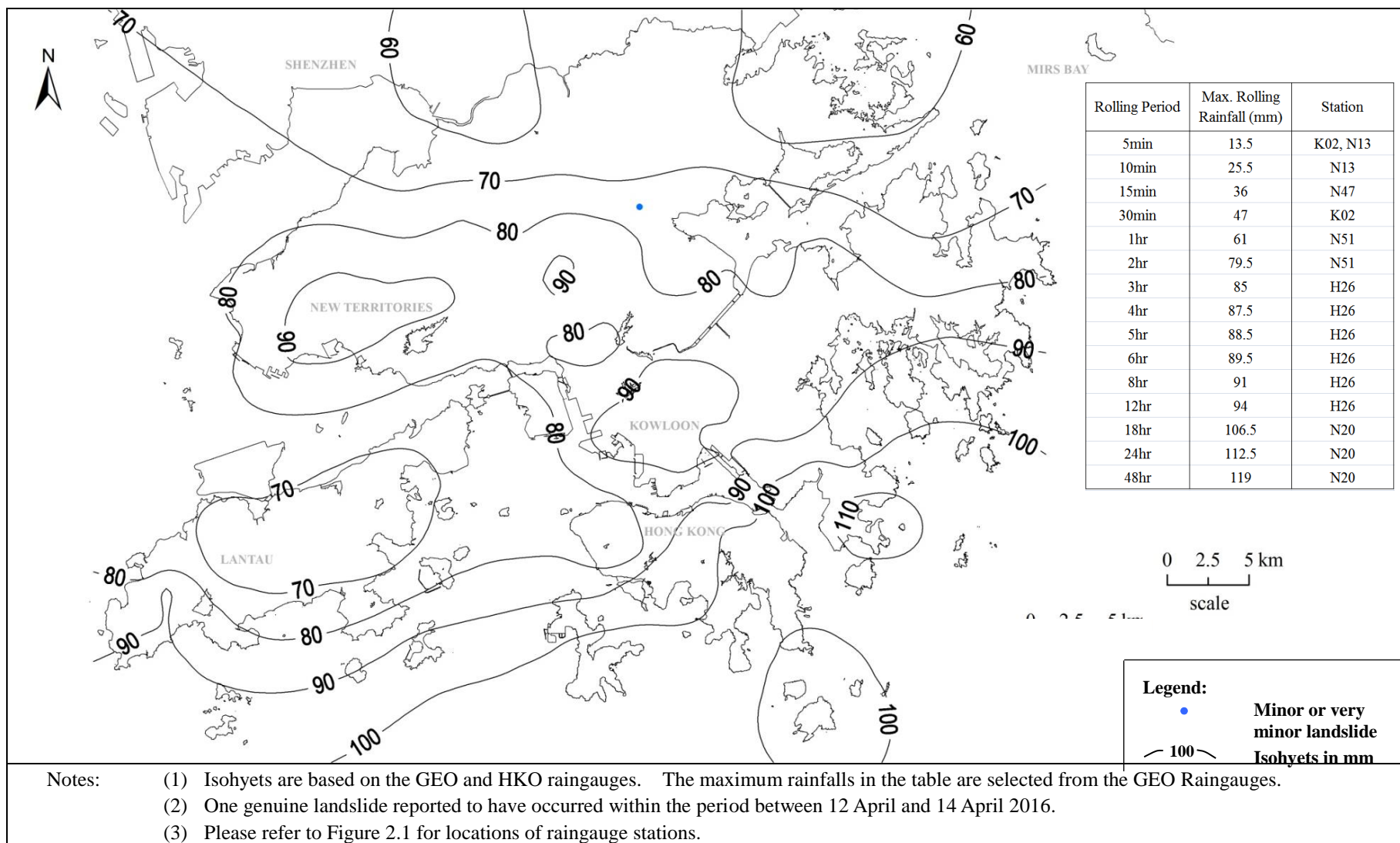


Figure A2 Maximum Rolling 24-hour Rainfall Distribution for the Period between 12 April (00:00) and 14 April 2016 (24:00) and Locations of Landslides

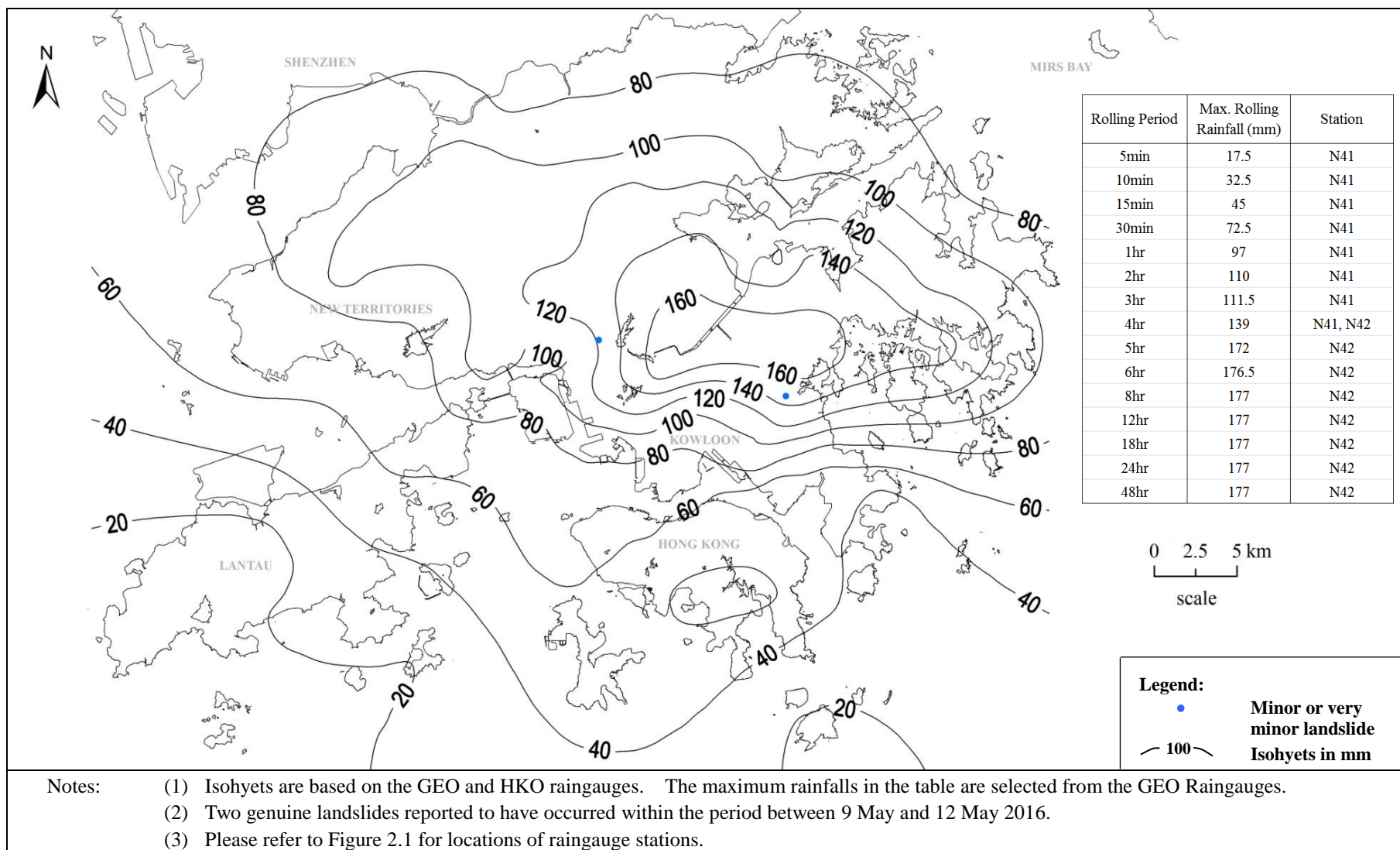


Figure A3 Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 May (00:00) and 12 May 2016 (24:00) and Locations of Landslides

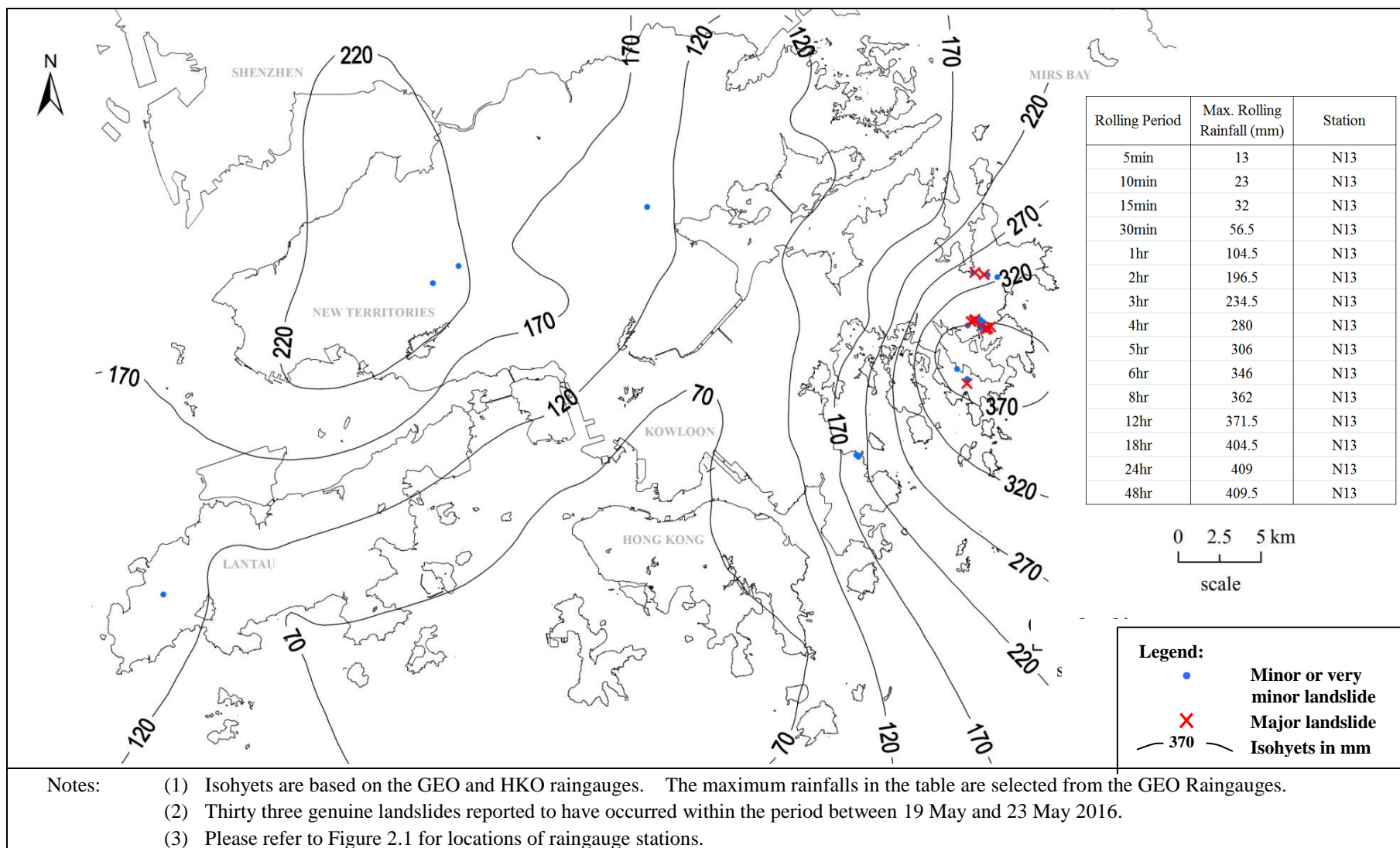


Figure A4 Maximum Rolling 24-hour Rainfall Distribution for the Period between 19 May (00:00) and 23 May 2016 (24:00) and Locations of Landslides

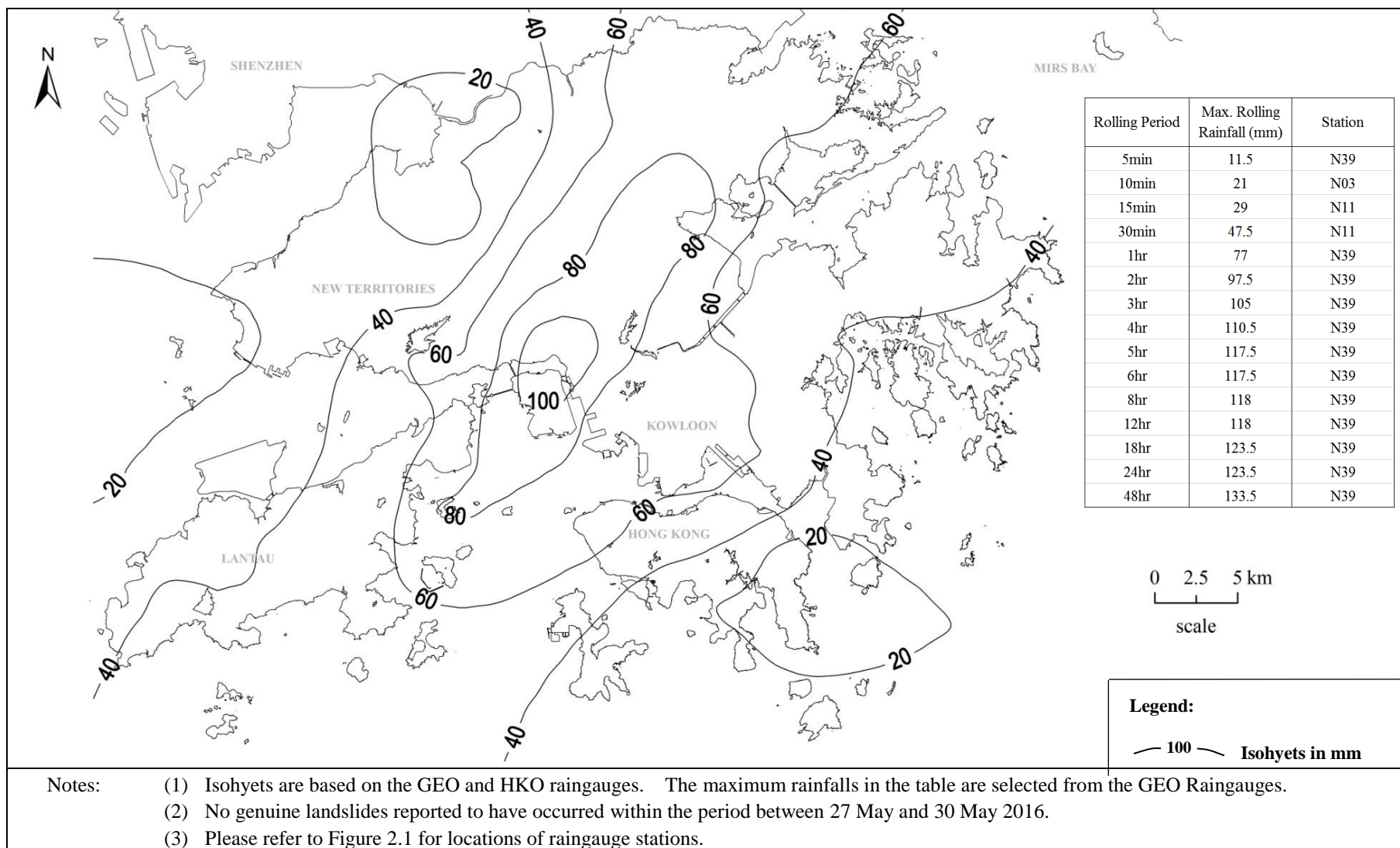


Figure A5 Maximum Rolling 24-hour Rainfall Distribution for the Period between 27 May (00:00) and 30 May 2016 (24:00) and Locations of Landslides

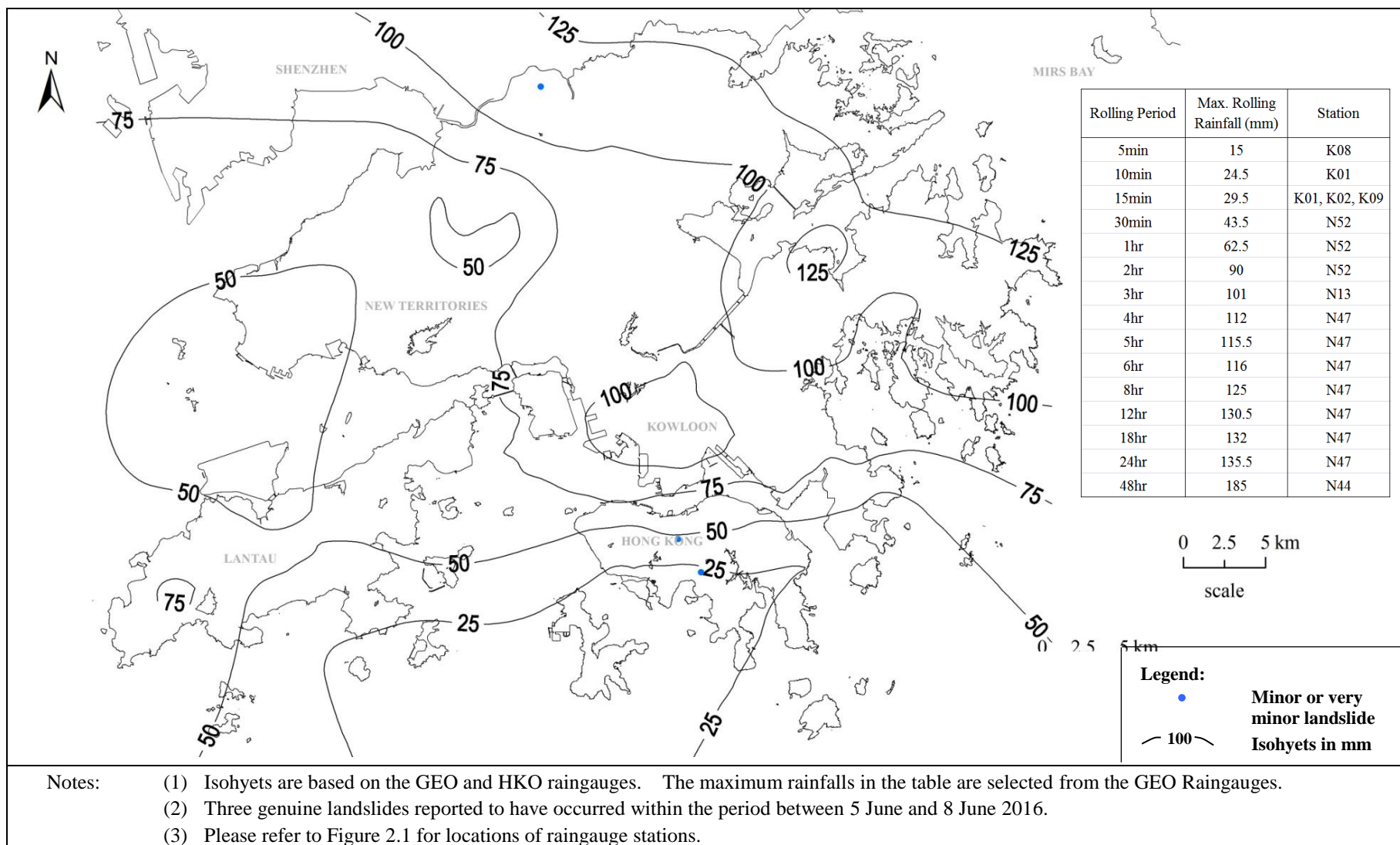


Figure A6 Maximum Rolling 24-hour Rainfall Distribution for the Period between 5 June (00:00) and 8 June 2016 (24:00) and Locations of Landslides

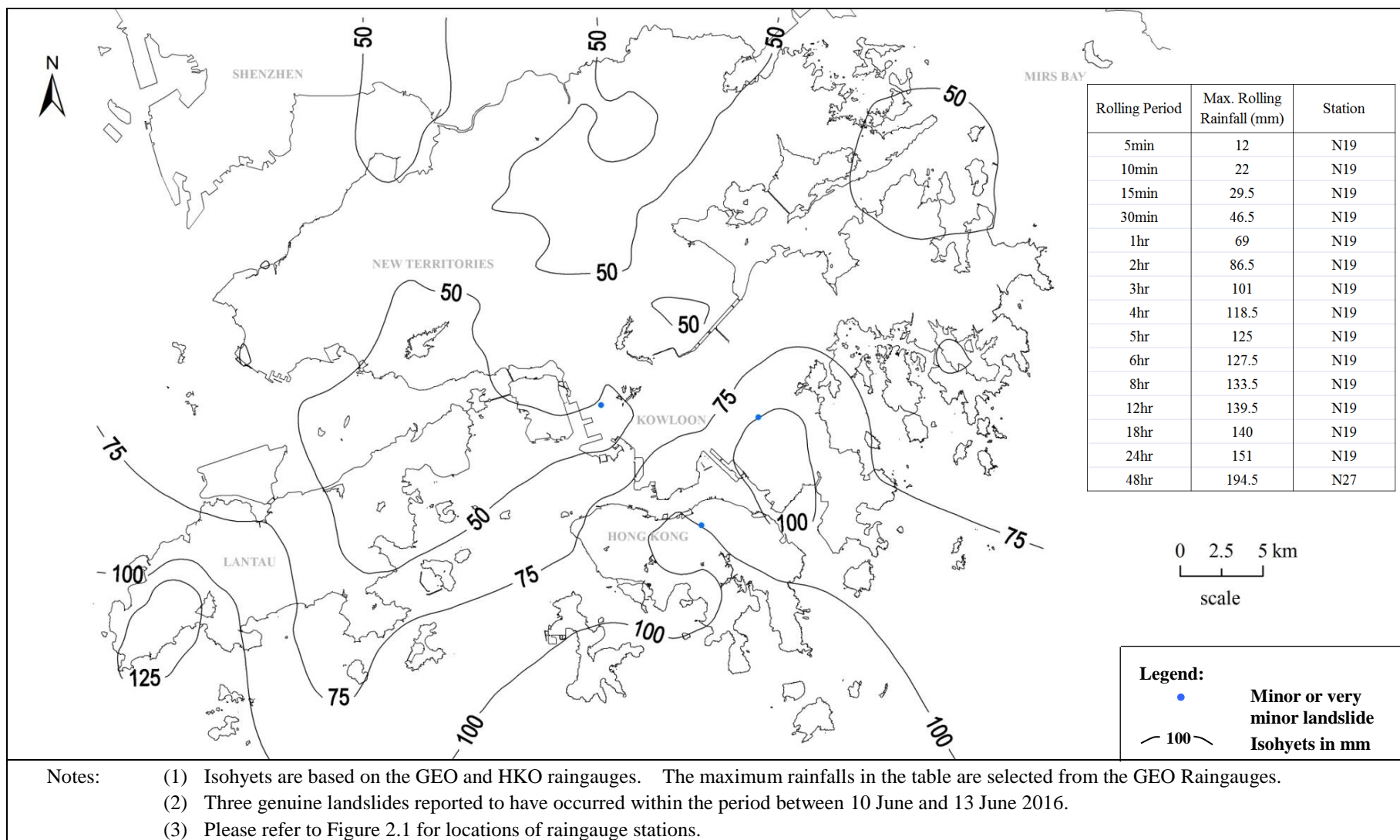


Figure A7 Maximum Rolling 24-hour Rainfall Distribution for the Period between 10 June (00:00) and 13 June 2016 (24:00) and Locations of Landslides

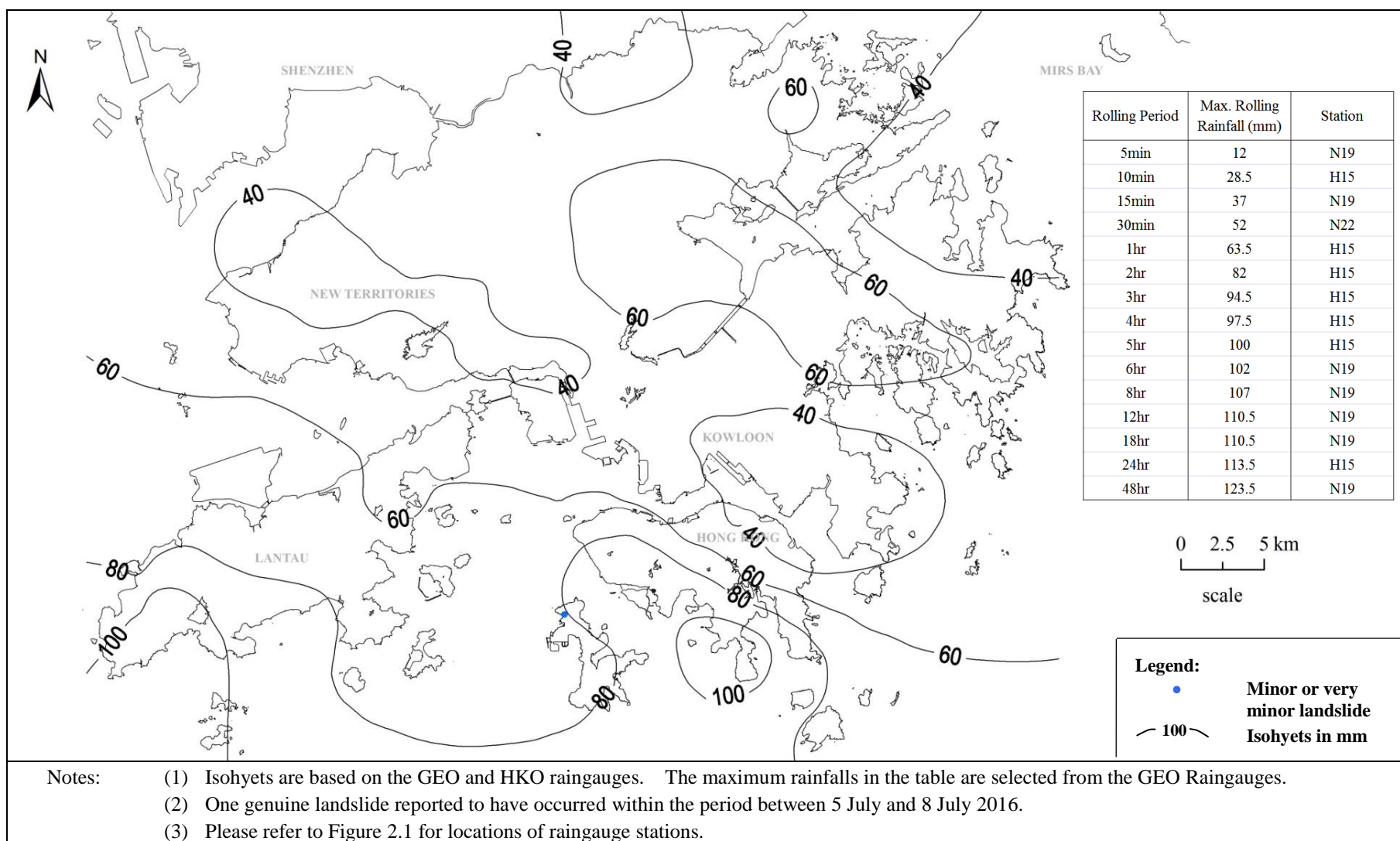


Figure A8 Maximum Rolling 24-hour Rainfall Distribution for the Period between 5 July (00:00) and 8 July 2016 (24:00) and Locations of Landslides

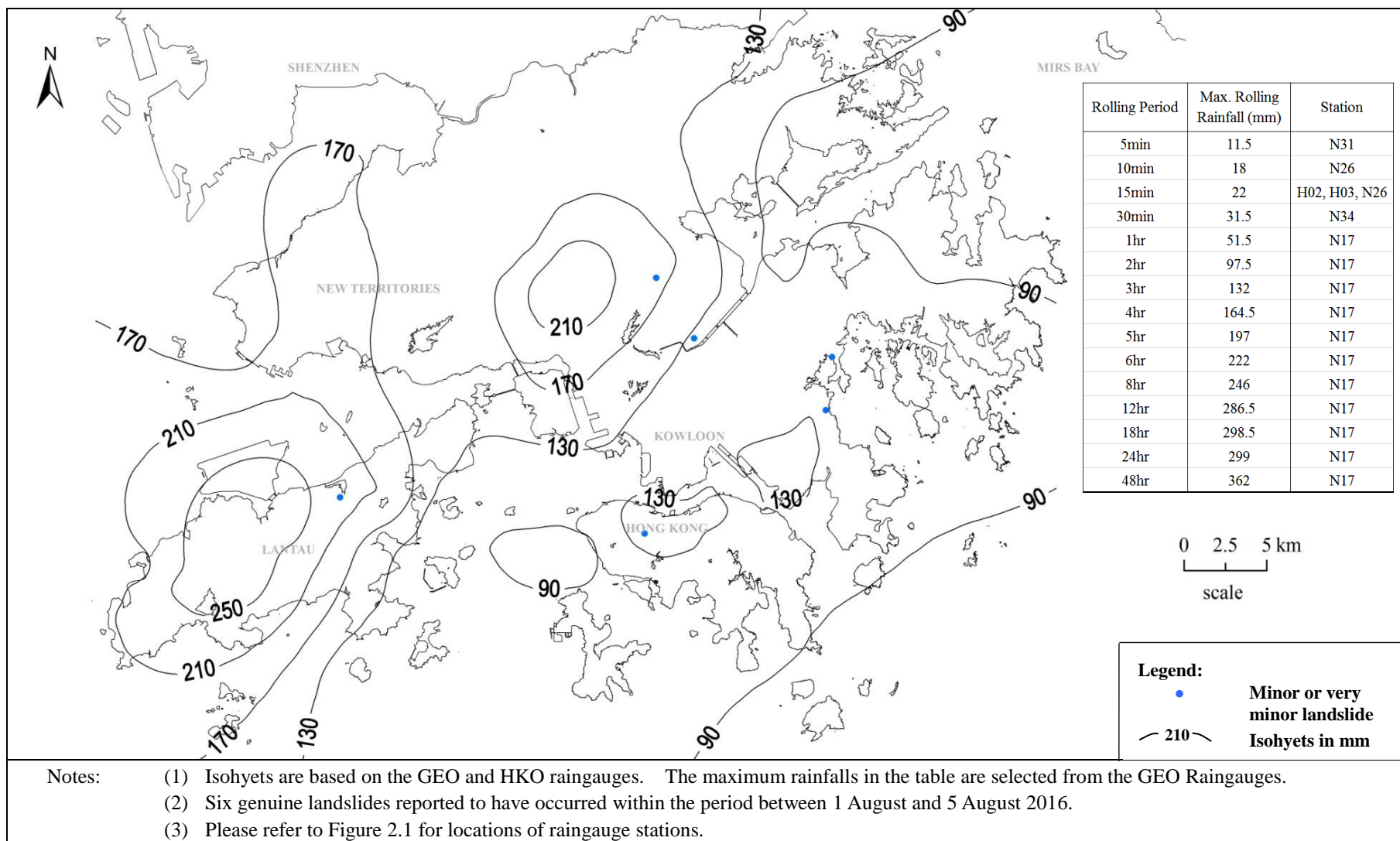


Figure A9 Maximum Rolling 24-hour Rainfall Distribution for the Period between 1 August (00:00) and 5 August 2016 (24:00) and Locations of Landslides

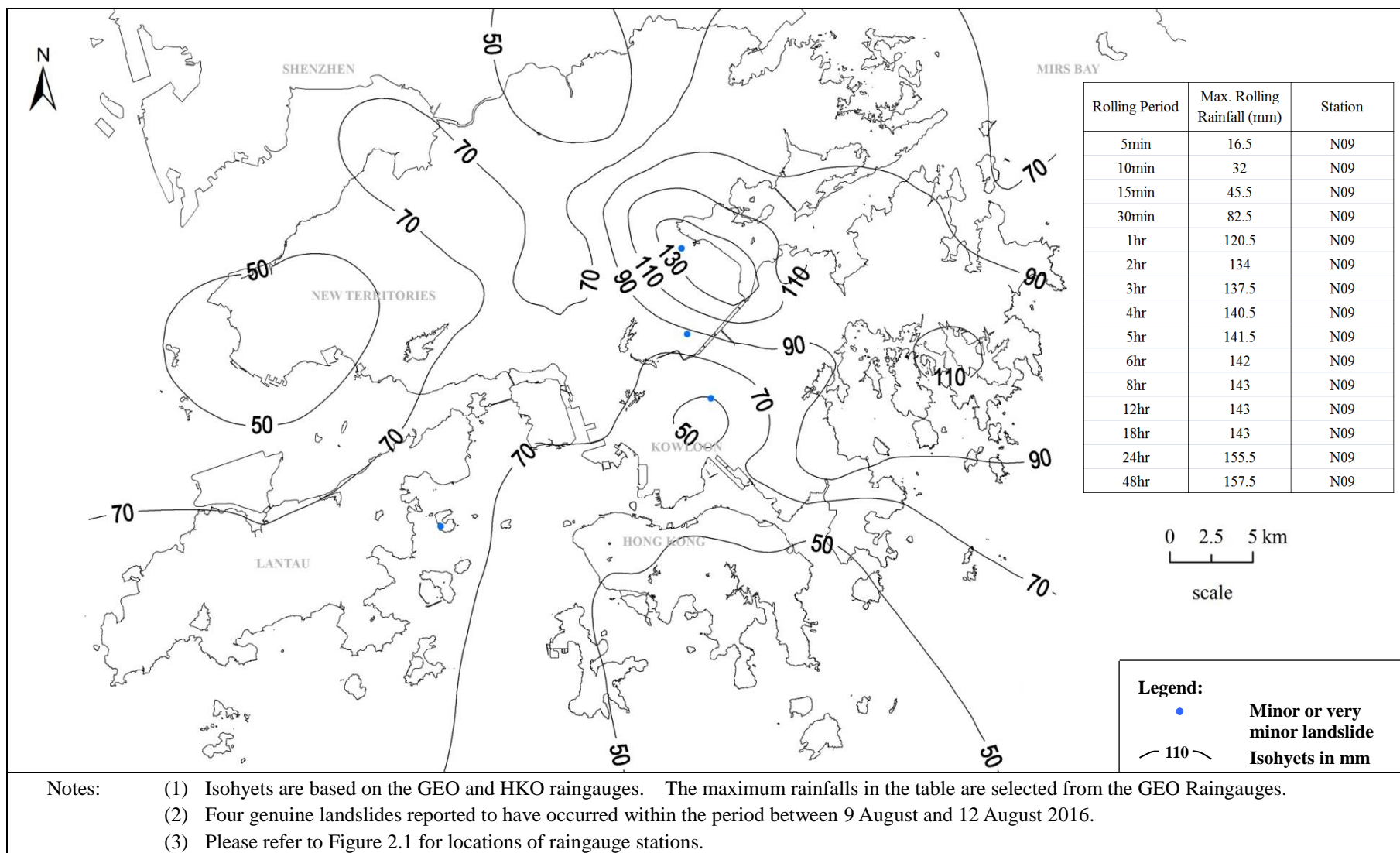


Figure A10 Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 August (00:00) and 12 August 2016 (24:00) and Locations of Landslides

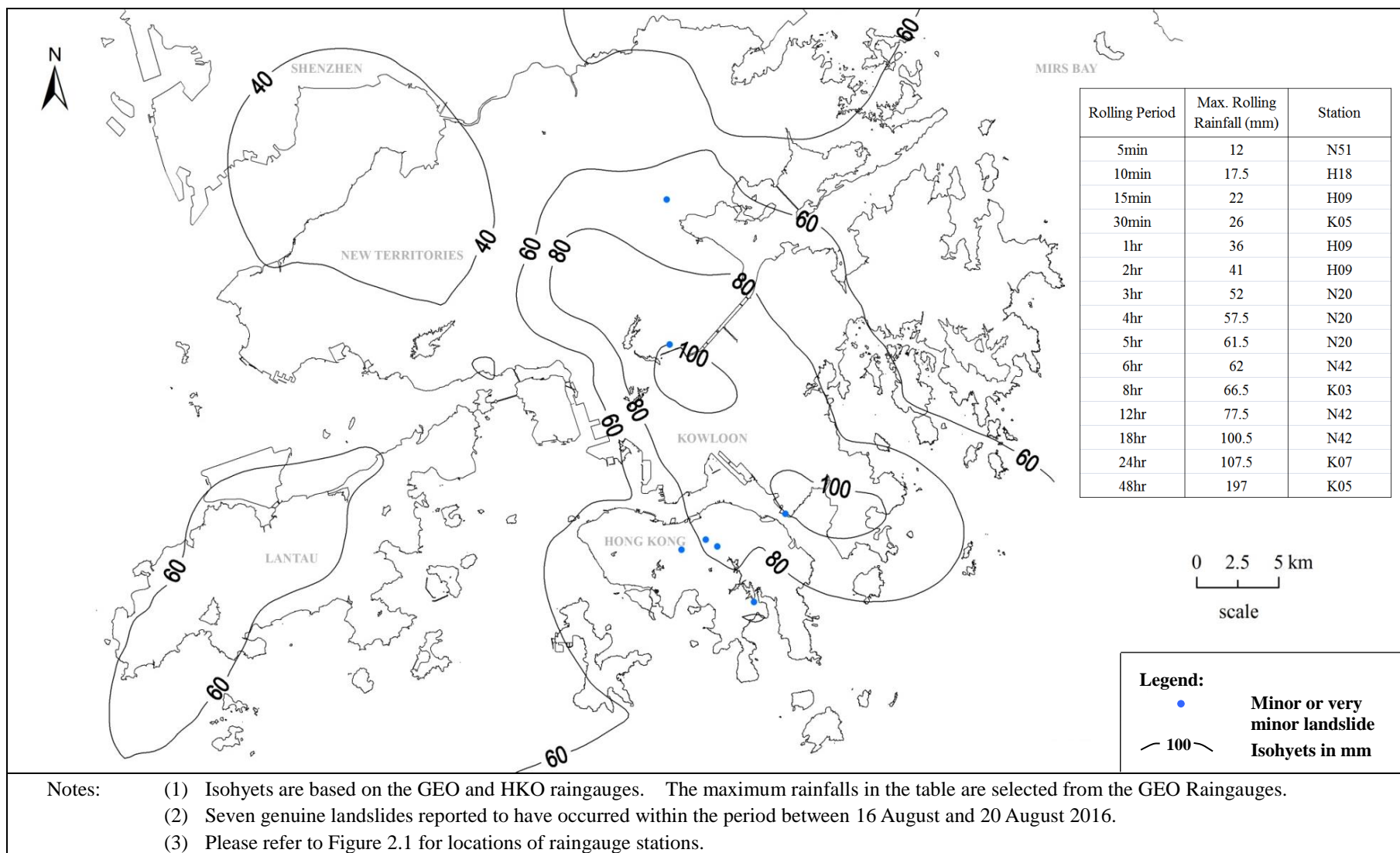


Figure A11 Maximum Rolling 24-hour Rainfall Distribution for the Period between 16 August (00:00) and 20 August 2016 (24:00) and Locations of Landslides

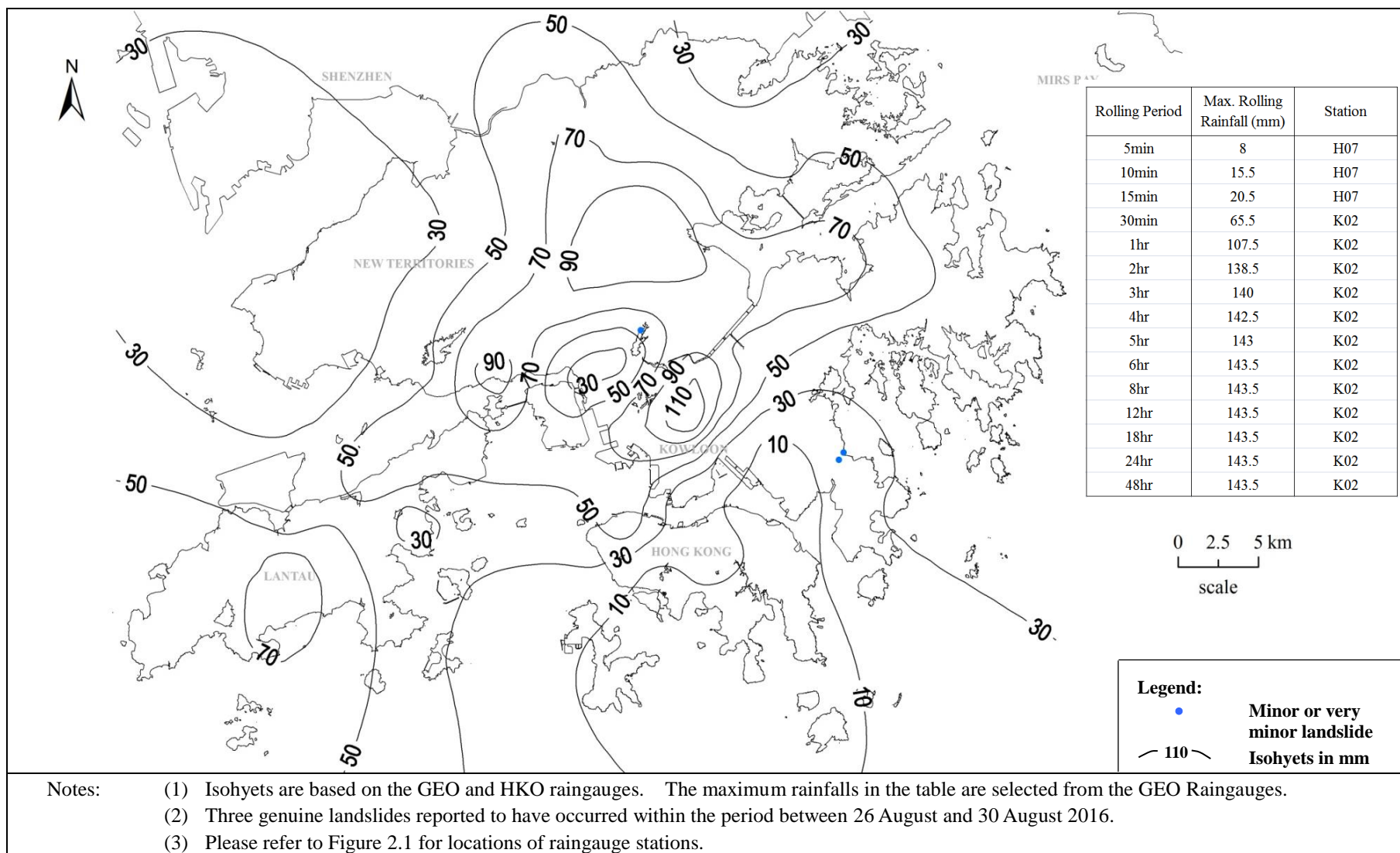


Figure A12 Maximum Rolling 24-hour Rainfall Distribution for the Period between 26 August (00:00) and 30 August 2016 (24:00) and Locations of Landslides

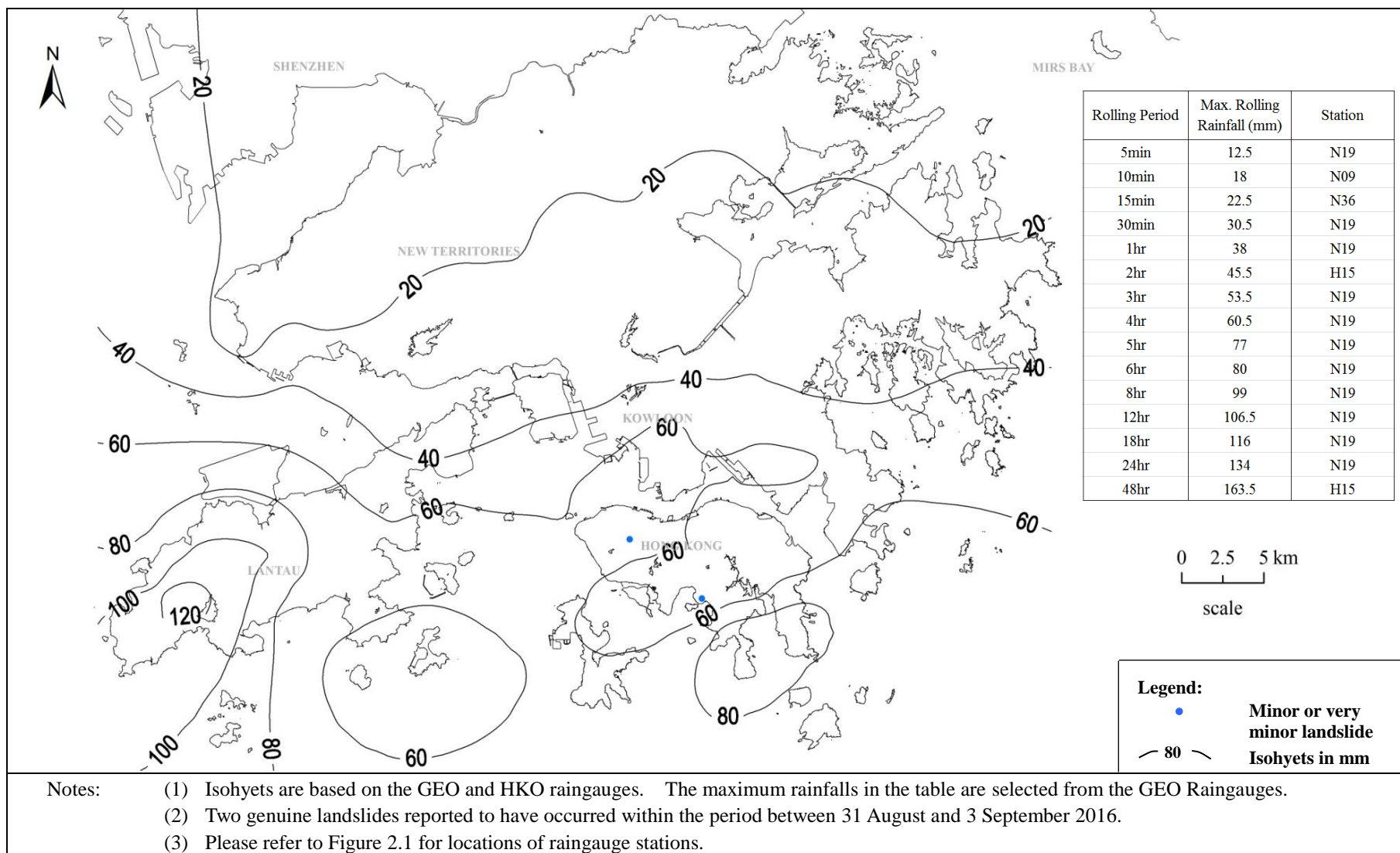


Figure A13 Maximum Rolling 24-hour Rainfall Distribution for the Period between 31 August (00:00) and 3 September 2016 (24:00) and Locations of Landslides

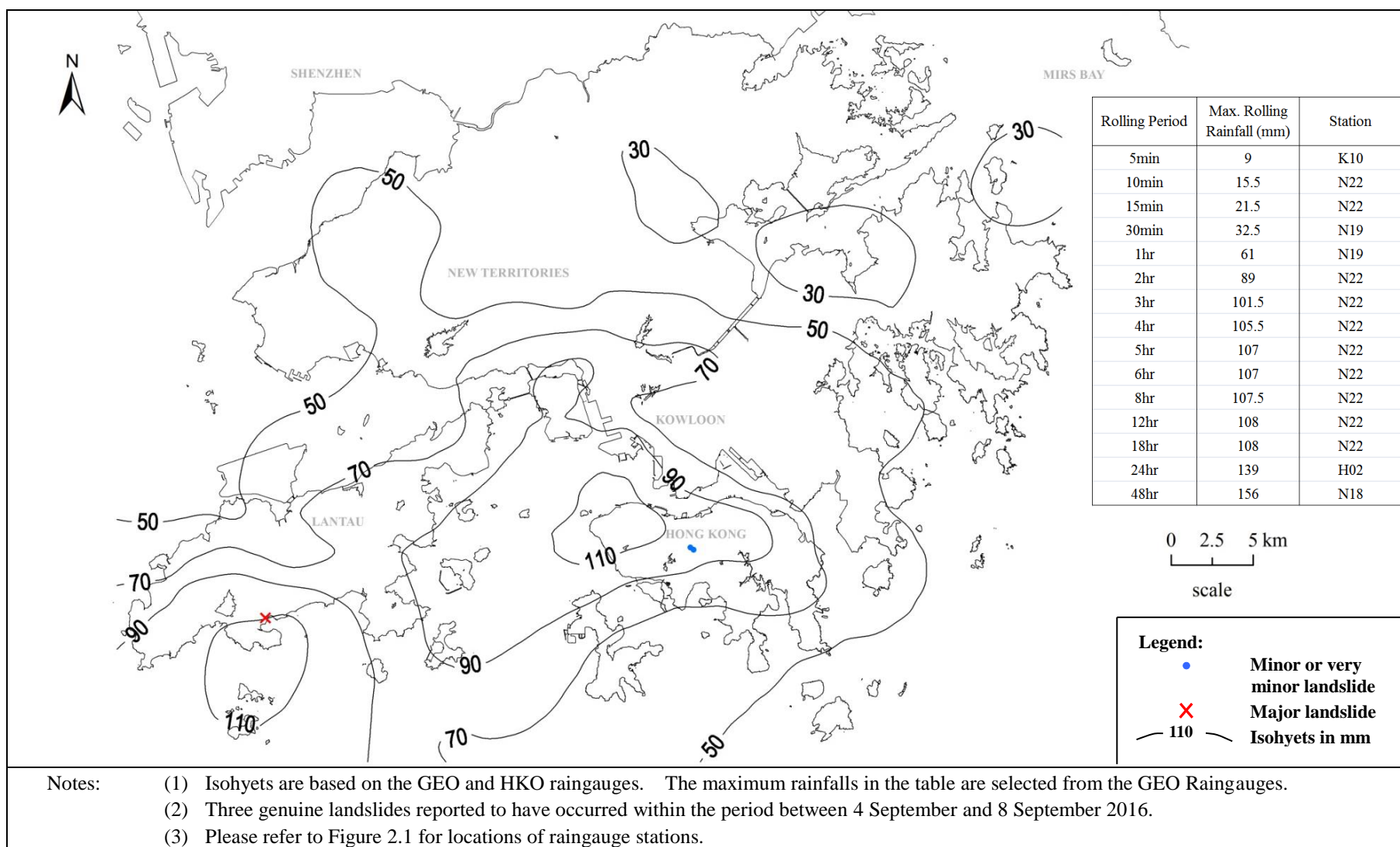


Figure A14 Maximum Rolling 24-hour Rainfall Distribution for the Period between 4 September (00:00) and 8 September 2016 (24:00) and Locations of Landslides

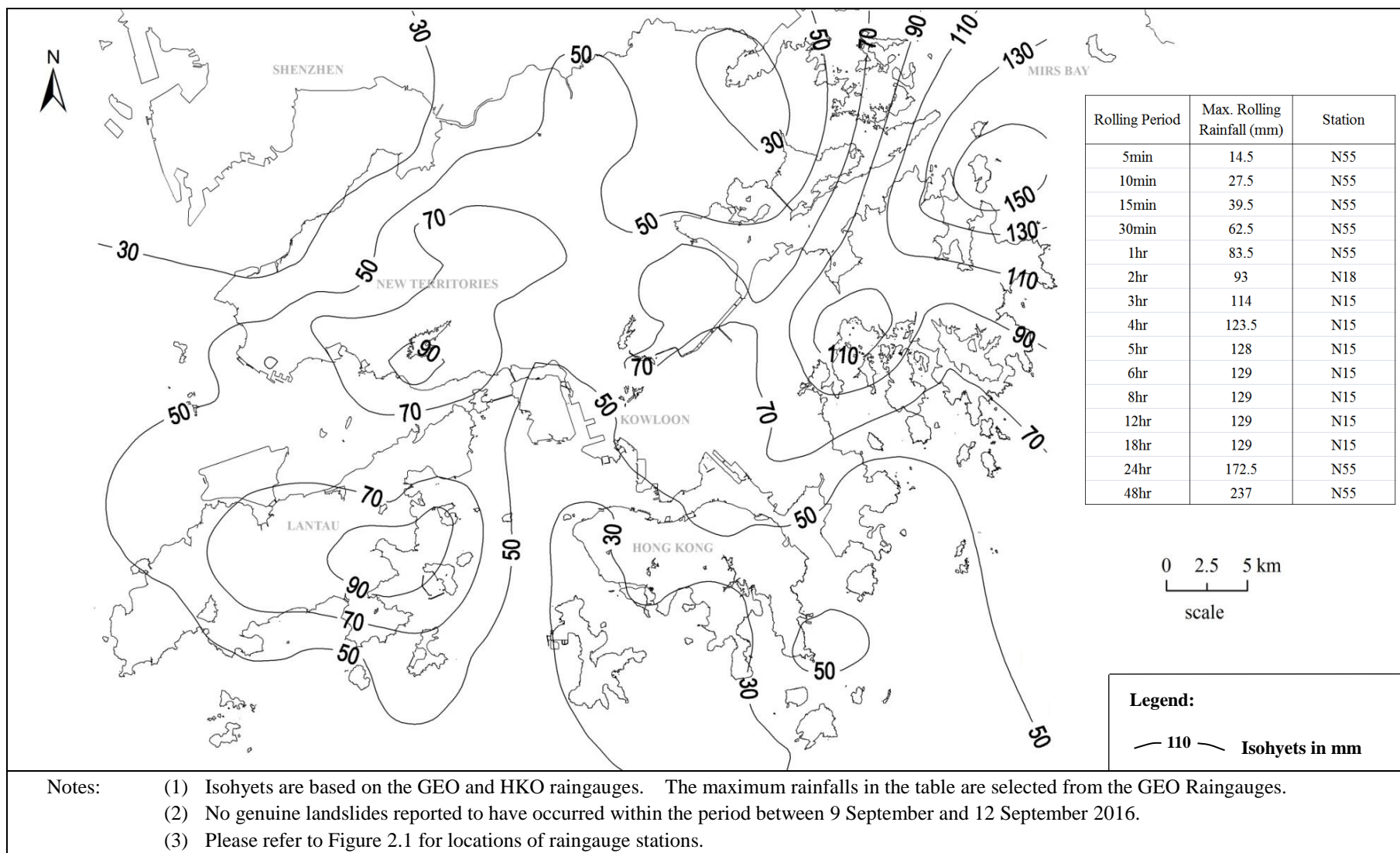


Figure A15 Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 September and 12 September 2016 (24:00) and Locations of Landslides

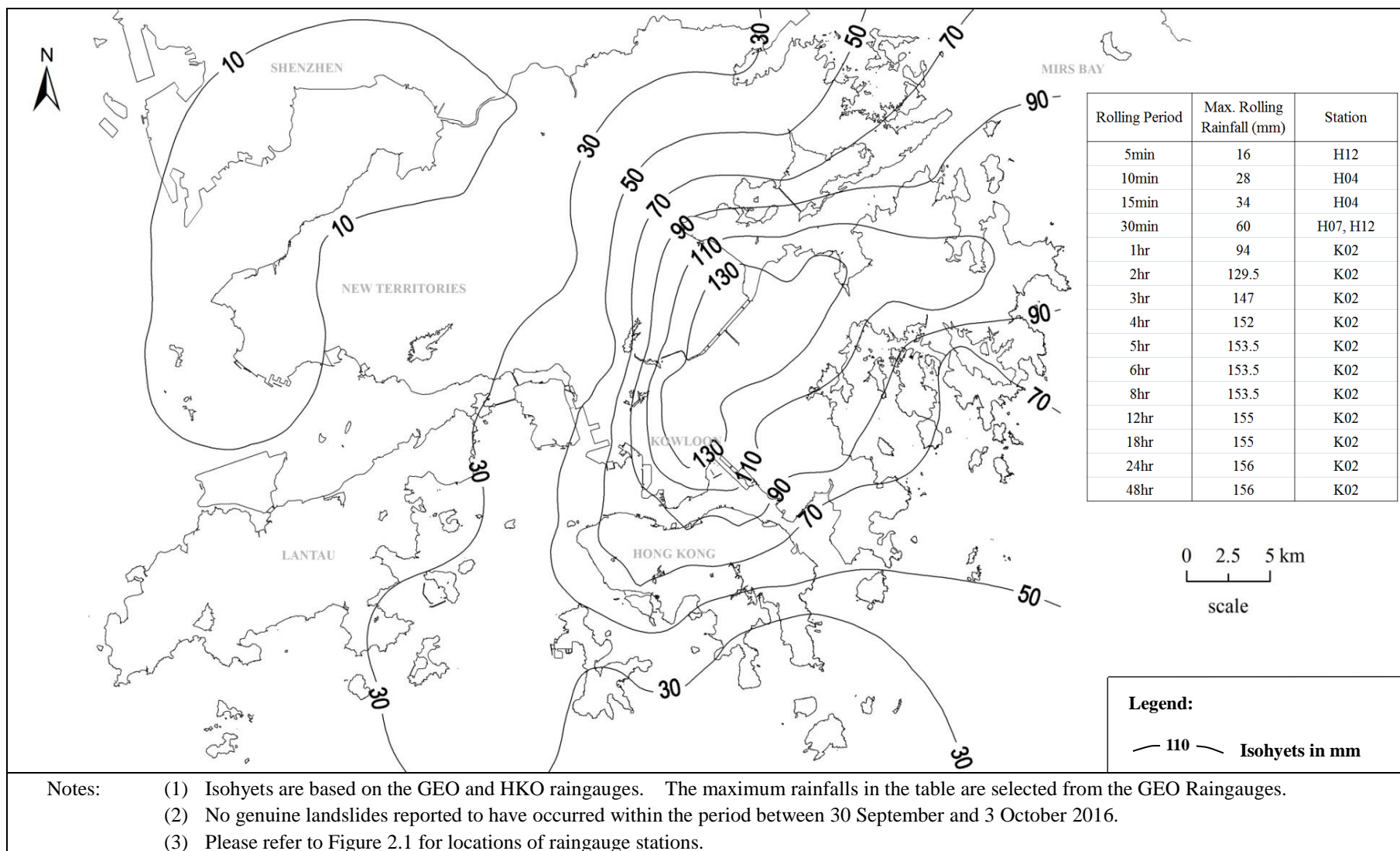


Figure A16 Maximum Rolling 24-hour Rainfall Distribution for the Period between 30 September (00:00) and 3 October 2016 (24:00) and Locations of Landslides

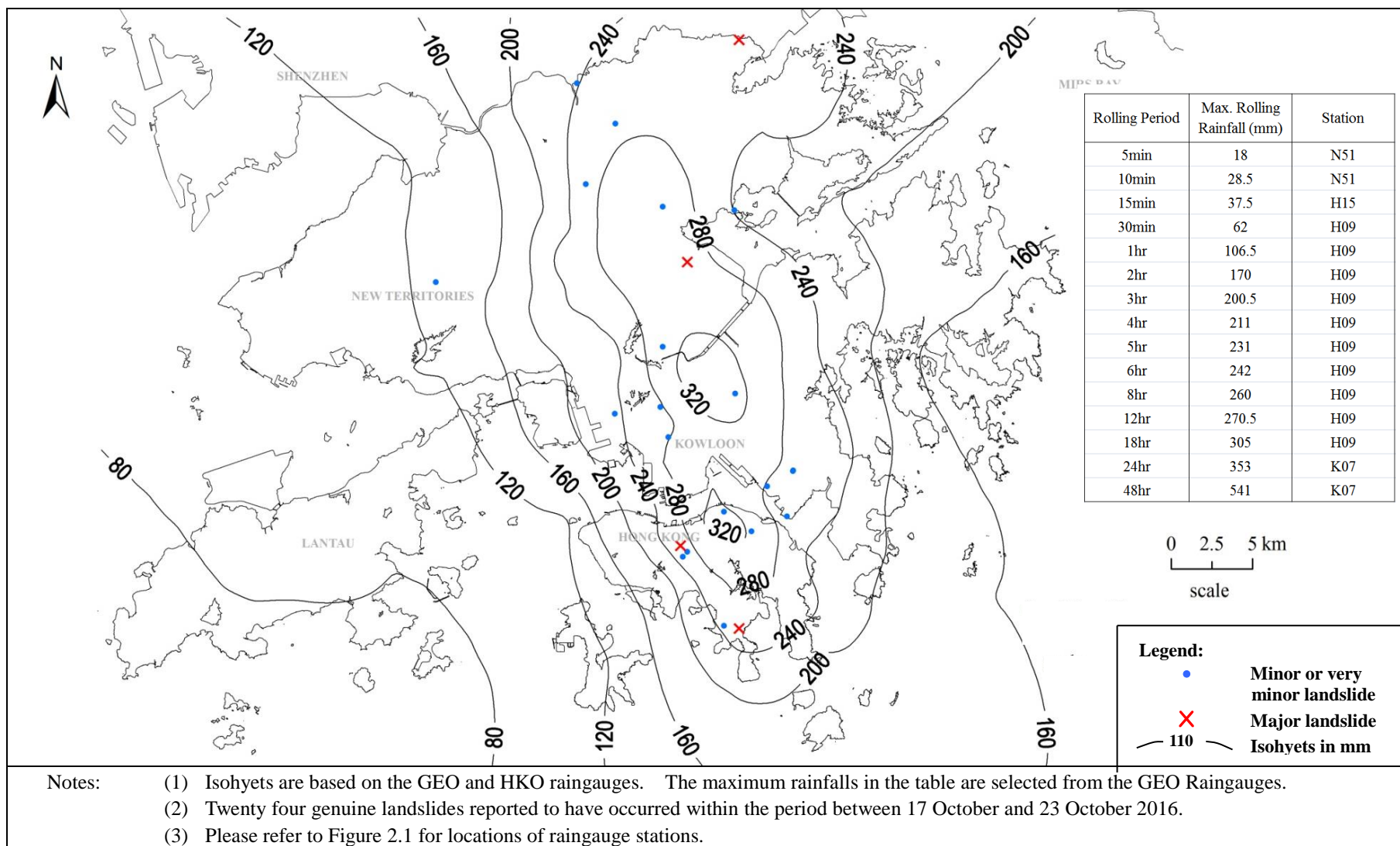


Figure A17 Maximum Rolling 24-hour Rainfall Distribution for the Period between 17 October (00:00) and 23 October 2016 (24:00) and Locations of Landslides

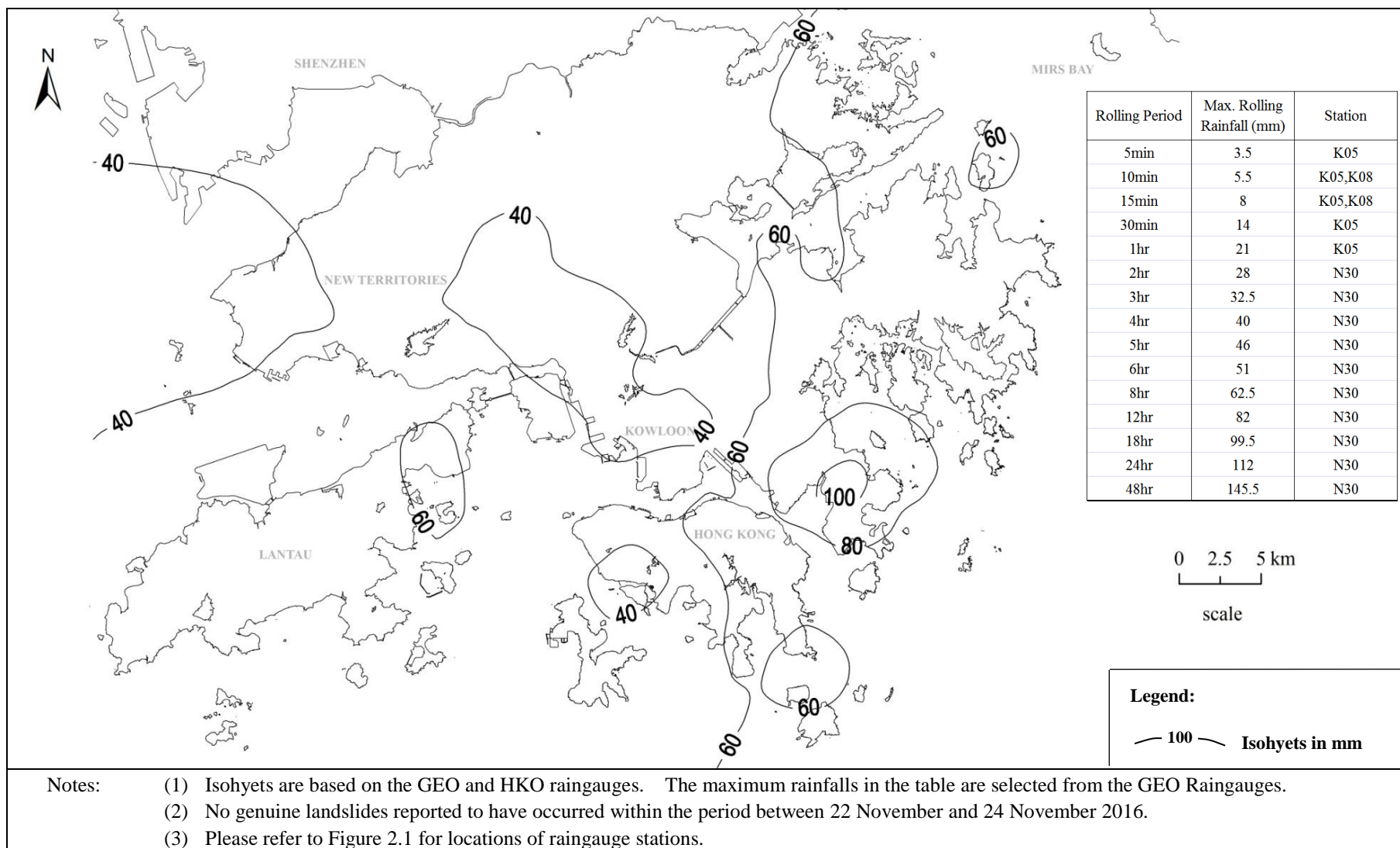


Figure A18 Maximum Rolling 24-hour Rainfall Distribution for the Period between 22 November (00:00) and 24 November 2016 (24:00) and Locations of Landslides

Appendix B

List of Landslide Incidents Reported to the Government

List of Tables

Table No.		Page No.
B1	List of Major Landslide Incidents	64
B2	List of Landslide Incidents on Hong Kong Island	67
B3	List of Landslide Incidents in Kowloon	73
B4	List of Landslide Incidents in the New Territories	75
B5	List of Landslide Incidents on Outlying Islands	93

Table B1 List of Major Landslide Incidents (Sheet 1 of 3)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Failure			Facility Affected	Consequence
			Date (Time)	Feature Type	Scale (m³)		
2016/05/1823	Above Feature No. 8SE-A/F34, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5 (08:32)	Natural hillside	2100	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed
2016/05/1824	MacLeHose Trail (Section 2), Hiking Trail Mark No. M42, Chek Keng, Tai Po	Natural hillside	21/5	Natural hillside	236	Minor footpath	MacLeHose Trail blocked
2016/05/1825	Above Feature No. 8SE-A/C52, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5 (08:52)	Natural hillside	300	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed
2016/05/1826	100 m northwest of Feature No. 8SE-A/F42, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5 (08:52)	Natural hillside	75	Other (government water supply facilities)	-
2016/05/1831	Adjacent to Feature No. 8SE-C/DT8 at the hiking trail between Sai Kung Man Yee Road and Pak A Village, Sai Kung	Natural hillside	21/5 (08:52)	Natural hillside	250	Minor footpath	Hiking trail blocked
2016/05/1837	MacLeHose Trail (Section 2), in-between Hiking Trail Mark Nos. M039 and M040, Chek Keng, Sai Kung	Natural hillside	21/5	Natural hillside	250	Minor footpath; Other (country park facilities)	MacLeHose Trail blocked
2016/07/1871	Above Feature No. 8SE-A/C94 at the footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	Natural hillside	21/5	Natural hillside	188	Minor footpath	-

Table B1 List of Major Landslide Incidents (Sheet 2 of 3)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Failure			Facility Affected	Consequence
			Date (Time)	Feature Type	Scale (m ³)		
2016/07/1873	Adjacent to Feature No. 8SE-A/C102 at the footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	Natural hillside	21/5	Natural hillside	230	Minor footpath	Minor footpath temporarily closed
2016/07/1875	Maclehose Trail (Section 2) towards Sai Wan Village, in-between Hiking Trail Mark Nos. M029 and M030, Sai Kung	Natural hillside	21/5	Natural hillside	125	Minor footpath	MacLeHose Trail blocked
2016/09/1917	South Lantau Road, Lantau	13NE-A/C78	7/9 (12:15)	Soil cut	100	Road	All two lanes of South Lantau Road temporarily closed
2016/10/1927	Adjacent to Feature No. 14NW-A/C209, Mong Tong Wan, Lantau	Natural hillside	Unknown	Natural hillside	130	Minor footpath	-
2016/10/1941	Behind Greenville Gradients, Nos. 14 to 17 Shiu Fai Terrace	Natural hillside	19/10 (16:09)	Natural hillside	65	Building	Three parked cars partially buried by landslide debris
2016/10/1944	Below Stanley Gap Road and adjacent to No. 18 Stanley Village Road	Natural hillside	19/10	Natural hillside	63	Road	One lane of Stanley Gap Road temporarily closed
2016/10/1959	Lakeview Garden, Yau On Street, Tai Wai	7SW-D/F124	Unknown	Fill	90	Minor footpath	-

Table B1 List of Major Landslide Incidents (Sheet 3 of 3)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Failure			Facility Affected	Consequence
			Date (Time)	Feature Type	Scale (m ³)		
2016/10/1966	Mang Kung Uk, Sai Kung Near Lamp Post No. VE2441	Natural hillside	Unknown	Natural hillside	83	Minor footpath	-
2016/10/1973	Lin Ma Hang Road, North	3NE-A/C140	20/10	Soil cut	240	Road	Lin Ma Hang Road (one lane road) temporarily closed
2016/10/1977	Bamboo Villa, No. 389 Tai Po Road, Sham Shui Po	11NW-A/F140	Unknown	Fill	87.5	Access road	-
2016/11/1982	Tai Tam Road Near Lamp Post No. 38767	Natural hillside	Unknown	Natural hillside	130	Road	-
2016/11/1997	Shek O Road	11SE-D/F47	Unknown	Fill	60	Road	-
2016/06/1016AF (AFCD/2016/06/0001)	Sheung Yiu Family Walk, Sai Kung East Country Park, Sai Kung	Natural hillside	24/6	Natural hillside	80	Open space	-
2016/10/1036AF (AFCD/2016/10/0001)	Opposite of Feature No. 7NW-D/C240, Tai Po Kau Track - Kau Lead Section, Tai Po Kau Nature Reserve, Tai Po	Natural hillside	18/10	Natural hillside	70	Access road	-

Note: (1) The bracket denotes the landslide number adopted by the government department concerned, other than the GEO.

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 1 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/02/1795	Lugard Road	Natural hillside	15/2	HyD	Unknown	Natural hillside	0.03 (Boulder fall)	Access road	-
2016/02/1797	St. Paul's Co-educational Primary School, Nam Fung Path, Nam Fung Road	11SW-D/FR654	19/2	Public	Unknown	Fill	25	Open space	-
2016/04/1803	No. 45 Deep Water Bay Road	11SW-D/C2296	18/3	Public	Unknown	Soil cut	0.1 (Boulder fall)	Access Road	-
2016/05/1817	Tregunter Path	11SW-D/F168	4/5	HyD	Unknown	Fill	1	Road	-
2016/06/1842	Opposite Estoril Court, Garden Road	11SW-B/FR18	1/6	HyD	31/5 (15:00)	Fill	0.6	Minor footpath	-
2016/06/1843	Wong Nai Chung Gap Road	Natural hillside	3/6	Police	Unknown	Natural hillside	0.02 (Boulder fall)	Road	-
2016/06/1845	Bowen Road	11SW-D/C2045	8/6	HyD	8/6	Soil cut	1 (Boulder fall)	Road	One lane of Bowen Road temporarily closed
2016/06/1853	Behind Tsuen Wing Lau, Lai Tak Tsuen, Tai Hang	11SE-A/CR132	12/6	Police	11/6 (23:00)	Rock cut	0.001 (Rockfall)	Other (open car park)	One car slightly damaged and carpark cordoned off
2016/06/1856	Opposite No.16 Repulse Bay Road	11SE-C/C5	13/6	HyD	6/6 (16:00)	Soil cut	0.5	Access road	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 2 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/06/1857	Above Feature No. 11SE-A/C80, King's Road	Natural hillside	17/6	Public	17/6 (06:00)	Natural hillside	0.03 (Boulder fall)	Road	One lane of King's Road temporarily closed
2016/06/1867	Behind Wah Shun Gardens, No. 898 King's Road	11SE-A/C278	29/6	Public	Unknown	Soil cut	0.2	Nil	-
2016/07/1877	Findlay Road	Natural hillside	13/7	HyD	13/7	Natural hillside	0.4 (Boulder fall)	Road	-
2016/07/1878	Adjacent to garage of No. 41 Shouson Hill Road	Natural hillside	13/7	BD	14/5	Natural hillside	0.1	Access road	-
2016/08/1883	Knightsbridge Court, No. 28 Barker Road	11SW-D/C466	2/8	HyD	2/8 (09:00)	Soil cut	7	Road	Barker Road (one lane road) temporarily closed
2016/08/1896	Opposite Tower GH of Swiss Towers, No. 113 Tai Hang Road	> 3 m high disturbed terrain	17/8	BD	17/8	Soil/rock cut	9 (Rockfall)	Building	Ceiling of a covered car park and one car damaged. The lowest three floors of Block GH of Swiss Towers temporarily evacuated
2016/08/1898	Mount Butler Road (opposite Lamp Post No. 27473)	11SE-C/CR137	17/8	Police	17/8 (09:00)	Rock cut	0.37	Road	-
2016/08/1900	Stubbs Road	11SW-D/C729	18/8	HyD	18/8 (12:30)	Soil cut	2	Pedestrian pavement	Pedestrian pavement temporarily closed
2016/08/1905	Tai Tam Road (opposite Lamp Post No. 32668)	2.5 m high cut slope	20/8	Public	20/8 (17:00)	Rock cut	0.026 (Rockfall)	Road	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 3 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/08/1906	No. 37 Park Road	11SW-A/FR141	23/8	Police	23/8 (17:15)	Fill	0.125 (Boulder fall)	Road	One lane of Park Road temporarily closed
2016/09/1910	Bellevue Drive	15NE-A/C54	1/9	Public	1/9 (09:00)	Rock cut	0.02 (Rockfall)	Road	-
2016/09/1911	No.4 Mount Austin Road	11SW-C/C877	3/9	BD	3/9 (20:30)	Soil/rock cut	2 (Boulder fall)	Building	-
2016/09/1914	Mount Nicholson Road	11SW-D/C333	6/9	HyD	6/9 (09:00)	Soil/rock cut	5.1	Road	One lane of Mount Nicholson Road temporarily closed
2016/09/1915	Black's Link	11SW-D/C1112	6/9	1823	6/9 (09:00)	Soil cut	1.05	Road	-
2016/09/1922	West of Tai Hing House, Quarry Bay	11SE-A/C180	20/9	BD	Unknown	Rock cut	1 (Boulder fall)	Minor footpath	-
2016/10/1931	Above Feature No. 11SE-D/C568, Tai Tam Road, Chai Wan	Natural hillside	17/10	HyD	13/10	Natural hillside	0.03 (Boulder fall)	Road	-
2016/10/1938	Peak Road	Natural hillside	19/10	DLO	Unknown	Natural hillside	16	Road	One lane of Peak Road temporarily closed
2016/10/1941	Behind Greenville Gradients, Nos. 14 to 17 Shiu Fai Terrace	Natural hillside	19/10	FSD	19/10 (16:09)	Natural hillside	65	Building	Three parked car buried by landslide debris

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 4 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/10/1944	Below Stanley Gap Road and adjacent to No. 18 Stanley Village Road	Natural hillside	19/10	Police	19/10	Natural hillside	63	Road	One lane of Stanley Gap Road temporarily closed
2016/10/1947	Behind Feature No. 11SE-A/CR790, Yiu Hing Road	Natural hillside	20/10	HyD	19/10 (16:45)	Natural hillside	18 (Boulder fall)	Minor footpath	-
2016/10/1948	Headland Road	15NE-A/C265	20/10	Public	19/10 (18:00)	Soil cut	6	Road	-
2016/10/1949	South of No. 6 Tung Shan Terrace, Stubbs Road	11SW-D/C430	19/10	HyD	19/10 (16:30)	Soil cut	9.2	Access road	-
2016/10/1950	Mount Nicholson Road	11SW-D/C334	20/10	HyD	19/10 (17:00)	Soil cut	0.21	Road	-
2016/10/1969	Old Peak Road (near Lamp Post No. 27569)	Natural hillside	24/10	HyD	Unknown	Natural hillside	2.6	Access road	-
2016/10/1970	South and southwest of North Point View Mansion	11SE-A/CR97	22/10	Public	19/10 (15:20)	Soil cut	12	Building	-
2016/10/1971	Between Nos. 86D and 88A Pok Fu Lam Road	Natural hillside	25/10	Public	6/10	Natural hillside	0.3	Access road	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 5 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/10/1972	Above Feature No. 11SE-A/C82 near Exit A of Quarry Bay MTRC Station	Natural hillside	24/10	Public	Unknown	Natural hillside	0.8 (Rockfall)	Access road	-
2016/11/1982	Tai Tam Road (near Lamp Post No. 38767)	Natural hillside	29/10	Police	Unknown	Natural hillside	130	Road	-
2016/11/1988	30 m east of Wilshire Towers, Po Luen Path, Braemar Hill	11SE-A/C500	24/10	Public	Unknown	Soil cut	0.1	Nil	-
2016/11/1989	South of Wiltshire Towers, No. 200 Tin Hau Temple Road	11SE-A/FR197	24/10	Public	Unknown	Fill	2.4	Nil	-
2016/11/1990	Above Feature No. 11SW-C/C212, Mount Davis Road	Natural hillside	8/11	HyD	30/10	Natural hillside	0.002 (Boulder fall)	Road	-
2016/11/1993	Sir Cecil's Ride, Mount Bulter	11SE-A/C478	16/11	LandsD	Unknown	Soil cut	3	Minor footpath	-
2016/11/1994	Sir Cecil's Ride, Mount Bulter	11SE-A/C481	25/10	LandsD	Unknown	Soil cut	6	Minor footpath	-
2016/11/1997	Shek O Road	11SE-D/F47	28/11	HyD	Unknown	Fill	60	Road	-
2016/01/1002AD (ArchSD/HK/2016/01/0002)	Next to the barbecue area at Chung Hum Kok Beach, Stanley	Natural hillside	14/1	LCSD	Unknown	Natural hillside	0.03 (Boulder fall)	Other (barbecue area)	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 6 of 6)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/03/1006WS (WSD/2016/03/01/HKI)	Opposite of Chai Wan Baptist Church, Fei Tsui Road, Chai Wan	11SE-D/FR175	22/3	WSD	Unknown	Fill	3.5	Nil	-
2016/09/1033WS (WSD/2016/09/1/HKI)	West of junction of Old Peak Road and Tregunter Path	11SW-A/C1215	13/9	WSD	Unknown	Soil cut	0.2 (Rockfall)	Minor footpath	-
2016/10/1037WS (WSD/2016/10/1/HKI)	Tai Tam Reservoir Road	15NE-A/C759	18/10	WSD	Unknown	Soil cut	0.2	Nil	-
2016/10/1040WS (WSD/2016/10/5/HKI)	Tsz La Lan Shan Path, Wong Nai Chung Reservoir Park	11SE-C/C845	20/10	WSD	Unknown	Soil/rock cut	4.8	Catchwater	-
2016/11/1045WS (WSD/2016/11/1/HKI)	Adjoining catchwater to the south of IL Lot 7713	11SE-D/CR617	4/11	WSD	Unknown	Soil cut	0.4	Catchwater	-
2016/11/1046WS (WSD/2016/11/2/HKI)	Mount Parker Road (southeast of Tai Tam Upper Reservoir)	11SE-C/C684	4/11	WSD	Unknown	Soil/rock cut	12	Nil	-
2016/11/1048WS (WSD/2016/11/4/HKI)	Adjoining catchwater to the south of IL Lot 7713	11SE-D/CR616	4/11	WSD	Unknown	Soil/rock cut	0.3	Catchwater	-

Note: (1) The bracket denotes the landslide number adopted by the government department concerned, other than the GEO.

Table B3 List of Landslide Incidents in Kowloon (Sheet 1 of 2)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/03/1798	Adjacent to Shell Petrol Station, Tai Po Road, Sham Shui Po	11NW-B/C947	21/3	FSD	Unknown	Soil/rock cut	0.008 (Rockfall)	Nil	-
2016/05/1818	Above Feature No. 11NE-A/CR158, Kingsford Terrace, Fung Shing Street, Wong Tai Sin	Natural hillside	6/5	HAD	Unknown	Natural hillside	0.125 (Boulder fall)	Nil	-
2016/06/1858	Adjacent to Block 6 of Tsui Chuk Garden, Lion Rock Park, Wong Tai Sin	Natural hillside	20/6	Public	Unknown	Natural hillside	0.36	Minor footpath	Minor footpath undermined
2016/07/1880	Above Feature No. 11NE-A/CR158, Kingsford Terrace, Fung Shing Street, Wong Tai Sin	Natural hillside	14/7	Public	Unknown	Natural hillside	0.125 (Boulder fall)	Other (fencing)	-
2016/08/1894	Above Feature No. 11NE-A/C301, Shatin Pass Road, Wong Tai Sin	Natural hillside	11/8	Police	11/8	Natural hillside	0.25 (Boulder fall)	Road	A section of the handrailing damaged
2016/08/1895	Shatin Pass Road, Wong Tai Sin	11NE-A/C284	16/8	HyD	Unknown	Rock cut	0.7	Road	Shatin Pass Road (one lane road) temporarily closed
2016/08/1904	Ma Wan Village, Lei Yue Mun	11SE-B/DT6	20/8	LandsD	20/8	Disturbed terrain	1.2 (Rockfall)	Minor footpath; Other (country park facilities)	Wilson Trail blocked

Table B3 List of Landslide Incidents in Kowloon (Sheet 2 of 2)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/09/1909	No. 488 Tai Po Road, Sham Shui Po	> 3 m high disturbed terrain	22/8	Public	Unknown	Soil cut	0.04 (Rockfall)	Pedestrian pavement	-
2016/10/1936	Wo Chai Street, Sham Shui Po	11NW-B/C39	19/10	Police	19/10 (16:00)	Rock cut	0.5	Pedestrian pavement	-
2016/10/1943	Rhenish Church Pang Hok Ko Memorial College next to Kowloon Park, Kowloon Tong	Natural hillside	19/10	Police	Unknown	Natural hillside	10	Open space	-
2016/10/1945	Jat's Incline, Wong Tai Sin	11NE-A/C414	19/10	HyD	Unknown	Soil cut	30	Road	Jat's Incline (one lane road) temporarily closed
2016/10/1974	East of Cha Kwo Ling Village, 110 m east of Wing Fook Street, Kwun Tong	11NE-D/C499	25/10	HyD	19/10 (20:00)	Soil/rock cut	39.3	Open space	-
2016/10/1976	Behind House No. 84 Ma Pui Tsuen, Lei Yue Mun	11SE-B/C238	25/10	LandsD	19/10 (21:00)	Soil cut	2.42	Registered squatter dwelling	-
2016/10/1977	Bamboo Villa, No. 389 Tai Po Road, Sham Shui Po	11NW-A/F140	22/10	Public	Unknown	Fill	87.5	Access road	-
2016/12/1998	Above Hip Wo Street opposite Sau Mau Ping Police Station, Kwun Tong	11NE-C/C142	9/12	LandsD	8/12	Soil cut	38	Minor footpath	-
2016/06/1017HY (HyD/K/2016/06/0004)	Shatin Pass Road, Wong Tai Sin	11NE-A/C284	21/6	HyD	14/6	Rock cut	0.5 (Rockfall)	Road	-

Note: (1) The bracket denotes the landslide number adopted by the government department concerned, other than the GEO.

Table B4 List of Landslide Incidents in the New Territories (Sheet 1 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/01/1789	Tsing Yi Road, Tsing Yi	10NE-B/C267	11/1	Police	11/1 (00:01)	Rock cut	0.3 (Rockfall)	Road	One lane of Tsing Yi Road temporarily closed
2016/01/1791	Adjoining Feature No. 11NW-A/F63, No. 77 Lai Cho Road, Kwai Tsing	2.5 m high fill slope	21/1	Public	Unknown	Fill	3	Other (temporary bicycle holding area)	-
2016/01/1793	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C86	20/1	LandsD	15/1	Soil cut	5	Minor footpath	-
2016/02/1794	DD 114 Lot 1634 s.B, Pat Heung, Yuen Long (near Lamp Post No. VD 3966)	2 m high retaining wall	29/1	Public	29/1 (09:00)	Retaining wall	3	Minor footpath	-
2016/02/1796	Po Lam Road North, Tseung Kwan O	12NW-C/C210	17/2	HyD	5/2 (13:42)	Soil/rock cut	0.1 (Rockfall)	Minor footpath	-
2016/03/1799	Behind House Nos. 84 & 85, Heng Mei Deng Village, Sai Kung	Natural hillside	22/3	DLO	Unknown	Natural hillside	1	Other (alleyway)	-
2016/04/1800	Hiking trail between Tseung Kwan O Village and Clear Water Bay Road, Tseung Kwan O	1.3 m high cut slope	30/3	DLO	Unknown	Soil cut	2	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 2 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/04/1801	Near House No. 87, Fu Tei Sheung Tsuen, Tuen Mun	6SW-A/CR377	18/3	DLO	Unknown	Masonry wall	1	Others (alleyway)	-
2016/04/1802	Ma Kam Street, Ma On Shan	7NE-D/C93	7/4	BD	Unknown	Soil cut	6	Road	-
2016/04/1805	East of Feature No. 7SW-D/C1027, Kak Tin Street, Tai Wai	Natural hillside	16/4	HyD	Unknown	Natural hillside	2	Nil	-
2016/04/1806	Fei Ngo Shan Road, Sai Kung	7SE-C/C588	17/4	HyD	Unknown	Soil/rock cut	1	Road	-
2016/04/1807	East of No. 13 To Shek Village, Shatin	7SE-C/C199	14/4	Public	Unknown	Soil cut	0.16	Minor footpath	-
2016/04/1808	Adjacent to Feature No. 12NW-A/CR59 at the footpath linking HKUST and Natures Harvest Organic Farm and Leisure Getaway, Sai Kung	< 3 m high cut slope	19/4	Police	18/4	Soil cut	0.26	Minor footpath	-
2016/04/1809	West of No. 121 Pau Tau Village, Shatin	2.5 m high cut slope	19/4	Public	Unknown	Soil cut	2.6	Minor footpath	-
2016/04/1810	Mang Kung Wo Road, Sai Kung (near Lamp Post No. V2184)	1.2 m high retaining wall	13/4	DO	Unknown	Retaining wall	1.5	Road	-
2016/04/1811	Behind House No. 135 Tai Po Tau, Tai Po	Natural hillside	12/4	Public	12/4 (00:00)	Natural hillside	1.05	Nil	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 3 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/04/1812	Shatin Pass Road, Wong Tai Sin	7SE-C/C410	25/4	TD	25/4 (09:00)	Rock cut	0.25 (Rockfall)	Road	Shatin Pass Road (one lane road) temporarily closed
2016/04/1813	Wilson Trail (Section 10), adjacent to Hiking Trail Mark No. W136, Nam Chung, Sha Tau Kok	< 3 m high cut slope	19/4	Public	Unknown	Soil cut	0.06	Road	-
2016/05/1819	Behind House No. 29 Pei Tau, Sai Kung	11NE-B/C834	11/5	DLO	10/5 (14:00)	Soil cut	7.2	Village house	-
2016/05/1820	Kiu Tau Village, Wo Yi Hop Lane, Tusen Wan	9 m high fill slope	11/5	Public	11/5 (02:00)	Fill	20	Minor footpath	-
2016/05/1822	Sai Kung Sai Wan Road, Sai Kung	8SE-A/C76	21/5	FSD	21/5 (08:32)	Soil cut	31	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed
2016/05/1823	Above Feature No. 8SE-A/F34, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5	FSD	21/5 (08:32)	Natural hillside	2100	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed
2016/05/1824	MacLeHose Trail (Section 2), Hiking Trail Mark No. M42, Chek Keng, Tai Po	Natural hillside	21/5	FSD	21/5	Natural hillside	236	Minor footpath	MacLeHose Trail blocked
2016/05/1825	Above Feature No. 8SE-A/C52, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5	FSD	21/5 (08:52)	Natural hillside	300	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 4 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/05/1826	100 m northwest of Feature No. 8SE-A/F42, Sai Kung Sai Wan Road, Sai Kung	Natural hillside	21/5	FSD	21/5 (08:52)	Natural hillside	75	Other (government water supply facilities)	-
2016/05/1827	Sai Kung Sai Wan Road, Sai Kung	8SE-A/C61	21/5	FSD	21/5 (08:52)	Soil/rock cut	0.06	Road	-
2016/05/1828	Below Sai Wan Pavilion, Sai Kung Sai Wan Road, Sai Kung	2 m high cut slope	21/5	FSD	21/5 (08:52)	Soil cut	0.016	Road	-
2016/05/1829	Sai Kung Sai Wan Road, Sai Kung	8SE-A/C68	21/5	FSD	21/5 (08:52)	Soil cut	47	Road	Sai Kung Sai Wan Road (one lane road) temporarily closed
2016/05/1830	Opposite to Feature No. 8SE-A/F79, High Island Reservoir, Sai Kung	Natural hillside	21/5	FSD	21/5 (08:52)	Natural hillside	2	Other (government water supply facilities)	-
2016/05/1831	Adjacent to Feature No. 8SE-C/DT8 at the hiking trail between Sai Kung Man Yee Road and Pak A Village, Sai Kung	Natural hillside	21/5	Police	21/5 (08:52)	Natural hillside	250	Minor footpath	Minor footpath temporarily closed
2016/05/1832	Sai Kung Man Yee Road, Sai Kung	8SE-C/C88	22/5	Police	21/5 (08:52)	Soil/rock cut	0.9	Open space	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 5 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/05/1833	Sai Kung Man Yee Road, Sai Kung	8SE-C/C70	22/5	Police	21/5 (08:52)	Soil cut	1.4	Pedestrian pavement	-
2016/05/1834	Behind House No. 34 Sung Shan San Tsuen, Yuen Long	2 m high retaining wall	23/5	LandsD	21/5	Masonry wall	1.7	Open space	-
2016/05/1835	Nam Hang Pai, Yuen Long	3.4 m high cut slope	22/5	HyD	21/5	Soil cut	0.5	Minor footpath	-
2016/05/1836	MacLeHose Trail (Section 2), Chek Keng, Sai Kung	8NE-C/C51	23/5	AFCD	21/5 (00:00)	Soil cut	20.4	Other (country park facility)	-
2016/05/1837	MacLeHose Trail (Section 2), in-between Hiking Trail Mark Nos. M039 and M040, Chek Keng, Sai Kung	Natural hillside	24/5	GEO	21/5	Natural hillside	250	Minor footpath, Other (country park facilities)	MacLeHose Trail blocked
2016/05/1838	Hang Hau Wing Lung Road, Sai Kung	12NW-C/C298	30/5	DLO	21/5 (08:52)	Soil cut	10	Road	-
2016/05/1839	Near No. 33 Hang Hau Wing Lung Road, Sai Kung	2 m high cut slope	30/5	DLO	21/5 (08:52)	Soil cut	1.1	Road	-
2016/05/1840	Hang Hau Wing Lung Road, Sai Kung	12NW-C/C297	30/5	DLO	21/5 (08:52)	Soil cut	3.1	Road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 6 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/06/1841	15 m southwest of House No. 33 Chuk Hang, Tai Po	2.4 m high cut slope	27/5	LandsD	21/5 (00:00)	Soil cut	0.06	Other (alleyway)	-
2016/06/1846	Adjacent to Feature No. 2NE-D/C64, Shun Yee Sun Tsuen, Ma Tso Lung, North	3 m high fill slope	8/6	LandsD	7/6	Fill	2	Open space	-
2016/06/1847	7 m northwest of Feature No. 6SW-A/C376, behind House No. 81 Tseng Tau Sheung Tsuen, Tuen Mun	< 3 m high cut slope	8/6	Public	Unknown	Soil cut	0.026	Registered squatter dwelling	-
2016/06/1848	Tsuen Wan West Lower Level Fresh Water Service Reservoir, Tsuen Wan	6SE-B/CR72	10/6	Public	Unknown	Soil/rock cut	35	Open space	-
2016/06/1849	Kau Wah Keng San Tsuen, Kwai Chung	11NW-A/CR791	10/6	Public	10/6 (18:00)	Soil cut	0.2	Open space	-
2016/06/1850	No. 19 Fei Ngo Shan Road, Sai Kung	11NE-B/C789	11/6	Police	11/6 (09:30)	Soil/rock cut	25	Road	Fei Ngo Shan Road (one lane road) temporarily closed
2016/06/1854	Tai Po Tsai Upper Village, Clear Water Bay Road, Sai Kung	11NE-B/F205	13/6	HyD	Unknown	Fill	0.05	Access road	-
2016/06/1855	Above access road at Tai Lung, North (near Feature No. 3SW-C/C280)	Natural hillside	27/5	LandsD	Unknown	Natural hillside	0.5	Access road	Access road partially undermined

Table B4 List of Landslide Incidents in the New Territories (Sheet 7 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/06/1859	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C54	1/6	DO	21/5	Soil cut	1.5	Minor footpath	Minor footpath temporarily closed
2016/06/1860	Fung Kat Heung, Yuen Long	6NE-A/C26	13/6	LandsD	Unknown	Soil cut	1	Registered squatter dwelling	-
2016/06/1861	House No. 5 Hung Fa Tsuen, Sai Kung	1.5 m high cut slope	6/6	DO	Unknown	Soil cut	0.8	Registered squatter dwelling	-
2016/06/1862	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C86	1/6	DO	21/5	Soil cut	5	Nil	-
2016/06/1863	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C89	1/6	DO	21/5	Soil/rock cut	6.5	Minor footpath	Minor footpath temporarily closed
2016/06/1864	MacLeHose Trail (Section 2), Tai Long Au, Sai Kung	8NE-C/C48	16/6	HAD	21/5	Soil cut	1.57	Other (country park facility)	-
2016/06/1865	MacLeHose Trail (Section 2), Tai Long Au, Sai Kung	8NE-C/C49	16/6	HAD	21/5	Soil cut	0.63	Minor footpath	-
2016/06/1866	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung (near Feature No. 8SE-A/C94)	Natural hillside	1/6	DO	21/5	Natural hillside	3	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 8 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/07/1870	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C94	1/6	DO	21/5	Soil/rock cut	3.5	Minor footpath	Minor footpath temporarily closed
2016/07/1871	Above Feature No. 8SE-A/C94 at footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	Natural hillside	1/6	DO	21/5	Natural hillside	188	Minor footpath	-
2016/07/1872	Above Feature No. 8SE-A/C95 at footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	Natural hillside	1/6	DO	21/5	Natural hillside	2.5	Other (country park facility)	-
2016/07/1873	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung (near Feature No. 8SE-A/C102)	Natural hillside	1/6	DO	21/5	Natural hillside	230	Minor footpath	Minor footpath temporarily closed
2016/07/1874	Footpath leading from Sai Kung Sai Wan Road to Sai Wan Village, Sai Kung	8SE-A/C102	1/6	DO	21/5	Soil cut	18	Minor footpath	Minor footpath temporarily closed
2016/07/1875	MacLehose Trail (Section 2) towards Sai Wan Village, in-between Hiking Trail Mark Nos. M029 and M030, Sai Kung	Natural hillside	1/6	DO	21/5	Natural hillside	125	Minor footpath	MacLeHose Trail blocked
2016/07/1879	Leung Fai Tin, Clear Water Bay Road, Sai Kung	< 5 m high fill slope	14/7	HyD	11/7 (16:24)	Fill	20	Road	One lane of Clear Water Bay Road temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 9 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/07/1881	Adjacent to Feature No. 11NE-B/C969, Man Wo, Sai Kung	< 3 m high cut slope	6/6	DO	Unknown	Soil cut	0.3	Access road	-
2016/08/1885	Footpath linking HKUST and Natures Harvest Organic Farm and Leisure Getaway, Sai Kung	1.5 m high cut slope	2/8	HyD	2/8	Soil cut	0.21	Minor footpath	Minor footpath temporarily closed
2016/08/1886	Northwest of No. 305A Pai Tau Village, Shatin	7SW-D/FR202	4/8	Police	4/8	Retaining wall	10	Registered squatter dwelling	-
2016/08/1888	Kau To Village, Fo Tan	Natural hillside	5/8	Public	Unknown	Natural hillside	2	Minor footpath	-
2016/08/1891	Tai Po Road near Hung Lam Drive, Tai Po Kau	7NW-D/C178	10/8	HyD	10/8 (10:00)	Soil cut	40	Road	All two lanes of Tai Po Road temporarily closed
2016/08/1892	Rural footpath near Savanna Garden, Tai Po Kau	Natural hillside	10/8	Public	10/8 (09:00)	Natural hillside	0.5	Minor footpath	Minor footpath temporarily closed
2016/08/1899	Behind House No. 92 Tseng Tau Chung Tsuen, Tuen Mun	1 m high cut slope	16/8	Public	Unknown	Soil cut	0.05	Other (alleyway)	-
2016/08/1901	House No. 90 Pak Tin Village, Tai Wai	7SW-D/DT41	18/8	Public	18/8 (08:15)	Disturbed terrain	5	Minor footpath	Minor footpath temporarily closed
2016/08/1903	Nam On Temple, Lam Tei, Tuen Mun	6NW-C/C219	19/8	LandsD	Unknown	Soil cut	0.4	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 10 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/08/1907	Behind L' Utopie, Tai Po Kau, Tai Po	1.5 m high cut slope	19/8	Public	Unknown	Soil cut	3	Other (on verge)	-
2016/08/1908	Near House No. 93 Che Keng Tuk, Sai Kung	4 m high cut slope	19/8	DLO	2/8	Soil cut	0.5	Village house	-
2016/09/1912	East of Feature No. 7NW-B/C699, Shek Kwu Lung, Tai Po	Natural hillside	26/8	Public	Unknown	Natural hillside	5	Minor footpath	Minor footpath partially undermined
2016/09/1913	Tit Mei Tsai, Tai Po	7NW-B/C702	25/8	BD	20/8 (00:00)	Soil cut	4.71	Nil	-
2016/09/1916	Tai Po road - Shatin Height, Tsing Sha Highways, Shatin	7SW-D/C274	2/9	HyD	Unknown	Rock cut	0.04 (Rockfall)	Road	-
2016/09/1918	Below watchman's accommodation of Silverstrand Garden, Silverstrand Beach, Clear Water Bay Road, Sai Kung	Natural hillside	1/9	Public	26/8 (21:00)	Natural hillside	35	Nil	-
2016/09/1919	65 m southwest of St. Vincent's Church, Hang Hau Road, Sai Kung	Natural hillside	1/9	DLO	30/8 (16:35)	Natural hillside	16.8	Minor footpath	-
2016/09/1920	Near House No. 207 Fuk Hang Tsuen, Tuen Mun	3.1 m high retaining wall	29/8	DLO	Unknown	Masonry wall	1.3	Open space	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 11 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/09/1921	Liu Pok Road, Fanling	2NE-D/C47	9/9	HyD	Unknown	Soil cut	0.2	Road	-
2016/09/1923	Cheung Shue Tan Road, Tai Po	7NE-C/C115	13/9	BD	Unknown	Soil cut	4	Open space	-
2016/09/1924	Cheung Shue Tan Road, Tai Po	7NE-C/C115	13/9	BD	Unknown	Soil cut	0.7	Open space	-
2016/10/1926	Pak Tam Road, Sai Kung	8NW-D/C9	4/10	Public	4/10	Soil/rock cut	0.15 (Rockfall)	Pedestrian pavement	Pedestrian pavement temporarily closed
2016/10/1930	Nos. 8 to 9 Chung Shan Terrace, Kwai Chung	< 3 m high retaining wall	18/10	BD	18/10	Masonry wall	10	Access road	Access road temporarily closed
2016/10/1932	Nam Hang Pai, Tai Tong Road, Shap Pat Heung, Yuen Long (west of Lamp Post No. VA3235)	2.5 m high retaining wall	18/10	FSD	18/10 (13:00)	Masonry wall	1.6	Open space	-
2016/10/1933	House No. 218 Sha Lan Villas, Tai Po	7NE-A/C28	19/10	Police	19/10 (11:49)	Soil cut	3.3	Access road	Access road temporarily closed
2016/10/1934	East of Lamp Post No. VE4496, Kam Shan, Tai Po	< 2 m high cut slope	19/10	Public	Unknown	Soil cut	0.3	Minor footpath	-
2016/10/1935	Man Uk Pin Village, Sha Tau Kok Road, Wo Hang	3NW-D/C38	19/10	FSD	Unknown	Soil cut	5.8	Access road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 12 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/10/1942	Pak Tin Tsuen, Lower Shing Mun Reservoir Road, Shatin	7SW-D/C756	19/10	FSD	19/10 (16:25)	Soil cut	38	Access road	Access road temporarily closed
2016/10/1951	No. 8 Lok Lo Ha Village, Fo Tan	7SE-A/R42	20/10	BD	Unknown	Masonry wall	4	Village house	-
2016/10/1952	Access road to Beacon Hill Radar Station, Lung Yan Road, Shatin	11NW-B/C518	20/10	ArchsD	20/10 (07:00)	Soil cut	3	Road	-
2016/10/1953	Northeast of Feature No. 7NW-D/C444, Pun Shan Chau, Tai Po	2.5 m high cut slope	20/10	Public	Unknown	Soil cut	5.2	Access road	-
2016/10/1954	East of Feature No. 7NW-D/C444, Pun Shan Chau, Tai Po	Natural hillside	20/10	Public	Unknown	Natural hillside	6.3	Open space	-
2016/10/1955	East of Feature No. 7NW-A/F91 at Pun Chun Yuen Salt Water Service Reservoir, Tai Po	2 m high cut slope	20/10	LandsD	Unknown	Soil cut	2.5	Access road	-
2016/10/1956	Wilson Trail, Au Tau, Sai Kung (opposite Lamp Post No. VA6611)	1.6 m high cut slope	22/10	FSD	Unknown	Soil cut	1.5	Access road	-
2016/10/1958	Footpath to Yau Oi Tsuen from Mei Tin Road, Shatin	Natural hillside	20/10	FSD	Unknown	Natural hillside	20	Minor footpath	Minor footpath temporarily closed
2016/10/1959	Lakeview Garden, Yau On Street, Tai Wai	7SW-D/F124	20/10	Public	Unknown	Fill	90	Minor footpath	-
2016/10/1960	Lok Shun Path Barbecue Area, Fo Tan	7SE-A/C126	20/10	ArchSD	Unknown	Soil cut	3	Open space	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 13 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/10/1961	Adjacent to Feature No. 2NE-D/C38, No. 39 Lo Wu Tsuen, North	2.2 m high cut slope	24/10	Public	21/10	Soil cut	0.8	Registered squatter dwelling	-
2016/10/1962	No. 24B Shek Wu San Tsuen, North	2.5 m high retaining wall	24/10	Police	21/10	Masonry wall	5.2	Registered squatter dwelling	Registered squatter dwelling slightly damaged
2016/10/1964	Pak Tin Village, Tai Wai (near Lamp Post No. VA7785)	2 m high fill slope	24/10	Police	Unknown	Fill	28	Village house	-
2016/10/1965	Shatin Pass Road, Shatin	7SE-C/C406	24/10	HyD	20/10	Soil cut	1	Nil	-
2016/10/1966	Mang Kung Uk, Sai Kung (near Lamp Post No. VE2441)	Natural hillside	21/10	Public	Unknown	Natural hillside	83	Minor footpath	-
2016/10/1967	Tseng Lan Shue, Sai Kung (near Lamp Post No. VA4580)	Natural hillside	24/10	Public	Unknown	Natural hillside	1.8	Others (Government drainage system)	-
2016/10/1968	Ng Tung Chai, Lam Tsuen, Tai Po (near Lamp Post No. VE 4601)	2.5 m high cut slope	20/10	Public	Unknown	Soil cut	2.5	Access road	-
2016/10/1973	Lin Ma Hang Road, North	3NE-A/C140	26/10	HyD	20/10	Soil cut	240	Road	Lin Ma Hang Road (one lane road) temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 14 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/10/1975	Southwest of House No. 151 Pai Tau Village, Shatin	7SW-B/C402	24/10	LandsD	Unknown	Soil cut	5	Open space	-
2016/10/1978	Ying Pun, Fanling	3SW-C/CR614	27/10	LandsD	21/10	Soil cut	1	Minor footpath	-
2016/10/1979	Fei Ngo Shan Road, Sai Kung	11NE-B/C586	29/10	HyD	Unknown	Soil/rock cut	1	Road	-
2016/11/1981	Fei Ngo Shan Road, Sai Kung	11NE-B/C427	31/10	Others	Unknown	Soil cut	5	Pedestrian pavement	-
2016/11/1983	About 80 m west of Feature No. 7NE-C/C285, Tai Po Mei, Tai Po	Natural hillside	25/10	Public	Unknown	Natural hillside	14	Minor footpath	-
2016/11/1984	Shek Kwu Lung, Tai Po (near Lamp Post No. VE3049)	< 3 m high cut slope	24/10	Public	Unknown	Soil cut	0.15	Minor footpath	-
2016/11/1985	East of Ma Yau Tong Landfill, Ma Yau Tong, Sai Kung	11NE-D/C313	4/11	LandsD	19/10 (23:00)	Soil cut	2.84	Minor footpath	-
2016/11/1986	East of Ma Yau Tong Landfill, Ma Yau Tong, Sai Kung	11NE-D/C314	4/11	LandsD	19/10 (23:00)	Soil cut	0.79	Minor footpath	-
2016/11/1987	House No. 36 Cho Ma Wu, Nam Hang, Tai Po	< 5 m high fill slope	28/10	Public	21/10	Fill	19.6	Registered squatter dwelling, minor footpath	Minor footpath temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 15 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/11/1995	Northwest of pumping station, Shing Mun (near Feature No. 7SW-D/C854)	7SW-D/C854	18/11	Public	Unknown	Soil cut	0.5	Minor footpath	-
2016/01/1001AD (ArchSD/F/2016/01/0001)	Wo Hop Shek Cemetery, Fanling	3SW-C/C346	6/1	ArchSD	Unknown	Soil cut	2	Access road	-
2016/01/1003WS (WSD/2016/01/1/NTW)	Adjoining WSD access road NT31, Tai Lam Country Park, Tai Lam	< 3 m high cut slope	29/1	WSD	Unknown	Rock cut	16 (Rockfall)	Access road	WSD access road temporarily closed
2016/02/1004LD (LandsD/2016/02/0198)	Junction of Lung Ha Wan Road and Tai Hung Hau Road, Tuen Mun	< 3 m high cut slope	19/2	LandsD	Unknown	Rock cut	1 (Rockfall)	Access road	-
2016/02/1005WS (WSD/2016/02/1/NTW)	250 m south of Shing Mun Management Center, Shing Mun Reservoir, Shatin	7SW-A/C202	11/2	WSD	Unknown	Soil cut	0.5	Nil	-
2016/04/1009AF (AFCD/2016/04/0001)	Shing Mun Country Park, Kwai Tsing	7SW-C/C820	19/4	AFCD	2/4	Soil /rock cut	0.6	Minor footpath	-
2016/04/1010LD (LandsD/2016/04/0001)	Southeast of No. 2D Sun Tai Village, Tseng Lane Shue, Sai Kung	11NE-B/C493	12/4	LandsD	Unknown	Soil cut	0.1	Minor footpath	-
2016/04/1011WS (WSD/2016/04/1/NTE)	Adjoining Beacon Hill Catchwater, Lion Rock Country Park, Shatin	11NW-B/CR480	5/4	WSD	Unknown	Soil/rock cut	2.5	Catchwater	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 16 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/05/1012AF (AFCD/2016/05/0001)	Opposite to Feature No. 6SE-A/F34, Tsing Fai Tong Section, Tai Lam Country Park, Tai Lam	< 3 m high cut slope	3/6	AFCD	1/5	Soil cut	1.5	Minor footpath	-
2016/05/1013WS (WSD/2016/05/1/NTE)	Adjacent to Feature No. 11NE-B/C637, Sai Kung Fresh Water Break Pressure Tank off Hiram's Highway, Sai Kung	< 3 m high cut slope	12/5	WSD	Unknown	Soil cut	10.5	Pedestrian pavement	Pedestrian pavement temporarily closed
2016/05/1015WS (WSD/2016/05/4/NTE)	Sai Kung Man Yee Road, High Island Reservoir, Sai Kung	8SE-C/C100	21/5	WSD	Unknown	Soil/rock cut	3.5	Nil	-
2016/06/1016AF (AFCD/2016/06/0001)	Sheung Yiu Family Walk, within Sai Kung East Country Park, Sai Kung	Natural hillside	4/7	AFCD	24/6	Natural hillside	80	Open space	-
2016/06/1018WS (WSD/2016/06/1/NTE)	Access road to intake 'MA', Po Lo Che Road, Sai Kung	8SW-A/C175	13/6	WSD	Unknown	Soil/rock cut	0.1	Nil	-
2016/06/1019WS (WSD/2016/06/3/NTE)	Sai Kung Man Yee Road, High Island Reservoir, Sai Kung	8SE-C/F48	24/6	WSD	Unknown	Fill	0.5	Nil	-
2016/06/1020WS (WSD/2016/06/4/NTE)	High level access road in High Island Reservoir, Sai Kung	8SE-C/FR4	24/6	WSD	Unknown	Fill	0.3	Nil	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 17 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/07/1021WS (WSD/2016/07/1/NTE)	Sai Kung Man Yee Road, High Island Reservoir, Sai Kung	Natural hillside	5/7	WSD	Unknown	Natural hillside	8.1	Nil	-
2016/08/1025AF (AFCD/2016/08/0001)	Tai Po Kau Forest Track, Kau Lead Section, Tai Po	7NW-D/C245	19/8	AFCD	Unknown	Soil cut	0.5	Nil	-
2016/08/1026AF (AFCD/2016/08/0002)	Tai Po Kau Forest Track, Kau Lead Section, Tai Po	7NW-D/C238	19/8	AFCD	Unknown	Soil cut	0.5	Nil	-
2016/08/1027AF (AFCD/2016/08/0003)	Tai Po Kau Forest Track, Kau Lead Section, Tai Po	< 3 m high cut slope	25/8	AFCD	5/8	Soil cut	20	Open space	-
2016/08/1028AF (AFCD/2016/08/0004)	Shing Mun Forest Track – Reservoir Section, Shing Mun Country Park, Shatin	7SW-A/C409	26/8	AFCD	26/8	Soil cut	0.1	Access road	-
2016/08/1029WS (WSD/2016/08/1/NTE)	Access road to Tai Po Tau Treatment Works, Tai Po (partly within GLA - TP O9641B)	7NW-A/C33	8/8	WSD	Unknown	Soil cut	10	Access road	WSD access road temporarily closed
2016/09/1030AF (AFCD/2016/09/0001)	Shing Mun Forest Track – Needle Hill Section, Shing Mun Country Park, Shatin	7SW-B/C434	22/9	AFCD	20/9	Soil cut	4.5	Access road	-
2016/09/1031AF (AFCD/2016/09/0002)	Adjacent to the south east end of Feature No. 7SW-C/C964, Shing Mun Road barbecue site, Shing Mun Country Park, Shatin	< 3 m high cut slope	22/9	AFCD	20/9	Soil cut	0.5	Access road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 18 of 18)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/09/1035WS (WSD/2016/09/3/NTE)	North of Lower Shing Mun Reservoir, Shatin	7SW-D/C828	29/9	WSD	Unknown	Soil cut	1.2	Nil	-
2016/10/1036AF (AFCD/2016/10/0001)	Opposite southeast end of Feature No. 7NW-D/C240, Tai Po Kau Track - Kau Lead Section, Tai Po Kau Nature Reserve, Tai Po	Natural hillside	31/10	AFCD	18/10	Natural hillside	70	Access road	-
2016/10/1038WS (WSD/2016/10/3/NTE)	Adjoining WSD access road NT 43, Lower Shing Mun Reservoir, Shatin	7SW-D/C691	20/10	WSD	Unknown	Soil/rock cut	6	Minor footpath	-
2016/11/1042AD (ArchSD/F/2016/11/0001)	Wo Hop Shek Cemetery, Fanling	3SW-C/C657	14/11	ArchSD	Unknown	Soil cut	1	Other (cemetery)	-
2016/11/1043AD (ArchSD/F/2016/11/0002)	Wo Hop Shek Cemetery, Fanling	3SW-C/C442	24/11	ArchSD	Unknown	Soil cut	10	Nil	-
2016/11/1044AF (AFCD/2016/11/0001)	Hiking Path about 200 m offset south of Lead Mine Pass MC, Shing Mun Country Park, Shatin	Natural hillside	8/11	AFCD	1/11	Natural hillside	25	Minor footpath	-
2016/11/1047WS (WSD/2016/11/3/NTE)	South Kowloon Hills Fitness Trail (Ch. 1000 - Ch. 1050), Lion Rock Rock Country Park, Shatin	7SW-D/CR505	10/11	WSD	Unknown	Soil/rock cut	7.2	Catchwater	-
2016/12/1049AD (ArchSD/F/2016/12/0001)	Wo Hop Shek Cemetery, Fanling	3SW-C/C22	30/12	ArchSD	Unknown	Soil cut	7	Open space	-

Note: (1) The bracket denotes the landslide number adopted by the government department concerned, other than the GEO.

Table B5 List of Landslide Incidents on Outlying Islands (Sheet 1 of 2)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2016/01/1790	No. 140 Middle Hill Road, Cheung Chau	4 m high cut slope	18/1	Public	15/1 (18:14)	Soil cut	10	Registered squatter dwelling	A window of registered squatter dwelling damaged. Alleyway blocked
2016/05/1816	Cheung Fu Street, Cheung Chau	13NE-B/C134	4/5	HyD	4/5	Soil cut	0.04 (Boulder fall)	Road	-
2016/06/1844	Nos. 126 to 128 Tai Peng Village, Lamma	1.5 m high cut slope	8/6	HyD	Unknown	Soil cut	0.58	Access road	-
2016/07/1868	No. 5A1 Shek Li Ka Nam, Lamma	14NE-B/R125	6/7	Police	6/7 (08:00)	Masonry wall	11.3	Registered squatter dwelling	One squatter structure temporarily evacuated
2016/07/1869	Footpath between House Nos. 47 and 50 Lo Tik Wan Village, Lamma	15NW-A/C67	9/7	LandsD	9/7 (12:05)	Soil cut	0.2 (Boulder fall)	Minor footpath	Minor footpath temporarily closed
2016/08/1890	Access road to Ngau Kwu Long Village, Mui Wo, Lantau (between Lamp Post Nos. VA4335 and VA4336)	2.8 m high fill slope	8/8	DO	2/8 (13:00)	Fill	10	Access road	-

Table B5 List of Landslide Incidents on Outlying Islands (Sheet 2 of 2)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m³)		
2016/08/1893	Peng Chau Wing Hing Street, Peng Chau	10SW-B/C87	10/8	Police	10/8 (07:30)	Soil/rock cut	1 (Boulder fall)	Registered squatter dwelling	The back yard storage area of the squatter dwelling affected
2016/09/1917	South Lantau Road between Tong Fuk and Shui Hau, Lantau	13NE-A/C78	7/9	HyD	7/9 (12:15)	Soil cut	100	Road	All two lanes of South Lantau Road temporarily closed
2016/09/1925	House No. 64 Pak Kok Kau Tsuen, Lamma	Natural hillside	22/9	Police	Unknown	Natural hillside	0.03 (Boulder fall)	Village house	-
2016/10/1927	In front of Feature No. 14NW-A/C209, Mong Tong Wan, Lantau	Natural hillside	28/9	DO	Unknown	Natural hillside	130	Minor footpath	-
2016/05/1014WS (WSD/2016/05/2/HKI)	Lantau Island Catchwater Section C South, Lantau	13NW-B/C66	23/5	WSD	Unknown	Rock cut	13.5 (Rockfall)	Access Road	-
2016/08/1024AD (ArchSD/SKW&IS/2016/0001/08)	Hei Ling Chau Addiction Treatment Centre, Hei Ling Chau	10SW-D/CR142	22/8	CSD	Unknown	Masonry wall	10	Building	-
2016/09/1032HY (HyD/NTE/2016/09/0024)	South Lantau Road, Lantau	< 3 m height cut slope	7/10	HyD	23/9	Soil cut	0.15	Access Road	-

Note: (1) The bracket denotes the landslide number adopted by the government department concerned, other than the GEO.

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