

Factual Report on Hong Kong Rainfall and Landslides in 2017

GEO Report No. 345

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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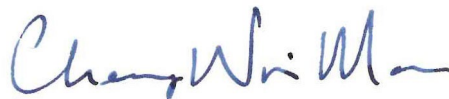
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Preface

In keeping with our policy of releasing information which may be of general interest to the geotechnical profession and the public, we make available selected internal reports in a series of publications termed the GEO Report series. The GEO Reports can be downloaded from the website of the Civil Engineering and Development Department (<http://www.cedd.gov.hk>) on the Internet.



Raymond WM Cheung
Head, Geotechnical Engineering Office
March 2022

Foreword

This report presents a summary of the factual information on rainfall and landslides in Hong Kong throughout 2017. 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/LPM1

Abstract

This report presents a summary of the factual information on rainfall and landslides in Hong Kong throughout 2017. 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 2017 at the HKO's Principal Rain gauge at Tsim Sha Tsui amounted to 2572.1 mm, a surplus of seven percent comparing to the mean rainfall of 2398.5 mm between 1981 and 2010. One Black Rainstorm Warning was issued on 24 May 2017. Five Red Rainstorm Warnings and 24 Amber Rainstorm Warnings were issued between 24 May and 3 August 2017, and between 21 April and 17 October 2017 respectively.

Four Landslip Warnings were issued on 24 May, 13 June, 17 July and 27 August 2017. A total of 188 incidents were reported to the Government in 2017. Of these, 152 were classified as genuine landslides and eight 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 eight landslides in 2017 with notable consequences. Of these landslides, one led to minor injury of a villager due to fallen bricks as well as temporary evacuation of a squatter dwelling and two other led to temporary evacuation of one squatter dwelling and five squatter dwellings respectively. The remaining five landslides resulted in temporary closure of roads. Other landslides in 2017 primarily affected open areas, footpaths or minor access roads, catchwaters and construction sites without any significant direct or indirect consequence. No fatality was reported as a result of the 2017 landslides.

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1 Introduction

This report summarises the factual information on rainfall and reported landslides in Hong Kong throughout 2017. 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 1-minute and 5-minute intervals respectively. 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 2017, as well as individual months and individual rainstorms.

The weather in 2017, as described by the HKO (2018), is excerpted as follows:

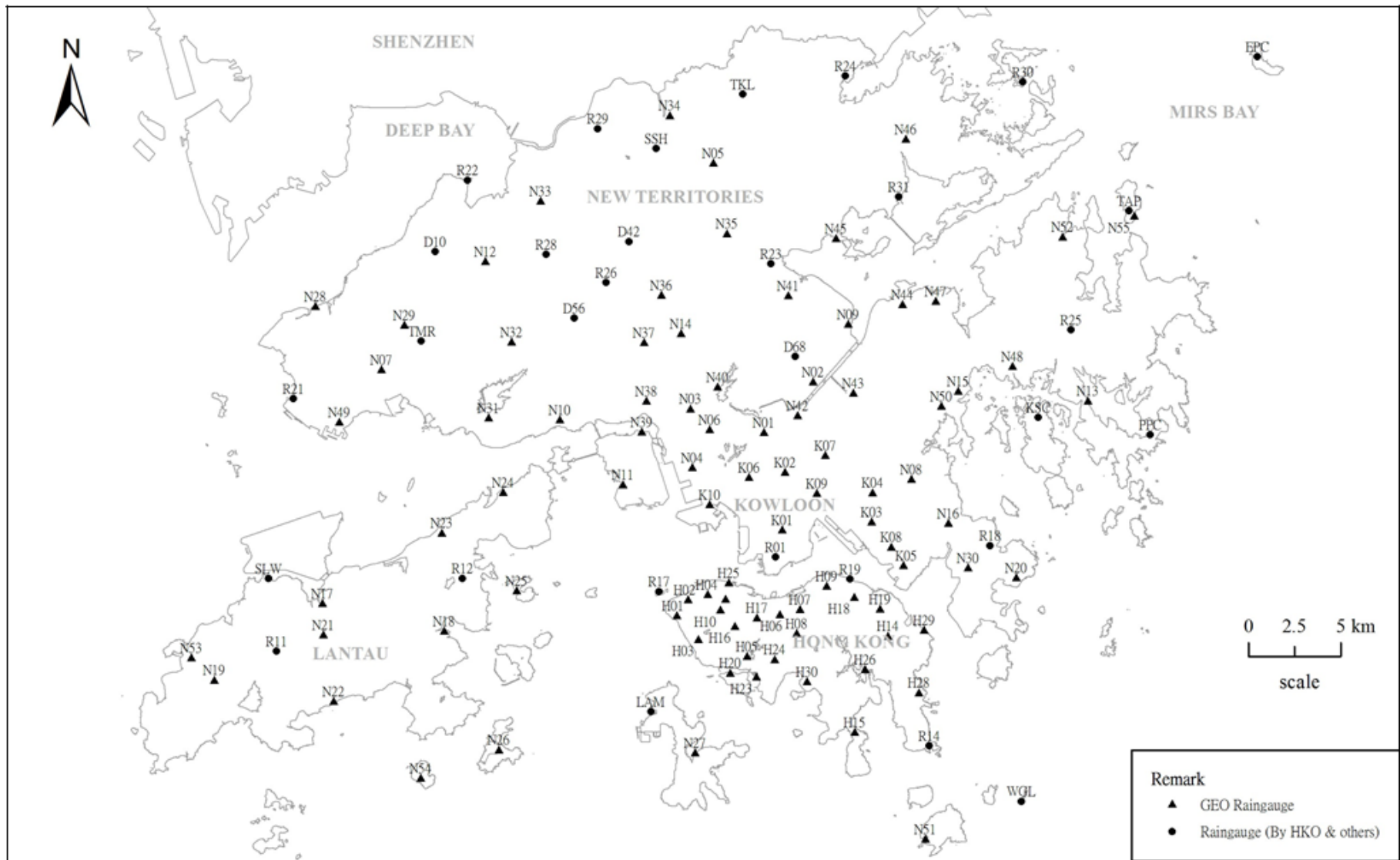


Figure 2.1 Locations of GEO Raingauges and Raingauges Operated by HKO and Other Government Departments

"The year 2017 brought more rain than normal in Hong Kong. The annual total rainfall was 2572.1 millimetres, a surplus of 7 percent comparing to the 1981-2010 normal of 2398.5 millimetres (or about 16 percent above the 1961-1990 normal). The number of days with thunderstorms reported in Hong Kong was 48 days in 2017, about 9 days more than the 1981-2010 normal. Affected by a trough of low pressure, torrential rain and squally thunderstorms in Hong Kong led to the issuance of the only Black Rainstorm Warning in the year on 24 May."

"A total of 32 tropical cyclones occurred over the western North Pacific and the South China Sea in 2017, more than the long-term (1961-2010) average. There were 12 tropical cyclones reaching typhoon intensity or above during the year, less than the long-term average of about 15, and four of them reached super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre). In Hong Kong, seven tropical cyclones necessitated the issuance of tropical cyclone warning signals, slightly higher than the long-term average of about six in a year. The Hurricane Signal No. 10 was issued during the passage of Hato in August, while the No. 8 Gale or Storm Signals was issued five times for the passages of Merbok in June, Roke in July, Hato and Pakhar in August and Khanun in October, equalling the records of 1964 and 1999."

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 2017). Further details on the monthly weather are available on the HKO Website (<https://www.hko.gov.hk/en/wxinfo/pastwx/mws/mws.htm>).

"April 2017 was also drier than usual in terms of rainfall with 58.8 millimetres recorded in the month, only about one-third of the normal of 174.7 millimetres. The accumulated rainfall recorded in the first four months of the year was 134.5 millimetres, a deficit of 60 percent compared to the normal of 336.1 millimetres for the same period. Upon the passage of a trough of low pressure, widespread rain affected the territory on 11 April. Rain was heavy at times on 12 April, with more than 30 millimetres falling in some places, before easing off the next day."

"With the passage of a trough of low pressure across the coast of Guangdong, local weather deteriorated with heavy showers and squally thunderstorms on 24 May. The heavy rain, which necessitated the issuance of the first Black Rainstorm Warning this year, brought more than 70 millimetres of rainfall to widespread areas with rainfall exceeding 300 millimetres in Kwai Tsing and Sham Shui Po. Serious flooding were reported

in many places over the territory including Lai Chi Kok, Tseung Kwan O, Ho Man Tin, central and western parts of the Hong Kong Island."

"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."

"With the approach of Merbok, local winds strengthened significantly with heavy squally showers later on 12 June, leading to the issuance of the No. 8 Gale or Storm Signal for the first time in June since 2012. As Merbok weakened over land, its rainbands continued to affect the south China coastal region with gusty winds and heavy rain, with temperature at the Hong Kong Observatory falling to the month's lowest of 24.3 degrees in rain and the issuance of the Red Rainstorm Warning Signal on the morning of 13 June. More than 150 millimetres of rainfall were generally recorded over the territory on 13 – 14 June, with rainfall over the urban areas exceeding 250 millimetres."

"Under the influence of an active southwest monsoon, the weather in Hong Kong was generally cloudy with morning showers that affected mostly the southeastern part of the territory on the first two days of the month. The showers got heavier and became more widespread on the morning of 3 August, leading to the issuance of the Red Rainstorm Warning Signal. The weather was a mixture of sunshine and scattered showers over the next couple of days, with some heavy showers affecting Tuen Mun and Shek Kong on 25 August. Ahead of the visit of Pakhar, oppressively hot and hazy conditions affected Hong Kong once again on 26 August. Rain and squalls associated with the intense rainbands north of Pakhar started to affect the territory later that evening. Heavy showers and some squally thunderstorms continued to affect the territory the next day as winds gradually subsided."

"Mawar moved across inland Guangdong on the morning of 4 September and weakened into an area of low pressure progressively during that day. Affected by the rainbands associated with Mawar, there were squally heavy showers and thunderstorms over the territory on 2-4 September."

The rainfall recorded at the HKO in the first quarter of 2017 is 75.7 mm (53% below the normal rainfall). The total rainfalls recorded in the second and third quarter are 1114.1 mm (19% above normal) and 1251.5 mm (10% above normal) respectively. For the last quarter of 2017, the total rainfall is 130.8 mm (22% below normal). The annual rainfall for 2017 is 2572.1 mm, about seven percent higher than the annual normal of 2398.5 mm recorded between 1981 and 2010. The cumulative rainfall for 2017 is compared with the highest, lowest and mean rainfall in Figure 2.2.

Figure 2.3 show the monthly rainfall distribution in 2017. Figure 2.4 shows the annual rainfall distribution in 2017, together with the locations of the reported landslides.

2.3 Rainstorms in 2017

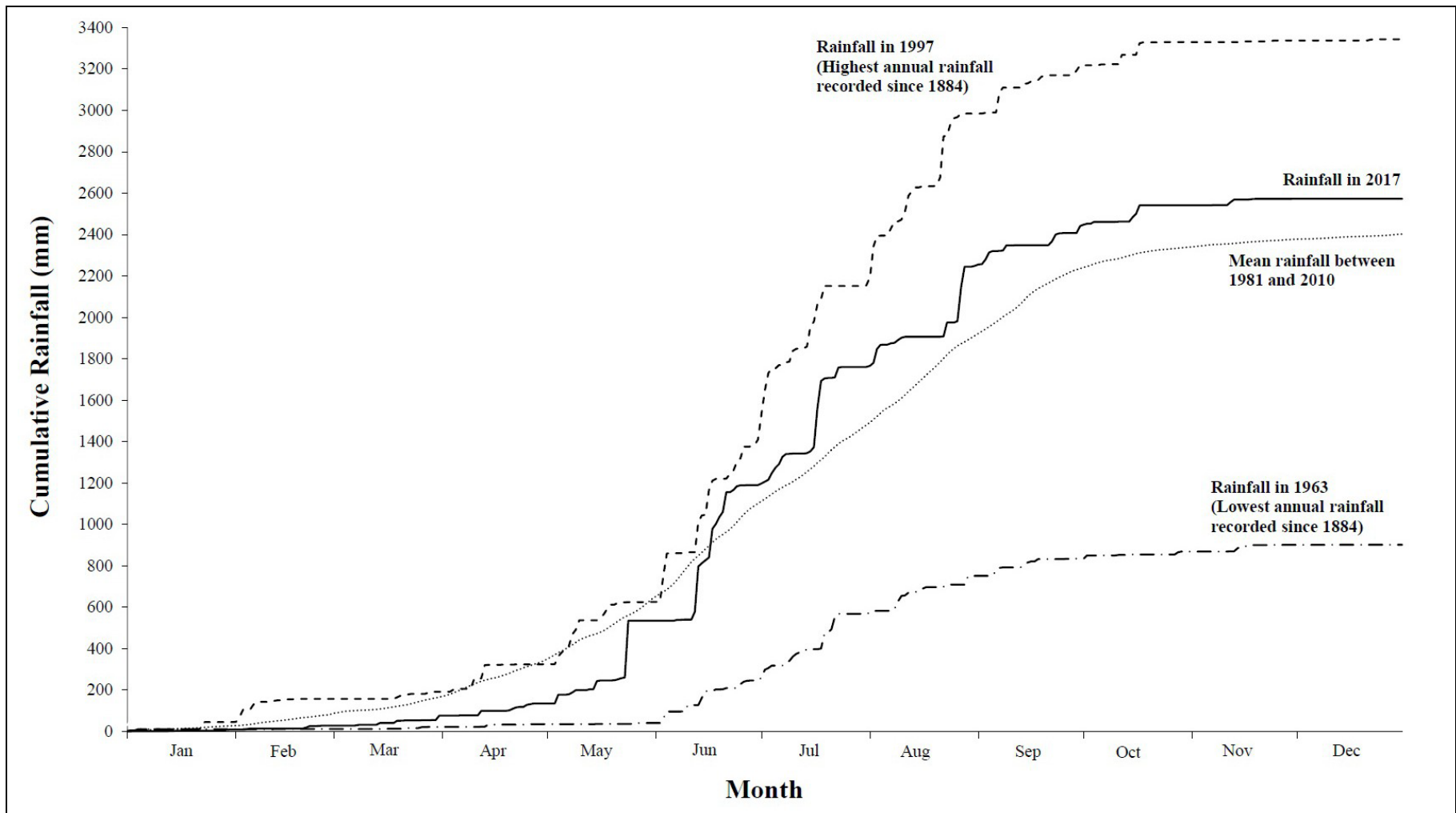
Table 2.1 tabulates the rainfall parameters for 12 rainstorms in 2017, during which the daily rainfall exceeded 100 mm at HKO's Principal Raingauge or any of the GEO raingauges. The parameters include the maximum 24-hour, 4-hour and 1-hour rolling rainfalls (based on 5-minute rainfall data). Table 2.1 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 12 rainstorms are also shown in Table A1 of Appendix A.

Figures A1 to A12 of Appendix A show the isohyets of the maximum rolling 24-hour rainfall during the above 12 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 12-20 June 2017 and 16-21 July 2017 had caused 14 and 10 reported landslides respectively. Each of the other rainstorms in 2017 resulted in less than ten reported landslides.

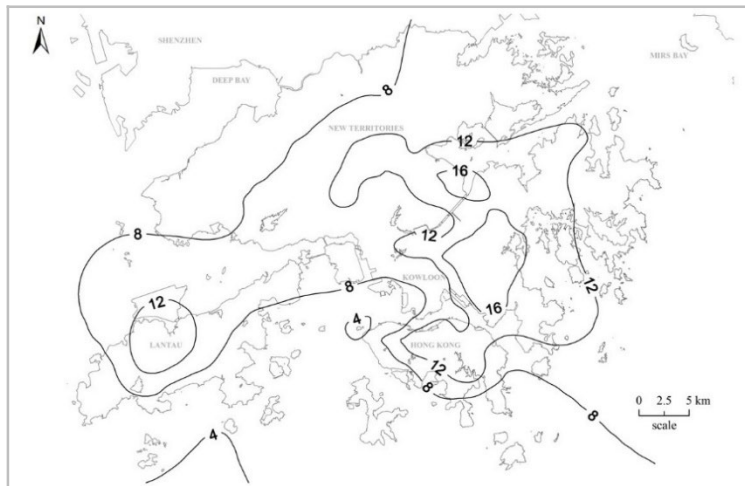
2.4 Warnings Issued by the Hong Kong Observatory

Table 2.2 summarises the details of the Thunderstorm, Flooding, Landslip, Tropical Cyclone and Rainstorm Warnings issued by the HKO in 2017. One Black Rainstorm Warning was issued on 24 May 2017. Five Red Rainstorm Warnings and 24 Amber Rainstorm Warnings were issued between 24 May and 3 August 2017, and between 21 April and 17 October 2017 respectively. Four Landslip Warnings were issued on 24 May, 13 June, 17 July and 27 August 2017.

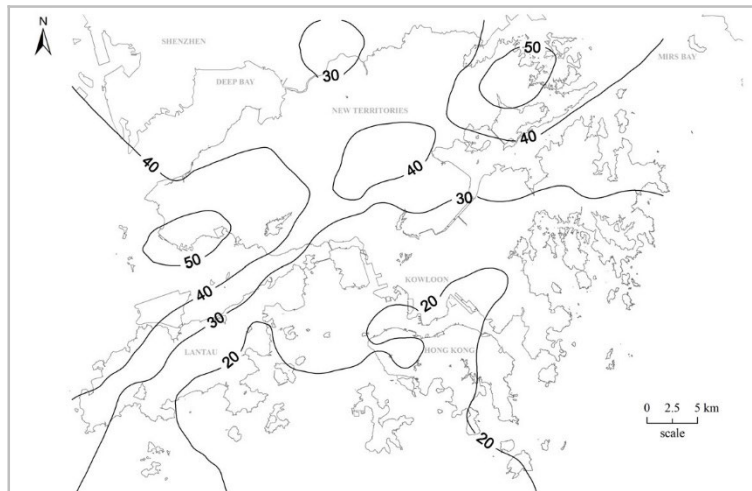


Note: Rainfall recorded at Hong Kong Observatory, Tsim Sha Tsui.

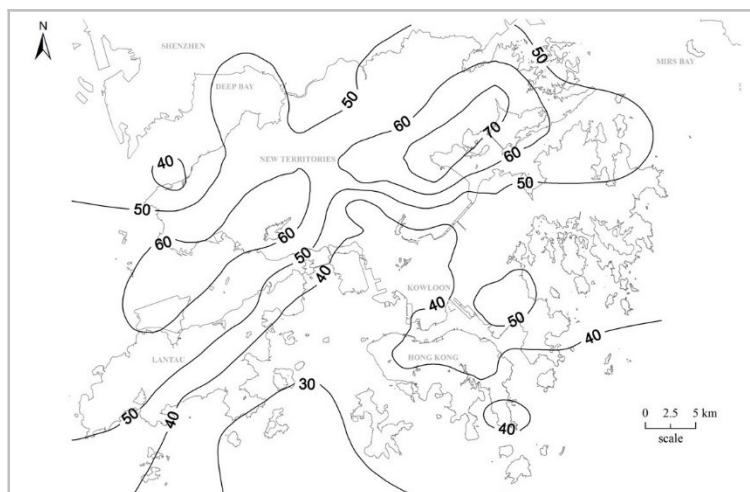
Figure 2.2 Cumulative Rainfall for 2017 at the Hong Kong Observatory and its Recorded Highest, Mean and Lowest Cumulative Rainfalls



January 2017



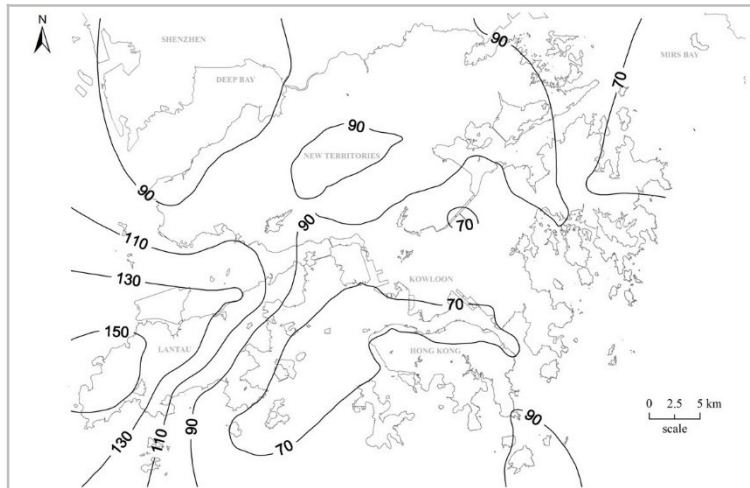
February 2017



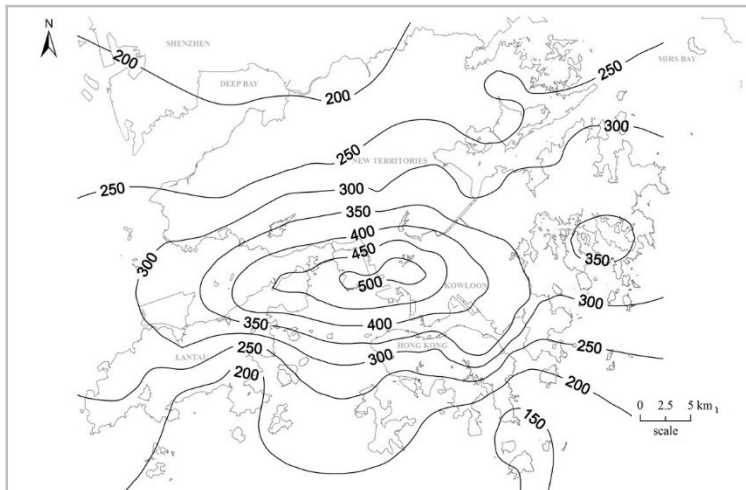
March 2017

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

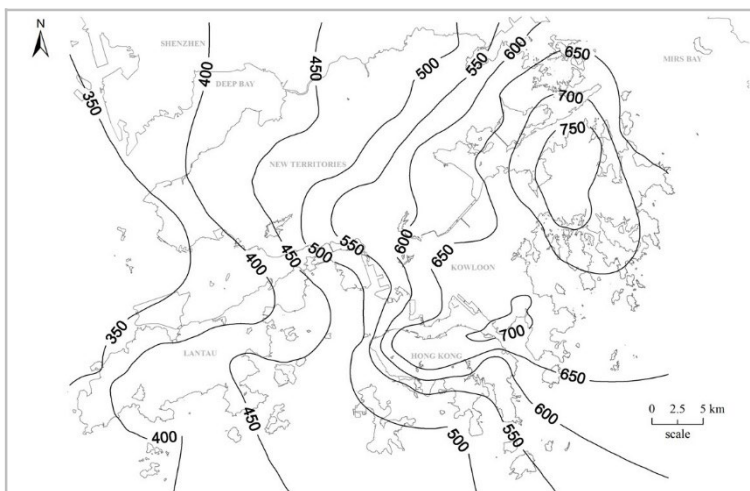
Figure 2.3 Monthly Rainfall Distribution in 2017 (Sheet 1 of 4)



April 2017



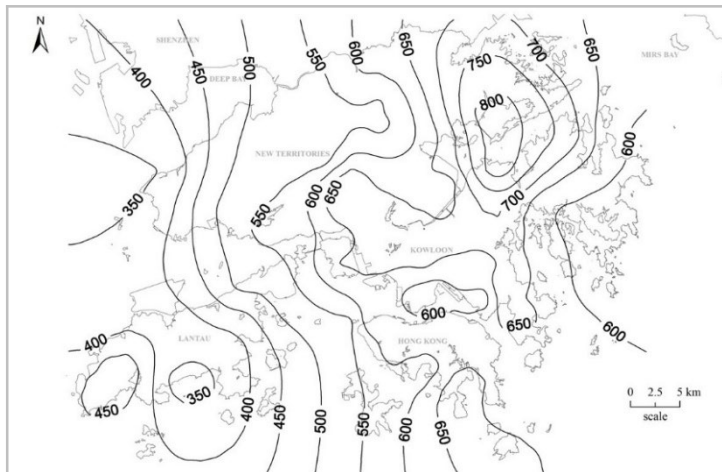
May 2017



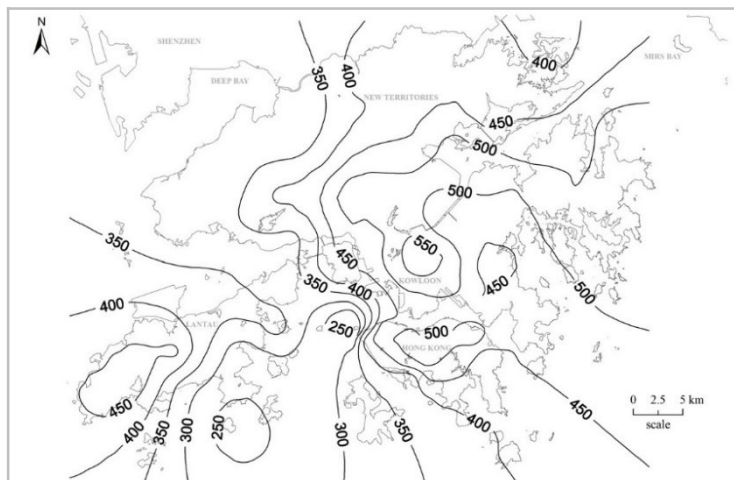
June 2017

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

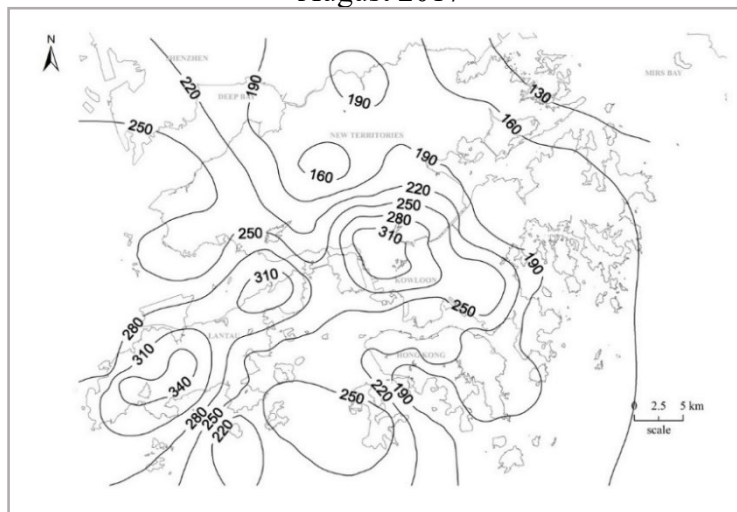
Figure 2.3 Monthly Rainfall Distribution in 2017 (Sheet 2 of 4)



July 2017



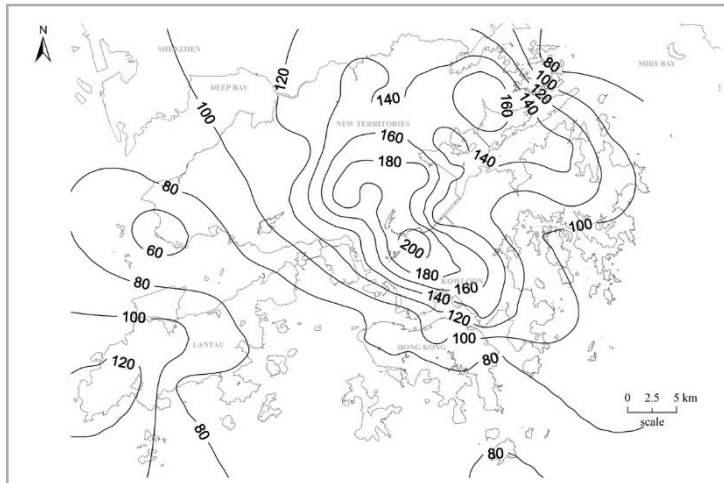
August 2017



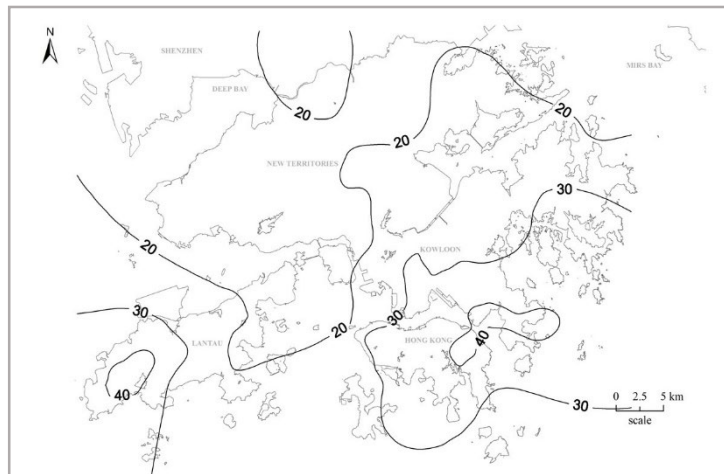
September 2017

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

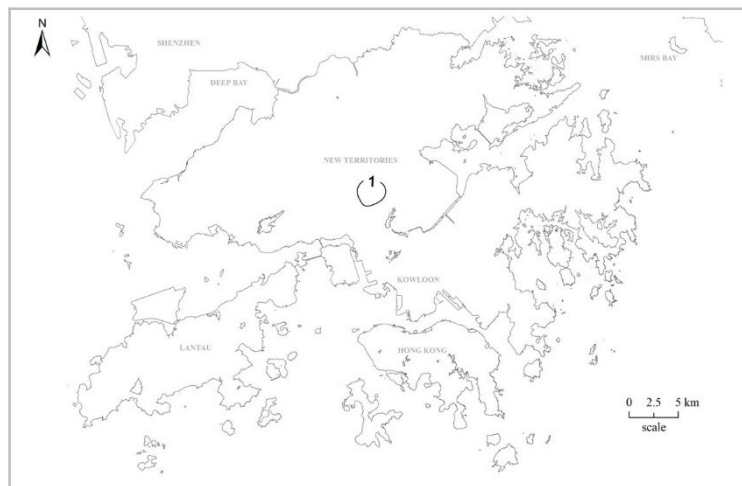
Figure 2.3 Monthly Rainfall Distribution in 2017 (Sheet 3 of 4)



October 2017



November 2017



December 2017

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

Figure 2.3 Monthly Rainfall Distribution in 2017 (Sheet 4 of 4)

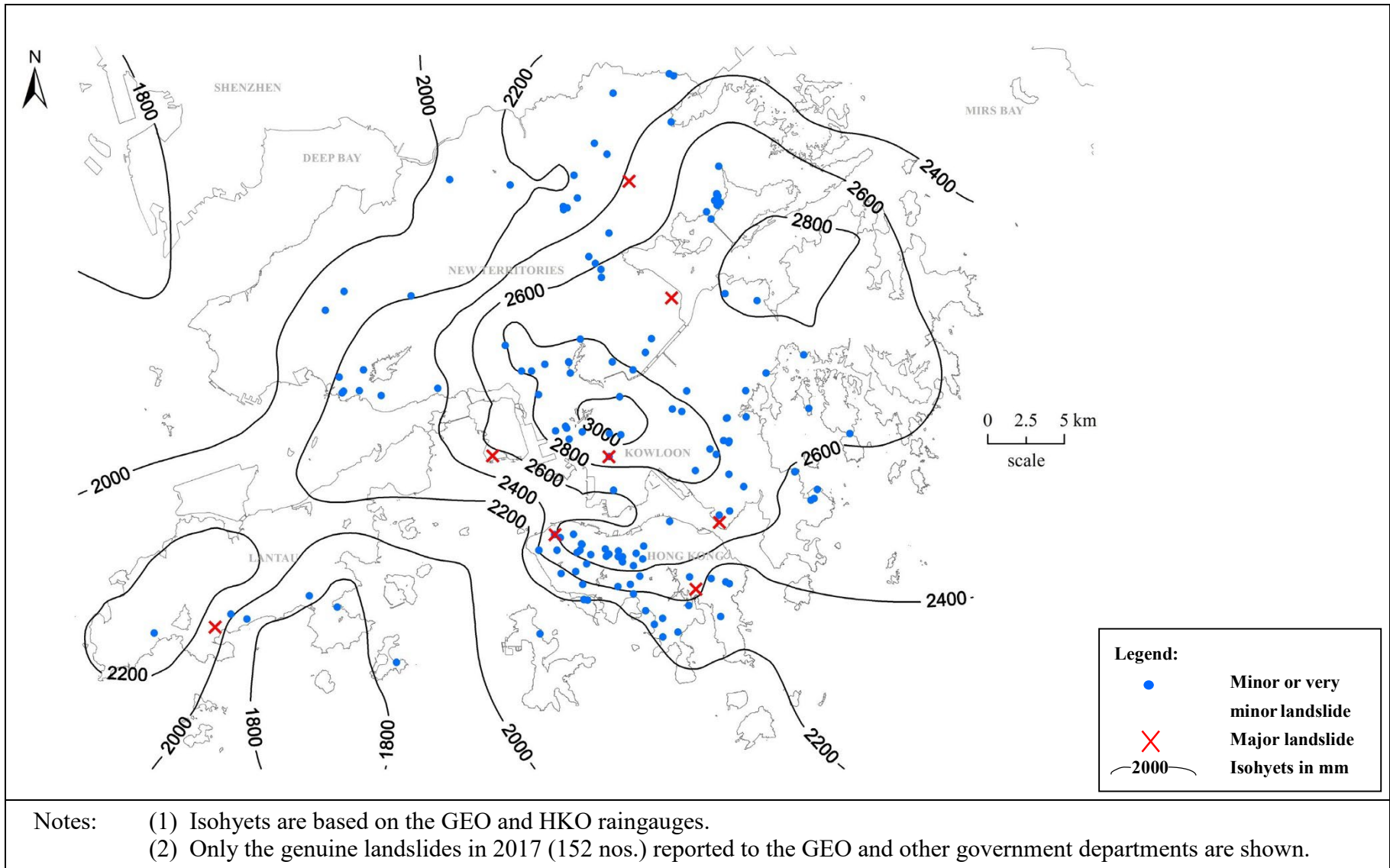


Figure 2.4 Annual Rainfall Distribution and Locations of Reported Landslides in 2017

Table 2.1 Rainfall and Landslides in 2017 and Selected Previous Major Rainstorms (Sheet 1 of 2)

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				
23-27 May 2017	260.5	161	57	15	81	381.5 (N11)	309.5 (N11)	121 (H18)	5
12-20 June 2017	227.5	116.5	62	1	5.5	285 (H08)	144.5 (N28)	91.5 (H12)	14
16-21 July 2017	177.5	96.5	41	12	161.5	360.5 (N47)	171 (N44)	82.5 (N44)	10
26-30 August 2017	171.5	64.5	33	70	74	259 (N47)	107 (N36)	62.5 (H24)	3
21-24 June 2017	94	58.5	40.5	228	525	154 (N13)	82.5 (N13)	73 (N13)	1
22-25 August 2017	67.5	49	25	0	38	129 (N37)	101.5 (N37)	45.5 (N37)	0
3-7 September 2017	47.5	21.5	9	12.5	349.5	201.5 (N22)	86 (N22)	62.5 (N22)	0
3-6 May 2017	43	39	26.5	0	37.5	125 (N24)	94.5 (N24)	76 (N24)	2
15-18 May 2017	40.5	25	17	5	70	110.5 (N52)	77.5 (N52)	61.5 (N52)	0
2-6 July 2017	40.5	18	13	7.5	345	141.5 (N12)	123 (N12)	61 (N12)	1
9-13 August 2017	24.5	12.5	11.5	10.5	116.5	111.5 (N55)	102.5 (N55)	85.5 (N55)	0
6-10 June 2017	4.5	4.5	4.5	0	270	122.5 (N52)	105.5 (N52)	78.5 (N52)	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 2017 and Selected Previous Major Rainstorms (Sheet 2 of 2)

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 2017

Month	Monthly Total Rainfall (mm)	Dates on which Warnings ⁽¹⁾ were in Effect				
		Thunderstorm ⁽²⁾	Flooding ⁽³⁾	Landslip ⁽⁴⁾	Tropical Cyclone ⁽⁵⁾	Rainstorm
January	7.8	-	-	-	-	-
February	19.9	22	-	-	-	-
March	48	19, 31	-	-	-	-
April	58.8	12, 20, 21, 22, 25, 26	-	-	-	21 (Amber)
May	399.3	4, 8, 9, 10, 15, 16, 24	4, 24	24	-	4 (Amber), 24 (2 x Amber), 24 (Red), 24 (Black)
June	656	6, 7, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 26, 27, 30	13	13	11-13 (1-8, MERBOK)	13 (2 x Amber), 13 (Red), 17 (2 x Amber), 17 (Red), 21 (Amber)
July	570	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 27, 31	3, 18	17	22-23 (1-8, ROKE)	17 (3 x Amber), 17 (Red), 18 (3 x Amber), 23 (Amber)
August	489.1	1, 2, 3, 4, 6, 7, 9, 10, 12, 16, 18, 22, 23, 25, 26, 27, 30, 31		27	22-23 (1-10, HATO) 26-27 (1-8, PAKHAR)	3 (2 x Amber), 3 (Red), 4 (Amber), 23 (Amber), 27 (Amber), 28 (Amber)
September	192.4	1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 20, 21, 22, 23, 24, 30		-	2-4 (1-3, MAWAR) 23 (1, No name)	23 (Amber)
October	99.6	1, 2, 4	-	-	14-16 (1-8, KHANUN)	17 (Amber)
November	31.2	-	-	-	-	-
December	0	-	-	-	-	-
Total	2572.1	143 Warnings	6 Warnings	4 Warnings	7 Warnings	30 Warnings (24 x Amber, 5 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) More than one Flooding Warning may have been issued within a day but have only been shown once for clarity.
 - (4) Landslip Warning was issued after consultation between the GEO and the HKO.
 - (5) 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 2017

Landslide incidents occurring in 2017 and reported to the GEO and other government departments are summarised in Table 3.1.

Table 3.1 Breakdown of Landslides in 2017 Reported to Government Departments

Department	Reported Number of Landslides	Genuine Landslides
Agriculture, Fisheries and Conservation Department	8 (0)	8 (0)
Architectural Services Department	7 (0)	7 (0)
Drainage Services Department	0	0
Geotechnical Engineering Office, Civil Engineering and Development Department	139 ⁽¹⁾	115 ⁽¹⁾
Highways Department	37 (29)	36 (28)
Housing Department	0	0
Lands Department	2 (0)	2 (0)
Water Supplies Department	26 (2)	14 (2)
Total	219 (31) ⁽²⁾	182 (30) ⁽²⁾

Legend:

37 (29) Thirty-seven incidents were reported to the government department concerned, twenty-nine of which were also reported to the GEO separately by other parties (i.e. duplicate cases)

Notes: (1) A total of 139 landslide incidents that occurred in 2017 (discounting duplicate cases) were reported to the GEO, of which 115 were classified as genuine landslides.

(2) The number of reported landslide incidents that occurred in 2017 (discounting duplicate cases) is **188** [219 - 31]. The number of genuine landslides is **152** [182 - 30].

A total of 188 landslide incidents that occurred in 2017 were reported to various government departments. These include 139 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 188 reported incidents, 152 were genuine landslides (see details in Appendix B). The other reported incidents were non-landslide events such as tree falls and flooding.

Of the 152 genuine landslides, eight (5.2%) were major landslides (see Table B1 in Appendix B), 98 (64.5%) were minor landslides and 46 (30.3%) 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 152 landslides, the timing of occurrence was determined to within one day for 51 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 2017 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)	3 (0)	0	2 (0)	5 (0)
Registered Squatter Dwellings	0	1 (1)	9 (0)	10 (1)
Roads	19 (1)	1 (0)	14 (1)	34 (2)
Transportation Facilities (e.g. railways, tramways, etc.)	0	0	0	0
Pedestrian Pavements/Footways	6 (0)	2 (0)	3 (0)	11 (0)
Minor Footpaths/Access Paths/ Access Roads	10 (1)	4 (1)	34 (0)	48 (2)
Construction Sites	2 (0)	0	1 (0)	3 (0)
Open Areas	4 (0)	2 (0)	13 (1)	19 (1)
Catchwaters	4 (0)	0	2 (1)	6 (1)
Others (e.g. carparks, parks, playgrounds, gardens, backyards, etc.)	1 (0)	0	6 (1)	7 (1)
Nil	4 (0)	2 (0)	4 (0)	10 (0)
Total	53 (2)	12 (2)	88 (4)	153 (8)

Legend:

53 (2) Fifty-three landslides of which two 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	1	0	0	0	0
Cut Slopes	Soil	0	1 (1)	0	3	1	1	0	0
	Soil/Rock	0	5 (5) ⁽³⁾	0	1	0	0	0	0
	Rock	0	0	0	0	1	0	0	0
Retaining Walls		0	1 (2)	0	0	0	1	0	1
Natural Hillside		0	0	0	0	0	4	0	0
Registered Disturbed Terrain		0	0	0	0	0	0	0	0
Total		0	7 (8)	0	5	2	6	0	1

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) Temporary evacuation of five squatter dwellings was resulted from a single incident No. 2017/06/2052 (see Section 4.3 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	0	1	0	0	1	3	3
Major Landslides on Man-made Slopes	0	1	0	0	1	3	1
Major Landslides on Registered Disturbed Terrain	0	0	0	0	0	0	0
Major Landslides on Natural Hillside	0	0	0	0	0	0	2

Notes: (1) Facility groups are classified in accordance with the GEO Technical Guidance 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		12 (0)	7.9
Cut Slopes	Soil	57 (2)	37.5
	Soil/Rock	13 (2)	8.5
	Rock	10 (2)	6.6
Retaining Walls		12 (0)	7.9
Natural Hillside		45 (2)	29.6
Registered Disturbed Terrain		3 (0)	2.0
Total		152 (8)	100

Legend:

13 (2) Thirteen landslides, two of which were major failures.

Note: (1) 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 97 landslides (63.8%) involved less than 5 m³ of material. There were eight major landslides (with a failure volume of 50 m³ or more), two of which occurred on natural hillside and the other six occurred on man-made features. The largest incident occurred on a rock cut slope below Tsing Yi Road with an estimated failure volume of about 1,300 m³. Detailed description of the landslide is given in Section 4.5.

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	42	5	50	97 (63.8%)
≥ 5 to < 10	2	1	12	15 (9.9%)
≥ 10 to < 20	4	2	14	20 (13.2%)
≥ 20 to < 50	2	2	8	12 (7.9%)
≥ 50 to < 200	2	2	3	7 (4.6%)
≥ 200 to < 500	0	0	0	0 (0%)
≥ 500 to < 1000	0	0	0	0 (0%)
≥ 1000	0	0	1	1 (0.6%)
Total	52	12	88	152 (100%)

Legend:

20 (13.2%) Twenty landslides, which amount to 13.2% of the total 152 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	5	37	11	7	6	29	2	97 (63.8%)
≥ 5 to < 10	2	5	0	0	4	4	0	15 (9.9%)
≥ 10 to < 20	3	9	0	0	1	7	0	20 (13.2%)
≥ 20 to < 50	2	4	0	1	1	3	1	12 (7.9%)
≥ 50 to < 200	0	2	2	1	0	2	0	7 (4.6%)
≥ 200 to < 500	0	0	0	0	0	0	0	0 (0%)
≥ 500 to < 1000	0	0	0	0	0	0	0	0 (0%)
≥ 1000	0	0	0	1	0	0	0	1 (0.6%)
Total	12	57	13	10	12	45	3	152 (100%)

Legend:

20 (13.2%) Twenty landslides, which amount to 13.2% of the total 152 genuine landslides reported to the Government.

Note: (1) 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 152 genuine landslides reported to the Government that occurred in 2017, 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 4 May 2017 Landslide at an Unregistered Fill Platform behind a Squatter Structure at Shung Him Tong Village, Fanling (Incident No. 2017/05/2009)

At about 10:00 a.m. on 4 May 2017, a landslide occurred on an unregistered fill platform behind a squatter dwelling at No. 101 Shung Him Tong Village, Fanling (Figure 4.1). The landslide, with an estimated failure volume of 7 m³, involved failure of a newly constructed unsupported fill platform and its vertical brickwork facing. The landslide debris, comprising fill materials and fragments of the severed brickwork facing, was deposited on the alleyway behind the squatter dwelling. A villager suffered a minor scratch from the fallen bricks while escaping. Following the landslide, the affected squatter dwelling was temporarily evacuated. The incident was widely reported by the media.



Figure 4.1 View of the 4 May 2017 Landslide at an Unregistered Fill Platform behind a Squatter Structure at Shung Him Tong Village, Fanling (Incident No. 2017/05/2009)

4.3 The 21 June 2017 Landslide on Slope No. 11SE-B/C635 behind Sam Ka Tsuen, Lei Yu Mun (Incident No. 2017/06/2052)

On 21 June 2017, a landslide was reported to have occurred on a soil/rock cut slope (Feature No. 11SE-B/C635) behind a squatter area at Sam Ka Tsuen, Lei Yu Mun (Figure 4.2). The landslide, with an estimated source volume of about 90 m³, involved a shallow failure within the zone of soil/rock interface. The landslide debris travelled over 30 m downslope and came to rest on an open area a few meters in front of the squatter swellings of Sam Ka Tsuen. Following the landslide, five squatter dwellings were temporarily evacuated. No casualty was reported as a result of the landslide.



Figure 4.2 View of the 21 June 2017 Landslide on Slope No. 11SE-B/C635 behind Sam Ka Tsuen, Lei Yu Mun (Incident No. 2017/06/2052)

4.4 The 13 June 2017 Landslide on Slope No. 11SE-C/C148 at Tai Tam Road (Incident No. 2017/06/2028)

In the morning of 13 June 2017 when Landslip Warning was in effect, a landslide occurred on a soil/rock cut slope (Feature No. 11SE-C/C148) at Tai Tam Road (Figure 4.3). The landslide involved an estimated failure volume of about 60 m³ with the debris blocking both lanes of Tai Tam Road. No casualty was reported, but the affected section of road was completely closed which had resulted in substantial traffic disruption. The incident was widely reported by the media. One of the traffic lanes was re-opened in the morning of

14 June 2017 and the whole section of road was subsequently re-opened on 25 August 2017 following the completion of the remedial works.



Figure 4.3 View of the 13 June 2017 Landslide on Slope No. 11SE-C/C148 at Tai Tam Road (Incident No. 2017/06/2028)

4.5 The 24 May 2017 Landslide on Slope No. 10NE-B/C57 below Tsing Yi Road, Tsing Yi (Incident No. 2017/05/2017)

In the morning of 24 May 2017 when Landslip Warning was in effect, a landslide occurred on a rock cut slope (Feature No. 10NE-B/C57) below Tsing Yi Road, Tsing Yi (Figure 4.4). The landslide involved a rockslide with an estimated failure volume of about 1300 m³. The landslide scar is about 32 m long, 10 m wide and 10 m deep. The landslide debris damaged several containers at a storage area and blocked a nullah at the slope toe. No casualty was reported as a result of the landslide.



Figure 4.4 View of the 24 May 2017 Landslide on Slope No. 10NE-B/C57 below Tsing Yi Road, Tsing Yi (Incident No. 2017/05/2017)

5 Conclusion

Rainfall recorded at the HKO's Principal Raingauge at Tsim Sha Tsui amounted to 2572.1 mm in 2017, a surplus of seven percent comparing to the 1981-2010 normal of 2398.5 mm. In 2017, four Landslip Warnings and one Black Rainstorm Warning were issued between 24 May and 27 August 2017. Of the 152 genuine landslides, eight were major failures, 98 were minor failures and 46 were very minor failures with negligible consequences.

There were eight landslides in 2017 with notable consequences. Of these landslides, one led to minor injury of a villager due to fallen bricks as well as temporary evacuation of a squatter dwelling and two other led to temporary evacuation of one squatter dwelling and five squatter dwellings respectively. The remaining five landslides resulted in temporary closure of roads. Other landslides in 2017 primarily affected open areas, footpaths or minor access roads, construction site and catchwaters without any significant direct or indirect consequence. No fatality was reported as a result of the 2017 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 (2018). *The Year's Weather - 2017*. Hong Kong Observatory, Hong Kong, 8 p.

Appendix A

Some Selected Rainfall Parameters for the 12 Rainstorms with Daily Rainfall
Exceeding 100 mm in 2017

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Table A1 Some Selected Rainfall Parameters for the 12 Rainstorms with Daily Rainfall Exceeding 100 mm in 2017 (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	3-6 May 2017	13	N24	24	N24	31.5	N24	47	N24
2	15-18 May 2017	12	K02	21	N51	28.5	K02	37.5	K02, N52
3	23-27 May 2017	15	H09	27.5	H09, H19	40.5	H19	74	H19
4	6-10 June 2017	11	N52	20.5	N52	30.5	N52	54	N52
5	12-20 June 2017	17	H05	31.5	H17	40	H17	59	H17
6	21-24 June 2017	14	N13	27.5	N13	38	N13	64.5	N13
7	2-6 July 2017	11.5	H19	19	N34	26	N34	41.5	N12
8	16-21 July 2017	23	N55	36	N55	46	N55	53	N55
9	9-13 August 2017	11.5	N55	21.5	N52	29	N55	45	N55
10	22-25 August 2017	9.5	K07	16.5	K07	21	N01	28.5	N44
11	26-30 August 2017	10.5	H05, K10	19.5	N03	26	K10, N13	39.5	H24
12	3-7 September 2017	14	N02	23.5	N22	30.5	N22	51.5	N22

Table A1 Some Selected Rainfall Parameters for the 12 Rainstorms with Daily Rainfall Exceeding 100 mm in 2017 (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	3-6 May 2017	76	N24	90	N24	94.5	N24	98.5	N24	100	N24
2	15-18 May 2017	61.5	N52	75.5	N52	77.5	N52	77.5	N52	77.5	N52
3	23-27 May 2017	121	H18	190	N11	309.5	N11	342	N11	366	N11
4	6-10 June 2017	78.5	N52	100	N52	105.5	N52	109.5	N52	109.5	N52
5	12-20 June 2017	91.5	H12	116	H12	144.5	N28	161.5	H09	175.5	H09
6	21-24 June 2017	73	N13	76.5	N13	82.5	N13	84.5	N13	84.5	N13
7	2-6 July 2017	61	N12	100.5	N12	123	N12	127.5	N12	129	N12
8	16-21 July 2017	82.5	N44	144	N44	171	N44	185.5	N51	209.5	N30
9	9-13 August 2017	85.5	N55	99.5	N55	102.5	N55	106.5	N55	106.5	N55
10	22-25 August 2017	45.5	N37	85.5	N37	101.5	N37	114	N37	116.5	N37
11	26-30 August 2017	62.5	H24	83.5	N19	107	N36	120.5	N36	128.5	N36
12	3-7 September 2017	62.5	N22	71	N22	86	N22	91	N22	96.5	N22

Table A1 Some Selected Rainfall Parameters for the 12 Rainstorms with Daily Rainfall Exceeding 100 mm in 2017 (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	3-6 May 2017	114	N24	125	N24	125	N24	125	N24	125	N24
2	15-18 May 2017	80	N52	83.5	N52	88	N52	110.5	N52	112	N52
3	23-27 May 2017	375	N11	381.5	N11	381.5	N11	381.5	N11	382.5	N11
4	6-10 June 2017	109.5	N52	109.5	N52	109.5	N52	122.5	N52	125.5	N52
5	12-20 June 2017	214	H09	245	H09	265	H08, H09	285	H08	310.5	H12
6	21-24 June 2017	111	N13	143	N13	143.5	N13	154	N13	181	N13
7	2-6 July 2017	129.5	N12	134	N12	137.5	N12	141.5	N12	159	N12
8	16-21 July 2017	232.5	N30	248.5	N47	320	N44	360.5	N47	494	N47
9	9-13 August 2017	106.5	N55	107	N55	107	N55	111.5	N55	115	N55
10	22-25 August 2017	118	N37	126	N37	128.5	N37	129	N37	133	N19
11	26-30 August 2017	149.5	N36	200.5	N36	233.5	N47	259	N47	350.5	N01
12	3-7 September 2017	140.5	N22	184	N22	198	N22	201.5	N22	206.5	N22

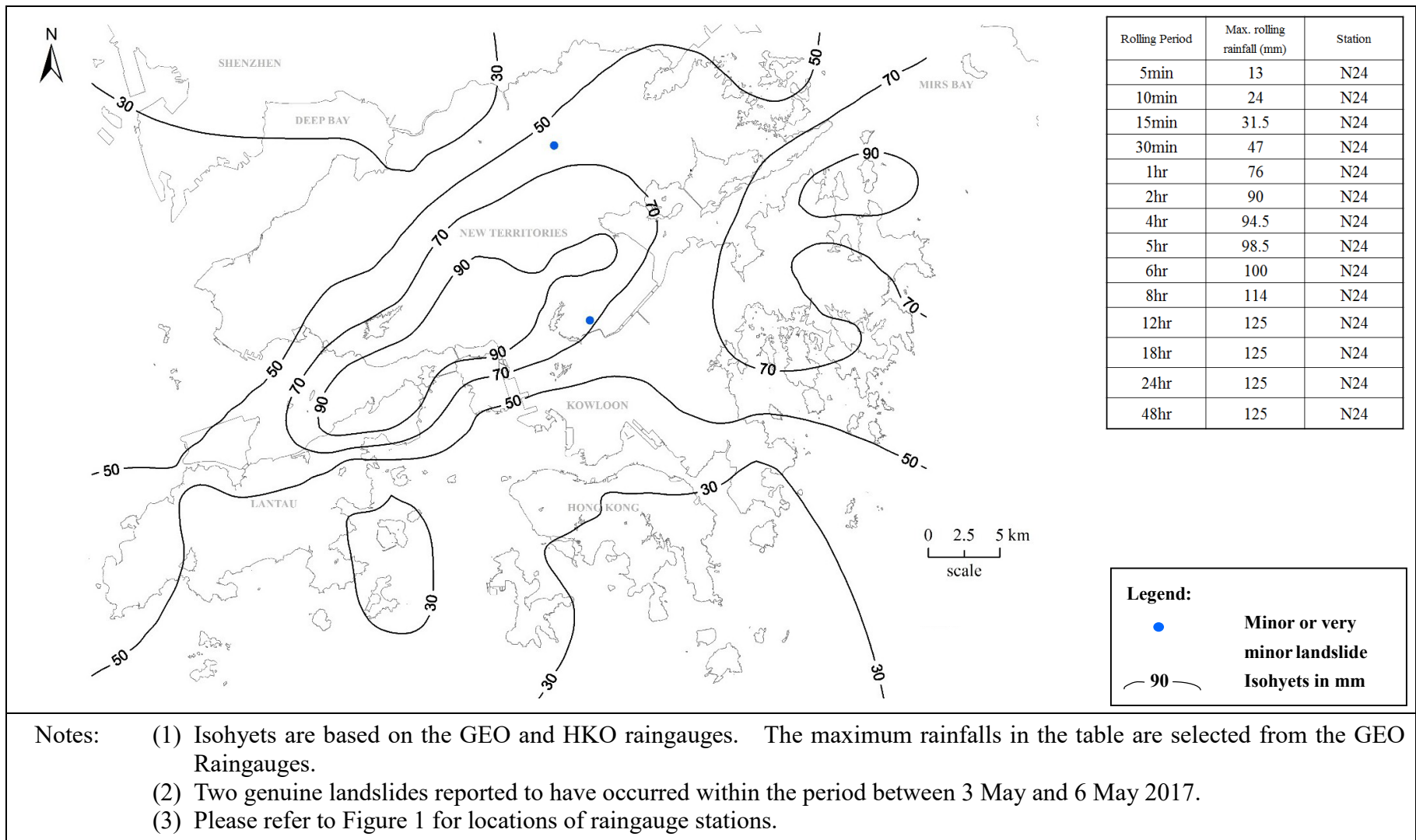


Figure A1 Maximum Rolling 24-hour Rainfall Distribution for the Period between 3 May (00:00) and 6 May 2017 (24:00) and Locations of Landslides

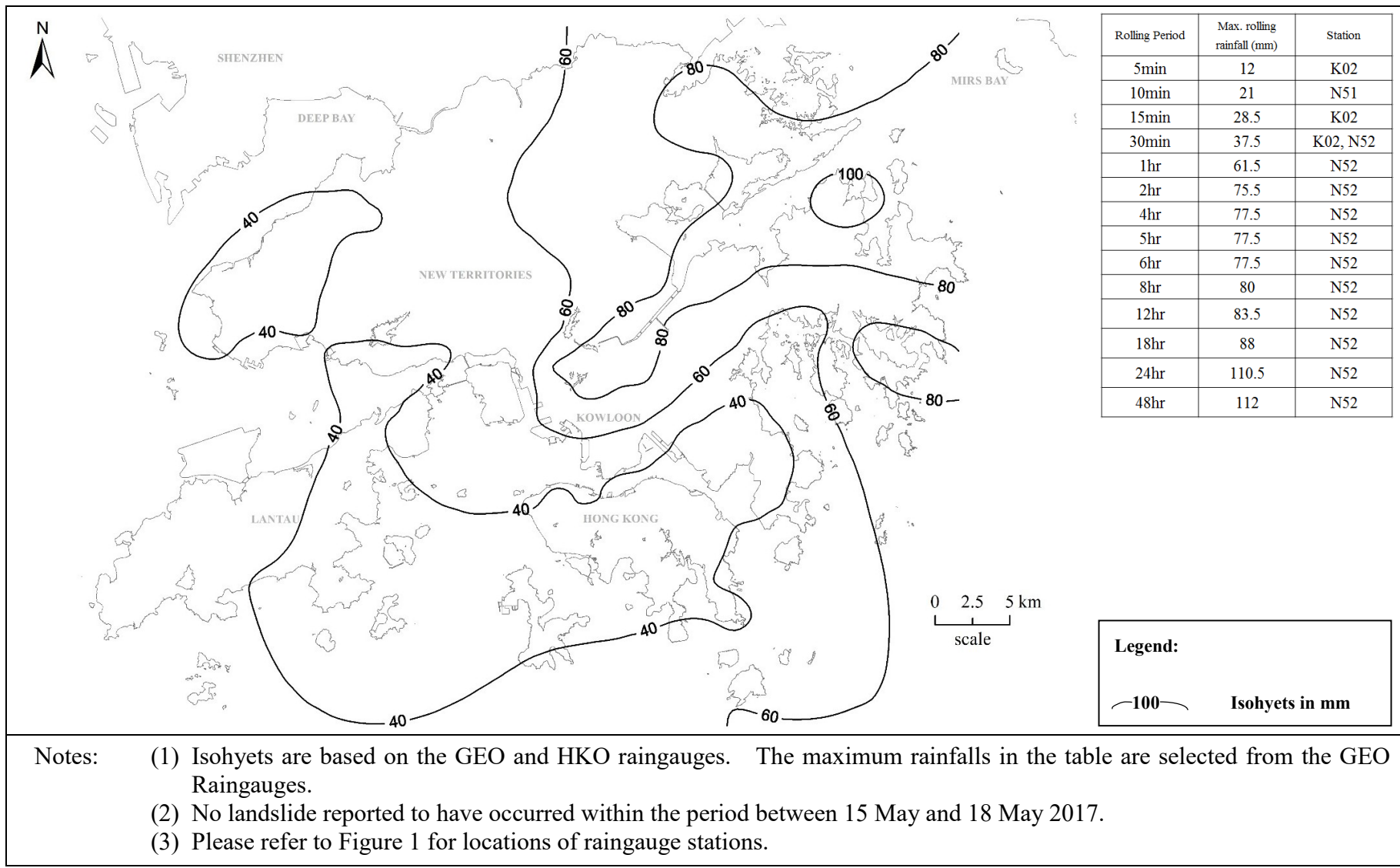


Figure A2 Maximum Rolling 24-hour Rainfall Distribution for the Period between 15 May (00:00) and 18 May 2017 (24:00) and Locations of Landslides

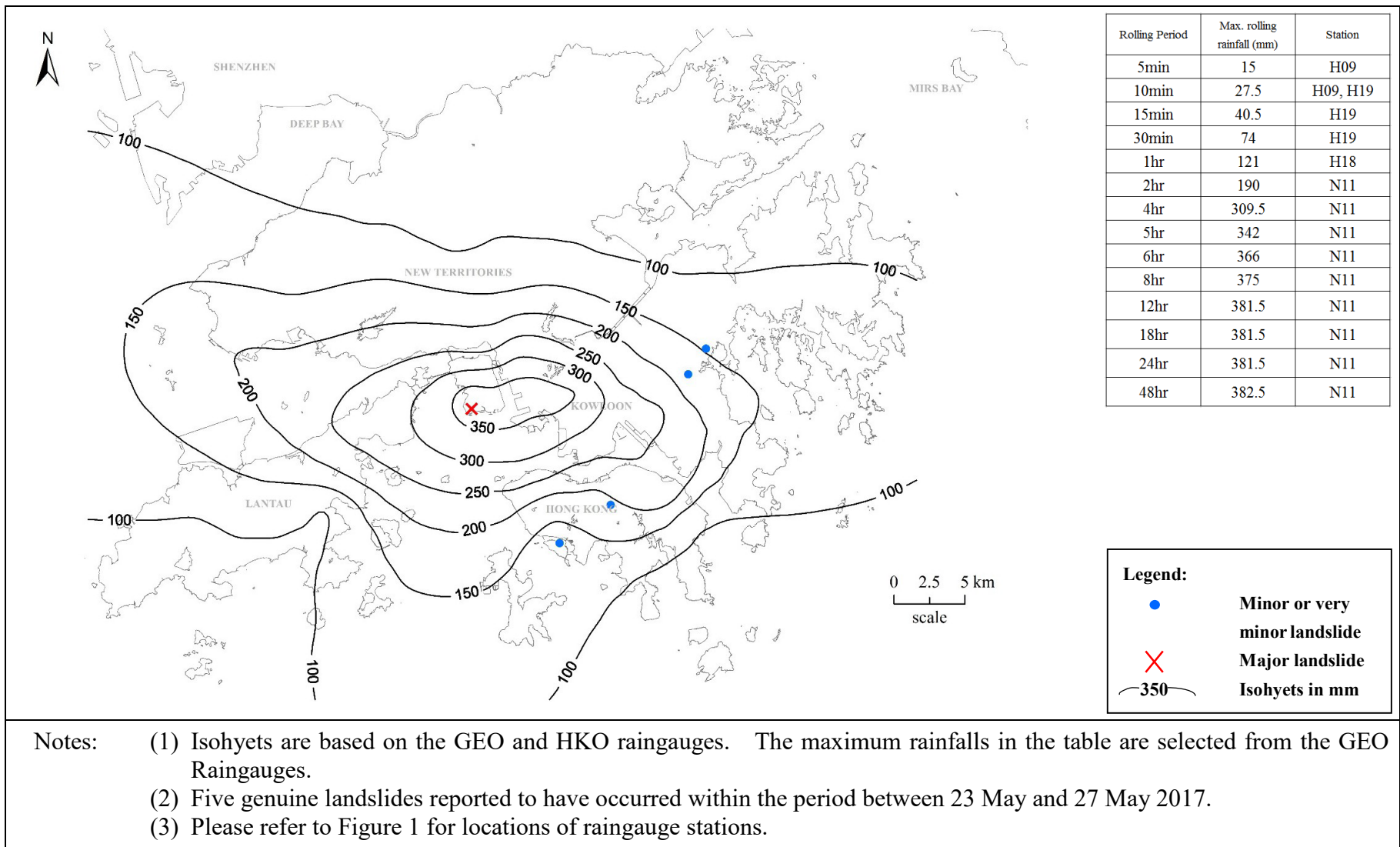


Figure A3 Maximum Rolling 24-hour Rainfall Distribution for the Period between 23 May (00:00) and 27 May 2017 (24:00) and Locations of Landslide

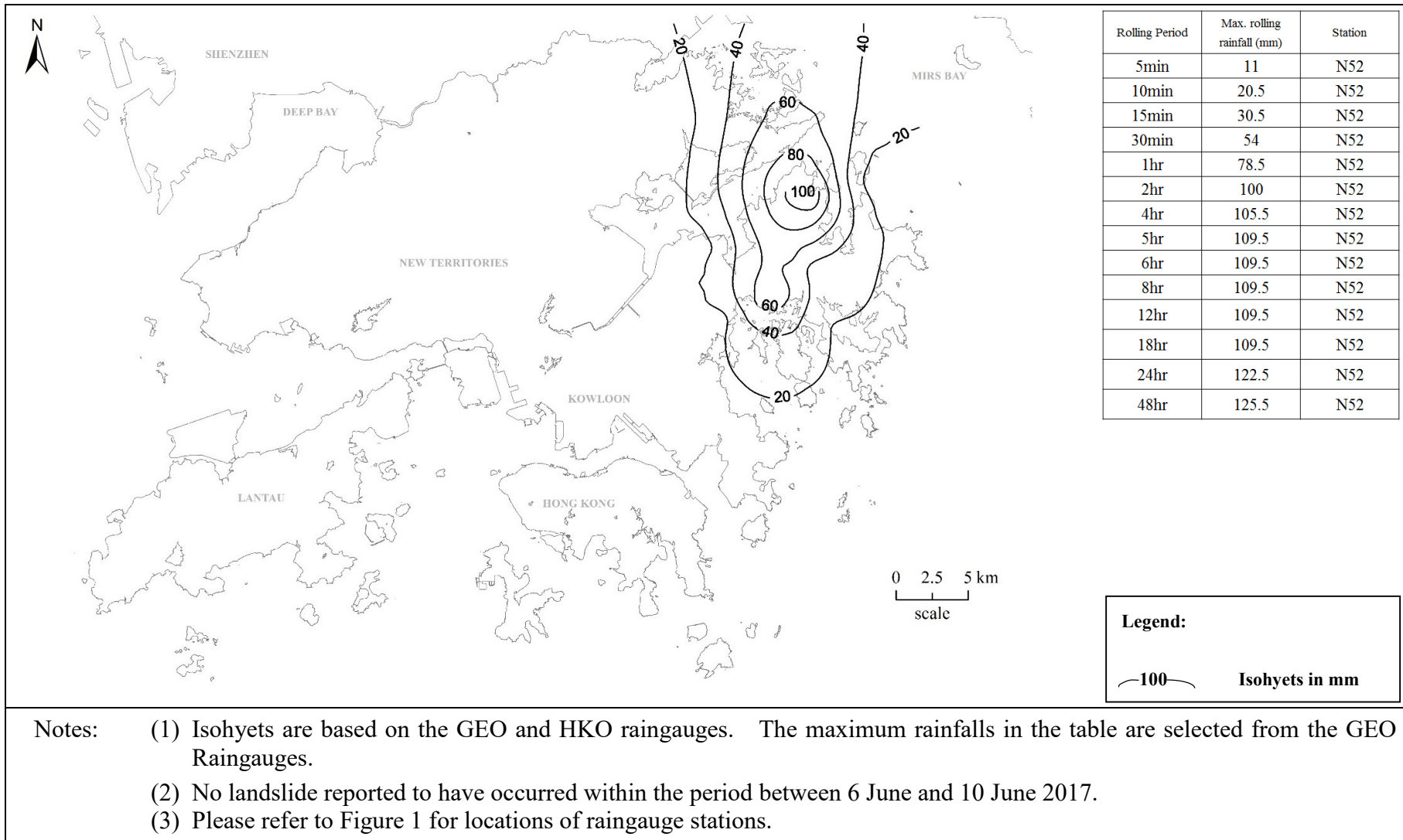


Figure A4 Maximum Rolling 24-hour Rainfall Distribution for the Period between 6 June (00:00) and 10 June 2017 (24:00) and Locations of Landslides

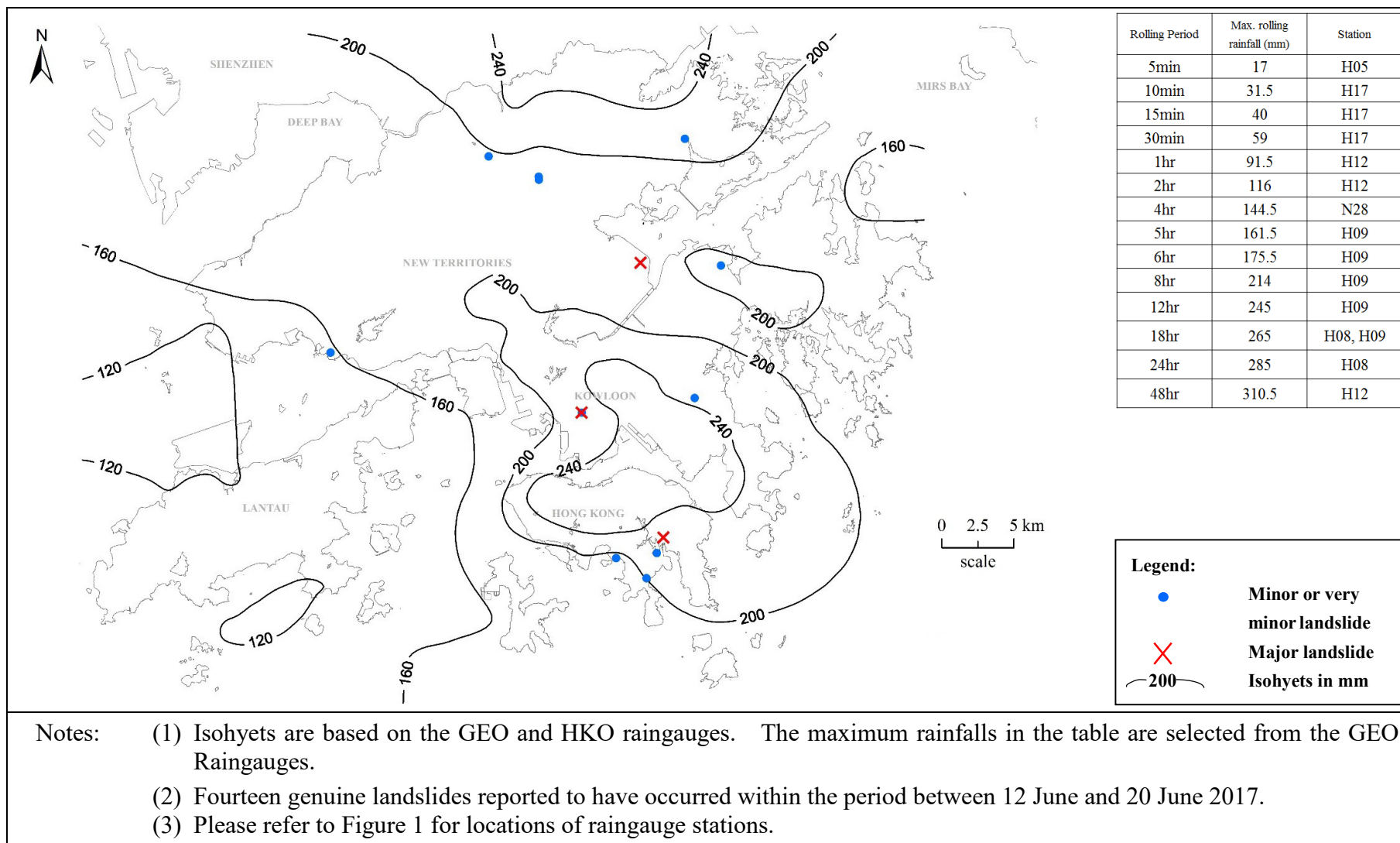


Figure A5 Maximum Rolling 24-hour Rainfall Distribution for the Period between 12 June (00:00) and 20 June 2017 (24:00) and Locations of Landslides

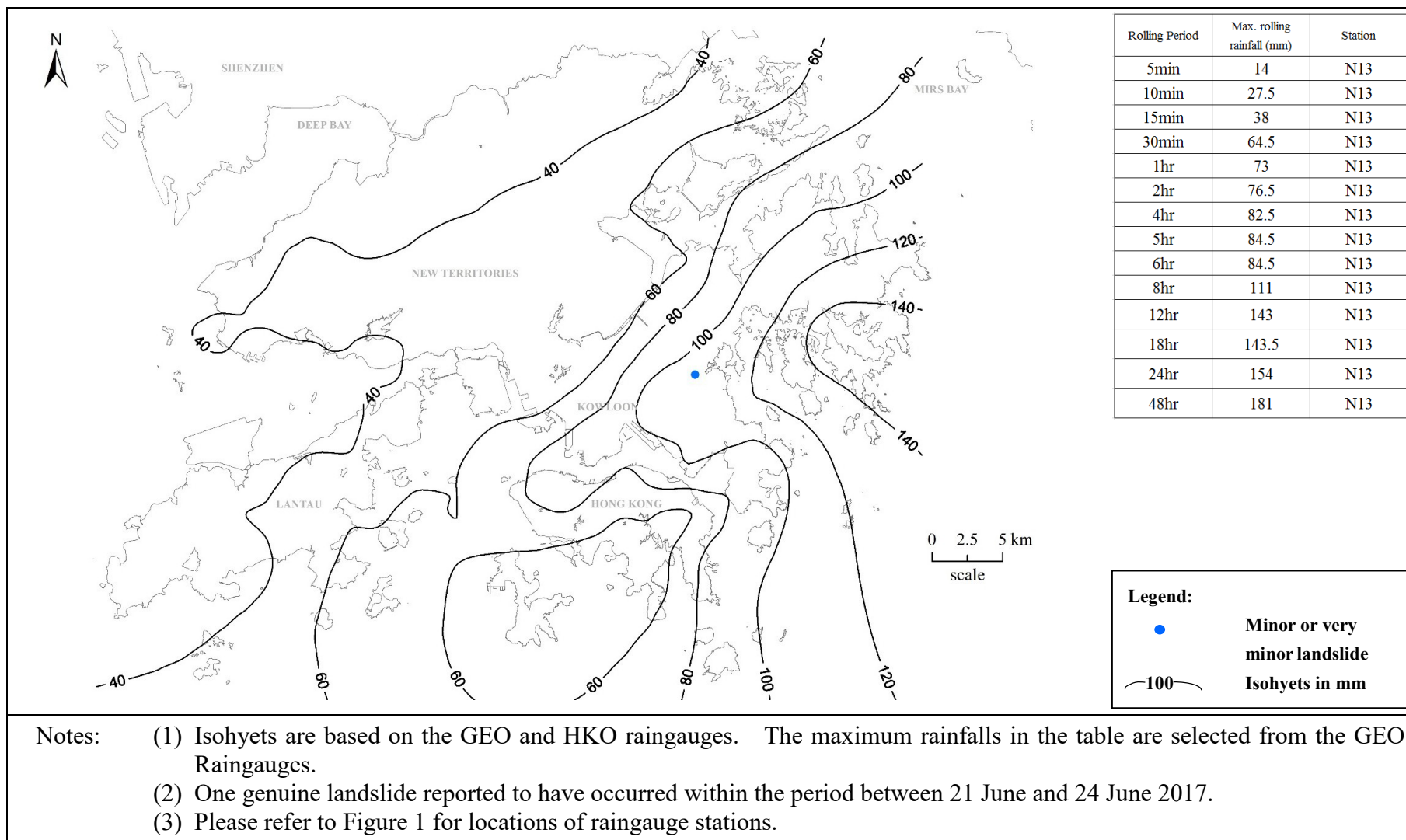


Figure A6 Maximum Rolling 24-hour Rainfall Distribution for the Period between 21 June (00:00) and 24 June 2017 (24:00) and Locations of Landslides

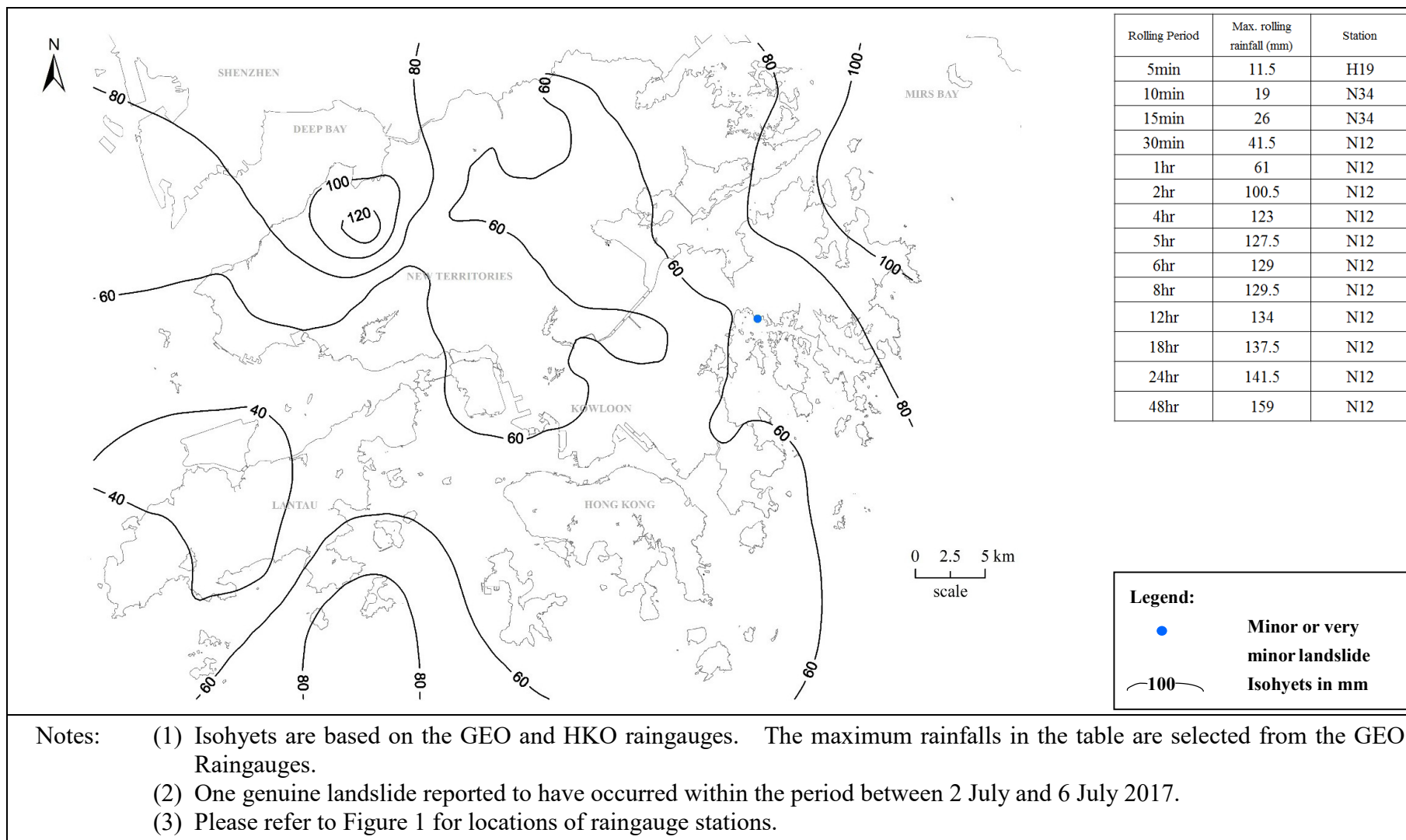


Figure A7 Maximum Rolling 24-hour Rainfall Distribution for the Period between 2 July (00:00) and 6 July 2017 (24:00) and Locations of Landslides

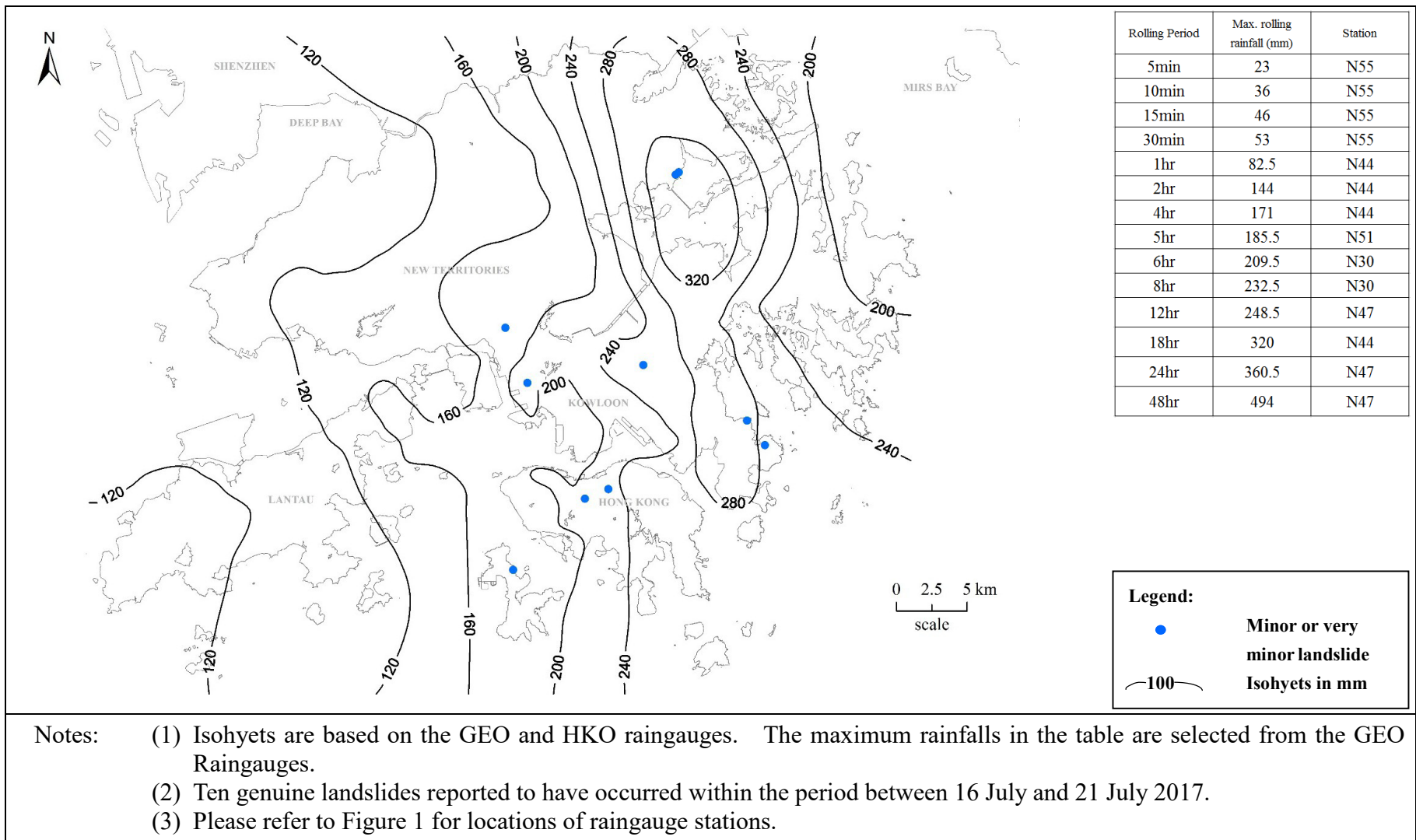


Figure A8 Maximum Rolling 24-hour Rainfall Distribution for the Period between 16 July (00:00) and 21 July 2017 (24:00) and Locations of Landslides

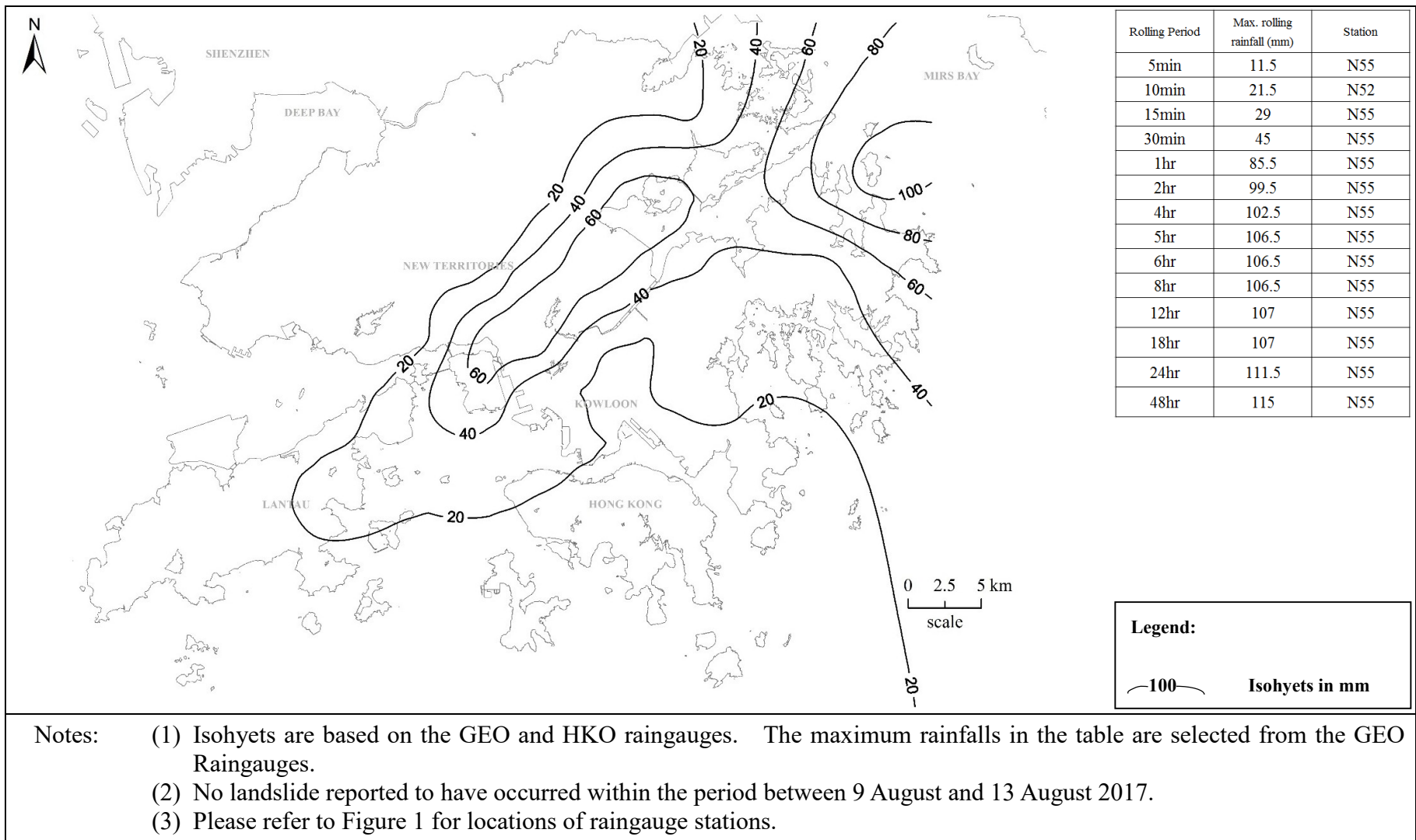


Figure A9 Maximum Rolling 24-hour Rainfall Distribution for the Period between 9 August (00:00) and 13 August 2017 (24:00) and Locations of Landslides

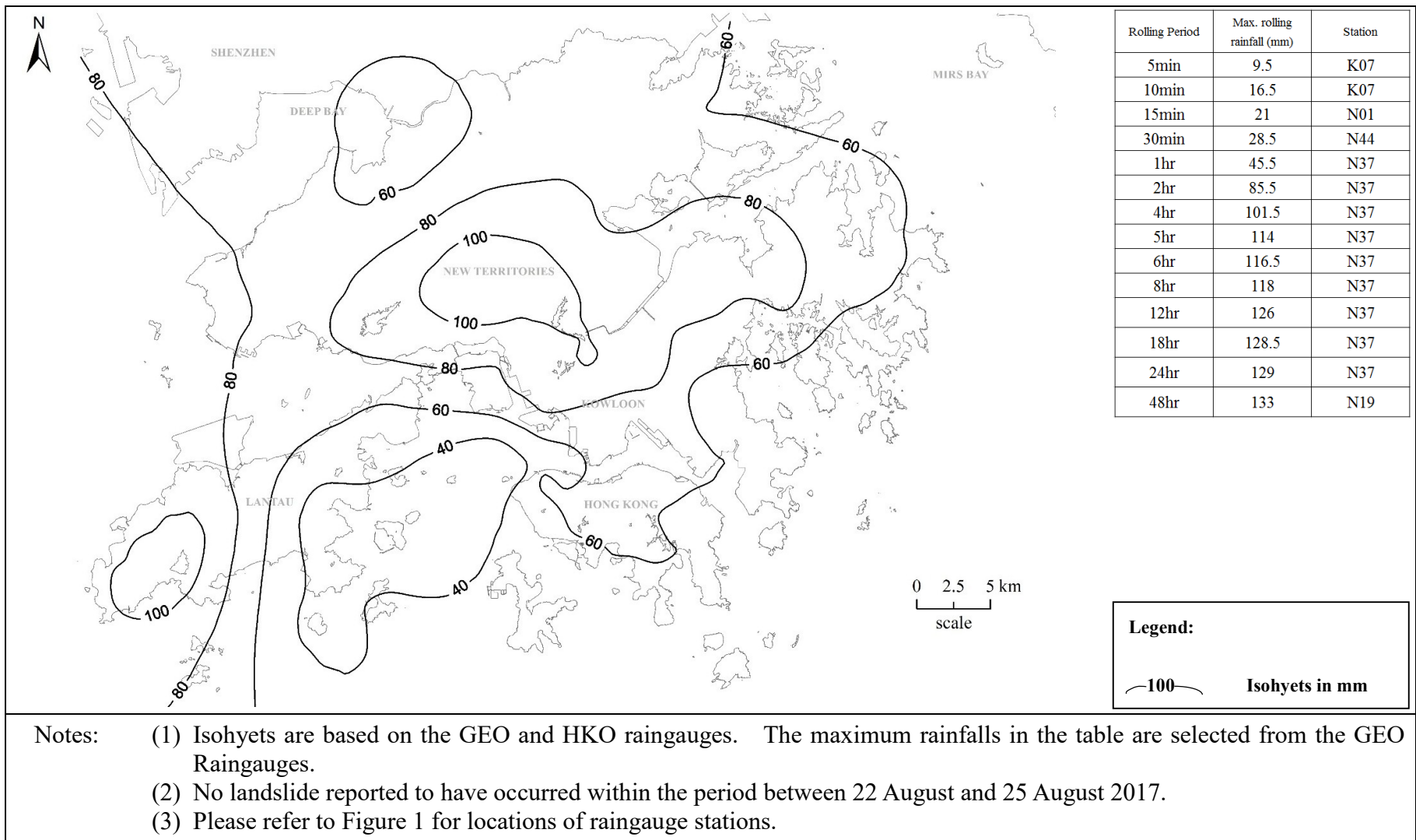


Figure A10 Maximum Rolling 24-hour Rainfall Distribution for the Period between 22 August (00:00) and 25 August 2017 (24:00) and Locations of Landslides

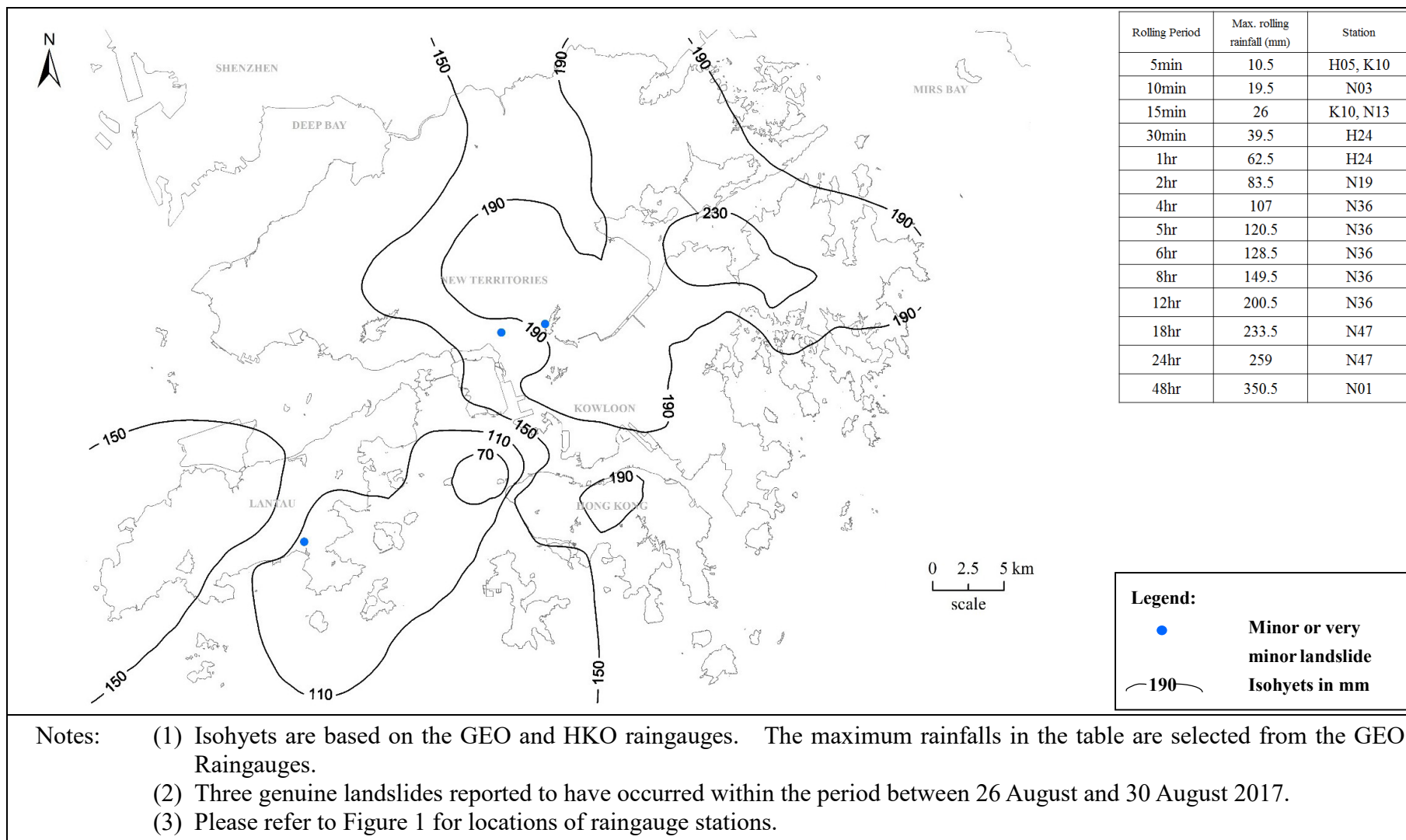


Figure A11 Maximum Rolling 24-hour Rainfall Distribution for the Period between 26 August (00:00) and 30 August 2017 (24:00) and Locations of Landslides

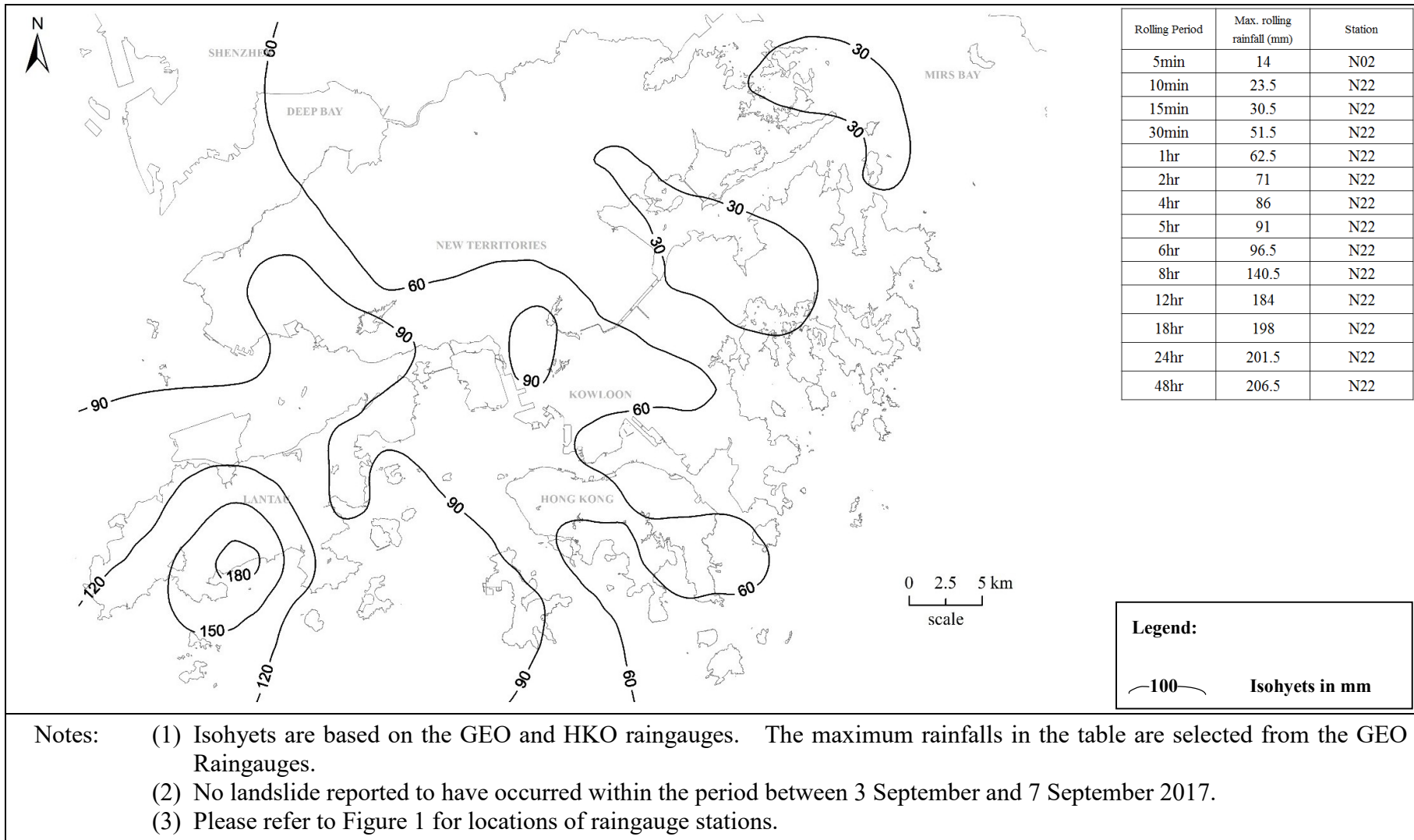


Figure A12 Maximum Rolling 24-hour Rainfall Distribution for the Period between 3 September (00:00) and 7 September 2017 (24:00) and Locations of Landslides

Appendix B

List of Landslide Incidents Reported to the Government

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Table B1 List of Major Landslide Incidents

Incident No.	Location	Feature Registration No. (if any)	Failure			Facility Affected	Consequence
			Date (Time)	Feature Type	Scale (m ³)		
2017/04/2003	Behind Chow Yei Ching Building of HKU	11SW-A/NS19	Unknown	Natural hillside	55	Footpath	Hiking trail temporarily closed
2017/05/2017	Tsing Yi Road, Tsing Yi	10NE-B/C57	24/5	Rock cut	1300	Open area	Containers damaged; nullah blocked
2017/06/2028	Tai Tam Road	11SE-C/C148	13/6	Soil/rock cut	60	Road	All two lanes of Tai Tam Road temporarily closed
2017/06/2035	45 m north of Police Sports and Recreation Club, Sham Shui Po	Natural hillside	13/6	Natural hillside	50	Minor footpath	-
2017/06/2039	Behind Residence No. 17 of CUHK, Shatin	7NE-C/C65	17/6 (21:00)	Rock cut	100	Other (open carpark)	Carpark cordoned off
2017/06/2052	27 m southeast of House No. 3B, Sam Ka Tsuen, Lei Yue Mun	11SE-B/C635	Unknown	Soil/rock cut	90	Registered squatter dwelling	Five squatter dwellings temporarily evacuated
2017/07/1031WS (WSD/2017/07/2/NTE)	Adjoining Hok Tau Road WSD access road NT 14 near Spot Level 101.4, Hok Tau Reservoir, Fanling	3SW-B/C182	Unknown	Soil cut	53	Road	Hok Tau Road (one lane road) temporarily closed
2017/09/1044WS (WSD/2017/09/5/HKI)	Shek Pik Catchwater (Section E, CH2060 - CH2158), Lantau Island	13NE-A/CR141	Unknown	Soil cut	130	Catchwater	Catchwater blocked

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)		
2017/02/2001	East of Feature No. 11SW-A/C35, 35 m west of Hornsey Road	< 3 m high cut slope	9/2	DLO	Unknown	Soil cut	0.3	Minor footpath	-
2017/04/2003	Behind Chow Yei Ching Building of HKU	11SW-A/NS19	8/4	FSD	Unknown	Natural hillside	55	Minor footpath	Hiking trail temporarily closed
2017/04/2004	Behind Chow Yei Ching Building of HKU	11SW-A/NS7	8/4	FSD	Unknown	Natural hillside	1.5	Minor footpath	Hiking trail temporarily closed
2017/04/2006	Hornsey Road	11SW-A/C704	26/4	HyD	26/4 (07:30)	Soil cut	0.2 (Boulder fall)	Road	-
2017/04/2007	Adjacent to staircase linking Deep Water Bay Drive and South Island School	11SW-D/C1329	25/4	DLO	Unknown	Soil cut	2.5	Pedestrian pavement	-
2017/05/2015	Mount Nicholson Road	11SW-D/C336	21/5	HyD	Unknown	Soil/rock cut	0.2 (Rockfall)	Road	-
2017/05/2016	Shek O Road	15NE-B/FR20	22/5	HyD	Unknown	Fill	16	Road	-
2017/05/2021	Behind No. 83 Main Street, Ap Lei Chau	15NW-B/C28	26/5	BD	24/5	Soil cut	0.03	Building	-
2017/05/2022	Below Hong Kong University Alumni Association College	1.5 m high fill slope	29/5	BD	Unknown	Fill	0.4	Access road; Other (existing streamcourse)	-

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)		
2017/06/2024	Tai Hang Road	Natural hillside	29/5	GEO	24/5	Natural hillside	13	Road	-
2017/06/2028	Tai Tam Road	11SE-C/C148	13/6	FSD	13/6	Soil/rock cut	60	Road	All two lanes of Tai Tam Road temporarily closed
2017/06/2034	Opposite to Feature No. 15NE-A/C204, Tai Tam Reservoir Road	Natural hillside	14/6	WSD	13/6	Natural hillside	1 (Rockfall)	Road	-
2017/06/2038	West of Feature No. 11SW-D/C1559, Hospital Path, 35 m south of Cragside Mansion, 23 Baker Road	Natural hillside	18/6	HyD	Unknown	Natural hillside	18	Minor footpath	Minor footpath temporarily closed
2017/06/2042	Bowen Road	11SW-B/CR211	19/6	HyD	Unknown	Soil cut	0.1	Road	-
2017/06/2043	Above Feature No. 11SW-D/C404, Kennedy Road	Natural hillside	19/6	BD	Unknown	Natural hillside	42	Nil	-
2017/06/2044	Junction of Bellevue Drive and Repulse Bay Road	15NE-A/C48	19/6	HyD	19/6 (09:30)	Rock cut	2.6 (Rockfall)	Pedestrian Pavement	Pedestrian pavement temporarily closed
2017/06/2047	Below Feature No. 11SW-D/FR104, Peak Road	Natural hillside	20/6	HyD	Unknown	Natural hillside	4	Road	-
2017/06/2048	Between Lamp Post Nos. 41735 and 41736, Chung Hom Kok Road	15NE-A/C131	21/6	HyD	Unknown	Soil/rock cut	2 (Rockfall)	Pedestrian Pavement	-

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 (m ³)		
2017/06/2051	No. 8 Kai Yuen Street	11SE-A/C99	21/6	BD	Unknown	Soil cut	0.6	Pedestrian Pavement	-
2017/06/2055	Bowen Road	11SW-D/C2044	22/6	HyD	Unknown	Soil cut	0.08	Pedestrian Pavement	-
2017/06/2056	Lee Man Road	15NW-B/C419	23/6	HyD	Unknown	Soil cut	1	Construction site	-
2017/07/2063	Adjacent to Feature No.11SW-D/CR186, Broadwood Road	Natural hillside	3/7	GEO	Unknown	Natural hillside	3	Nil	-
2017/07/2064	Lee Man Road	15NW-B/C419	4/7	HyD	Unknown	Rockcut	1 (Rockfall)	Construction site	-
2017/07/2065	Near No. 80 Robinson Road	11SW-A/CR81	14/6	Public	Unknown	Soil cut	1	Nil	-
2017/07/2070	Near No. 51 Stubbs Road	Natural hillside	18/7	Public	18/7 (09:30)	Natural hillside	0.5 (Boulder fall)	Road	-
2017/07/2076	Above Feature No. 11SE-A/C412, Tung Wah Eastern Hospital, Tai Hang	Natural hillside	18/7	Public	18/7 (16:00)	Natural hillside	10	Building	-
2017/07/2085	Stanley Gap Road	15NE-A/C138	20/7	HAD	13/6	Rock cut	0.5 (Rockfall)	Nil	-

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 (m ³)		
2017/08/2093	Pak Fuk Road near Braemar Terrace	< 3 m high cut slope	1/8	Public	Unknown	Soil cut	0.15 (Boulder fall)	Minor footpath	-
2017/08/2095	Above Feature No. 11SW-C/C212, Mount Davis Road	Natural hillside	4/8	HyD	Unknown	Natural hillside	0.004 (Boulder fall)	Road	-
2017/08/2097	Near Feature No. 11SW-C/C818, Old Peak Road	1 m high fill slope	9/8	HyD	Unknown	Fill	1	Road	-
2017/08/2098	Near No. 100M Pokfulam Village	2 m high retaining wall	7/8	DLO	24/7	Retaining wall	0.05	Open area	-
2017/08/2105	Adjacent to Feature No. 11SW-C/F286, Near Tin Lai House, Tin Wan Estate	Natural hillside	21/8	HyD	8/8	Natural hillside	0.027 (Boulder fall)	Open area	-
2017/08/2106	Adjoining No. 8 Mount Austin Road	Natural hillside	21/8	Police	Unknown	Natural hillside	5	Building	-
2017/08/2107	Adjacent to Feature No. 11SW-C/C306, Harlech Road	Natural hillside	18/8	Public	Unknown	Natural hillside	0.3	Minor footpath	-
2017/08/2118	Opposite to No. 28 Peak Road	11SW-D/C589	28/8	HyD	Unknown	Soil/rock cut	0.2	Road	-
2017/09/2132	Opposite to No. 37 Mount Davis Road	Natural hillside	21/9	HyD	18/9	Natural hillside	0.002 (Boulder fall)	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 (m ³)		
2017/10/2135	Mount Nicholson Road	Natural hillside	20/10	HyD	20/10 (12:00)	Natural hillside	0.18 (Rockfall)	Pedestrian pavement	-
2017/10/2137	North of 71 Deep Water Bay Road	Natural hillside	23/10	Public	Unknown	Natural hillside	0.1 (Rockfall)	Road	-
2017/10/2138	Black's Link	11SW-D/C1570	26/10	HyD	26/10	Soil/rock cut	0.33	Road	-
2017/11/2140	Above Feature No. 11SW-C/C681, No. 48 Mount Kellett Road	Natural hillside	17/11	Public	13/11	Natural hillside	0.1 (Boulder fall)	Access road	-
2017/11/2141	Mount Nicholson Road	11SW-D/C337	29/11	HyD	28/11	Soil cut	0.1 (Boulder fall)	Road	-
2017/12/2142	Between Feature Nos. 11SW-D/R141 and 11SW-D/C737, Stubbs Road	8 m high cut slope	19/12	HyD	Unknown	Soil cut	0.1	Road	-
2017/02/1002AD (ArchSD/Southern/2017/02/0001)	Aberdeen Police Training School, Wong Chuk Hang	15NW-B/C168	8/2	ArchSD	Unknown	Soil cut	3	Open area	-
2017/02/1003WS (WSD/2017/02/1/HKI)	Adjoining catchwater within Tai Tam Country Park	15NE-A/CR365	15/2	WSD	Unknown	Soil/rock cut	4.4 (Rockfall)	Catchwater	-
2017/04/1005WS (WSD/2017/04/2/HKI)	Pottinger Peak Catchwater (1st Section, CH0410 - CH0500)	11SE-D/CR350	3/4	WSD	Unknown	Soil cut	0.8	Catchwater	-

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 (m ³)		
2017/06/1015AD (ArchSD/PML/ 2017/06/0003)	Victoria House, No. 15 Barker Road	Natural hillside	19/6	ArchSD	Unknown	Natural hillside	30	Access path	-
2017/07/1032WS (WSD/2017/07/3/ HKI)	Mt. Parker Upper Catchwater (1st Section, CH0920 - CH0990)	11SE-C/C205	22/7	WSD	Unknown	Rock cut	1.2	Access road	-
2017/08/1033WS (WSD/2017/08/1/ HKIa)	Mt. Pottinger South Catchwater	11SE-D/CR510	7/8	WSD	Unknown	Soil/rock cut	0.6 (Rockfall)	Catchwater	-
2017/08/1034WS (WSD/2017/08/1/ HKIb)	Mt. Pottinger South Catchwater	11SE-D/CR507	7/8	WSD	Unknown	Soil/rock cut	0.15 (Rockfall)	Catchwater	-
2017/09/1035AD (ArchSD/S/2017/ 09/0001)	Middle Bay Beach, Repulse Bay	15NE-A/F202	21/9	ArchSD	14/9	Fill	8	Open area	-
2017/09/1036HY (HyD/HK2017/09/ 0031)	Near Feature No. 11SW- D/R286, Peak Road	2.5 m high cut slope	11/9	HyD	11/9	Soil cut	0.1	Road	-
2017/11/1048WS (WSD/2017/11/1/ HKI)	Southwest of GLA - THK361/HGS/63	11SW-A/C1124	20/11	WSD	20/11	Soil cut	2	Road	-

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 (m ³)		
2017/06/2035	45 m north of Police Sports and Recreation Club, Sham Shui Po	Natural hillside	14/6	ArchSD	13/6	Natural hillside	50	Minor footpath	-
2017/06/2036	48 m north of Police Sports and Recreation Club, Sham Shui Po	Natural hillside	14/6	ArchSD	13/6	Natural hillside	25	Minor footpath	-
2017/06/2049	Southeast of Yau Tong Centre, Yan Wing Street, Yau Tong	11SE-B/C227	21/6	Public	Unknown	Rock cut	28 (Rockfall)	Open area	-
2017/06/2050	West of Methodist College, Gascoigne Road, Yau Ma Tei	11NW-D/C355	21/6	Police	21/6 (13:00)	Soil/rock cut	0.07 (Rockfall)	Pedestrian pavement	-
2017/06/2052	27 m southeast of House No. 3B, Sam Ka Tsuen, Lei Yue Mun	11SE-B/C635	21/6	Police	Unknown	Soil/rock cut	90	Registered squatter dwelling	Five squatter dwellings temporarily evacuated
2017/06/2060	Lung Ping Road, Tai Wo Ping	11NW-B/CR109	29/6	Public	Unknown	Soil cut	8	Nil	-
2017/07/2077	Between One Beacon Hill and Violet Court, 30 m north of No. 6 Cornwall Street, Lockoo Garden, Kowloon City	Natural hillside	18/7	Public	Unknown	Natural hillside	10	Nil	-
2017/07/2081	Jat's Incline, Wong Tai Sin	7SE-C/C550	18/7	Police	18/7 (20:48)	Soil cut	2.8	Road	Jat's Incline (one lane road) temporarily closed
2017/09/2131	South of Bamboo Villa, Sham Shui Po	11NW-A/F140	14/9	BD	Unknown	Fill	19	Minor footpath	-

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 (m ³)		
2017/10/2133	South of Feature No.11NW-A/CR28, Butterfly Valley Road, Lai Chi Kok	> 3 m high cut slope	29/9	CSD	Unknown	Rock cut	0.4 (Rockfall)	Open area	-
2017/10/2136	Junction of Hong Ning Road and Chun Wah Road, Kwun Tong	11NE-C/CR63	17/10	Public	17/10	Soil/rock cut	0.31	Pedestrian pavement	-
2017/09/1037HY (HyD/NTE/2017/09/0021)	Cheung Hang Road, Lai Chi Kok	11NW-A/C276	11/9	HyD	11/9	Soil/rock cut	1	Access 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 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/01/2000	Kwun Ping Road, Kwun Yam Shan Tsuen, Shatin	Natural hillside	16/1	HAD	Unknown	Natural hillside	16	Road	-
2017/02/2002	Behind House No. 7, Tui Min Hoi, Sai Kung	3.5 m high cut slope	9/2	DLO	Unknown	Soil cut	3.5	Village house	-
2017/04/2005	Behind House No. 23, Siu To Yuen Village, Tseng Lan Shue, Sai Kung	Natural hillside	12/4	DLO	Unknown	Natural hillside	0.1 (Boulder fall)	Registered squatter dwelling	-
2017/04/2008	No. 11 Ma Wo Road, Tai Po	2.5 m high fill slope	19/4	CEDD	Unknown	Fill	0.8	Access road	-
2017/05/2009	Behind House No. 101, Shung Him Tong Village, Fanling	2.3 m high retaining wall	4/5	FSD	4/5	Brick wall	7	Registered squatter dwelling	One villager injured; one squatter dwelling temporarily evacuated
2017/05/2011	Near Lamp Post No. VA6677, Pak Tin Village, Section 2, Tai Wai, Shatin	1.7 m high retaining wall	8/5	DO	4/5	Masonry wall	1.3	Minor footpath	-
2017/05/2013	DD 11 Lot 1479, Nam Hang, Tai Po	Natural hillside	12/5	DLO	12/5	Natural hillside	0.5	Minor footpath	-
2017/05/2017	Tsing Yi Road, Tsing Yi	10NE-B/C57	24/5	FSD	24/5	Rock cut	1300	Open area	Containers damaged; nullah blocked
2017/05/2018	No. 24 Man Kung Uk, Sai Kung (near Lamp Post No. VE2354)	3 m high retaining wall	24/5	FSD	24/5 (11:30)	Masonry wall	5	Minor footpath	Minor footpath temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 2 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/05/2019	Northwest of House No.29, Pei Tau, Sai Kung	11NE-B/C864	24/5	DLO	24/5	Soil cut	20	Other (temporary storage structure)	One temporary storage structure damaged
2017/05/2020	Behind House No. 21A, Sham Tseng San Tsuen, Sham Tseng	6SE-C/C325	24/5	LandsD	Unknown	Soil cut	1	Registered squatter dwelling	-
2017/05/2023	Sung Shan New Village, Yuen Long (near Lamp Post No. FA7154)	6NE-C/F20	19/5	Public	Unknown	Fill	7	Open area	-
2017/06/2025	Near Feature No. 6SW-C/CR149, So Kwun Wat, Tuen Mun	3.2 m high cut slope	31/5	LandsD	Unknown	Soil cut	3	Open area	-
2017/06/2027	Near Feature No. 8SW-C/DT1, Hap Mun Bay, Sai Kung	< 3 m high cut slope	25/5	DLO	Unknown	Soil cut	2.5	Minor footpath	-
2017/06/2032	Fan Kam Road, Sheung Shui (near Lamp Post No. AD3018)	2.5 m high retaining wall	13/6	Police	13/6	Masonry wall	15	Access road	-
2017/06/2039	Behind Residence No. 17 of CUHK, Shatin	7NE-C/C65	18/6	BD	17/6 (21:00)	Rock cut	100	Other (open carpark)	Carpark cordoned off
2017/06/2040	North of Feature No. 7NW-B/C686, To Yuen Tung, Tai Po	Natural hillside	18/6	Police	Unknown	Natural hillside	0.16 (Boulder fall)	Access road	Access road temporarily closed
2017/06/2041	Lung Ha Wan Road, Clear Water Bay, Sai Kung	12NW-D/C4	19/6	HyD	Unknown	Rock cut	3.2 (Rockfall)	Road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 3 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/06/2045	Pak Shek Toi Road, Pik Uk, Sai Kung	11NE-B/C386	19/6	HyD	19/6 (09:00)	Soil cut	8	Road	-
2017/06/2046	Behind House No. 336, Siu Sau Ha Tsuen, Tuen Mun	1.4 m high cut slope	16/6	Public	12/6 (14:20)	Soil cut	1	Registered squatter dwelling	-
2017/06/2054	Behind House No. 25, Pei Tau, Sai Kung	11NE-B/C863	22/6	Police	22/6	Soil cut	3	Registered squatter dwelling	-
2017/06/2057	Wilson Trail (Section 3) near Junk Bay Chinese Permanent Cemetery, Tiu Keng Leng	Natural hillside	23/6	Police	Unknown	Natural hillside	5	Minor footpath	-
2017/06/2058	Access road to House No. 50, Tai Tung Wo Liu, Sai Kung	1 m high retaining wall	19/6	Public	19/6	Retaining wall	2	Access road	-
2017/06/2059	Lau Shui Heung Road, Fanling	Natural hillside	27/6	DLO	Unknown	Natural hillside	2	Open area	-
2017/07/2061	Above Feature No. 3SE-B/C138, Bride's Pool Road, Tai Po	Natural hillside	19/6	HyD	16/6 (00:00)	Natural hillside	0.125 (Boulder fall)	Road	-
2017/07/2062	North of DD130 Lot 871 RP, Lo Fu Hang, Lam Tei, Tuen Mun	4 m high retaining wall	3/7	Public	Unknown	Masonry wall	3	Open area	-
2017/07/2066	Tan Kwai Tsuen, Hung Shui Kiu, Yuen Long (near Lamp Post No. FB2624)	< 3 m high cut slope	7/7	Public	Unknown	Soil cut	8	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 4 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/07/2073	Bride's Pool Road, Tai Po	3SE-D/C77	18/7	Public	18/7 (12:30)	Soil cut	13	Pedestrian pavement	Pedestrian pavement temporarily closed
2017/07/2074	Behind House No. 5, Kau Sai Village, Sai Kung	< 3 m high cut slope	18/7	Public	Unknown	Soil cut	0.27 (Boulder fall)	Registered squatter dwelling	-
2017/07/2075	Bride's Pool Road, Tai Po	4.2 m high fill slope	18/7	HyD	18/7 (13:00)	Fill	16	Road	One lane of Bride's Pool Road temporarily closed
2017/07/2078	Lung Mei Road, Tai Po (near Lamp Post No. VE4114)	Natural hillside	18/7	Police	Unknown	Natural hillside	4.7	Access road	-
2017/07/2079	Behind House No. 21, Kau Wah Keng San Tsuen, Kwai Chung	11NW-A/C697	18/7	Police	18/7 (17:50)	Soil cut	37	Registered squatter dwelling	Windows of a squatter structure damaged; one squatter dwelling temporarily evacuated
2017/07/2082	Hang Hau Wing Lung Road, Clear Water Bay, Sai Kung	12NW-C/C297	19/7	HyD	19/7	Soil cut	5	Road	-
2017/07/2083	Northeast of Chuk Lam Sim Yuen, Tsuen Wan	7SW-C/DT12	20/7	LandsD	19/7 (00:00)	Disturbed terrain	40	Minor footpath	-
2017/07/2084	Hang Hau Wing Lung Road, Sai Kung	12NW-C/DT19	20/7	LandsD	Unknown	Disturbed terrain	1	Road	-
2017/07/2086	Hang Hau Wing Lung Road, Sai Kung	4.5 m high cut slope	20/7	LandsD	Unknown	Soil cut	8	Road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 5 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/07/2087	Between House No. 5 and No. 6, Nam Wai Village, Sai Kung	11NE-B/R152	24/7	LandsD	Unknown	Masonry wall	7	Open area	-
2017/07/2088	Route Twisk - Tsuen Wan (about 16m south of Lamp Post No. FA5699)	6SE-B/C163	25/7	FSD	25/7	Soil cut	15	Open area	-
2017/07/2089	Pak Shek Wo San Tsuen, Clear Water Bay Road, Sai Kung	11NE-B/C370	26/7	LandsD	24/7	Soil cut	0.3	Nil	-
2017/07/2090	Zone 258, Lin Ma Hang Road, Sha Tau Kok	3NE-A/C137	26/7	HyD	Unknown	Soil cut	18	Road	Lin Ma Hang Road (one lane road) temporarily closed
2017/07/2091	Zone 254, Lin Ma Hang Road, Sha Tau Kok	3NE-A/C127	26/7	HyD	Unknown	Soil cut	15	Road	-
2017/07/2092	House No. 120, Keng Hau Village, Shatin	7SW-D/C404	27/7	Public	Unknown	Soil cut	14	Open area	-
2017/08/2094	Luk Keng Road, Tai Po	3NE-C/C129	28/7	Public	Unknown	Soil cut	0.004 (Boulder fall)	Road	-
2017/08/2096	South of Feature No. 7SW-C/C537, Near Tai Wo Hau Estate, Kwai Tsing	Natural hillside	8/8	WSD	6/8	Natural hillside	12	Minor footpath	-
2017/08/2099	Near House No. H12, Tai Mei Tuk Government Bungalows, Tai Po	1.2 m high cut slope	8/8	Public	24/7 (00:00)	Soil cut	0.79	Pedestrian pavement	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 6 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/08/2100	Southeast of Li On Estate, Ma On Shan	1.2 m high fill slope	11/8	HAD	Unknown	Fill	0.15	Minor footpath	-
2017/08/2101	Tseng Lan Shue, Sai Kung (near Lamp Post Nos. VE0009 and VE0010)	Natural hillside	10/8	DLO	Unknown	Natural hillside	0.5 (Boulder fall)	Road	-
2017/08/2102	Fu Yung Pei, Shatin	< 3 m high cut slope	13/8	Public	Unknown	Soil cut	12	Access road	-
2017/08/2112	East of Feature No. 6SW-D/C523, House No. 110, Tai Lam Chung Tsuen, Tuen Mun	Natural hillside	18/8	Public	Unknown	Natural hillside	3	Nil	-
2017/08/2120	To Fung Shan Road (near Lamp Post No. EB1841)	7SW-D/F334	28/8	FSD	Unknown	Fill	20	Road	-
2017/08/2121	Below Shing Mun Country Park Visitor Centre, Tsuen Wan	7SW-A/C229	28/8	Public	27/8 (00:00)	Soil cut	11	Construction site	-
2017/08/2124	Behind House No. 279, Ha Wo Che, Shatin	7SE-A/C606	28/8	FSD	Unknown	Soil cut	0.4	Registered squatter dwelling	-
2017/08/2125	Behind House No. 201, Yat Wing Garden, Tai Po	2.5 m high retaining wall	18/8	CEDD	Unknown	Masonry wall	1	Open area	-
2017/09/2126	North of Feature No. 7NW-D/DT67, San Uk Ka, Tai Po	1.5 m high retaining wall	5/9	LandsD	Unknown	Masonry wall	5	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 7 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/09/2128	Adjoining the south of Feature No. 6SE-D/C573, Tusen Wan	6SE-D/DT10	18/9	GEO	28/8 (00:00)	Disturbed terrain	1.4	Open area	-
2017/09/2129	North of No. 8 Tsing Fat Lane, Siu Sau, Tuen Mun	Natural hillside	13/9	DLO	Unknown	Natural hillside	5	Nil	-
2017/09/2130	Lot 76 77RP and 78RP in DD105, Mai Po Lung Road, San Tin, Yuen Long	2SE-A/C95	14/9	Public	Unknown	Soil cut	0.6	Access road	-
2017/11/2139	Siu Lam Village, Tuen Mun (near Lamp Post No. V5685)	< 3 m high retaining wall	10/11	Public	Unknown	Masonry wall	2	Open area	-
2017/01/1001LD (LandsD/2017/01/0063)	Near Pat Tsz Wo Village, Fo Tan	7SE-A/C41	19/1	LandsD	17/1	Soil cut	2.5	Open area	-
2017/05/1006AD (ArchSD/F/2017/05/0001)	Wo Hop Shek Cemetery, Fanling	3SW-C/CR406	19/5	ArchSD	19/5	Soil cut	12	Other (cemetery)	-
2017/05/1007AD (ArchSD/F/2017/05/0002)	Wo Hop Shek Cemetery, Fanling	3SW-C/C82	29/5	ArchSD	29/5	Soil cut	38	Other (cemetery)	-
2017/05/1011WS (WSD/2017/05/4/NTW)	Adjoining WSD access road K 15, Kau Wah Keng No. 2 Service Reservoir, Kwai Chung	11NW-A/C275	19/5	WSD	Unknown	Soil/rock cut	0.03 (Rockfall)	Access road	-
2017/06/1013AD (ArchSD/F/2017/06/0001)	Wo Hop Shek Cemetery, Fanling	3SW-C/C135	13/6	ArchSD	13/6 (14:30)	Soil cut	15	Other (cemetery)	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 8 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/06/1014AD (ArchSD/F/2017/06/0002)	Wo Hop Shek Cemetery, Fanling	3SW-C/F52	13/6	ArchSD	13/6 (15:30)	Fill	40	Other (cemetery)	-
2017/06/1017WS (WSD/2017/06/1/NTW)	Adjoining WSD access road NT 41 near Spot Level 198.5, Tsuen Wan	7SW-C/F289	8/6	WSD	Unknown	Fill	1.5	Pedestrian pavement	-
2017/07/1020AF (AFCD/2017/07/0001A)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	10	Minor footpath	-
2017/07/1021AF (AFCD/2017/07/0001B)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	5	Minor footpath	-
2017/07/1022AF (AFCD/2017/07/0001C)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	1	Minor footpath	-
2017/07/1023AF (AFCD/2017/07/0001D)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	3	Minor footpath	-
2017/07/1024AF (AFCD/2017/07/0001E)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	1	Minor footpath	-
2017/07/1025AF (AFCD/2017/07/0001F)	Pat Sin Leng Natural Trail, Pat Sin Leng Country Park	Natural hillside	27/7	AFCD	27/7	Natural hillside	1	Minor footpath	-
2017/07/1026AF (AFCD/2017/07/0002)	Tai Mei Tuk Family Walk (Grid Ref. KK153874)	Natural hillside	31/7	AFCD	Unknown	Natural hillside	0.5	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 9 of 10)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/06/1016HY (HyD/NTE/2017/06/0013)	Ma Yau Tong Road, Sai Kung (near Lamp Post No. EB8024)	Natural hillside	26/6	HyD	26/6	Natural hillside	0.5 (Boulder fall)	Minor footpath	-
2017/07/1027HY (HyD/NTE/2017/07/0014)	Tai Mong Tsai Road near Fung Sau Road, Sai Kung	< 3 m high cut slope	3/7	HyD	3/7	Soil cut	0.5	Minor footpath	-
2017/07/1028HY (HyD/NTE/2017/07/0019)	Near Lobster Bay Villa, 115 Tai Hang Hau Village, Sai Kung	Natural hillside	21/7	HyD	21/7	Natural hillside	2 (Boulder fall)	Access road	-
2017/07/1029HY (HyD/NTE/2017/07/0020)	Junction of Pak Shek Toi Road Chung and Yin Lane, Sai Kung	< 3 m high cut slope	31/7	HyD	31/7	Soil cut	0.2	Access road	-
2017/07/1030WS (WSD/2017/07/1/NTW)	Access Road to Wong Nai Tun Reservoir, Tai Lam	6SW-D/C90	19/7	WSD	Unknown	Soil cut	22	Access road	Access road temporarily closed
2017/07/1031WS (WSD/2017/07/2/NTE)	Adjoining Hok Tau Road WSD access road NT 14 near Spot Level 101.4, Hok Tau Reservoir, Fanling	3SW-B/C182	19/7	WSD	Unknown	Soil cut	53	Road	Hok Tau Road (one lane road) temporarily closed
2017/09/1038HY (HyD/NTE/2017/09/0022)	Shing Mun Road, Tusen Wan	7SW-A/C205	18/9	HyD	18/9	Soil cut	1	Nil	-
2017/09/1039LD (LandsD/2017/09/0109)	Lung Ha Wan Road, Clearwater Bay, Sai Kung	12NW-C/C348	27/9	HyD	Unknown	Soil cut	0.2	Access road	-
2017/10/1045AF (AFCD/2017/10/0001)	Shing Mun Forest Track - Lead Mine Pass Section, Shing Mun Country Park	7SW-A/C27	27/10	AFCD	27/10	Soil cut	1.5	Access road	-

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

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/10/1046HY (HyD/NTE/2017/10/0037)	Po Lam Road South, Sai Kung (near Lamp Post No. N2287)	Natural hillside	23/10	HyD	23/10	Natural hillside	0.2	Access road	-

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

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2017/05/2012	Kwun Yam Wan Road, Cheung Chau	14NW-D/C277	10/5	BD	Unknown	Soil cut	1.5	Minor footpath	-
2017/07/2068	Behind No. 23 Shap Long Chung Hau, Lantau Island	< 3 m high cut slope	10/7	Public	Unknown	Soil cut	2.4	Open area	-
2017/07/2071	House No. 23 (Lot DD4 LM330), Lo Tik Wan, Lamma Island	Natural hillside	18/7	Public	17/7 (20:00)	Natural hillside	0.01 (Boulder fall)	Registered squatter dwelling	-
2017/08/2122	House No. 123, Pui O Lo Wai Tsuen, Lantau Island	14NW-A/R25	28/8	GEO	27/8 (22:00)	Masonry wall	35	Building	-
2017/09/1041WS (WSD/2017/09/2/HKI)	Adjoining catchwater near Spot Level 80.2, Tai Long Wan Tsuen, Lantau Island	13NW-B/CR259	1/9	WSD	Unknown	Rock cut	4.8 (Rockfall)	Catchwater	-
2017/09/1044WS (WSD/2017/09/5/HKI)	Shek Pik Catchwater (Section E, CH2060 - CH2158), Lantau Island	13NE-A/CR141	4/9	WSD	Unknown	Soil cut	130	Catchwater	Catchwater blocked

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

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