

Factual Report on Hong Kong Rainfall and Landslides in 2020

GEO Report No. 351

V.S.F. Kong, R.C.T. Wai & E.K.H. Chu

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

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**This report was originally produced in June 2021
as GEO Special Project Report No. SPR 1/2021**

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First published, March 2022

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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 2020. 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.



Patrick K. S. Chau
Chief Geotechnical Engineer/LPM2

Abstract

This report presents a summary of the factual information on rainfall and landslides in Hong Kong throughout 2020. 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 2020 at the HKO's Principal Raingauge at Tsim Sha Tsui amounted to 2,395.0 mm, near the mean annual rainfall of 2,398.5 mm recorded between 1981 and 2010. Two Black Rainstorm Warnings were issued on 6 June and 30 September 2020. Eleven Red Rainstorm Warnings and 30 Amber Rainstorm Warnings were issued between 21 May and 5 October 2020, and between 13 February and 5 October 2020 respectively.

Two Landslip Warnings were issued respectively on 6 June and 19 August 2020. A total of 234 incidents were reported to the Government in 2020. Of these, 214 were classified as genuine landslides and seven of them were designated as major failures (i.e. with a failure volume of 50 m³ or more, or where a fatality has occurred).

There were 29 landslides in 2020 with notable consequences. Of these landslides, three led to temporary evacuation of squatter dwellings, one resulted in damage of a village house, two resulted in damage of parked private cars and the other 23 resulted in temporary closure of roads. Other landslides in 2020 primarily affected footpaths or minor access roads, catchwaters and open areas without any significant direct or indirect consequence. No fatality was reported as a result of the landslides.

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1 Introduction

This report summarises the factual information on rainfall and reported landslides in Hong Kong throughout 2020. 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 28/2018 (GE) and CE 29/2018 (GE) respectively.

In this report, a landslide is defined as the detachment or excessive displacement of soil or rock mass, and includes the failure of a fill slope, cut slope, retaining wall, or natural hillside, 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 mobile networks 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 the HKO and other government departments. The GEO 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.

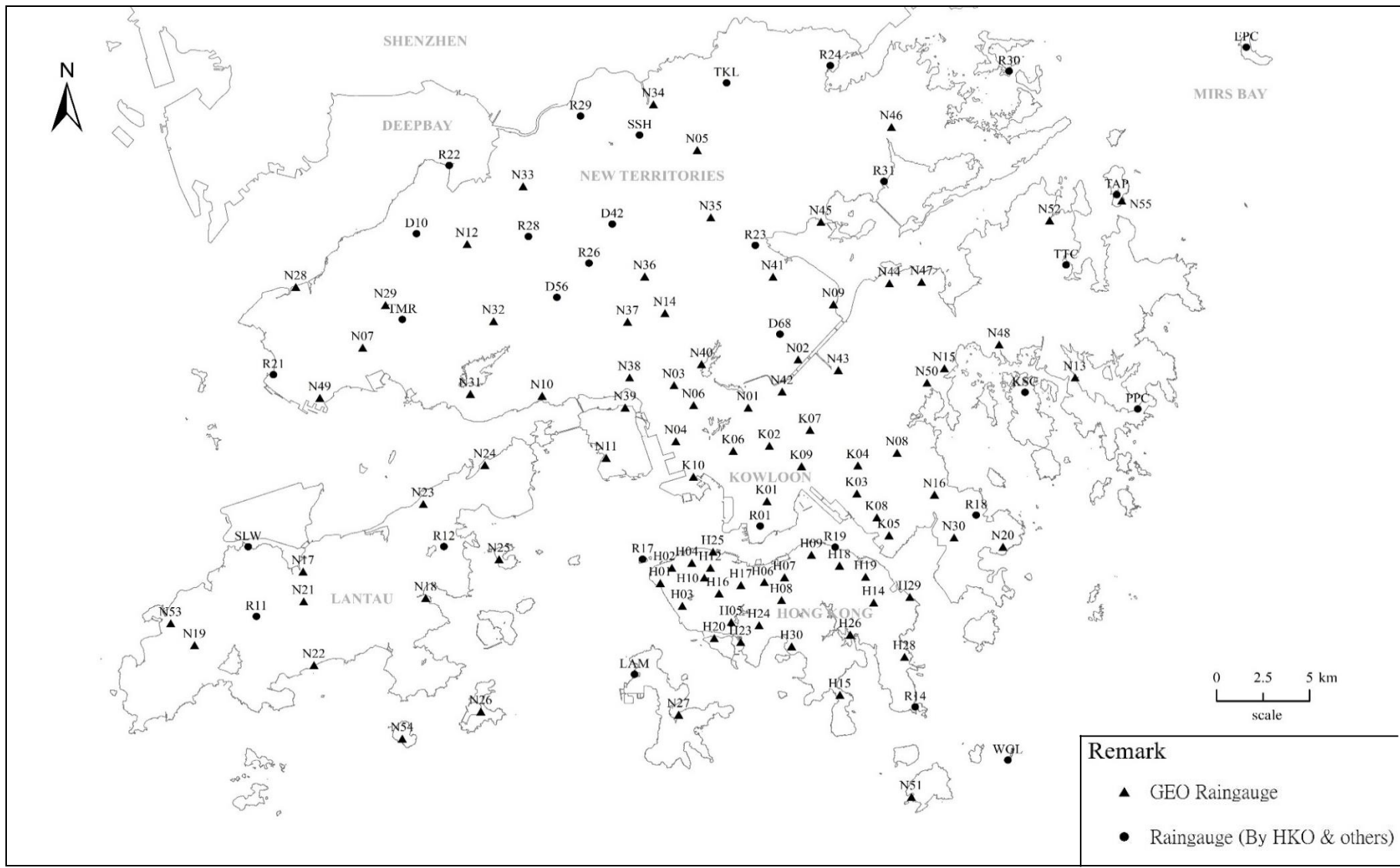


Figure 2.1 Locations of GEO Raingauges and Raingauges Operated by HKO and Other Government Departments

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 2020, as well as individual months and individual rainstorms.

The weather in 2020, as described by the HKO (2021), is excerpted as follows:

"The annual total rainfall in 2020 was 2,395.0 millimetres, near the 1981-2010 normal of 2,398.5 millimetres. Eleven red rainstorm warnings and two black rainstorm warnings were issued by the Hong Kong Observatory in the year. The number of days with thunderstorms reported in Hong Kong was 42 days in 2020, about 3 days more than the 1981-2010 normal."

"A total of 25 tropical cyclones occurred over the western North Pacific and the South China Sea in 2020, less than the long-term (1961-2010) average of about 30. There were 11 tropical cyclones reaching typhoon intensity or above during the year, less than the long-term average of about 15, and three of them reached super typhoon intensity (with maximum 10-minute wind speed of 185 km/h or above near the centre). In Hong Kong, five tropical cyclones necessitated the issuance of tropical cyclone warning signals, slightly less than the long-term average of about six in a year. The Increasing Gale or Storm Signal, No. 9 was issued during the passage of Higos in August, while the No. 8 Gale or Storm Signal was issued during the passage of Nangka in October."

The following is excerpted from the HKO's Monthly Weather Summary describing the weather condition when the most intense rainstorms occurred in the wet season (i.e. between May and October 2020). Further details on the monthly weather are available on the HKO Website (<https://www.hko.gov.hk/en/wxinfo/pastwx/mws/mws.htm>).

"Under the influence of a trough of low pressure over southern China, local weather was unsettled with outbreaks of heavy showers and squally thunderstorms on 21-22 May. More than 80 millimetres of rainfall were recorded over most parts of the territory and rainfall even exceeded 120 millimetres over parts of Hong Kong Island and Tseung Kwan O during these two days. As the trough of low pressure moved away from the coastal areas, the showers over Hong Kong gradually eased off on the next two days with sunny intervals on 24 May."

"Heavy showers and squally thunderstorms returned to the territory on 25-26 May when another trough of low pressure moved across the south China coastal areas. More than

40 millimetres of rainfall were recorded over most parts of the territory on these two days. The showery activities in Hong Kong became less active with sunny intervals on the next three days. Affected by an active southwest monsoon, local weather deteriorated again with heavy showers and thunderstorms on May 30. More than 100 millimetres of rainfall were recorded over most parts of the territory and rainfall even exceeded 150 millimetres over Wong Tai Sin and Tseung Kwan O on that day. Apart from isolated thunderstorms in the morning, the shower activities receded with sunny intervals on the last day of the month."

"Affected by a trough of low pressure lingering over the coastal areas of Guangdong, local weather deteriorated with outbreaks of heavy showers and squally thunderstorms on 6-8 June. More than 250 millimetres of rainfall were recorded over most parts of the territory and rainfall even exceeded 450 millimetres over Tsuen Wan, Sha Tin, Tai Po and Sai Kung during these three days. There were reports of serious flooding in the New Territories and parts of Kowloon. The rain was particularly heavy on the morning of 6 June and the incessant downpour necessitated the issuance of the Black Rainstorm Warning, the first time since May 2017. More than 14350 cloud-to-ground lightning strokes were detected in Hong Kong on that day, the second highest on record since the launch of the lightning location system in 2005."

"The strike of Higos necessitated the issuance of the Gale or Storm Signal No. 8 on the night of 18 August and the Increasing Gale or Storm Signal No. 9 in the small hours of 19 August. Locally, winds strengthened on 18 August and increased significantly that night and in early morning on 19 August, reaching storm force offshore and hurricane force on high ground. Heavy squally showers and thunderstorms associated with the rainbands of Higos also brought more than 100 millimetres of rainfall to most parts of the territory and rainfall even exceeded 200 millimetres over parts of Hong Kong Island in these two days."

"Showery activity continued to affect the territory on 4-5 September. The heavy showers and thunderstorms on the morning of 5 September necessitated the issuance of the Red Rainstorm Warning. More than 40 millimetres of rainfall were recorded over Hong Kong Island, Kowloon and Tseung Kwan O and the rainfall even exceeded 100 millimetres over Southern District, Eastern District and Kwun Tong."

"A fresh easterly airstream set in on 21 September and brought heavy showers and thunderstorms to the territory in the afternoon

and at night. More than 50 millimetres of rainfall were recorded over many places and the rainfall even exceeded 100 millimetres over most parts of the urban areas, necessitating the issuance of the Red Rainstorm Warning."

"Affected by a broad trough of low pressure over the northern part of the South China Sea, there were heavy showers on the evening of 28 September. More than 10 millimetres of rainfall were recorded over many places and the rainfall even exceeded 70 millimetres over Southern District of the Hong Kong Island. The broad trough of low pressure continued to bring showers and thunderstorms to Hong Kong on 29 September. A band of intense thundery showers moved across the coastal areas of Guangdong and brought heavy rain and squally thunderstorms to Hong Kong on the evening of 30 September. More than 70 millimetres of rainfall were recorded in most parts of the territory and rainfall even exceeded 100 millimetres over Hong Kong Island and Kowloon, necessitated the issuance of Black Rainstorm Warning."

"A cold front moved across the coastal areas of Guangdong and brought heavy rain and squally thunderstorms to Hong Kong on the morning of 5 October. The heavy downpour also necessitated the issuance of the Red Rainstorm Warning in that morning. More than 50 millimetres of rainfall were recorded over many places in Kowloon and the rainfall recorded at the Hong Kong Observatory even exceeded 100 millimetres."

The rainfalls recorded at the HKO in the first and second quarters of 2020 are 135.9 mm (16% below the normal rainfall) and 827.5 mm (12% below the normal rainfall) respectively. The total rainfalls recorded in the third and last quarters are 1,282.6 mm (13% above normal) and 149.0 mm (10% below normal) respectively. The annual rainfall for 2020 is 2,395.0 mm, near the annual normal of 2,398.5 mm recorded between 1981 and 2010. The cumulative rainfall for 2020 is compared with the highest, lowest and mean rainfall in Figure 2.2.

Figure 2.3 shows the monthly rainfall distribution in 2020. Figure 2.4 shows the annual rainfall distribution in 2020, together with the locations of the reported landslides.

2.3 Rainstorms in 2020

Table 2.1 tabulates the rainfall parameters for two rainstorms in 2020, during which Landslip Warnings were issued. 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 two rainstorms are also shown in Table A1 of Appendix A.

Figures A1 to A2 of Appendix A show the isohyets of the maximum rolling 24-hour rainfalls during the above two rainstorms, together with the locations of reported landslides with incident dates or incident reported dates that can be attributed to the rainstorm events, and the locations and values of maximum rolling rainfalls for durations ranging from five minutes to 48 hours.

The rainstorms of 6 to 9 June 2020 and 19 to 20 August 2020 triggered 99 and two reported landslides respectively.

2.4 Warnings Issued by the Hong Kong Observatory

Table 2.2 summarises the details of the Flooding, Landslip, Tropical Cyclone and Rainstorm Warnings issued by the HKO in 2020. Two Black Rainstorm Warnings were issued in 2020. Eleven Red Rainstorm Warnings and 30 Amber Rainstorm Warnings were issued between 21 May and 5 October 2020, and between 13 February and 5 October 2020 respectively. Two Landslip Warnings were issued respectively on 6 June and 19 August 2020.

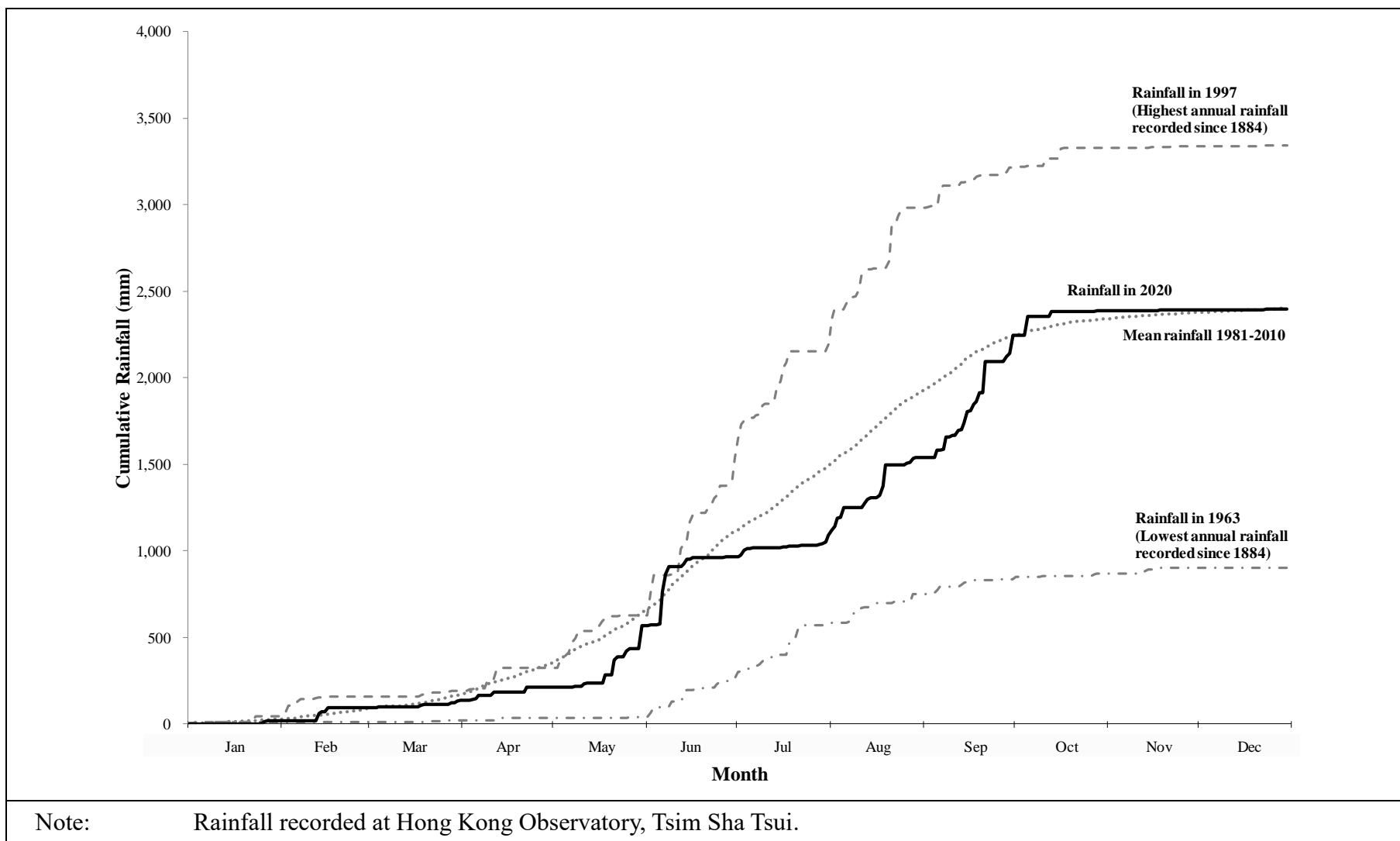
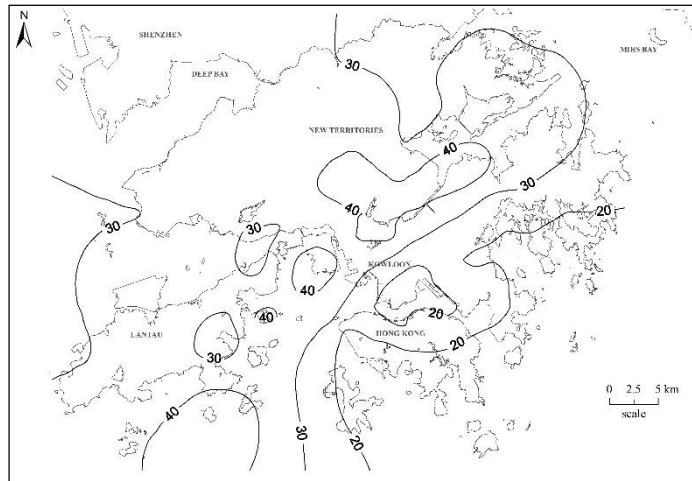
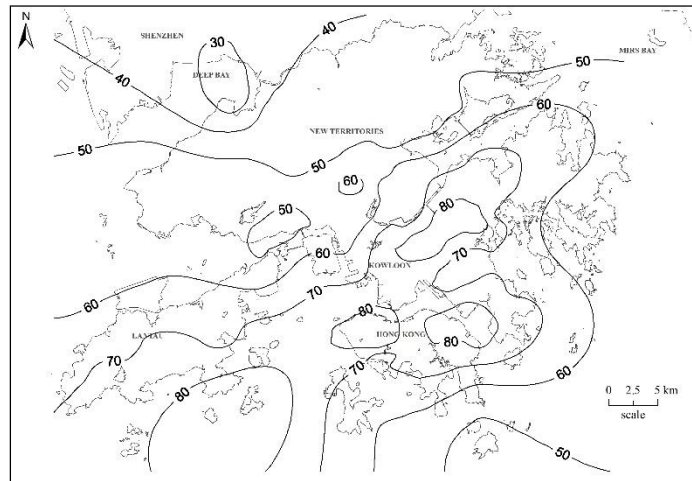


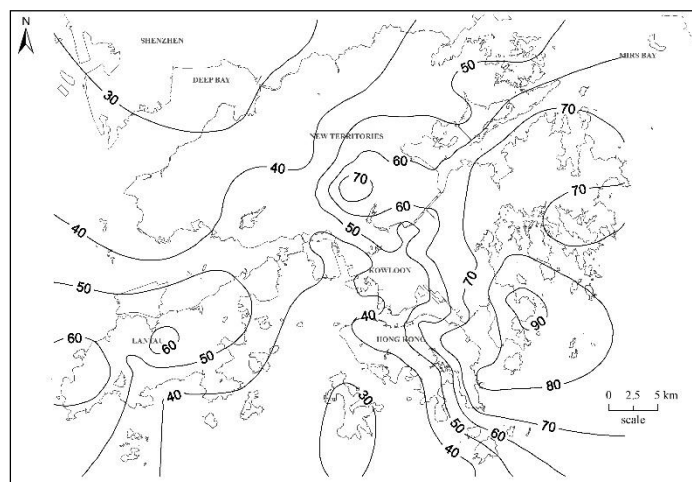
Figure 2.2 Cumulative Rainfall for 2020 at the Hong Kong Observatory and Its Recorded Highest, Mean and Lowest Cumulative Rainfalls



January 2020



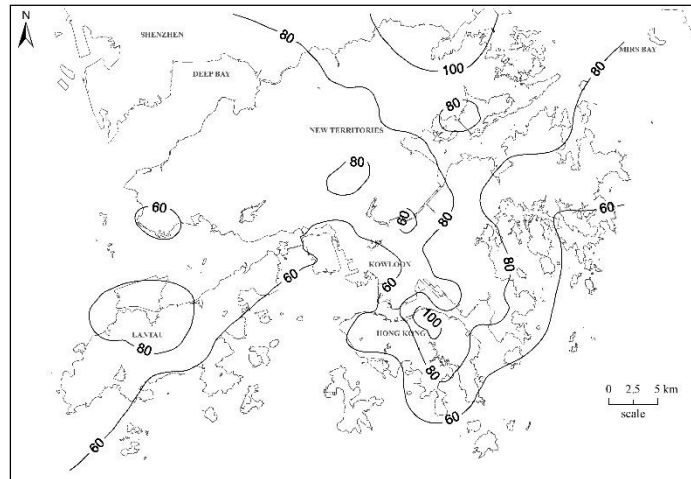
February 2020



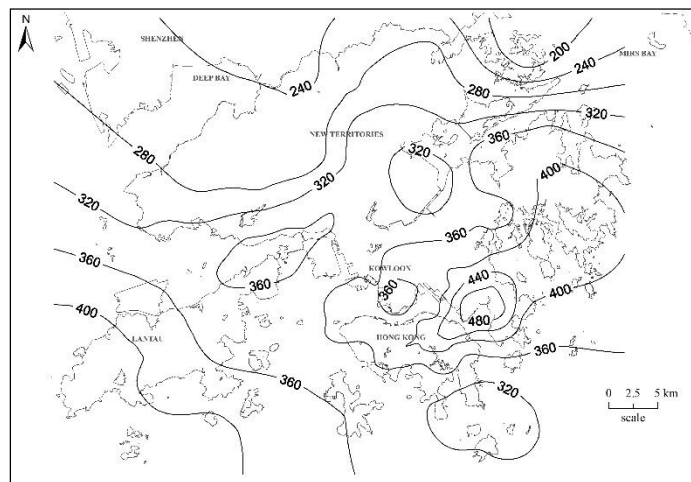
March 2020

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

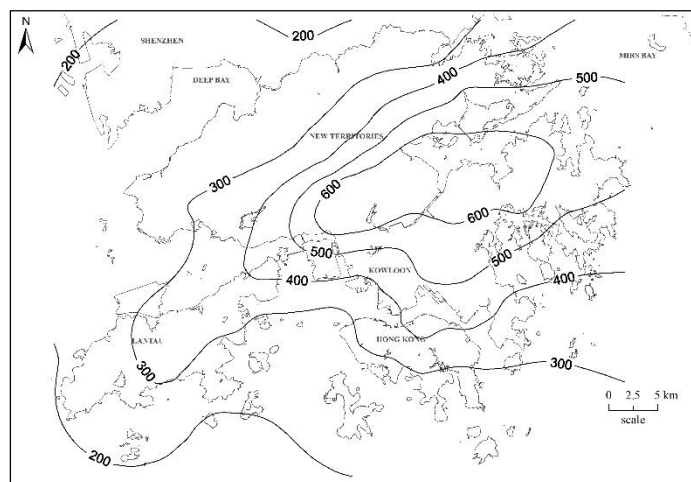
Figure 2.3 Monthly Rainfall Distribution in 2020 (Sheet 1 of 4)



April 2020



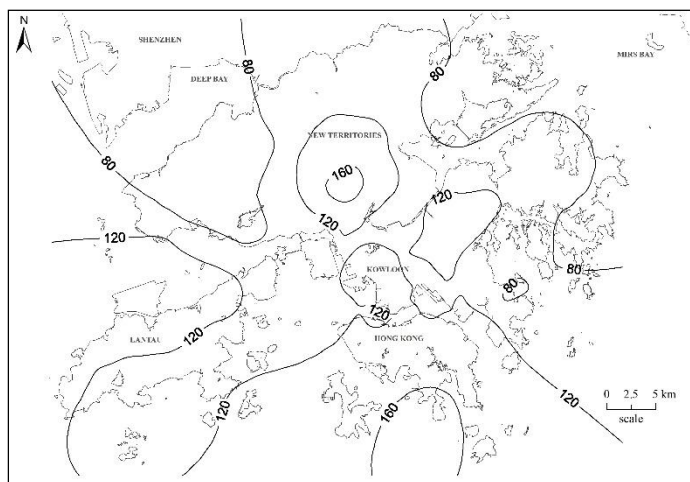
May 2020



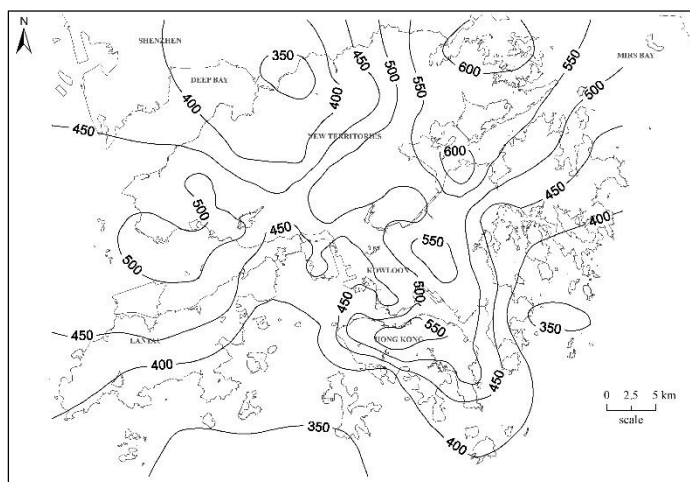
June 2020

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

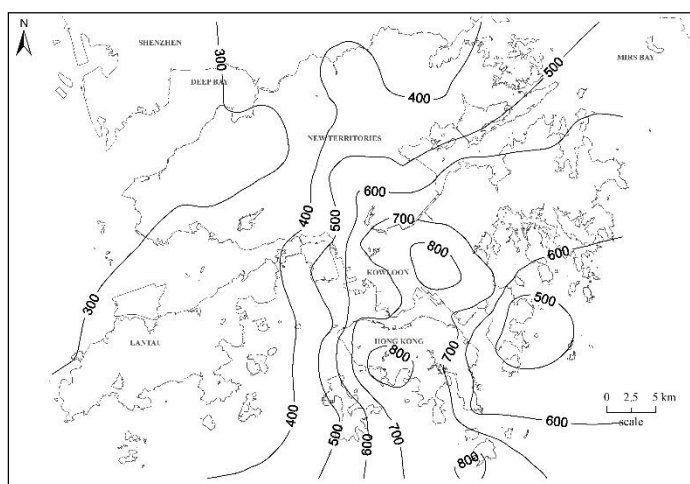
Figure 2.3 Monthly Rainfall Distribution in 2020 (Sheet 2 of 4)



July 2020



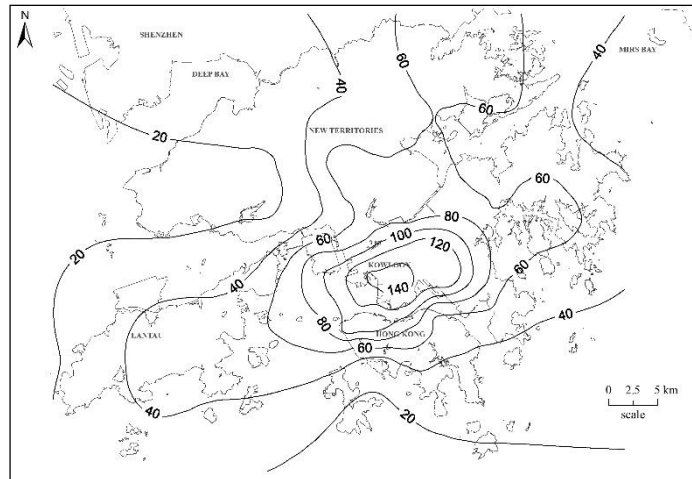
August 2020



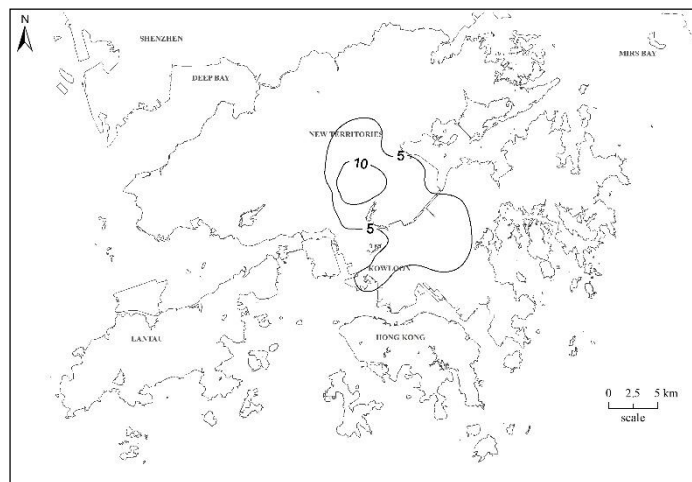
September 2020

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

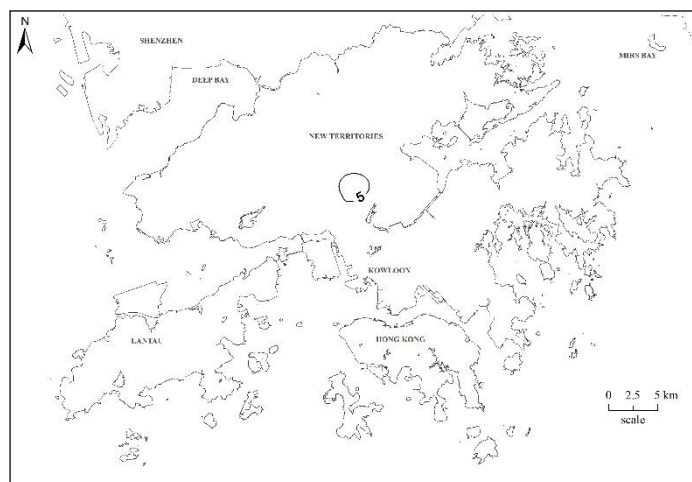
Figure 2.3 Monthly Rainfall Distribution in 2020 (Sheet 3 of 4)



October 2020



November 2020



December 2020

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

Figure 2.3 Monthly Rainfall Distribution in 2020 (Sheet 4 of 4)

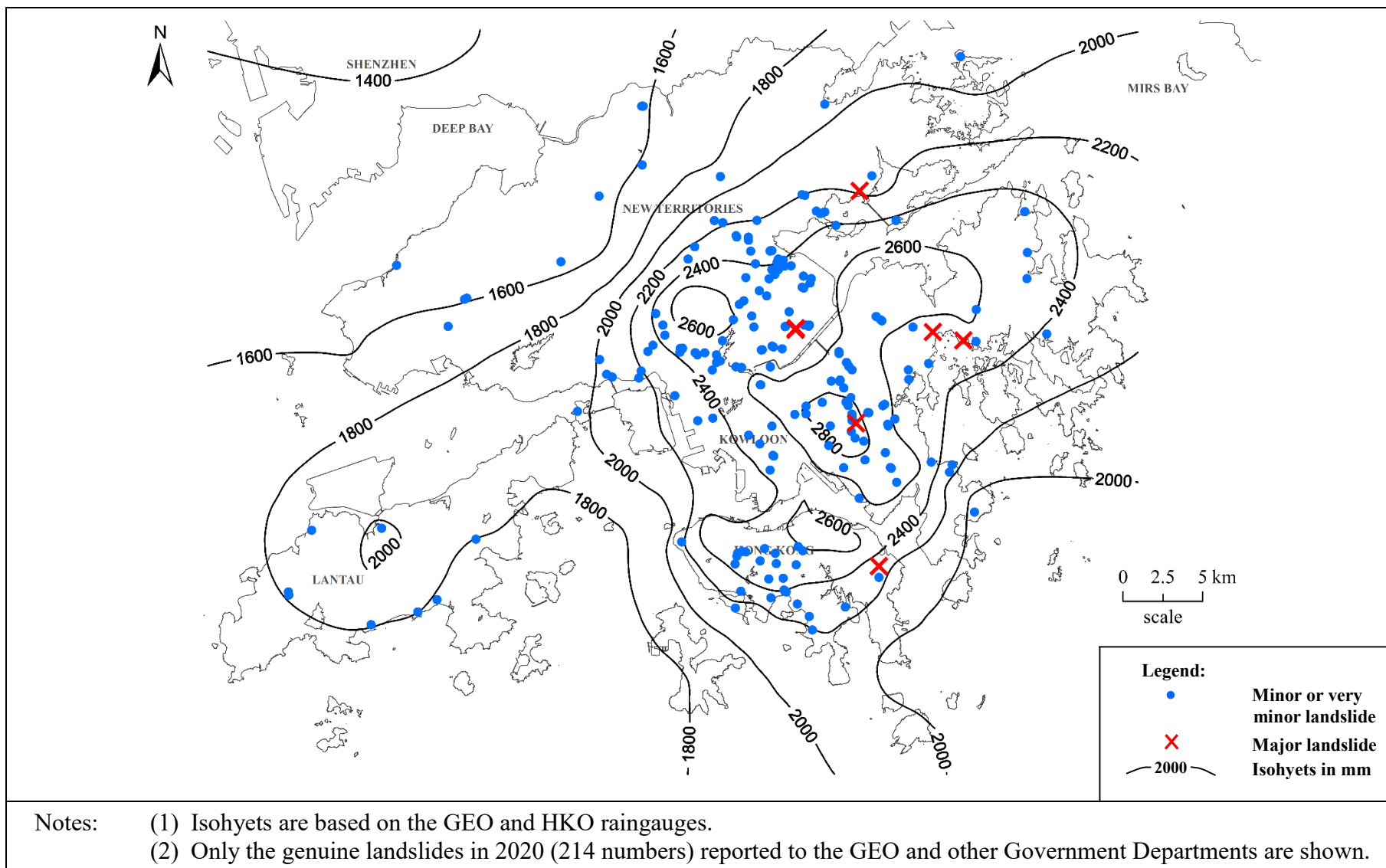


Figure 2.4 Annual Rainfall Distribution and Locations of Reported Landslides in 2020

Table 2.1 Rainfall and Landslides in 2020 and Selected Previous Major Rainstorms (Sheet 1 of 2)

Date of Rainstorm Event	Maximum Rainfall (mm) ⁽¹⁾								Number of Landslides Reported ⁽³⁾
	Hong Kong Observatory (HKO)					GEO Raingauges ⁽²⁾			
	24-hr	4-hr	1-hr	Antecedent		24-hr	4-hr	1-hr	
				4-day	15-day				
6-9 June 2020	174	161	57.5	8.5	196	336.5 (N09)	298.5 (N09)	139.5 (K04)	99
19-20 August 2020	152	78	26	92.5	202.5	246 (H04)	140 (H17)	61.5 (H04)	2

- 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) The maximum rainfalls are selected from the 90 GEO Raingauges for the rainstorms. The GEO Raingauge reference number is shown in brackets.
 - (3) Reported landslides refer to those genuine landslides that can be attributed to the rainstorm events.

Table 2.1 Rainfall and Landslides in 2020 and Selected Previous Major Rainstorms (Sheet 2 of 2)

Date of Rainstorm Event	Maximum Rainfall (mm) ⁽¹⁾								Number of Landslides Reported ⁽³⁾
	Hong Kong Observatory (HKO)					GEO Raingauges ⁽²⁾			
	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) The maximum rainfalls are selected from all the available GEO Raingauges for the rainstorms. The GEO Raingauge reference number is shown in brackets.
 - (3) Reported landslides refer to those genuine landslides that can be attributed to the rainstorm events.

Table 2.2 Warnings Issued by the Hong Kong Observatory in 2020

Month	Monthly Total Rainfall (mm)	Dates on which Warnings ⁽¹⁾ were in Effect			
		Flooding ⁽²⁾	Landslip ⁽³⁾	Tropical Cyclone ⁽⁴⁾	Rainstorm
January	14.8	-	-	-	-
February	79.8	-	-	-	13 (Amber)
March	41.3	-	-	-	18 (Amber)
April	77.8	-	-	-	-
May	352.5	21	-	-	11 (Amber), 18 (Amber), 21 (2 x Amber), 21 (Red), 25 (2 x Amber), 25 (Red), 30 (2 x Amber), 30 (Red)
June	397.2	6, 7	6-7	12-14 (1-3, NURI)	6 (2 x Amber), 6 (2 x Red), 6 (Black), 7 (2 x Amber), 7 (Red), 8 (Amber)
July	125.4	-	-	31 (3, SINLAKU)	-
August	448.4	-	19	1 (1-3, SINLAKU) 18-19 (1-9, HIGOS)	5 (Amber), 18 (Amber)
September	708.8	15	-	-	5 (2 x Amber), 5 (Red), 8 (Amber), 12 (2 x Amber), 15 (Amber), 21 (2 x Amber), 21 (Red), 28 (Amber), 30 (2 x Amber), 30 (2 x Red), 30 (Black)
October	142.4	-	-	11-14 (1-8, NANGKA) 22-24 (1-3, SAUDEL)	5 (2 x Amber), 5 (Red)
November	5.1	-	-	-	-
December	1.5	-	-	-	-
Total	2,395.0	4 Warnings	2 Warnings	5 Warnings	43 Warnings (30 x Amber, 11 x Red & 2 x Black)

Notes:

- (1) Warnings and signals were based on the information from the HKO.
- (2) More than one Flooding 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 2020

Landslide incidents occurring in 2020 and reported to the GEO and other government departments are summarised in Table 3.1.

Table 3.1 Breakdown of Landslides in 2020 Reported to Government Departments

Department	Reported Number of Landslides	Genuine Landslides
Agriculture, Fisheries and Conservation Department	18 (0)	18 (0)
Architectural Services Department	0	0
Drainage Services Department	5 (0)	5 (0)
Geotechnical Engineering Office, Civil Engineering and Development Department	158 ⁽¹⁾	146 ⁽¹⁾
Highways Department	49 (34)	46 (34)
Housing Department	0	0
Lands Department	13 (1)	13 (1)
Water Supplies Department	27 (1)	22 (1)
Total	270 (36) ⁽²⁾	250 (36) ⁽²⁾

Legend:

49 (34) Forty-nine incidents were reported to the government department concerned, 34 of which were also reported to the GEO separately by other parties (i.e. duplicate cases)

Notes: (1) A total of 158 landslide incidents that occurred in 2020 (discounting duplicate cases) were reported to the GEO, of which 146 were classified as genuine landslides.

(2) The number of reported landslide incidents that occurred in 2020 (discounting duplicate cases) is **234** [270 - 36]. The number of genuine landslides is **214** [250 - 36].

A total of 234 landslide incidents that occurred in 2020 were reported to various government departments. These include 158 incidents (discounting duplicate cases) reported to the GEO. Another 76 incidents were reported to other government departments (i.e. AFCD, DSD, HyD, HD, LandsD and WSD). Of these 234 reported incidents, 214 were genuine landslides (see details in Appendix B). The other reported incidents were non-landslide events such as tree falls.

Of the 214 genuine landslides, seven (3.3%) were major landslides (see Table B1 in Appendix B), 148 (68.1%) were minor landslides and 59 (27.6%) were very minor landslides with negligible consequences (see Section 1).

Selected notable landslides are presented in Section 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. Further details of these landslide incidents can be found in the relevant files of the three District Divisions and LPM Division 2 of the GEO.

Wherever possible, the dates and times of the landslides were assessed by geotechnical professionals. Of the 214 landslides, the timing of occurrence was determined to within one day for 48 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, registered squatter dwellings, roads, catchwaters, car parks, etc.) in different regions is summarised in Table 3.2. In regard to the landslides with significant consequences (e.g. casualties, 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 2020 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 four major types of slope failures, i.e. fill slopes, cut slopes, retaining walls and natural hillside. 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)	1 (0)	1 (0)	10 (1)	12 (1)
Registered Squatter Dwellings	0	0	15 (0)	15 (0)
Roads	15 (1)	3 (0)	29 (1)	47 (2)
Transportation Facilities (e.g. railways, tramways, etc.)	0	0	0	0
Pedestrian Pavements/Footways	1 (0)	1 (0)	4 (1)	6 (1)
Minor Footpaths/Access Paths/ Access Roads	4 (0)	4 (0)	71 (3)	79 (3)
Construction Sites	0	0	0	0
Open Areas	1 (0)	5 (0)	14 (0)	20 (0)
Catchwaters	3 (0)	0	9 (0)	12 (0)
Others (e.g. carparks, parks, playgrounds, gardens, backyards, etc.)	2 (0)	2 (0)	18 (1)	22 (1)
Nil	2 (0)	0	6 (0)	8 (0)
Total	29 (1)	16 (0)	176 (7)	221 (8)

Legend:

15 (1) Fifteen landslides of which one was a major failure

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' 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	1 (1)	0	0	0	1	0	0
Cut Slopes	Soil	0	0	0	10	1	1	0	0
	Soil/Rock	0	0	0	7	0	0	0	0
	Rock	0	0	0	2	0	1	0	0
Retaining Walls		0	1 (1)	0	0	0	1	0	0
Natural Hillside		0	1 (1)	0	4	0	0	0	0
Total		0	3 (3)	0	23	1	4	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, 2018).
(2) A failure may give rise to more than one type of consequence.

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	5	0
Major Landslides on Man-made Slopes	0	0	0	0	1	3	0
Major Landslides on Natural Hillside	0	1	0	0	0	2	0

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		16 (0)	7.5
Cut Slopes	Soil	103 (3)	48.1
	Soil/Rock	18 (1)	8.4
	Rock	10 (0)	4.7
Retaining Walls		14 (0)	6.5
Natural Hillside		53 (3)	24.8
Total		214 (7)	100

Legend:

16 (1) Sixteen landslides, one of which was a major failure

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 121 landslides (56.5%) involved less than 5 m³ of material. There were seven major landslides (with a failure volume of 50 m³ or more), four of which occurred on man-made slopes and three occurred on natural hillside. Two incidents involved a failure volume up to 100 m³. One occurred on a soil cut slope at Wong Chuk Yeung Road. The other one occurred on the natural hillside at Lung Mei Village (see Section 4.3 for details).

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	18	8	95	121 (56.5%)
≥5 to <10	2	2	27	31 (14.5%)
≥10 to <20	3	2	20	25 (11.7%)
≥20 to <50	3	3	24	30 (14.0%)
≥50 to <200	1	0	6	7 (3.3%)
≥200 to <500	0	0	0	0 (0%)
≥500 to <1000	0	0	0	0 (0%)
≥1000	0	0	0	0 (0%)
Total	27	15	172	214 (100%)

Legend:

25 (11.7%) Twenty-five landslides, which amount to 11.7% of the total 214 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	Total
		Soil	Soil/Rock	Rock			
<5	6	63	9	8	10	25	121 (56.5%)
≥5 to <10	3	21	1	0	2	4	31 (14.5%)
≥10 to <20	1	11	4	1	1	7	25 (11.7%)
≥20 to <50	6	5	3	1	1	14	30 (14.0%)
≥50 to <200	0	3	1	0	0	3	7 (3.3%)
≥200 to <500	0	0	0	0	0	0	0 (0%)
≥500 to <1000	0	0	0	0	0	0	0 (0%)
≥1000	0	0	0	0	0	0	0 (0%)
Total	16	103	18	10	14	53	214 (100%)

Legend:

25 (11.7%) Twenty-five landslides, which amount to 11.7% of the total 214 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 214 genuine landslides reported to the Government that occurred in 2020, 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 6 June 2020 Landslide on a Retaining Wall at South of No. 5 Tung Hang Mei, Mui Wo (Incident No. 2020/06/2637)

At about 4:00 a.m. on 6 June 2020 when Black Rainstorm Warning was in effect, a landslide occurred on a retaining wall (Feature No. 10SW-A/R9) located to the south of No. 5 Tung Hang Mei, Mui Wo (Figure 4.1). The landslide involved the failure of the masonry wall and the fill materials behind it (volume of about 12 m³). The failed wall portion was about 3 m high. At the wall crest, the paved platform was partially undermined and the one-storey squatter dwelling was temporarily evacuated. No casualty was reported as a result of the landslide.



Figure 4.1 View of the 6 June 2020 Landslide on a Retaining Wall at South of No. 5 Tung Hang Mei, Mui Wo (Incident No. 2020/06/2637)

4.3 The 7 June 2020 Landslide on the Natural Hillside behind House No. 292, Lung Mei Village, Tai Po (Incident No. 2020/06/2663)

At about 7:00 a.m. on 7 June 2020 when Landslip Warning and Amber Rainstorm Warning were in effect, a landslide with an estimated failure volume of about 100 m³ occurred on the natural hillside behind house No. 292 Lung Mei Village, Tai Po (Figure 4.2). Debris from the open hillslope failure impacted on the village house causing damage of a window, a wooden fence and the backyard garden. The footpath at the toe of slope was temporarily closed. No casualty was reported as a result of the landslide.



Figure 4.2 View of the 7 June 2020 Landslide on the Natural Hillside behind House No. 292, Lung Mei Village, Tai Po (Incident No. 2020/06/2663)

4.4 The 6 June 2020 Landslide on a Soil Cut Slope at an Open Carpark at Shan Liu Ha Road, Sai Kung (Incident No. 2020/06/2631)

In the morning of 6 June 2020 when Landslip Warning was in effect, a landslide with an estimated failure volume of about 80 m³ occurred on a soil cut slope (Feature No. 8SW-A/C254) situated above an open carpark at Shan Liu Ha Road, Sai Kung (Figure 4.3). Three cars parked at the slope toe were partially buried, damaged or displaced by the landslide debris. The slope was generally covered with shotcrete and steeply inclined at about 65° prior to the failure. The failure extended from the crest of a concrete toe wall and involved almost the full height of the slope. No casualty was reported as a result of the landslide.



Figure 4.3 Views of the 6 June 2020 Landslide on a Soil Cut Slope at an Open Carpark at Shan Liu Ha Road, Sai Kung (Incident No. 2020/06/2631)

4.5 The 30 September 2020 Rockfall from the Natural Hillside above Choi Shek Road, Ngau Tau Kok (Incident No. 2020/10/2859)

On 30 September 2020, a rockfall occurred on the natural hillside above Choi Shek Road, Ngau Tau Kok (Figure 4.4). A series of rainstorm warnings (including Black Rainstorm Warning) had been issued between 7:15 p.m. and 11:30 p.m. on 30 September 2020. A fallen rock block of approximately 1 m³ in volume, originated from a protruded rock mass above the crest of a roadside cut slope, damaged a private car parked at the roadside opposite to the slope. No casualty was involved. The incident was reported in the media.

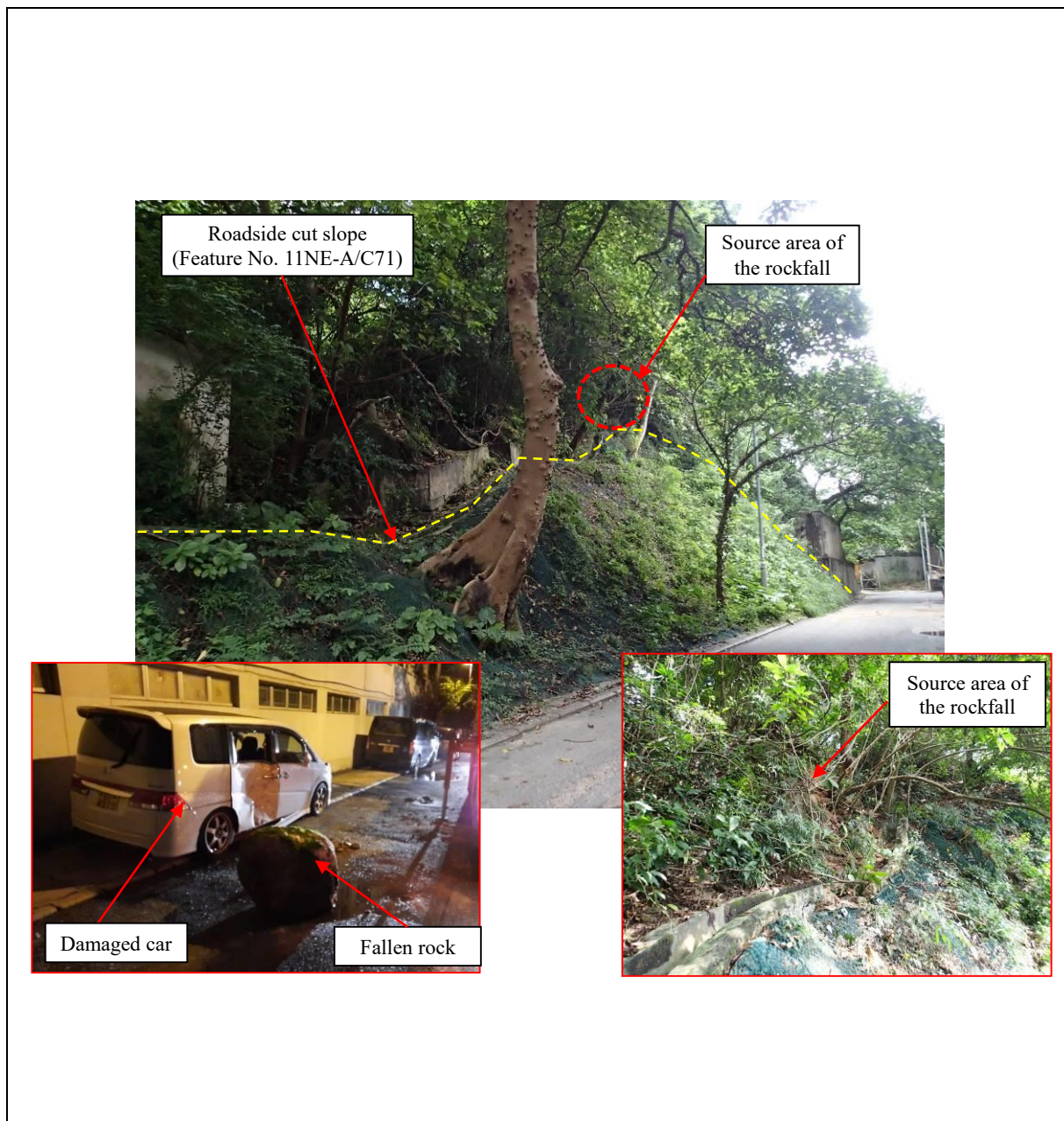


Figure 4.4 Views of the 30 September 2020 Rockfall on the Natural Hillside above Choi Shek Road, Ngau Tau Kok (Incident No. 2020/10/2859)

5 Conclusion

Rainfall recorded at the HKO's Principal Raingauge at Tsim Sha Tsui amounted to 2,395.0 mm in 2020, near the mean annual rainfall of 2398.5 mm between 1981 and 2010. In 2020, two Landslip Warnings were issued respectively on 6 June and 19 August 2020, and two Black Rainstorm Warnings were issued on 6 June and 30 September 2020. Of the 214 genuine landslides, seven were major failures, 148 were minor failures and 59 were very minor failures with negligible consequences.

There were 29 landslides in 2020 with notable consequences. Of these landslides, three led to temporary evacuation of squatter dwellings, one resulted in damage of a village house, two resulted in damage of parked private cars and the other 23 resulted in temporary closure of roads. Other landslides in 2020 primarily affected footpaths or minor access roads, catchwaters, and open areas without any significant direct or indirect consequence. No fatality was reported as a result of the landslides.

6 References

- GEO (2007). *Guidelines for Classification of Consequence-to-Life Category for Slope Features (GEO Technical Guidance Note No. 15)*. Geotechnical Engineering Office, Civil Engineering and Development Department, Hong Kong, 14 p.
- GEO (2018). *Non-Development Clearance (Slope Safety) of Squatters (GEO Circular No. 3)*. Geotechnical Engineering Office, Civil Engineering and Development Department, Hong Kong, 19 p.
- HKO (2021). *The Year's Weather - 2020*. Hong Kong Observatory, Hong Kong, 8 p.

Appendix A

Some Selected Rainfall Parameters for the Two Rainstorms
with Landslip Warnings Issued in 2020

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Table A1 Some Selected Rainfall Parameters for the Two Rainstorms with Landslip Warnings Issued in 2020

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	6-9 June 2020	20.0	N14	39.5	N14	52.0	N14	81.5	K04
2	19-20 August 2020	15.0	H06	24.0	H04, H06, H17	32.5	H04, H17	41.0	H06

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	6-9 June 2020	139.5	K04	245.5	K04	298.5	N09	326.0	N09	329.0	N09
2	19-20 August 2020	61.5	H04	85.0	H04	140.0	H17	154.0	H04	177.0	H04

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	6-9 June 2020	329.0	N09	329.0	N09	331.0	N09	336.5	N09	511.5	N09
2	19-20 August 2020	209.5	H04	231.0	H04	240.5	H04	246.0	H04	249.0	H04

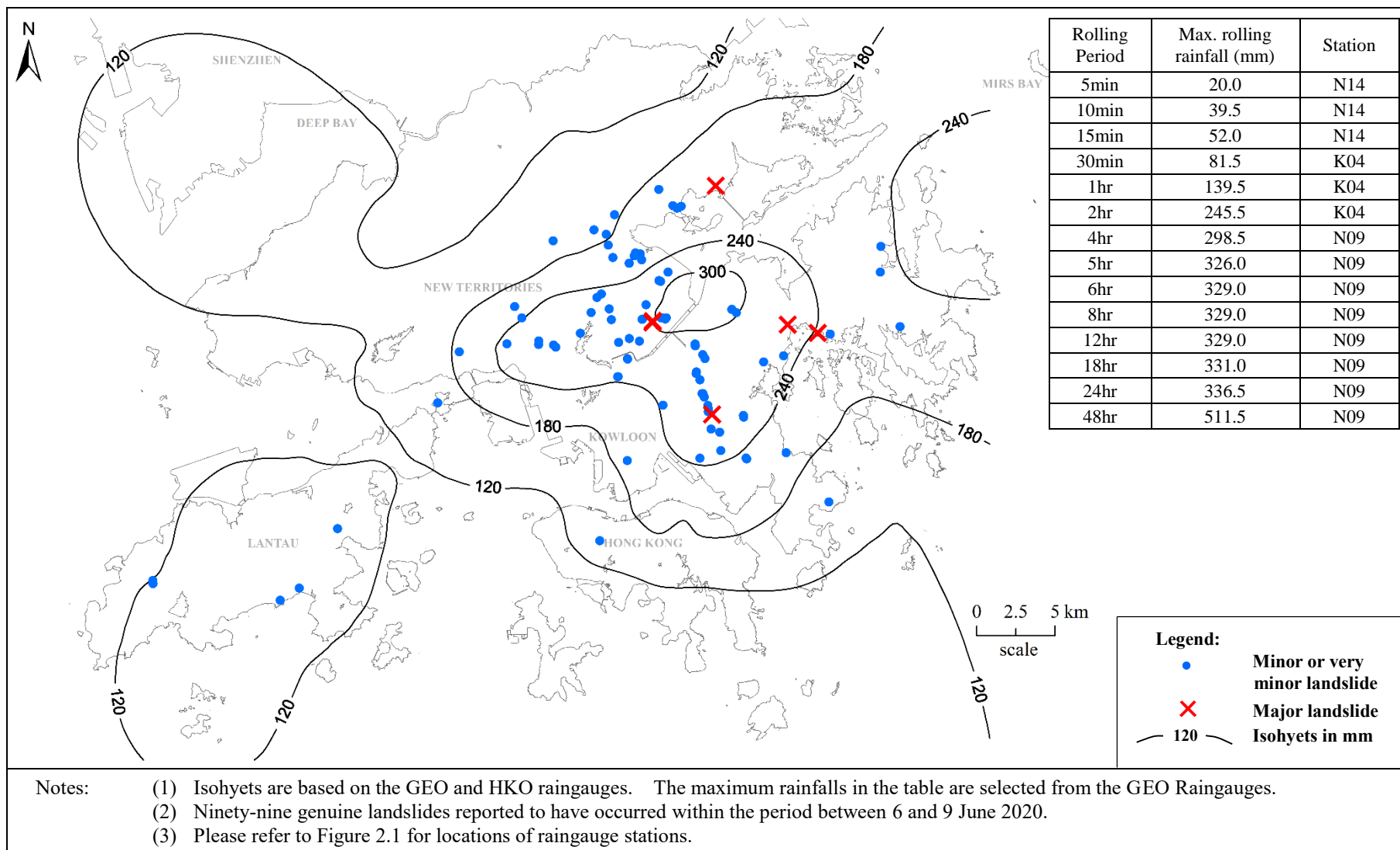


Figure A1 Maximum Rolling 24-hour Rainfall Distribution for the Period between 6 June (00:00) and 9 June 2020 (24:00) and Locations of Landslides

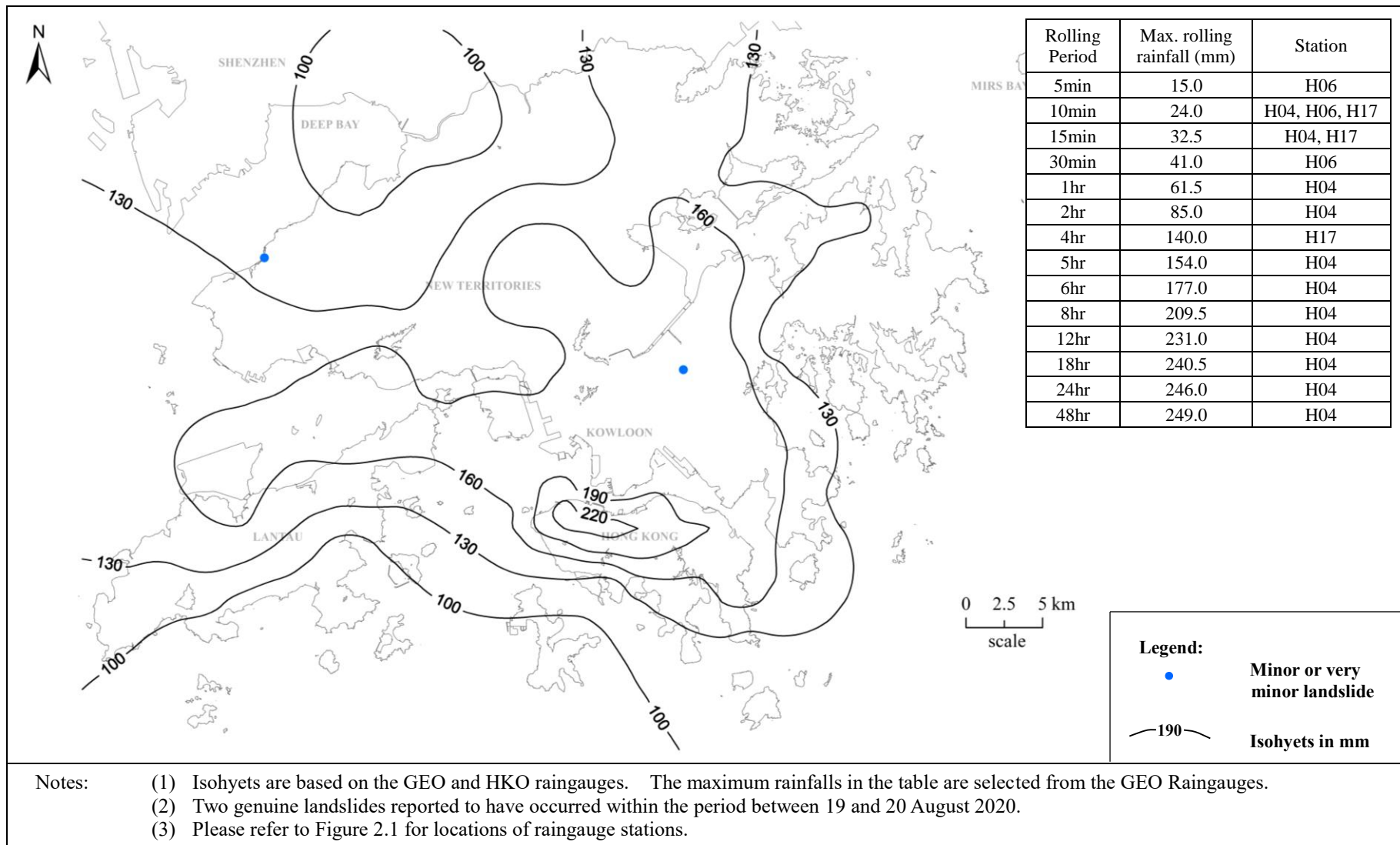


Figure A2 Maximum Rolling 24-hour Rainfall Distribution for the Period between 19 August (00:00) and 20 August 2020 (24:00) and Locations of Landslide

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)		
2020/05/2619	Above Feature No. 11SE-D/C525, Cape Collinson Road	Natural hillside	21/5 (03:30)	Natural hillside	52	Road	Half lane of Cape Collinson Road temporarily closed
2020/06/2631	No. 22 Shan Liu Ha Road open carpark, next to Lot 22, Shan Liu, Sai Kung	8SW-A/C254	6/6	Soil cut	80	Other (open carpark)	Three cars parked in the open carpark damaged
2020/06/2633	Fei Ngo Shan Road	11NE-B/C197	Unknown	Soil/rock cut	75	Road	Fei Ngo Shan Road (one-lane road) temporarily closed
2020/06/2636	Wong Chuk Yeung Road	7SE-A/C336	Unknown	Soil cut	100	Minor footpath	-
2020/06/2656	Fung Sau Road, Sai Kung	8SW-A/C66	7/6	Soil cut	92	Pedestrian pavement	-
2020/06/2663	House No. 292, Lung Mei Village, Tai Po	Natural hillside	7/6 (07:00)	Natural hillside	100	Village house; minor footpath	The window of a village house, a wooden fence and backyard garden damaged; Footpath at the toe of slope temporarily closed
2020/06/2670	To the northwest of Lot S.T.T.L. 33, Fo Tan	Natural hillside	7/6	Natural hillside	90	Minor footpath	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 1 of 4)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/02/2512	Next to Feature No. 11SW-D/CR1238, No. 8 Severn Road	Natural hillside	15/2	HyD	Unknown	Natural hillside	0.25 (Boulder fall)	Road	Severn Road (one-lane road) temporarily closed
2020/05/2616	Lee Wing Street, Ap Lei Chau	15NW-A/CR18	4/5	Public	4/5 (14:00)	Rock cut	0.03 (Rockfall)	Road	-
2020/05/2617	Wan Chai Gap Road, near Bamboo Grove, Wan Chai, Hong Kong	Natural hillside	9/5	Others	Unknown	Natural hillside	15 (Rockfall)	Minor footpath; other (country park facilities)	-
2020/05/2618	Opposite to lamp post No. 39990 at the Y-junction of Shouson Hill Road East and Deep Water Bay Road	11SW-D/CR1869	18/5	HyD	18/5	Rock cut	0.03 (Rockfall)	Road	-
2020/05/2619	Above Feature No. 11SE-D/C525, Cape Collinson Road	Natural hillside	21/5	HyD	21/5 (03:30)	Natural hillside	52	Road	Half lane of Cape Collinson Road temporarily closed
2020/05/2621	Along Mount Davis Path near lamp post No. 45368	Natural hillside	28/5	Public	23/5 (09:00)	Natural hillside	0.125	Road	-
2020/05/2622	Trail adjacent to No. 77 Plantation Road, The Peak	Natural hillside	30/5	HyD	30/5 (12:27)	Natural hillside	18.8	Road	One lane of Plantation Road temporarily closed
2020/05/2623	Near Entrance of Tai Tam Country Park, Tai Tam Road	< 3 m high cut slope	30/5	Police	30/5 (14:28)	Soil/rock cut	0.3	Road	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 2 of 4)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/07/2718	Behind Swiss Towers, No. 113 Tai Hang Road	Natural hillside	6/7	DLO	4/7 (05:14)	Natural hillside	0.003 (Boulder fall)	Other (podium of Swiss Towers)	-
2020/08/2832	Nos. 74-76 Peak Road, the Peak	11SW-D/C253	16/8	Police	Unknown	Rock cut	0.1 (Rockfall)	Road	-
2020/09/2837	Abutting Repulse Bay Fresh Water Service Reservoir (GLA HK 734) and Adjoining Belleview Place, No. 93 Repulse Bay Road	Natural hillside	5/9	Others	5/9 (10:30)	Natural hillside	39.3	Nil	-
2020/09/2838	Ocean Park Road	15NW-B/C188	7/9	HyD	5/9 (12:00)	Soil cut	21.9	Road	Ocean Park Road (one-lane road) temporarily closed
2020/09/2840	Abutting access road leading to No. 1 Headland Road, Repulse Bay	15NE-A/C123 (Sub-division No. 1)	7/9	Public	5/9	Soil cut	9	Pedestrian pavement	Pedestrian pavement temporarily closed
2020/09/2842	No. 12 Stubbs Road, Wan Chai	< 3 m high cut slope	15/9	Police	15/9	Rock cut	0.25 (Rockfall)	Road	One lane of Stubbs Road temporarily closed
2020/09/2845	No. 90 Mount Nicholson Road, Mid-Levels	11SW-D/C332	21/9	HyD	21/9 (19:30)	Soil cut	1.5 (Rockfall)	Road	One lane of Mount Nicholson Road temporarily closed
2020/09/2849	Abutting access road leading to Nos. 21, 23, 25, 25A, 27-31 South Bay Road	15NE-A/C637	21/9	Public	Unknown	Soil cut	2.5	Building; road	-

Table B2 List of Landslide Incidents on Hong Kong Island (Sheet 3 of 4)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/09/2851	Next to lamp post No. 40004D, Deep Water Bay Road	< 3 m high cut slope	25/9	HyD	Unknown	Rock cut	0.01 (Rockfall)	Road	-
2020/09/2852	Abutting building platform of No. 75 Deep Water Bay Road and opposite to lamp post No. 40007, Shouson Hill	11SW-D/C169	25/9	HyD	Unknown	Rock cut	3 (Rockfall)	Road	-
2020/09/2857	Adjoining the southern portion of Feature No. 11SE-C/C802, Tai Hang Road	Natural hillside	29/9	Others	28/9	Natural hillside	5.7	Minor footpath	-
2020/10/2858	Near No. 5 Mount Cameron Road, the Peak	11SW-D/C559	1/10	HyD	1/10	Soil/rock cut	26	Road	One lane of Mount Cameron Road temporarily closed
2020/10/2864	Above Feature No. 11SW-D/C622 behind Aberdeen Harbour Mansion, Nos. 52-64 Aberdeen Main Road	Natural hillside	22/10	Public	Unknown	Natural hillside	0.02 (Boulder fall)	Open area	-
2020/01/1001HY (HyD/HK/2020/01/0001)	Adjacent to footpath between Plantation Road and Gough Hill Road	< 3 m high cut slope	15/1	HyD	15/1	Soil cut	0.4	Minor footpath	-
2020/06/1028HY (HyD/HK/2020/06/0002)	Moorsom Road	11SE-C/CR429	12/6	HyD	12/6	Soil cut	0.5	Nil	-
2020/06/1033HY (HyD/HK/2020/06/0028)	Adjacent to Nos. 15-17 Barker Road	< 3 m high cut slope	8/6	HyD	8/6	Soil/rock cut	0.5	Minor footpath	-

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

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1053WS (WSD/2020/6/15/ HK&I)	Adjoining Catchwater within Aberdeen Country Park	11SW-D/CR2070	18/6	WSD	Unknown	Soil cut	2.1	Catchwater	-
2020/09/1061WS (WSD/2020/9/4/ HK&I)	Aberdeen East Catchwater	11SW-D/CR795	17/9	WSD	Unknown	Soil/rock cut	10	Catchwater	-
2020/10/1067WS (WSD/2020/10/3/ HK&I)	Mount Pottinger South Catchwater	11SE-D/CR506	22/10	WSD	Unknown	Soil/rock cut	4.4	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 (m ³)		
2020/03/2513	Above Block 3 Tsui Chuk Garden, Wong Tai Sin	Natural hillside	8/1	Public	Unknown	Natural hillside	11.5	Building	-
2020/06/2625	Behind No. 28-30 Braga Circuit, Nos. 85-91 Waterloo Road, Mong Kok	11NW-D/FR112	1/6	BD	30/5 (15:00)	Fill	0.13	Open area	-
2020/06/2643	Fei Ngo Shan Road	11NE-A/C508	6/6	HyD	6/6	Soil/rock cut	14.7	Road	-
2020/06/2644	Above roundabout at Oi Tat house, On Tat Estate, Sau Mau Ping	11NE-D/F62	6/6	Public	6/6 (05:00)	Fill	20	Access road	Emergency vehicular access temporarily closed
2020/06/2659	Diamond Hill Reservoir	11NE-A/C627	8/6	Public	8/6 (09:47)	Soil cut	42	Access road	-
2020/06/2684	Nam Hong Building, No. 23 Hong Lee Road, Kwun Tong	11NE-C/C77	10/6	BD	8/6 (14:00)	Soil cut	5	Open area	Carpark spaces at the slope toe temporarily closed
2020/06/2706	Above Feature No. 11SE-B/C629 at Cha Kwo Ling Tsuen, Lam Tin	Natural hillside	22/6	LandsD	Unknown	Natural hillside	6	Minor footpath	-
2020/06/2712	Behind Menon Mansion, Nos. 18-20 Ho Man Tin Street	< 3 m high retaining wall	23/6	BD	6/6	Retaining wall (masonry)	1	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)		
2020/07/2716	One Beacon Hill	Natural hillside	30/6	Public	16/6	Natural hillside	40	Open area	-
2020/07/2723	Near Shek Kip Mei MTR Station Exit B1, Shek Kip Mei	11NW-B/C39	15/7	Police	15/7 (18:20)	Soil/rock cut	0.063 (Rockfall)	Pedestrian pavement, other (MTR station exit)	Temporary closure of Exit B1 of Shek Kip Mei MTR Station
2020/08/2836	Shatin Pass Road, Lion Rock, Wong Tai Sin	Natural hillside	27/8	HyD	27/8 (09:00)	Natural hillside	2 (Boulder fall)	Road	Shatin Pass Road (one-lane road) temporarily closed
2020/09/2850	Near No. 292 Tai Po Road, Sham Shui Po	11NW-B/C579	21/9	LandsD	19/9 (09:30)	Soil cut	3.1	Open area	-
2020/10/2859	Choi Shek Road, Ngau Tau Kok	Natural hillside	1/10	Public	30/9	Natural hillside	1 (Rockfall)	Road	A parked private car damaged
2020/10/2862	Behind Wah Mei Court and Health Mansion, Nos. 237-239A and 241-243 Prince Edward Road West, Kowloon City	11NW-D/FR195	22/10	BD	Unknown	Retaining wall (Brickwork)	2	Open area	-
2020/06/1024DS (Nil No.)	Near Fung Shing Street, Wong Tai Sin	Natural hillside	30/6	DSD	Unknown	Natural hillside	2	Other (natural streamcourse)	-

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 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/01/2511	Above Feature No. 11NE-A/C354, Shatin Pass Road	Natural hillside	23/1	HyD	16/1	Natural hillside	0.125 (Boulder fall)	Nil	-
2020/03/2514	Wun Yiu Road, Tai Po near Wilson Trail	< 3 m high cut slope	16/3	Public	Unknown	Soil cut	4	Minor footpath	-
2020/05/2620	Adjacent to lamp post No. VA3742, Lo Wai Tsuen, Tsuen Wan	< 3 m high cut slope	21/5	Police	21/5	Soil cut	3	Minor footpath	-
2020/06/2624	Behind house No. 88 Wo Hop Shek Village, Fanling (near lamp post No. V5129)	< 3 m high cut slope	1/6	Public	29/5 (22:00)	Soil cut	0.09	Village house	-
2020/06/2626	Natural trail between Hoi Ha Pier and Hoi Ha Marine Life Centre, Hoi Ha, Sai Kung	Natural hillside	2/6	Public	30/5	Natural hillside	0.2	Minor footpath	-
2020/06/2627	Natural trail between Hoi Ha Pier and Hoi Ha Marine Life Centre, Hoi Ha, Sai Kung	Natural hillside	2/6	Public	30/5	Natural hillside	1	Minor footpath	-
2020/06/2628	Near Po Lam Road, Tseung Kwan O	Natural hillside	6/6	Police	6/6	Natural hillside	3.8	Road	Access road temporarily closed
2020/06/2629	Behind village house Nos. 131 to 133, Pik Uk Tsuen, Clear Water Bay Road, Sai Kung	11NE-B/FR284	6/6	Police	6/6	Fill	6	Village house	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 2 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2630	Near Tai Mo Shan Public Toilet, Tai Mo Shan Road	6SE-B/C49	6/6	HyD	Unknown	Soil cut	5.2	Road	One lane of Tai Mo Shan Road temporarily closed
2020/06/2631	No. 22 Shan Liu Ha Road open carpark, next to Lot 22, Shan Liu, Sai Kung	8SW-A/C254	6/6	FSD	6/6	Soil cut	80	Other (open carpark)	Three cars parked in the open carpark damaged
2020/06/2632	Tai Mong Tsai Road	8SW-B/C71	6/6	FSD	Unknown	Soil cut	7.2	Road	Two lanes of Tai Mong Tsai Road temporarily closed
2020/06/2633	Fei Ngo Shan Road	11NE-B/C197	6/6	Police	Unknown	Soil/rock cut	75	Road	Fei Ngo Shan Road (one-lane road) temporarily closed
2020/06/2634	House No. 110 Pak Tin Tsuen, Lower Shing Mun Road	7SW-B/CR527	6/6	HyD	6/6 (05:00)	Soil/rock cut	40	Road	Two lanes of Lower Shing Mun Road temporarily closed
2020/06/2636	Wong Chuk Yeung Road	7SE-A/C336	6/6	Public	Unknown	Soil cut	100	Minor footpath	-
2020/06/2638	Near Tai Au Mun Road, Clear Water Bay Road, Tseung Kwan O	12SW-B/C14	6/6	Police	Unknown	Soil cut	7.9	Road	One lane of Clear Water Bay Road temporarily closed
2020/06/2639	Lung Wo Tsuen near lamp post No. VE0012, No. 233 Clear Water Bay Road	2.5 m high cut slope	6/6	FSD	Unknown	Soil cut	8.4	Road	One lane of Clear Water Bay Road temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 3 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2641	House No. 25B Kwai Tei New Village Resite Village, Fo Tan	7SW-B/C787	6/6	Police	6/6 (15:35)	Soil cut	5	Registered squatter dwelling	-
2020/06/2642	Nos. 15 to 17 Silver Cape Road, Sai Kung	12NW-C/C284	6/6	FSD	6/6	Soil cut	27	Road	One lane of Silver Cape Road temporarily closed
2020/06/2645	Below Jade Villa, No. 15 Keng Hau Road, Tai Wai	Natural hillside	6/6	Police	6/6	Natural hillside	2.6	Building	-
2020/06/2647	Near Lai Chi Hang Fresh Water Pump Station, Tai Po Road (Tai Po Kau Section)	7NW-D/C178	7/6	HyD	7/6 (09:00)	Soil cut	3	Road	One lane of Tai Po Road temporarily closed
2020/06/2648	Near Feature No. 7NW-B/F145, Nam Hang Village, Tai Po	4 m high cut slope	7/6	FSD	Unknown	Soil cut	8	Minor footpath	-
2020/06/2650	Pak Tam Road, Tai Po	8NW-D/C5	7/6	Police	Unknown	Soil/rock cut	17	Road	One lane of Pak Tam Road temporarily closed
2020/06/2652	House No. 15 Ma On Shan Sheung Tsuen near Feature No. 7SE-B/CR124, Ma On Shan	Natural hillside	7/6	Police	7/6 (14:28)	Natural hillside	30	Registered squatter dwelling	One squatter with two persons temporarily evacuated
2020/06/2654	30 m above Feature No. 7NE-C/C285, Tai Po Road, Tai Po Mei	Natural hillside	7/6	FSD	7/6	Natural hillside	25	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 4 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2655	No. 4A & 4B, Pun Shan Chau, Tai Po	5 m high fill slope	8/6	BD	8/6	Fill	47	Registered squatter dwelling	One squatter with three persons temporarily evacuated
2020/06/2656	Fung Sau Road, Sai Kung	8SW-A/C66	8/6	Police	7/6	Soil cut	92	Pedestrian pavement	-
2020/06/2657	Along access road leading to Lam Kam Road (near lamp post No. VE4256)	3.3 m high cut slope	7/6	Public	Unknown	Soil cut	1	Access road	Access road temporarily closed
2020/06/2658	Next to Feature No. 11NE-D/C173, along access road leading to Po Lam Road, Tseung Kwan O	3 m high cut slope	8/6	Public	6/6 (06:24)	Soil cut	5.2	Nil	-
2020/06/2660	Sun Hoi Tin, Chuen Lung, Tsuen Wan	2.5 m high cut slope	6/6	Public	6/6	Soil cut	3	Other (open carpark)	-
2020/06/2661	Fei Ngo Shan Road	11NE-A/C509	8/6	HyD	6/6	Rock cut	10 (Rockfall)	Road	Fei Ngo Shan Road (one-lane road) temporarily closed
2020/06/2662	Fei Ngo Shan Road	11NE-A/C514	8/6	HyD	6/6	Soil/rock cut	30	Road	Fei Ngo Shan Road (one-lane road) temporarily closed

Table B4 List of Landslide Incidents in the New Territories (Sheet 5 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2663	House No. 292, Lung Mei Village, Tai Po	Natural hillside	9/6	Public	7/6 (07:00)	Natural hillside	100	Village house; minor footpath	The window of a village house, a wooden fence and backyard garden damaged; Footpath at the toe of slope temporarily closed
2020/06/2664	Near Feature No. 7NE-A/C111, Shuen Wan Chan Uk Village, Tai Po	Natural hillside	8/6	DO	Unknown	Natural hillside	30	Other (grave)	-
2020/06/2665	Wo Liu Hang Tsun, Fo Tan	7SE-A/C528	8/6	LandsD	6/6	Soil cut	1.5	Registered squatter dwelling	-
2020/06/2666	Wo Liu Hang, Fo Tan	7SE-A/C477	8/6	LandsD	7/6	Soil cut	2	Other (abandoned structure)	-
2020/06/2667	Sam Tung Uk Road, Tsuen Wan	Natural hillside	9/6	BD	8/6	Natural hillside	30	Registered squatter dwelling	-
2020/06/2668	No. 161 Pai Tau Village, Shatin	7SW-B/C405	8/6	LandsD	6/6	Soil cut	1.5	Village house	-
2020/06/2669	Yiu Dau Ping, Fo Tan	7SW-B/CR710	9/6	LandsD	7/6	Soil cut	13	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 6 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2670	To the northwest of Lot S.T.T.L. 33, Fo Tan	Natural hillside	9/6	LandsD	7/6	Natural hillside	90	Minor footpath	-
2020/06/2671	No. 35A Ma On Shan Tsuen	5 m high cut slope	8/6	DLO	27/5	Soil cut	4	Registered squatter dwelling	-
2020/06/2672	Above Feature No. 7NW-B/F259, west of L'Utopie, Tai Po Kau	2 m high cut slope	8/6	LandsD	6/6	Soil cut	0.5	Minor footpath	-
2020/06/2673	West of Savana Garden, Lai Chi Hang, Tai Po Kau	1.8 m high cut slope	8/6	LandsD	6/6	Soil cut	0.5	Minor footpath	-
2020/06/2674	180 m southeast of Ma On Shan Ha Tsuen, Ma On Shan	7SE-B/C74	8/6	DO	7/6	Soil cut	6	Road	-
2020/06/2675	180 m southeast of Ma On Shan Ha Tsuen, Ma On Shan	7SE-B/C74	8/6	DO	7/6	Soil cut	2.5	Road	-
2020/06/2676	Fei Ngo Shan Road	11NE-B/C649	9/6	HyD	6/6	Soil cut	0.5	Road	-
2020/06/2677	Fei Ngo Shan Road	11NE-B/C591	9/6	HyD	6/6	Soil cut	0.5	Road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 7 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2678	Fei Ngo Shan Road	11NE-B/C590	9/6	HyD	6/6	Soil cut	0.5	Road	-
2020/06/2679	Pik Uk Tsuen Road, Sai Kung	11NE-B/C808	9/6	HyD	6/6	Soil cut	0.5	Road	-
2020/06/2680	Near Tui Min Hoi New Village, Tui Min Hoi, Sai Kung	Natural hillside	9/6	DLO	6/6	Natural hillside	10	Minor footpath	-
2020/06/2681	Behind House No. 6 A Shan Village, Tai Po	< 3 m high cut slope	9/6	LandsD	Unknown	Soil cut	0.5	Village house	-
2020/06/2682	Shuen Wan Lei Uk, Tai Po	7NE-A/F36	10/6	LandsD	7/6	Fill	24	Open area	-
2020/06/2683	To the west of Feature No. 7NE-A/C99, Ting Kok Road, Tai Po	Natural hillside	10/6	LandsD	Unknown	Natural hillside	20	Minor footpath	-
2020/06/2685	15 m south of lamp post No. GE3114, Tai Po Kau	2 m high cut slope	8/6	DO	7/6	Soil cut	2	Minor footpath	-
2020/06/2686	House No. 38 Wo Liu Hang Village, Fo Tan	< 3 m high cut slope	8/6	DLO	7/6	Soil cut	2.5	Registered squatter dwelling	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 8 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2687	Access road adjoining Shing Mun Road, Tsuen Wan	7SW-C/C841	10/6	Police	10/6 (17:01)	Soil cut	12	Access road	-
2020/06/2688	Near Feature No. 11NE-B/C1049 at Fei Ha Road, Sai Kung	Natural hillside	9/6	Public	6/6	Natural hillside	12	Pedestrian pavement	-
2020/06/2689	Near Feature No. 3SE-C/C138, Ha Tei Ha, Tai Po	3 m high cut slope	10/6	LandsD	7/6	Soil cut	7	Minor footpath	-
2020/06/2690	Fei Ngo Shan Road	11NE-A/C515	12/6	HyD	6/6	Soil cut	16	Access road	-
2020/06/2691	Fei Ngo Shan Road	11NE-B/C586	12/6	HyD	6/6	Soil cut	22	Road	-
2020/06/2692	Fu Yung Pei, Shatin	7SE-C/C475	8/6	LandsD	6/6	Soil cut	10.5	Access road	-
2020/06/2693	Fu Yung Pei, Shatin	2.7 m high cut slope	8/6	LandsD	6/6	Soil cut	1.3	Access road	-
2020/06/2694	Fu Yung Pei, Shatin	2.5 m high cut slope	8/6	LandsD	6/6	Soil cut	3.9	Access road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 9 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2695	Adjoining natural streamcourse near Siu Lek Yuen Road, Shatin	7SE-A/F258	8/6	Public	6/6	Fill	7.9	Other (natural streamcourse)	-
2020/06/2696	South of house No. 2A Tai Lam Liu Village, Shatin	7SE-A/F275	8/6	Public	6/6	Fill	1.6	Other (natural streamcourse)	-
2020/06/2697	60 m north of Junk Bay High Level Freshwater Service Reservoir, Tai Lam Road, Sai Kung	11NE-D/C914	11/6	Public	10/6 (21:45)	Soil cut	6.3	Road	-
2020/06/2698	Lion Rock, Ma On Shan Country Park	Natural hillside	9/6	DO	6/6	Natural hillside	40	Minor footpath	-
2020/06/2699	Lion Rock, Ma On Shan Country Park	Natural hillside	9/6	DO	6/6	Natural hillside	1 (Boulder fall)	Minor footpath	-
2020/06/2700	Golden Hill Road	7SW-C/C667	11/6	HyD	Unknown	Soil/rock cut	1	Road	-
2020/06/2701	Near lamp post No. VE4893, Cheung Shue Tan, Tai Po	1.7 m high cut slope	12/6	Public	9/6	Soil cut	0.5	Access road	-
2020/06/2702	Near house No. 11 Tai Tan, Sai Kung	1.5 m high cut slope	11/6	DLO	Unknown	Soil cut	0.3	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 10 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/2703	Near lamp post No. VE3049 under Tolo Highway Elevated Road	2.3 m high cut slope	18/6	Public	6/6	Rock cut	0.2	Minor footpath	-
2020/06/2704	Below house No. 1 Sheung Wong Yi Au Village, Tai Po	< 3 m high cut slope	1/6	Public	1/6	Soil cut	1.5	Minor footpath	-
2020/06/2705	Below house No. 1 Sheung Wong Yi Au Village, Tai Po	< 3 m high cut slope	1/6	Public	1/6	Soil cut	1	Minor footpath	-
2020/06/2707	Access Road to Mau Tso Ngam (near lamp post No. V8141)	Natural hillside	9/6	DO	6/6	Natural hillside	3.1	Minor footpath	-
2020/06/2708	House No. 33 Tai Lam Liu Village	7SE-A/R51	19/6	DO	6/6	Retaining wall (masonry)	1.2	Open area	-
2020/06/2710	Tai Lam Chung Catchment	6SE-B/CR99	22/6	Public	Unknown	Soil cut	2	Registered squatter dwelling	-
2020/06/2711	Wang Lung, Chuen Lung, Tsuen Wan	< 3 m high cut slope	17/6	DO	Unknown	Soil cut	1	Access road	-
2020/06/2713	Opposite to house No. 67 at 62 Chung Shun Lane, Tai Po	1.7 m high fill slope	22/6	DLO	7/6	Fill	0.5	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 11 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/07/2714	About 65 m from Feature No. 11NE-B/C1032, Tai Lam Wu, Sai Kung	< 3 m high cut slope	29/6	Public	Unknown	Soil cut	9	Access road	-
2020/07/2715	Near Feature No. 11NE-B/C1032, Tai Lam Wu, Sai Kung	2.5 m high cut slope	29/6	Public	Unknown	Soil cut	5	Access road	-
2020/07/2717	Southeast of Rosary Villas, Fo Tan, Sha Tin	7SE-A/C117	7/7	LandsD	6/6	Soil/rock cut	3	Access road	-
2020/07/2719	Below access road in Ta Ku Ling San Tsuen, Sai Kung	Natural hillside	3/7	Public	Unknown	Natural hillside	30	Access road	-
2020/07/2720	Hang Hau Wing Lung Road, Sai Kung	12NW-C/C297	8/7	LandsD	3/7	Soil cut	19	Road	-
2020/07/2721	Hiram's Highway, Sai Kung	7SE-D/FR35	9/7	HyD	Unknown	Fill	38.5	Road	-
2020/07/2722	West of Greenview Terrace, Yau Kam Tau, Tsuen Wan	6SE-D/C29	7/7	Public	7/7	Soil cut	4.7	Road	-
2020/07/2726	No. 98A Shek Kwu Lung, Tai Po, Shatin	2.5 m high cut slope	3/7	DLO	Unknown	Soil cut	1	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 12 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/07/2727	Behind house No. 81 Ha Wong Yi Au Road	Natural hillside	14/7	DLO	Unknown	Natural hillside	4	Open area	-
2020/07/2827	Tai Po Road (Tai Po Kau Section)	Natural hillside	8/7	Public	15/6	Natural hillside	6	Other (natural streamcourse)	-
2020/07/2828	Above Feature No. 7SW-C/C744 near Yam Hing House of Shek Yam East Estate	10 m high cut slope	30/7	HD	29/7 (22:00)	Rock cut	40	Minor footpath	Minor footpath above Feature No. 7SW-C/C744 temporarily closed
2020/08/2829	No. 110A Ting Kau Village (Lot 482 DD399), Ting Kau	2 m high retaining wall	1/8	Others	1/8 (10:00)	Retaining wall (masonry)	4	Minor footpath	Minor footpath in front of the house temporarily closed
2020/08/2830	Along eastern side of an access road near Fu Fuk Road, Tuen Mun	< 3 m high cut slope	7/8	LandsD	4/8	Soil cut	3.2	Minor footpath	-
2020/08/2831	Fei Ngo Shan, Ma On Shan Country Park	Natural hillside	13/8	LandsD	6/8	Natural hillside	42	Nil	-
2020/08/2833	Nim Wan Road (near lamp post No. FA0901)	Natural hillside	20/8	LandsD	19/8 (13:55)	Natural hillside	0.8 (Boulder fall)	Road	-
2020/08/2835	Near house Nos. 69-70, Luen Yick Fishermen Village, Sam Mun Tsai, Tai Po	7NE-A/F37	26/8	LandsD	Unknown	Fill	5	Open area	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 13 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/09/2841	Ma Tso Lung Shun Yee San Tsuen near lamp post No. N4009, Ma Tso Lung	2 m high fill slope	14/9	Police	14/9 (08:25)	Fill	1.5	Registered squatter dwelling; access road	-
2020/09/2843	Ng Tung Chai Road, Lam Tsuen, Tai Po	2.5 m high cut slope	10/9	DO	Unknown	Soil cut	1	Access road	-
2020/09/2847	Yau Kam Tau Village, Tsuen Wan (near Feature No. 6SE-D/FR275)	2 m high retaining wall	22/9	FSD	Unknown	Retaining wall (masonry)	5	Minor footpath; other (concrete platform within private lot)	-
2020/09/2848	20 m west of Tseng Tau Chung Tsuen, Tuen Mun	2.8 m high cut slope	22/9	Public	22/9	Soil cut	0.2	Registered squatter dwelling	-
2020/09/2853	Wo Yi Hop Village, Tsuen Wan (near Feature No. 7SW-A/C184)	2 m high retaining wall	28/9	DLO	Unknown	Retaining wall (masonry)	5	Open area	-
2020/09/2854	Near No. 67 Lo Wai Village, Lo Wai, Tsuen Wan	2.5 m high retaining wall	28/9	DLO	Unknown	Retaining wall (masonry)	1	Open area	-
2020/09/2855	Near No. 67 Lo Wai Village, Lo Wai, Tsuen Wan	2 m high cut slope	28/9	DLO	Unknown	Soil cut	2	Open area	-
2020/09/2856	No. 71 Tai Po Mei, Tai Po, Shatin	7NE-C/C511	28/9	BD	6/9	Soil cut	2	Village house	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 14 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/10/2860	Hang Tau, Sheung Shui	2SE-D/CR409	7/10	LandsD	1/10	Soil cut	1.9	Minor footpath; open area	-
2020/10/2861	South of Ngau Tam Mei Road, Mai Po, Yuen Long	2 m high retaining wall	14/10	Public	14/10 (02:30)	Retaining wall	0.3	Registered squatter dwelling	-
2020/10/2863	Behind Nos. 46 & 47 Kam Shan House, Tai Po	2.5 m high fill slope	23/10	DLO	6/10	Fill	0.2	Village house	-
2020/11/2865	Ex. Kat O Public School, No. 104 Kat O Main Street, Kat O	4NW-A/CR35	19/11	Public	Unknown	Retaining wall (masonry)	27	Other (abandoned school)	-
2021/01/2866	North of Kwun Yam Garden near Feature No. 7SE-C/C496, Tso Tsui Ha, Shatin	3 m high fill slope	12/1	LandsD	19/8	Fill	18	Access road	-
2020/05/1003LD (LandsD/2020/05/0355)	South of Shek Tong Tsuen, Yuen Long	6NE-C/C6	27/5	LandsD	13/5 (08:15)	Soil cut	2.3	Village house	-
2020/05/1004LD (LandsD/2020/07/0401)	Kon Hang, Tai Po Road	7NE-C/CR365	30/5	LandsD	30/5	Soil cut	2	Open area	-
2020/05/1005LD (LandsD/2020/10/0421)	Near Feature Nos. 6SE-C/CR94 and 6SE-C/C93	< 3 m high retaining wall	18/6	LandsD	22/5	Retaining wall (masonry)	1	Open area	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 15 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1006AF (AFCD/2020/06/0001A)	Tai Po Kau Forest Track - Kau Lead Section, Tai Po Kau Nature Reserve	7NW-D/C235	10/6	AFCD	Unknown	Soil cut	1	Access road	-
2020/06/1007AF (AFCD/2020/06/0001B)	Tai Po Kau Forest Track - Kau Lead Section, Tai Po Kau Nature Reserve	Natural hillside	10/6	AFCD	Unknown	Natural hillside	41	Access road	-
2020/06/1008AF (AFCD/2020/06/0002)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	7SW-A/FR60	11/6	AFCD	Unknown	Fill	25	Access road	-
2020/06/1009AF (AFCD/2020/06/0003)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	7SW-B/F84	11/6	AFCD	Unknown	Fill	36	Access road	-
2020/06/1010AF (AFCD/2020/06/0004)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	Natural hillside	11/6	AFCD	Unknown	Natural hillside	8	Other (culvert)	-
2020/06/1011AF (AFCD/2020/06/0005)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	7NW-D/C285	11/6	AFCD	Unknown	Soil cut	2	Access road	-
2020/06/1012AF (AFCD/2020/06/0006)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	Natural hillside	11/6	AFCD	Unknown	Natural hillside	2	Access road	-
2020/06/1013AF (AFCD/2020/06/0007)	Shing Mun Forest Track - Reservoir Section, Shing Mun Country Park	7SW-B/C461	11/6	AFCD	Unknown	Soil cut	1.5	Access road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 16 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1014AF (AFCD/2020/06/0008)	West Buffalo Hill, Shatin	Natural hillside	17/6	AFCD	Unknown	Natural hillside	15	Minor footpath	-
2020/06/1015AF (AFCD/2020/06/0009)	West Buffalo Hill, Shatin	Natural hillside	17/6	AFCD	Unknown	Natural hillside	30	Minor footpath	-
2020/06/1016AF (AFCD/2020/06/0010)	Tai Po Kau Forest Track - Kau Lead Section	7NW-D/C238	17/6	AFCD	13/6	Soil cut	8	Access road	-
2020/06/1017AF (AFCD/2020/06/0011)	Tai Po Kau Forest Track - Kau Lead Section	7NW-D/CR411	17/6	AFCD	13/6	Soil cut	5	Access road	-
2020/06/1018AF (AFCD/2020/06/0012)	Tai Po Kau Forest Track - Kau Lead Section	7NW-D/C418	17/6	AFCD	13/6	Soil cut	10	Access road	-
2020/06/1019AF (AFCD/2020/06/0013)	Tai Po Kau Forest Track - Fire Lookout Section	7NW-D/C276	17/6	AFCD	13/6	Soil cut	15	Access road	-
2020/06/1020AF (AFCD/2020/06/0014)	Tai Po Kau Forest Track - Red Road Trail	Natural hillside	23/6	AFCD	13/6	Natural hillside	44	Access road	-
2020/06/1021AF (AFCD/2020/06/0015)	Pat Sin Leng Nature Trail	Natural hillside	22/6	AFCD	Unknown	Natural hillside	15	Minor footpath	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 17 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1022AF (AFCD/2020/06/0016)	Wilson Trail Section 4, Tung Yeung Shan, Ma On Shan	Natural hillside	3/7	AFCD	13/6	Natural hillside	20	Access road	-
2020/06/1023DS (Nil No.)	Near House No. 109A, Pak Tin Area 2, Tai Wai	Natural hillside	15/6	DSD	Unknown	Natural hillside	2	Other (natural streamcourse)	-
2020/06/1025DS (Nil No.)	Along footpath to Shui Hau Village, Ho Chung, Sai Kung	11NE-B/C1003	12/6	DSD	Unknown	Soil cut	4	Other (natural streamcourse)	-
2020/06/1026DS (Nil No.)	Near house No. 34 Tai Chung Hau, Sai Kung	< 3 m high retaining wall	9/6	DSD	Unknown	Retaining wall (masonry)	4	Other (natural streamcourse)	-
2020/06/1027DS (Nil No.)	Ho Chung, Sai Kung	< 3 m high cut slope	23/6	DSD	Unknown	Soil cut	3	Other (natural streamcourse)	-
2020/06/1029HY (HyD/NTE/2020/06/0009A)	Mei Tin Road near lamp post No. CE0637	7SW-D/CR126	8/6	HyD	8/6	Soil cut	5	Pedestrian pavement	-
2020/06/1030HY (HyD/NTE/2020/06/0009B)	Mei Tin Road near lamp post No. CE0637	7SW-D/F576	8/6	HyD	8/6	Fill	1	Pedestrian pavement	-
2020/06/1032HY (HyD/NTE/2020/06/0026)	Near Po Lam Road South, Tseung Kwan O	Natural hillside	6/7	HyD	22/6	Natural hillside	3	Access road	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 18 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1034HY (HyD/NTE/2020/06/0041)	Luk Keng Road near Feature No. 3NE-C/FR39	< 3 m high retaining wall	3/6	HyD	Unknown	Retaining wall (masonry)	1	Open area	-
2020/06/1035LD (LandsD/2020/06/0365)	Wong Chuk Yeung Tsuen, Fo Tan, Sha Tin	7SW-B/C786	6/6	LandsD	6/6	Soil cut	5.4	Village house	-
2020/06/1036LD (LandsD/2020/06/0376)	Near Nam On Temple, Fu Tai Tsuen, Lam Tei	6NW-C/C222	5/6	LandsD	5/6 (15:26)	Soil cut	0.8	Registered squatter dwelling	-
2020/06/1037LD (LandsD/2020/07/0400)	To Yuen Tung, Ma Wo Road, Tai Po	7NW-B/CR224	6/6	LandsD	6/6	Soil/rock cut	1	Registered squatter dwelling	-
2020/06/1038LD (LandsD/2020/07/0402)	200 m west of Tsung Tsai Yuen, Tai Po Road	7NW-D/C413	6/6	LandsD	6/6	Soil cut	10	Access road	-
2020/06/1039LD (LandsD/2020/07/0403)	Near Feature No. 11NW-A/C308 at Kau Wa Keng Pumping Station Upper Village	< 3 m high retaining wall	15/6	LandsD	Unknown	Retaining wall (masonry)	2	Minor footpath	-
2020/06/1042WS (WSD/2020/6/3/NTE)	Sai Kung Sai Wan Road, High Island Reservoir	8SE-A/C42	10/6	WSD	Unknown	Soil cut	5.6	Road	Sai Kung Sai Wan Road (one-lane road) temporarily closed
2020/06/1043WS (WSD/2020/6/4/NTE)	Within GLA-ST145, To Fung Shan, Shatin	7SW-B/C226	11/6	WSD	Unknown	Soil cut	28	Nil	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 19 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1044WS (WSD/2020/6/5/ NTW)	Along catchwater of spot level 202.1, Tai Mo Shan, Tsuen Wan	7SW-A/CR137	11/6	WSD	Unknown	Soil cut	5.6	Catchwater	Catchwater partially blocked
2020/06/1045WS (WSD/2020/6/6/ NTW)	Access road along Shing Mun Catchwater to Jubilee Reservoir, Tsuen Wan	7SW-A/CR74	11/6	WSD	Unknown	Soil cut	2.1	Catchwater	-
2020/06/1046WS (WSD/2020/6/7/ NTW)	Ch. 3710 - 3950 catchwater near Tai Mo Shan, Tsuen Wan	7SW-A/CR91	11/6	WSD	Unknown	Soil cut	1.5	Catchwater	-
2020/06/1047WS (WSD/2020/6/8/ NTW)	Ch. 8600 - 8745 Tai Lam Chung Catchwater Section O, Tai Lam Chung	6SE-B/CR217	11/6	WSD	Unknown	Soil cut	3.5	Catchwater	-
2020/06/1048WS (WSD/2020/6/9/ NTW)	Ch. 2500 Tai Lam Chung Catchwater Section L, Tai Lam Chung	6SE-C/CR618	11/6	WSD	Unknown	Soil/rock cut	3 (Rockfall)	Catchwater	-
2020/06/1049WS (WSD/2020/6/11/ NTE)	Access road to Intake MA, Sai Kung	8SW-A/C170	12/6	WSD	Unknown	Soil/rock cut	8	Road	The WSD access road temporarily closed
2020/06/1050WS (WSD/2020/6/12/ NTE)	South of Scout Centre along catchwater, Tung Tsz	3SE-C/CR86	12/6	WSD	Unknown	Soil cut	10	Catchwater	-
2020/06/1051WS (WSD/2020/6/13/ NTE)	Pan Long Wan Tsuen	12NW-C/C422	15/6	WSD	Unknown	Soil/rock cut	1.4	Other (open carpark)	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 20 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/06/1052WS (WSD/2020/6/14/NTW)	Adjoining Shing Mun Road (WSD access road NT 41) near spot level 196.4, Tsuen Wan	7SW-C/C821	15/6	WSD	Unknown	Soil/rock cut	13	Road	The WSD access road temporarily closed
2020/06/1054WS (WSD/2020/6/16/NTE)	WSD access road of Plover Cove Reservoir, Tai Po	7NE-B/C2	18/6	WSD	Unknown	Soil cut	10	Nil	-
2020/06/1055HY (HyD/NTE/2020/06/0040)	Near Feature No. 7NW-A/C89, West of the Duke of Edinburgh Training Camp, Chuen Pei Lung, Tai Po	Natural hillside	7/7	HyD	Unknown	Natural hillside	1	Open area	-
2020/09/1057AF (AFCD/2020/09/0001)	Shing Mun Forest Track - Lead Mine Pass Section, Shing Mun Country Park	Natural hillside	17/9	AFCD	14/9	Natural hillside	1	Access road	-
2020/09/1058HY (HyD/NTE/2020/09/0042)	Hang Ha Po	Natural hillside	17/9	HyD	Unknown	Natural hillside	1 (Boulder fall)	Access road	-
2020/09/1059LD (LandsD/2020/09/0417)	House No. 1-4 Block C, Shun Yee San Tsuen, Yuen Long	2NE-D/CR75	18/9	LandsD	Unknown	Soil cut	1.6	Registered squatter dwelling	-
2020/09/1060WS (WSD/2020/9/3/NTE)	Catchwater 'QA', Tai Mong Tsai, Sai Kung	8SW-B/CR191	16/9	WSD	Unknown	Soil cut	12	Catchwater	Catchwater blocked
2020/10/1062HY (HyD/NTE/2020/12/0047)	Near lamp post No. EA5443 along To Fung Shan Road, Tai Wai	Natural hillside	22/12	HyD	22/12	Natural hillside	1 (Boulder fall)	Open area	-

Table B4 List of Landslide Incidents in the New Territories (Sheet 21 of 21)

Incident No. ⁽¹⁾	Location	Feature Registration No. (if any)	Reported		Failure			Facility Affected	Consequence
			Date	By	Date (Time)	Feature Type	Scale (m ³)		
2020/10/1063LD (LandsD/2020/10/0424)	Tsuen Wan Chinese Permanent Cemetery	7SW-C/C711	12/10	LandsD	Unknown	Soil cut	0.5	Open area	-
2020/10/1064LD (LandsD/2020/10/0425)	South of Shing Mun Road, south-east of Shing Mun Tunnel	7SW-C/C846	9/10	LandsD	Unknown	Soil cut	0.5	Other (temporary structure)	-
2020/10/1065WS (WSD/2020/10/1/NTW)	Lai Chi Kok Saltwater Pumping Station	11NW-A/C206	16/10	WSD	Unknown	Rock cut	0.76 (Rockfall)	Access road	-
2020/10/1066WS (WSD/2020/10/2/NTE)	At the north of Lower Shing Mun Reservoir	7SW-D/C808	22/10	WSD	Unknown	Soil cut	6.7	Access road	-
2020/12/1068WS (WSD/2020/12/1/NTE)	At the north of Lower Shing Mun Reservoir	7SW-D/C820	28/12	WSD	Unknown	Soil cut	3.7	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 (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)		
2020/06/2637	South of No. 5 Tung Hang Mei, Mui Wo, Lantau	10SW-A/R9	6/6	BD	6/6 (04:00)	Retaining wall (masonry)	12	Registered squatter dwelling	One squatter with one person temporarily evacuated
2020/06/2649	South Lantau Road, Lantau	14NW-A/C97	7/6	FSD	7/6	Soil cut	2.2	Road	One lane of South Lantau Road temporarily closed
2020/06/2653	No. 46 Tin Liu Village, Ma Wan	10NE-A/C72	7/6	LandsD	7/6	Soil cut	1	Other (alleyway)	-
2020/06/2709	Behind house No. 32, Cheung Sha Sheung Tsuen, Lantau	< 3 m high cut slope	18/6	Public	6/6	Soil cut	0.6	Minor footpath	-
2020/05/1002LD (LandsD/2020/05/0354)	Adjacent to Feature No. 9SW-B/C23, Sham Shek, Lantau	< 3 m high cut slope	25/5	LandsD	Unknown	Soil cut	0.6	Other (alleyway)	-
2020/06/1031HY (HyD/NTE/2020/06/0013)	Behind house No. 3A, Wong Nai Uk, Lantau	Natural hillside	15/6	HyD	Unknown	Natural hillside	0.1 (Boulder fall)	Nil	-
2020/06/1040WS (WSD/2020/6/1/HK&I)	Catchwater at Lower Keung Shan, Tai O, Lantau	9SW-D/CR212	8/6	WSD	Unknown	Soil/rock cut	3	Catchwater	-
2020/06/1041WS (WSD/2020/6/2/HK&I)	Adjoining Catchwater near Tai O Road, Lantau	13NW-B/C195	8/6	WSD	Unknown	Soil cut	0.6	Catchwater	-

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 (m ³)		
2020/06/1056HY (HyD/NTE/2020/06/0044)	Behind lamp post No. V7541 near Lantau International School at Tong Fuk, Lantau	Natural hillside	3/7	HyD	Unknown	Natural hillside	2	Minor footpath	-

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

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