

## 附件一

## 颱風海高斯(2007)及熱帶風暴浪卡(2016)引致香港直接經濟損失的估算

## 1. 數據收集

## (A) 政府部門、公共事業機構及其他組織報告的損失

香港天文台在 2021 年 1 月至 5 月向以下的政府部門、公共事業機構及其他組織進行調查，收集颱風海高斯及熱帶風暴浪卡所造成的破壞及經濟損失的數據：

漁農自然護理署、建築署、屋宇署、民航處、土木工程拓展署、渠務署、機電工程署、環境保護署、消防處、食物環境衛生署、政府產業署、路政署、民政事務總署、房屋署、地政總署、康樂及文化事務署、海事處、社會福利署、水務署。

中華電力有限公司、中國移動香港有限公司、城巴有限公司、愉景灣航運服務有限公司、環球全域電訊有限公司、香港中華煤氣有限公司、香港機場管理局、香港寬頻網絡有限公司、香港電燈有限公司、香港紅十字會、香港鐵路有限公司、香港電訊有限公司、香港電車有限公司、國際環球通訊網絡(香港)有限公司、九龍巴士(一九三三)有限公司、珀麗灣客運有限公司、新渡輪服務有限公司、信德中旅船務管理有限公司及天星小輪有限公司。

截至 2021 年 5 月 31 日，政府部門、公共事業機構及其他組織報告的損失如下：

	政府部門、公共事業機構及其他組織報告的損失 (港元)
颱風海高斯	1,196,067
熱帶風暴浪卡	772,658

為避免與(B)保險索償數據重複計算，相關的保險索償已在數據中扣除。

## (B) 保險索償數據

因颱風海高斯及熱帶風暴浪卡而產生的香港保險索償統計數字由香港保險業聯會根據其成員調查提供。調查的資料如下：

	參與調查的保險公司的數目	根據保險業監管局發佈的 2019 年度一般保險業務的統計數字的市場份額
颱風海高斯	50	70%
熱帶風暴浪卡	48	72%

**(B1) 颱風海高斯保險索償數據**

截至 2020 年 10 月 18 日，根據調查所得的保險索償數字如下：

	索償總額 (港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	268,640,600
(ii) 僱員補償、汽車及旅遊	2,026,745

按參與調查的機構所佔的市場份額(70%)作調整，海高斯保險索償數字估計為(268,640,600 港元+ 2,026,745 港元) / 70% = 386,667,636 港元

**(B2) 熱帶風暴浪卡保險索償數據**

截至 2020 年 12 月 13 日，根據調查所得的保險索償數字如下：

	索償總額 (港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	1,933,122
(ii) 僱員補償、汽車及旅遊	325,600

按參與調查的機構所佔的市場份額(72%)作調整，浪卡保險索償數字估計為(1,933,122 港元+ 325,600 港元) / 72% = 3,137,114 港元

**2. 颱風海高斯及熱帶風暴浪卡引致直接經濟損失的估算**

颱風海高斯引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B1)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

$$= 1,196,067 \text{ 港元} + 386,667,636 \text{ 港元}$$

$$= 387,863,703 \text{ 港元 (約 3.90 億港元)}$$

熱帶風暴浪卡引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B2)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

$$= 772,658 \text{ 港元} + 3,137,114 \text{ 港元}$$

$$= 3,909,772 \text{ 港元 (約 4 百萬港元)}$$

### **3. 免責聲明**

直接經濟損失的估算是基於香港天文台向政府部門、公共事業機構及其他組織所收集的經濟損失數據、香港保險業聯會向成員收集的保險索償統計數字，以及相關政府報告所作出的。由於所收集的數據並非詳盡無遺，估算的損失亦有可能受到調查回應和分析方法的各種局限所影響，因此直接經濟損失估算僅供參考。

### **鳴謝**

香港天文台感謝所有參與調查的政府部門、公共事業機構及其他組織、香港保險業聯會提供保險索償數字，以及政府統計處為經濟損失調查及估算方法提供的專業意見。

**Annex 1**  
**Estimated Direct Economic Losses in Hong Kong caused**  
**by Typhoon Higos (2007) and Tropical Storm Nangka (2016)**

**1. Data collection**

**(A) Losses reported by government departments, public utility companies and other organizations**

The Hong Kong Observatory conducted a survey to collect data on damages and economic losses caused by Typhoon Higos and Tropical Storm Nangka from the following government departments, public utilities and other organizations between January and May 2021:

Agriculture, Fisheries and Conservation Department, Architectural Services Department, Buildings Department, Civil Aviation Department, Civil Engineering and Development Department, Drainage Services Department, Electrical and Mechanical Services Department, Environmental Protection Department, Fire Services Department, Food and Environmental Hygiene Department, Government Property Agency, Highways Department, Home Affairs Department, Housing Department, Lands Department, Leisure and Cultural Services Department, Marine Department, Social Welfare Department, Water Supplies Department.

China Light and Power Company Limited, China Mobile Hong Kong Company Limited, City Bus Limited, Discovery Bay Transportation Services Limited, HGC Global Communications Limited, Hong Kong and China Gas Company Limited, Hong Kong Airport Authority, Hong Kong Broadband Network Limited, Hong Kong Electric Company Limited, Hong Kong Red Cross, Mass Transit Railway Corporation Limited, Hong Kong Telecommunications Limited, Hong Kong Tramways Limited, Reach Networks Hong Kong Limited, Kowloon Motor Bus Company (1933) Limited, Park Island Transport Company Limited, Sun Ferry Services Company Limited, Shun Tak China Travel Shipping Management Limited and the “Star” Ferry Company, Limited.

As of 31 May 2021, the losses reported from government departments, public utilities and other organizations are as follow:

	The losses reported from government departments, public utilities and other organizations (HK\$)
Typhoon Higos	1,196,067
Tropical Storm Nangka	772,658

To avoid double counting the insurance claims data in part (B), items with insurance claims covered have been excluded.

**(B) Insurance claims data**

The insurance claims statistics incurred by Typhoon Higos and Tropical Storm Nangka in Hong Kong are provided by the Hong Kong Federation of Insurers (HKFI) based on its member surveys. Details of the statistics are as follows :

	Number of insurance companies participated in the survey	Market share according to the Annual Statistics for General Business 2019 issued by the Insurance Authority
Typhoon Higos	50	70%
Tropical Storm Nangka	48	72%

**(B1) Insurance claims data of Typhoon Higos**

The insurance claims incurred as of 18 October 2020 are as follows :

	Total claims incurred (HK\$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	268,640,600
(ii) Employees' Compensation (EC), Motor and Travel	2,026,745

Adjusted by market share of the participating companies (70%), the insurance claims incurred by Higos is estimated to be  $(\text{HK\$ } 268,640,600 + \text{HK\$ } 2,026,745) / 70\% = \text{HK\$ } 386,667,636$

**(B2) Insurance claims data of Tropical Storm Nangka**

The insurance claims incurred as of 13 December 2020 are as follows :

	Total claims incurred (HK\$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	1,933,122
(ii) Employees' Compensation (EC), Motor and Travel	325,600

Adjusted by market share of the participating companies (72%), the insurance claims incurred by Nangka is estimated to be  $(\text{HK\$ } 1,933,122 + \text{HK\$ } 325,600) / 72\% = \text{HK\$ } 3,137,114$

**2. Estimation of direct economic losses caused by Typhoon Higos and Tropical Storm Nangka**

The estimated direct economic losses due to Typhoon Higos in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B1)** insurance claims (adjusted by market share of companies participating in the survey):

= HK\$ 1,196,067 + HK\$ 386,667,636  
= **HK\$ 387,863,703 (around HK\$ 390 million)**

The estimated direct economic losses due to Tropical Storm Nangka in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B2)** insurance claims (adjusted by market share of companies participating in the survey):

= HK\$ 772,658 + HK\$ 3,137,114  
= **HK\$ 3,909,772 (around HK\$ 4 million)**

### **3. Disclaimer**

The estimated direct economic losses are based on the best available information from the responses of government departments, public utilities and other organizations to the survey conducted by the Hong Kong Observatory, statistics on insurance claims collected from the members of the Hong Kong Federation of Insurers and other relevant government reports at the time of assessment. The estimates are for reference only as the data collection are by no means exhaustive and may be subject to various limitations in the survey responses and analysis method.

### **Acknowledgement**

The Hong Kong Observatory gratefully acknowledges the government departments, public utilities and other organizations involved in the survey, the Hong Kong Federation of Insurers for providing insurance claims, and the Census and Statistics Department for providing professional advice to the survey and analysis methods of economic losses.