Controlling officer: the Director of the Hong Kong Observatory will account for expenditure under this Head.

Estimate 2025–26 ..... **$470.4m**

Establishment ceiling 2025–26 (notional annual mid-point salary value) representing an estimated 363 non-directorate posts as at 31 March 2025 reducing by two posts to 361 posts as at 31 March 2026 ..... **$264.0m**

In addition, there will be an estimated five directorate posts as at 31 March 2025 and as at 31 March 2026.

Controlling Officer's Report

Programmes

Programme (1) Weather Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Environment and Ecology).
Programme (2) Radiation Monitoring and Assessment	This programme contributes to Policy Area 9: Internal Security (Secretary for Security).
Programme (3) Time Standard and Geophysical Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Environment and Ecology).

Detail

Programme (1): Weather Services

	2023–24 (Actual)	2024–25 (Original)	2024–25 (Revised)	**2025–26 (Estimate)**
Financial provision ($m)	389.0	407.9	407.9 (—)	**413.4** (+1.3%) (or +1.3% on 2024–25 Original)

Aim

2 The aim is to provide weather forecasts and issue warnings to the public, special users, the shipping community and aviation groups in order to reduce loss of life and damage to property, and minimise disruption to economic and social activities during hazardous weather.

Brief Description

3 The Central Forecasting Office and Airport Meteorological Office of the Hong Kong Observatory (HKO) are responsible for the preparation and issuance of weather information, forecasts and various warnings on hazardous weather to the public, special users, the shipping community and aviation groups. HKO also promotes public awareness of, and community preparedness for, natural disasters. The work involves:

- operating a network of mostly automated weather stations;
- carrying out real-time exchange of data with meteorological centres in the world;
- receiving meteorological satellite imageries, and operating weather radar systems and other meteorological instruments;
- analysing meteorological data and computing the future weather by numerical modelling, and application of artificial intelligence (AI) and big data;
- disseminating weather information by different means;
- issuing warnings and advisory messages on hazardous weather such as tropical cyclones, storm surges, rainstorms, landslips, flooding, thunderstorms, windshear, fire danger and extreme hot and cold conditions; and
- conducting public talks, interviews and training courses as well as producing TV weather programmes and educational materials on hazardous weather phenomena.

4 In 2024, HKO fulfilled its performance pledge of issuing at least one bulletin every hour of the day, disseminating 100 per cent of the bulletins within ten minutes after each hour, and attained a forecast accuracy (as verified by objective means) of 91 per cent. The mobile weather application "MyObservatory" and HKO website remained as popular channels for disseminating weather information to the public, recording about 169 billion total page views in the year.

5 To meet the needs of the public, HKO enhanced the provision of weather services in 2024–25 through:

- enhancing dissemination of extreme weather alerts by (i) issuing "Special Weather Tips" through the "MyObservatory" mobile application to notify the public of the weather changes when the Tropical Cyclone Warning Signal No. 9 may be issued; (ii) enhancing the "MyObservatory" mobile application to provide more vivid and eye-catching notifications when Tropical Cyclone Warning Signal No. 9 or 10 is issued; (iii) conducting hourly briefings to provide the public with the latest weather information when the Black Rainstorm Warning Signal is in force; (iv) issuing "Special Weather Tips" during exceptionally heavy rainstorm; and (v) issuing Special Landslip Advisory message in collaboration with the Geotechnical Engineering Office when landslip may be induced by heavy rain;
- enriching the "MyObservatory" with the introduction of (i) voice function in the HKO chatbot; (ii) weather information for cities in the Greater Bay Area; (iii) space weather information; and (iv) facelifted menu supporting bookmark and search function; and
- enriching the "Earth Weather" on the HKO website and the "MyObservatory" by adding more weather forecast products based on the weather prediction models, including AI models.

6 HKO maintains a close surveillance of the weather at and around the Hong Kong International Airport (HKIA) and provides the aviation community with the weather information needed for its operations. In 2024–25, HKO's Aeronautical Meteorological Advisers provided weather consultation services to support the operation of the Integrated Airport Centre of the HKIA. As the Backup Centre of the Asian Aviation Meteorological Centre, HKO took over the role of the Main Centre from Beijing for one week every quarter to issue hazardous weather forecasts and advisories to aviation users in the Asian region.

7 Other noteworthy activities for 2024–25 include:

- commencing operation of the replacement storm-detecting weather radar at Tai Mo Shan;
- providing flood risk information to government users through the flood risk assessment system to strengthen overall capability in coping with extreme weather in particular heavy rain;
- providing support to Labour Department in optimising the operations of the Heat Stress at Work Warning;
- implementing numerical weather prediction models and forecast products on a new high performance computer system in support of weather forecast operation;
- further enhancing the electronic flight bag weather mobile application "MyFlightWx" to provide inflight weather information to flight crews electronically and promoting its use to airlines operating from the HKIA;
- implementing the necessary aviation meteorological facilities to facilitate the full operation of the Three-Runway System of the HKIA;
- installing two new long-range Light Detection and Ranging (LIDAR) Systems, two new weather buoys, and one additional wind profiler to further enhance the detection and warning of low-level windshear at the HKIA;
- acquiring a solid state weather radar for enhancing the operational backup of HKO's long-range weather radars, and monitoring of rainstorms and tropical cyclones through measurements of low-level winds and precipitation;
- organising educational events and outreach activities to engage the public, in particular young people and students, through the "Science in Public Service Campaign", the "Public Course on Weather Observation", and the "Community Weather Information Network", which included workshops, scientific talks, practicals, day camp, quiz competition and guided tours to HKO facilities;
- organising the "Working Together for a Better Climate" Open Day on 30 November and 1 December 2024 as a celebratory event for the 75th anniversary of the founding of the People's Republic of China, introducing the long-standing collaborations between HKO and the meteorological authorities in Mainland China and around the world;
- posting new Chinese Fengyun-4B (FY-4B) satellite images on the HKO website for public access;
- extending the quality management system on automatic meteorological measurements to include microclimate station network;
- establishing the virtual Meteorological Training Centre for Belt and Road Countries to provide training for meteorological personnel from Belt and Road regions, with a view to enhancing their capabilities to respond to hazardous weather, extreme weather events and natural disasters, and strengthening their resilience;
- updating the Memorandum of Understanding between HKO and the World Meteorological Organization to further strengthen meteorological cooperation, and launching the Severe Weather Information Centre 3.0 website

to enable sharing and dissemination of early warnings on hazardous weather, water, climate, and related environmental events on a one-stop-shop platform;

- signing agreements with overseas official meteorological services of Solomon Islands and Fiji to enhance collaboration and exchange in aeronautical meteorological science and technologies;
- organising an international workshop on promoting technical exchange of AI applications in tropical cyclone analysis and forecasting under the United Nations (UN) Economic and Social Commission for Asia and the Pacific / World Meteorological Organization Typhoon Committee;
- organising an international workshop on aviation meteorological science and service development which was attended by about 40 on-site participants from over 30 States/Administrations around the world; and
- continuously supporting other weather services as a Regional Specialized Meteorological Centre (RSMC) for Nowcasting of the World Meteorological Organization in the provision of severe weather nowcasting products, sharing of nowcast software or technique development, and capacity building activities.

8 The key performance measures in respect of weather services are:

Targets

	Target	2023 (Actual)	2024 (Actual)	**2025 (Plan)**
forecasts perceived as accurate by the public (%)#	78	78	77	**78**
accurate public forecasts as verified by objective means (%)	88	91	91	**90**
accurate forecasts as assessed by ship captains (%)	96	100	98	**98**
accurate forecasts as assessed by airline operators (%)	96	100	98	**98**
hourly local weather reports disseminated within the first ten minutes of each hour (%)	99	100	100	**99**

Indicators

	2023 (Actual)	2024 (Actual)	**2025 (Estimate)**
calls answered by the Dial-a-Weather system (million)#	4.1	3.8	**3.8**
telephone enquiries answered manually#	15 140	13 915	**13 000**
visits to the HKO websites (billion)^	163	169	**160**
companies and organisations subscribing to special weather and warning services	80	75	**74**
total revenue from the above subscribers ($m)	0.7	0.7	**0.8**
media interviews and public lectures/talks on weather#	810	754	**750**
meteorological documents for flights departing Hong Kong@	142 000	183 000	**184 000**
visits to the aviation weather information system (million)@	303	319	**320**

\# The actual figures may vary from year to year depending on whether there are more weather changes of concern to the public in that particular year.

^ Figures measured in page views refer to the number of access to the HKO websites which include thematic websites, the Weather Wizard and the mobile application "MyObservatory". The actual figures may vary from year to year depending on whether there are more weather changes of concern to the public in that particular year.

@ The rise in number in 2024 is due to an increase of flight movements during the year.

Matters Requiring Special Attention in 2025–26

9 During 2025–26, HKO will:

- continue to provide weather forecasts, regional weather services and extended weather outlook, including multi-hazard and impact-based forecasts;
- continue to develop and enhance nowcasting and forecasting services on high-impact weather for the public and special users;
- continue to explore better utilisation of technologies such as big data and AI to support weather forecast operations and to further enhance the flood risk assessment system to strengthen the capability in coping with hazards such as flooding in the event of extreme weather conditions;

- enhance the regional weather webpage on HKO website to integrate information of automatic weather stations, urban-scale meteorological stations and automatic weather forecasts;
- continue to study the use of small unmanned aircraft in meteorological measurements;
- replace two aging LIDARs in support of the low-level windshear and turbulence warning service for the HKIA;
- enhance the capability in monitoring space weather including ionospheric scintillations in support of the development of low-altitude economy;
- study and map out plans through engaging with stakeholders to develop the required weather service support to facilitate the development of low-altitude economy;
- continue to enrich the content of the mobile weather application "MyObservatory" and HKO website;
- continue to enrich the "Earth Weather" with more forecast products from weather prediction models;
- continue to enhance marine meteorological observations through the deployment of buoys, both drifting and moored over the South China Sea, and installation of meteorological equipment onboard more merchant and fishing vessels;
- arrange tendering for acquisition of three sets of Phased Array Weather Radar System (PAWRS) to implement a PAWRS network in Hong Kong for enhancing HKO's capability of territory-wide monitoring and predicting high impact weather in Hong Kong;
- continue to implement the numerical weather prediction models on the high performance computer system in support of weather forecast operation;
- procure additional computing power for a high performance computer system;
- continue to develop regional nowcast products and provide support for other weather services under the RSMC for Nowcasting; and
- continue to operate the virtual Meteorological Training Centre for Belt and Road Countries and organise training courses in collaboration with other international organisations.

Programme (2): Radiation Monitoring and Assessment

	2023–24 (Actual)	2024–25 (Original)	2024–25 (Revised)	**2025–26 (Estimate)**
Financial provision ($m)	36.9	36.7	36.7 (—)	**35.0** (–4.6%)
				(or –4.6% on 2024–25 Original)

Aim

10 The aim is to provide information on environmental radiation levels in Hong Kong and advise government departments on the protective action that may be necessary during nuclear emergencies.

Brief Description

11 HKO monitors ambient radiation levels in Hong Kong and conducts radiological measurements on air, soil, water and food samples. In the event of a nuclear emergency, HKO will notify and advise government departments on the possible consequences in Hong Kong and recommend protective action. HKO organises training and exercises on radiation monitoring, assessment and protection for other government departments involved in the Hong Kong contingency plan for nuclear emergencies. The work involves:

- operating a network of radiation monitoring stations, an aerial radiation monitoring system, two radiological survey vehicles, a radiation laboratory and an emergency radiation data management system;
- keeping abreast of the latest development on the methodology for nuclear accident consequence assessment; and
- planning and participating in exercises and drills in response to nuclear emergencies.

12 In 2024–25, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness. Exercises, drills and training on radiation monitoring, assessment and protection were conducted. A new cycle of inter-comparison of radiation measurements between Hong Kong and Guangdong began. The Emergency Radiation Data Management System was revamped to enhance IT security, data presentation and user communication. Radiation monitoring of sea water samples in local waters in response to the discharge of nuclear-contaminated water from Fukushima of Japan continued. Outreach activities such as public and school talks were conducted to enhance public education. The school community ambient radiation measurement programme named "Gamma-Go" continued to promote students' understanding of radiation through STEM activities.

13 The key performance measures in respect of radiation monitoring and assessment are:

Target

	Target	2023 (Actual)	2024 (Actual)	**2025 (Plan)**
data availability of radiation monitoring network (%)	99.0	99.9	99.9	**99.7**

Indicators

	2023 (Actual)	2024 (Actual)	**2025 (Estimate)**
exercises and drills	22	22	**22**
visits to HKO's webpage on radiationφ	8 434 318	5 681 946	**5 000 000**

φ The actual figures may vary from year to year depending on whether there are particular issues of concern to the public.

Matters Requiring Special Attention in 2025–26

14 During 2025–26, HKO will continue to:

- implement the agreed arrangements between Hong Kong and Guangdong on radiation monitoring and assessment;
- conduct drills, exercises and communication tests on emergency response in conjunction with other government departments as well as the relevant Guangdong counterparts;
- organise training on radiation monitoring and assessment;
- take forward the enhancement of radiation monitoring and assessment facilities; and
- further promote outreach activities and the Gamma-Go programme to enhance public education on radiation.

Programme (3): Time Standard and Geophysical Services

	2023–24 (Actual)	2024–25 (Original)	2024–25 (Revised)	**2025–26 (Estimate)**
Financial provision ($m)	18.9	19.3	19.3 (—)	**22.0** (+14.0%) (or +14.0% on 2024–25 Original)

Aim

15 The aim is to maintain the Hong Kong time standard and provide geophysical, oceanographic, astronomical and climatological information to the public.

Brief Description

16 HKO maintains the Hong Kong time standard, provides time signals for the public and contributes to the International Bureau of Weights and Measures for the determination of the universal standard time. It provides geophysical, oceanographic, astronomical, climatological information, climate projection, seasonal and annual forecast to meet the requirements for planning, engineering design and environmental impact assessments. It monitors earthquakes and the sea level and releases related information to the public, including the operation of the tsunami warning system. It also keeps abreast of research and development on international issues such as global climate change and advises the public and government bureaux/departments on the likely implications. The work involves:

- maintaining a network of caesium beam atomic clocks as the Hong Kong time standard and providing time signals for radio broadcasts, automatic telephone answering service and synchronisation of clocks via the Internet;
- operating seismological, tide and sea level monitoring networks and conducting related analyses;
- carrying out real-time exchange of seismic data with overseas centres and disseminating earthquake information by various means;
- compiling climatological and other related data;
- conducting studies on climate change in Hong Kong and promoting public understanding; and
- providing updates on the effects of El Niño, La Niña and other longer-term atmospheric phenomena on Hong Kong.

17 In 2024–25, the objectives and targets of this programme were generally met through the following:

- providing scientific support to studies by relevant government bureaux/departments on the mitigation, adaptation and resilience-building measures required in combatting climate change and its impacts including extreme weather events;
- monitoring climate change-related scientific studies, and providing the latest assessment of climate change and its impacts to support policy making and action planning of relevant government bureaux/departments;
- co-organising a side event with the Environment and Ecology Bureau at the China Pavilion of the 29th meeting of the Conference of the Parties to the UN Framework Convention on Climate Change to bring together experts to share insights on climate science and actions;
- enhancing the climate prediction services by launching the monthly forecast in December 2024;
- promoting public understanding and awareness of climate change and its impacts through conducting school talks, participating in public fora, producing educational videos, and publishing articles and latest international research findings on global climate change on the HKO website; and
- commissioning of the reconstructed Tai Po Kau Tide Gauge Station to strengthen the monitoring of tide levels in Tolo Harbour.

18 The key performance measures in respect of time standard and geophysical services are:

Targets

	Target	2023 (Actual)	2024 (Actual)	**2025 (Plan)**
time standard accuracy (microseconds per day)	0.01	0.01	0.01	**0.01**
geophysical, meteorological and oceanographic data capture rate (%)	99	100	100	**99**
climatological information (% of written requests responded to within ten working days)	99	100	100	**99**

Indicators

	2023 (Actual)	2024 (Actual)	**2025 (Estimate)**
visits to HKO's Internet time service (million)β	100 000	152 000	**170 000**
requests for geophysical, climatological and oceanographic information and adviceΔ	559	489	**500**

β Replacement of network time servers with upgraded hardware and software technologies in April 2024 has significantly boosted the capacity for processing requests.

Δ The actual figures may vary from year to year depending on whether there are relevant events of concern to the public in that particular year.

Matters Requiring Special Attention in 2025–26

19 During 2025–26, HKO will continue to:

- undertake and support monitoring and assessment of earthquake, tsunami risk and sea level in the region;
- enhance its earthquake monitoring and tsunami warning capability;
- enhance the capability of earthquake intensity analysis by making use of the newly installed earthquake intensity meters over the territory;
- monitor and study climate change issues, enhance climate projections, as well as provide relevant government bureaux/departments with latest information and assessment of climate change and its impacts to support their studies;
- engage various stakeholders to promote the effective use of climate data in support of the emerging needs of different sectors and government bureaux/departments; and
- conduct outreach activities to promote public understanding of measures required in combatting climate change.

ANALYSIS OF FINANCIAL PROVISION

Programme	2023–24 (Actual) ($m)	2024–25 (Original) ($m)	2024–25 (Revised) ($m)	**2025–26 (Estimate) ($m)**
(1) Weather Services	389.0	407.9	407.9	**413.4**
(2) Radiation Monitoring and Assessment	36.9	36.7	36.7	**35.0**
(3) Time Standard and Geophysical Services	18.9	19.3	19.3	**22.0**
	444.8	463.9	463.9	**470.4**
			(—)	**(+1.4%)**
				(or +1.4% on 2024–25 Original)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2025–26 is $5.5 million (1.3%) higher than the revised estimate for 2024–25. This is mainly due to the increased requirement for capital expenditure. In addition, there will be a net decrease of two posts in 2025–26.

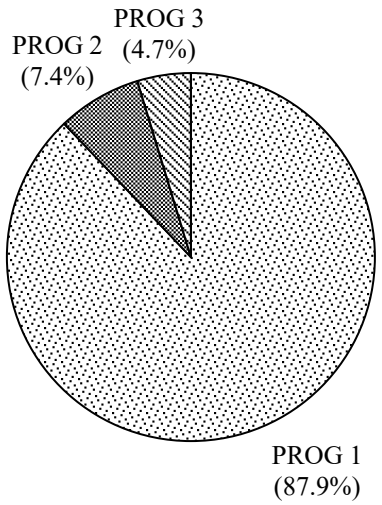
Programme (2)

Provision for 2025–26 is $1.7 million (4.6%) lower than the revised estimate for 2024–25. This is mainly due to the decreased requirement for capital expenditure.

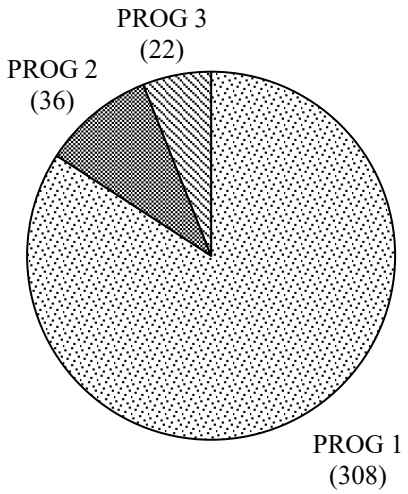
Programme (3)

Provision for 2025–26 is $2.7 million (14.0%) higher than the revised estimate for 2024–25. This is mainly due to the increased requirement for operating expenses and capital expenditure.

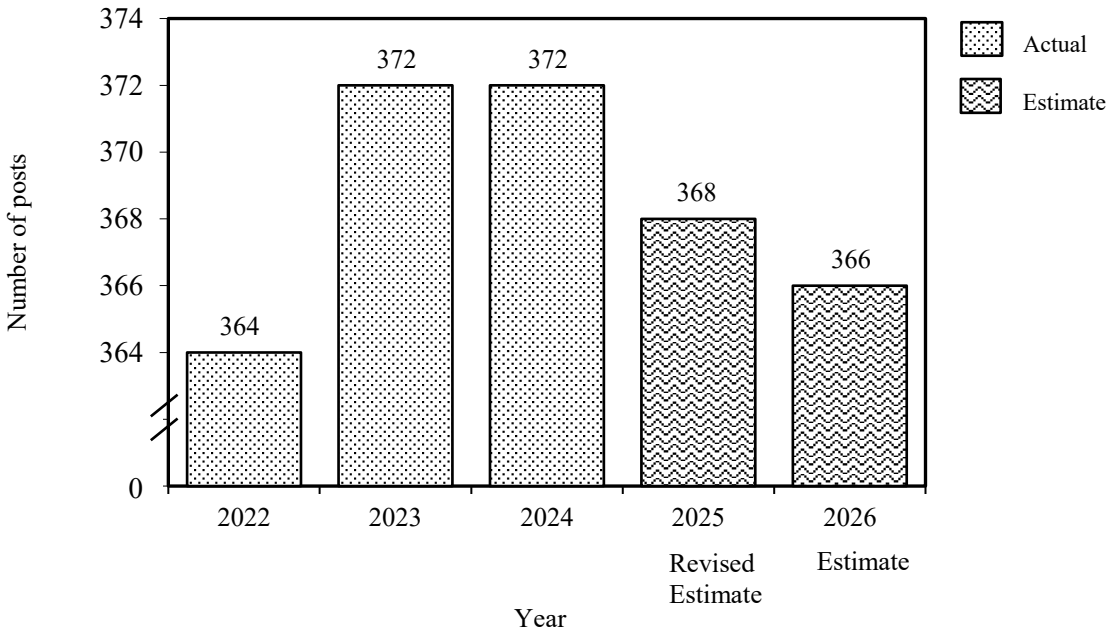
Allocation of provision to programmes (2025-26)



Staff by programme (as at 31 March 2026)



Changes in the size of the establishment (as at 31 March)



Sub-head (Code)		Actual expenditure 2023–24	Approved estimate 2024–25	Revised estimate 2024–25	**Estimate 2025–26**
		$'000	$'000	$'000	**$'000**
	Operating Account				
	Recurrent				
000	Operational expenses	421,090	444,738	444,738	**445,732**
	Total, Recurrent	421,090	444,738	444,738	**445,732**
	Total, Operating Account	421,090	444,738	444,738	**445,732**
	Capital Account				
	Plant, Equipment and Works				
661	Minor plant, vehicles and equipment (block vote)	23,691	19,115	19,115	**24,690**
	Total, Plant, Equipment and Works	23,691	19,115	19,115	**24,690**
	Total, Capital Account	23,691	19,115	19,115	**24,690**
	Total Expenditure	444,781	463,853	463,853	**470,422**

Details of Expenditure by Subhead

The estimate of the amount required in 2025–26 for the salaries and expenses of the Hong Kong Observatory is $470,422,000. This represents an increase of $6,569,000 over the revised estimate for 2024–25 and $25,641,000 over the actual expenditure in 2023–24.

Operating Account

Recurrent

2 Provision of $445,732,000 under *Subhead 000 Operational expenses* is for the salaries, allowances and other operating expenses of the Hong Kong Observatory.

3 The establishment as at 31 March 2025 will be 368 posts. It is expected that there will be a net decrease of two posts in 2025–26. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2025–26, but the notional annual mid-point salary value of all such posts must not exceed $263,994,000.

4 An analysis of the financial provision under *Subhead 000 Operational expenses* is as follows:

	2023–24 (Actual) ($'000)	2024–25 (Original) ($'000)	2024–25 (Revised) ($'000)	**2025–26 (Estimate) ($'000)**
Personal Emoluments				
- Salaries	250,762	271,404	266,198	**276,544**
- Allowances	4,199	4,025	4,485	**4,920**
- Job-related allowances	1,640	2,140	1,070	**1,700**
Personnel Related Expenses				
- Mandatory Provident Fund contribution	1,019	1,162	1,018	**864**
- Civil Service Provident Fund contribution	16,920	20,440	19,983	**22,704**
Departmental Expenses				
- General departmental expenses	146,428	145,445	151,855	**138,871**
Other Charges				
- World Meteorological Organization	122	122	129	**129**
	421,090	444,738	444,738	**445,732**

Capital Account

Plant, Equipment and Works

5 Provision of $24,690,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents an increase of $5,575,000 (29.2%) over the revised estimate for 2024–25. This is mainly due to the increased requirement for capital expenditure.