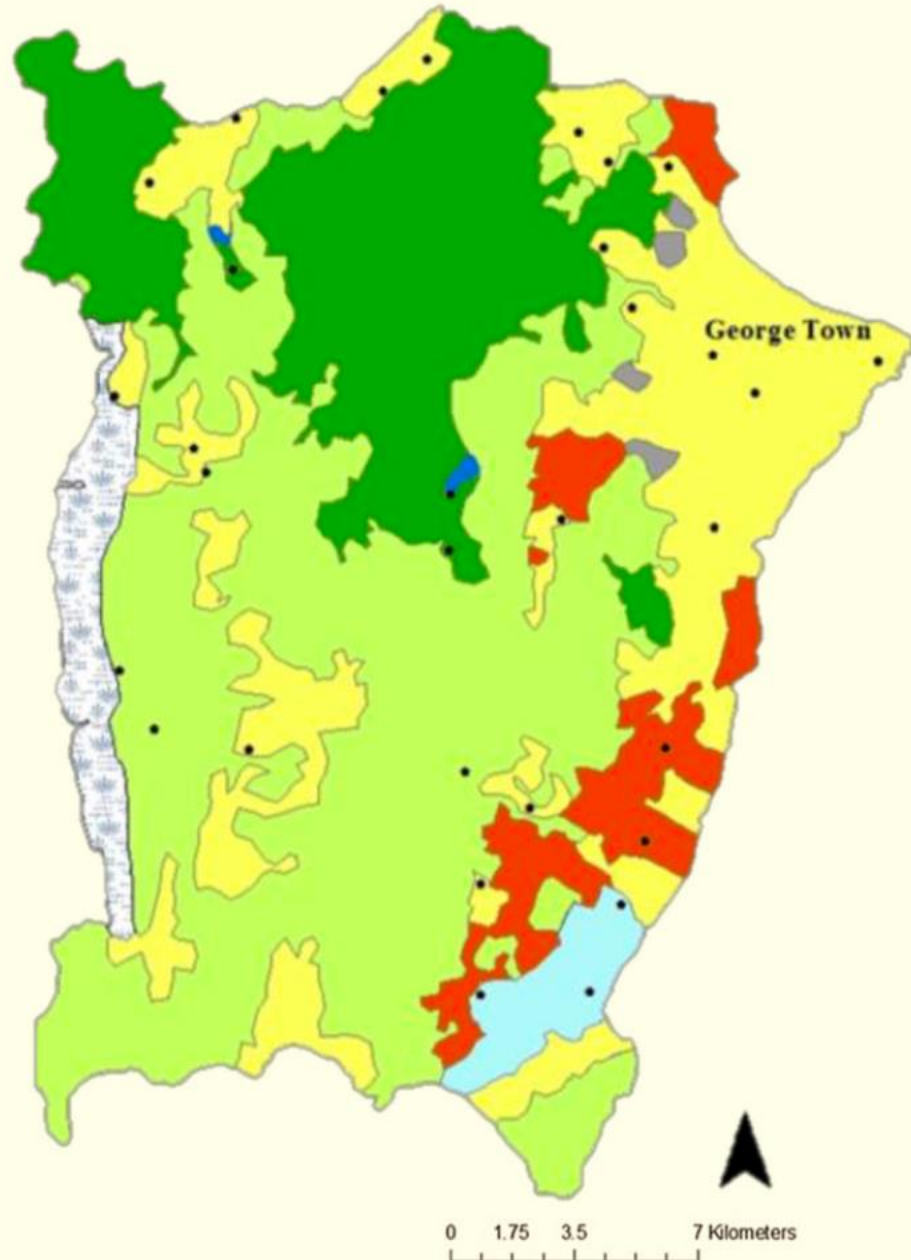


# MBPP WEATHER STATION

Majlis Bandaraya Pulau Pinang



# PENANG ISLAND



**303 square kilometers**

**792,000 population**

**61.84% of Penang Island  
covered with natural/ green areas**

## ENVIRONMENTALLY SENSITIVE AREAS



**Land above 75 meters  
(250 feet) from sea level  
is maintained as  
natural/ green area  
(restricted development)**

**No development is  
allowed on slopes  
above 25 degrees,  
water catchment and  
forest reserve area**





# **FLOOD IN PENANG ISLAND**

**Based on Malaysian Department of Irrigation & Drainage, there are five type of floods in Malaysia, namely flash flood, monsoon flood, mud flood, stagnant flood and coastal flood.**

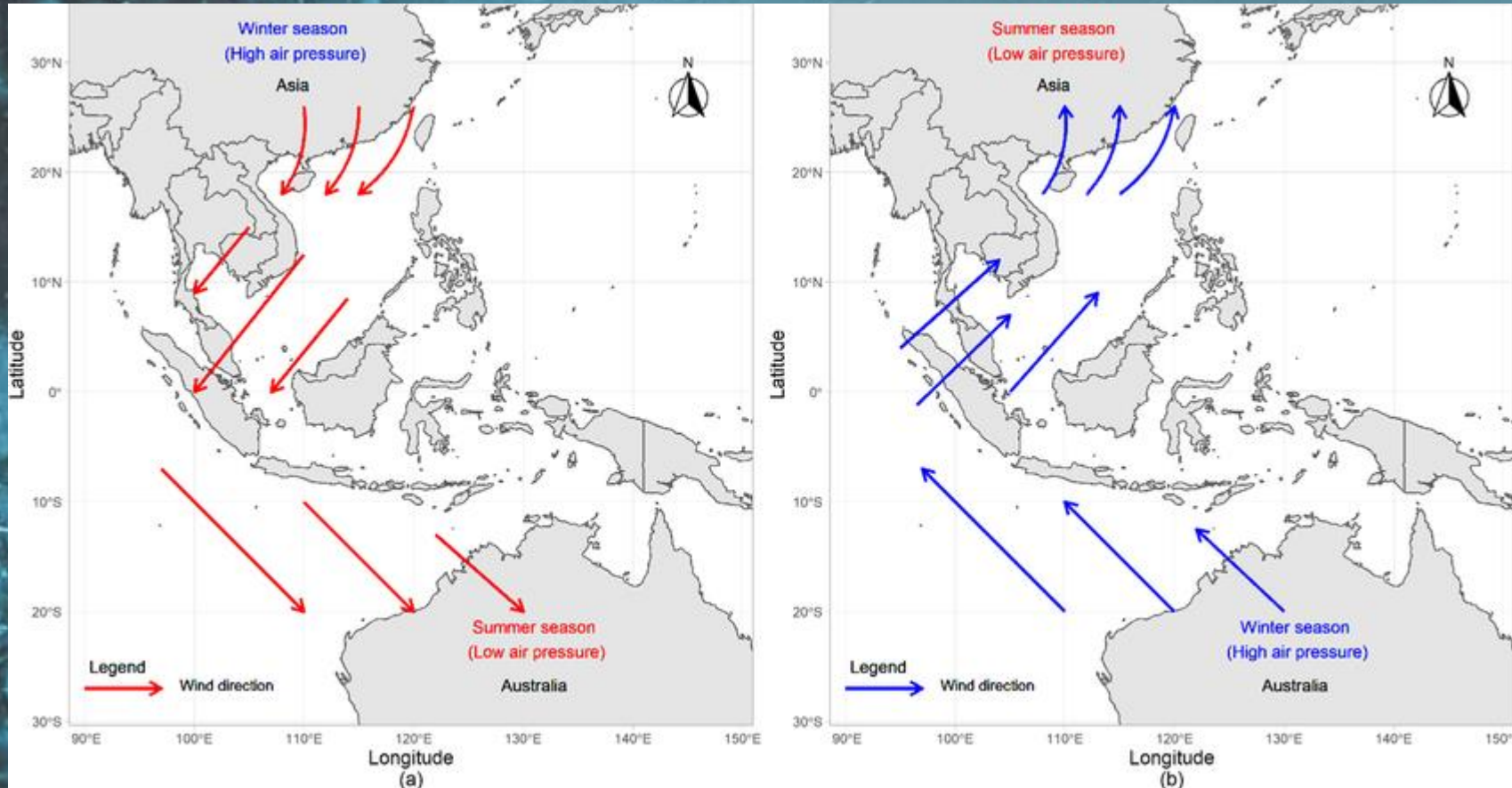
**Most common flood that happened in Penang Island are flash flood. Flash flood are flood that occur in a short period which is in less than 6 hour.**

**In many flash flood cases that occur in Timur Laut District and Barat Daya Distirict, the flash flood water will completely subside within the period of 2 hours.**





# MONSOON SEASON IN MALAYSIA



The formation of the northeast monsoon and the southwest monsoon winds in Malaysia. Annual average rainfall in Peninsular Malaysia is 2420mm.

Flood usually occurs in Penang during the transition period from the Northeast Monsoon to the Southwest Monsoon between March to May and the transition from the Southwest Monsoon to the Northeast Monsoon around September to November each year.

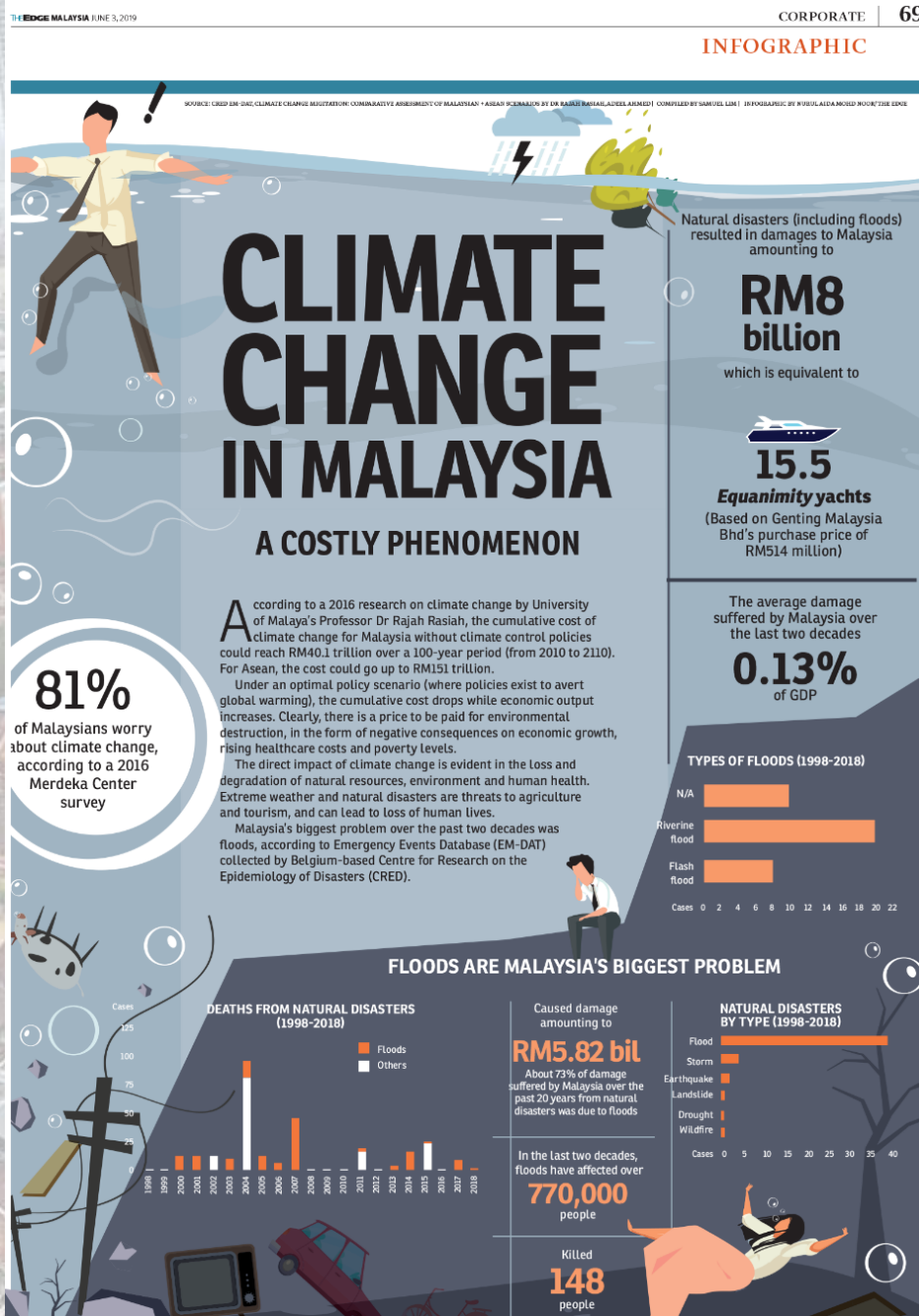
During this monsoon transition period, heavy rain and thunderstorms will usually occur and this situation will invite the risk of flash floods, landslides and fallen trees in identified hot spot areas.





# CLIMATE CHANGE

more frequent severe storms, heavy rains and floods





# CAUSES OF FLASH FLOOD

## RIVER OVERFLOW

Normally happen when heavy downpour for several hour in the river catchment. (ie; Pinang River & Dondang River)

## UNDER SIZE DRAIN

Some drains are not enough in capacity to store storm water during heavy downpour which cause it overflow.

## RUBBISH

Rubbish that were thrown into the drain will cause blockage or slow down the flow of the drain.

## TIDE EFFECT

When high tide & heavy downpour occurs concurrently.

## POOR MANAGEMENT/CONTROL OF CONSTRUCTION

Excessive water/runoff from construction site due failure to control/contain the storm water during he

# FLASH FLOOD FORECAST? EARLY WARNING?



ENGINEERING DEPARTMENT  
CITY COUNCIL OF PENANG ISLAND

## FLOOD CONTROL / MITIGATION INITIATIVES BY MBPP

### 1. FLOOD MITIGATION PROJECTS

(ie; upgrading the size of the drain, construction of a reservoir)

### 2. DRAINAGE SYSTEM MAINTENANCE

(ie; structural repairs and cleaning of drains)

### 3. PLANNING PERMISSION CONTROL

(ie; requirements for developers to upgrade the drainage systems, carry out flood mitigation works at locations bordering the development area, design the drainage system according to MSMA guidelines)

# FLASH FLOOD PREDICTION?







## Initiative

Smart Governance

Smart Environment

Smart Economy

Smart Mobility

Smart People

Smart Living

Smart Digital



### Landslide Information

The system will offer an intuitive, user-friendly geo-referenced web-based map interface ..



### Weather Monitoring

The Weather Monitoring Dashboard delivers real-time weather data and forecasts ..



### Disaster Monitoring

The Disaster Dashboard provides real-time updates on natural disasters ..



### Penang Tree Inventory

PeTIS system is developed with the primary objective ..

**The Weather Monitoring Dashboard delivers real-time weather data and forecasts for Penang, enhancing disaster preparedness, urban planning, and public safety by providing accurate information for informed decision-making and community awareness.**



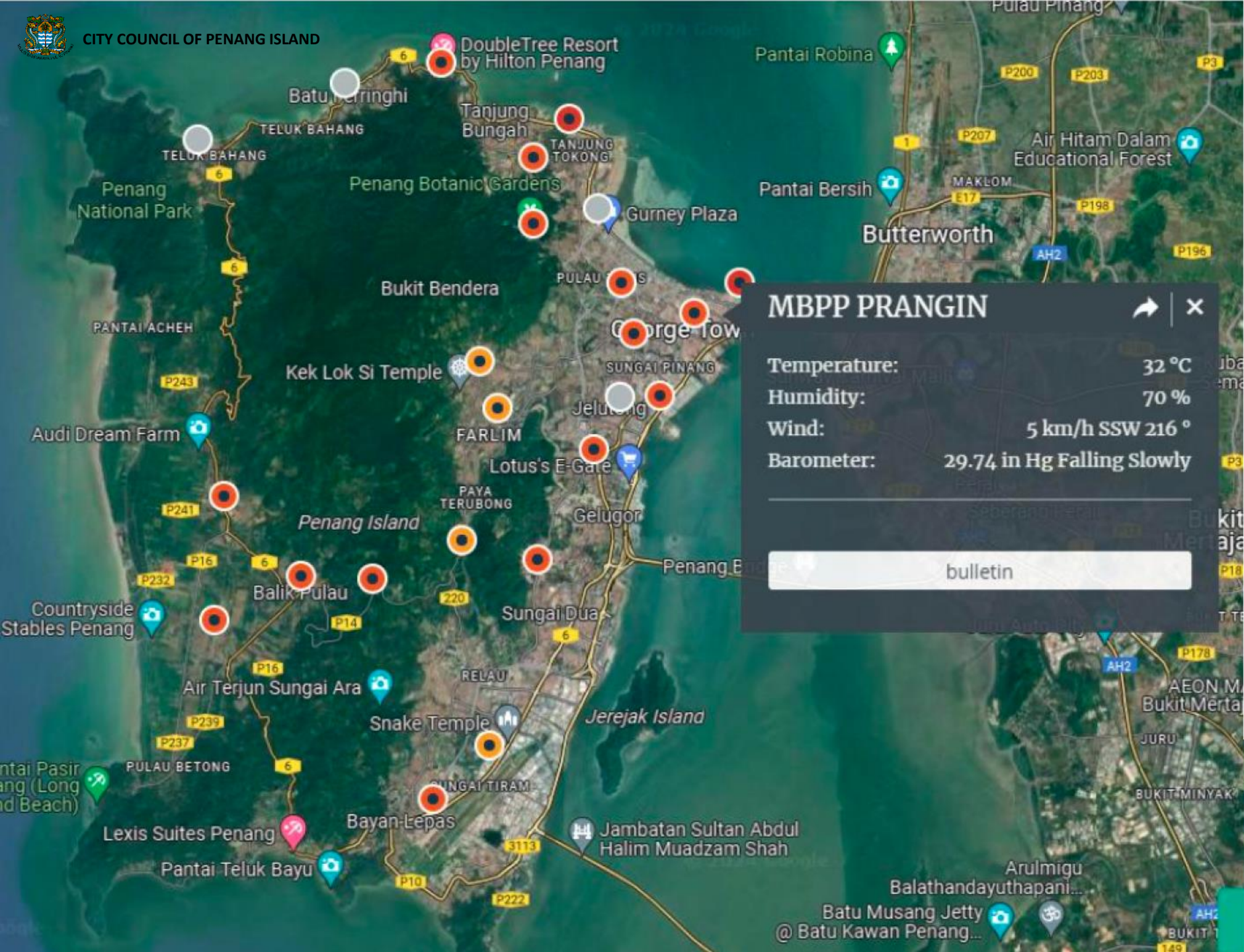


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Weather  
Stations







Location	Weather Station Name
Ayer Itam	<ul style="list-style-type: none"><li>Thean Tek</li><li>Ayer Itam</li><li>Pair Road</li></ul>
Bayan Lepas	<ul style="list-style-type: none"><li>Kg Binjai</li><li>Airport</li><li>Bayan Lepas FIZ</li></ul>
Batu Feringgi	<ul style="list-style-type: none"><li>Batu Feringgi</li></ul>
Telok Bahang	<ul style="list-style-type: none"><li>Sungai Rusa</li></ul>
Batu Maung	<ul style="list-style-type: none"><li>Batu Maung</li></ul>
Bayan Lepas	<ul style="list-style-type: none"><li>Bayan Baru</li></ul>
Georgetown	<ul style="list-style-type: none"><li>MBPP Prangin</li><li>Panchor</li><li>Baobab Tree</li><li>Botanic Garden</li><li>.P.Ramlee</li><li>Gurney</li><li>Padang Kota</li></ul>
Tanjung Bunga	<ul style="list-style-type: none"><li>Bukit Mutiara</li><li>Teluk Bahang</li></ul>
Gelugor	<ul style="list-style-type: none"><li>Yeap Chor Ee</li><li>USM</li></ul>
Jelutong	<ul style="list-style-type: none"><li>TPS Jelutong</li><li>Masjid Negeri</li></ul>
Balik Pulau	<ul style="list-style-type: none"><li>Kompleks Sukan Balik Pulau</li><li>Anjung Indah</li><li>Kongsi</li></ul>





# Weather Monitoring

Majlis Bandaraya Pulau Pinang

Station

DUN

Mukim

Daerah

Parlimen



[Back](#)

## MBPP S06 BAYAN BARU



Wind Speed (km/h)

3.37



Outdoor Temperature (C)

Current

28.90

Low

27.70

High

34.30



Current Rain (mm)

[Live View](#)

[Charts and Data Tables](#)



MBPP S06 BAYAN BARU

Bayan Lepas

Rain Rate  
0.00mm/h

Wind Speed  
3.37km/h

Temperature  
28.9°C

Last Updated: 13 May 2025, 11:43PM

58

Wind Speed: 3.27828 km/h  
Wind Direction: 67.9589°  
Lat: 5.338

+

-







# Weather Monitoring

Majlis Bandaraya Pulau Pinang

Station

DUN

Mukim

Daerah

Parlimen



## MBPP S31 PADANG K...



Wind Speed (km/h)

8.25



Outdoor Temperature (C)

Current

27.70

Low

27.30

High

34.30



Current Rain (mm)

Day

0

Storm

0

Live View

Charts and Data Tables

## MBPP S31 PADANG KOTA

George Town



Rain Rate

0.00mm/h



Wind Speed

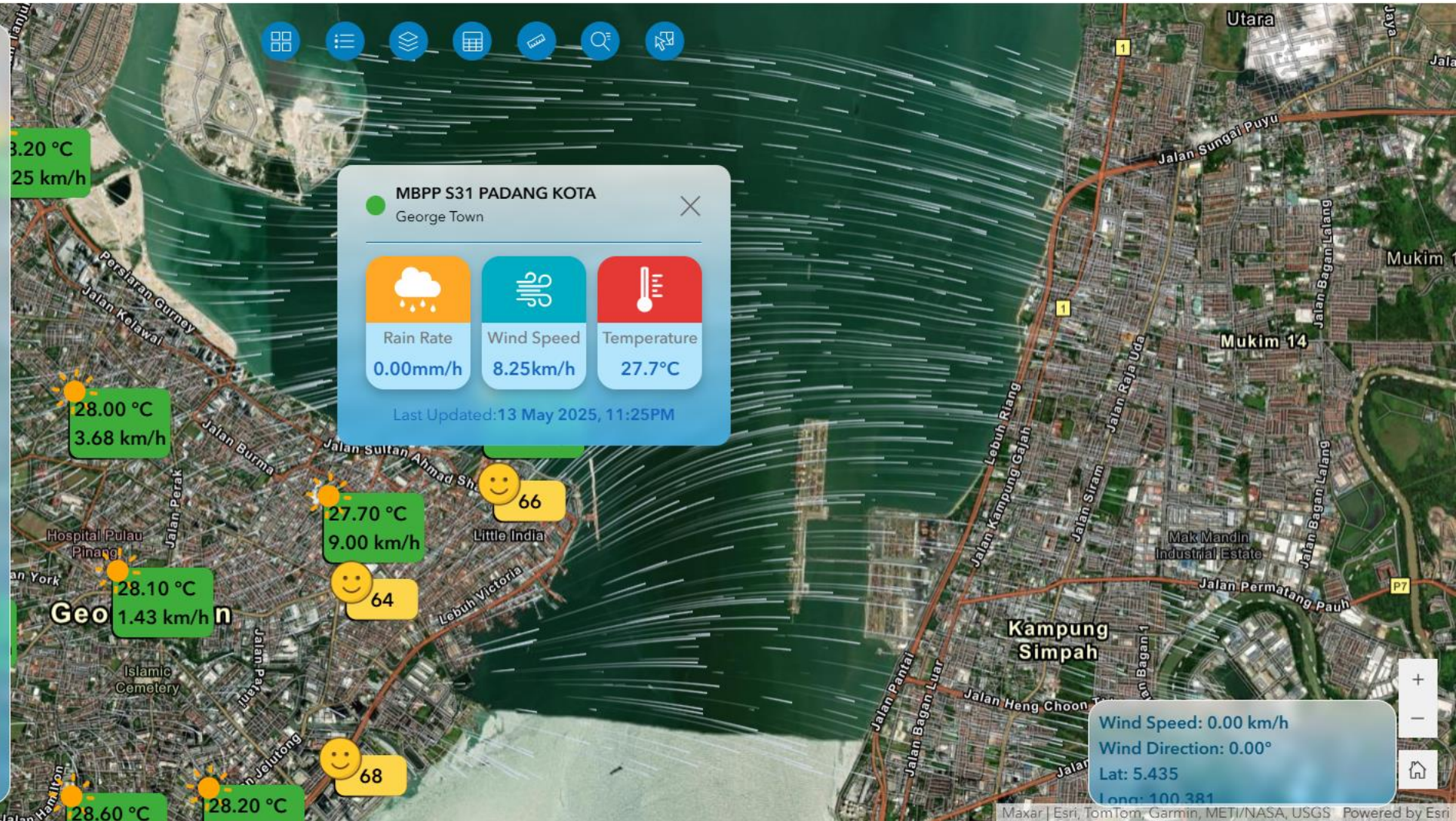
8.25km/h



Temperature

27.7°C

Last Updated: 13 May 2025, 11:25PM



Wind Speed: 0.00 km/h  
Wind Direction: 0.00°  
Lat: 5.435  
Long: 100.381

Maxar | Esri, TomTom, Garmin, METI/NASA, USGS | Powered by Esri









# Weather Monitoring

Majlis Bandaraya Pulau Pinang

Station ▼

DUN ▼

Mukim ▼

Daerah ▼

Parlimen ▼



## MBPP S31 PADANG K...



Wind Speed (km/h)

1.87



Outdoor Temperature (C)

Current

27.70

Low

27.30

High

34.30

Current Rain (mm)

Day

Live View

Charts and Data Tables

### Chart Window

#### Station

MBPP S31 PAD...

#### Date

12/05/2025 ...

#### Span

Span: 1 Day  
☐ Inside Humidity

☒ Rainfall

☒ Rain Rate

☒ Barometer

☐ Dew Point

☐ Wind Speed

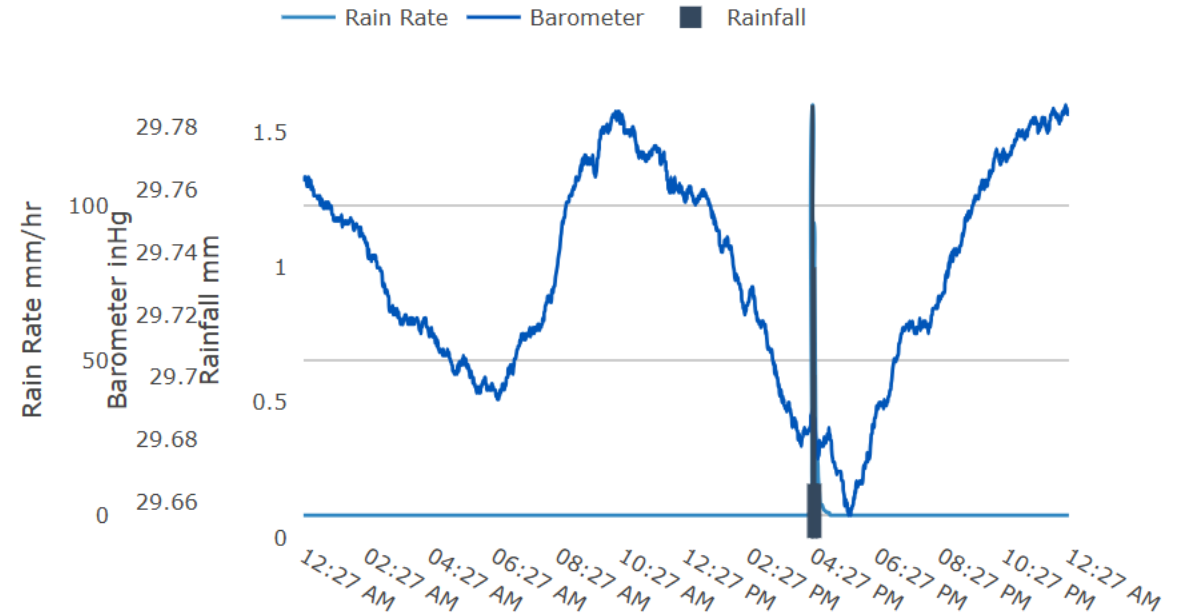
☐ High Wind

☐ Wind Chill

Update

Chart

Tabular Data







# Weather Monitoring

Majlis Bandaraya Pulau Pinang

Station

DUN

Mukim

Daerah

Parlimen



## MBPP S31 PADANG K...



Wind Speed (km/h)

1.87



Outdoor Temperature (C)

Current

27.70

Low

27.30

High

34.30

Current Rain (mm)

Live View

Charts and Data Tables

### Chart Window

#### Station

MBPP S31 PAD...

#### Date

12/05/2025 ...

#### Span

☐ Span: 1 Day  
☐ Inside Humidity

☒ Rainfall

☒ Rain Rate

☒ Barometer

☐ Dew Point

☐ Wind Speed

☐ High Wind

☐ Wind Chill

Update

#### Chart

#### Tabular Data

12/05/2025 04:18 PM	0.20	29.68	0.00
12/05/2025 04:19 PM	0.20	29.68	0.00
12/05/2025 04:20 PM	0.20	29.68	0.00
12/05/2025 04:21 PM	0.20	29.68	0.00
12/05/2025 04:22 PM	2.00	29.69	0.20
12/05/2025 04:23 PM	2.00	29.68	0.20
12/05/2025 04:24 PM	16.20	29.69	0.20
12/05/2025 04:25 PM	132.40	29.69	1.60
12/05/2025 04:26 PM	132.40	29.69	1.20
12/05/2025 04:27 PM	94.40	29.69	1.40

< 1 ... 79 80 81 ... 120 > Go to page 80

Export Data





# Weather Monitoring

Majlis Bandaraya Pulau Pinang

Station

DUN

Mukim

Daerah

Parlimen



## MBPP S31 PADANG K...



Wind Speed (km/h)

1.87



Outdoor Temperature (C)

Current

27.70

Low

27.30

High

34.30

Current Rain (mm)

Live View

Charts and Data Tables

### Chart Window

#### Station

MBPP S31 PAD...

#### Date

12/05/2025 ...

#### Span

☐ Span: 1 Day  
☐ Inside Humidity

☒ Rainfall

☒ Rain Rate

☒ Barometer

☐ Dew Point

☐ Wind Speed

☐ High Wind

☐ Wind Chill

Update

#### Chart

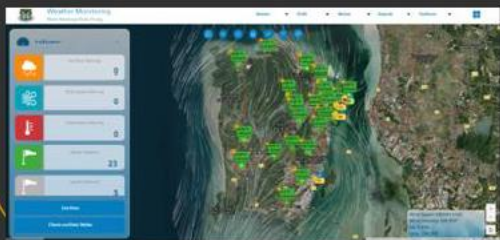
#### Tabular Data

Date & Time	Rain Rate mm/h	Barometer inHg	Rainfall mm
12/05/2025 04:28 PM	94.40	29.69	1.20
12/05/2025 04:29 PM	80.00	29.69	1.00
12/05/2025 04:30 PM	57.80	29.68	0.60
12/05/2025 04:31 PM	34.60	29.68	0.20
12/05/2025 04:32 PM	13.00	29.68	0.20
12/05/2025 04:33 PM	8.40	29.68	0.00
12/05/2025 04:34 PM	7.80	29.68	0.20
12/05/2025 04:35 PM	18.20	29.67	0.20
12/05/2025 04:36 PM	12.20	29.68	0.20
12/05/2025 04:37 PM	9.80	29.68	0.00

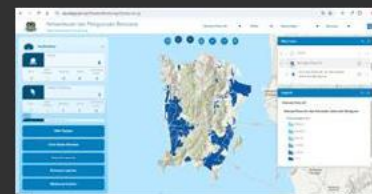




# VIP Disaster & Flood Management Initiatives

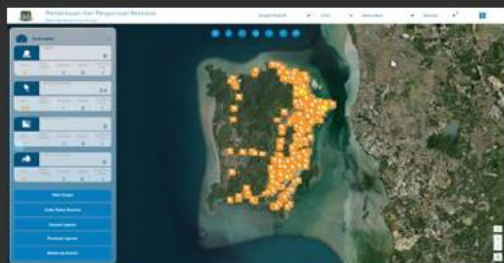


Maintaining Real-Time Situational Awareness



Understanding the Potential Impact

Briefing Command Staff



Conducting Damage Assessment



On Ground Squad Pantas

Pearl (One Touch)



Waze Citizen Flood Alert





# INTELLIGENCE OPERATION CENTER (IOC)





An aerial photograph of Penang, Malaysia, showing a dense urban landscape. In the foreground, there are numerous residential buildings with red-tiled roofs. In the background, a tall, modern skyscraper stands out against a blue sky with scattered white clouds. Other buildings and greenery are visible in the mid-ground.

**THANK YOU**