

**GE**  
**SMART**  
**ASIA 2018**



**Locate**  
#Locate18



WHEN

**9 – 11 APRIL 2018**

WHERE

**ADELAIDE, AUSTRALIA**

[CLICK HERE TO KNOW MORE](#)



**GEO  
SMART  
ASIA 2016**

17-19 OCT, 2016

BERJAYA TIMES SQUARE HOTEL, KUALA LUMPUR, MALAYSIA



**GEO  
Intelligence**

Asia Pacific Forum

18 OCT, 2016



**PENANG  
GIS**  
SERVING THE PUBLIC

**PELAN STRATEGIK ICT  
PSICT**  
2016 - 2020  
PEJABAT SETIAUSAHA KERAJAAN NEGERI PULAU PINANG



# Presentation Outline

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**1**

**PENANG GIS BACKGROUND**

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**2**

**APPLICATION : ePETA**

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**3**

**APPLICATION : WEB MAPS**

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**4**

**APPLICATION : STORY MAPS**

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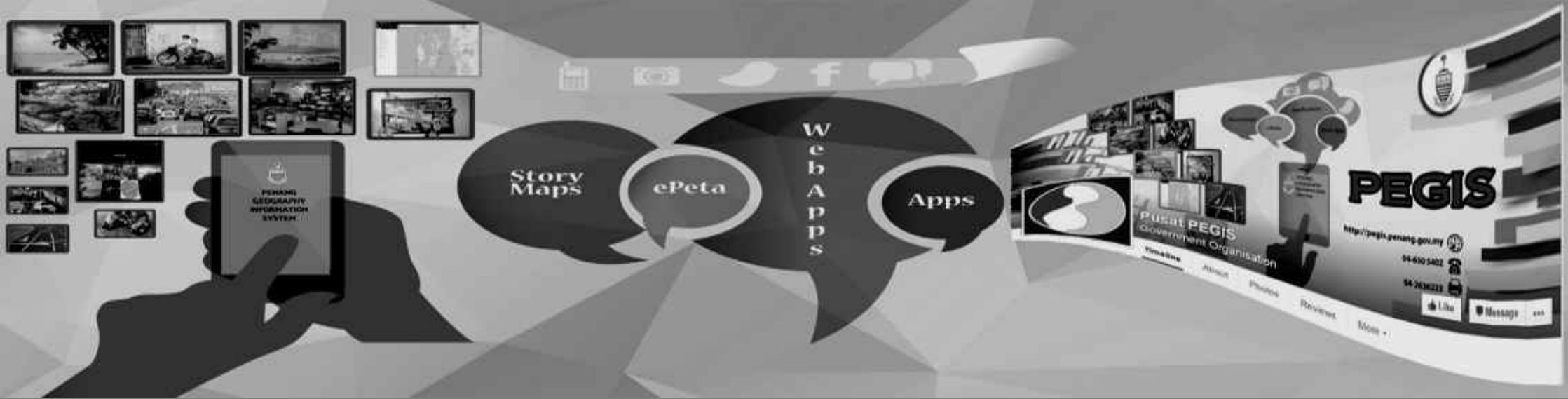
**5**

**MOBILE APPS**

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**6**

**ISSUES & CHALLENGES**



# Penang GIS

**1992**

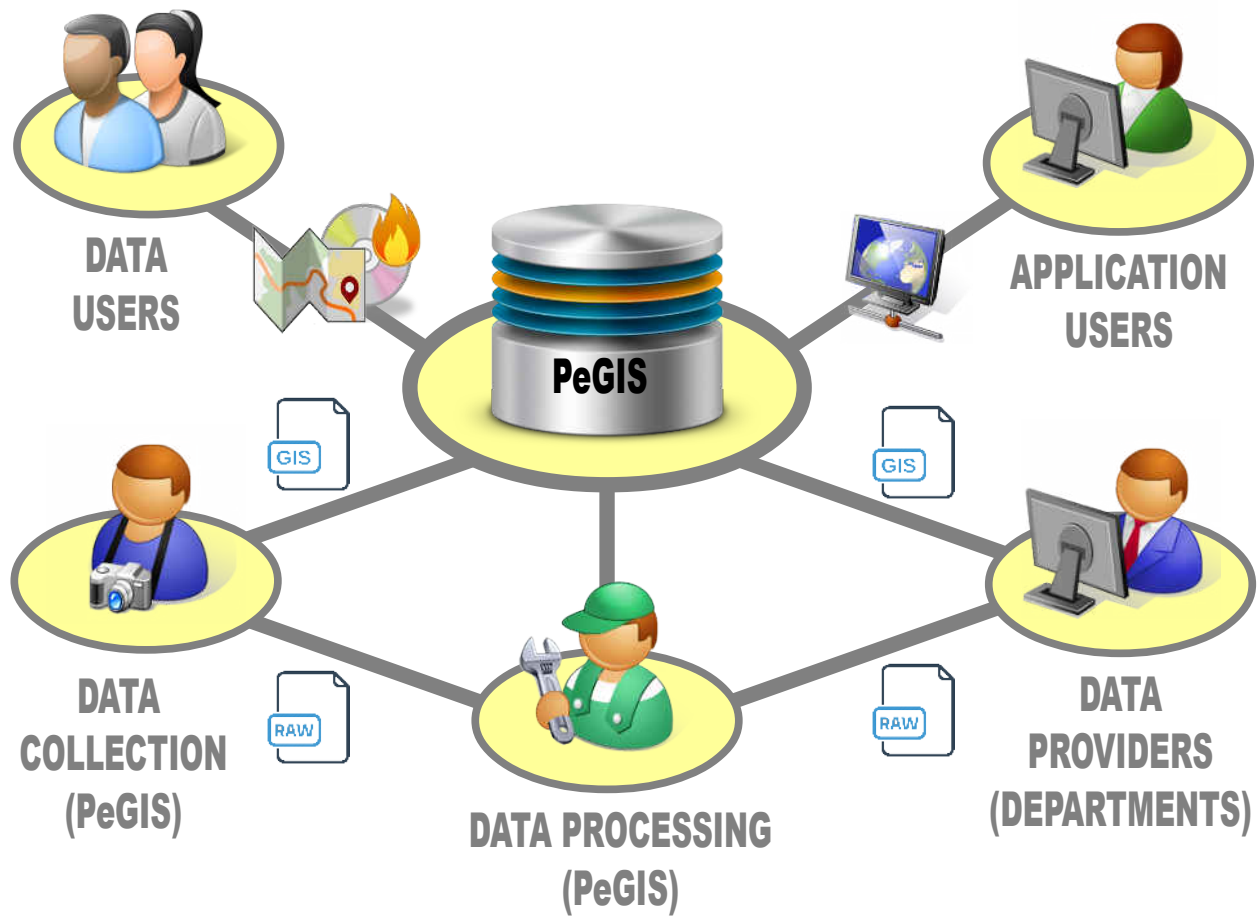
PILOT PROJECT

**400+**

DATA LAYERS

**21**

DEPARTMENTS IN  
TECHNICAL COMMITTEE





## How We Did It?

---

# 1

## COMMITMENT FROM TOP MANAGEMENT

---

- UNDERSTAND THE VALUE OF DATA
  - BUDGET FOR DEVELOPING DATA
  - MANAGEMENT 'BUY-IN' IS A MUST
- 

# 2

## A GIS UNIT AND DEDICATED STAFF

---

- A NEED TO HAVE AN EXPERT TEAM TO ASSIST DEPARTMENT
  - TRAIN NON TRANSFERABLE OFFICER IN GIS
- 

# 3

## MENTOR AND MANTEE APPROACH

- TECHNICAL ASSISTANCE TO DEPARTMENT
- ASSIST DEPARTMENTS TO COLLECT DATA
- ADOPTED DEPARTMENT CONCEPT

# 5

## DEPARTMENTS WITH GIS APPLICATIONS

### PENANG GIS (PeGIS)

*epeta*

**JPBD**

*jpbd geoportal*

**MBPP**

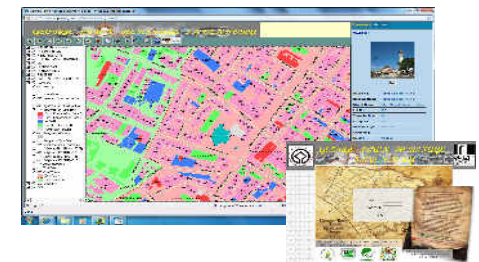
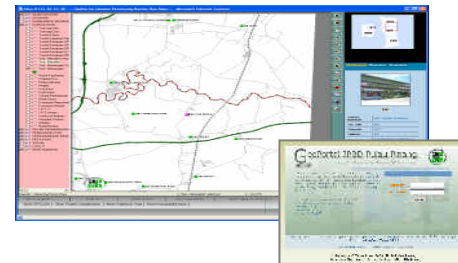
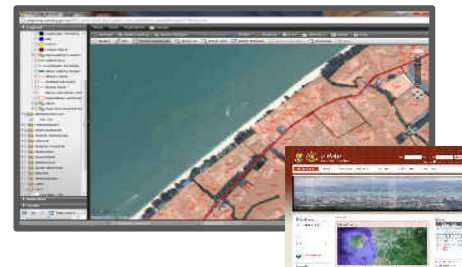
*geoportal perancangan pembangunan*

**MPSP**

*mssp gis*

**GTWHI**

*integrated heritage db system*





# Way Forward

# 2018

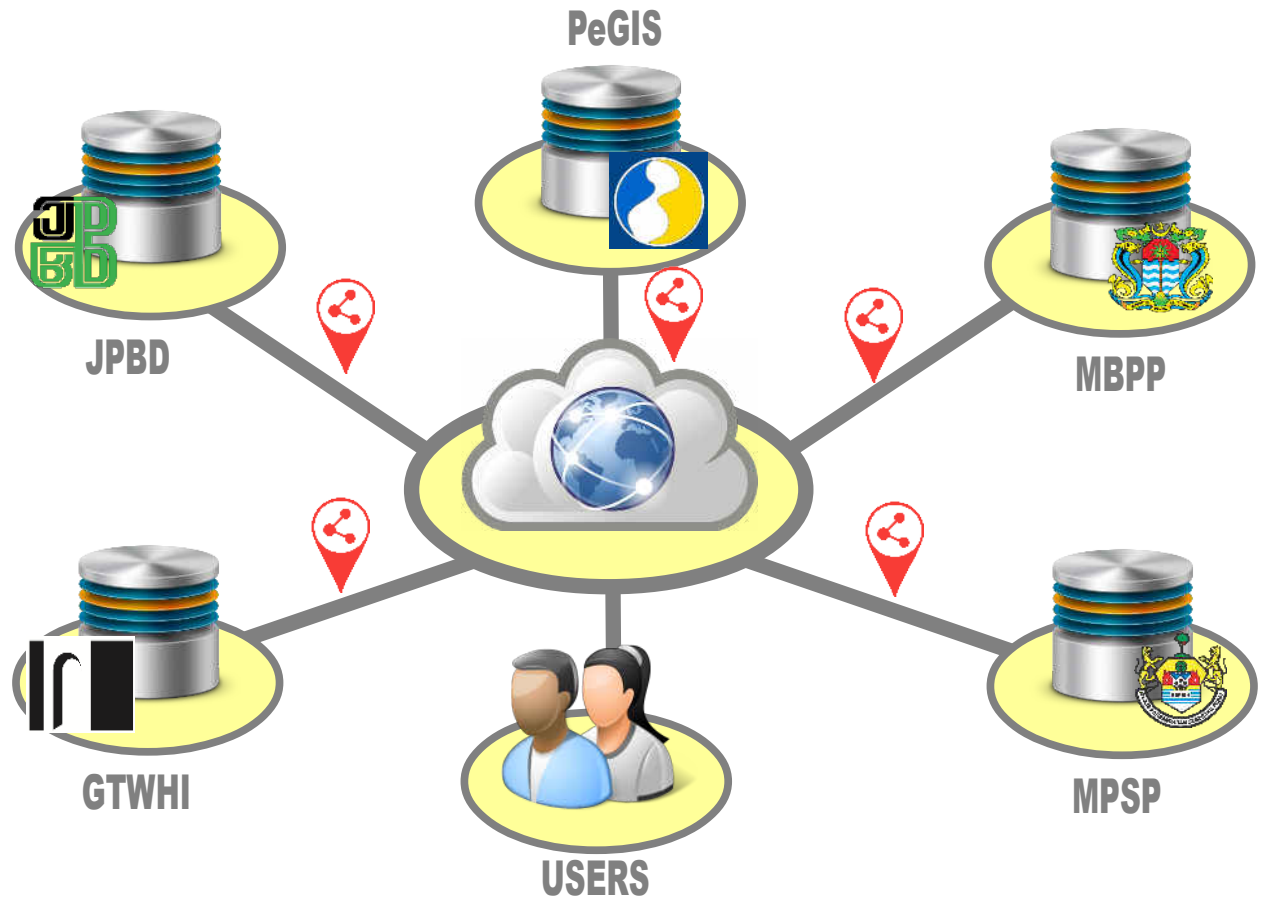
FUNDAMENTALS DATA SET  
WILL BE SHARED THROUGH  
MAP SERVICES

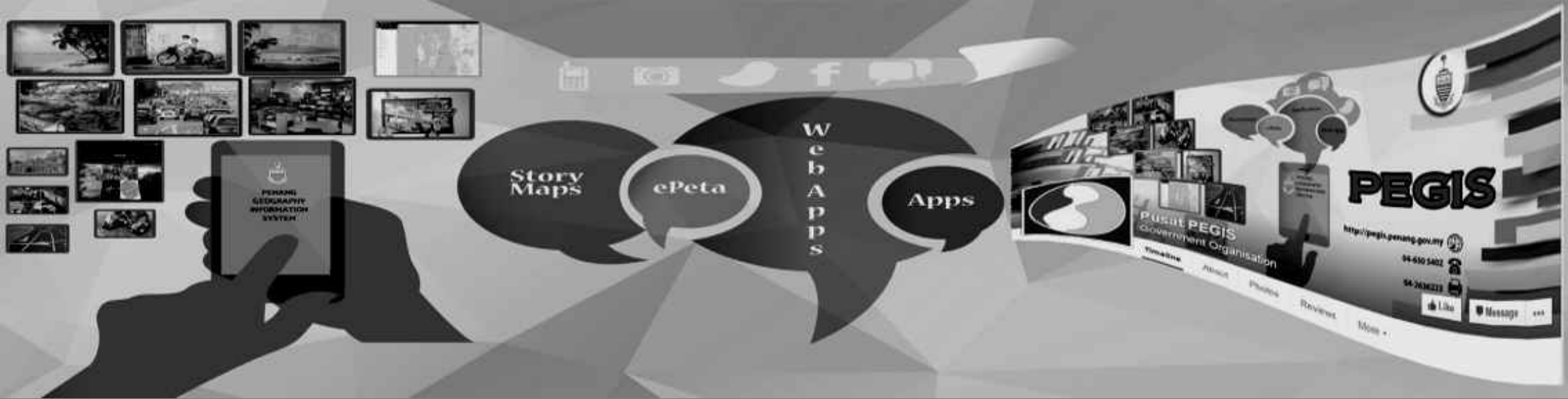
# 1

DATA SET USED BY ALL

# 1000+

ESTIMATED DATA SETS





# PeGIS Applications

## 2

ePETA

**ePETA : TECHNICAL**  
**ePETA : PUBLIC VIEW**

## 7

WEB APPS

**LOT TRACKER • LOT FINDER • LOCAL PERSPECTIVE • WHAT'S UP PENANG • TREE INVENTORY • TASKA • GET CONNECTED**

## 8

STORY MAPS

**A WALK THROUGH HISTORY • BEACHES & WATERFRONTS • PENANG STREET ART • GEORGE TOWN WORLD HERITAGE TRAILS • MUSEUM & ART GALLERY • HERITAGE TRADERS • GEORGE TOWN HERITAGE CAFE • BICYCLE TRAILS IN BALIK PULAU**







# ePETA Technical



**MORE THAN 200 LAYERS OF INFORMATION INCLUDING TECHNICAL DATA SUCH AS CADASTRAL LOTS, CONTOURS ETC. SEARCH AND INCIDENT ANALYSIS FUNCTION ARE ALSO PROVIDED.**



# ePeta Registered Users

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**790**

TOTAL USERS

---

---

**570**

TECHNICAL

---

---

**220**

PUBLIC REGISTERED

---

**34**

DEPARTMENT

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**54+**

DATA LAYERS

---

**±200**

DATA LAYERS

# ePETA Usage

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**24,548**

ACCESS IN 2013

---

**55,737**

ACCESS IN 2014

---

**56,754**

ACCESS IN 2015

---

**20,284**

JAN-SEP 2016

---

**74**

2016 DAILY AVERAGE

---

**2254**

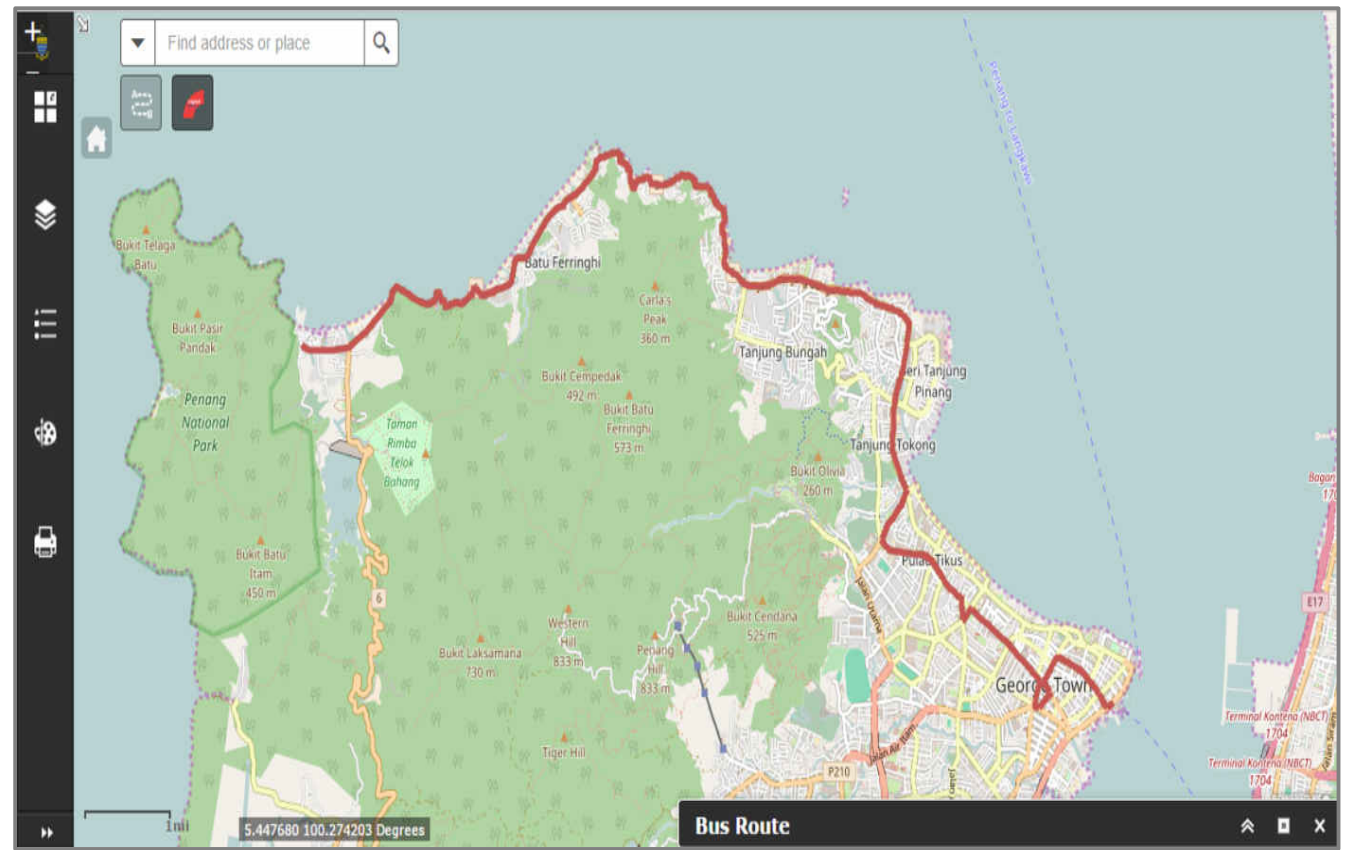
2016 MONTHLY AVERAGE





# ePETA Public

**ePETA PUBLIC VIEW : THERE ARE 54 LAYERS OF INFORMATION TO CHOOSE AND VIEW FROM. USERS ARE ALSO PROVIDED APPLICATION TO SEARCH RAPIDPG BUS ROUTES**





# Lot Tracker

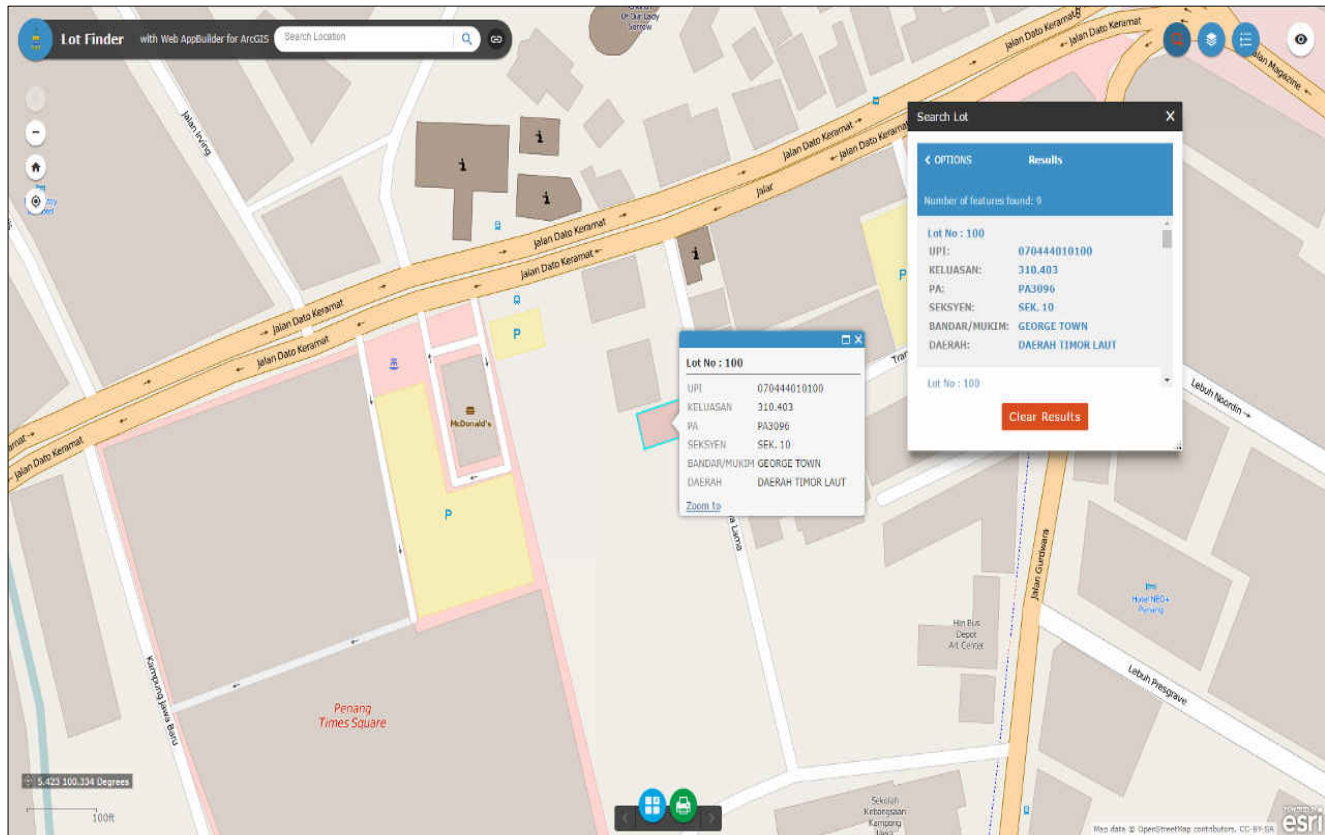
**KNOW THE INFORMATION OF LAND PARCELS NEAR TO YOU. GET THE INFORMATION THROUGH YOUR MOBILE DEVICES AT THE GROUND.**

Lot Number	Distance (Kilometers)
1	Lot 1205 ~0.04 KILOMETERS
2	Lot 1204 ~0.04 KILOMETERS
3	Lot 1206 ~0.05 KILOMETERS
4	Lot 1203 ~0.05 KILOMETERS
5	Lot 331 ~0.06 KILOMETERS
6	Lot 1207 ~0.07 KILOMETERS
7	Lot 1207 ~0.07 KILOMETERS
8	Lot 1208 ~0.08 KILOMETERS
9	Lot 361 ~0.12 KILOMETERS



# Lot Finder

GET THE LOCATION AND INFORMATION OF A LOT WHEREVER YOU ARE. ACCESSIBLE FROM YOUR MOBILE DEVICES.





# Local Perspective



**FIND THE NEAREST PUBLIC FACILITIES AROUND YOU. HOSPITAL, SCHOOLS, COLLEGE, PETROL STATION, BANKING FACILITIES, POST OFFICE, CONVENIENCE STORE & WEATHER.**

Number	Location	Distance (KILOMETERS)
1	CDM - MALAYAN BANKING BERHAD	~0.44 KILOMETERS
2	CDM - CIMB BANK BERHAD	~0.47 KILOMETERS
3	CDM - HONG LEONG BANK BERHAD	~0.55 KILOMETERS
4	CDM - MALAYAN BANKING BERHAD	~0.59 KILOMETERS
5	CDM - CIMB BANK BERHAD	~0.68 KILOMETERS
6	CDM - PUBLIC BANK BERHAD	~0.69 KILOMETERS
7	CDM - BANK KERJASAMA RAKYAT	

# What's Up Penang



**INTERESTED IN ANY ISSUES? SEE WHAT AND WHERE PENANGITES ARE TALKING ABOUT IT ON TWITTER, INSTAGRAM, YOUTUBE & FLICKR. ALSO GET A VIEW OF THE TRAFFIC CONDITION THROUGH TRAFFIC CCTVS.**

**What's Up PENANGITE**

Legend

- Sign in to Instagram
- Instagram
- Flickr
- Twitter
- Live Camera Services
  - PNB CAM04 PERAI KM139.4 NB
  - PNB CAM05 PNG BRG TP KM0.5 WB
  - PNB CAM07 PNG BRG KM1.68EB
  - PNB CAM12 PNG BRG KM6.7 WB
  - PNB CAM13 PNG BRG KM7.9 WB
  - PNB CAM18 UDINI 1C LM CH1.3

Flickr (1 of 3)

DSC\_0135  
8:28am - Sep 17, 2016  
[Zoom to](#)

Twitter

@fathinadiah [Follow](#)

balik duuuuuu (@SMK Bukit Jambul in Bayan Lepas, Penang, Malaysia)  
<https://t.co/6dhpPR1gez>  
2:09pm - Sep 27, 2016  
[Zoom to](#)

PNB CAM18 UDINI 1CLM CH1.3

Name PNB CAM18 UDINI 1CLM CH1.3  
Longitude 100.319728  
Latitude 5.358197

[Zoom to](#)

Map data © OpenStreetMap contributors, CC-BY-SA | Esri, HERE





# Stay Connected

**USED UP YOUR DATA PLAN QOUTA?  
SIGN UP FOR PENANG FREE WIFI  
AND STAY CONNECTED. FIND OUT  
PENANG FREE WIFI ACCESS POINT  
AROUND YOU.**

Hotspot ID	Hotspot Name	Distance
1	WiFiHotSpots: Sri Ganga Fancy Stor...	+0.12 KILOMETERS
2	WiFiHotSpots: Sri Ananda Bahwan R...	+0.13 KILOMETERS
3	WiFiHotSpots: Kalamms Restaura...	+0.13 KILOMETERS
4	WiFiHotSpots: Ramanie Stores (M) ...	+0.17 KILOMETERS
5	WiFiHotSpots: Friendship Motel 2, P...	+0.19 KILOMETERS
6	WiFiHotSpots: Friendship Motel 1, P...	+0.19 KILOMETERS
7	WiFiHotSpots: Lakshmi Silks, Penan...	+0.21 KILOMETERS
8	WiFiHotSpots: Twin Cellular Sales &...	+0.21 KILOMETERS
9	WiFiHotSpots: Umayal Textiles, Pen...	+0.23 KILOMETERS



# Parking

**FIND OUT YOUR LOCATION ROAD SIDE PARKING RATE. IF YOU DON'T HAVE ANY PARKING TICKETS, GO TO THE NEAREST OUTLET THAT SELL IT, OR YOU CAN PARK AT THE NEAREST PRIVATE PARKING SPACE OR SHOPPING COMPLEX.**

**PARKING PARK** Find address or place

**PARKING PARK**  
318  
KILOMETERS (1.1 - 1.5)

313	Jalan Sultan Ahmad Shah	~1.01 KILOMETERS
314	Jalan Pengkalan Weld	~1.02 KILOMETERS
315	Lebuh Lintang	~1.03 KILOMETERS
316	Jalan Ariffin	~1.04 KILOMETERS
317	Jalan Khoo Sian Ewe	~1.04 KILOMETERS
318	Jalan Argyll	~1.05 KILOMETERS

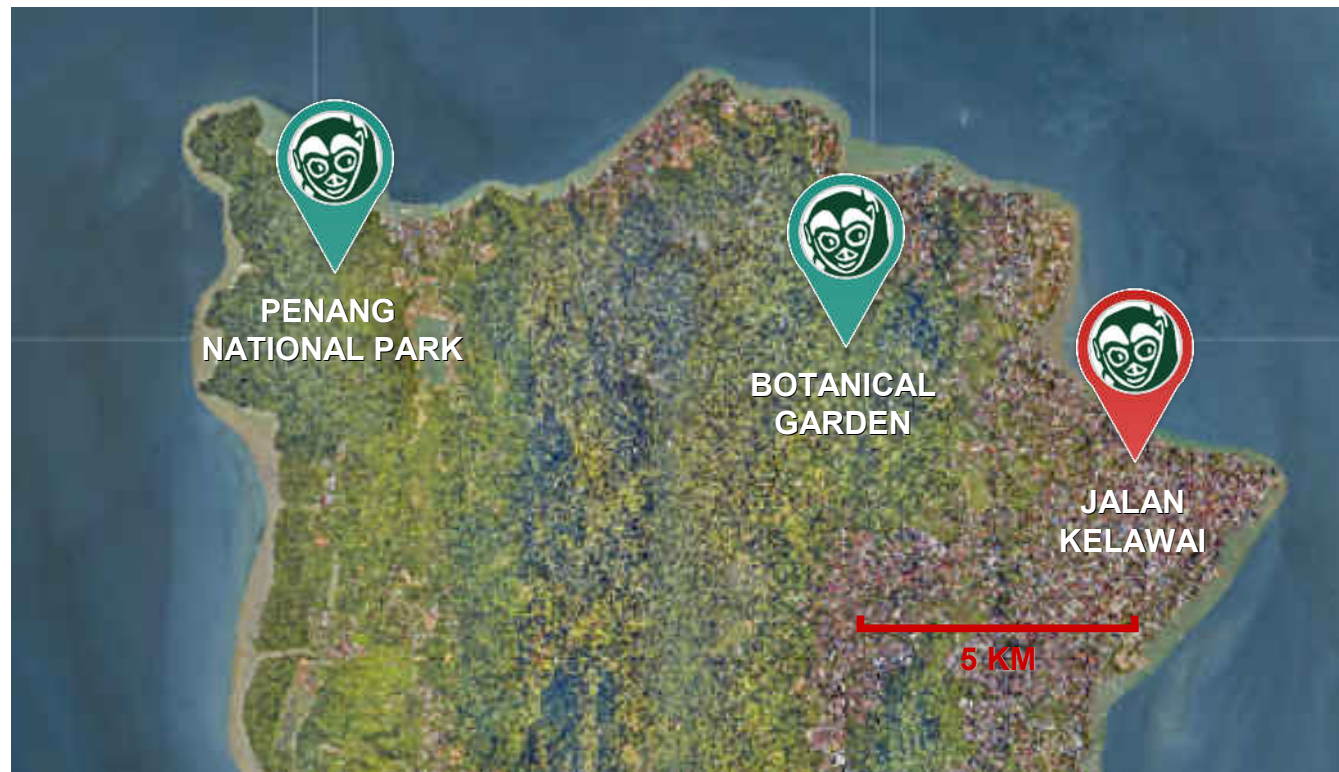
esri Map data © OpenStreetMap contributors, CC-BY-SA



# Urban Tree Mapping



Dusky Leaf Monkey



Recently (July 2016) spotted in the trees in a town area



# Urban Tree Mapping

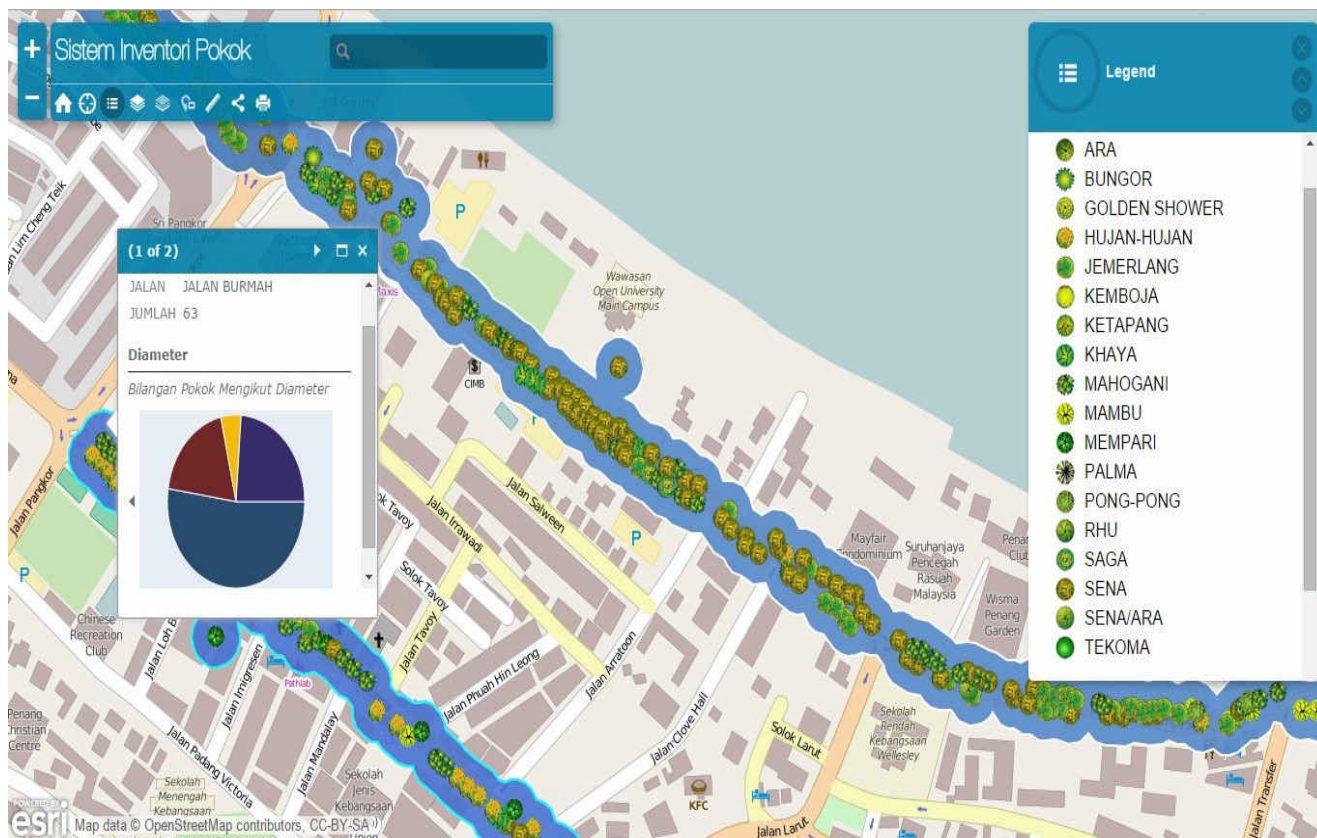
## 3

DEPT COLLABORATION

PENANG CITY COUNCIL  
PENANG BOTANIC GARDEN  
FORESTRY DEPT

# 4,517

TREES MAPPED





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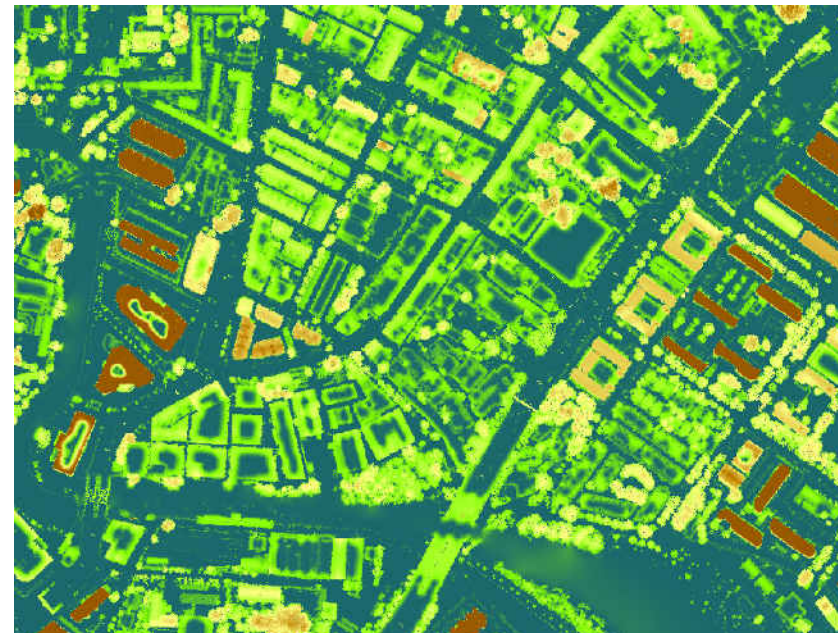
**ONLY TREES WITHIN THE DEPT  
JURISDICTION WERE MAPPED**

---

**OBJECTIVE : TO CREATE  
CORRIDORS OF TREE  
CANOPIES FROM THE HILLS TO  
GEORGE TOWN**

---

**USING LiDAR DATA, WE  
MAPPED OUT TREE CANOPY  
WHICH ARE > 5M HEIGHT**



**DIFFERENCE BETWEEN DSM & DTM TO EXTRACT  
VEGETATION & BUILDING**



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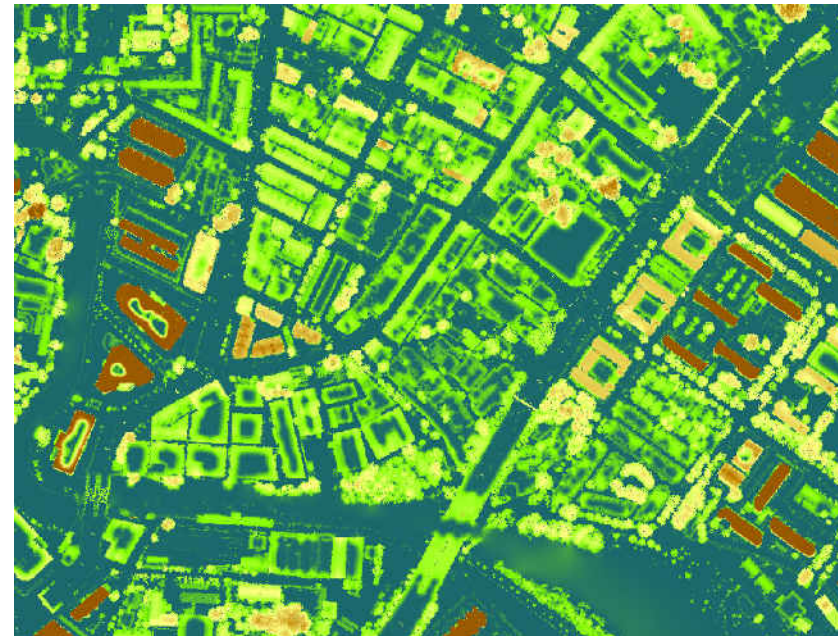
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WHICH ARE > 5M HEIGHT**



**BUILDING FOOT PRINT WAS USED TO ISOLATE  
OBJECT ON SURFACE**



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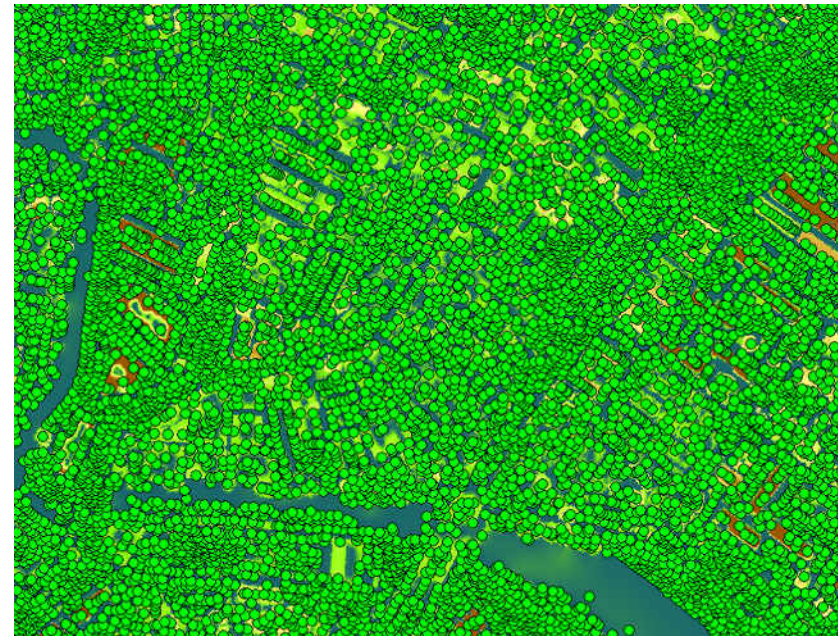
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JURISDICTION WERE MAPPED**

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**OBJECTIVE : TO CREATE  
CORRIDORS OF TREE  
CANOPIES FROM THE HILLS TO  
GEORGE TOWN**

---

**USING LiDAR DATA, WE  
MAPPED OUT TREE CANOPY  
WHICH ARE > 5M HEIGHT**



**RESULTED DTM ARE CONVERTED TO POINT**



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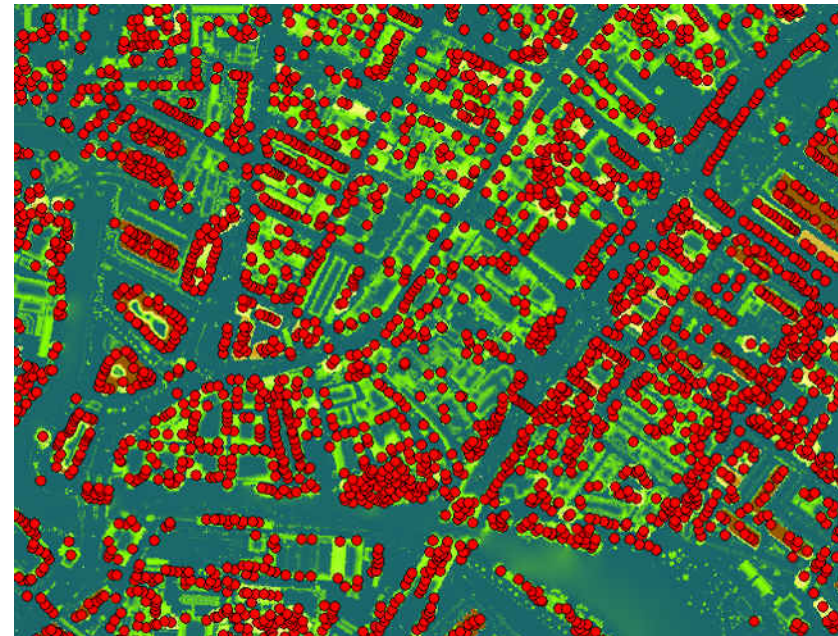
**ONLY TREES WITHIN THE DEPT  
JURISDICTION WERE MAPPED**

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**OBJECTIVE : TO CREATE  
CORRIDORS OF TREE  
CANOPIES FROM THE HILLS TO  
GEORGE TOWN**

---

**USING LiDAR DATA, WE  
MAPPED OUT TREE CANOPY  
WHICH ARE > 5M HEIGHT**



**OBJECT HIGHER THAN 5m SELECTED**





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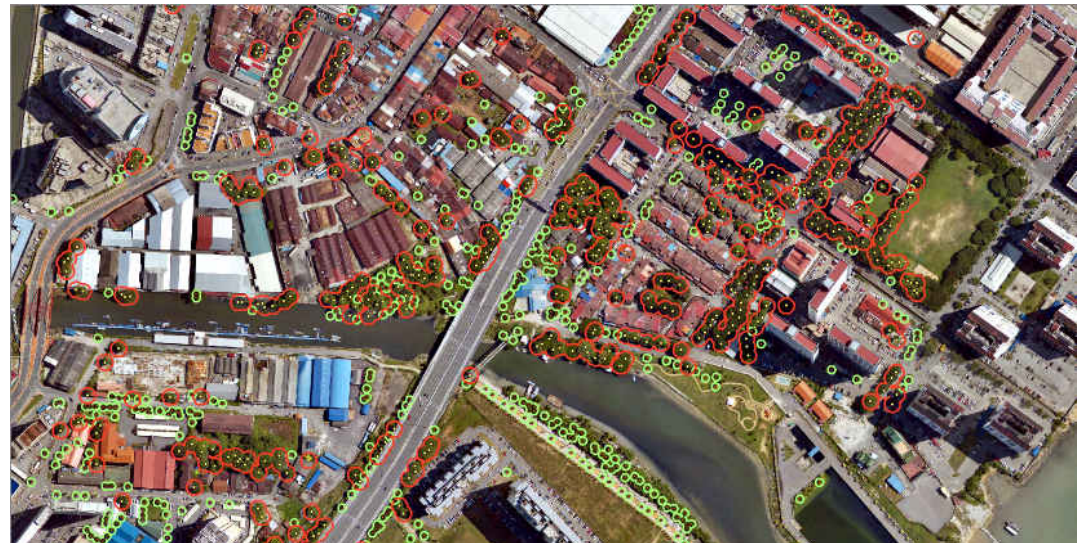
**ONLY TREES WITHIN THE DEPT JURISDICTION WERE MAPPED**

---

**OBJECTIVE : TO CREATE CORRIDORS OF TREE CANOPIES FROM THE HILLS TO GEORGE TOWN**

---

**USING LIDAR DATA, WE MAPPED OUT TREE CANOPY WHICH ARE > 5M HEIGHT**



**POINTS < 10m IN HEIGHT : 4m BUFFER**  
**POINTS ≥ 10m IN HEIGHT : 8M BUFFER**



# Aquilaria Malaccensis



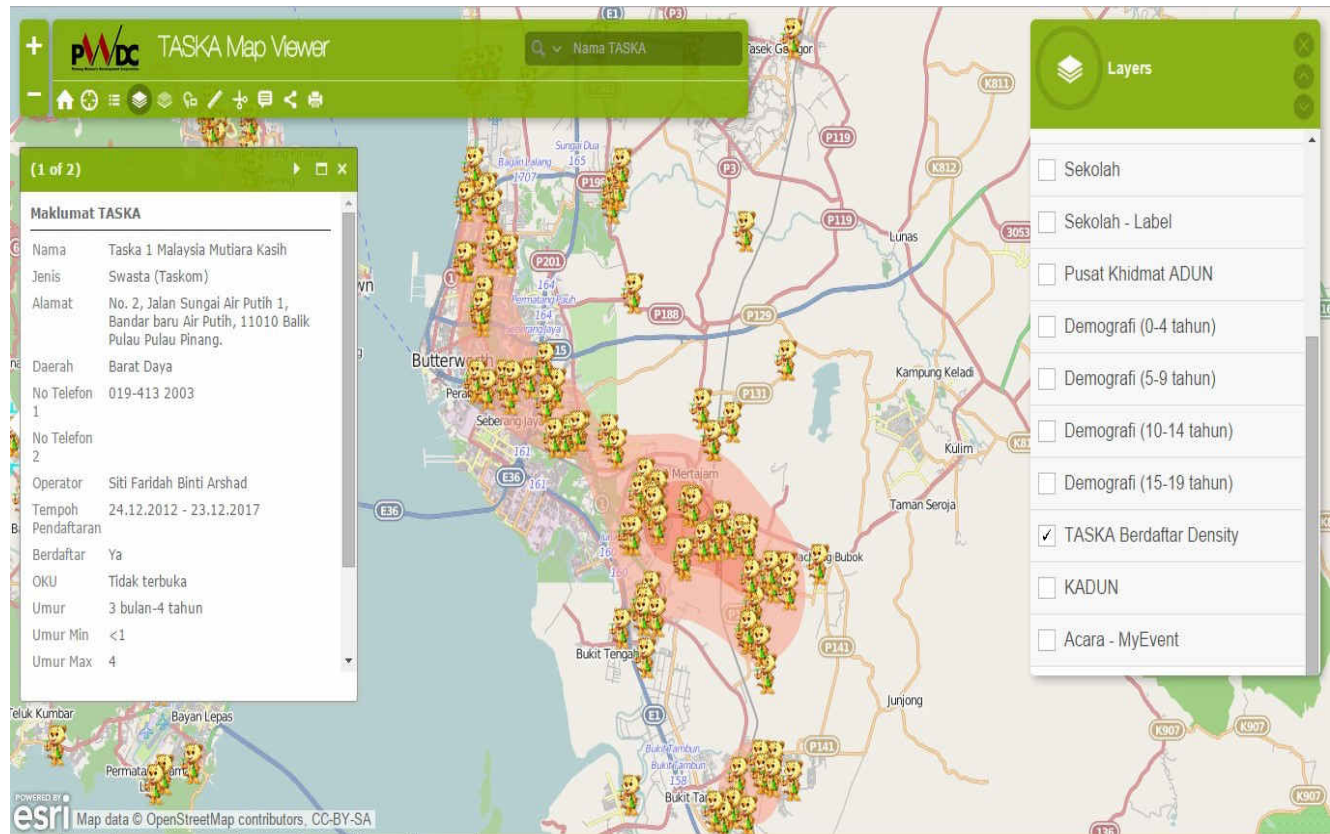
**A SPECIAL PROJECT TO MAP  
AQUILARIA MALACCENSIS (KARAS).  
COLLABORATION WITH BOTANIC  
GARDEN, FRIM & FORESTRY  
DEPARTMENT. INFORMATION IS  
USED TO MONITOR AND PROTECT  
THE TREES.**





# Child Care Centre

**MAPPING OF REGISTERED CHILD CARE CENTRE. COLLABORATION WITH PENANG WOMAN DEVELOPMENT CENTRE (PWDC) AND DEPARTMENT OF SOCIAL WELFARE.**



# Penang Street Arts



SINCE ITS INSCRIPTION HAS A WORLD HERITAGE SITE, GEORGE TOWN, PENANG, HAS DEVELOPED A VIBRANT STREET ART SCENE. THIS BEGAN WITH MARKING GEORGE TOWN IN 2009, WHICH BROUGHT THE TELLING OF STREET AND SOCIAL HISTORY THROUGH THE USE OF CARICATURES.



**Street Art**

**Penang Street Art**

Penang GEOGRAPHIC INFORMATION SYSTEM

**Little Children On A Bicycle**

The "Little Children on a Bicycle" is a mural on the wall of a shophouse on Armenian Street, George Town. It depicts a little girl taking her younger brother on a bicycle ride. The joy in their faces echoes down the street, providing a ray of cheer and adding character to Armenian Street.

Little Children On A Bicycle | Little Girl In Blue | Mahjong Bird | Mr Five Foot Way | No Plastic Bag | Nostalgic Meal Order | One Leg Kicks All | Pau Seller



# A Walk Through History



**THE ISLAND OF PENANG WAS AN IMPORTANT TRADE ROUTE FOR EUROPE, THE MIDDLE EAST, INDIA AND CHINA IN THE DISTANT PAST. IT IS BECAUSE OF THIS THAT THE ISLAND HAS SUCH A DIVERSE MELTING POT OF CULTURES; TRAVELERS ALL BROUGHT THEIR OWN CULTURE TO PENANG.**

**Penang : A Walk Through History**  
 The story map of historical places, streets and landmarks.

**Penang Heritage Trust**  
**Penang Warfare Pulau Pinang PHT**  
**Penang Geographic Information System**

**Esplanade Road**  
 The Padang Kota Lama is the parade ground and playing field created by the British colonials. During 1900s, the clubhouse buildings such as Penang Cricket Club, Penang Recreation Club were located at here. However, during the Second World War, they were destroyed and never rebuilt again.

10 Chowrasta Market  
 11 Chulia Street  
 12 City Hall  
 13 Dato Keramat Market  
 14 Downing Street  
 15 Eastern & Oriental Hotel  
 16 Esplanade Road  
 17 Farquhar Street  
 18



# Beaches & Waterfronts



**PENANG BEACHES AND WATERFRONTS ARE PLENTIFUL AND HAILED AS SOME OF THE MOST BREATHTAKING IN THE COUNTRY, DRAWING A STEADY CROWD OF TOURISTS AND LOCALS**

### Penang : Beaches & Waterfronts

**Teluk Tempoyak**

Teluk Tempoyak is a quiet Malay fishing village on the southeast tip of Penang Island, just south of Batu Maung. Until recently, Teluk Tempoyak is truly off the beaten path. There isn't a bus service to Teluk Tempoyak, so its residents have to climb over the hill to reach the nearest bus stop in Batu Maung. Teluk Tempoyak's biggest call to fame today is ikan bakar, or grilled fish. This can be enjoyed in a number of seaside Malay restaurants with the catch that comes in every evening, and is gaining fame among local tourists.

Gurney Drive

Padang Kota Lama

Karpal Singh Drive

Queensbay Coast

Batu Maung

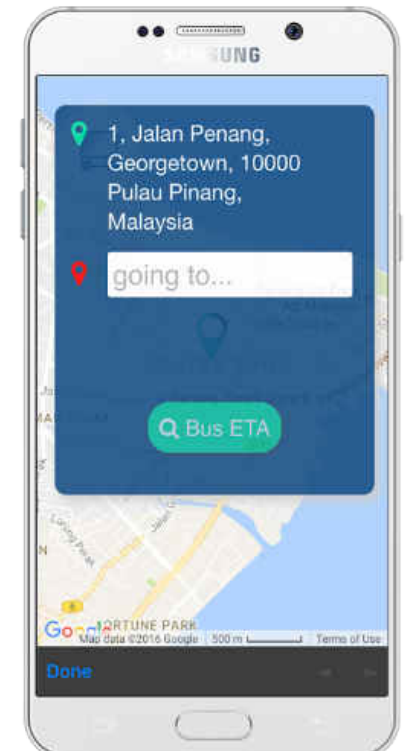
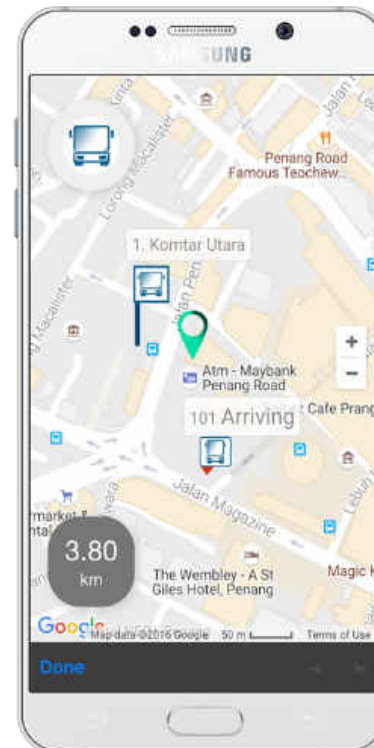
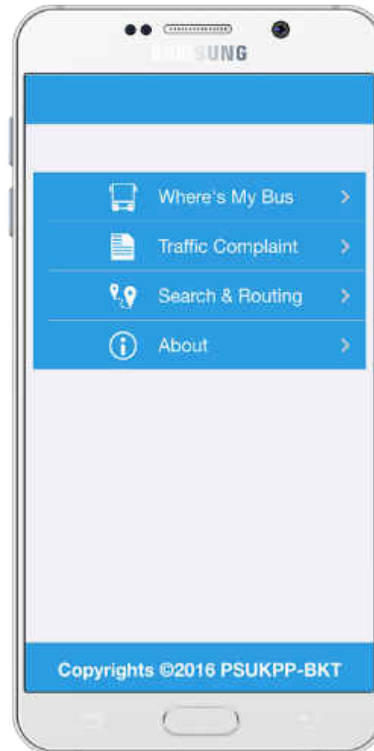
Teluk Tempoyak

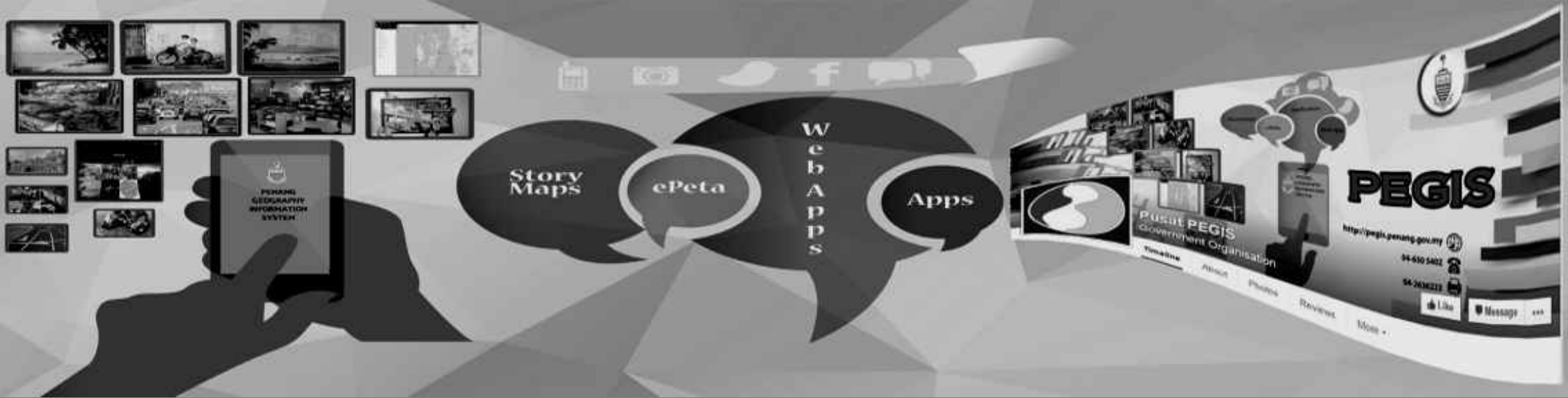
Permatang Damar Laut

Sungai Batu



**PENANG INTELLIGENT TRAFFIC AND TRANSPORT SYSTEM (PiTTS) IS A MOBILE APP SERVICE TO THE PUBLIC. IT WILL ASSIST RAPIDPG USERS TO PLAN THEIR JOURNEY.**





**BETA VERSION : SOME OF THE APPLICATIONS ARE CONVERTED INTO MOBILE APPS.**



**PeGISApps**





# Issues & Challenges

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**1**

WHAT DO PEOPLE WANT, NEED AND EXPECT FROM PUBLIC SERVICES?

---

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**2**

TO INCREASE THE EFFECTIVENESS OF THE APPLICATION TO MEET USERS EXPECTATION.

---

**3**

LACK OF PROGRAMS TO PROMOTE E-GOVERNMENT BENEFITS AND ADVANTAGES.

**4**

DATA AVAILABILITY.



рахмат  
Баярлалаа  
спасибо  
nami  
nandri  
kiitos  
dankie  
dhanyavad  
gracie  
hvala  
mauruuru  
koszönöm

danke

merisi  
kia ora  
barka  
welalin  
tack  
spas

謝謝

ngiyabonga

tesekkür ederim

vinaka  
спасиби  
blagodaram  
dank je  
misaotra  
matondo  
paldies  
grazzi  
mahalo

thank you

gracias

tapadh leat

хвала  
asante  
manana  
obrigada  
tenki

enkosi  
bedankt

dziękuje

sagolun

sukriya

kop khun krap

taiku  
grazie

go raibh maith agat

obrigado

dziękuję

sukriya

kop khun krap

taiku  
grazie

taiku  
grazie

go raibh maith agat

arigatō

takk

dakujem

trugarez

তোমাকে ধন্যবাদ

감사합니다

xiexie

ευχαριστώ

merci

merci

merci

merci

merci