

High-level Roundtable Discussion on Smart Sustainable Cities

World Smart Sustainable Cities Organization

Mr. Kyong-yul Lee
Secretary General

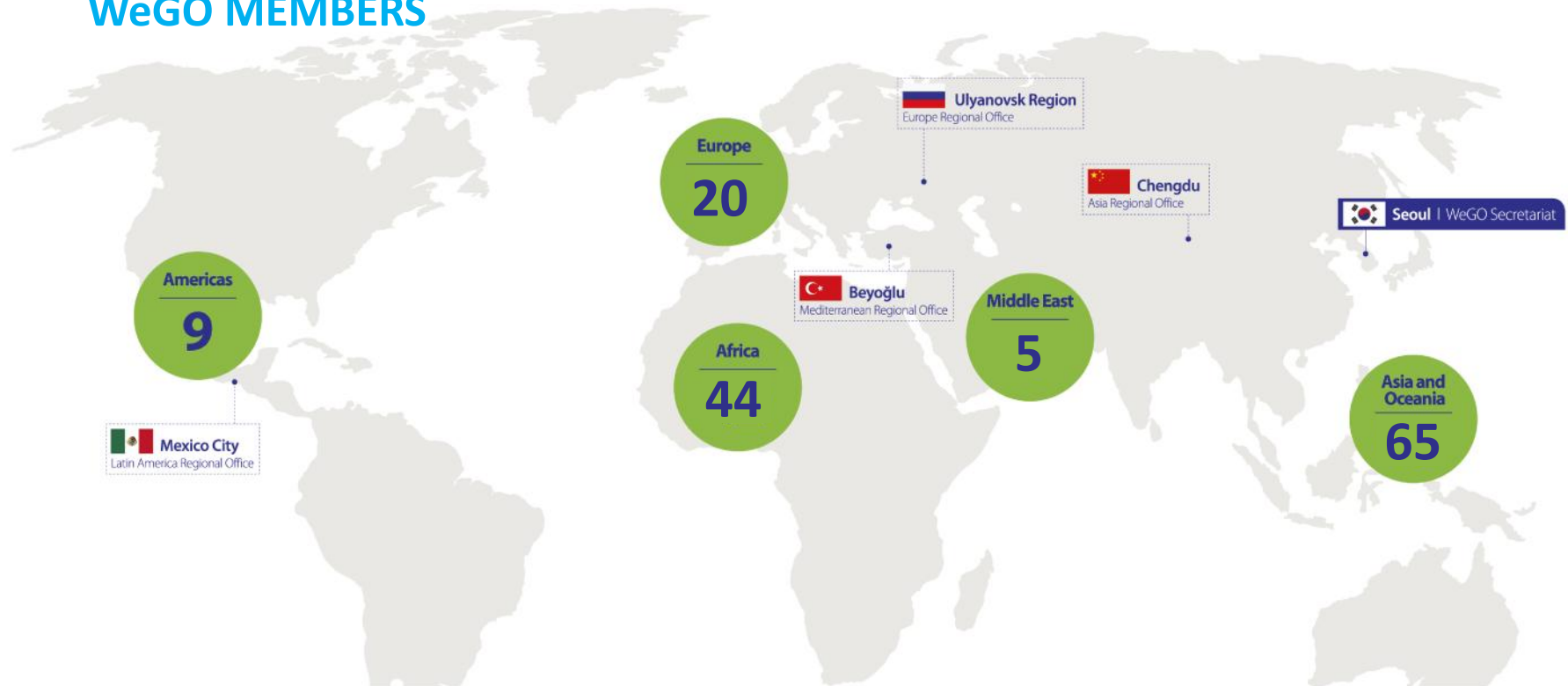
WHAT IS WeGO?

INTERNATIONAL ORGANIZATION OF 131 CITIES + 5 NATIONAL ICT INSTITUTIONS + 7 CORPORATE MEMBERS

- **President City:** Seoul
- **Executive Vice President City:** Makati
- **Vice President Cities:** Addis Ababa, Beyoğlu, Ha Noi, Jakarta, Mexico City, Moscow, Ulyanovsk Region
- **Executive Committee Member Cities:** Bucharest, Chengdu, Goyang, Hebron, Khartoum State, Kigali, Nairobi, Pittsburgh, Seberang Perai, Ulaanbaatar
- **Regional Offices:** Asia, Europe, Latin America, Mediterranean
- **Secretariat:** Seoul Global Center 7F, South Korea



WeGO MEMBERS



143 MEMBERS WORLDWIDE

VISION: Smart Sustainable Cities for All

- Innovative cities that leverage digital technology and connectivity to improve quality of life, efficiency of urban operation and services, and economic prosperity for all citizens, while ensuring long-term economic, social and environmental sustainability



MISSION

- To promote and facilitate the transformation of cities to Smart Sustainable Cities worldwide;
- To be a global platform for cities to enhance their digital capabilities and leverage their innovation potentials in order to develop transformative solutions; and
- To foster international exchange, cooperation, and learning among cities.

WeGO ACTIVITIES

1. Capacity Building

- WeGO Smart Sustainable Cities Training Program (Seoul)
- Joint WeGO-NIA-World Bank Workshop for Smart Sustainable Cities & e-Government (Jeju Island)
- FMDV-WeGO Smart City Study Visit in Europe (Brussels, Paris)
- WeGO-TM Forum Smart City Maturity & Benchmark Model
- UN KPIs for Smart Sustainable Cities (ITU)
- Civic Participation System (CPS) Solution
- WeGO Online Smart Classroom
- WeGO Regional Office Training Programs (Chengdu, Beyoğlu)

2. Platform for Action-oriented Cooperation

- Smart City Feasibility Study and Pilot Project
- WeGO Thematic Clusters

3. Knowledge Building and Research

- WeGO Smart Sustainable City Projects Catalog
- WeGO Smart Sustainable Cities Best Practices Journal

4. Conferences & Exhibitions

- AfDB Annual Meeting (Busan)
- 4th Asia-Pacific Regional Forum on Smart Sustainable Cities and e-Government (ITU) (Thanh Hoa)
- WeGO Smart City Week + Seoul Digital Summit (Seoul)
- Global City Teams Challenge(GCTC) Tech Jam (Portland)
- OGP Global Summit (Tbilisi, Georgia)
- OGP Asia-Pacific Regional Meeting (Seoul)
- International Digital Economy Conference (Ulyanovsk)
- Smart City Expo World Congress (Barcelona)

5. WeGO Meetings

- Executive Committee Meeting
- General Assembly
- Smart Sustainable City Awards

High-level Roundtable Discussion on Smart Sustainable Cities



Dato' Sr Hj Rozali
bin Hj Mohamud

Municipal President
Seberang Perai,
Malaysia



Mr. Mahesh Baral

Chief Administrative
Officer
Dhulikhel, Nepal



Hon. Joel Alangsab

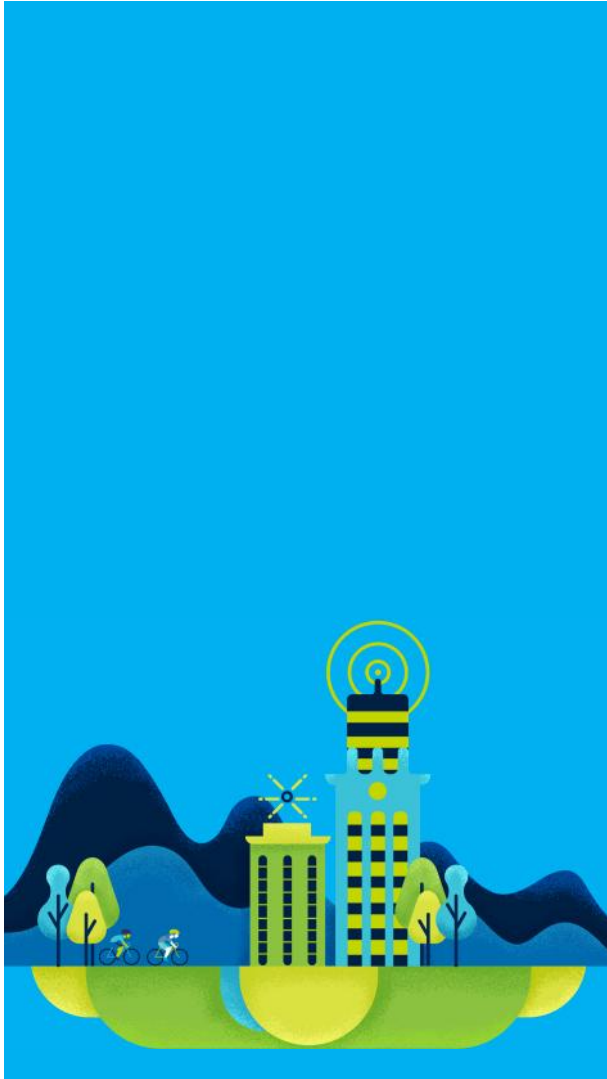
City Councilor
Baguio City,
Philippines



Mr. Tran Ngoc Thach

Vice Director,
Department of
Information and
Communications
Da Nang, Vietnam





Seberang Perai's Smart Sustainable City Vision

Dato' Sr Hj Rozali bin Hj Mohamud
Municipal President
Seberang Perai, Malaysia



4th Asia Pacific Regional Forum
On Smart Sustainable Cities and
E-Government
4th July 2018

High Level Roundtable Discussion:
Seberang Perai's Smart
Sustainable City Vision



Speaker: Dato' Sr Haji Rozali Bin Haji Mohamud





Vision

Seberang Perai Resilient,
Inclusive, Green, Competitive
and Technology Driven Smart
City



Mision

To provide urban service,
development planning and
infrastructure efficiently, effectively
and responsive to the needs of the
community in Seberang Perai

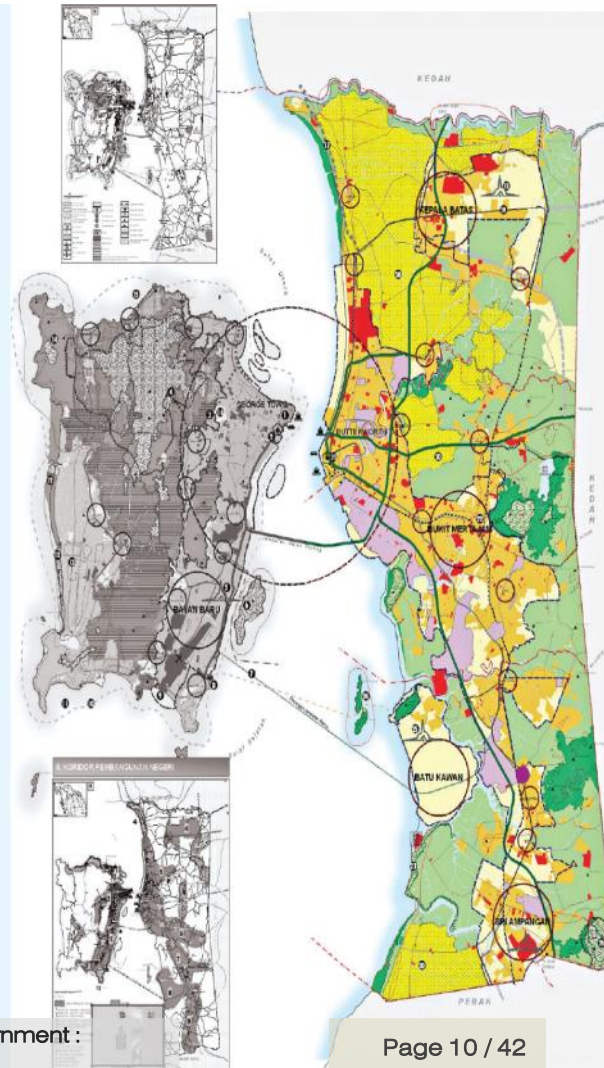
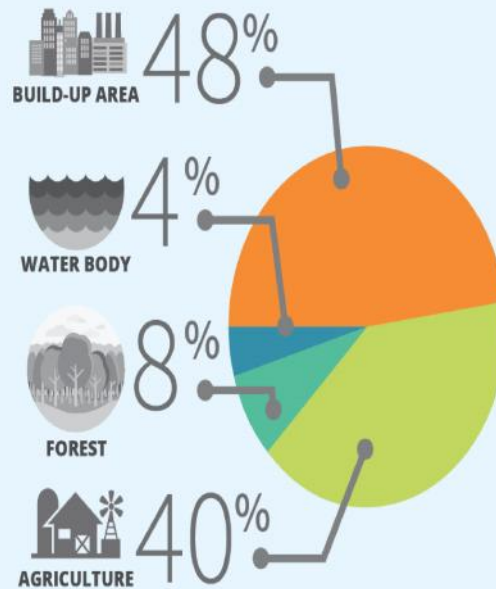


SEBERANG PERAI LANDUSE ZONING

POPULATION
897,600
RESIDENT
based on Malaysian
Population Statistic 2014

SIZE
738
KILOMETER²

**POPULATION
GROWTH**
1.7%
PER YEAR



SEBERANG PERAI

Aspiring City Of Tomorrow

A VISION FOR
TOMORROW
& BEYOND

Smart
Industry
4.0

Smart
Street Light

Digital
Signage

Smart
Parking

Smart &
Sustainable
Hawkers
Complex

Smart
Traffic
Light

Smart Solid
Waste
Management

Citizen
Participatio
n System

Cashless
Payment
System

Public
Reporting
System

Data
Exchange
Platform

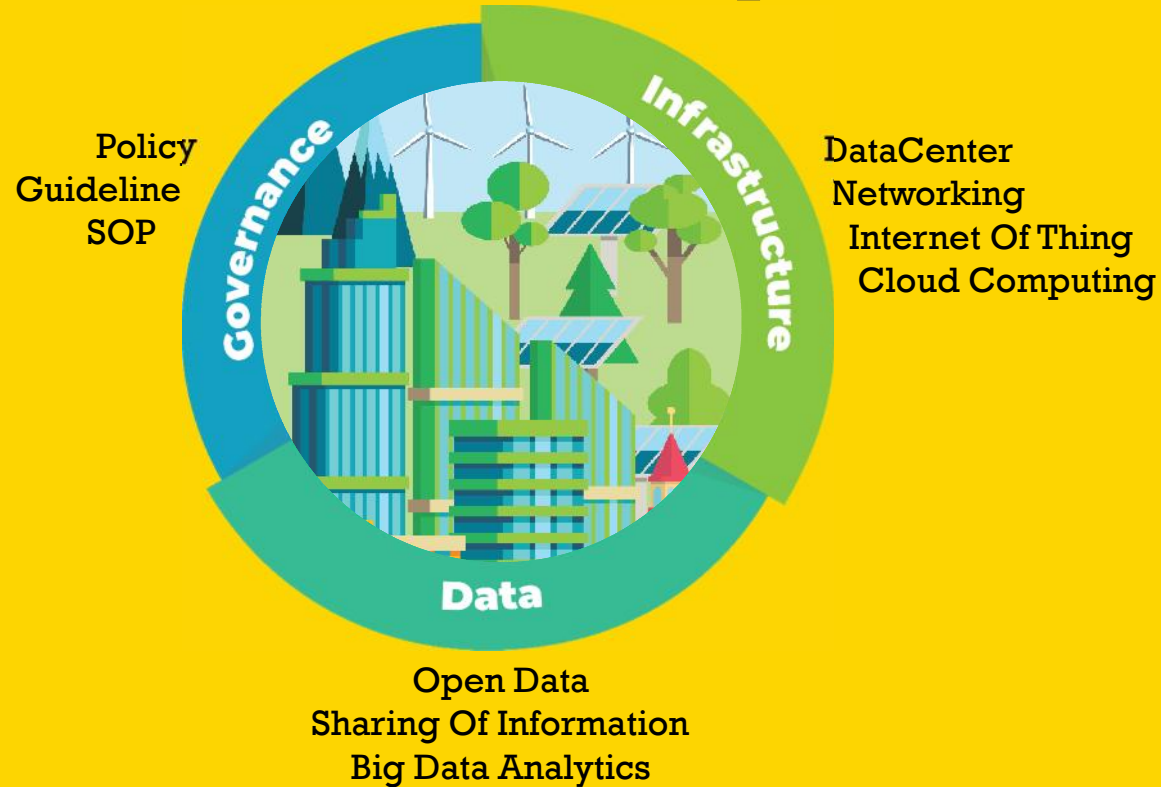
Flood
Managemen
t System

Smart &
Sustainable
Building

Integrated
Command
Center

Smart
Learning
Center

Core Strategic
for Seberang Perai
Smart City







Smart
Community

STRATEGIES

Public Participations / Engagement

- Town Hall Sessions
- Budget Dialogue
- Consult project
- Slido
- School Eco Rangers & Community Engagement

Learning Center / Talent Development

- Butterworth Digital Library

Complaint System

- Smart Monitoring system

Upcycle Park

Hackaton

- Hackfest MPSP 2018 – Cyber Counter
- Hackfest MPSP 2019 – IoT in Local Council



Smart
Community

Respondents priority level of
MPSP services

Seberang Perai Strategic Plan 2018 - 2022



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

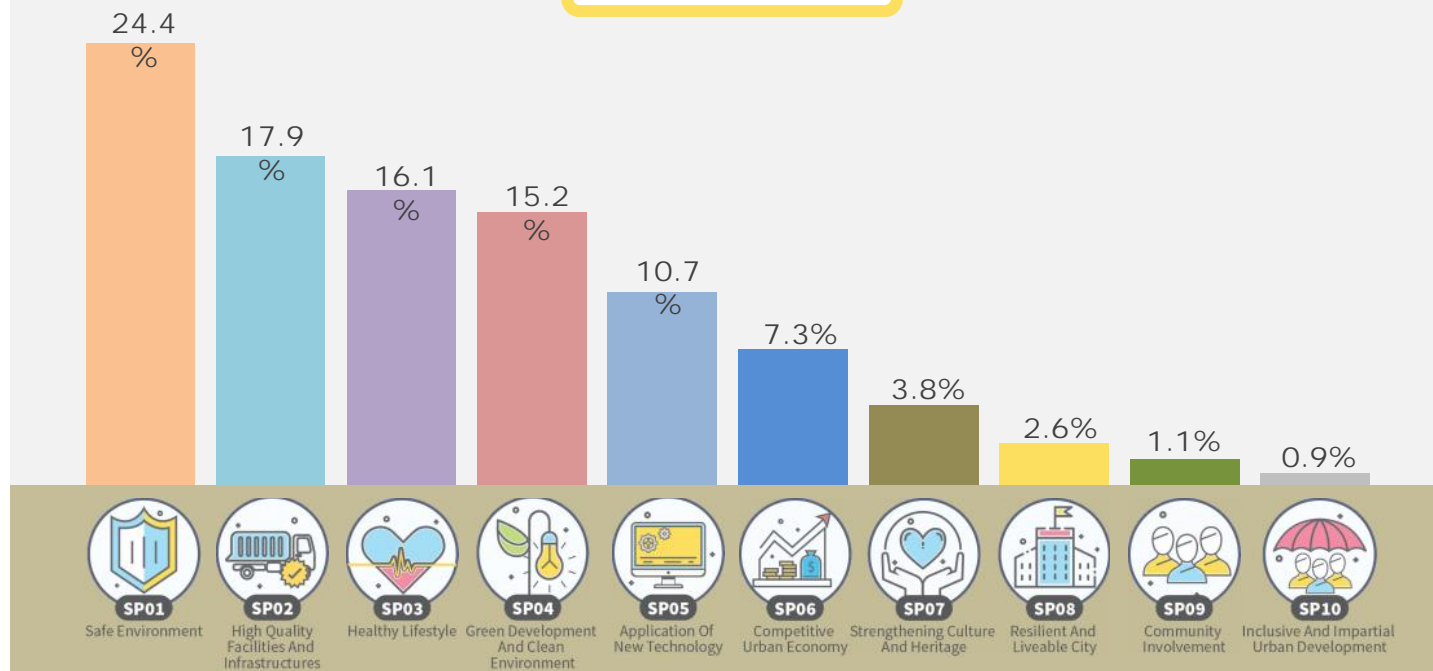




Smart
Community

Respondents priority level of MPSP services

YEAR: 2019





Smart
Community

Townhall Session

Dialogue
Budget

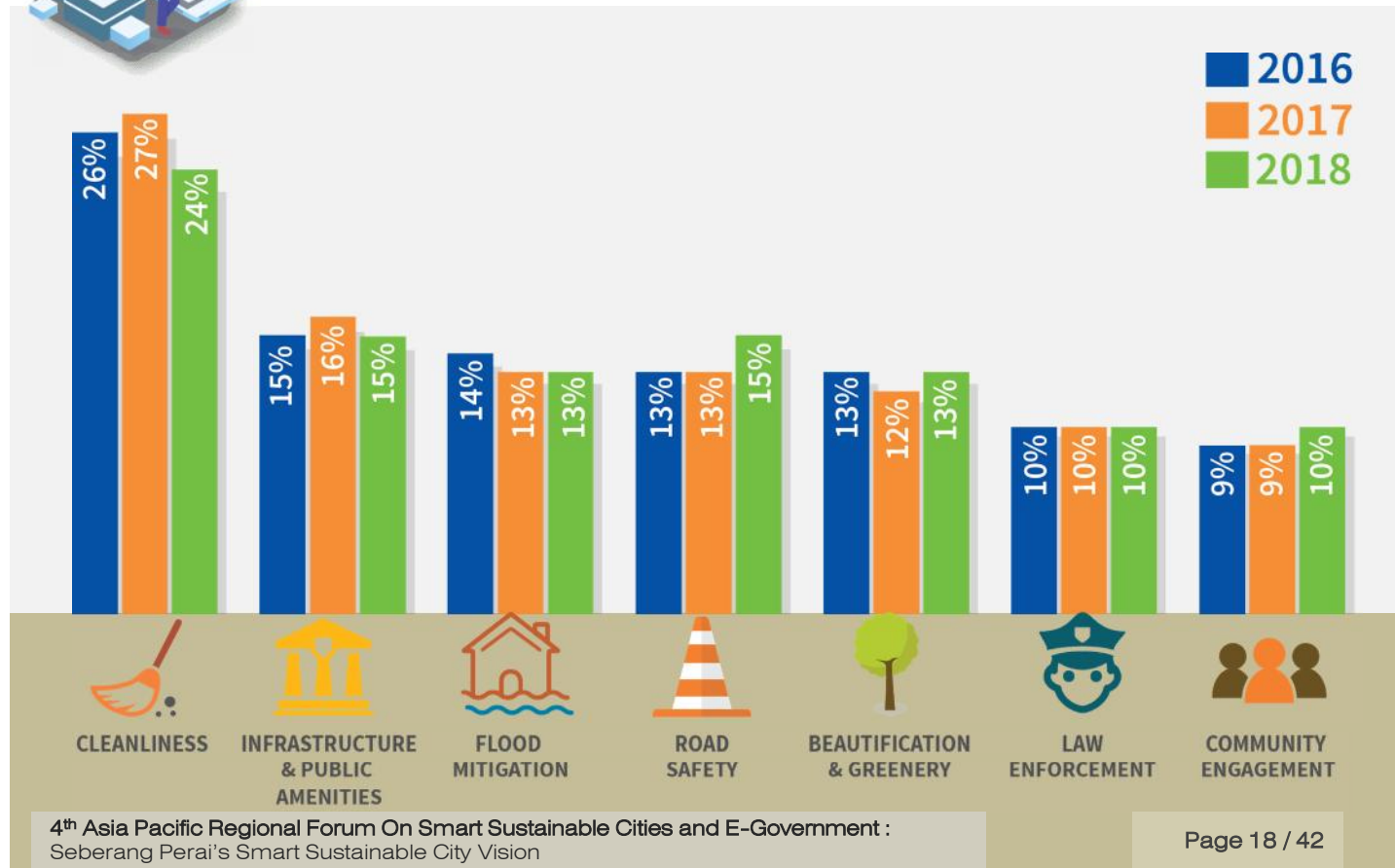


4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision



Smart
Community

Dialogue Budget Respondents priority level of MPSP services





Smart
Community

Collabration Software
Slido as Q&A platform

Majlis Perbandaran Seberang Perai was live.
Published by Teradek [?] · 17 April ·

Program Integriti Bersama Peniaga
"Saya Peniaga Berintegriti"
Majlis Perbandaran Seberang Perai
Panel : ... See more

The collage shows a live event titled 'Program Integriti Bersama Peniaga "Saya Peniaga Berintegriti"'. It features a panel discussion with three men on stage. The background screen displays the event's logo and a Slido Q&A interface. The Slido interface shows a question: 'Mppg kota apa yang dikatakan. Hari ini contoh smart city yg meletakkan peniaga dan stakeholders dihadapan. Syabas' and an answer: 'Assalamualaikum jika ada yg berkaitan integriti bagaimana cara kita membuat laporan jika pihak berwajib dan adakah denda jika tidak melaporkan'.



Smart
Community

Butterworth Digital Library

Creating the community of Seberang Perai towards the higher level education which results in making Penang State an excellence, tranquil and sustainable city.

24 x 7 x52 working culture
Walking distance to provide
education for all.

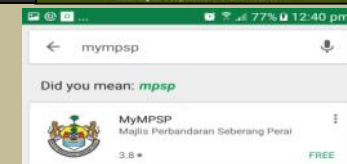
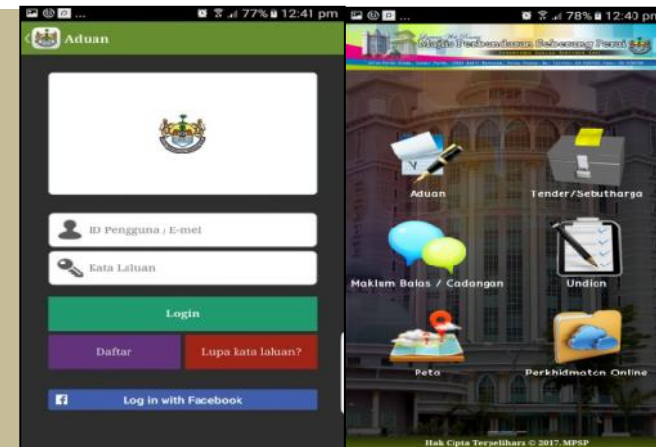




Smart Community

Smart Monitoring System (SMS)

- 2013 ● Complaints
(Conventional)
- 2014 ● Facebook
(MPSP Watch)
- Better Penang Apps
- 2016 ● SMS
- SMS 2.0
- SmartEye
- 2017 ● MyMPSP Apps





Smart
Community

Upcycle Park



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

Page 22 / 42



Smart
Community

Smart Monitoring System
(SMS)



To connect people with ideas,
expertise, experiences and
networking to share and
contribute in improving the
MPSP's counter services.



Date : 13-15 July 2018
Venue : MPSP Tower, Bukit Mertajam
Theme : "Cyber Counter"
Estimate Participant : 100 people



STRATEGIES

Penang Transport Master Plan Traffic Management System

- Green wave technology
- Vehicle counting system

Vehicle Information System

- GPS tracking vehicle

Routing Information

- Interconnection between public transportation and bicycle route

Wireless Internet Access

- Free Penang Wifi

Cycling- GIS Mapping

E-Bikes



Penang Transport Masterplan



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

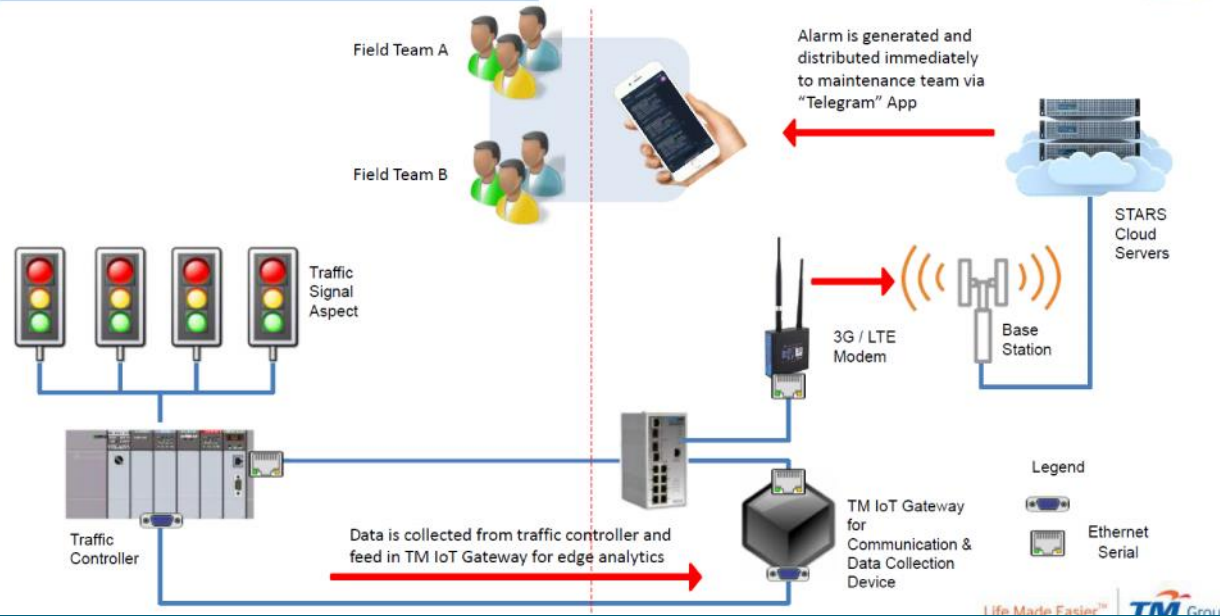
Page 25 / 42



Smart
Mobility

Traffic Management Solutions

STARS Operational Flow





Smart
Mobility

Connectivity Penang Free Wi-Fi



- Collaboration With State Government of Penang
- 1550 Hotspot in Whole Penang, 623 Hotspot in Seberang Perai
 - 75Mbps to 375Mbps Bandwidth

Connect with
Wireless @ Penang



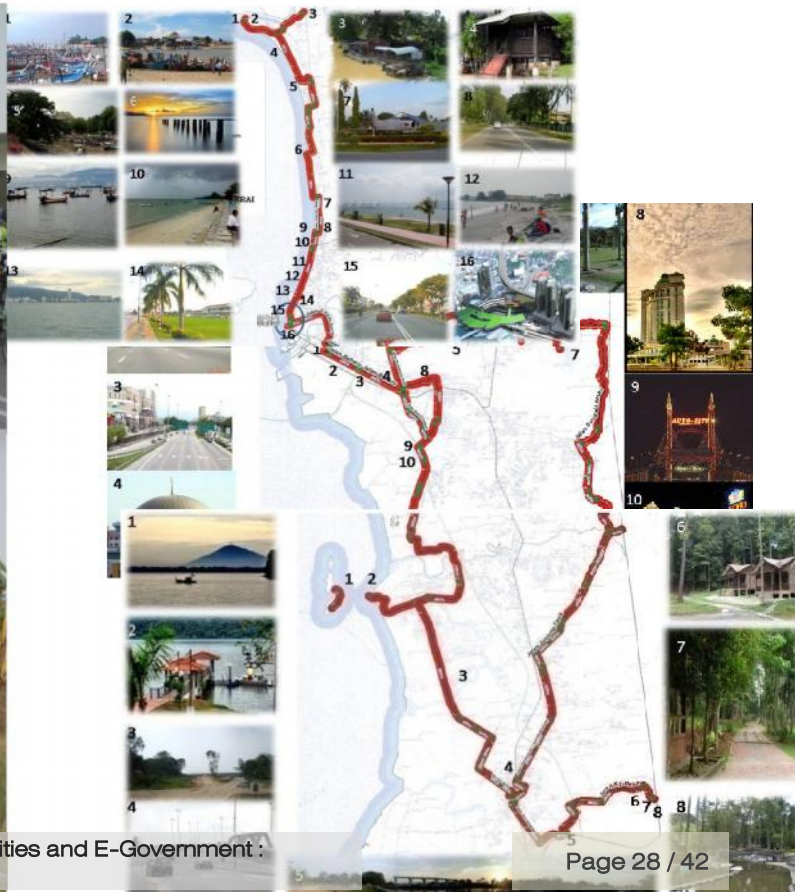


Smart
Mobility

Cycling GIS Mapping



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision





STRATEGIES

Sustainable Energy (Solar, Wind, Wave energy)

LED Street Lights

Solid Waste Management

Flood Mitigation Management

Water Level Monitoring & Alert Warning system

Penang State Policy

Public Education & Mobile Apps

Corporate Social Responsibility (CSR)



Smart
Environment

Sustainable Energy

ISO 50001:2011 (EnMS) Energy Management System (15 August 2014).

C1 immediately issued if developer could reduce 15% energy saving or implement any renewable energy.





Smart
Environment

LED Street Lights

Street Lights High Pressure Sodium Vapour
(HPSV) Change To Light Emitted Diode (LED)
Under MPSP Jurisdiction

2018- 10,000 Street Lights



LED

HSPV

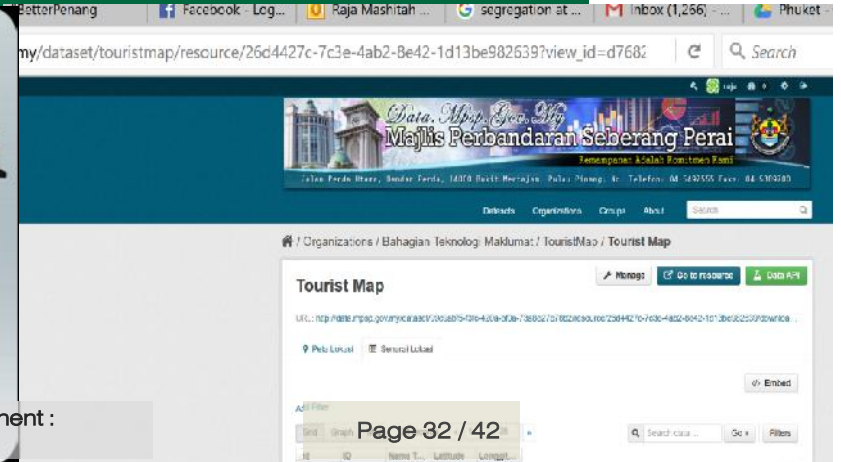


Smart
Environment

Solid Waste
Management

Big Data Analytic and IoT

- Use of **GPS** to optimize the use of Vehicles.
- Use of **BDA** to calculate and design solid waste projections for existing development and new developments.
- Establish database for solid waste management and recycling.
- Loading solid waste data and recycling into the Open Data MPSP portal





Smart
Environment

Solid Waste Management GPS Monitoring

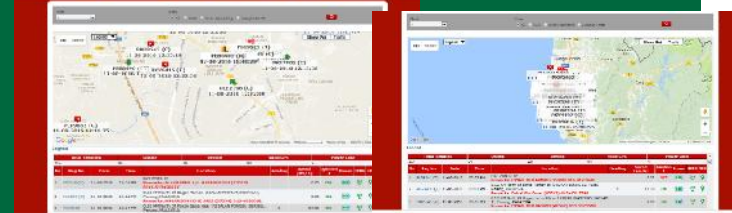


Solid Waste



GPS Tracking

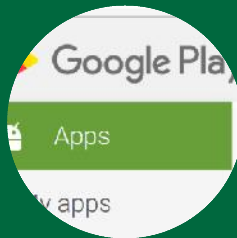
GPS Monitoring



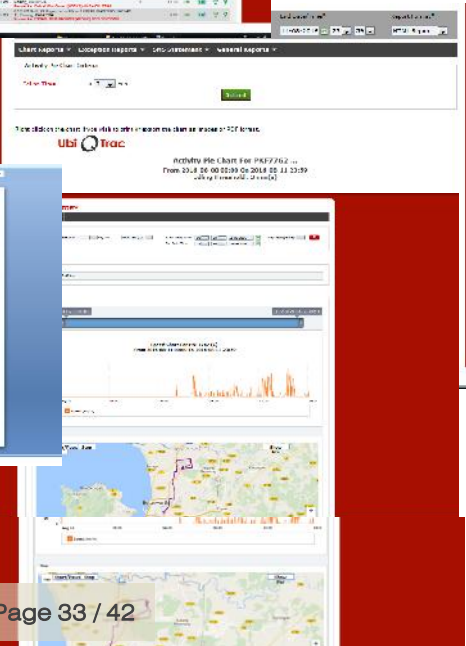
System Analysis



Public Engagement
Education :
Trash2Treasure App
*(learn how to
segregate your waste
in a fun way)*



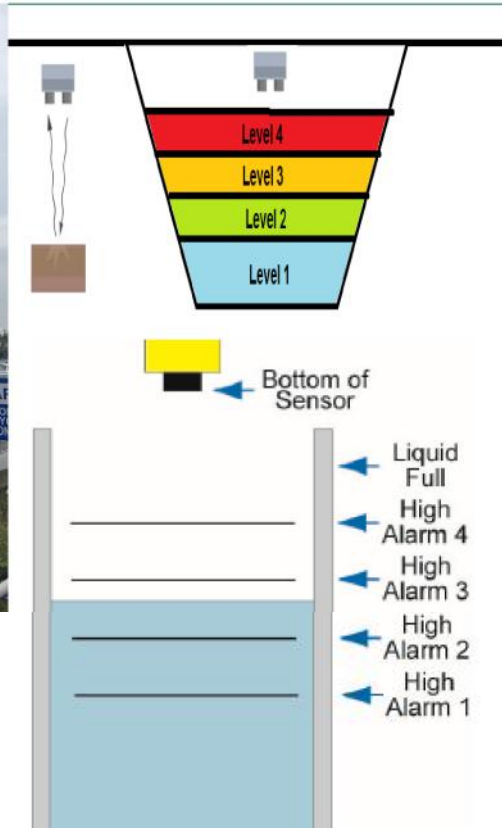
Overflowing
Waste





Smart
Environment

Water Level Monitoring & Alert Warning System



Ultra Sonic will detect and send when water increase by it setting level

Level 1 – Basic Level
Level 2 – 25% Increase
Level 3 – 50% Increase
Level 4 – 75% Increase

Each level increase, system will send a notification via SMS, Email or Apps



Smart
Environment

Penang State Policy

Collaboration
with
Smart Partner



Penang
State
Government



MPSP
PENANG
INSTITUTE
making ideas work



PENANG
GREEN COUNCIL



No Plastic Bag



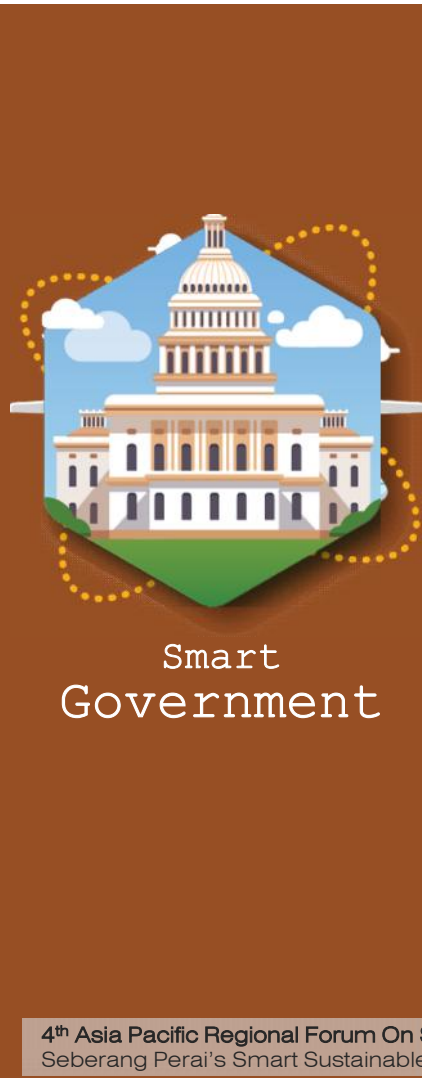
No Polystyrenes



Segregation at Source

Solid Waste has reduced from 1.6kg to 1.3kg
per person per day - Source by Penang Institute





STRATEGIES

Open & Inclusiveness

- Live Streaming & Sign Language Interpreter

Open Data Platform

Security & Safety

Collaboration System

GIS Public Portal

Disaster Preparedness

Asset Management System

- Regular Maintenance & Services
- Periodically Monitoring Status



Smart
Government

Live Streaming Sign Language Interpreter

Majlis Perbandaran Seberang Perai was live...
18 November 2017

Sesi "Townhall" memperkenalkan pelan strategik Seberang Perai 2018-2022 oleh Yang Berhormat Dato' Sri Haji Razali B. Haji Mohamad, Yang DiPertua MPSP pada hari Sabtu, 10 November 2017.

#Townhall
#Live
#PelanStrategik
#MySeberangPerai

Your video is popular in Penang

4 Comments 37 Shares 1.8k Views

Majlis Perbandaran Seberang Perai was live...
Published by Teradek (?) · 25 January at 09:19

People have watched this video for a total of 1.8k minutes

Boost Post

1k Views

Like Comment Share

58

Top comments

15 shares

Page 37 / 42

4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision



Smart
Government

Open Data 15 Data Sets

- 1) Recycling Center
- 2) List Of Public Market
- 3) List Of Public Hall

#BetterPenang Facebook - Log... Raja Mashitah ... segregation at ... 150x (1,16) 4) The Location Of Public Market

v.my/dataset/touristmap/resource/26d4427c-7c3e-4ab2-8e42-1d13be982639?view_id=d763...

6) Schedule For Waste Collection According To The Location In Seberang Perai

7) 2015 Penang Tourism Statistics Publication

8) Social Basic Data

9) Health Basic Data

10) Real Estate And Basic Data

11) Transportation Basic Data

12) Infrastructure Basic Data

13) Map

14) e-Data

4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

Page 38 / 42



Smart
Government

Security and Safety



CONTROL ROOM



CCTV

TOTAL CCTV IN SEBERANG PERAI

NORTHERN (SPU)	46 UNITS
CENTRE (SPT)	34 UNITS
SOUTH (SPS)	20 UNITS
TOTAL	100 UNITS



Smart
Government

Security and Safety Crisis Management Department

Dedicated team to response during disaster and crisis. This team is available for 24 hours everyday throughout the year. Equipped with multiple vehicles and equipments to tackle almost any sort of municipal crisis.



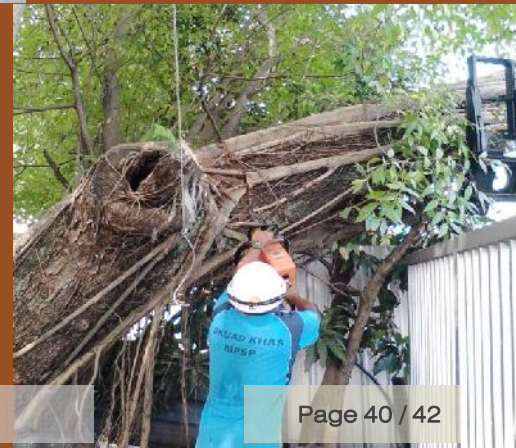
Seberang Perai Disaster Management Plan highlight the role of every members of the community.

Engagement and partnerships with the stakeholders are the key factors in building a resilient Seberang Perai



168 skill workers work in shift to enhance the preparedness in dealing with disaster and crisis.

This workers have been given adequate training regarding disaster management and



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision



Cashless Society

- Payment
- Parking
- Smart Retail System
- Unified Collaboration
- Security
- Delivery Services

Cyber Counter

- Online Transaction
- Online Submission
- One Stop Center /UTC
- Kiosk

Smart & Sustainable Hawker Centers

- Self sufficient Management System (PPP Collaboration)
- Maintenance Service
- Water Harvesting
- Solar Panel
- Digital Signage/ LED Light box
- CCTV Monitoring
- Smart Metering
- Grease trap monitoring sensor
- Water & Electricity usage monitoring
- LED Lightning

STRATEGIES



Smart
Economy

Cashless Society

Payment

Cashless payment for Seberang Perai Services to be paid through online and mobile platform

Parking

- Smart parking through mobile apps and payment kiosk will reduce dependency on actual money being transferred and reducing paper.
- Encouraging the private parking to implement the same system will benefits all parties.

Smart Retail System

Encouraging small retail business especially under Seberang Perai management such as MPSP food Complex and market will help boost the utilization of Seberang Perai e-Wallet.

Unified Collaboration

Collaborating with another payment system to assist and utilization of Seberang Perai Cashless society to enhanced and reduce the burden of having multiple system of payment in Seberang Perai.

Security

Cashless environment will reduce the actual currency being utilize and for security purpose will reduce cases of mugging.

Delivery Services

Delivery services will be a major roles in the future of Seberang Perai as people mostly depends on fast delivery and utilizing a single platform for ordering and payment will boost the existing system and help small and medium business in Seberang Perai to



Smart
Economy

Cyber Counter

Online Transaction

- MPSPpay
- Single payment gateway for Seberang Perai Government service

Online Submission

- OSC Online

Urban Transformation Center (UTC)

- Government single

Kiosk

- 13 Kiosk



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

The image displays two screenshots of government service portals. The top screenshot shows the MPSPpay website, which is the official payment gateway for the Majlis Perbandaran Seberang Perai. It features a login section for registered users and a registration link. The bottom screenshot shows the OSC (Online Submission Center) website, which is used for online submissions. It includes a user selection interface with icons for different user types: PPD (Penerimaan Perumahan), SP (Sistem Pengiraan), PPD in PROJEK (Penerimaan Perumahan Projek), PPD in PROJEK (Penerimaan Perumahan Projek), and CHANG AGAMA (Pengiraan Agama).



Smart
Economy

Smart & Sustainable Hawker Centers

Seberang Perai has more than 100 hawkers centers that has to be manages.

Seberang Perai is hoping to work with the existing tenant to come out with a plan to self manage the complex by utilizing a smart and better solution with green and sustainable technology plus monitoring to reduce and tackle existing issue.

With self manage and monitoring system, the tenant has more control and responsible to take care their complexes for the benefits of

- Self Sufficient Management System (PPP Collaboration)
- Maintenance Service
- Water Harvesting
- Solar Panel
- Digital Signage/ LED Light box
- CCTV Monitoring
- Smart Metering
- Grease trap monitoring sensor
- Water & Electricity usage monitoring
- LED Lightning



Smart
Economy

Eco City Batu Kawan



EcoCity
BATU KAWAN

"Apart from physically greening Batu Kawan, it is also important to look at introducing sustainable green and eco-friendly practices in the area. We hope Batu Kawan can become a model for other townships to eventually adopt an Eco-town concept that promotes a healthy living environment,"

- Chief Minister Lim Guan Eng





Smart
Economy

New Butterworth

NEW BUTTERWORTH



New Butterworth is a joint venture of MPSP and Think City in order to improve the quality of the built environment and the public spaces

The Vision And The Principal Of New Butterworth

Butterworth as a unique destination, liveable and celebrate local values



4th Asia Pacific Regional Forum On Smart Sustainable Cities and E-Government :
Seberang Perai's Smart Sustainable City Vision

Page 46 / 42



Smart
Economy

Urban Renewal Bukit Mertajam

URBAN RENEWAL BUKIT MERTAJAM

Friendship City Programme - City of Yokohama, Yokohama City University,
JICA (Japan International Cooperation Agency), Universiti Sains Malaysia &
Municipal Council of Seberang Perai

横浜市
City of Yokohama



YOKOHAMA
CITY
UNIVERSITY



USM
UNIVERSITI SAINS MALAYSIA



MUNICIPAL COUNCIL OF
SEBERANG PERAI
PENANG, MALAYSIA

*“Project to
Create
Townscape
/ Communities
for the City of
Seberang Perai,
Malaysia, that
Accents Its
History and
Nature”*

Seberang Perai's Smart Sustainable City
Vision

Pilot Project

- Blueprint for Sustainable Hawkers Complex
- IoT Management System
- BDA SWM
- Seberang Perai Wireless Infrastructure for IoT.
- R&D for IoT
- Water Level Monitoring



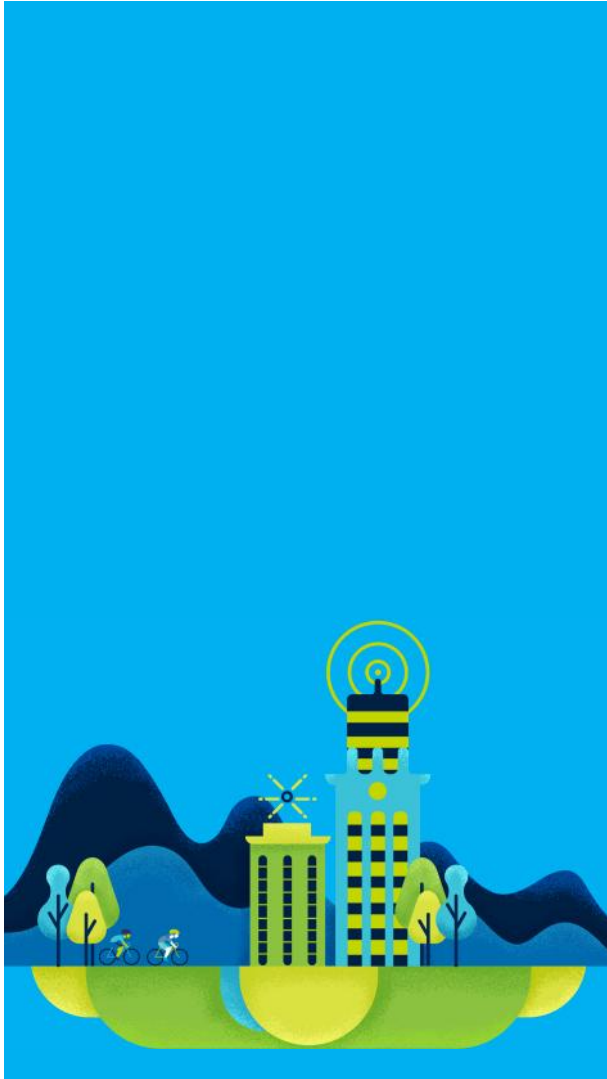


Thank You
#myseberangperai

MAJLIS
PERBANDARAN
SEBERANG PERAI
*MUNICIPAL COUNCIL OF
SEBERANG PERAI*

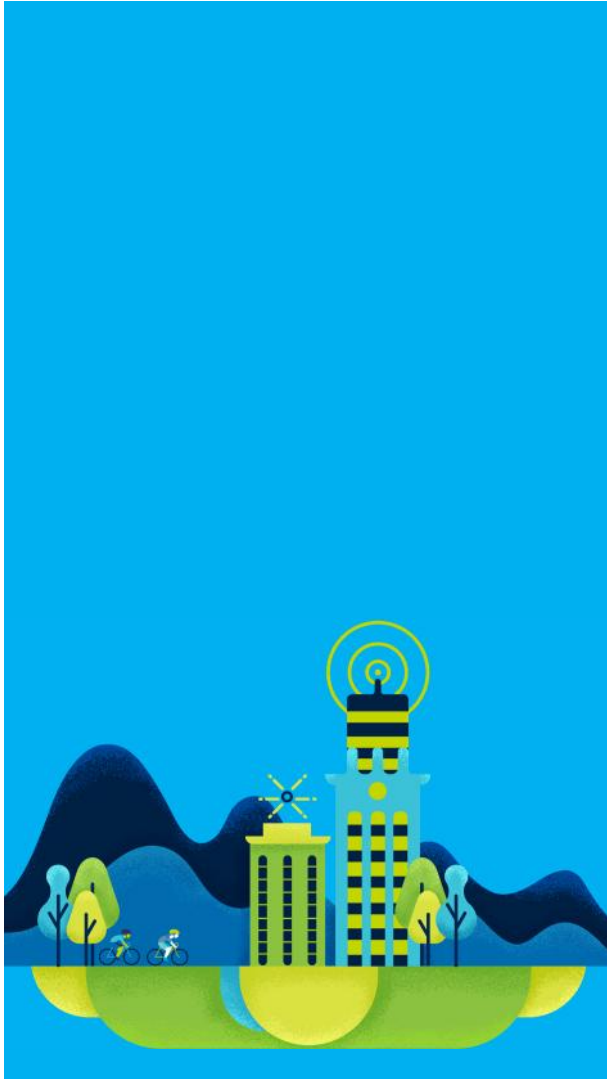
Jalan Perda Utama
Bandar Perda
14000, Bukit Mertajam
Penang, Malaysia

Tel : +604 – 5497 700
Tel : 1 – 800 – 88 – 6777 (Bebas Toll)
Fax : +604 – 5395 588
Web : <http://www.mpsp.gov.my>



High-level Roundtable Discussion on Smart Sustainable Cities

4th Asia-Pacific Regional Forum
on Smart Sustainable Cities and e-Government
Thanh Hoa, Vietnam



Information and Communication Technology: A Tool for Sustainability and Good Governance in the context of Nepalese Municipalities

Mr. Mahesh Baral

Chief Administrative Officer

Dhulikhel Municipality, Nepal



Information and Communication Technology:
**A Tool for Sustainability and
Good Governance,**
In the context of Nepalese Municipalities

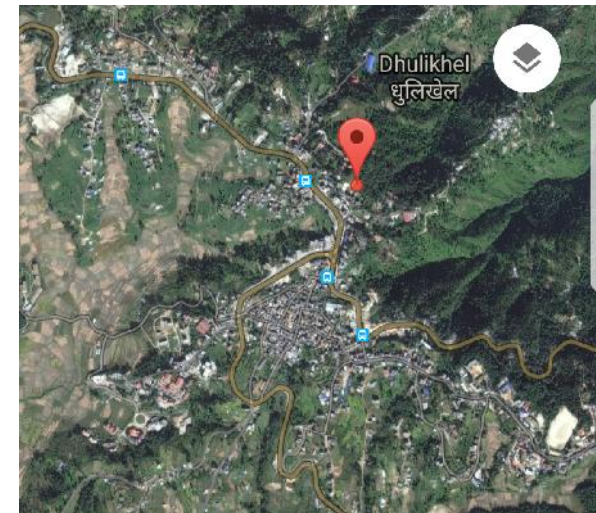
4th Asia Pacific Regional Forum, 2018

Thanh Hoa, Vietnam, 4-6 July 2018

**Mahesh Baral,
Chief Administrative Officer,
Dhulikhel Municipality, Nepal**

PRESENTATION OUTLINE

- ❖ **Facts & Figures of Dhulikhel Municipality**
- ❖ **ICT in Municipal Governance in Nepal and Dhulikhel**
- ❖ **ICT related policies and programmes of Dhulikhel**
- ❖ **Efforts towards Smart City: Dhulikhel**
- ❖ **Limitations and expectations**

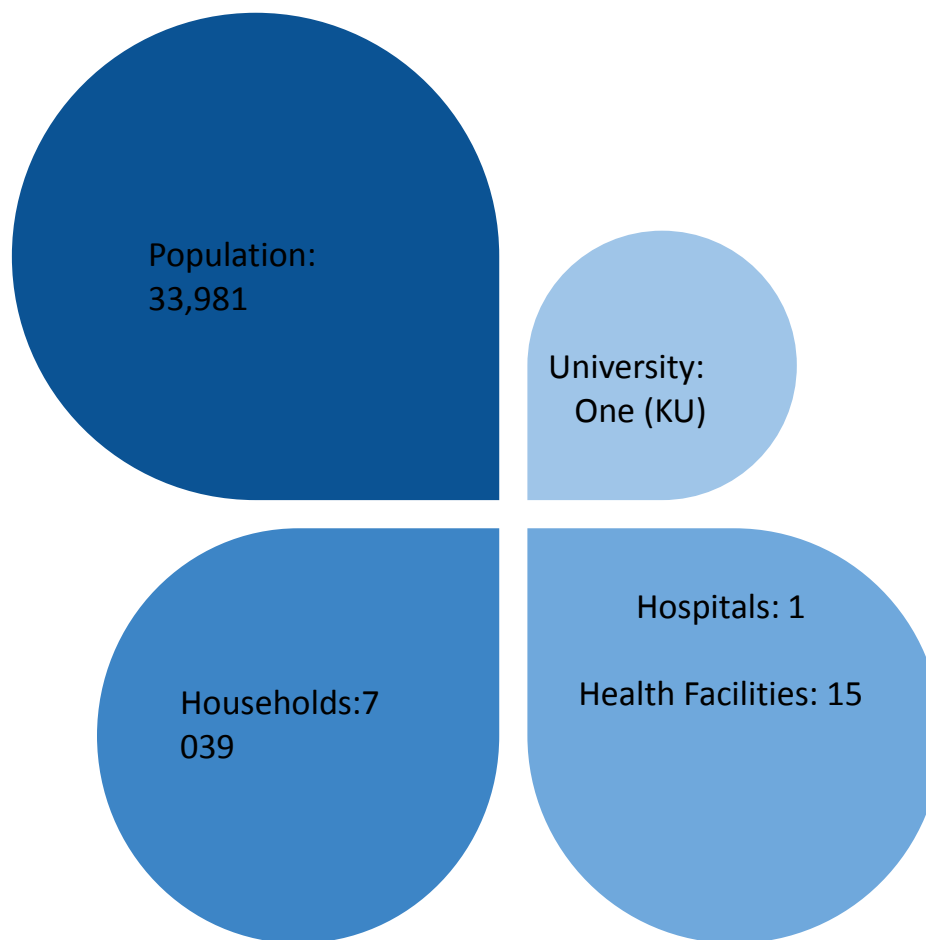


Dhulikhel

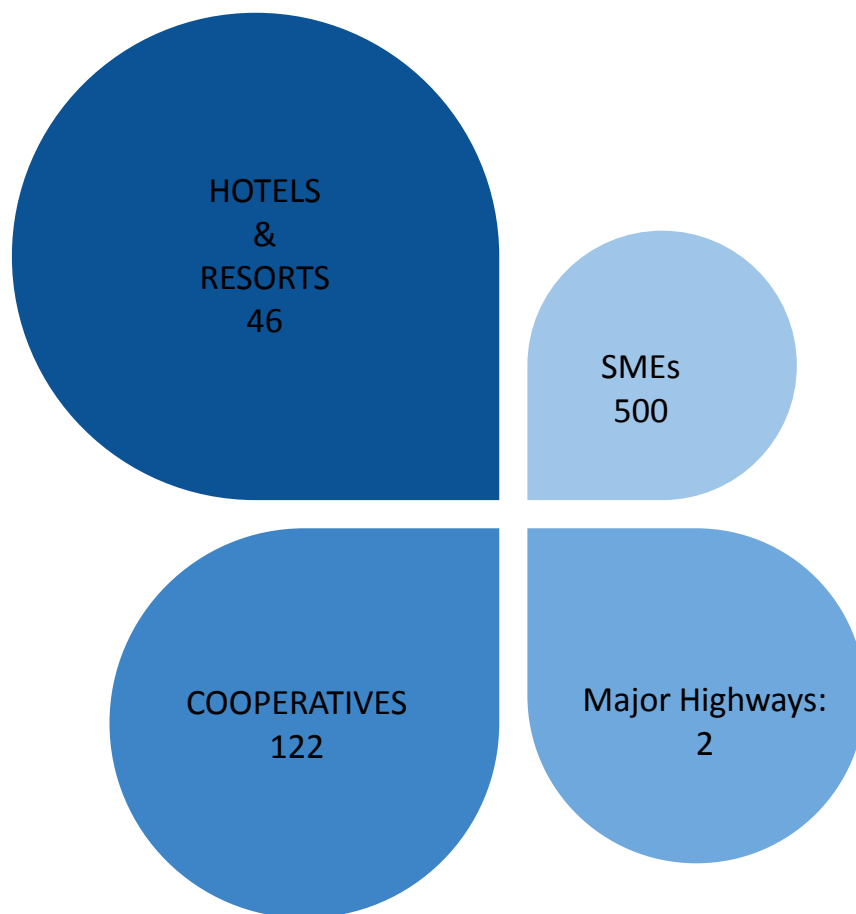
Dhulikhel Municipality is located in Province-3, Kavrepalanchowk District, Nepal and has a population of 33,981. Dhulikhel lies in the coordinates 27° 36' 992" N 85° 33' 432" E.

Located 30 km to the east of Kathmandu valley, Dhulikhel Municipality was established on 2043/11/05 constituting 9 wards. At present, with the expansion of area, the municipality constitutes of 12 wards covering a total of 54.62 sq. km.

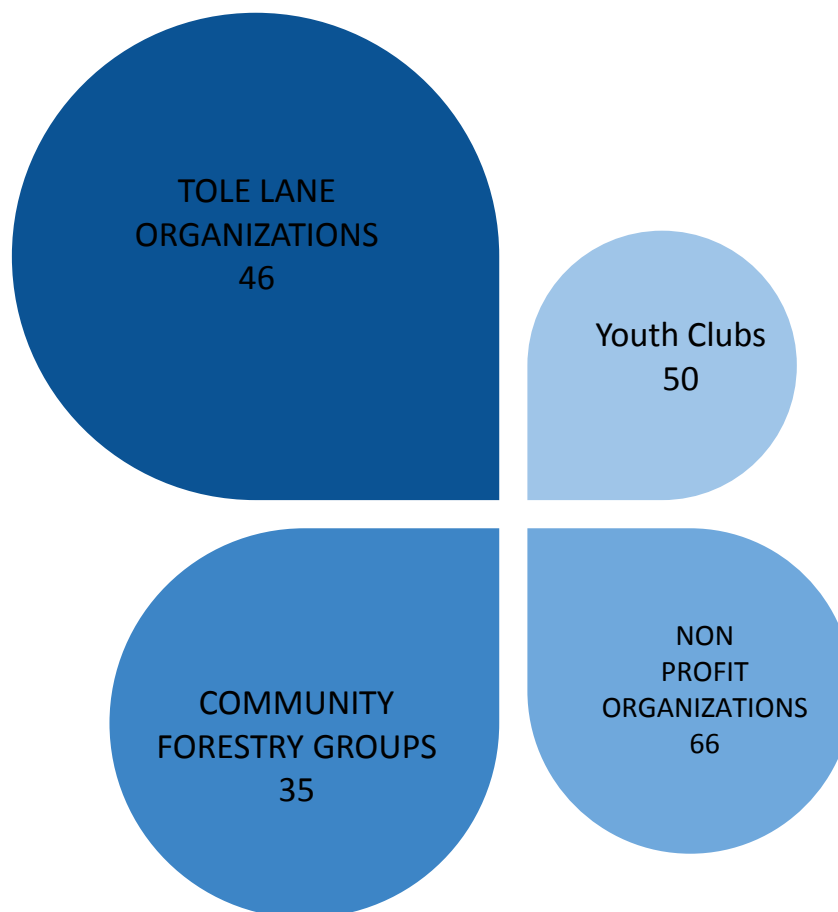
DHULIKHEL: FACTS & FIGURES



DHULIKHEL: ECONOMIC DRIVERS



DHULIKHEL: SOCIAL DRIVERS



ICT in Dhulikhel Then & Now

Then

- ▶ Network system was unmanaged and improper.
- ▶ Digital Literacy was low
- ▶ Computer with low capacity were used. (Processor, RAM, Hard Disk and peripherals etc.)
- ▶ Pen drive were used for data transfer

Now

- Internet Connection through optical fiber.
- Network infrastructure is well managed.
- Software-based Services.
- Different Management Information System (MIS) are used
- Data Server is established and maintained
- Bottleneck analysis are carried out