



MAKING CITIES RESILIENT: THE MALAYSIAN EXPERIENCE

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INTRODUCTION:

- Malaysia is fortunate for not experiencing major disaster except for flash floods in major cities like Kuala Lumpur but the Malaysian Government has taken disaster risk reduction (DRR) and climate change adaptation (CCA) as a national agenda.
- The government of Malaysia through its various ministries, departments, agencies and local authorities has drawn up various DRR and CCA policies and measures to be implemented in response to Hyogo Framework of Actions 2005-2015
- Putrajaya , Kuala Lumpur and Melaka has been chosen by the government as role model cities in the resilient cities campaign to be emulated nation wide
- Disaster Awareness Campaign via the Disaster Awareness Day 2011 was held recently to raise public awareness on disaster risks as well as to promote commitment among country leaders, decision makers and local authorities towards government efforts in dealing with DRR



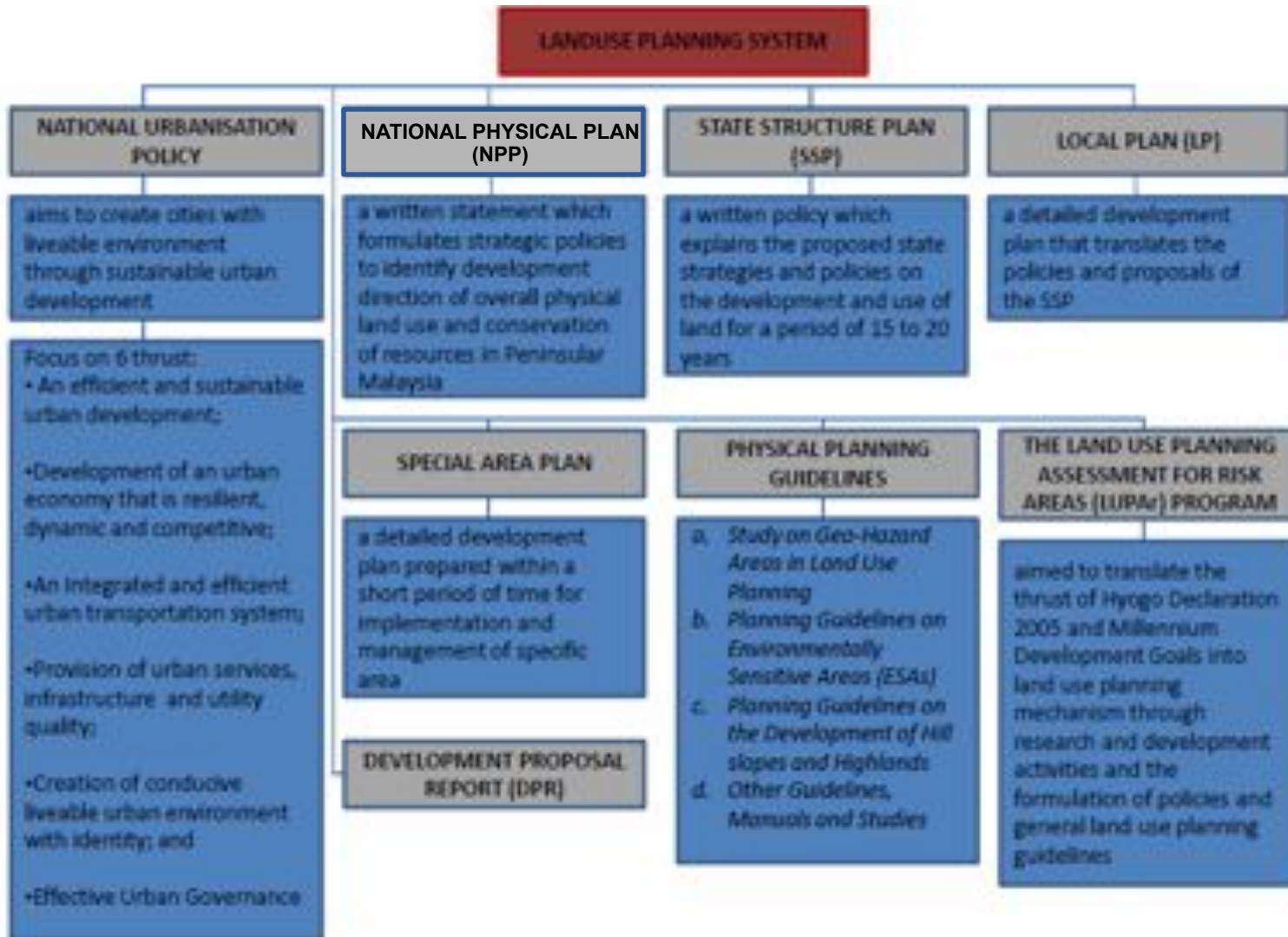
THE ROLE OF LANDUSE PLANNING IN DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION



- Land use planning is governed under the Town and Country Planning Act 1976 (Act 172)
- The National Urbanisation Policy incorporates Hyogo Framework for action 2005-2015
- National Physical Plan (NPP) incorporates management of geo-hazards and CCA



LANDUSE PLANING SYSTEM IN MALAYSIA





THE PUTRAJAYA EXPERIENCE

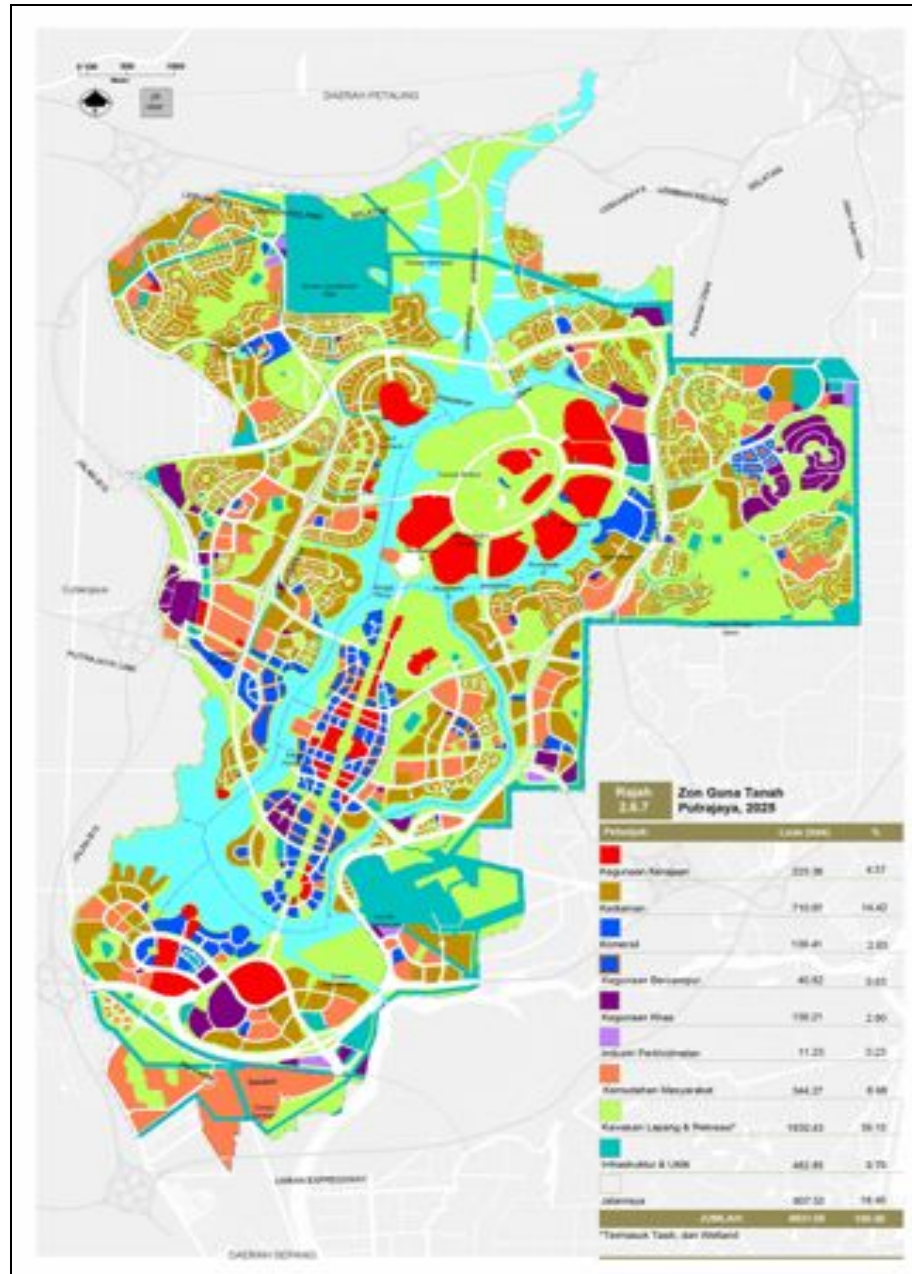


PUTRAJAYA MASTERPLAN

Putrajaya as **Malaysia's new federal government administrative centre**, is planned based on the **garden city concept** which aim to be a **sustainable city**

Main Features of Putrajaya Master Plan

- Large proportion of the city area designated as green open space
- A large water body (man-made lake) is built for water management & as climate moderator
- 20 m wide x 38km of promenade act as a buffer to the lake edge.
- Artificial wetlands are constructed for water filtration to support the lake system.



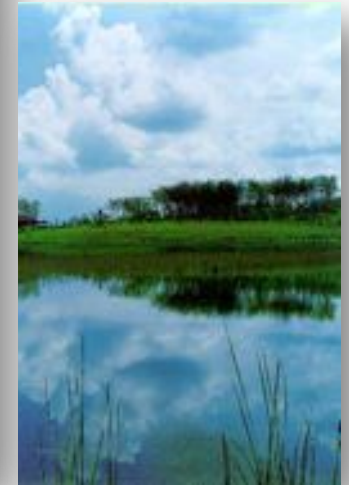
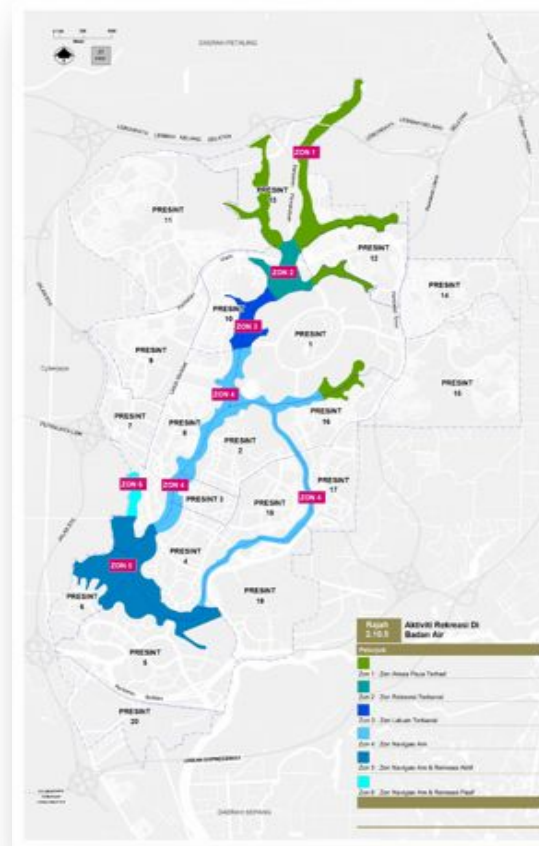
CRITICAL ENVIRONMENTAL INFRASTRUCTURE



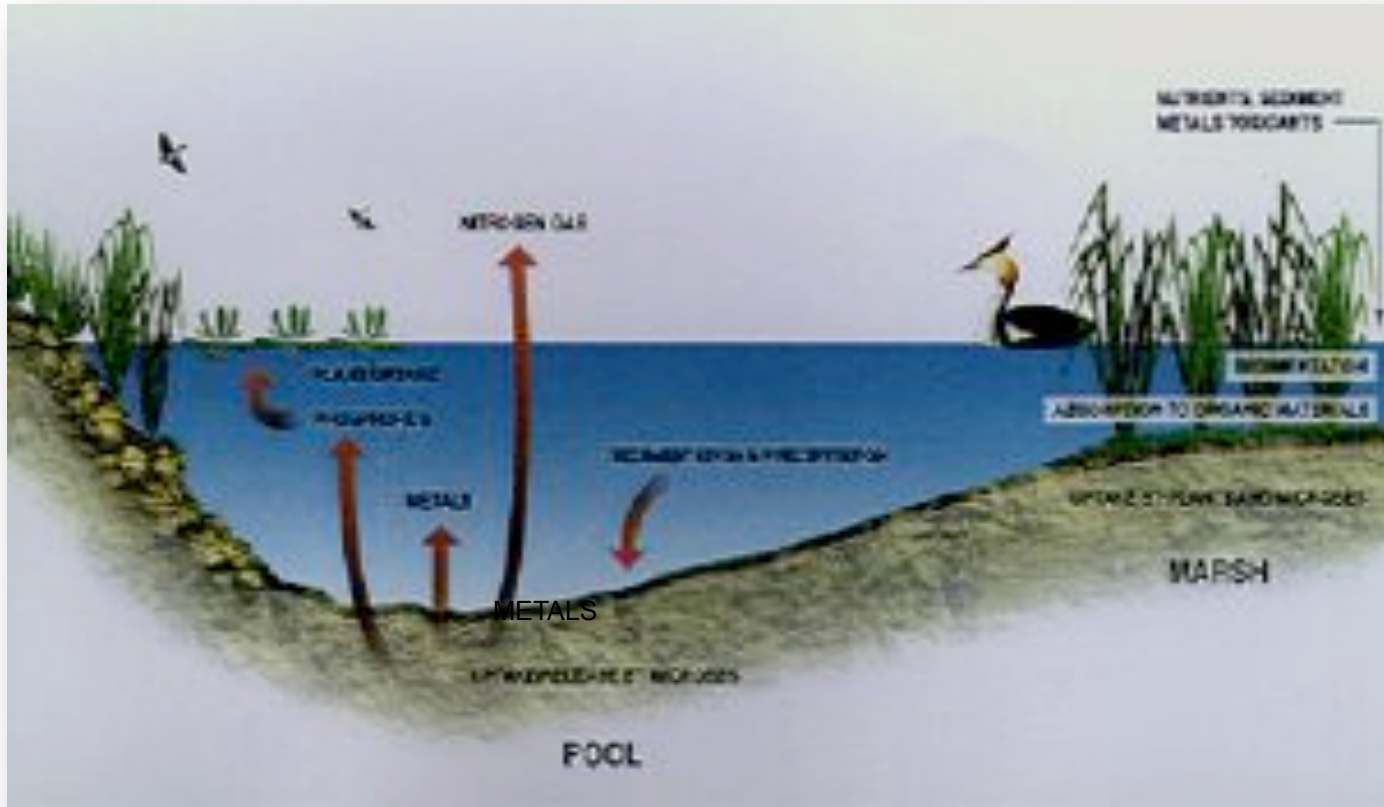
The Wetlands

Play multiple functions which contribute to DRR

- i. storm water management - flood retention by multi-cells
- ii. soil stabilization measure
- iii. control of erosion
- iv. introduce nature and biodiversity into urban fabric
- v. enhance the city's landscape



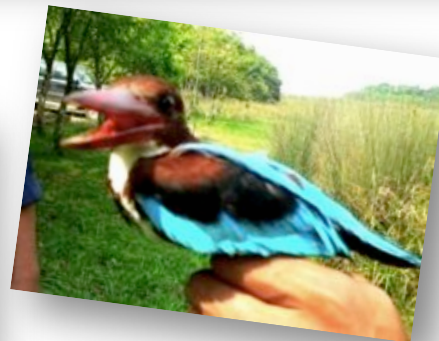
PROCESSES IN THE WETLANDS CELLS



Wetlands flora



Wetlands fauna



Wetland cells



CRITICAL ENVIRONMENTAL INFRASTRUCTURE



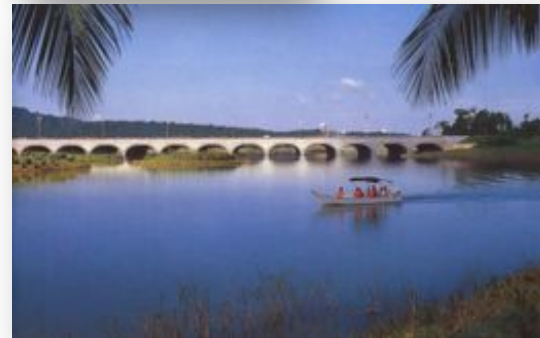
The Putrajaya Lake

- i. City-wide water management - potable water supply (in emergency case)
- ii. Storm water retention & flood control - collect runoff from lake catchment and rivers



The lake works in tandem with the dam

- i. Dam risk assessment undertaken - evaluate potential hazards to downstream population
- ii. Emergency Response Plan (ERP) developed - outlines actions and responsibilities during emergency situation
- iii. ERP also addresses emergency preparedness of the dam - determines access, security, warning system, and preventive measure



PUTRAJAYA LAKE ACTIVITIES



Lake provides opportunities for sports and recreation

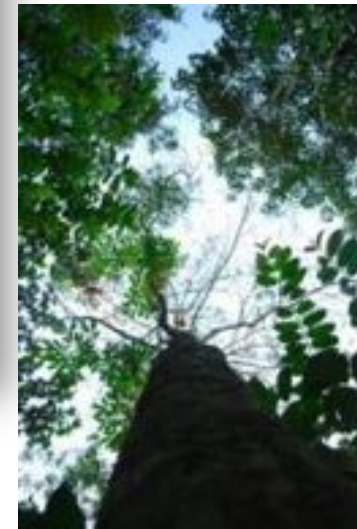
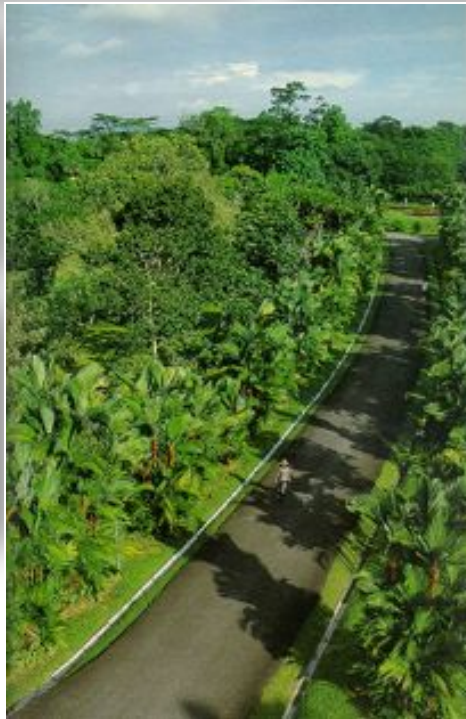


PUTRAJAYA PARKS & OPEN SPACE



40 % of city area for parks & open space;

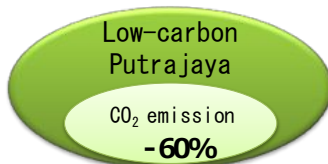
- Bring nature & biodiversity into city fabric
- Climate moderator, green lungs
- Carbon sink



PGC2025: BASELINE AND PRELIMINARY STUDY



- Cooperation between Universiti Teknologi Malaysia (UTM), Kyoto University, Okayama University, National Institute of Environmental Studies (NIES) & Malaysia Green Technology Corporation (MGTC)
- A Baseline study on the city's current levels of carbon emissions
- 3 main topics:
 - Low carbon Putrajaya: GHG emission intensity -60%
 - Cooler Putrajaya: Peak temperature -2 deg C
 - 3R Putrajaya: Final disposal of solid waste -50%, GHG emission per waste generation -50%



GREEN CITY ACTION PLAN



- Detail out actions, programs and initiatives towards a Green Putrajaya
- Set out quantifiable terms of carbon emission for various sectors to aim for Low Carbon City by 2025
- Seven focus areas to be given priority
 - i. Planning, urban design & building
 - ii. Integrating nature in the urban fabric
 - iii. Energy usage
 - iv. Water usage
 - v. Transportation & Mobility
 - vi. Solid waste management
 - vii. City administration & management



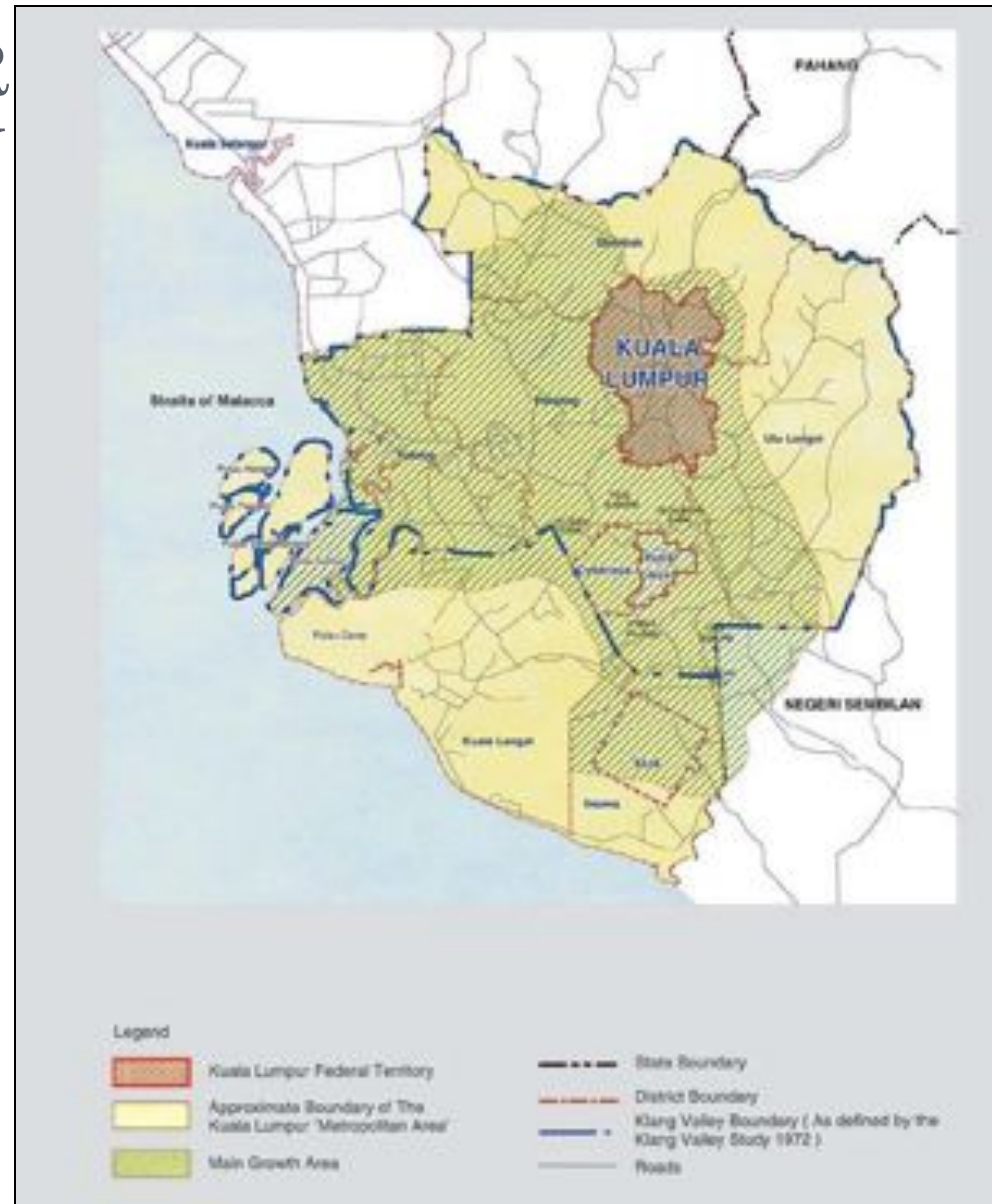


THE KUALA LUMPUR EXPERIENCE



KUALA LUMPUR METROPOLITAN REGION

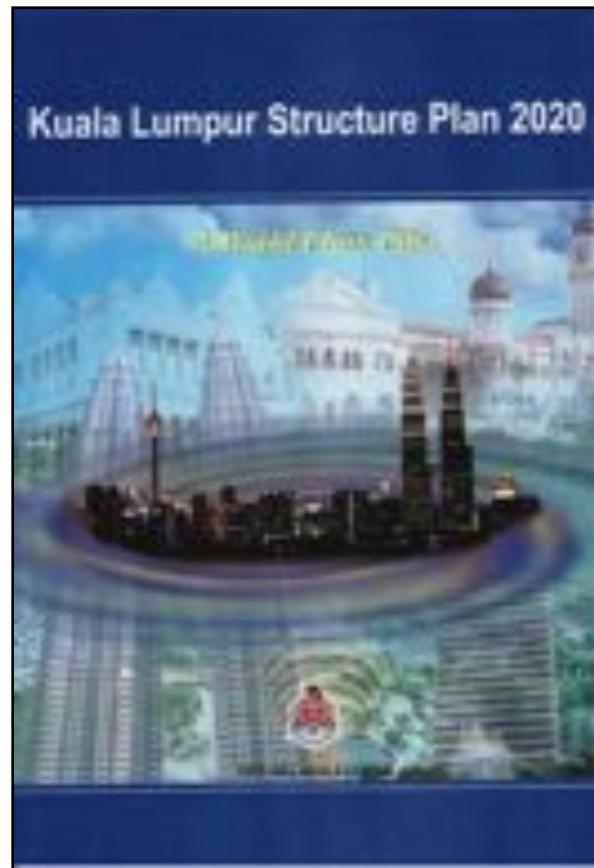
- KL in a metropolitan region is surrounded by 9 other local authorities
- Interdependence in terms of infrastructure and implementation of DRR & CCA measures



THE USE OF STATUTORY PLANS IN DRR & CCA



KUALA LUMPUR STRUCTURE PLAN 2020



KUALA LUMPUR CITY PLAN 2020



KUALA LUMPUR CITY PLAN

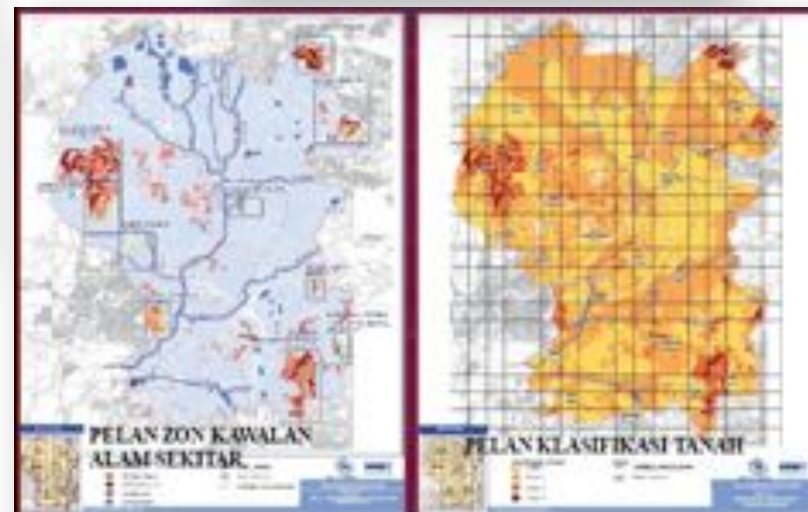
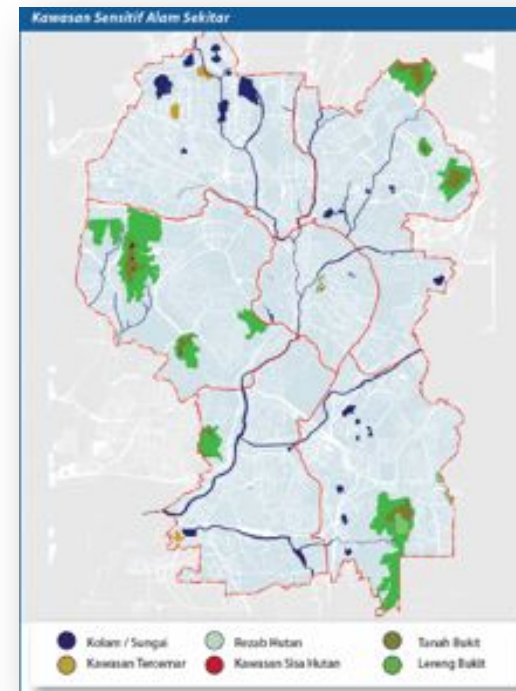


- The city plan identify main strategic directions to ensure sustainability. Includes among others key areas as these:
 - Protecting & enhancing the environment
 - Enhancing green network & blue corridor
 - Green infrastructure



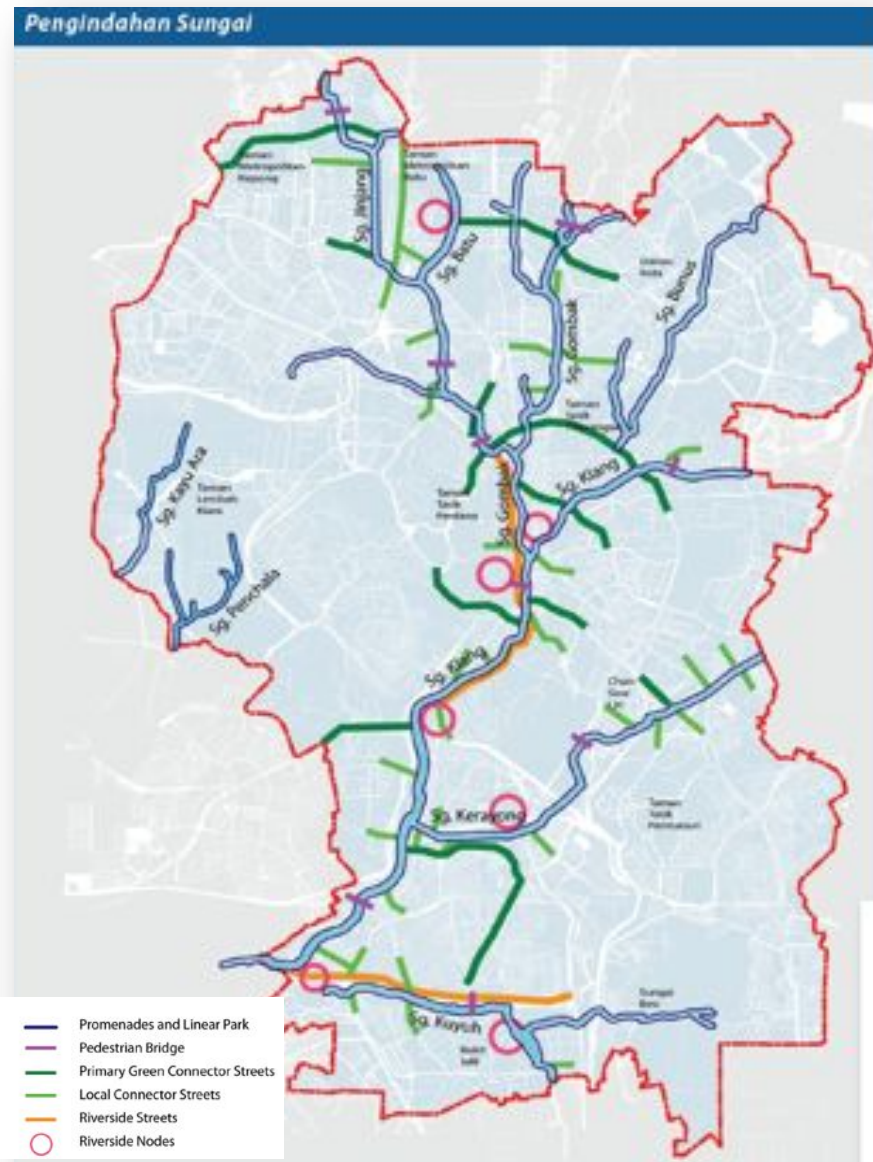
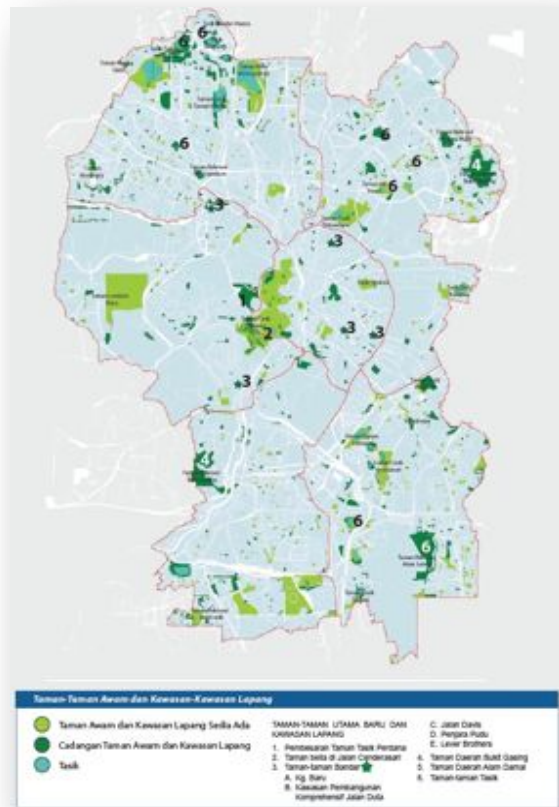
Protecting & enhancing the environment

- conserving natural environment,
- enhancing river value and water quality,
- ensuring safety and best use of contaminated sites and
- improving urban environmental quality



Enhancing green network & blue corridor

- Increasing access to public parks
- Improving amenity value of river corridor



FLOOD MITIGATION MEASURES BY CITY HALL KUALA LUMPUR



STRUCTURAL MEASURES

- Upgrading of main drains and minor rivers
- Construction of flood detention / retention ponds
- Construction of pump houses
- Maintenance of main drains, rivers, ponds and pump houses

NON STRUCTURAL MEASURES

- Flood mapping
- Land use planning
- Flood prediction and warning system
- Education & Awareness campaign



Flood detention pond with pumping facilities



Flood warning system and LED board

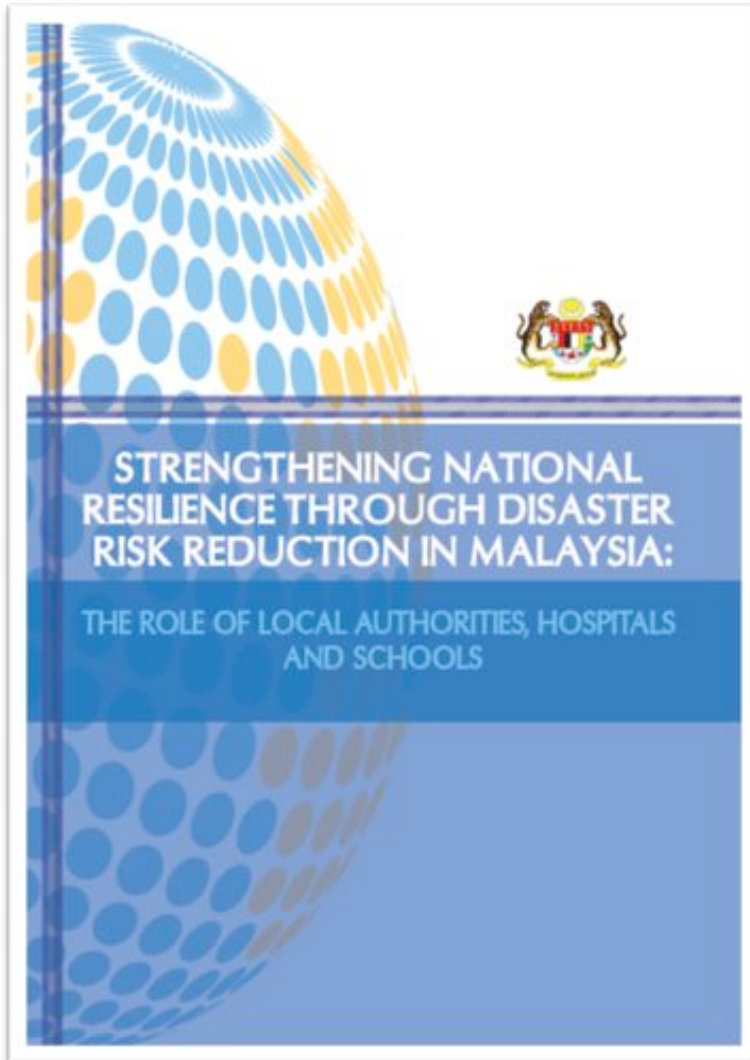




DISASTER AWARENESS CAMPAIGN



DISASTER AWARENESS DAY 2011



- Disaster Awareness Day 2011 was held for the first time in Malaysia on 18-19 February 2011 to raise public awareness in disaster risks as well as to promote commitment among country leaders, decision makers and local authorities toward government efforts in disaster management and disaster risk reduction (DRR).
- The programme, themed as “*Enhance National Resilience through Disaster Risk Reduction*”, was organised by the Malaysian National Security Council (MKN) with cooperation from the Ministry of Education, Ministry of Health, Ministry of Housing and Local Government Malaysia in addition to the support of United Nations International Strategy for Disaster Reduction (UNISDR) and ASEAN Secretariat
- Campaigns will continually be carried out to include society from all walks of life to ensure preparedness in the face of any disaster.



CONCLUSION

- Malaysia has participated actively in the global campaign on the “Resilient Cities: My City is Getting Ready” to prepare for any unforeseen circumstances due to climate change and natural disaster
- Hyogo Framework for action has been incorporated in the national policies in land use planning and urbanisation policy
- DRR & CCA has now become a national agenda and campaign will be continually carried out at various levels
- The way forward is to prepare the Malaysian community in dealing with climate change and natural disaster





THANK YOU ...

