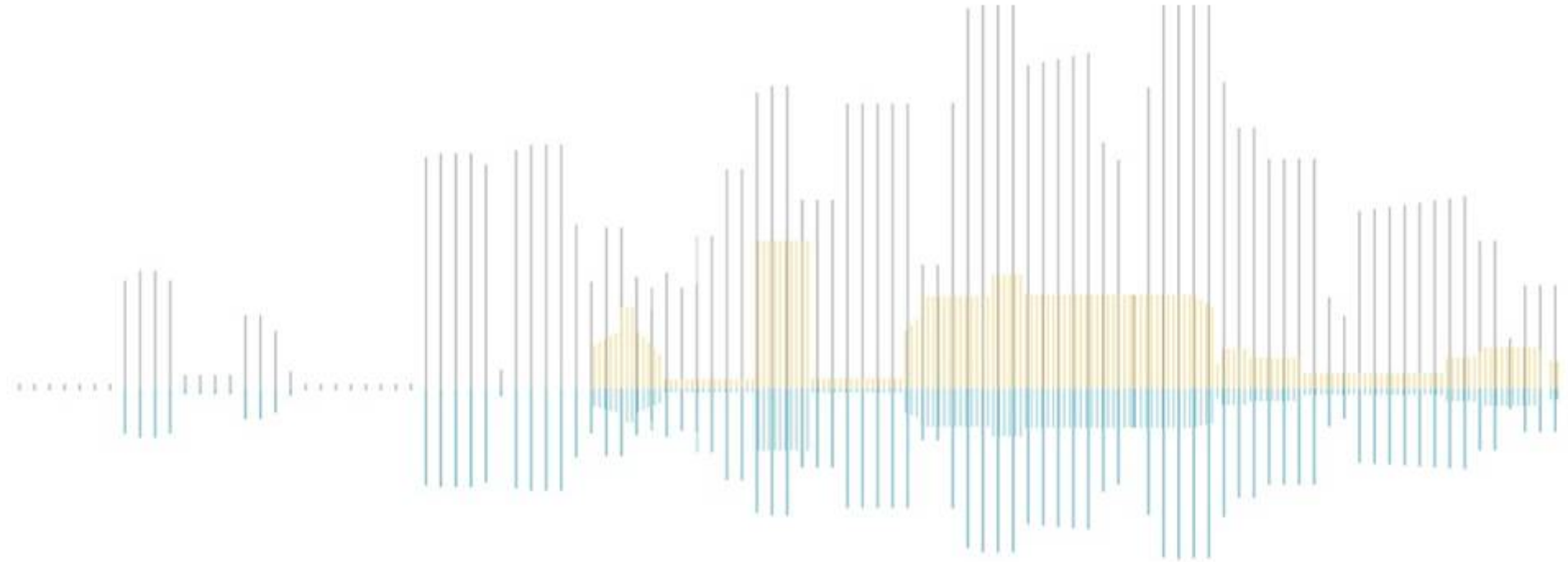


Singapore's Urban Planning Experience

Pursuing Harmonious and Sustainable Development



Dr Amy Khor

Senior Minister of State for
Ministry of Health and Ministry of Manpower, and
Mayor of South West District Singapore

The Challenges of a City-State

716 km² land area

5.3 mil population

Limited natural resources



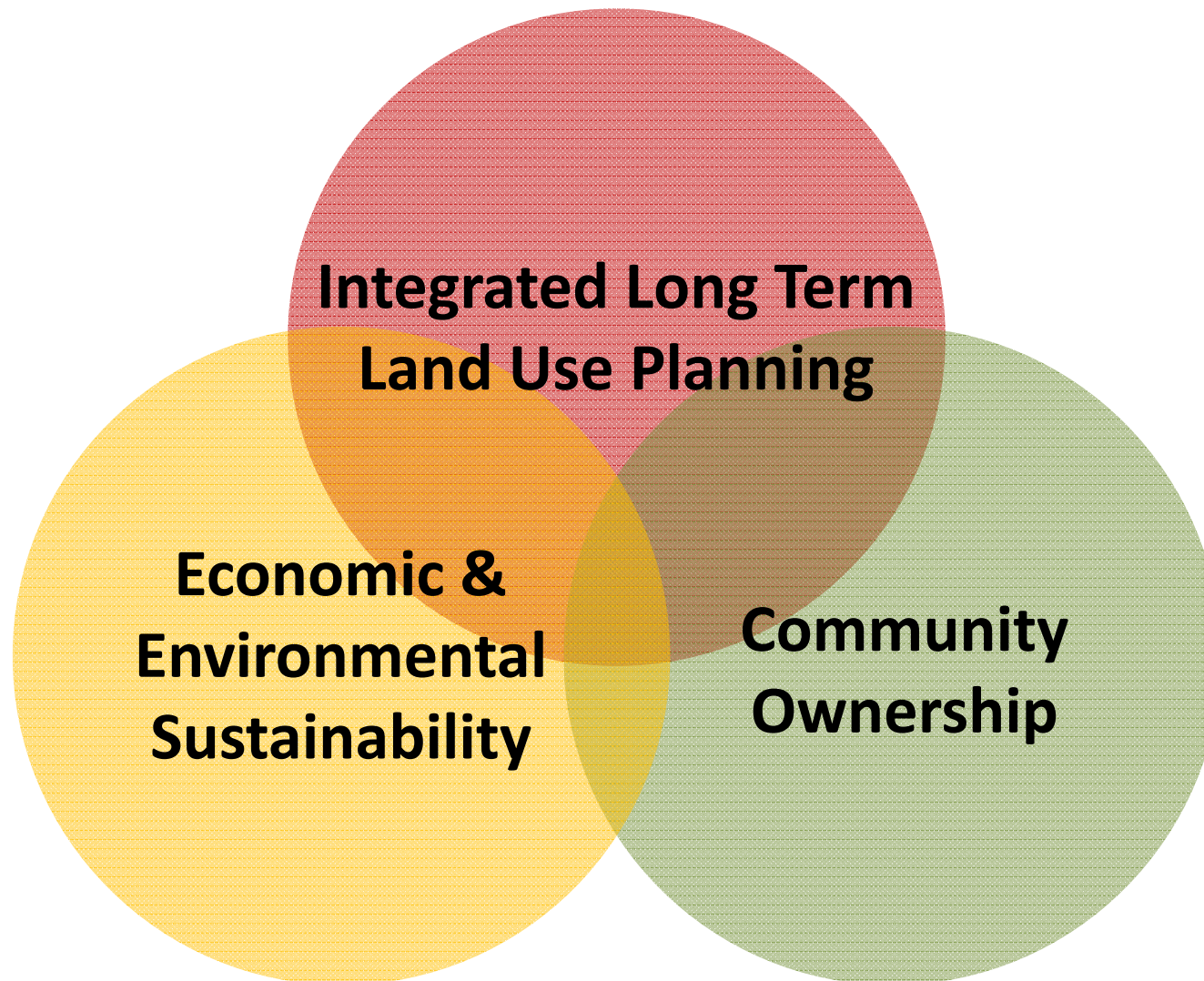
Singapore 1960s
1.6mil population, ~580 sq km
GDP: US\$1,000/cap

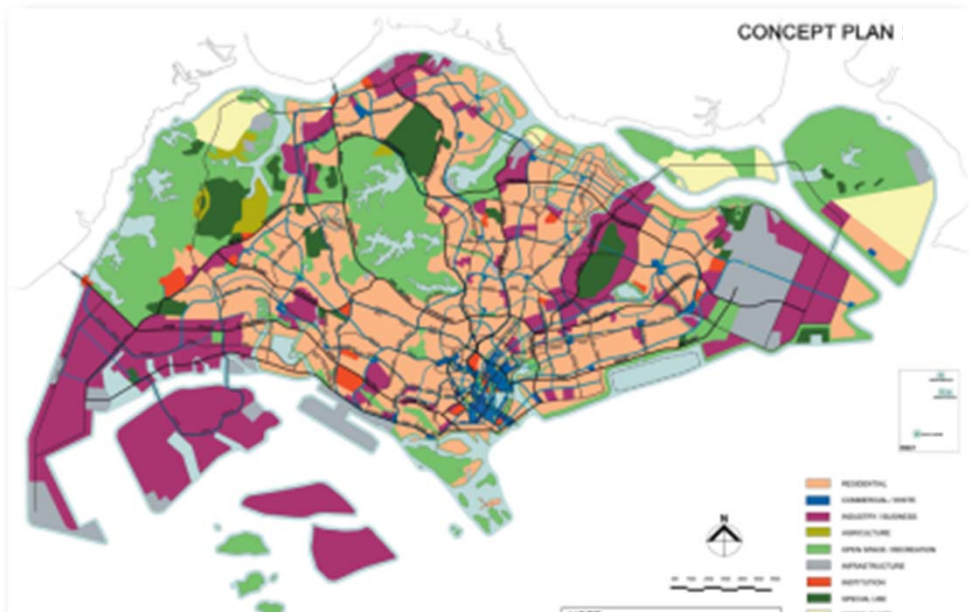


Singapore Today
5.4mil population, ~720 sq km
GDP: US\$50,000/cap



Singapore's Approach: Harmonious & Sustainable Development





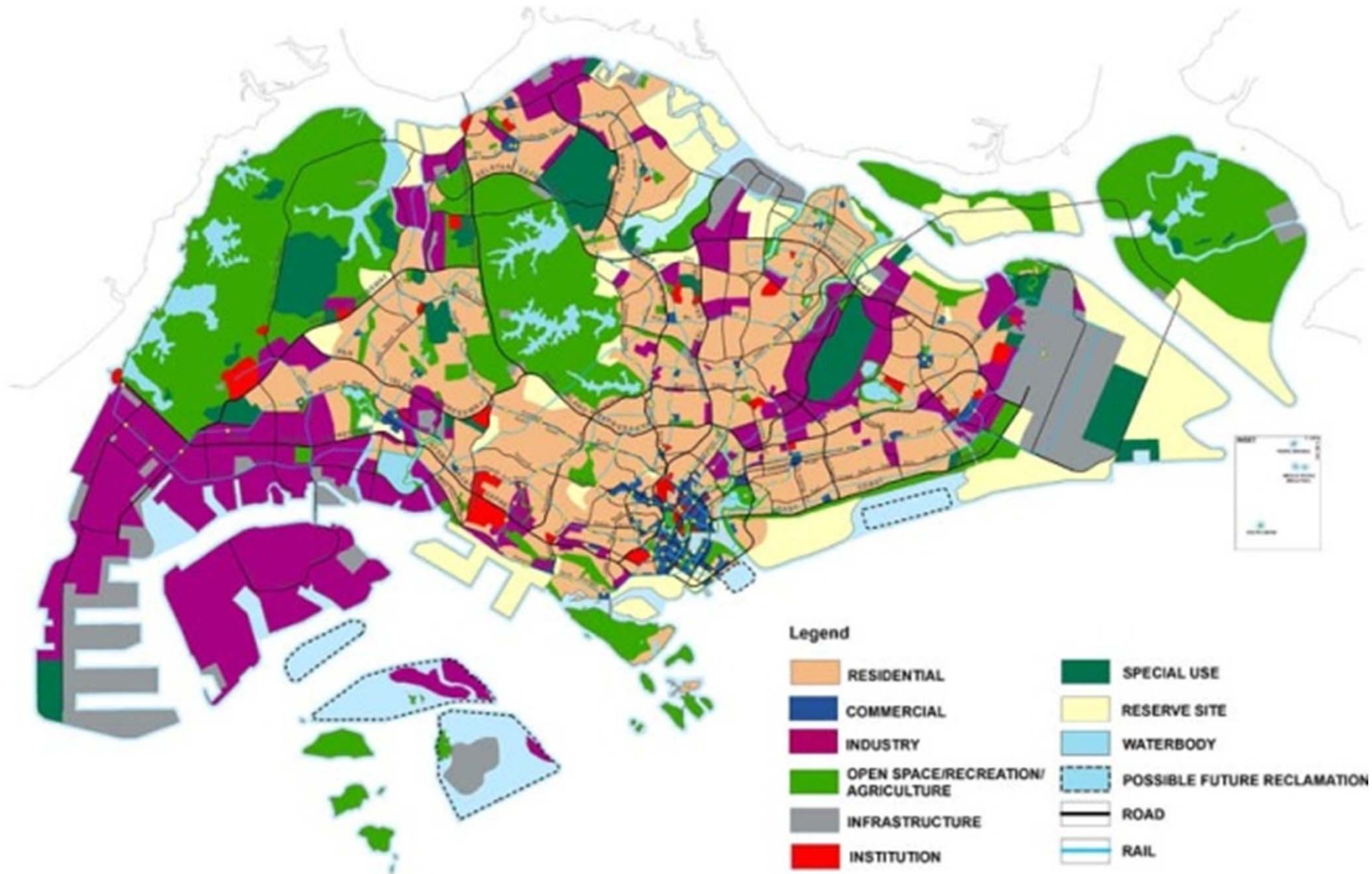
Integrated Long Term Planning



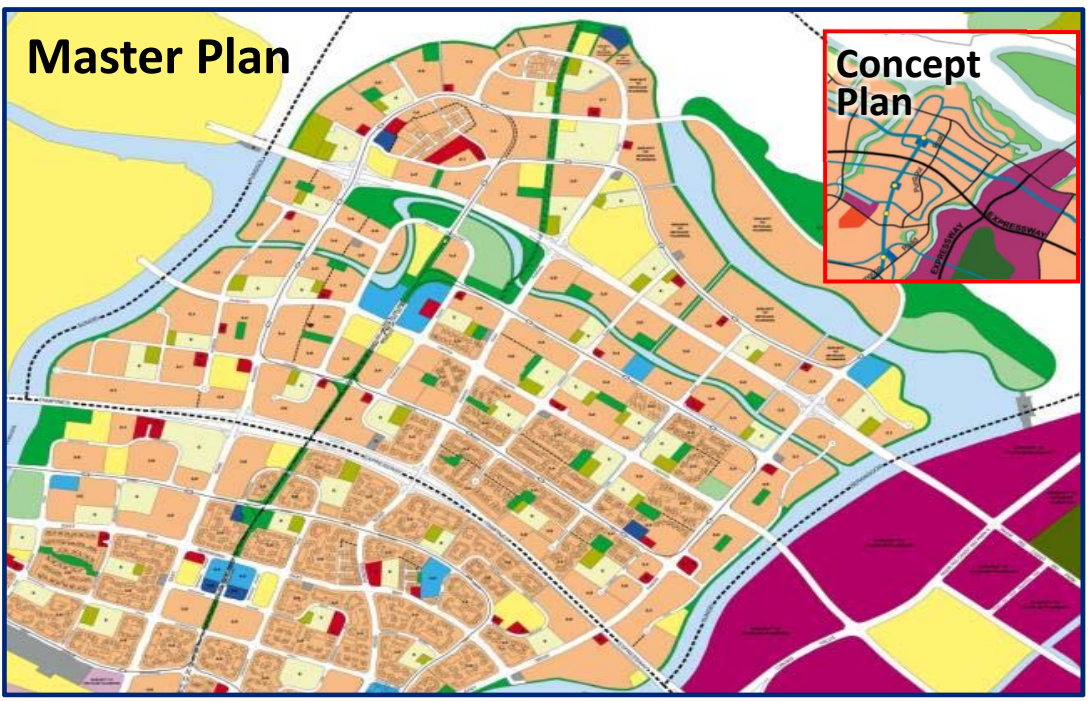


Jurong Lake District "Smart City"

Concept Plan 2011



Master Plan



Concept Plan

LEGEND

- RESIDENTIAL
- RESIDENTIAL WITH COMMERCIAL AT 1ST STOREY
- COMMERCIAL & RESIDENTIAL
- COMMERCIAL
- HOTEL
- WHITE
- BUSINESS 1
- W BUSINESS 1 - WHITE
- BUSINESS 2
- W BUSINESS 2 - WHITE
- BUSINESS PARK
- W BUSINESS PARK - WHITE
- RESIDENTIAL / INSTITUTION
- H HEALTH & MEDICAL CARE
- E EDUCATIONAL INSTITUTION
- W PLACE OF WORSHIP
- CIVIC & COMMUNITY INSTITUTION
- OPEN SPACE
- PARK
- BEACH AREA
- SPORTS & RECREATION
- WATERBODY
- ROAD
- TRANSPORT FACILITIES
- RAILWAY
- MRT
- LRT
- U UTILITY
- CEMETERY
- AGRICULTURE
- PORT / AIRPORT
- RESERVE SITE
- SPECIAL USE
- PARK CONNECTOR



CONSERVING NATURE

Despite the republic's urbanised setting, nature continues to enjoy a luxuriant niche in Singapore with tracts of primary and secondary rainforests in the Bukit Timah and Central Catchment Nature Reserves, mangroves and mudflats in Sungei Buloh Wetland Reserve, and rocky shore habitats in the Labrador Nature Reserve. Other areas of rich biodiversity, such as the Kranji Mangroves, Bukit Batok Nature Area, Sentosa Nature Area and Sisters Islands Nature Area, also have diverse habitats for plants and animals.

With the twin demands of economic development and "look to nature" recreational activities putting increasing pressure on our natural heritage, the future holds many challenges. These include finding innovative ways to integrate greenery with our urban landscape and conserving our flora and fauna while providing nature based recreation in a sustainable manner.

ACHIEVEMENTS

Make parks and nature accessible
In 2002, the National Parks Board (NPB) developed 123 hectares of new parks and 7.4 km of park connectors. They include Thane Yoke Park, and the Sembawang, Endak and Millrose Park



A HEALTHY LIVING ENVIRONMENT

A country's sustainability does not depend only on what it has – it depends also on what it does not. Infectious diseases, unsafe food and poor hygiene are what it can well do without. In this regard, Singapore spares no effort or expenses in keeping these scourges at bay. Through our public health efforts, we have made Singapore clean and hygienic, and have plans in place to ensure that this pristine image is maintained for years to come.

There we maintain a constant vigil over the state of our public health and are always prepared to respond swiftly to outbreaks of vector-borne (transmitted by animals or insects to humans) and food-borne diseases.

Such vigilance has served us well. Vector-borne (e.g. malaria, dengue) and food-borne (e.g. dysentery, cholera) diseases seldom make their ugly heads, and when they do, are quickly eradicated. As a small country with a high population density and an urbanised setting, Singapore knows that complacency carries a high price. The rise in the number of dengue cases in Singapore and the region in recent years is a timely reminder that we must never let our guard down.

ACHIEVEMENTS

Water control
While the public is most likely to associate outbreaks of



REDUCE, REUSE, RECYCLE

It's hard to imagine Singapore as a land of incineration plants and landfills. Yet not so long ago, the signs were pointing that way. The amount of waste being disposed had jumped six-fold over 30 years – from 1,300 tons a day in 1970 to 7,600 tons a day in 2000. At this rate,

incineration plants and landfills would have been required to dispose of 21,000 tons of waste a day by 2010. Singapore's overall recycling rate* rose from 40% to 49%.

But the low recycling rate has not stopped us from taking steps to reduce waste generation. Initiatives include the collection of waste through "curbside recycling" and "curbside recycling" and "curbside recycling".

The results are beginning to show. Between 2000 and 2005, Singapore's overall recycling rate* rose from 40% to 49%.

Waste growth has also been successfully controlled, with the amount being disposed falling from 7,600 tons a day in 2000 to 7,000 tons



Green and Blue Plan

CLEAN WATER ON TAP

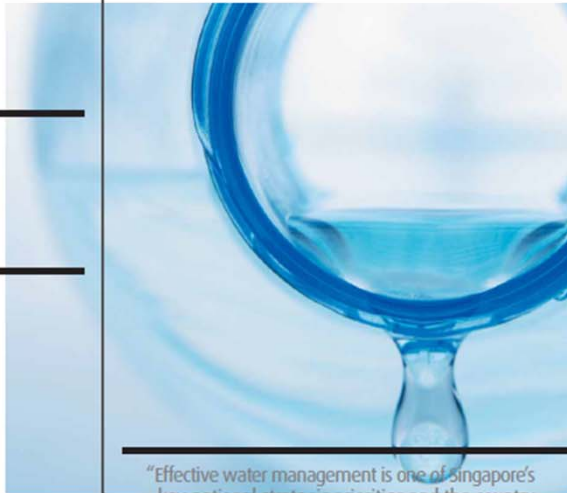
Singapore currently consumes 1.4 million cubic metres of water a day – a not insignificant volume for a nation of just over 4 million people. As the population grows, the challenge will be to ensure the sustainability of clean water supply. Diversification of our water supply sources, conservation of water and getting the community to value our water resources have been pursued as the means to achieving sustainability.

DIVERSIFYING SUPPLY SOURCES

Singapore has created a redundancy system as far as diversifying its water supply sources goes. With its first National Tap Storage to full flow, it has enough water to meet its future needs.

The first tap in the supply of water from local catchments. This consists of an integrated system of 14 reservoirs and an extensive drainage system to channel storm water into the reservoirs. The Marina Reservoir, when completed in late 2005, will have Marina Basin into Singapore's 15th reservoir with a catchment area of about 10,000 ha (or one-sixth of Singapore's land area). There will also be constructed across Sungei Pagar and Sungei Serangoon and when completed in 2005, will create a new catchment area of over 1,000 ha. Collectively, these projects will increase our water catchment areas from 50% to 67% of Singapore's land area by 2005 – fulfilling one of SGP 2015's targets on Clean Water.

The second tap – imported water from Johor – supplements Singapore's needs. To show the third tap – NRE water at high grade



"Effective water management is one of Singapore's

INTERNATIONAL COOPERATION

Singaporeans enjoy a clean environment and a high standard of public health and the country's excellent track record in managing environmental challenges over the years has earned it numerous international accolades. The Hong Kong-based Political and Economic Risk Consultancy (or PERC) rates Singapore as one of Asia's best environmental performers.

We are keenly aware that many of today's environmental issues are transboundary in nature and can only be resolved through close international cooperation. We are therefore committed to joint efforts to address such challenges through activities like participation in international law and multilateral environmental agreements. We value our relationship with our partners, and will continue to work with them at bilateral, regional and international levels in our pursuit of sustainable development.

As we move to the next phase of the implementation of the Singapore Green Plan (SGP 2015), we will be expanding beyond the existing areas of "Trilateral Collaboration" and "Capacity Building" to include "Industry Partnership" and "Community Partnership".

RELATIONS ENHANCEMENT
Boosting international cooperation
Multilateral Environmental Agreements



CLEAN AIR ALWAYS

Despite the occasional smoggy skies from the regional haze, Singapore has on the whole enjoyed good air quality. This happy state of affairs is not pre-ordained. It is the result of farsighted vision, meticulous planning and an unwavering adherence to the principle that the health of its citizens is non-negotiable. Thus, from the early days of her industrialisation and urbanisation, the republic has consciously adopted a no-compromise attitude in the pursuit of clean air. The result: an overall ambient air quality that is well within the standards of the World Health Organisation (WHO) and that ranked Singapore as one of the world's cleanest cities according to the annual Global Environmental Progression Agency (GEPIA).

Enforcement

All major industrial processes and plants in the republic are required to install air pollution control equipment. These measures were put in place from the late 1970s.

Monitoring – Besides monitoring individual polluters, NIA also checks the ambient air quality for signs of pollution so that quick action can be taken to prevent any problem from escalating.

Enforcement – Moving in step with the pace of pollution are a slew of enforcement actions such as inspections on

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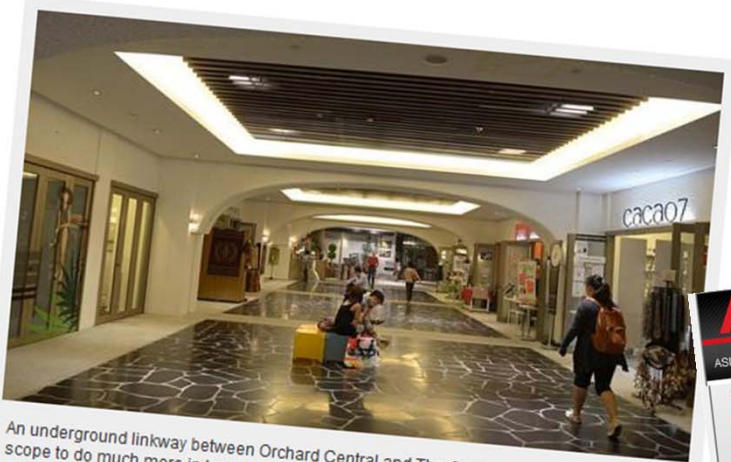
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More can still be done to make use of underground spaces: Minister Khaw

Published on Sep 03, 2013 11:34 AM



An underground linkway between Orchard Central and The Centrepoint. There is still scope to do much more in terms of making use of underground spaces in Singapore, said Minister for National Development Khaw Boon Wan on Tuesday. -- ST FILE PHOTO: DESMOND LIM

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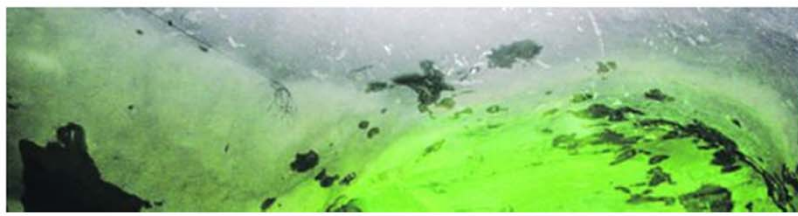
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Govt mulling large-scale underground developments



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Govt considering underground masterplan: Khaw



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Govt mulling master plan for underground spaces

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Singapore National Development Minister Khaw Boon Wan said the government is considering the possibility of developing a master plan for underground spaces.



File photo of the underground Jurong rock cavern. (Photo: JTC)

Economic & Environmental Sustainability



50 Years of Greening



On June 16, 1963, former Prime Minister Lee Kuan Yew started the islandwide tree-planting campaign



On June 16, 2013, former Prime Minister Lee continued an unbroken 50-year tradition

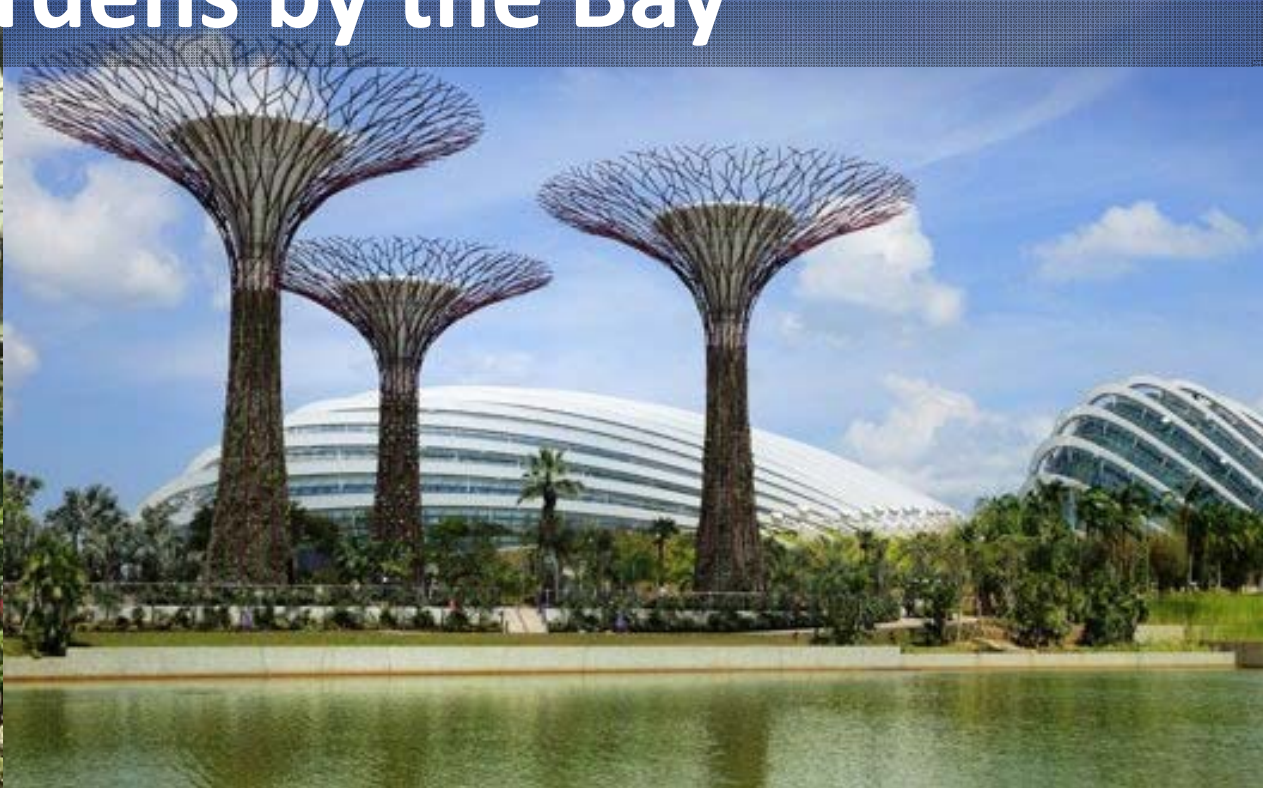
City in a Garden

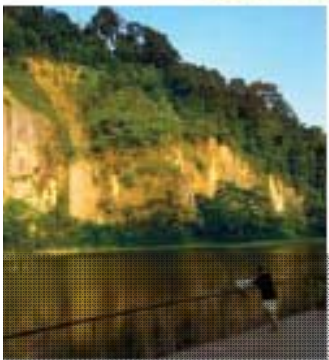
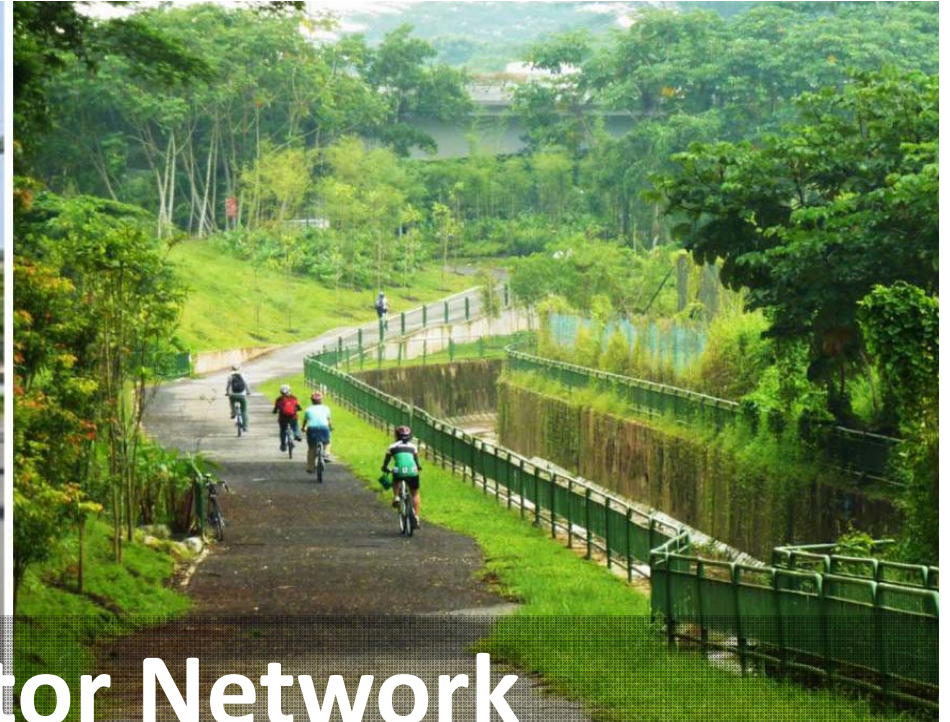


The **green cover** in Singapore grew from 35% to **almost 50%**



Gardens by the Bay





Park Connector Network



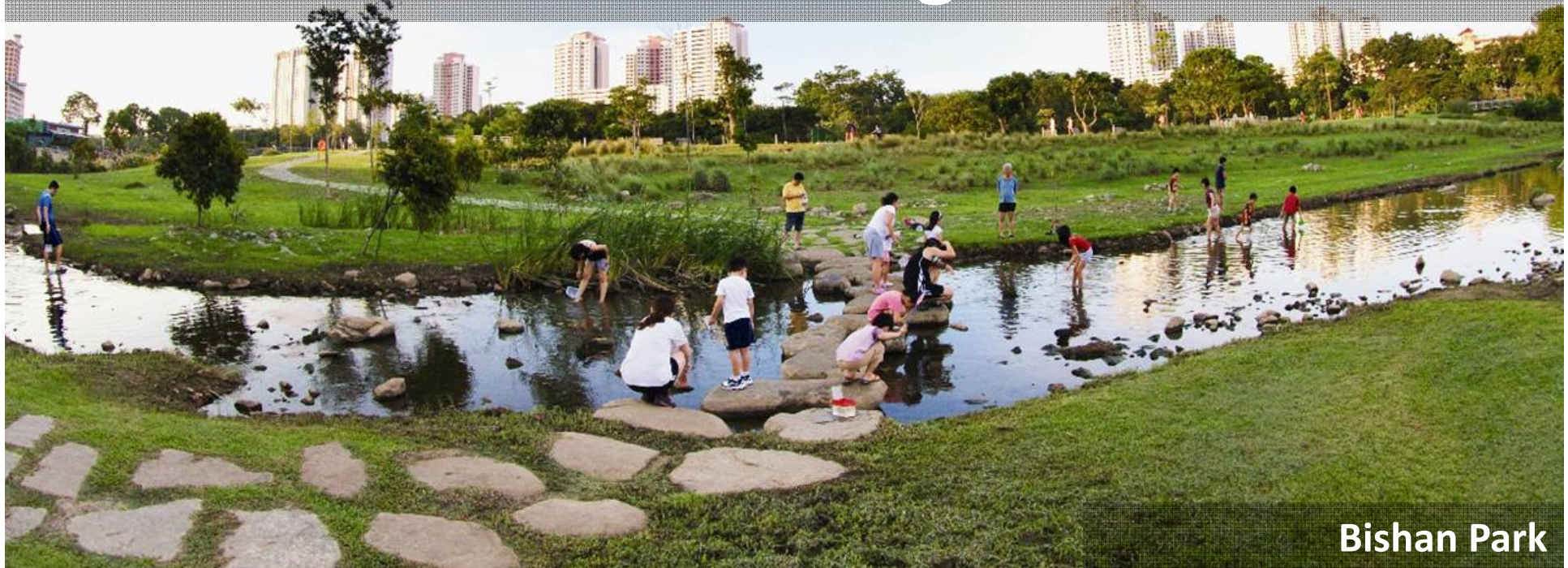
MacRitchie Reservoir



Alexandra Canal



ABC Waters Programme



Bishan Park

Community Ownership





People's Association

Racial & Religious Harmony and Social Integration





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