
SMART
Stormwater Management And Road Tunnel
Kuala Lumpur, Malaysia

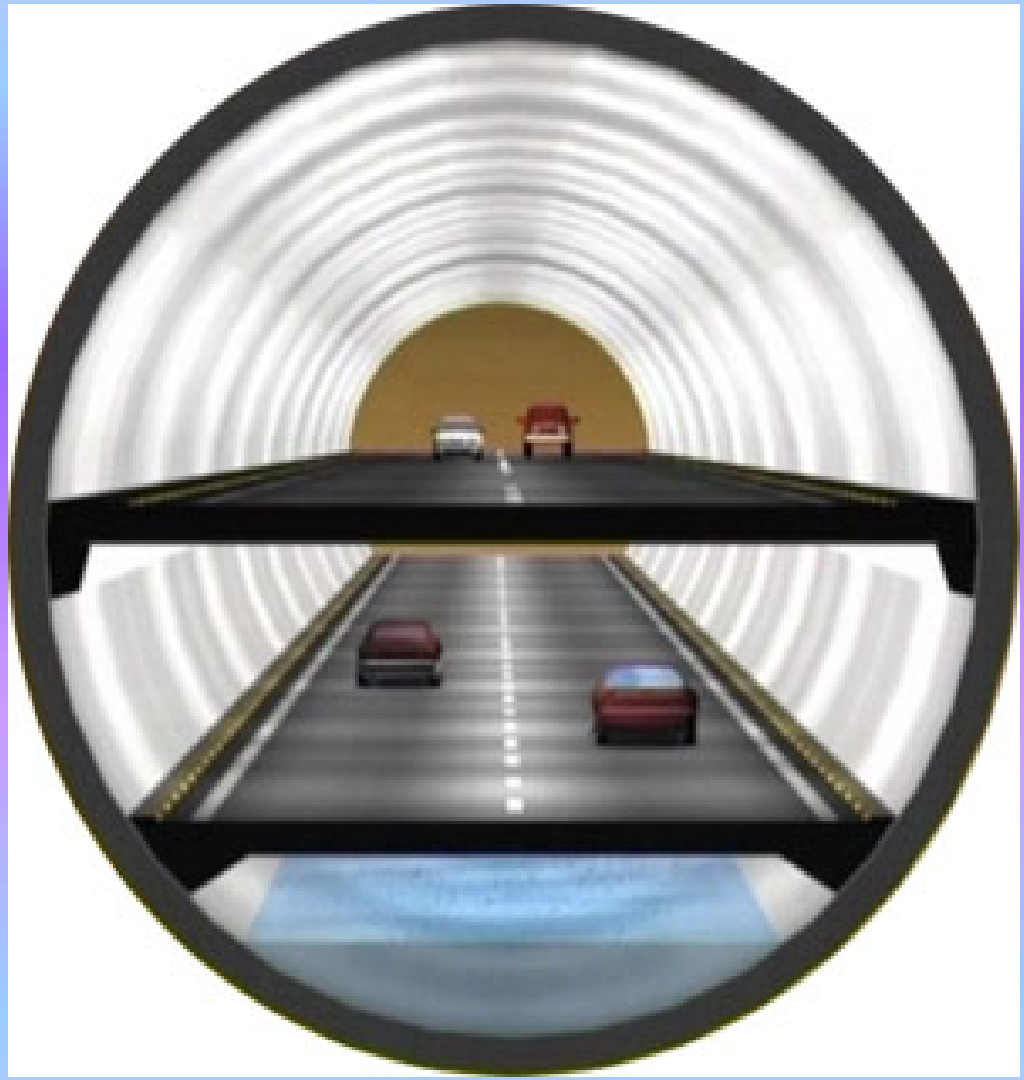

Boundary representation is not necessarily authoritative. Names in Vietnam are shown without diacritical marks.
South China Sea
Gulf of Thailand
THAILAND
CAMBODIA
VIETNAM
Phnom Penh
Mekong
SPRATLY ISLANDS
Con Dao
Palawan
Puerto Princesa
PHILIPPINES
Sulu Sea
Pulau Banggi
Kudat
Kota Belud
Kota Kinabalu
Sugut
TURTLE ISLANDS
Ranau
Sandakan
Papar
Beaufort
Melalap
Tenom
Lahad Datu
Kunak
Sempurna
Tawau
Pulau Sebatik
BRUNEI
Muara
Bandar Seri Begawan
Trusan
Labu
Kuala Baram
Miri
Labi
Batang Baram
Bintulu
Tarakan
Celebes Sea
Sungai Kayan
Sibu
Rajang
Batang Baleh
Borneo
Kalimantan
Natuna Besar
KEPULAUAN NATUNA (INDONESIA)
KEPULAUAN ANAMBAS (INDONESIA)
Strait of Malacca
Singapore
SINGAPORE
Johor Baharu
Kuala Lumpur
Seremban
Port Dickson
Melaka
Muar
Mersing
Kuantan
Pekan
Temerluh
Bentong
Kuala Lipis
Bidur
Ipoh
Sungai Perak
Lumut
Teluk Intan
Kuala Kubu Baharu
Kelang
Tetingtinggi
Rantauprapat
Dumai
Pekanbaru
Sungai Siak
Sungai Kampar
KEPULAUAN RIAU
KEPULAUAN LINGGA
Equator
Bukittinggi
Payakumbuh
Rengat
Pariaman
Solok
Padang
Batang Hari
Pulau Siberut
Pulau Sipura
Pulau Pagai Utara
INDONESIA
Sumatra
Jambi
Sungaipenuh
Sarolangun
Belinyu
Muntok
Pulau Bangka
Billiton
Selat Karimata
Singkawang
Paloh
Sematan
Siluas
Kuching
Simanggang
Tebedu
Pontianak
Sungai Kapuas
Sintang
Telukbatang
Kendawangan
Pangkalanbuun
Seruyan
Kahayan
Barito
Palangkaraya
Sampit
Pulangpisau
Malaysia
International boundary
National capital
Railroad
Expressway
Road
0 100 200 Kilometers
0 100 200 Miles
Mercator Projection
Base 801957 (R02595) 11-98

Kuala Lumpur

- Capital of Malaysia
- Population
  - City 1.5 million
  - Metro 4,450,500
  - Density over 16,000 mi^2
- Equatorial Climate
- Keep in mind…….
  - Only 16% mass transit ridership

SMART

- Flood Control
- Traffic Congestion Reduction
- Longest Tunnel in Southeast Asia
- Second Longest in Asia
- First Dual Purpose Tunnel in the world (3.968 km or 2.46 mi)



First Mode


Sg. Klang
HOLDING POND
STORAGE POND
Sg. Kerayong
MODE I : NO STORMS

Second Mode


Sg. Klang
HOLDING POND
STORAGE POND
Sg. Kerayong
MODE II : MOST STORMS - 7 TO 10 TIMES

Third Mode

- Traffic is no longer allowed in the tunnel
  - 45 minutes from last car entering tunnel
  - Flood gate are opened
- Traffic will not be allowed in the tunnel for 48 hours

Pros

- Diverts 90% of flood waters
  - 9 million cubic meters of flood water
- Will keep Kuala Lumpur flash flooding
  - Prevent spillovers on the Klang and Gombak Rivers
- Reduces congestion
  - Travel time reduced from 10-15 min to 4 min
  - Reduction in idling and pollution from cars
- Using resources to highest and best use

Cons

- Desiltation
  - 48 hours?
- Run off
  - Even more contaminated after running through the tunnel
- Very High Cost

My Questions

- What happens with the water when it hits the reservoir?
  - How will the water be treated?
  - Wetlands?
- With added highway capacity and shorter travel times will this eventually worsen congestion?
- Increase air pollution?
- Will this hurt the already poor ridership on Mass Transit?