

**ECO CHALLENGES & CURRENT**  
**RESPONSE-MUMBAI**

# GREATER MUMBAI

- **LARGEST CITY, POPULATION 12.4 MILLION**
- **7 ISLANDS JOINED BY CAUSEWAY FORM MUMBAI CITY**
- **4 OTHER ISLANDS FORM THE SUBURBS**
- **CITY COUNCIL MCGM LOOKS AFTER BOTH**
- **$\frac{3}{4}$  OF POPULATION OF MUMBAI LIVES IN SUBURBS**
- **56% OF MUMBAI POPULATION LIVE IN SLUMS**

# ECOLOGY-RAINFALL

	<u>Annual (mm)</u>	<u>Days</u>
• PARIS	585	164
• LONDON	594	107
• TOKYO	1563	104
• SINGAPORE	2273	180
• MUMBAI	2413	104

# STORM WATER DRAINAGE

- **MUMBAI MUST HAVE STORM WATER DRAINAGE SYSTEM WITH FOUR TIMES THE CAPACITY OF THE SYSTEM IN SINGAPORE**
- **LARGE STORM WATER DRAINAGE SYSTEM BEING IMPLEMENTED IN MUMBAI BUT IT CANNOT COPE WITH RAINFALL OF 100mm PER HOUR COINCIDING WITH HIGH TIDE**
- **WATER LOGGING REDUCES WHEN TIDE REDUCES TO LOW LEVEL**

# EFFECT OF CLIMATE CHANGE

- **INDIA LISTED AS EXTREMELY VULNERABLE BY SOPAC**
- **ECONOMIC FALL OUT OF CLIMATE CHANGE EFFECTS WILL BE VERY SERIOUS**
- **SEA LEVEL- DURING 20<sup>th</sup> CENTURY INCREASED BY 17cms. NOW IT IS 1.3 MM PER YEAR. COUNTERED BY SEDIMENTATION**
- **EFFECT OF CLIMATE CHANGE NOT FELT MUCH IN WATER SUPPLY & SEWERAGE SECTORS. HOWEVER HIGH TIDE PLUS VERY INTENSE RAINFALL SPELLS DISASTER**

# **DISASTER MANAGEMENT**

- **REVOLVES AROUND FLOODING AS HAPPENED ON 26 JUL2005**
- **RAINFALL RECORDED 944mm**
- **LARGE NUMBER OF PEOPLE STRANDED ON ROADS**
- **LOCAL TRAINS CAME TO A HALT**
- **VEHICLE DENSITY INCREASED, MANY PLACES CARS SUBMERGED & HALTED BY WATER**
- **WATER SUBMERGED POWER STATIONS & SUPPLY CUT OFF**
- **HOUSES CRASHED IN SLUMS, LAND SLIDES etc**

# MEASURES UNDER TAKEN

- **NUMBER OF PUMPING STATIONS FOR SEWERAGE & STORM WATER DRAINAGE HAVE BEEN INCREASED**
- **288 RETAINING WALLS CONSTRUCTED TO PREVENT SLIDES, ON GOING PROJECT**
- **DANGEROUS BUILDINGS IDENTIFIED, WORK/DEMOLISHING BEING DONE**
- **DRAINS CLEANED & IMPROVED**
- **WILL IT MEET THE BIG CHALLENGE ?? PROBABLY NOT**