

The Republic of the Union of Myanmar



Location: $9^{\circ} 32'$ and $28^{\circ} 31'$ North $92^{\circ} 10'$ and $101^{\circ} 11'$ South -----

Area: 2,61,228 sq. miles, 1275 miles , North to South, 582 miles, East to West -----

Population: 58.38 million by the year 2009, with a growth rate of 1.52%, -----

Climate: Tropical Monsoon , Three seasons. Summer, Rainy and Cold Season

National Environmental Policy of Myanmar

The wealth of the nation is its people, its cultural heritage, its environment and its natural resources. The objective of the Myanmar's environment policy is aimed at **achieving harmony and balance** between these through the integration of environmental consideration into the development process to enhance the quality of the life of all its citizens.

Nation commission for Environment Agency (NCEA) follows the guidance of UNEP and ASEAN frame works of all Environment sectors. It gives necessary guidance to the nation in accordance with Environmental protection law and regulations.

It is the responsibility of the State and every citizen to preserve its natural resources in the interest of present and future generation. Environmental protection should always be the primary objective in seeking further development.

ENERGY POLICY (Ministry of Energy)

- To maintain the Status of Energy Independence
- To promote wider use of New and Renewable Sources of Energy
- To promote Energy Efficiency and Conservation
- To promote use of Alternative Fuels in household
- To implement effective utilization of discovered crude oil and natural gas resources in the interest of the entire nation including the regions where the discovery was made
- To promote more Public Private Participation
- To introduce the Community Base Organization

The Ministry of Energy has also issued policies to maintain the status of energy independence, to promote wider use of new and renewable sources of energy, to promote energy efficiency and conservation, to promote use of alternative fuel in household.

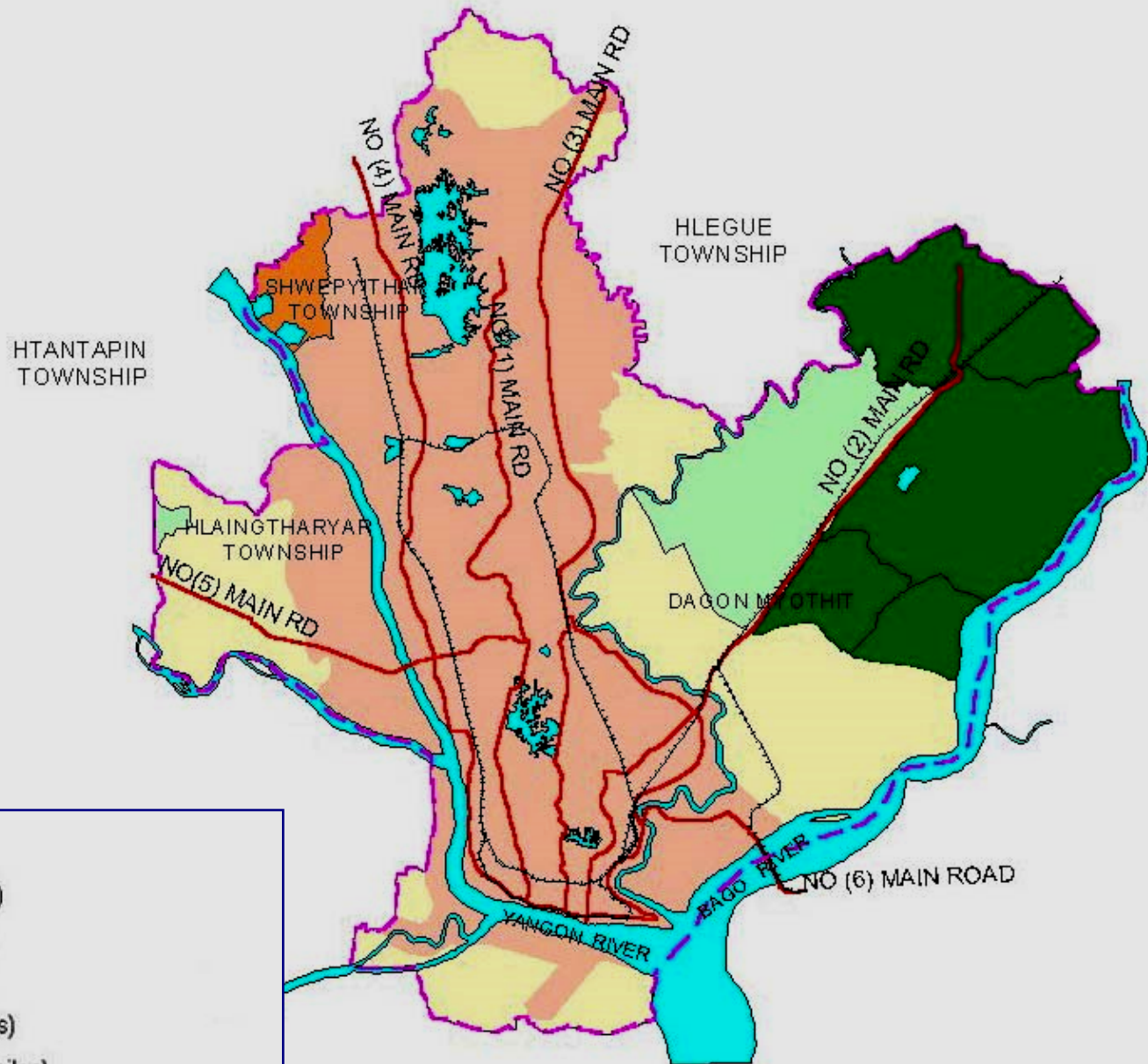
The Ministry of Health has issued policies to intensify and expand environmental health activities including prevention and control of air and water pollution.

"Myanmar Agenda 21" was published in 1997 and aims at strengthening and promoting systematic environmental management in the country. The Myanmar Agenda 21 makes recommendations for the drafting and promulgation of National Framework Environmental Law, and Environmental Impact Assessment (EIA) law for systematic integration of environmental considerations in the development process of the country.

National Environmental Conservation Law

- ❑ Promulgated the Environmental Conservation Law at 2012.
- ❑ Serious attention to Reduce Air Pollution, Water Pollution and Land Pollution
 - ❑ Conservation of Forests, Wood land, Wildlife and Biodiversity
 - ❑ Control Dumping of Industrial Waste
 - ❑ Mobilization of Public Awareness and Participation
 - ❑ Creation of Renewable Energy

Administrative boundary of Yangon City Development Committee



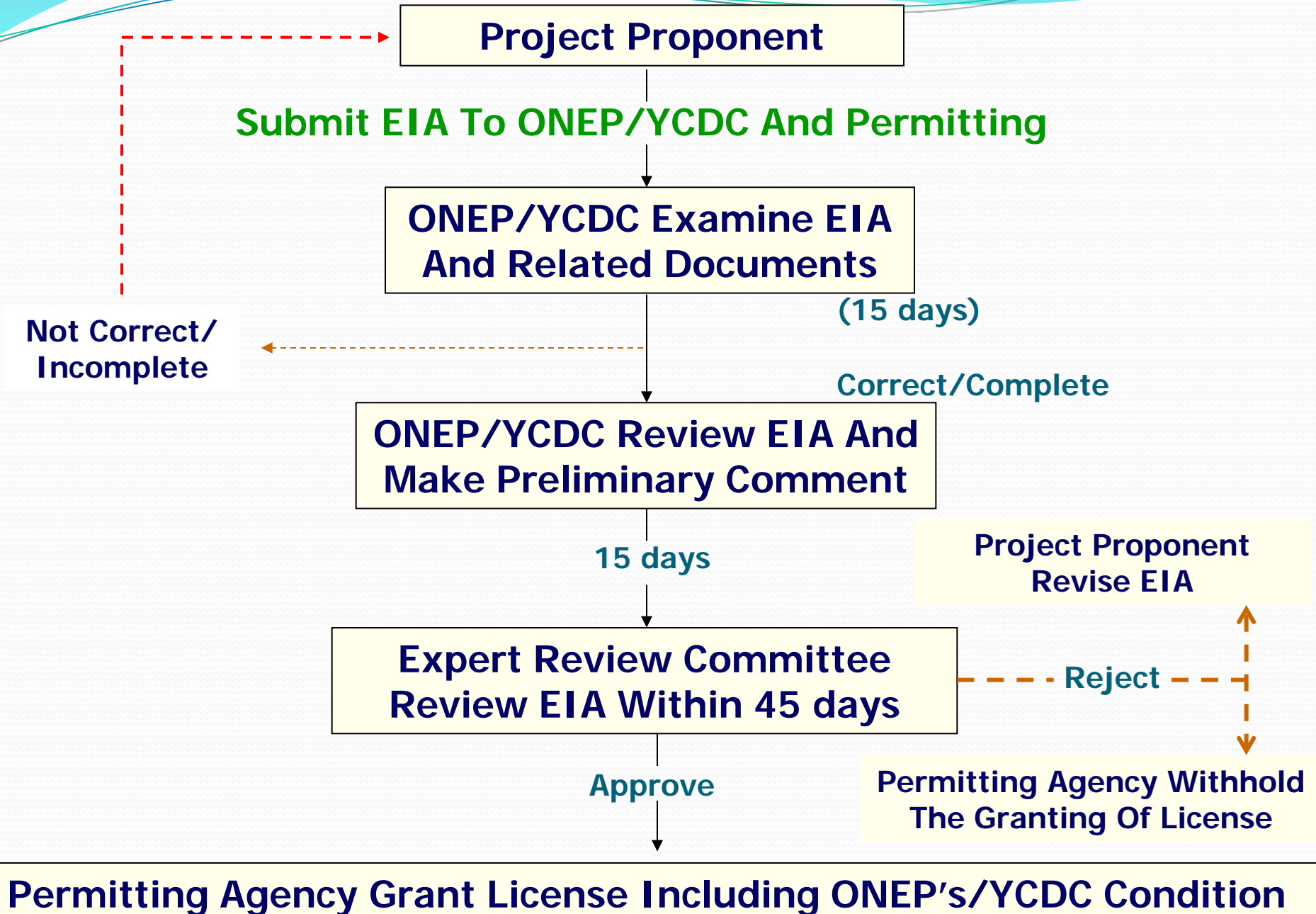
LEGEND

- 1985 Yangon Area (133,643 sq. miles)
- 1991 Extended Area (89,574 sq. miles)
- 1996 Extended Area (13,433 sq. miles)
- Handover from DHSHD (51,776 sq. miles)
- Wartayar Timber industrial Zone (4 sq. miles)
- Y.C.D.C. Administrative Boundary (292,426 sq. miles)

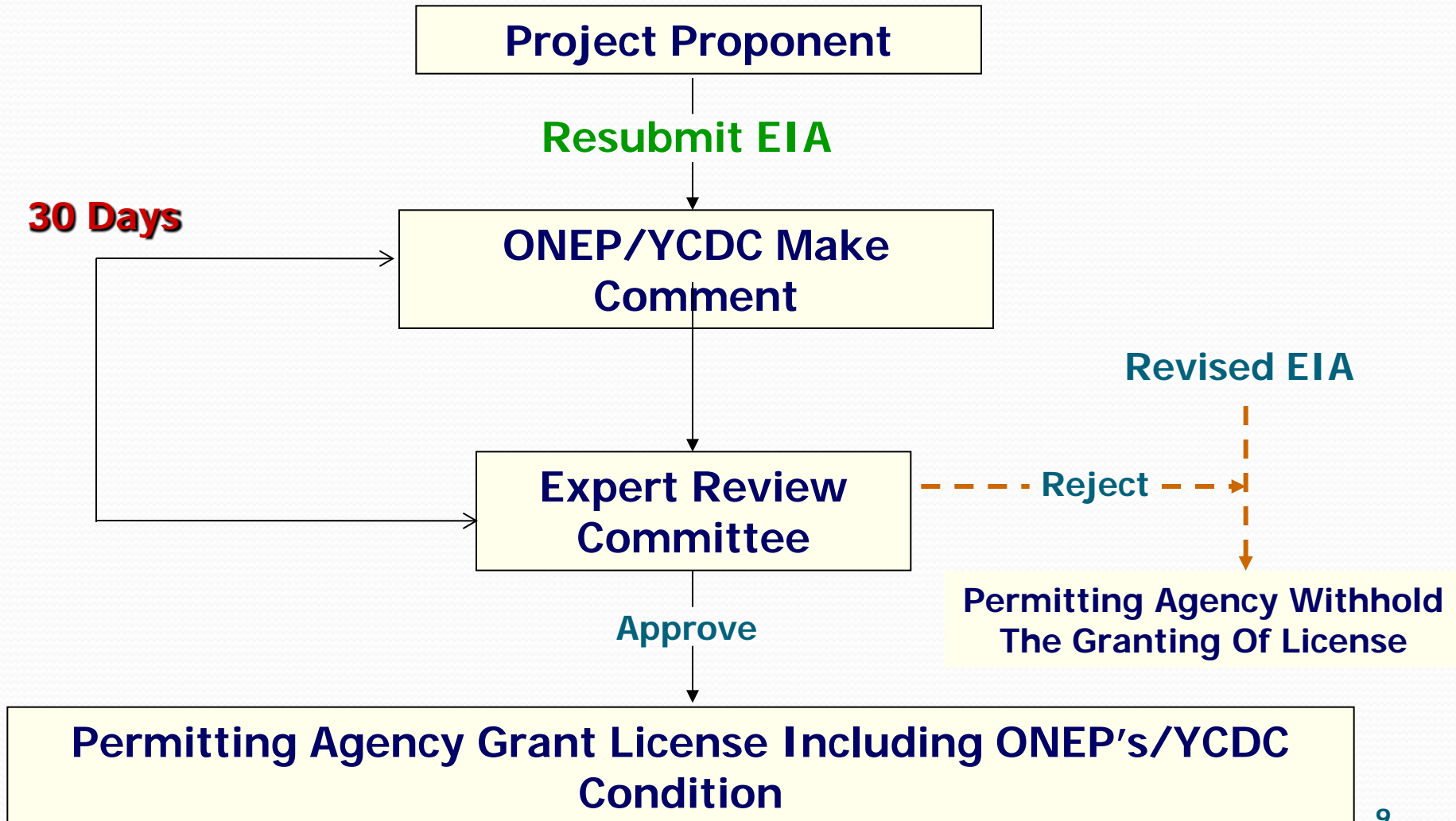
Approval Process for EIA of Regional Government



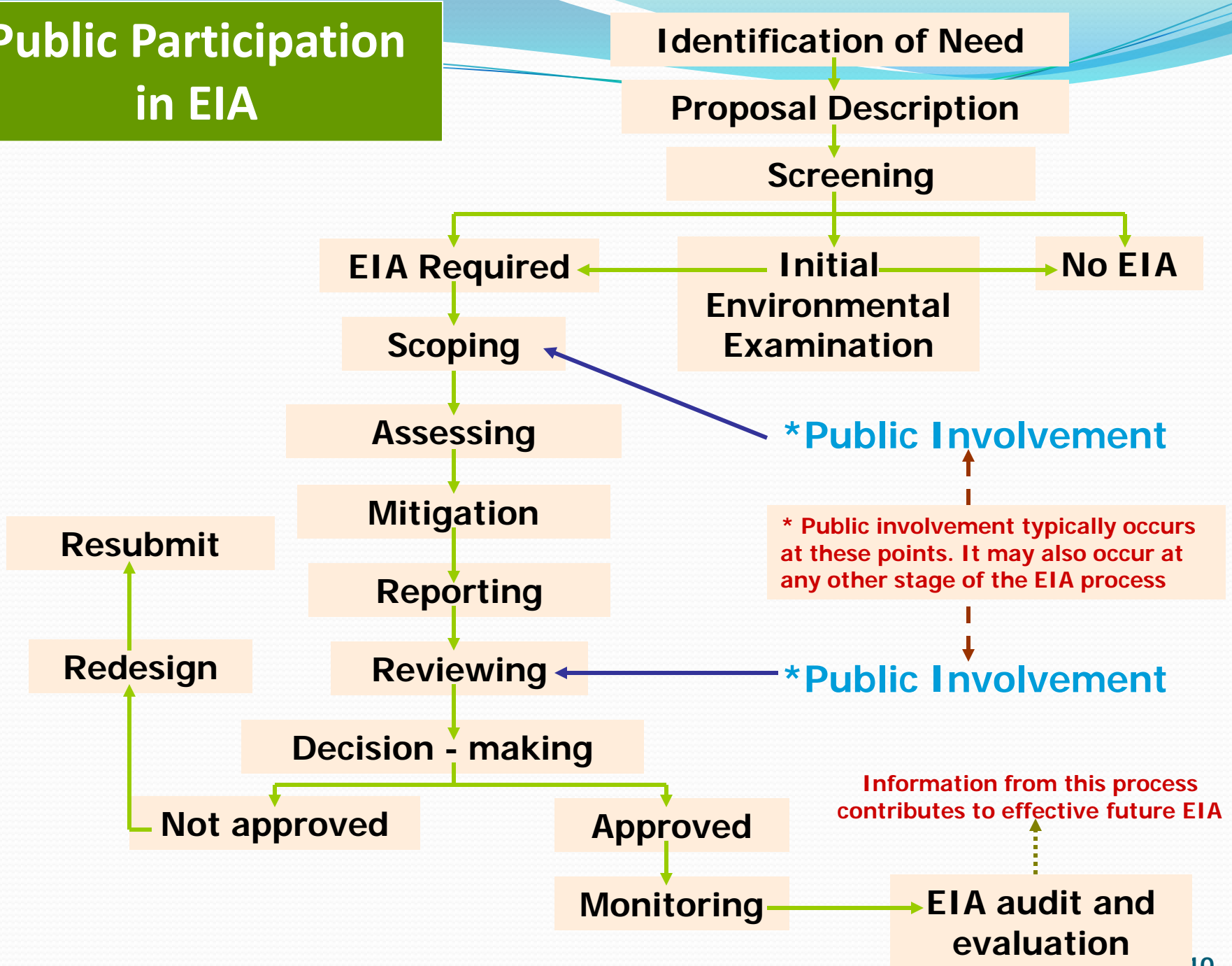
Approval Process for EIA of private Sector Projects



Approval Process for EIA of Private Sector Projects (Revision Process)



Public Participation in EIA



EXISTING LAND USE PATTERN OF YANGON CITY

HMAWBI

HLEGU

HTANTABIN

YCDC AREA- 231 sq-mile
(598.75 sq-km)

LEGEND

-  **NEWTOWNS (1989-2000) -**
139 sq-mile (360 sq-km) (60%)
-  **SATELLITE TOWNS (1958-1960)**
13.9 sq-mile (36 sq-km) (6%)
-  **INDUSTRIAL ZONES (1995-2002)**
16 sq-mile (41 sq-km) (6.5%)
-  **COMMERCIAL AREA**
3.5 sq-mile (9 sq-km) (1.5%)
-  **GREEN & RECREATION**
7.7 sq-mile (20 sq-km) (3.5%)
-  **INNER CITY & OLD SUBURB & OTHERS**
(22.5%)

THANLYIN-KYAUKTAN
INDUSTRIAL
DEVELOPMENT ZONE

Industrial Zones In Yangon City

➤ Industrial Zones in City	= 24 Number
➤ Total Factories	= 3562
➤ Garments	= 126
➤ Foodstuff	= 334
➤ Chemical	= 56
➤ Iron and Melting	= 519
➤ Cold Storage and Fish Processing	= 45
➤ Paper and Cardboard	= 105
➤ Distillery	= 9
➤ Forest Product	= 148
➤ Public Use Goods	= 709
➤ Others	= 1511

TSPM, 1997

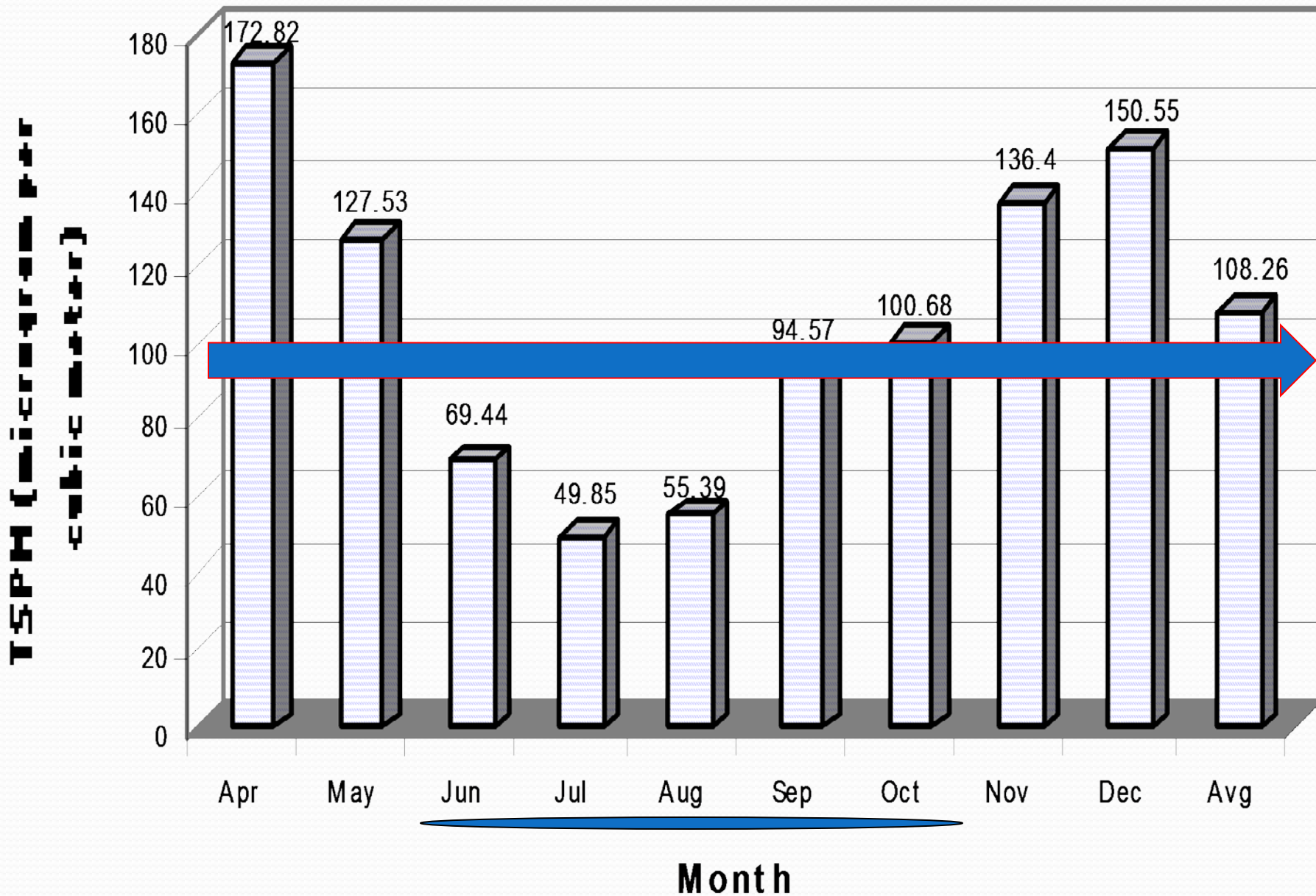
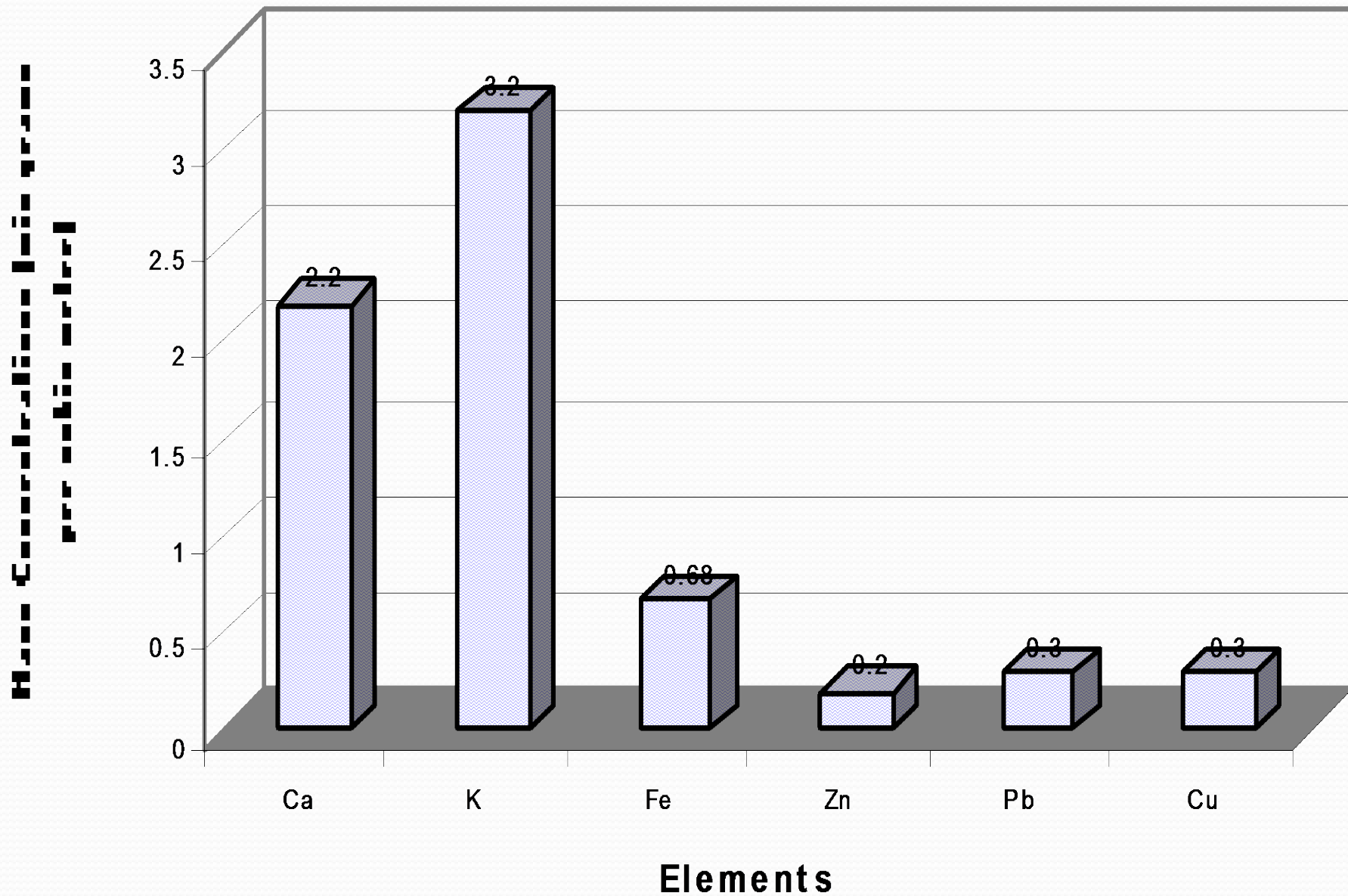


Figure (9)- Mass Concentration in Aerosols at Yangon (1997)



Respirable Dust Sampler

Envirotech APM 460(NL)



COMMERCIAL



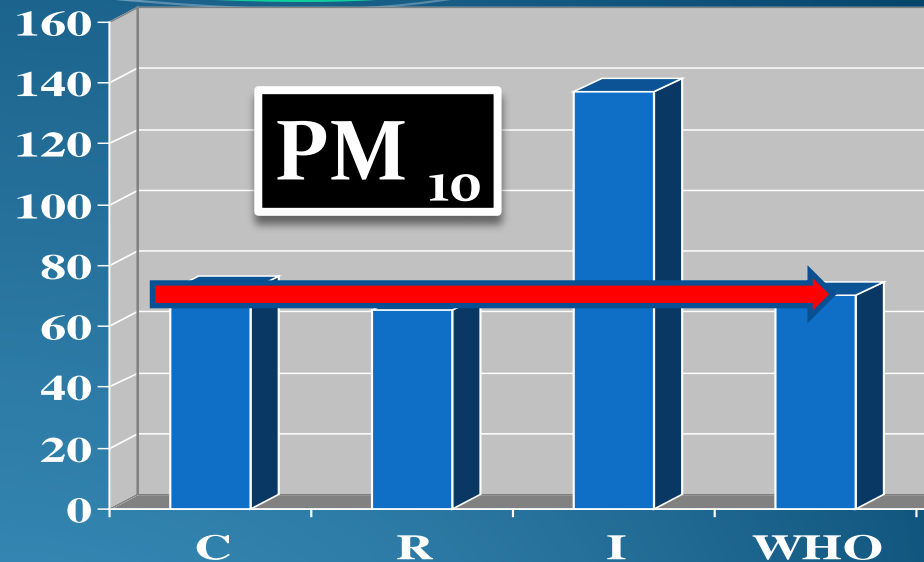
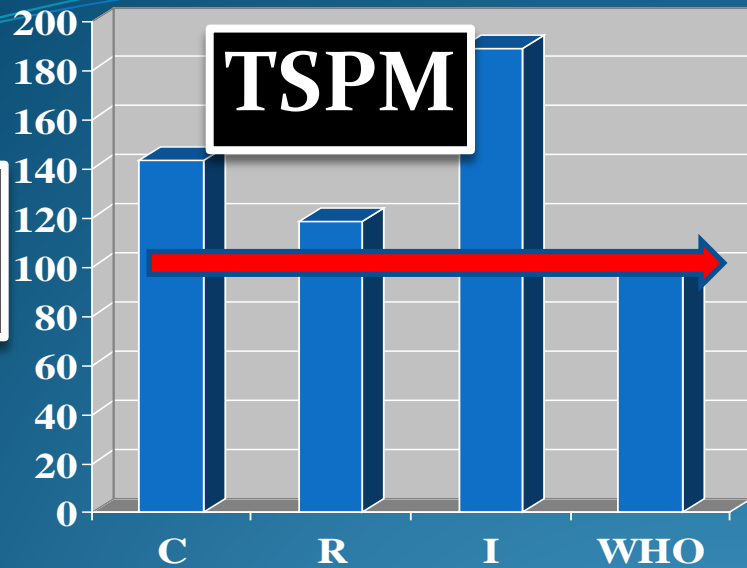
RESIDENTIAL AREA



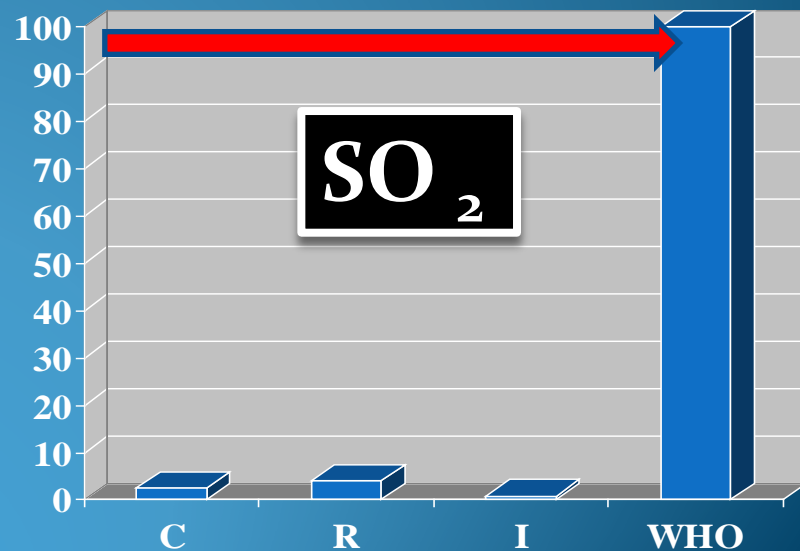
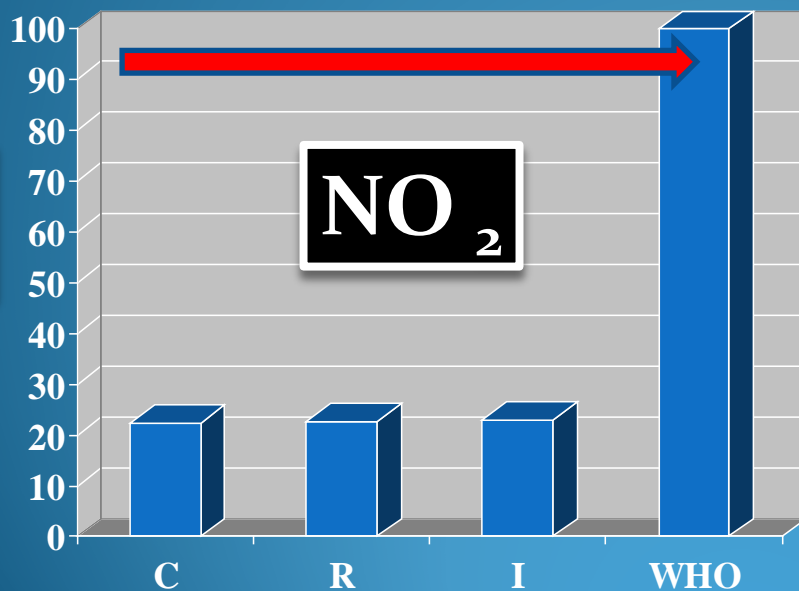
**INDUSTRIAL
ZONE**



$\mu\text{g}/\text{m}^3$



$\mu\text{g}/\text{m}^3$



AQM (Yangon)

Commercial Area

Month	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
October	53.48	2.45	1.66
November	52.30	0.12	14.09
December	94.18	0.05	13.22
January	80.57	0.58	15.55
February	94.92	0.78	9.09
March	72.49	1.06	17.74



> WHO Guideline Value

AQM (Yangon)

Residential Area

Month	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
October	63.16	2.18	5.73
November	63.21	0.08	36.36
December	92.69	0.06	15.14
January	69.78	1.36	13.48
February	119.86	0.9	22.89
March	75.5	0.5	15.08



> WHO Guideline Value

AQM (Yangon)

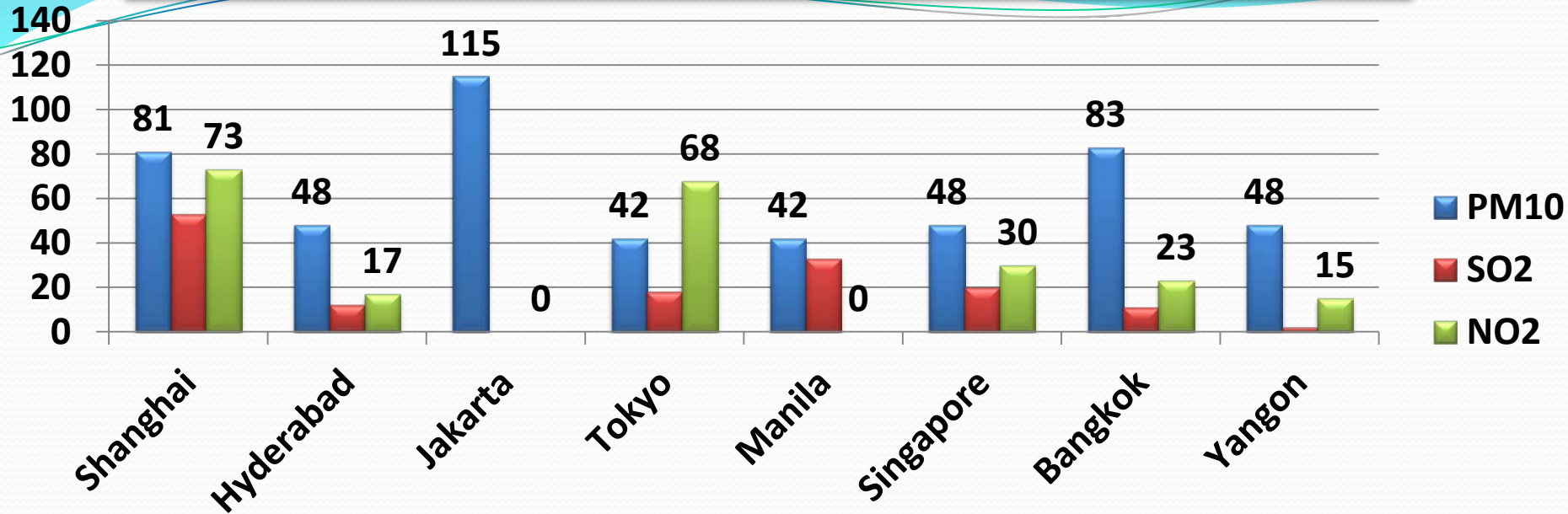
Industrial Area

Month	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
October	35.67	1.8	1.38
November	53.55	0.06	15.35
December	59.12	0.32	13.53
January	55.98	0.03	12.44
February	59.4	2.69	14.09
March	49.24	4.99	13.31



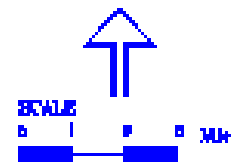
> WHO Guideline Value

Air Quality of some Asian Cities



1. PM_{10} s are almost above normal value of WHO Air Quality Guideline, ,, SO_2 and NO_2 are within normal value of WHO Air Quality Guideline,, Ozone, CO and Pb are not done,,
2. To continue and extend AQM to other places,,, To develop a "Dust Reduction" programme for the cities,,, To set up the AQM Devices city where,,, To develop a "National Air Quality Standards".

Proposed Area



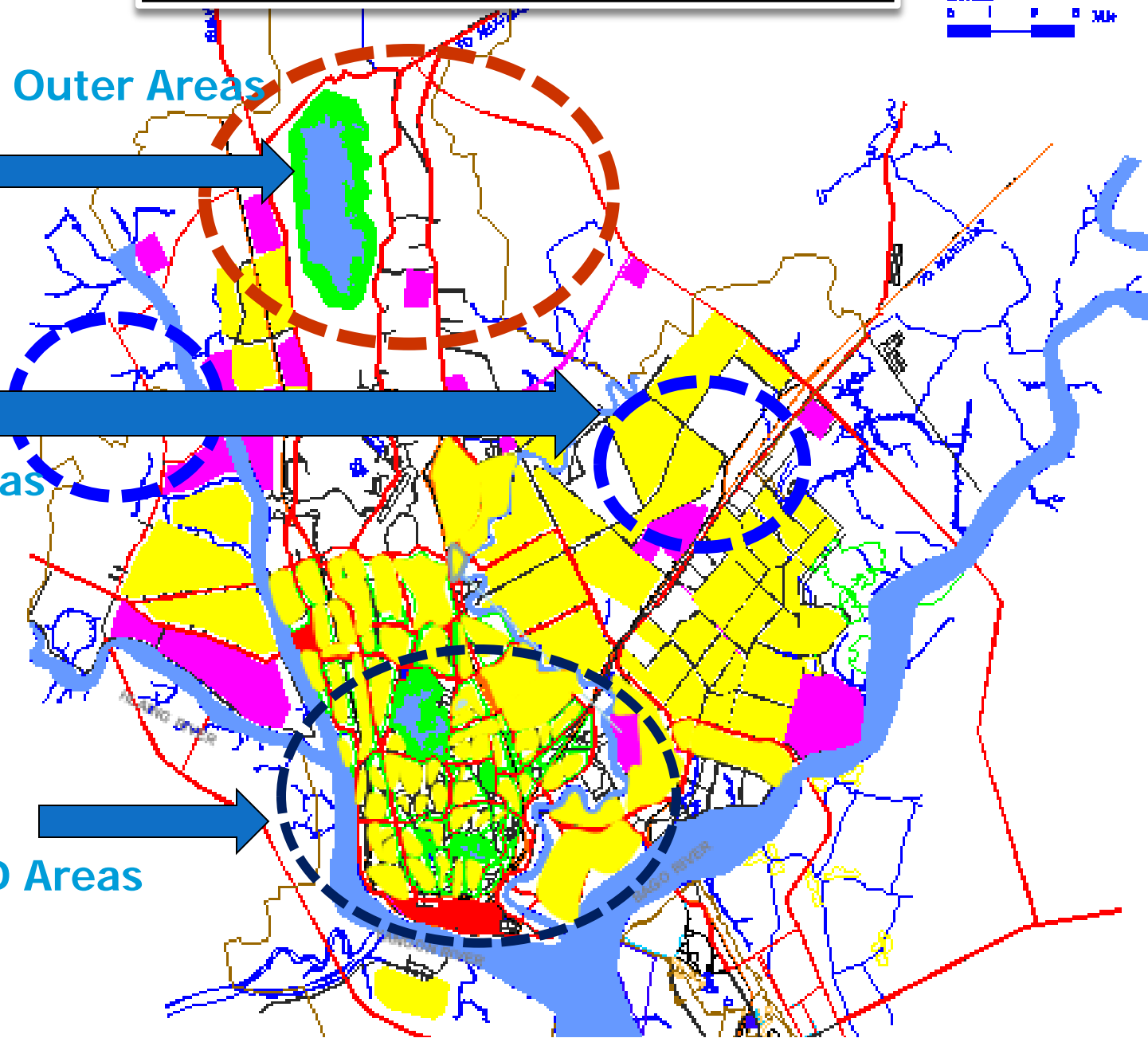
Green and Outer Areas



FDS Areas



CBD Areas





INSPECTION AT SITE



Comparison of Waste Water Standard

Sr. No	Particular	pH - Value	Total Solid	Suspended Solid	B.O.D	COD	Remarks
1	WHO Guide Line	7	600	100	110	220	ppm
2	ASEAN Standard	7	720	100	110	250	ppm
3	National Myanmar	6-- 9	Up to 2000	Up to 500	20 -- 60	< 200	ppm
4	Thailand Standard	5.5-9.0	3000-- 5000	50-- 150	20-- 60	120-- 400	ppm
5	Korea Standard	5.5--9	3000-- 5000	50--150	20—60	120-- 400	ppm

Presentation of Myanmar



**With Full Regards
Thanks for Attention**