



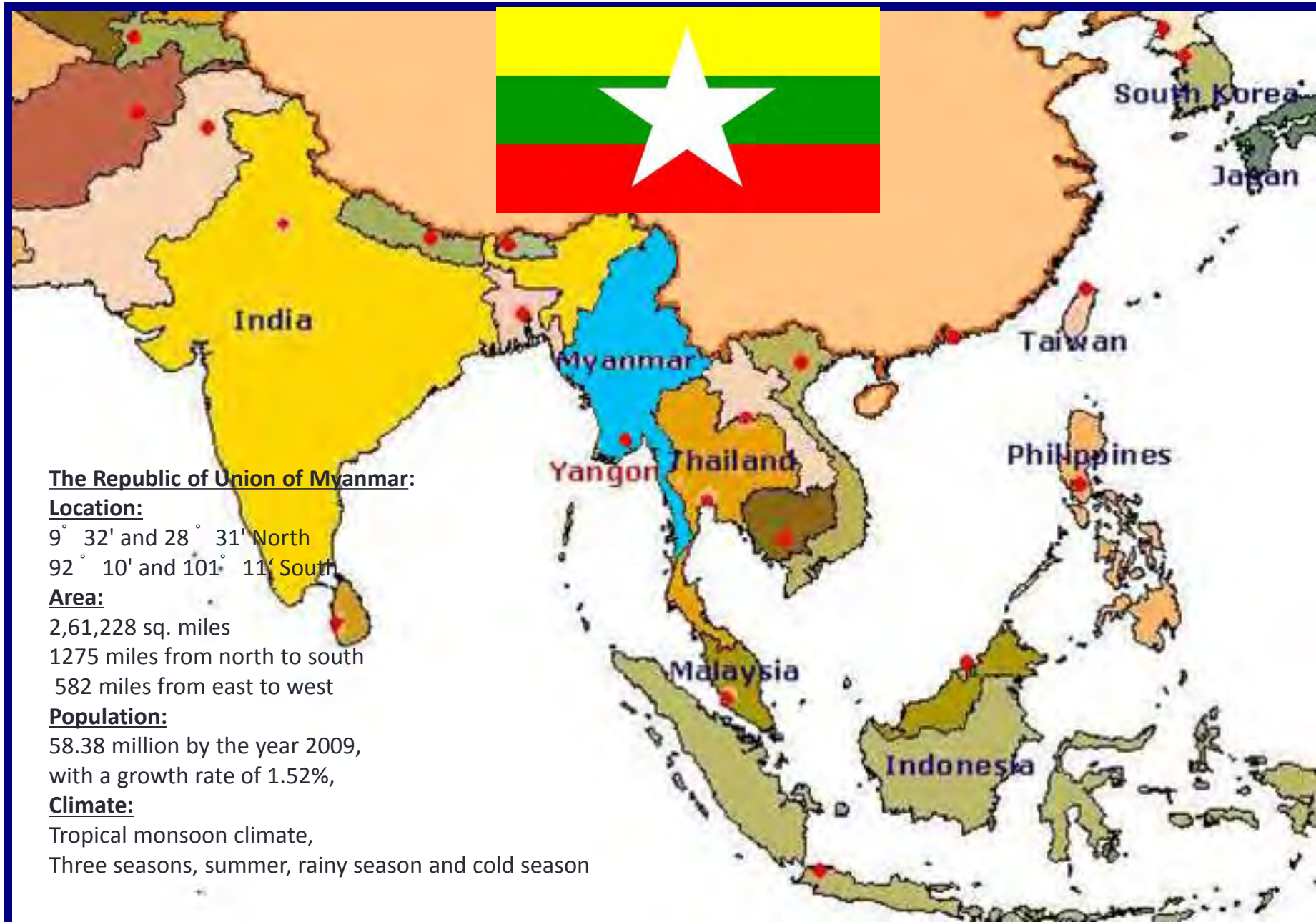
Sustainable Transportation: Upgrading Urban Mobility for Yangon City

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- Current Status
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The Republic of the Union of Myanmar



The Republic of Union of Myanmar:

Location:

9° 32' and 28° 31' North
92° 10' and 101° 11' South

Area:

2,61,228 sq. miles
1275 miles from north to south
582 miles from east to west

Population:

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

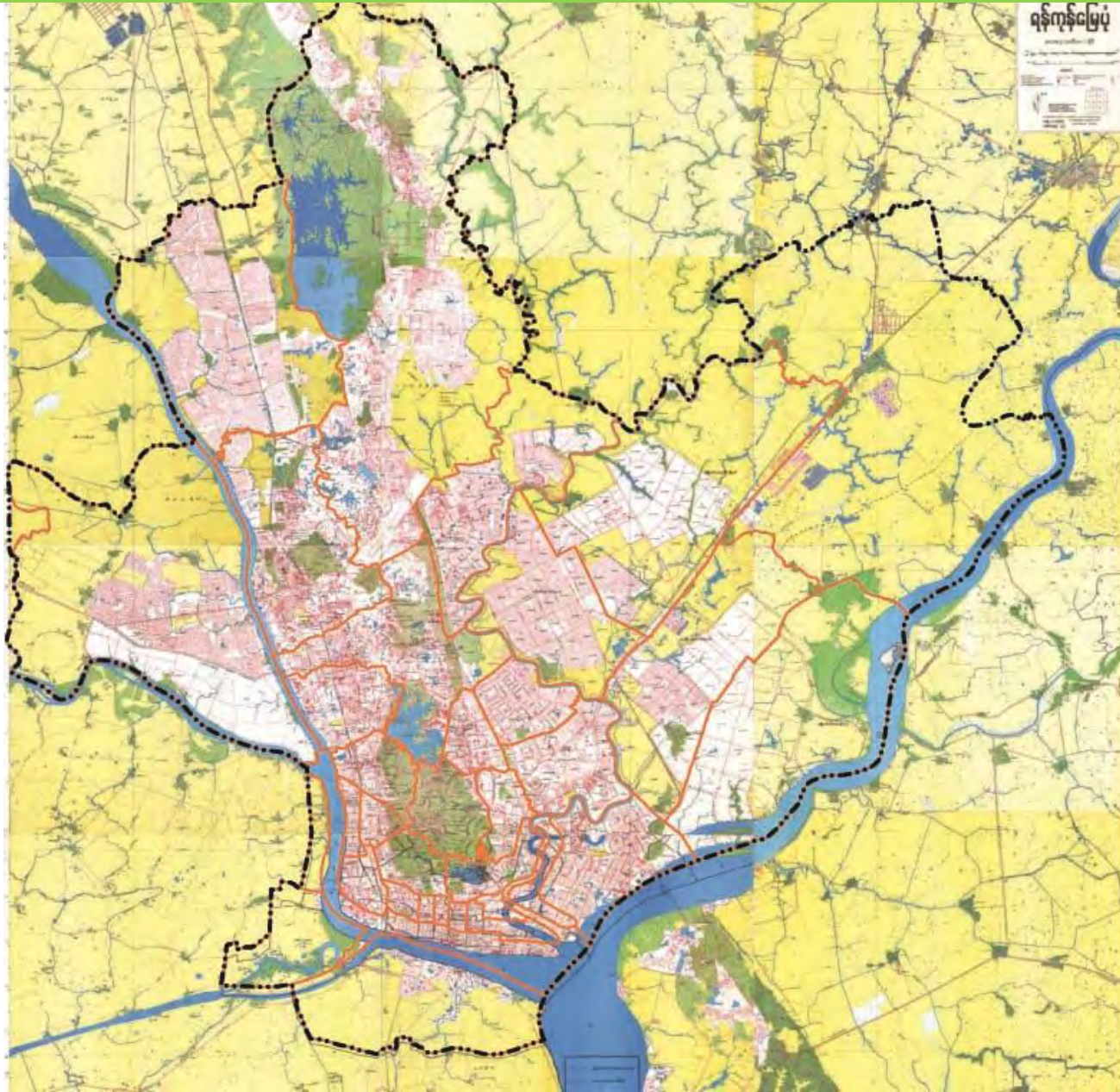
Climate:

Tropical monsoon climate,
Three seasons, summer, rainy season and cold season

Background: Yangon and YCDC

- On January 2, 1853, British planners started modern Yangon city planning.
- Colonial Yangon was renowned as "Princess of South East Asia" due to its beauty and cleanliness.
- Current Yangon population is estimated to be 5.7 million, annual growth rate is estimated to be 2.3 % , the city consists of 33 townships, area of about 680 km² (292 square-miles).
- The present city authority is Yangon City Development Committee (YCDC)
- Yangon consists of 33 townships: 6 downtown CBDs, 21 Sub-urban areas and 6 Satellite Towns.

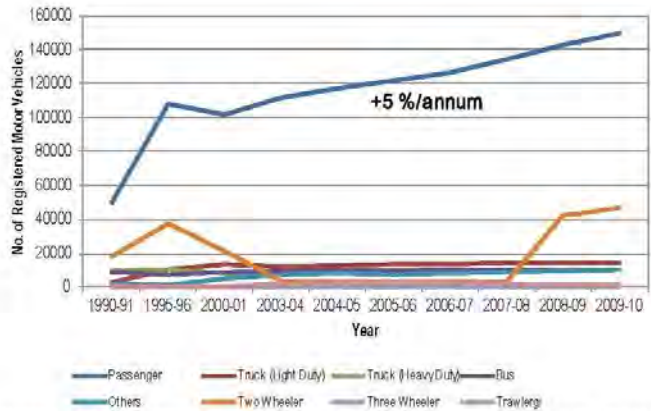
Yangon Regional Boundary Map





Current Status of YANGON CITY'S Traffic Situation

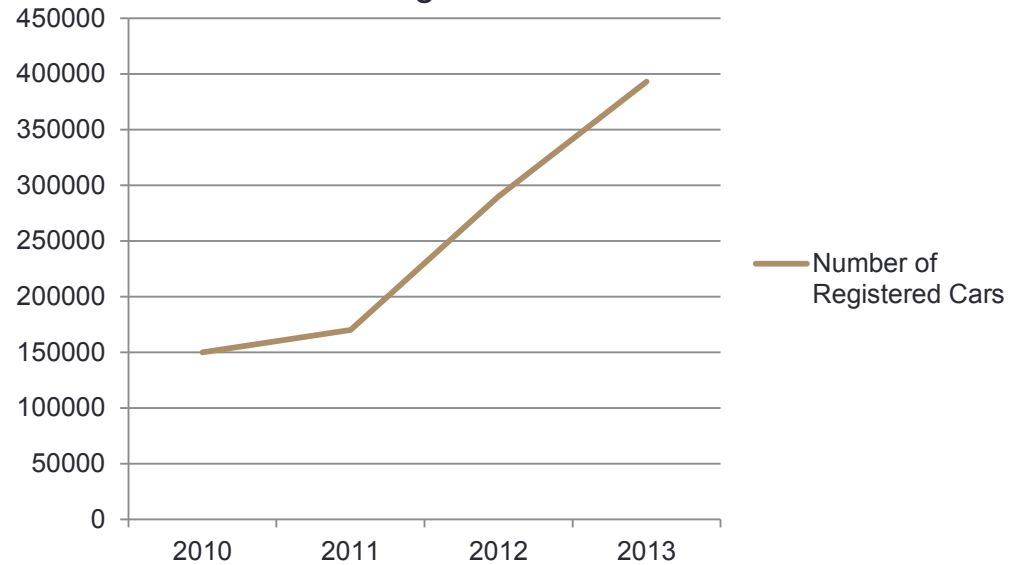
Background Data on Motor Vehicles



Source: Statistics Yearbook 2010, Central Statistical Organization (Published in 2012)

1990-2010 Registered Vehicles

Increasing Trend: Estimated Number of Registered Cars¹



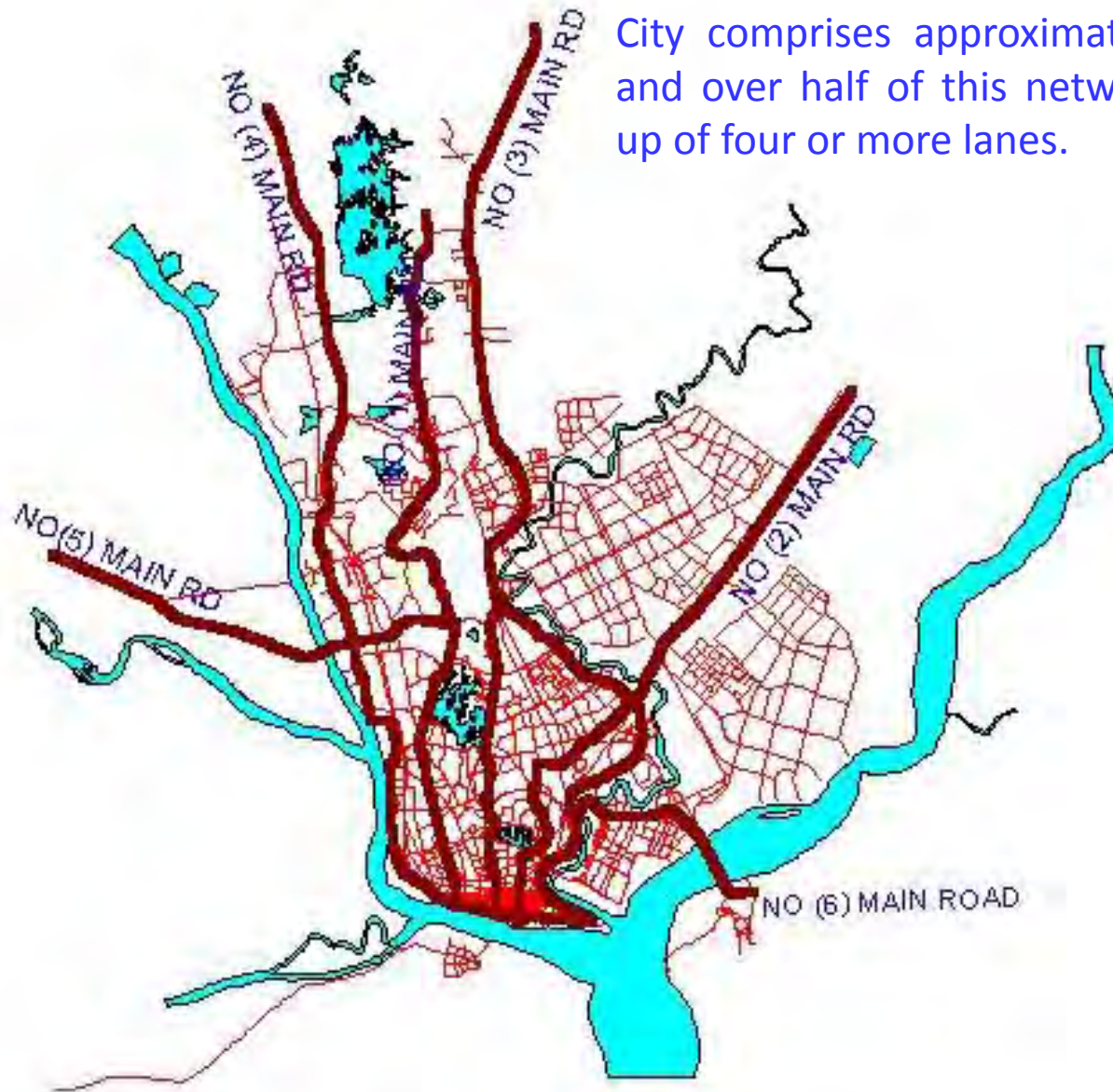
2010-2013 Registered Vehicles

- Import permits restriction for motor vehicles are relaxed in 2011 November after the reforms.
- Nearly 100,000 new import cars per annum are now newly registered.

¹ about 113280 numbers of old vehicles are de-registered since 2011

Road Networks in Yangon City

The network of main road in Yangon City comprises approximately 220 km and over half of this network is made up of four or more lanes.



Current Status

- Heavy Traffic Congestion
- Modes of Transportation
- Channels of Flow
- Present Conditions

Traffic Congestions





Traffic congestions in CBD areas

Registered vehicles in Yangon account for 65 % of the national total, and over two third of all private cars are in Yangon. Since 1988, total vehicle numbers in Yangon increased by 12.2 % annum.



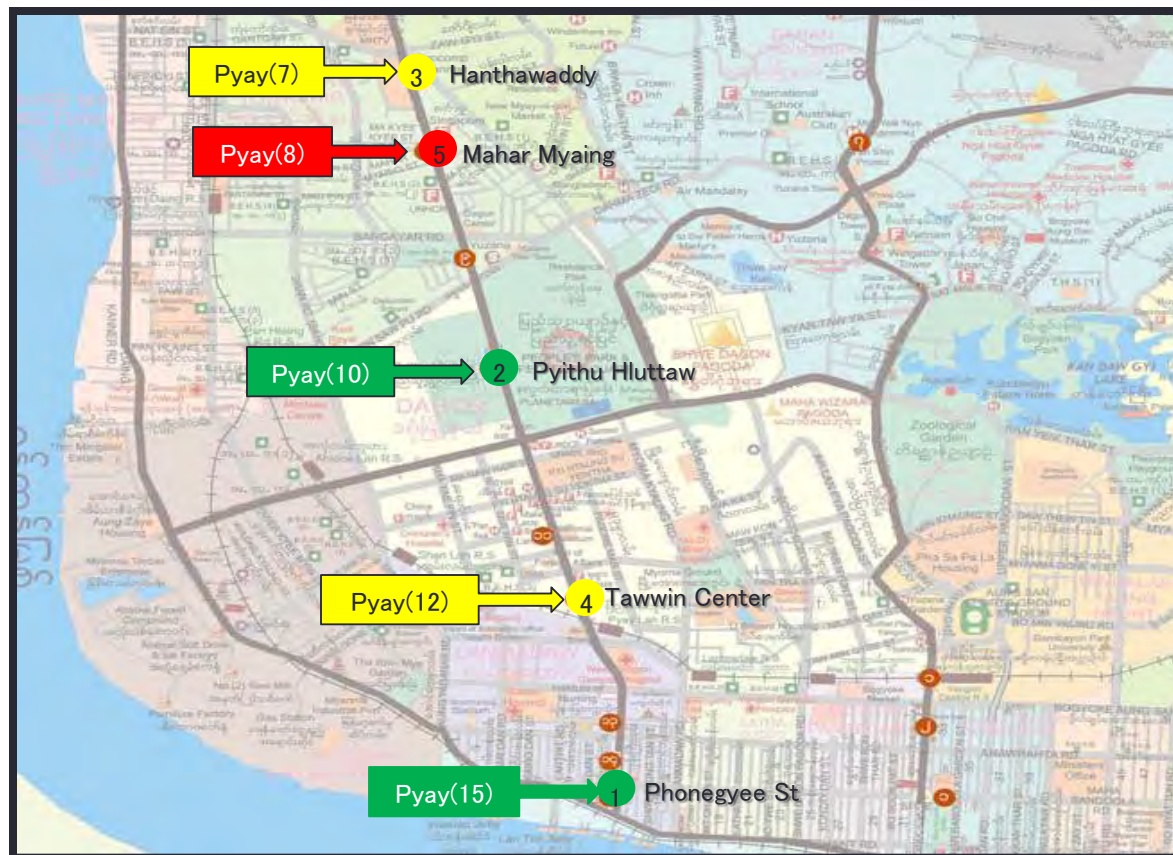
Traffic congestions in Anawrahta Road

Capacity of Current Flow



- A** Free Flow
VC Ratio 0 to 0.5 or more
- B** Stable Flow
VC Ratio 0.5 to 0.6 or more
- C** Restricted Flow
VC Ratio 0.6 to 0.7 or more
- D** High density Flow
VC Ratio 0.7 to 0.8 or more
- E** Unstable Flow
VC Ratio 0.8 to 0.9 or more
- F** Force Traffic Flow
VC Ratio 0.9 to 1 or more

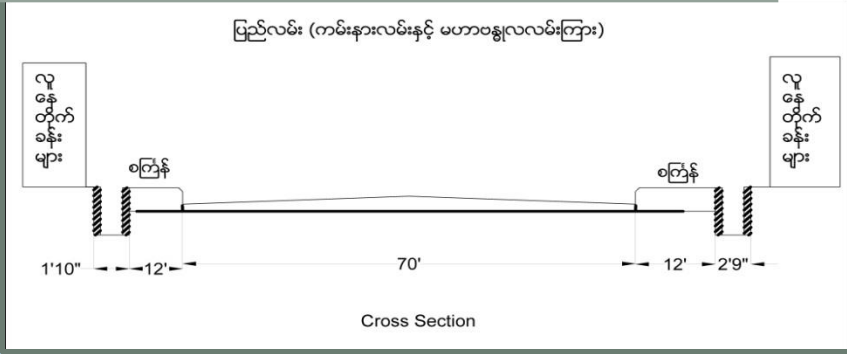
V C Ratio of Five Collected Point at Pyay Road



Location	Capacity/ Lane	Lane	Capacity	Volume	V / C Ratio	Level of Service	If road Sign
Pyay 15	480.93408	2	961.8682	540	0.561408	LOS B (0.5 to 0.6)	Green
Pyay 10	509.22432	3	1527.673	1052	0.688629	LOS C (0.6 to 0.7)	Green
Pyay 7	480.93408	3	1442.802	1087	0.753395	LOS D (0.7 to 0.8)	Yellow
Pyay 12	437.555712	3	1312.667	1055	0.803707	LOS E (0.8 to 0.9)	Yellow
Pyay 8	447.614464	3	1342.843	1700	1.26597	LOS F (0.9 to 1.0 or more)	Red



Traffic Count Location	Pyay (15)
Lane Width	11'-0"
Road Width	70'-0"
Number of Lane	6
Number of Effective Lanes	4
Shoulder Width	-
Platform	12' 0"
Widening Area	-
Road Island (Yes/ No)	No
AM Peak Hourly Volume	540 455
PM Peak Hourly Volume	290 240
Total Traffic Volume	3330



Capacity = Design Capacity x F1 x F2 x F3 x F4 x F5

= (Arterial Lane width 11') 800 x 0.95 x 0.88 x 0.9 x 0.94 x 0.8 = 480.93408

Location	Capacity/ Lane	Lane	Capacity	Volume	V / C Ratio	Level of Service	If road Sign
Pyay (15)	480.93408	2	961.8682	540	0.561408	L O S B (0.5 to 0.06)	



Pyay(8) Mahar Myaing



Pyay(8)		L O S F (0.9 to 1 or more)
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Underlying Causes

- Population Growth
 - Colonial Period: 300,000 population in 77 sq mile
 - Present: approximately 6 million population in 292 sq mile
- Urbanization
 - Rapid Economic Growth after Political Reforms
 - Expansions on major cities only (eg., Yangon , Mandalay)

Underlying Causes

- Commercial Business Districts inside the City
 - High concentration of employment in CBD areas only
- Level of service (LOS) was not updated in areas such as Industrials zones, new commercial areas etc...
- Coordination Systems within the government is weak
 - Lack of communication and coordination
 - For example – Car permits system was changed by Ministry of Trade and Commerce without informing YCDC
- Lack of enforcement in Traffic and municipal laws, rules and regulations

Underlying Causes

Poor Road Condition



Underlying Causes

Parking Space Limitations
and Unmanaged Road
Side Parking

Traffic delay and congestion
caused by road side parking at
Anawrahta Road

- ❑ 4400 on-street parking spaces available in CBD area.
- ❑ possibly 1000 or more parking owned by residents of CBD area.



Underlying Causes

- Parking space limitation



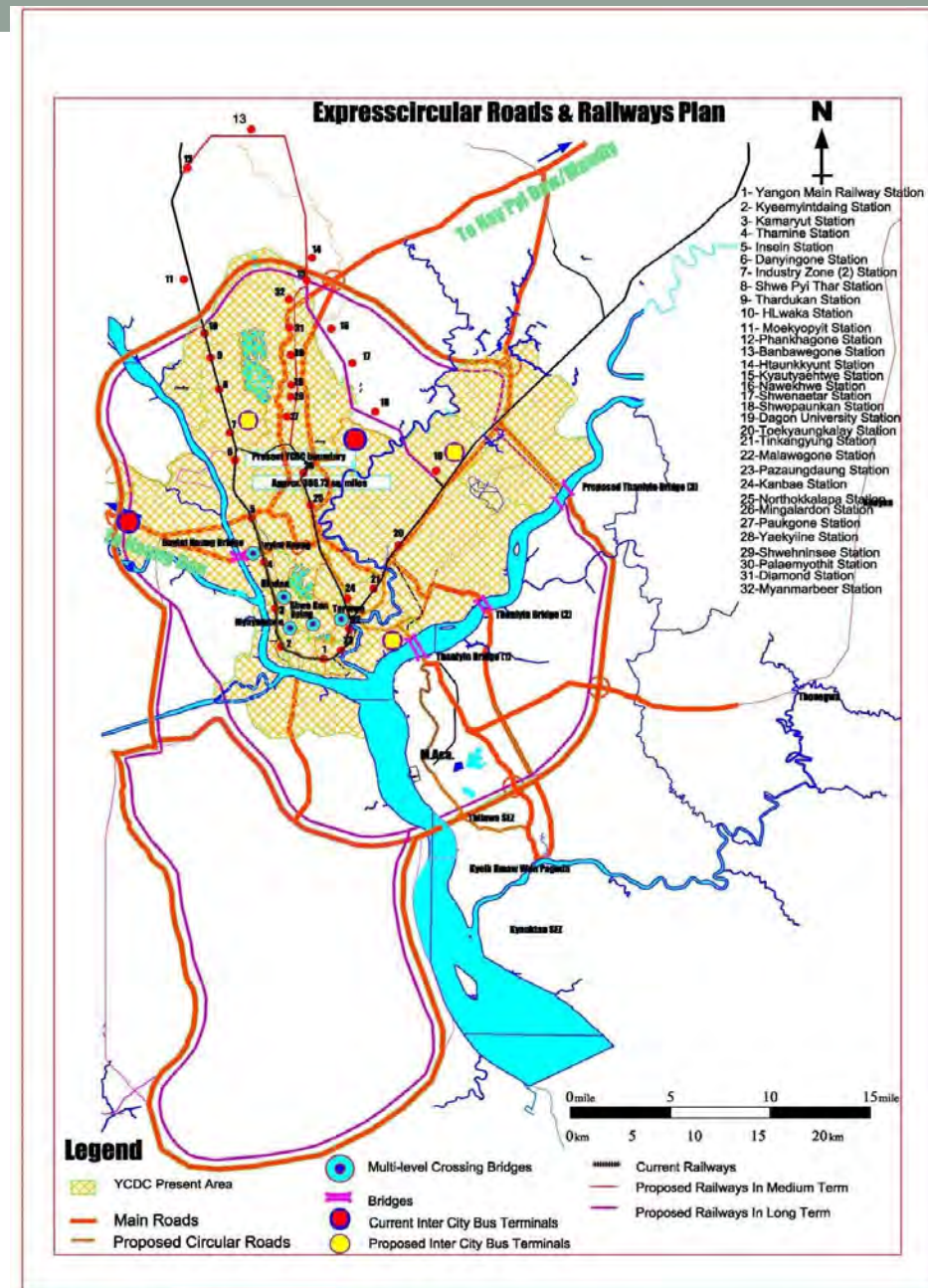
Underlying Causes: Implications

- Weak in Advanced Transport modes
 - Needs Mass Rapid Transport System (for example: MRT, BRT, Sky Trains etc)
 - Needs to maintain/upgrade existing Mass Public Transport System (eg., Public Buses, City Trains)
 - Upgrade current traffic control and management systems
- Needs to consider upgrading alternative transport modes such as river and rail transport modes

Proposed Solutions

Long Term Plans

- Designing the conceptual plan of Yangon City coordinating with JICA (Sub-Center and Green Isle System)
- Proposing new CBD Areas and
- Proposing new Ring Roads

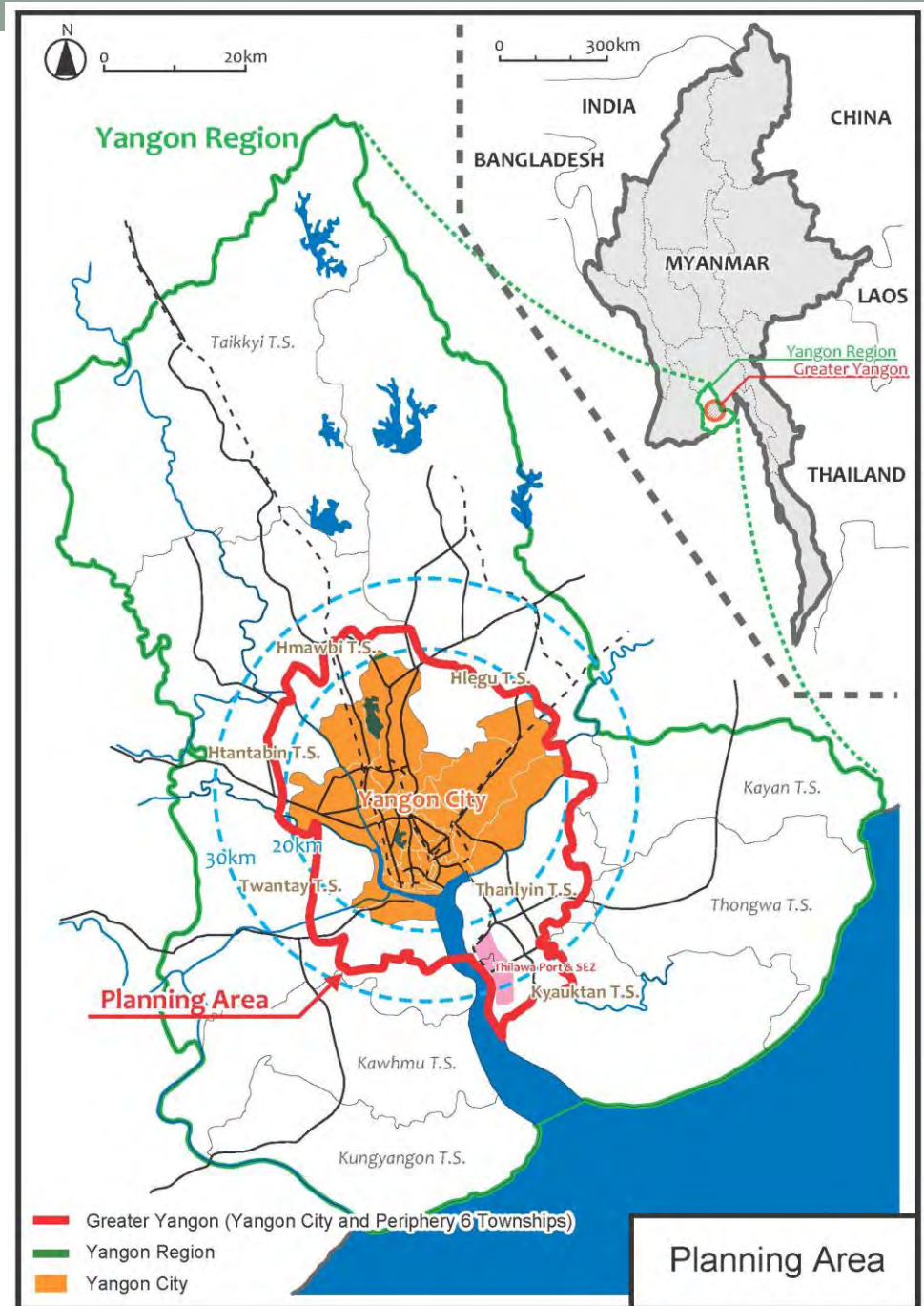


Source: Yangon City Development Concept, 2012

Figure 2.3.35: Proposed Road Network in 2040 by YCDC

Long Term Plans

- Green Belt Yangon



Short Term Plans

Construction of new Bridges and Fly-Over



Short Term Plans

Construction of new Bridges and Fly-Overs

Ngamoeyeik (Parami) Cross Bridge Under Construction



Short Term Plans

Extension and Widening of existing roads



Urban Development plans can positively affect the environment.

Short Term Plans



Upgrading of Junction Traffic Lights



Conclusion

- YCDC is working towards well planned, well developed Urban Environment for Yangon City (including its commercial centers).
- The current solutions for the issues we are facing are still limited.
- Urban Mobility area is one area where YCDC is actively seeking cooperation and assistance in upgrading/modernizing Yangon.
- Since the country's reforms attract new Foreign and Local investments, we would like to learn lessons from our friends in Japan and UN-Habitat to address the pressing issues associated with the urban planning and management in this reform period.

Thank you!

Discussions and Feedbacks are
welcomed