

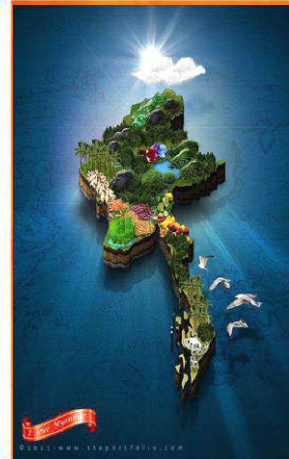
Government of the
Republic of the Union of
Myanmar



MINISTRY OF CONSTRUCTION



Current Status and Way Forwards in Road Infrastructure of Myanmar



Ei Ei Myo
Deputy Director,
Department of Highways

Philippines



Contents

- Profile of Myanmar
- Road Administration Organizations
- Overview of Road Network
- Accessibility & Mobility
- Public - Private Partnership
- Way Forward Projects
- Conclusion





Profile of Myanmar





Profile of Myanmar



Population

- 52.45 M (2015~16) projected

Area

- 676,578 km²
 - 936 km (East – West)
 - 2051 km (North – South)

Road Length

- 140,910 km (Mar 2015)

Number of registered vehicles

- 6,126,289 (Dec 2016)

Neighboring Countries

- Bangladesh, India, China, Lao, Thailand

GDP

- 72,780,464.5 kyats (March 2016)

GDP Growth

- 7.3% (March 2016)

Per Capita GDP

- 6.4% (March 2016)



City Profile

YANGON



Area	~	600 sq-km
Population	~	7.0 million (2010)
Growth Rate	-	1.69 % (2010)

MANDALAY



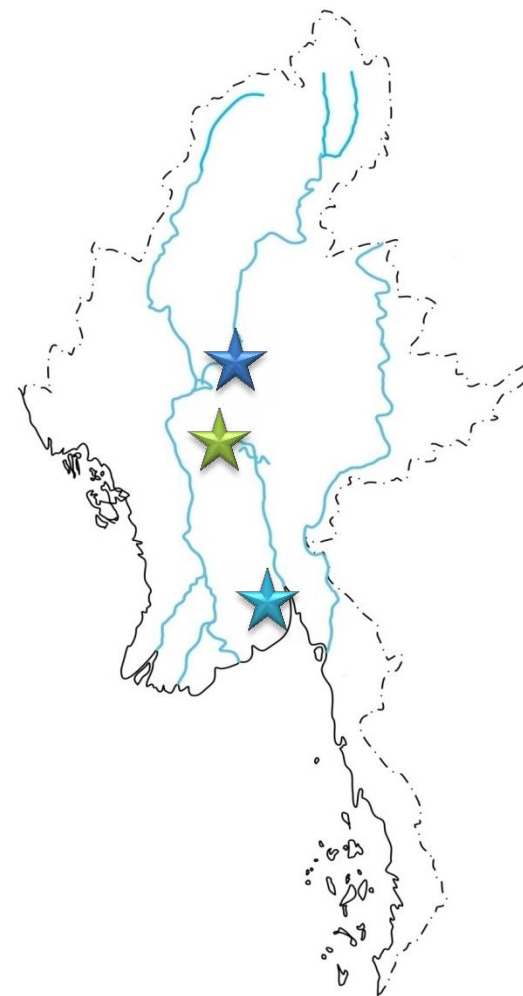
Area	~	120 sq-km
Population	~	1.0 million (2010)

NAY PYI TAW



Area	~	7,057 sq-km
Population	~	1 million

Cities & Towns (Population more than 100,000) - **56** no.





Road Administration Organization





Administrative Organizations in Transport and Logistics



Ministry of Transport and
Communications

Ministry of Construction



Air Transport, Water Transport,
Rail Transport, Land Transport

Roads/
Bridges/Airfields





Road Network

Total Road Mileage in Myanmar (as of March 2015) [in km]

No	Organization	Concrete	Bitumen	Metal	Gravel	Earth	Mule	Total
1	Ministry of Construction							
	Highways	784.43	13980.43	1501.68	2146.4	1934.28	-	20347.28
	Others	432.70	9008.76	2812.05	2817.48	4895.39	259.70	20226.08
		1217.13	22989.25	4313.73	4963.88	6829.67	259.70	40573.36
2	Ministry of Progress of Border Areas	-	893.36	5782.30	-	8167.12	-	14842.78
3	Ministry of Livestock, Fisheries and Rural Development	705.68	3025.89	11806.63	-	50062.91	-	65601.11
4	Ministry of Defense	393.47	703.97	1340.95	170.59	8722.31	-	11330.29
5	Ministry of Electricity & Energy	92.34	88.50	542.13	97.97	303.15	-	1124.10
	City Development Committees							
6	Yangon	1916.27	1440.52	-	-	1121.48	-	4478.27
7	Mandalay	39.14	753.67	121.74	-	237.4	-	1151.95
8	Naypyitaw	770.83	204.93	98.41	556.69	176.47	-	1807.33
	Grand Total	5134.86	30100.10	24005.89	5789.13	75620.51	259.7	140910.19



Overview of Road Network



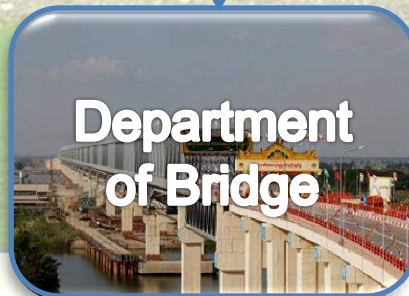


Ministry of Construction

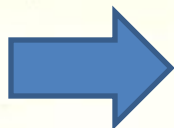
UNION MINISTER
DEPUTY MINISTER

PERMANENT SECRETARY

DIRECTOR GENERALS for



New Setup



Department of Rural Road Development



Vision, Mission, Responsibilities and Strategies

Vision

- ❖ To enhance the Socio - Economic Status of the people in the country by implementation of basic infrastructures such as roads, bridges and housing estates
- ❖ To ensure a balanced and sustainable urban and regional system throughout the country via developments of roads, bridges and housings.
- ❖ To contribute the GDP improvement by minimizing the transportation cost , reducing travel time by removing barriers as well as development of roads and bridges.
- ❖ To improve the quality of lives for the people of Myanmar by providing adequate and suitable housings.



Vision, Mission, Responsibilities and Strategies

Mission

- To upgrade the existing roads in the road network to meet at least ASEAN Class III Standard (18 feet in width DBST) by 2030
- To upgrade the existing bridges to meet ASEAN Class III Standards with, 24 feet wide two way roadway permanent Bridge by 2030.
- To modernize the 367 towns all over the country with systematic urban planning and in these towns, provisions of apartments for 1 million households by 2030



Vision, Mission, Responsibilities and Strategies

Strategy

The projects will be carried out according to one of the followings:

- For the potential projects, if possible, apply Public Private Partnership (PPP) for implementation with Win – Win situation.
- Implement projects with the financing of Government
- Implement projects with the assistances like Grant, Aid, Loan from the development partners such as JICA, KOICA, ADB, WB as well as from the Donor Countries.
- To enact “Road User Tax Law” that will support the maintenance of roads and bridges network effectively.



History of 30 Year Plan

- **Ministry of Construction has already drawn 30 year plan (2001 ~ 2030) with *six successive five year* short term plans.**
- In 2011, the 30 year plan was revised and updated. The remaining 20 year was drawn again with four successive five year updated short term plans.
- Under the new government, the plan was again reviewed and amended according to
 - the pledges to the Parliament,
 - the Arterial Road Network Master Plan by KOICA
 - National Transport Master Plan by JICA
 - In line with Political and Economic Policies.
- The remaining three successive five years plans till 2030 were updated.

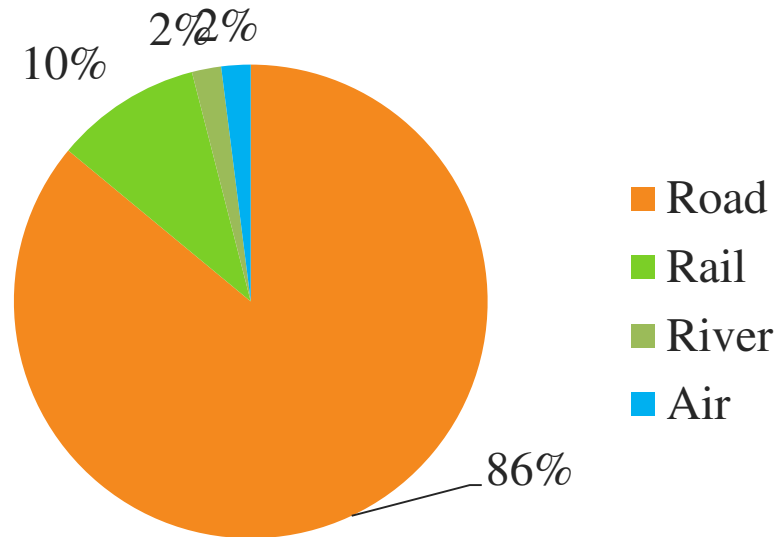
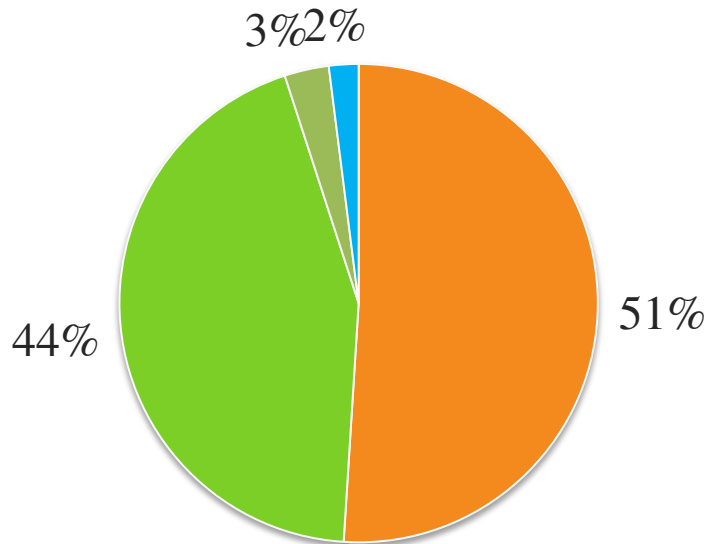


Long Distance Transport Modal Share in Myanmar

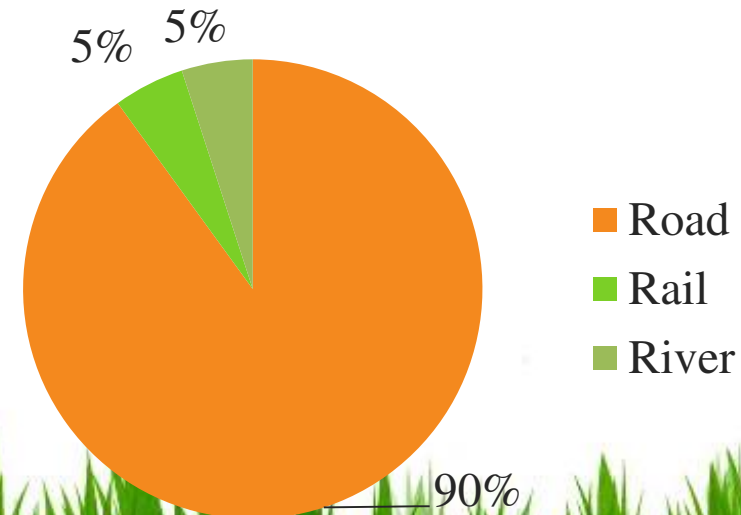
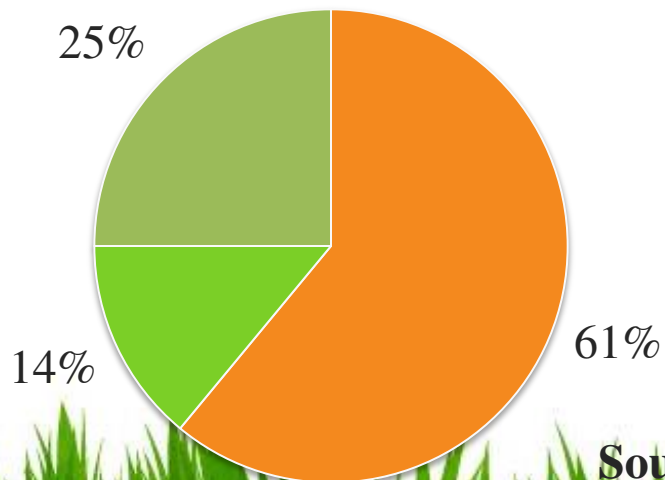
2009

2013

Passenger



Freight



Source: ADB



Investment Expenditures in the Transport Sector

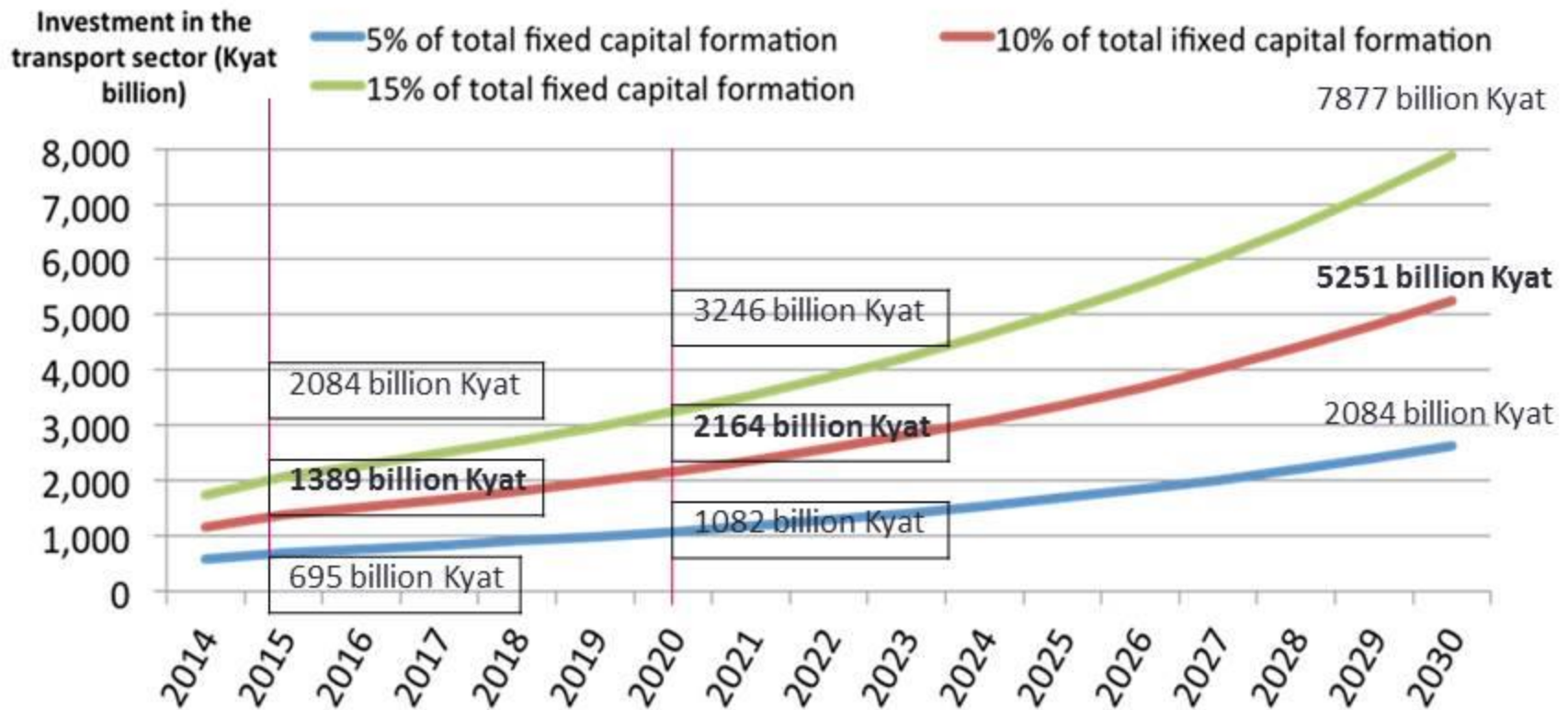
Fiscal Year	Proportion to Total Fixed Capital Formation	Proportion to Total Government Capital Expenditure
2004-05	12.8	21.0
2005-06	14.4	29.7
2006-07	7.5	14.0
2007-08	6.9	13.5
2008-09	4.8	12.0
2009-10	5.3	13.4
2010-11	3.5	9.9

Note 1: Higher level investment in 2004/05 and 2005/06 is due to Yangon – Mandalay Expressway and Nay Pyi Taw development.

Note 2: Transport capital expenditure: Union government budget + State administrative organization budget + state economic enterprises, calculated by MYT-Plan JICA Study Team from Myanmar Data CD-ROM 2010 and 2011



Impact on the Government



- Investment expenditure in the transport sector

Scenario Fixed Capital Formation x (three levels: 5%, 10% and 15%)

- Accumulated investment amount from 2014 to 2030 (16 years):

- 24 trillion kyat (5%)
- 48 trillion kyat (10%)
- 72 trillion kyat (15%)

Exchange rate (2017)
1 US\$ ~ 1350 kyats



Road Network

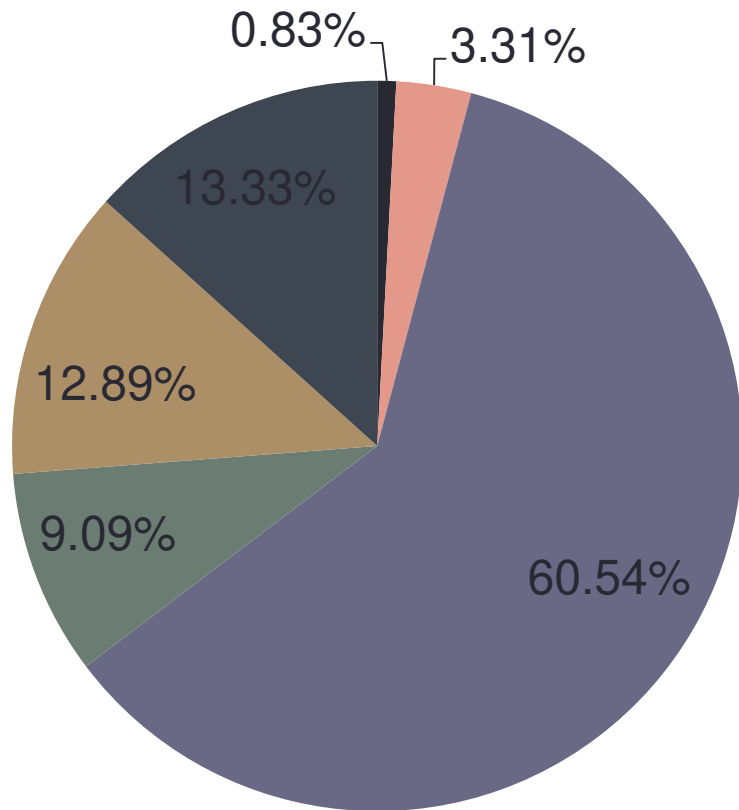
Road Data in States and Regions under MoC (as of March 2016)

No	Region/ State	AC	Concrete	Bitumen			Metal	Gravel	Earth	Total
				Up to 12'	Up to 22'	Over 24'				
1.	Kachin	-	28.566	584.494	275.902	226.113	461.077	905.256	1087.514	3568.922
2.	Kayar	-		484.915	136.090	14.585	33.595	63.469	218.569	951.223
3.	Kayin	-	1.207	559.951	225.509	210.723	44.559	419.636	503.121	1964.706
4.	Chin	-	1.207	595.860	13.478	11.064	450.214	288.274	610.344	1970.441
5.	Sagaing	-	163.650	1451.427	586.204	367.333	886.044	758.705	473.348	4686.711
6.	Tanintharyi	95.957	70.811	240.396	726.619	64.776	94.951	111.447	102.998	1507.955
7.	Bago	-	19.413	735.470	460.976	479.283	194.529	79.160	74.332	2043.163
8.	Magway	-	0.604	1472.047	1459.172	98.371	225.811	253.069	19.916	3528.990
9.	Mandalay	-	48.783	635.188	1016.502	615.976	13.780	57.333	48.683	2436.245
10.	Mon	-	0.604	326.898	272.080	337.359	-	11.869	1.811	950.620
11.	Yakhine	16.093	123.618	951.726	77.047	13.679	433.014	167.171	121.103	1903.451
12.	Yangon	-	268.157	198.855	356.369	167.674	-	4.225	31.181	1026.461
13.	Shan(South)	-	0.805	2268.270	541.041	131.262	117.884	317.544	481.496	3858.302
14.	Shan(North)	131.162	-	1766.255	180.247	395.396	458.361	987.031	1163.455	5081.907
15.	Shan(East)	-	24.542	647.560	181.152	99.176	246.028	361.599	233.355	1793.412
16.	Ayeyarwady	-	43.050	1002.420	805.678	151.982	81.574	418.631	314.224	2817.559
17.	Naypyitaw	-	78.254	92.537	114.465	88.313	-	100.081	0.805	474.455
18.	Y-M Exway	100.383	489.241	-	-	-	-	-	-	589.624
	Grand Total	343.595	1362.512	14014.26 9	7428.531	3473.06 5	3741.42 1	5304.500	5486.255	41154.14 7



Classification by Surface Type of Road (as of March 2016)

Types of Road under MoC



■ AC	343.595 km
■ Concrete	1362.512 km
■ Bituminous	24915.865 km
■ Metal	3741.421 km
■ Gravel	5304.500 km
■ Earth	5486.255 km

Total Length – 41154.147 km
Mule path – 259.7 km

2013 - Paved Ratio : 47.8 %
2014 - Paved Ratio : 53.2 %
2015 - Paved Ratio : 60.0 %
2016 – Paved Ratio 64.28%

Here Paved refers only to AC, Concrete and Bituminous only



Accessibility and Mobility





Road Sector Developments



Pathein – Monywa Highway



Yangon – Mandalay Expressway



Minbu – Ann Highway



Dala – Twantay Access Road



Yangon – Mandalay Highway



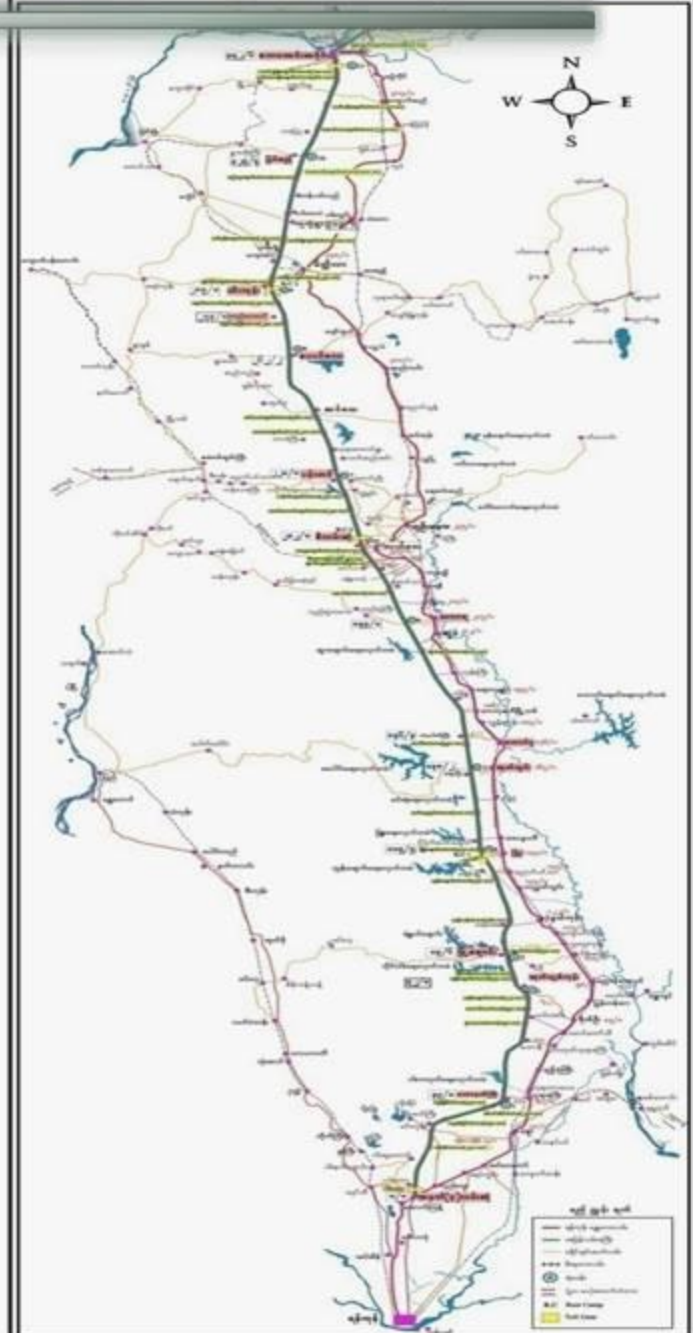
Payagyi - Thahton Section





Yangon - Mandalay Expressway

S. N	Section	Construction Period	Length (km)	Service to Public
1	Yangon - Naypyitaw	10/2005 – 3/2009	323.4	25-3-2009
2	Naypyitaw - Sakainn	7/2008 – 12/2010	241	29-12-2010
3	Sakainn – Tadaoo - Tagonedine	1/2011 – 12/2011	21.8	23-12-2011
Total Length			586.2	





Yangon – Mandalay Expressway





Yangon – Mandalay Expressway (Final Phase)





Asian Highways

Newly Proposed
Distances

AH1 ~ 1577.358 km

(Myawaddy – Yangon – Mandalay – Tamu)

AH2 ~ 804.269 km

(w/o including overlapping distance
with AH1)

(Tachileik – Meikhtila – Tamu)

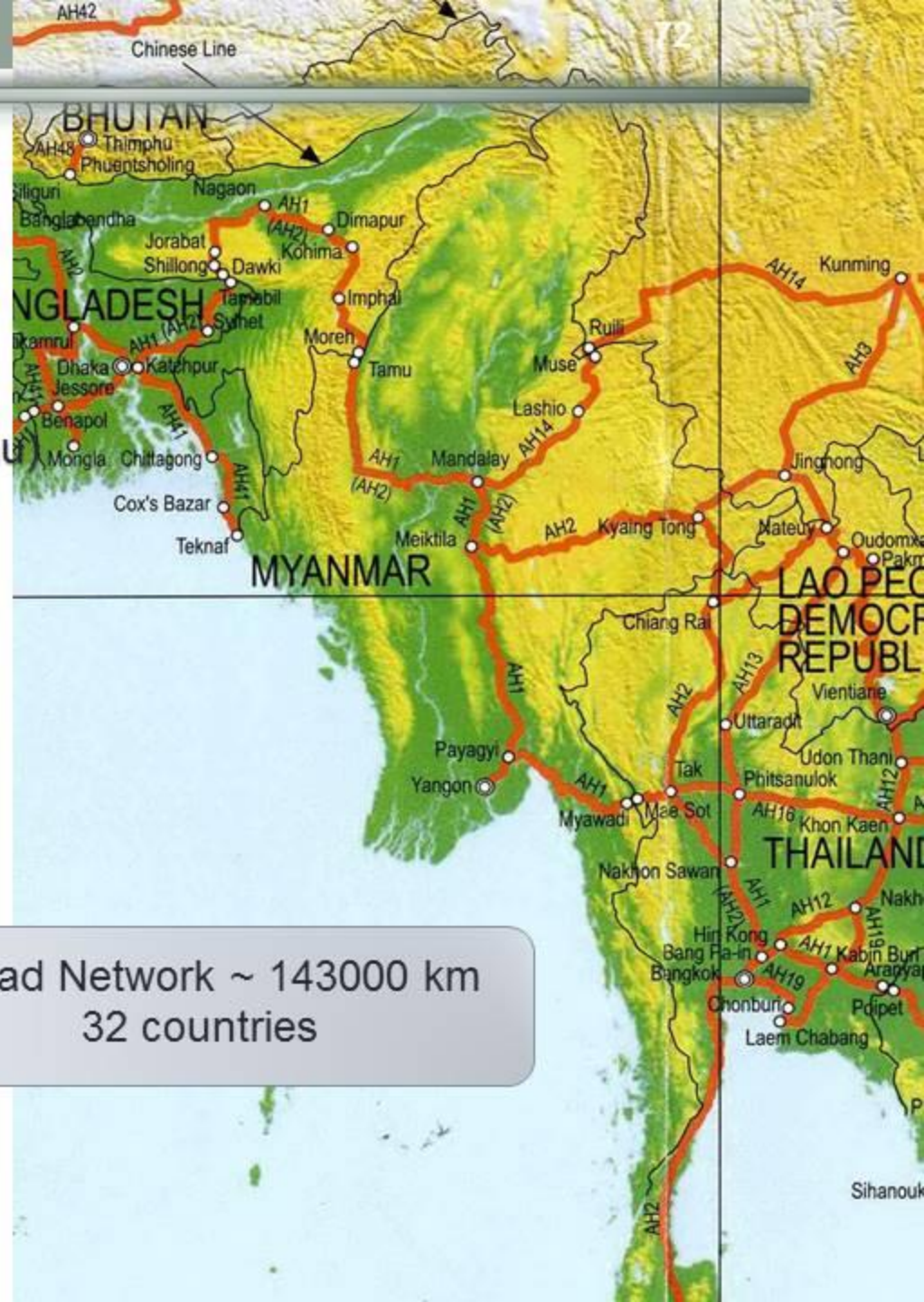
AH3 ~ 90.123 km

(Mongla – KyaingTong)

AH14 ~ 460.272 km

(Muse - Mandalay)

Approximate total length of roads
inside Myanmar – **2932 km**





ASEAN Highway Network

**23 Routes ,
Length 36,000 km**

**7 Routes in Myanmar :
AH1, AH2 , AH3 , AH14 . AH111 ,
AH112 , AH123**





Classification of ASEAN/ Asian Highways Standard

Primary

4 or more lanes with asphalt/ cement concrete pavement with Access Control (Motorway)

Class I

4 or more lanes with asphalt/ cement concrete pavement

Class II

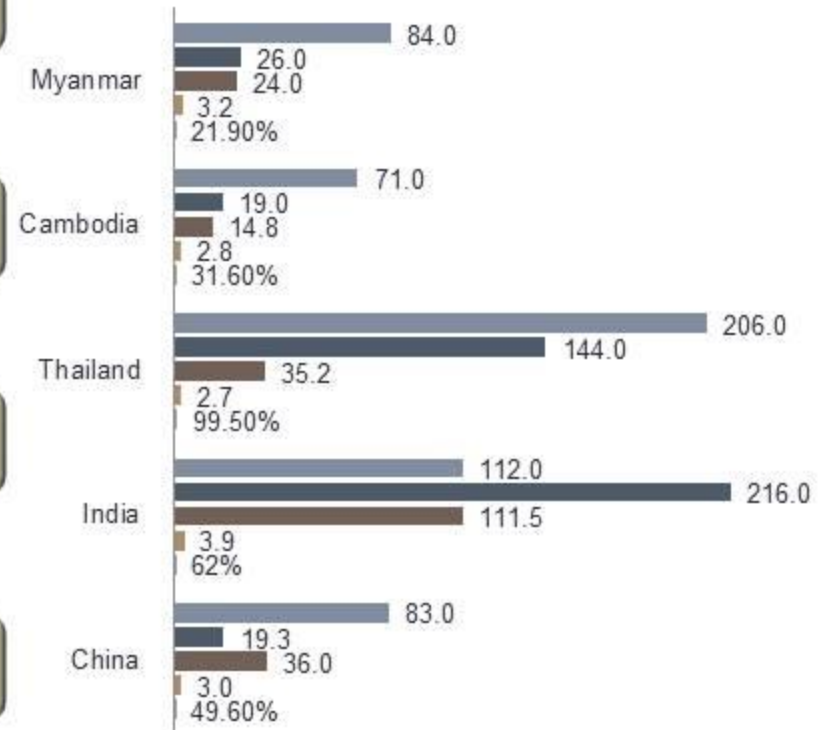
2 lanes with asphalt/ cement concrete pavement

Class III

2 lanes with double bituminous treatment pavement

Comparison of Road Index

■ Vehicle/1000 People ■ Vehicle/km Road
■ Road km/100 Area Sq.km ■ Road km/1000 People
■ Paved Ratio

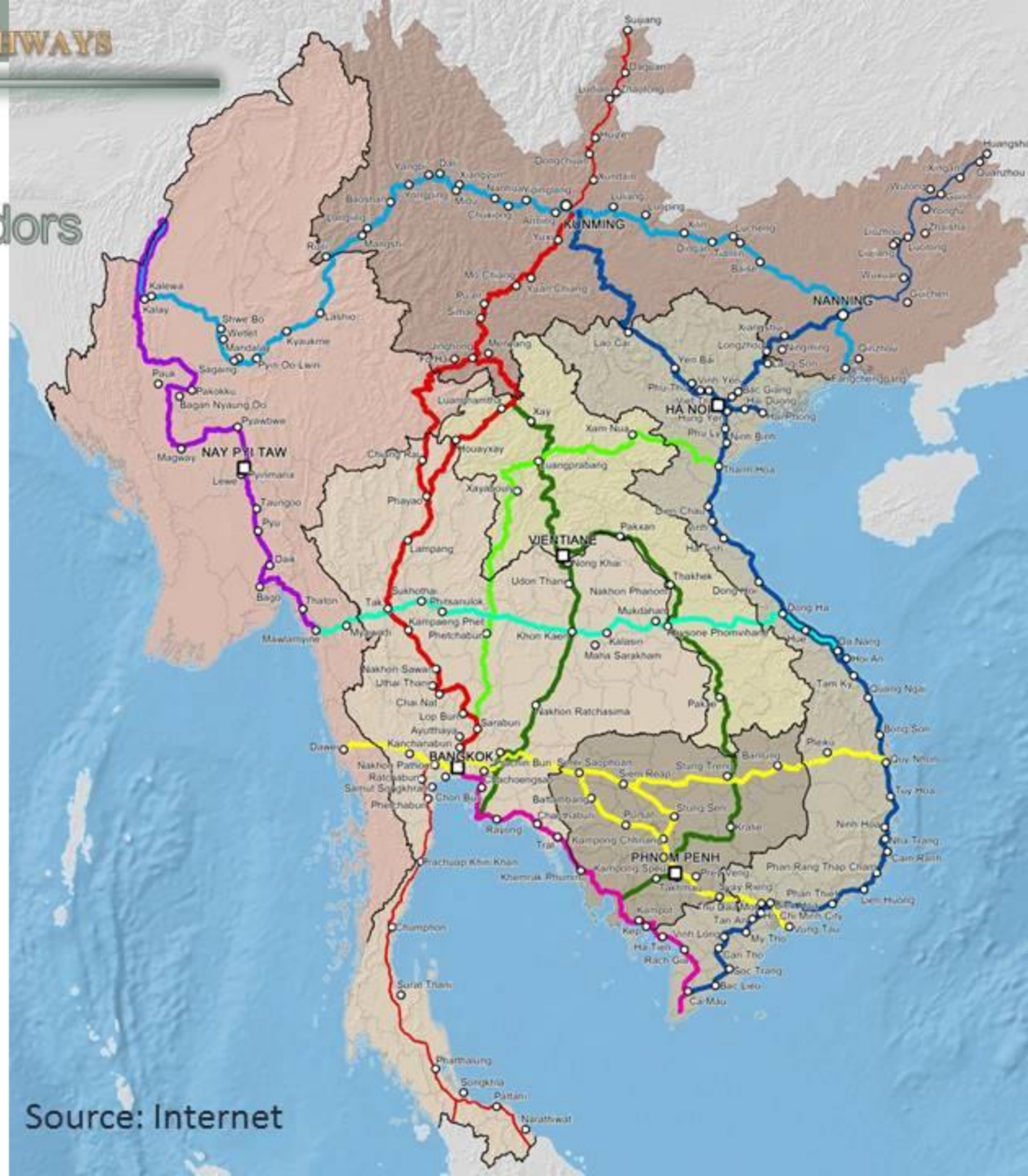




GMS Economic Corridors

- North - South EC
- Northern EC
- North Western EC
- East - West EC
- Southern EC

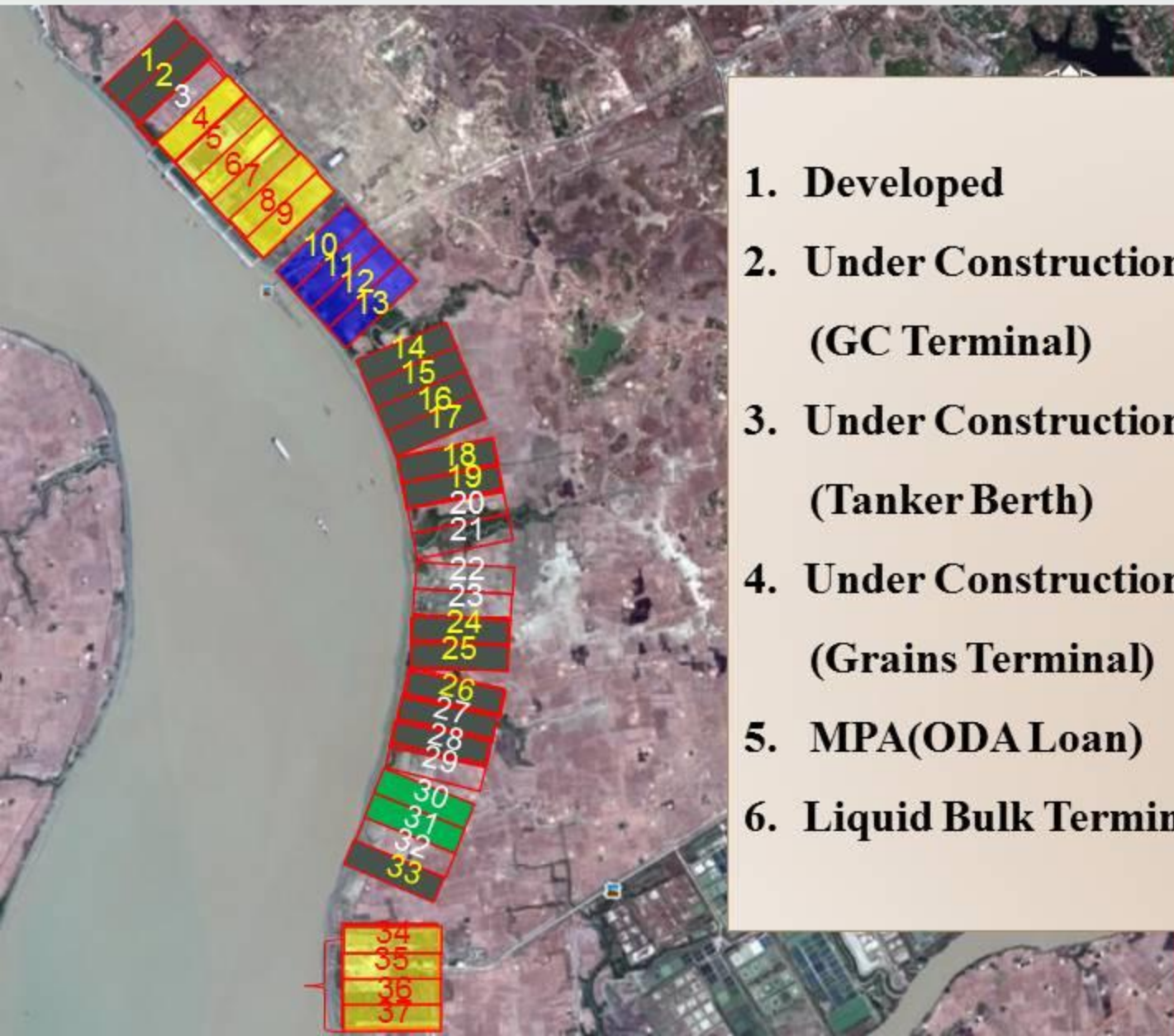
- North Eastern EC
- Eastern EC
- Central EC
- Southern Coastal EC



Source: Internet



Land Plot Allocations for Development of Terminals at Thilawa SEZ



1. Developed	10	Plots
2. Under Construction (GC Terminal)	5	Plots
3. Under Construction (Tanker Berth)	10 ¹ / ₃	Plots
4. Under Construction (Grains Terminal)	5 ² / ₃	Plots
5. MPA(ODA Loan)	5	Plots
6. Liquid Bulk Terminal	1	Plots



Public-Private Partnership





Private Sector Participation in Road

Build – Operate – Transfer (BOT)

Public – Private Partnership (PPP)

- Partnering Bodies
 - Ministry of Construction and Local Private Companies Established in- 1996
- First BOT Road
 - Mandalay-Lashio-Muse-Nankham Road (480.2 km)
- First Partnering Local Companies
 - (1) Diamond Palace Company (293.9 km)
 - (2) (Asia World) Oriental Highway Company (216.3 km)

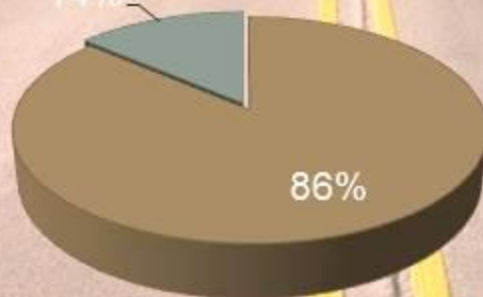
Under BOT scheme (as of 29th September 2016)

Number of local companies – **26** companies

Number of roads – **64** roads

Total length of BOT roads – **3308 mile 3.5 furlongs (5324.41 km)**

MIC permit – **60** roads



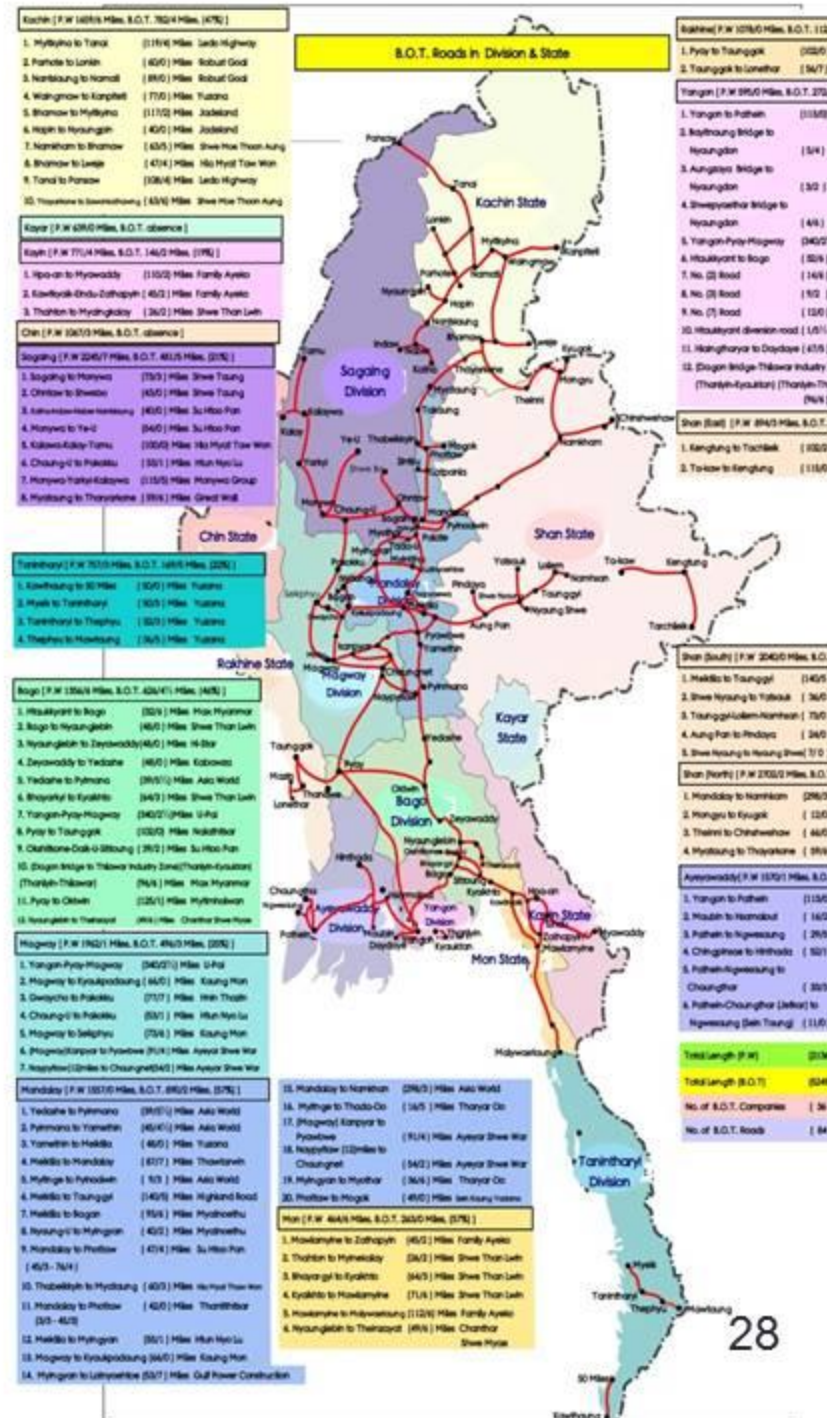
■ Roads managed by MoC (exclude BOT)

■ Roads managed by BOT



List of BOT in States/ Regions (28) Local Companies

Kachin	• 302/2 mi (15 %)
Mon	• 161/1 mi (14 %)
Kayin	• 161/2 mi (14 %)
Kayah & Chin	• No BOT Miles
Sagaing	• 324/2 mi (11 %)
Tanintharyi	• 169/5 mi (20 %)
Bago	• 462/3.5 mi (34 %)
Magway	• 367/7 mi (18 %)
Mandalay	• 666/4mi (46 %)
Rhakine	• 112/2 mi (10 %)
Yangon	• 266/4 mi (44 %)
Shan (East)	• 102/2 mi (4 %)
Shan (South)	• 203/4 mi (6 %)
Shan (North)	• 329/2 mi (24 %)
Ayeyarwaddy	• 146/4 mi (11 %)





Arterial Road Network Development

Current



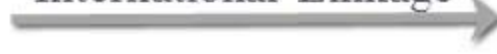
Center to Center Connection



Multimodal Transport Connectivity



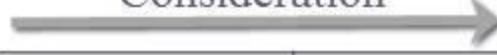
International Linkage



Hierarchical Road Network Development



Topographical Consideration



Road Class	Length
Expressway	9,470km
Main Arterial	13,224km
Sub Arterial	11,684km
Total	34,378km

Proposal



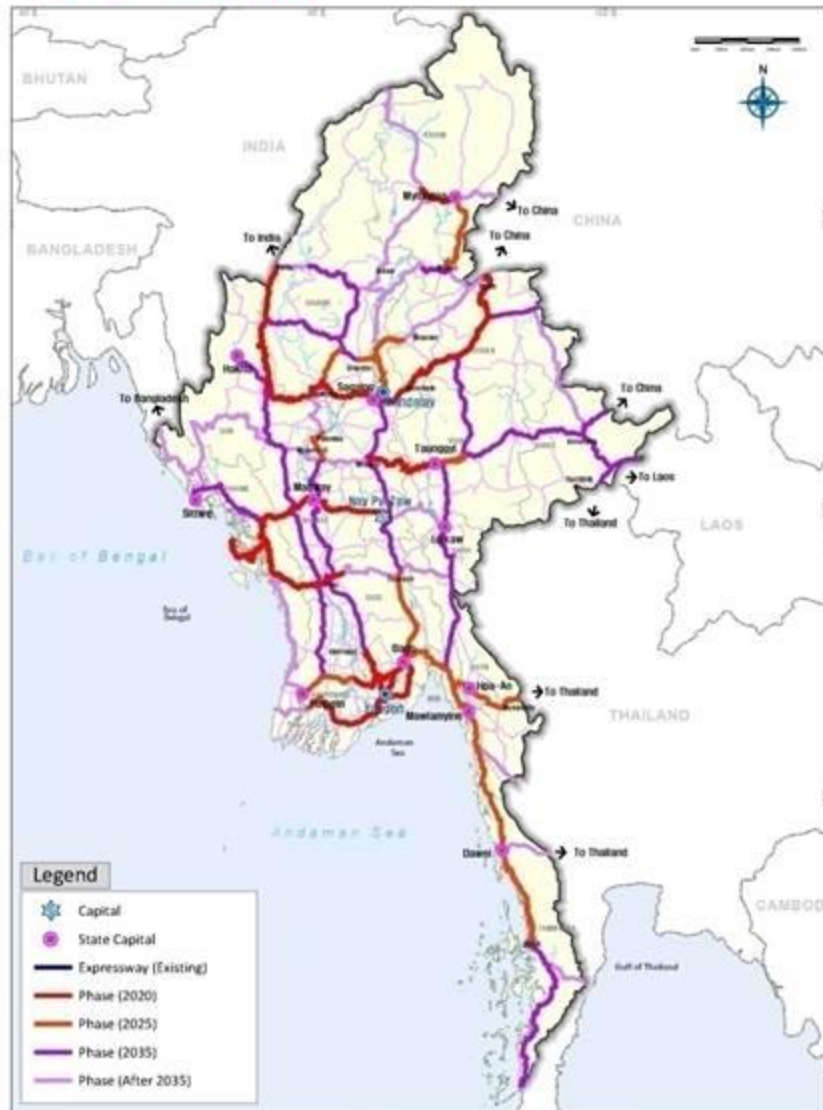


Phased Development

Expressway



Arterial Road





Equipment provided by Grant Aids of Japan

Sr.	Name of Grant Aid	Number of Equipment	Total Price (JPY)	Remark
1	Equipment for Disaster Affected Area in 2001	70	800,000,000	
2	Equipment for Kayin State, Project Grant Aid	64	558,205,670	
3	Equipment for Rakhine State, Project Grant Aid	56	576,710,000	
4	Equipment for Kachin State & Chin State, Project Grant Aid	218	2,740,000,000	In tendering process
5	Equipment for Sagaing Region	38	450,000,000	Same as above
	Total (provided)	408	5,124,915,670	
6	Equipment for Ayeyarwaddy Region & Mon State	181	1,992,000,000	Proposed
7	Equipment for Shan State	59	1,150,000,000	Proposed
	Total (proposal)	240	3,142,000,000	
	Grand Total	648	8,266,915,670	



Way Forward Projects





Ring Roads

JICA-assisted projects formulated 2 Master Plans



Strategic Urban Development Plan of the Greater Yangon (SUDP) recommends

- To outspread urban function

Comprehensive Urban Transport Plan of the Greater Yangon (YUTRA) recommends

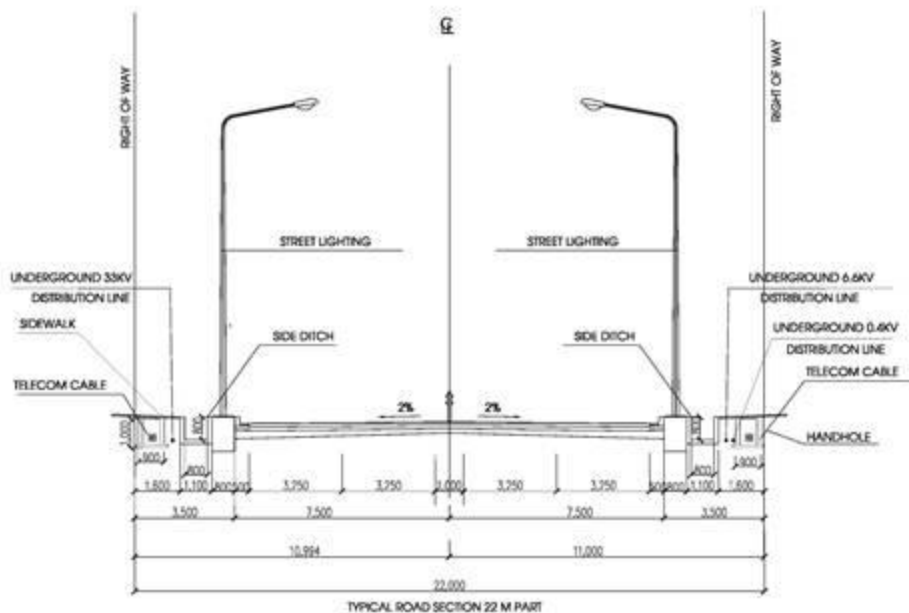
- Priority railway/roadway development projects based on SUDP





Yangon – Thilawa Road Project (8.7 km)

Japanese ODA Loan (MYP6)
With JUMP process



Roadway Cross section



**(MY P-2) (5711 Million Yen) (2018-2019 to 2021-22)**

No	State/ Region	Name of Road	Road Length which will be upgraded (Km)
1.	Kayah	Taungoo - Leik Tho - Yardo - Loikaw - Hopone Road	77.76 km
2.	Sagaing	Mandalay - Dagaung - Bhamaw - Myitkyina Road	52.96 km
3.	Bago	Taungoo - Leik Tho - Yardo - Loikaw - Hopone Road	16.64 km
4.	Magway	Gangaw - Aika Road	14.72 km
5.	Shan (S)	Taungoo - Leik Tho - Yardo - Loikaw - Hopone Road	39.20 km
6.	Ayarwaddy Rakhine	Ngathaingchaung - Gwa Road	35.82 km
7.	Shan (S)	Hanmyintmo - Myogyi - Ywangan - Aungpan Road	14.68 km

Kaladan Multimodal Transit Transport Project

**Paletwa-Setpyitpyin-Zoripui
(109.2 Km)**

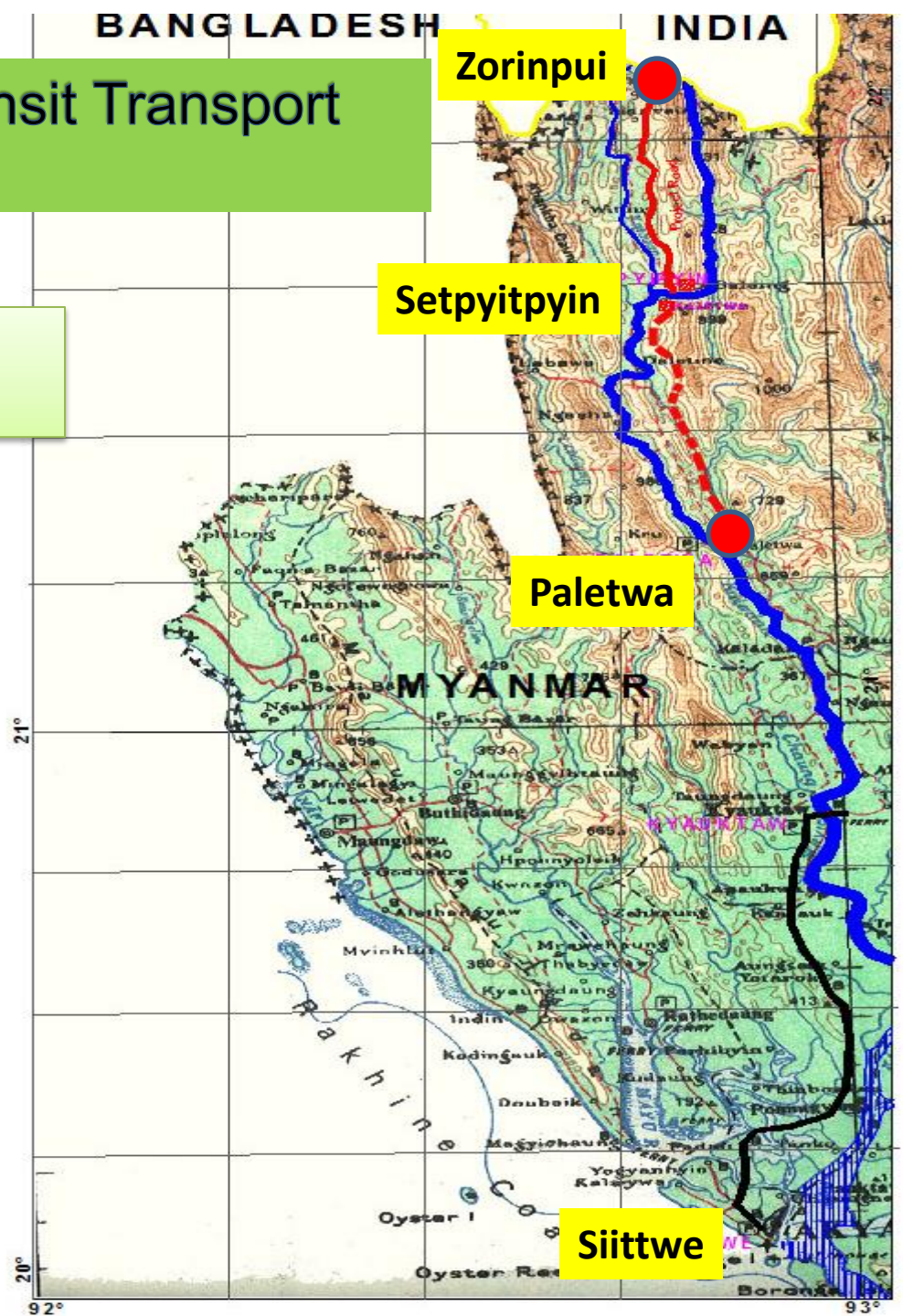
Estimated Project Cost
15,511,553,802 Rupee
(287 million US\$)

Consultant
and
Management

M/s IRCON
International Ltd.

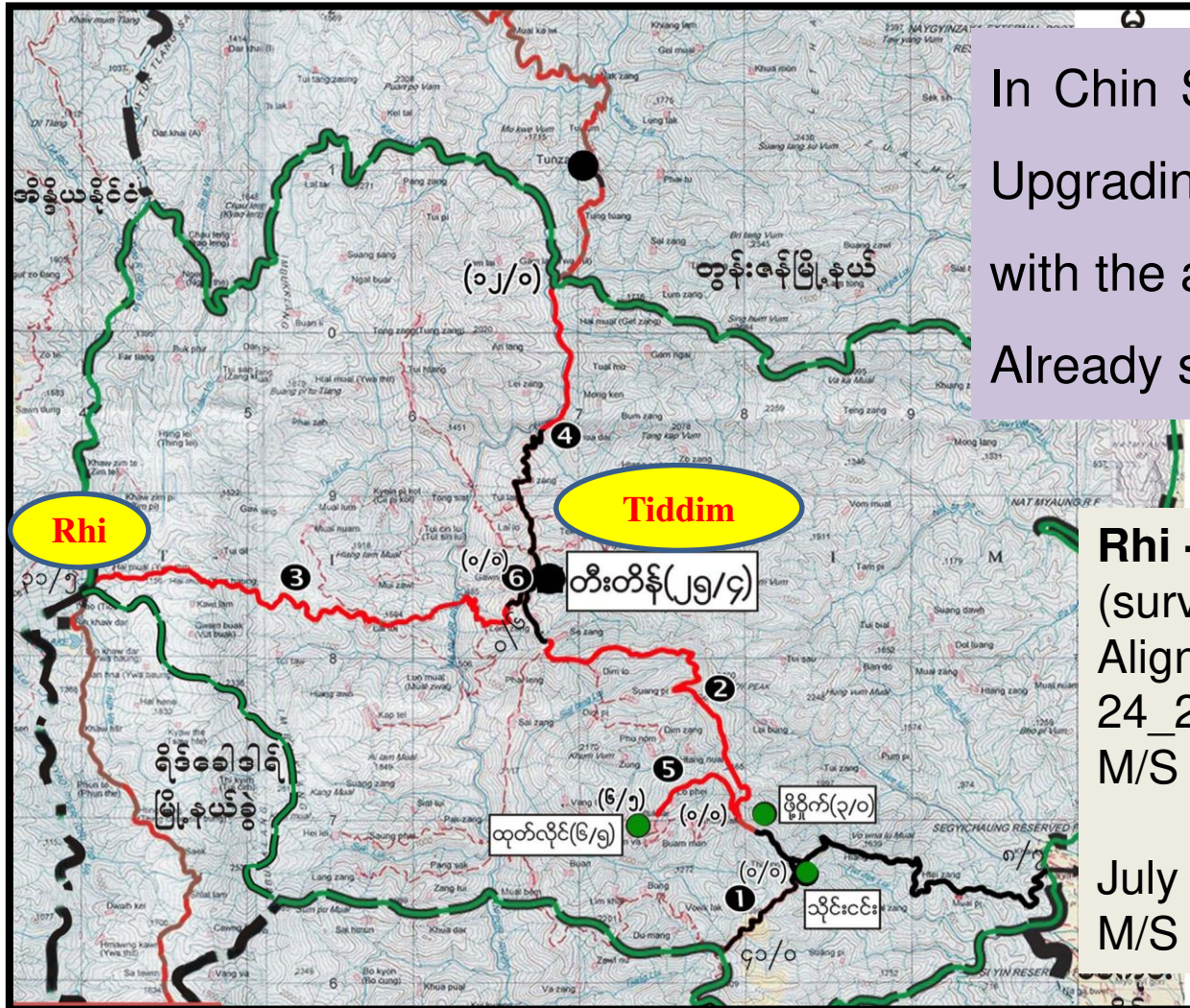
Civil work
(230 MUSD)

M/s EPIL Engineering
Project India Limited
and
C & C Construction
Company Ltd.



Rhi - Tiddim Road (Existing)

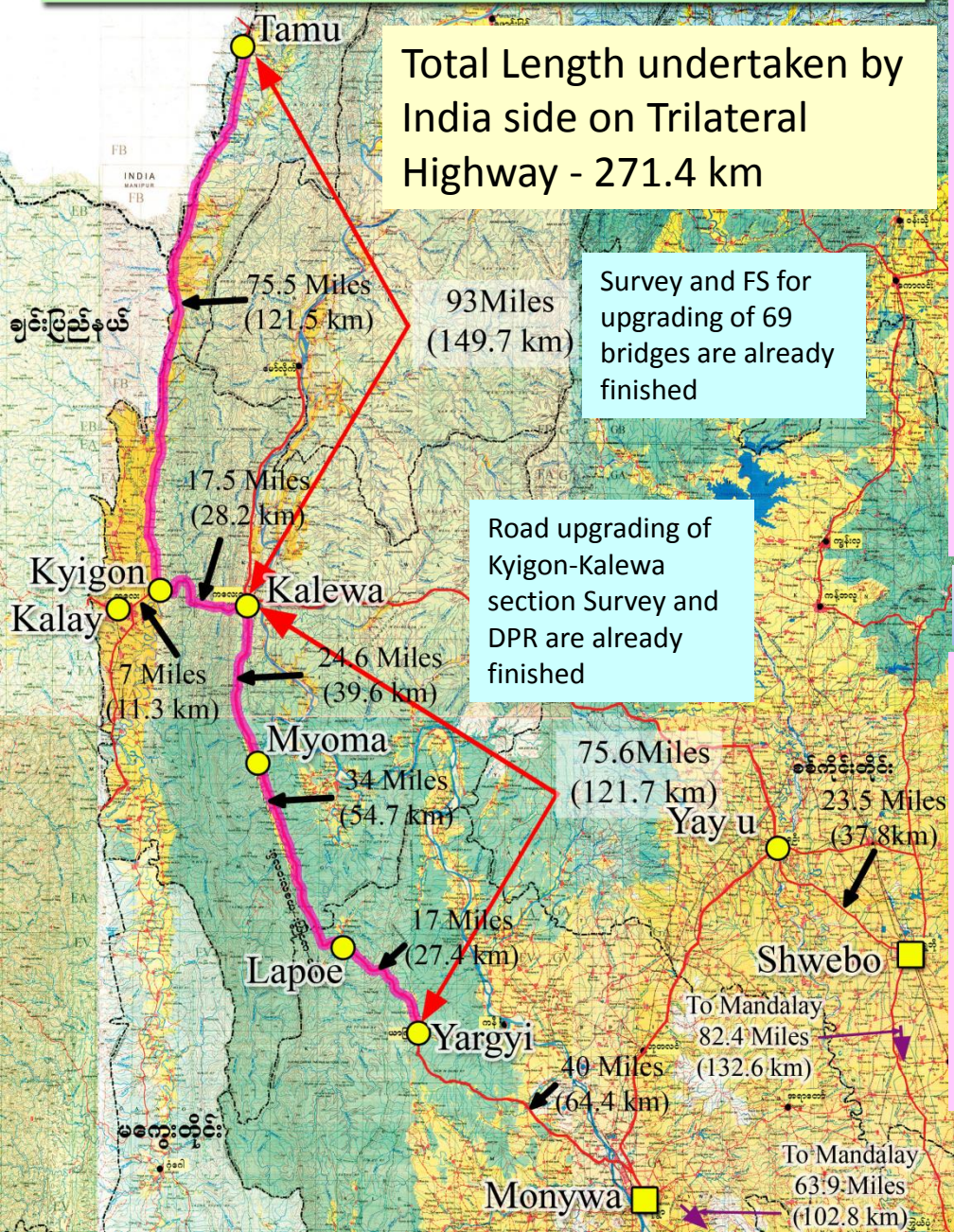
In Chin State, Rhi - Tiddim Road Upgrading Project (~ US \$ 60 M) with the aid of India Already signed the MoU



Rhi - Tiddim Road
(survey existing - 0/6-32/3, New Alignment 47 miles)
24_27.2.2014
M/S Rites Ltd.

July 2015 New Alignment
M/S IRCON Int. Ltd.

Road Portion Implementing and Planned to be Implemented by India



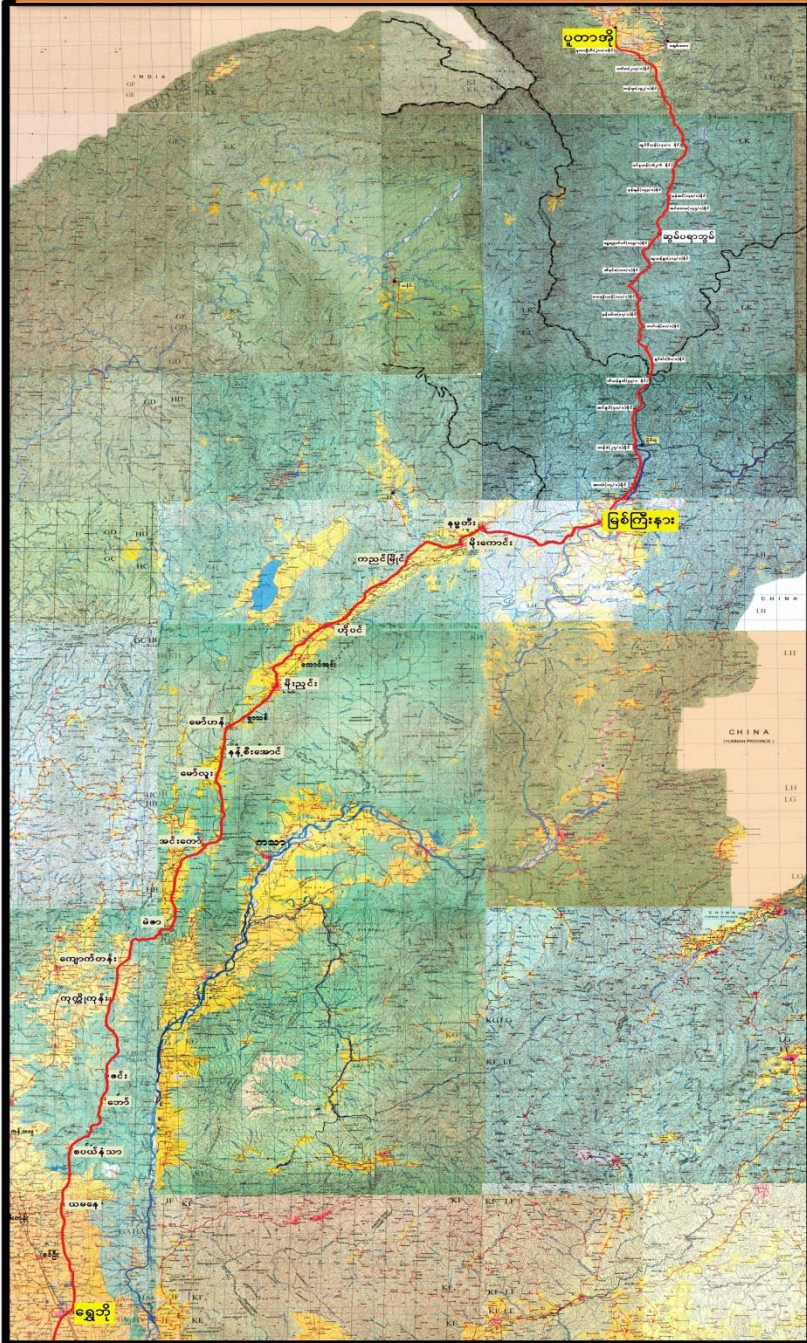
Current Status of Tamu-Kalewa Road

- Survey and FS for Upgrading of 69 bridges on the road
- Survey was started on May, 2014 until July, 2014 by M/s IRCON. DPR was already received.
- Kyigon-Kalewa Portion (17/4 miles)
- Road Upgrading has been carried out by BRO since 2010. In 2015 already finished.

Current Status of Yargyi-Kalewa Road

- Survey and DPR
- Survey was started on May, 2014 until July, 2014 by M/s Egis India Consulting Engineers Pvt. Ltd. DPR was already received.

Shwebo – Myitkyina – Sunprabon – Putao Road 507Miles



**India EXIM Bank
Under 140 million loan**

Upgrading Project (120 MUSD)

NanSiAung – Myitkyina section (121 mile)

Myitkyina – Putao section(218 mile)

**FS made by WAPCOS Co., Ltd
with India Grant**

Maungtaw-Kanyintan-Alethankyaw-Agnumaw Road 49/6 Miles



**India EXIM Bank
Under 140 million loan**

Upgrading Project (20 MUSD)

**FS made by M/s IRCON Int. Ltd.
with India Grant**



Six Package Priority

ပြည်ထောင်စု မြန်မာနိုင်ငံတော်

တိုင်းဒေသကြီးနှင့် ပြည်နယ်မြေပုံ



Mandalay – Myitkyina Expressway

Length – approximately 460 km

4 lane rigid pavement

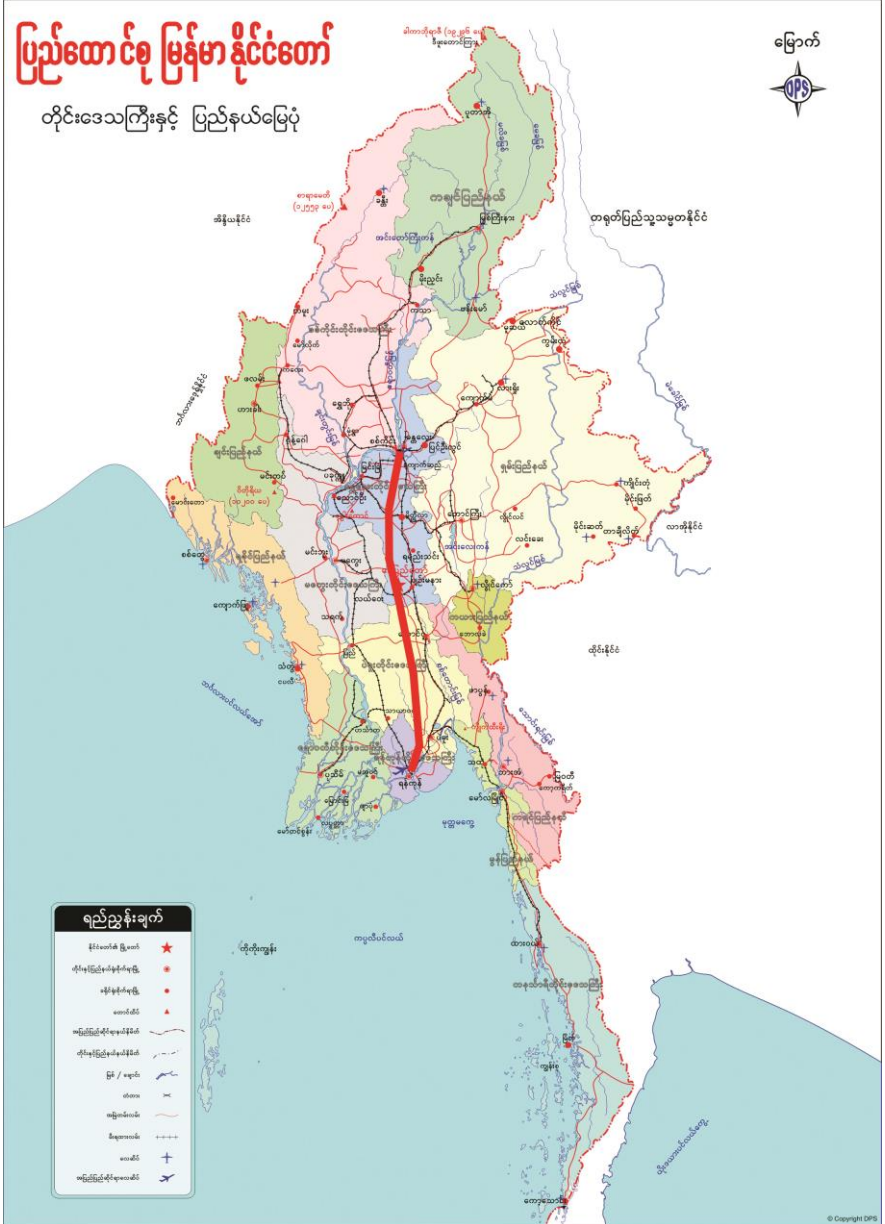
Estimated Cost - US\$ 1870 Millions



Six Package Priority

ပြည်ထောင်စု မြန်မာနိုင်ငံတော်

တိုင်းဒေသကြီးနှင့် ပြည်နယ်မြေပုံ



Yangon – Mandalay Expressway

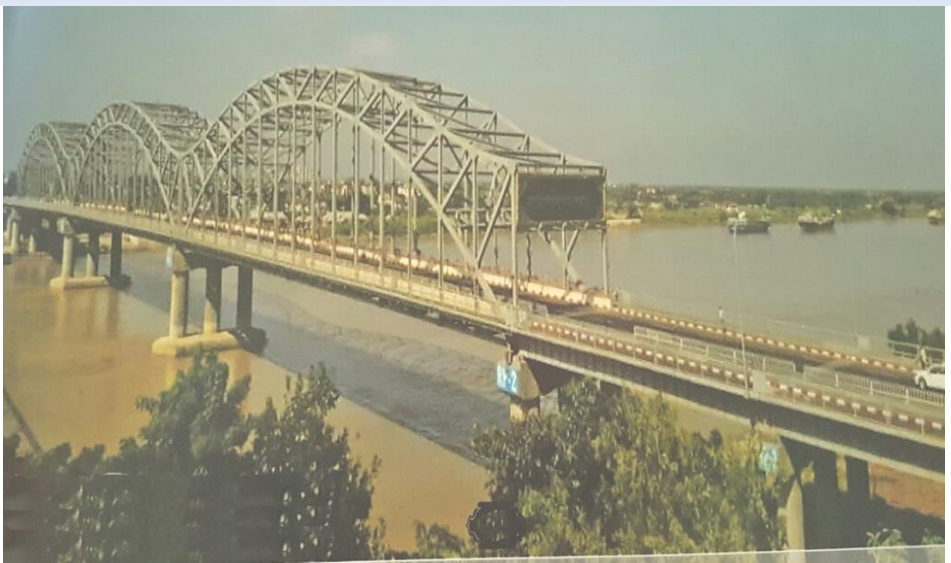
Length – approximately 589 km

4 lane rigid pavement

Estimated Cost - US\$ 560 Millions



Bridge Developments



Ayeyarwaddy Bridge (Pakokku)

Bayintnaung Bridge



Pathein Bridge

Yadanar Theinkha Bridge

Bridge Constructed by Department of Bridge

Sr	State / Division	180 Feet and above Length Bridges
1	Kachin State	33
2	Kayah State	8
3	Kayin State	18
4	Chin State	4
5	Sagaing Division	54
6	Tanintharyi	23
7	Bago Division	41
8	Magwe Division	57
9	Manadalay Division	24
10	Mon State	9
11	Rakhine State	49
12	Yangon Division	38
13	Shan State (East)	8
14	Shan State (South)	10
15	Shan State (North)	16
16	Ayeyarwady Division	98
17	NayPyiTaw	6
	Total	496

Ayeyarwaddy Bridge (Yadanarpon)



Thanlwin Bridge (Chaung Sone)



Image of New Gyaing (Kawkareik) Bridge



Image of New Gyaing (Zathapyin) Bridge



Image of New Attayan Bridge



Bago River Bridge

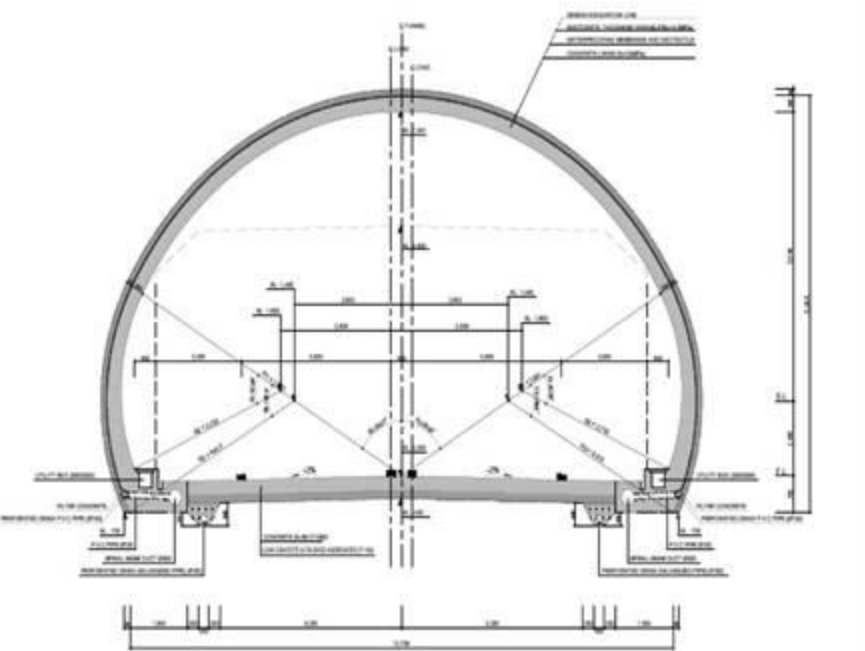


Goat Twin Bridge to be Implemented by PPP Scheme at Mandalay-Lashio-Muse Road

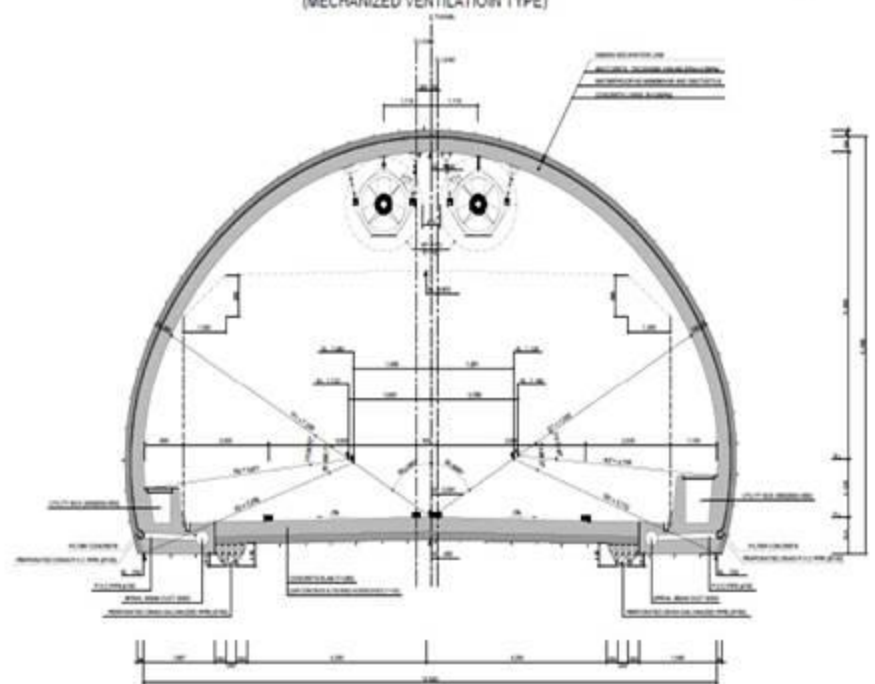


Pontaung –Ponnya Tunnel Projects (Proposal)

TUNNELS (01)
TYPICAL CROSS SECTION (1/2)
(NATURAL VENTILATION TYPE)



TUNNELS (02)
TYPICAL CROSS SECTION (2/2)
(MECHANIZED VENTILATION TYPE)





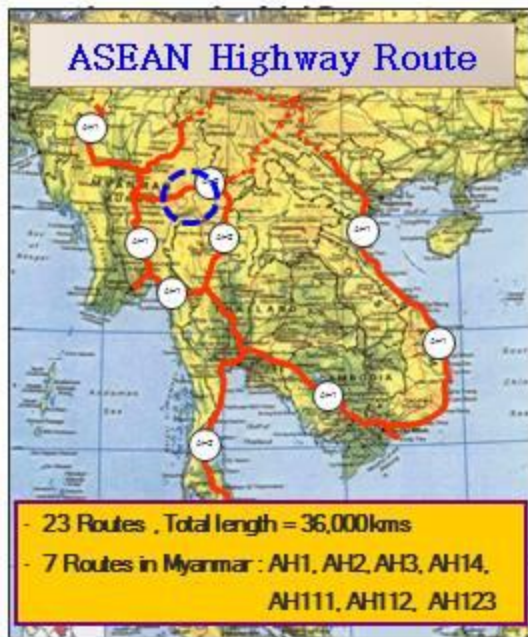
Watalone Tunnel in Shan State (Bi – Directional Tunnel)

Project Purpose

• A Feasibility study for tunnel construction of poor route road section located in mountains among comprehensive transportation environment Improvement plan which orders from Ministry of Construction(MOC).

Background

- The external aim of Myanmar government is playing a central role in land logistics through connected to Southwest Asia and Southeast Asia.
- Improvement of Social, economical conditions for Hill tribes living in mountains and the areas that passes



WATALONE Tunnel in Shan State



Contents • Satisfying geometric requirements → good road function, small number of structures(2,960m)

Total Length : 8.41 km
Normal Section : 5,447 m

Bridges : 10 nos (L=560m)
Tunnels : 1 nos (L=2,400m)

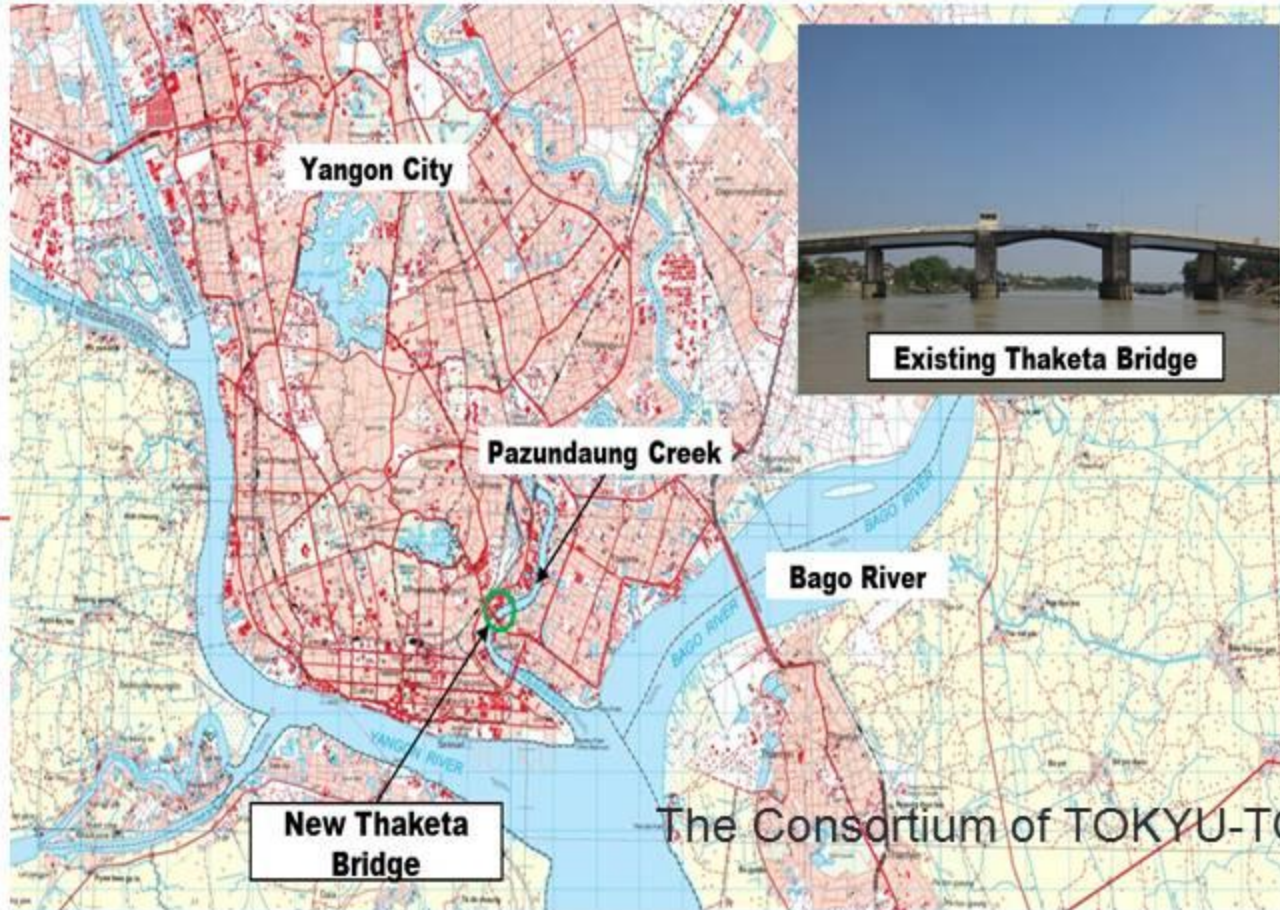
Driving Time : 8.4 min
Construction Cost : 96.8 million US (\$)

Project Proposal of Road and Bridge for First (5) Years Plan of MOC

No	Region/State	Project Proposal		Remark
		Length of Road (km)	No of Bridges	
1.	Kachin State	1116	23	
2.	Kayah State	156	-	
3.	Kayin State	575	29	
4.	Chin State	1206	5	
5.	Sagaing Region	2036	116	
6.	Thanintharyi Region	480	109	
7.	Bago Region	588	8	
8.	Magwe Region	119	1	
9.	Mandalay Region	959	6	
10.	Mon State	366	-	
11.	Rakhine State	620	24	
12.	Yangon Region	226	3	
13.	Shan State	2440	55	
14.	Ayeyarwady	185	-	
	Total	11072	379	



Thaketa Bridge in Yangon Region



The Consortium of TOKYU-TOYO-IIK





Thaketa Bridge





Conclusion



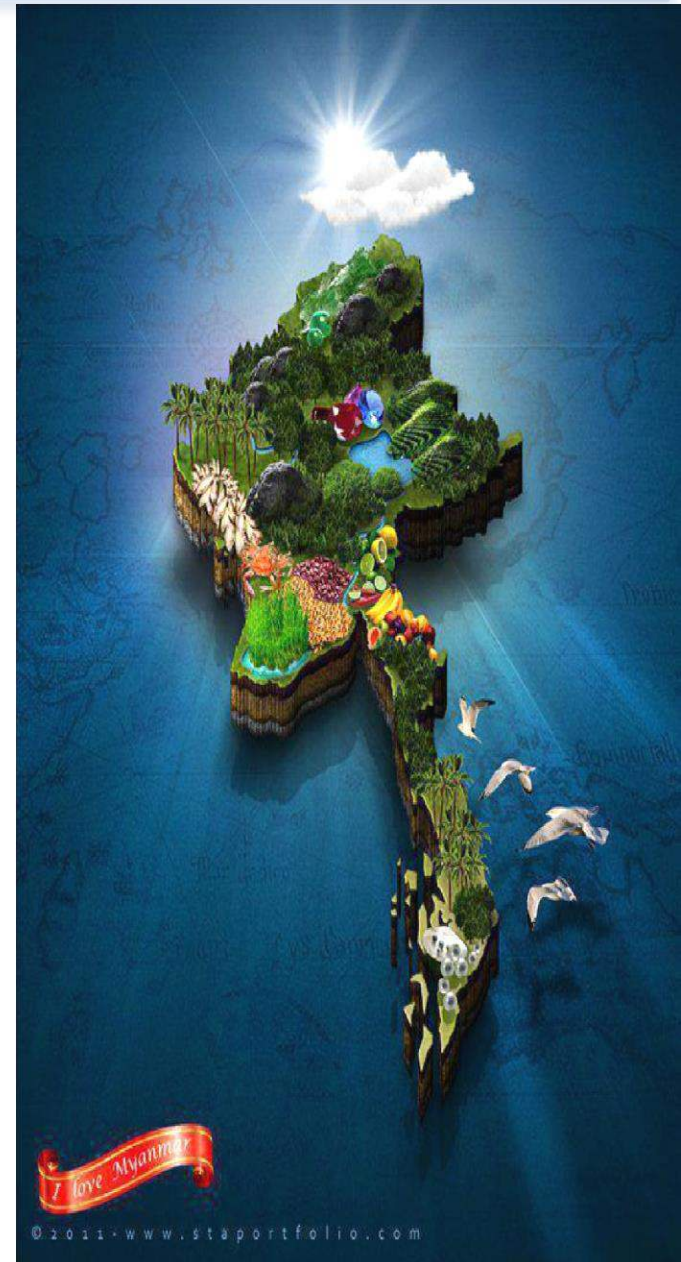


The investment in
the basic transport infrastructure
such as
roads and bridges
are the main pillar for
the development of Political and Socio-
economic welfare of the nation

To gain the momentum on
systematic development,
Ministry of Construction



set the policy as the first priority





www.ministryofconstruction.org

THANK YOU FOR YOUR KIND ATTENTION

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