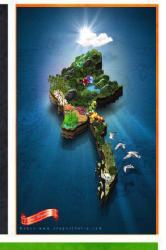






Current Status and Way Forwards in Road Infrastructure of Myanmar





Ei Ei Myo
Deputy Director,
Department of Highways



Contents

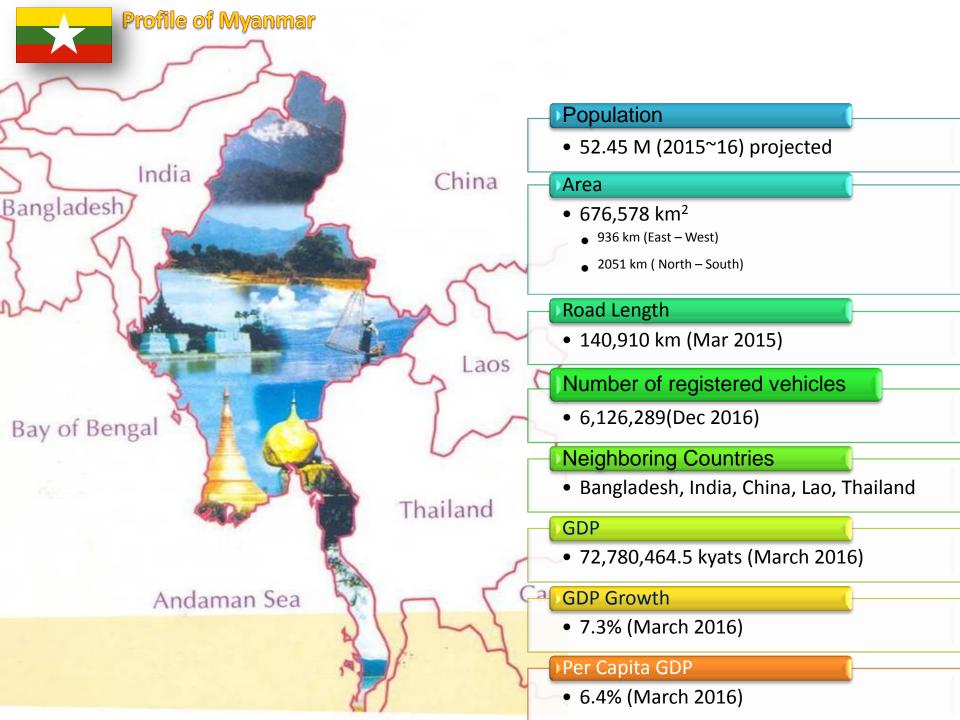
- Profile of Myanmar
- Road Administration Organizations
- Overview of Road Network
- Accessibility & Mobility
- Public Private Partnership
- Way Forward Projects
- Conclusion





Profile of Myanmar

AN MANAGEMENT AND MAN





City Profile

YANGON



600 sq-km Area

7.0 million (2010) **Population**

1.69 % (2010) **Growth Rate**

MANDALAY *



120 sq-km Area

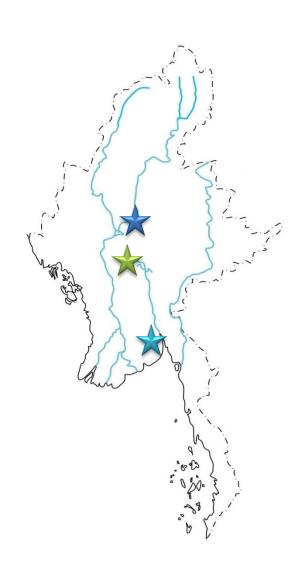
Population 1.0 million (2010)

NAY PYI TAW 🖈

7,057 sq-km Area

Population 1 million

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





Road Administration Organization

AND MANUEL MANUE



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



784.43

432.70

1217.13

705.68

393.47

92.34

1916.27

39.14

770.83

5134.86

Highways

Ministry of Progress

Livestock, Fisheries

Ministry of Defense

Electricity & Energy

City Development Committees

of Border Areas

Ministry of

and Rural Development

Ministry of

Yangon

Mandalay

Naypyitaw

Grand Total

Others

2

3

4

5

6

8

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

20347.28

20226.08

40573.36

14842.78

65601.11

11330.29

1124.10

4478.27

1151.95

1807.33

140910.19

No	Organization	Concrete	Bitumen	Metal	Gravel	Earth	Mule	Total
1	Ministry of Construc	ction						

1501.68

2812.05

4313.73

5782.30

11806.63

1340.95

542.13

121.74

98.41

24005.89

2146.4

2817.48

4963.88

170.59

97.97

556.69

5789.13

1934.28

4895.39

6829.67

8167.12

50062.91

8722.31

303.15

1121.48

237.4

176.47

75620.51

259.70

259.70

259.7

13980.43

9008.76

22989.25

893.36

3025.89

703.97

88.50

1440.52

753.67

204.93

30100.10



Overview of Road Network



Ministry of Construction

UNION MINISTER
DEPUTY MINISTER

PERMANENT SECRETARY

DIRECTOR GENERALS for



Department of Highways

Department of Bridge

Urban and Housing Development

New Setup



Department of Rural Road Development



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.



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



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.

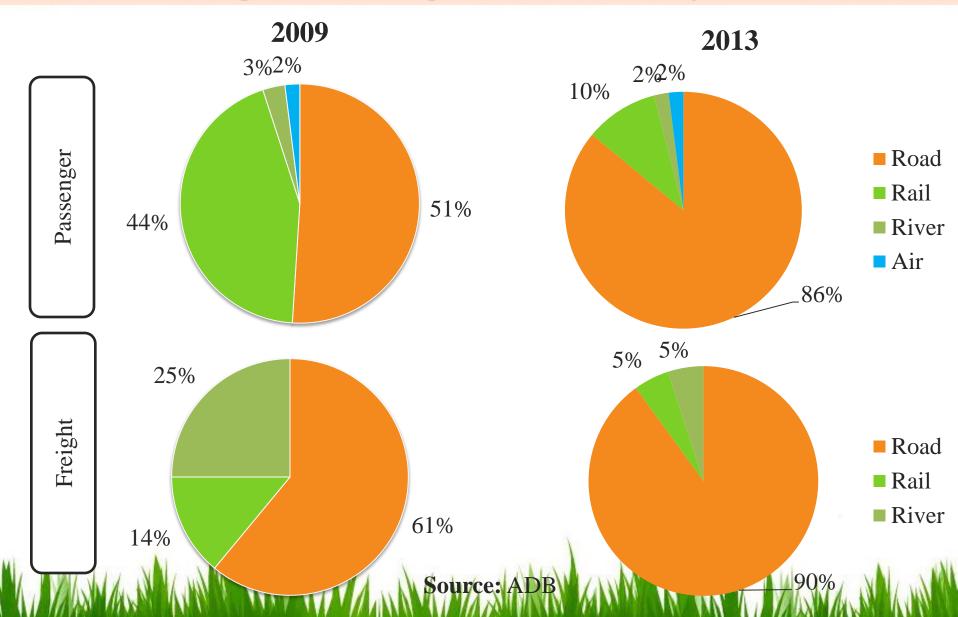


History of 30 Year Plan

- 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





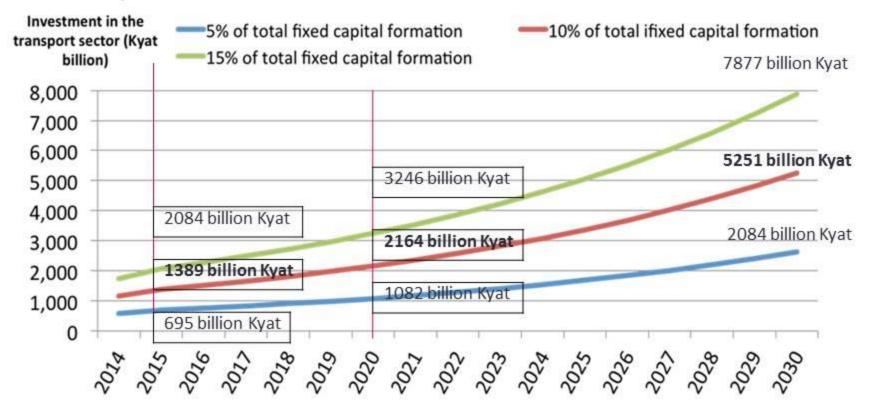
Investment Expenditures in the Transport Sector

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

16.093

131.162

100.383

343.595

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

Bago

Mon

Magway

Mandalay

Yakhine

Yangon

Shan(South)

Shan(North)

Shan(East)

Ayeyarwady

Naypyitaw

Y-M Exway
Grand Total

19.413

0.604

48.783

0.604

123,618

268.157

0.805

24.542

43.050

78.254

489.241

1362.512

735,470

1472.047

635.188

326.898

951.726

198.855

2268.270

1766.255

647.560

1002.420

14014.26

92.537

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

								-		
	Region/				Bitumen					
No	State	AC	Concrete	Up to 12'	Up to 22'	Over 24'	Metal	Gravel	Earth	Total
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	9	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

460.976

1459.172

1016.502

272.080

77.047

356.369

541.041

180.247

181.152

805.678

114.465

7428.531

479.283

98.371

615.976

337.359

13.679

167.674

131.262

395.396

99.176

151.982

88.313

3473.06

5

194.529

225.811

13.780

433.014

117.884

458.361

246.028

81.574

3741.42

79.160

253.069

57.333

11.869

167.171

317.544

987.031

361.599

418.631

100.081

5304.500

4.225

74.332

19.916

48.683

1.811

121.103

31.181

481.496

1163.455

233.355

314.224

5486.255

0.805

2043.163

3528.990

2436.245

950.620

1903.451

1026.461

3858.302

5081.907

1793.412

2817.559

474.455

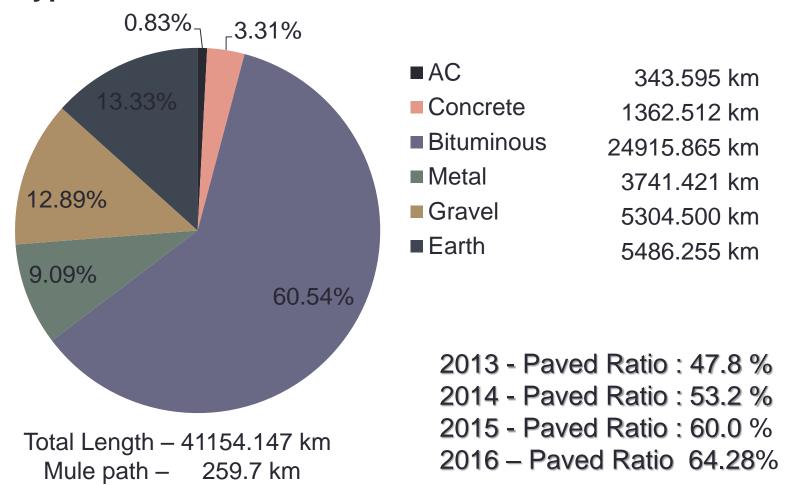
589.624

41154.14



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

Types of Road under MoC



Here Paved refers only to AC, Concrete and Bituminous only



Accessibility and Mobility

AND MANUEL MANUE



Road Sector Developments





Pathein – Monywa Highway

Yangon – Mandalay Expressway



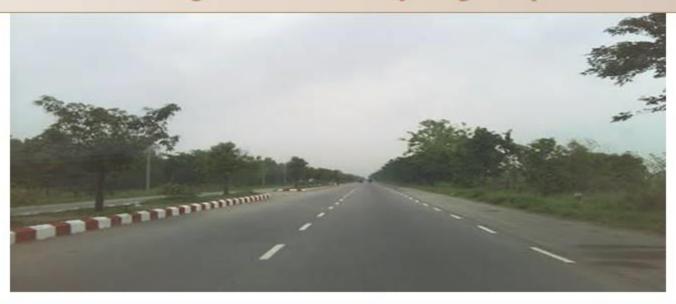
Minbu – Ann Highway



Dala – Twantay Access Road



Yangon - Mandalay Highway



Payagyi - Thahton Section



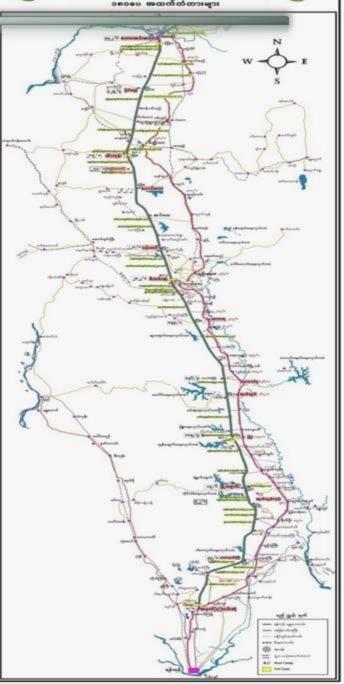


Yangon - Mandalay Expressway

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
2,400	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) Mongia Chiltagong

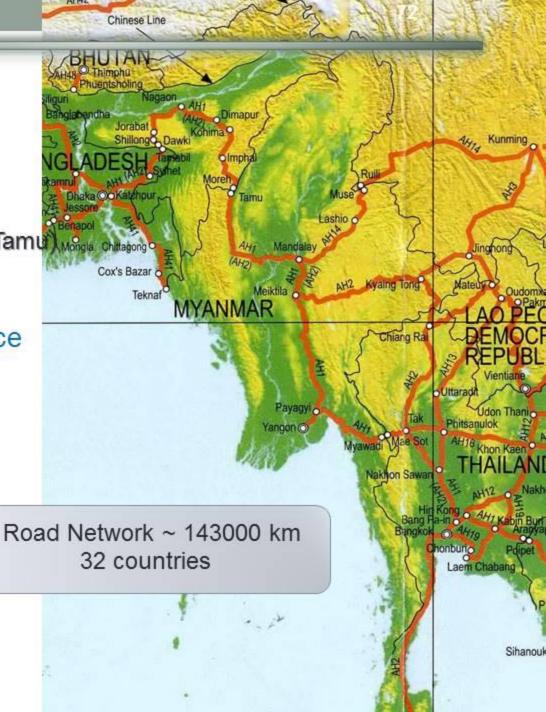
AH2 ~ 804.269 km (w/o including overlapping distance with AH1)

(Tachileik – Meikhtila – Tamu)

AH3 ~ 90.123 km (Mongla – KyaingTong)

AH14 ~ 460.272 km (Muse - Mandalay)

Approximate total length of roads inside Myanmar – 2932 km



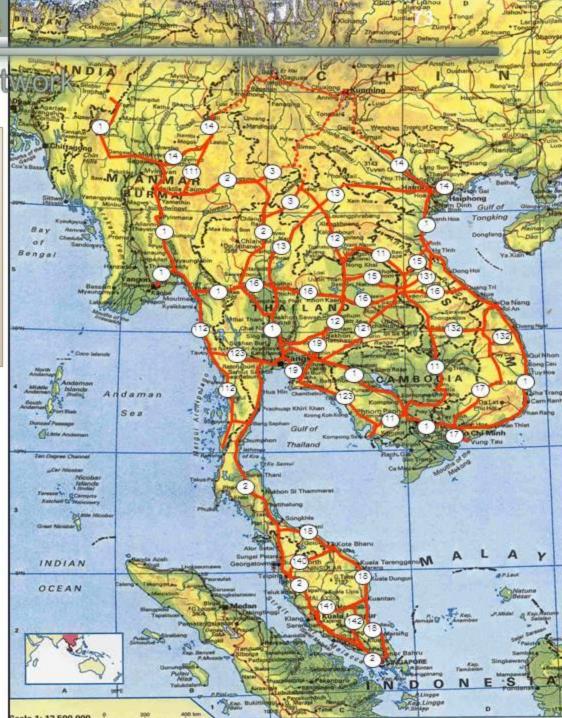
ASEAN Highway Net

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



111.5

83.0

India

China

3.9

62%

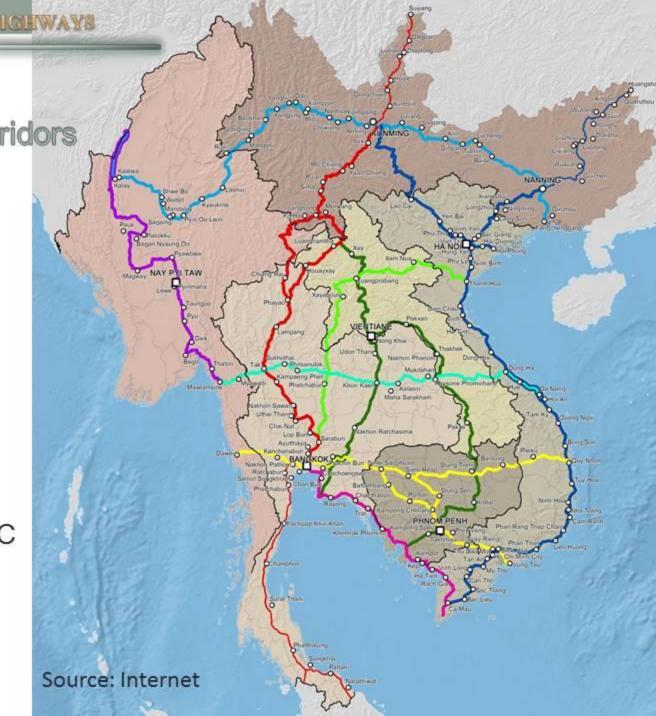
3.0 49.60%

19.3



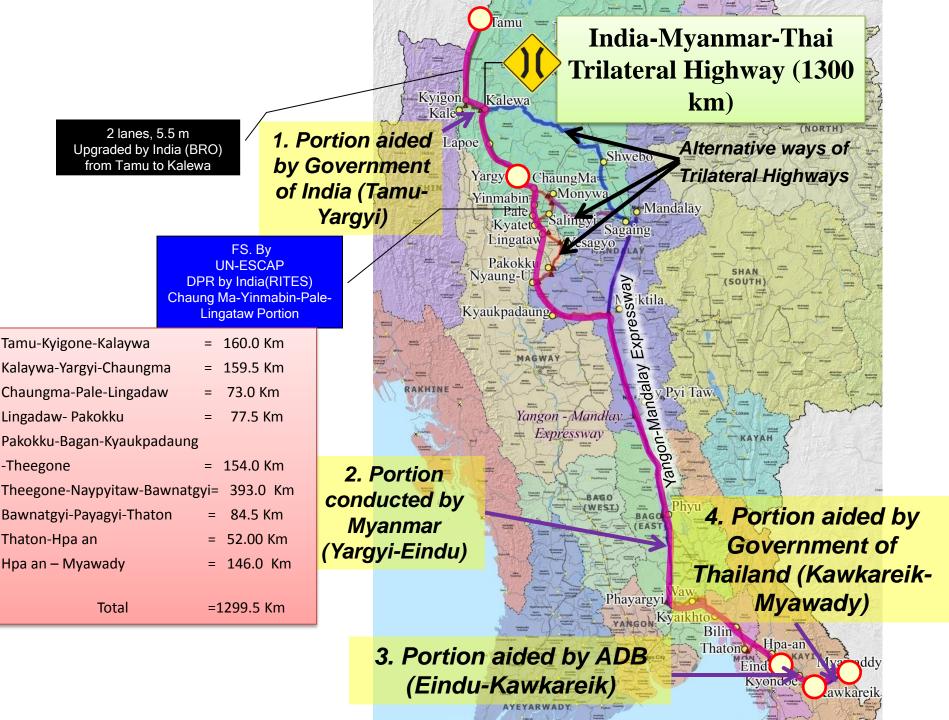
GMS Economic Corridors

- North South EC
- Northern EC
- North Western EC
- East West EC
- Southern EC
- North Eastern EC
- Eastern EC
- Central EC
- Southern Coastal EC



Land Plot Allocations for Development of Terminals at Thilawa SEZ

1 ₂ ,		512	-			
X	61	View.	1.	Developed	10	Plots
	1912		2.	Under Construction	5	Plots
	13		A	(GC Terminal)		
	()	167	3.	Under Construction	10 1/3	Plots
		19 -20 -21	5	(Tanker Berth)		
		22 23	4.	Under Construction	$5^{2}/_{3}$	Plots
		24 25 26	5	(Grains Terminal)		
1		27 28 28	5.	MPA(ODA Loan)	5	Plots
1		30	6.	Liquid Bulk Terminal	1	Plots
	34 35					



-Theegone

Thaton-Hpa an



Public-Private Partnership

AND MANUAL MANUA



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
- (1) Diamond Palace Company (293.9 km)

Companies

- (2) (Asia World) Oriental Highway Company (216.3 km)

Under BOT scheme (as of 29th September 2016)

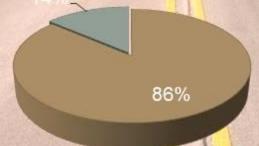
Number of local companies — 26 companies

Number of roads

- 64 roads

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

MIC permit-60 roads

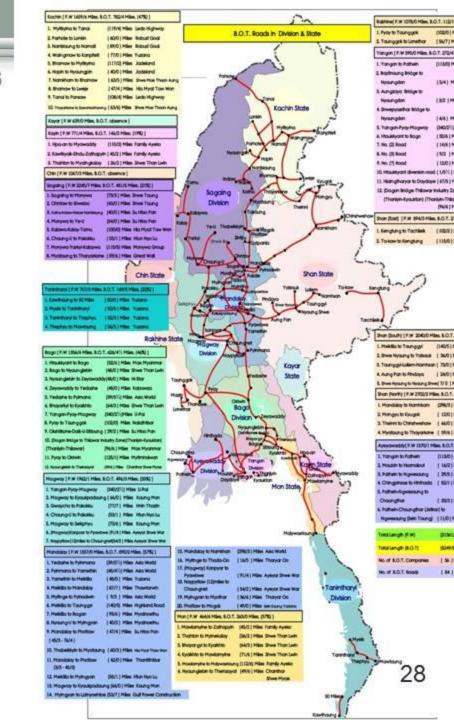


■ Roads managed by MoC (exclude BOT)



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

(20) 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



Center to Center Connection

Multimodal Transport Connectivity

International Linkage

Hierarchical Road Network Development

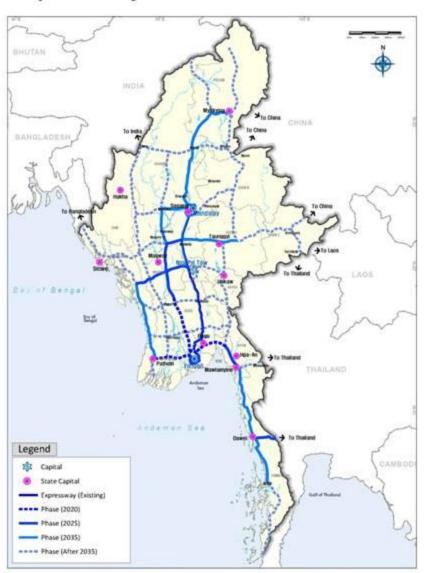
> Topographical Consideration

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

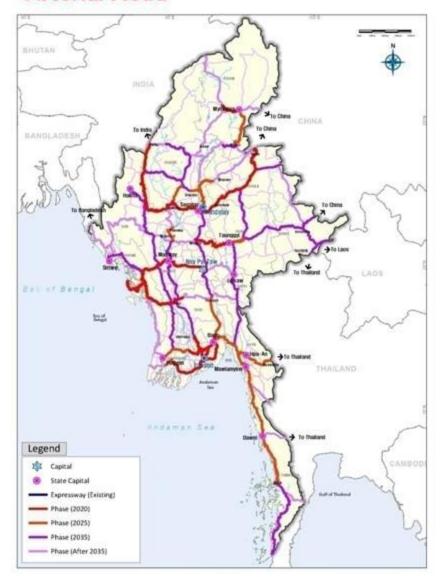


Phased Development

Expressway



Arterial Road





5

6

MINISTRY OF CONSTRUCTION

Equipment provided by Grant Aids of Japan

Sr.		Number of Equipment	Total Price (JPY)	
1	Equipment for Disaster Affected Area in 2001	70	800,000,000	

Equipment for Kayin State, **Project Grant Aid** Equipment for Rakhine State,

Equipment for Sagaing Region

Equipment for Ayeyarwaddy

Equipment for Shan State

64 56

38

408

181

59

240

648

558,205,670 576,710,000

Project Grant Aid Equipment for Kachin State & 4

Total (provided)

Total (proposal)

Grand Total

Region & Mon State

218 Chin State, Project Grant Aid

2,740,000,000 In tendering process

450,000,000

5,124,915,670

1,992,000,000

1,150,000,000

3,142,000,000

8,266,915,670

Remark

Same as above

Proposed

Proposed



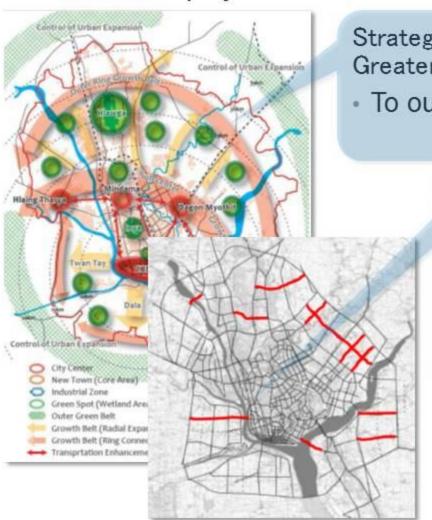
Way Forward Projects

AN MANAGEMENT AND MAN



Ring Roads

JICA-assisted projects formulated 2 Master Plans



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

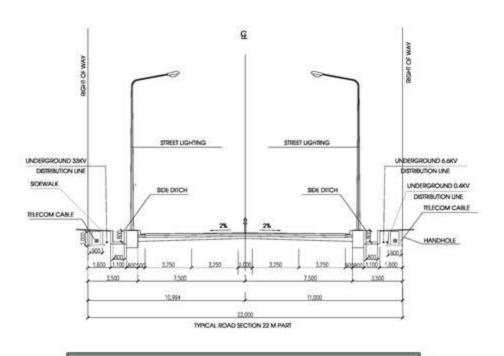
To outspread urban function

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

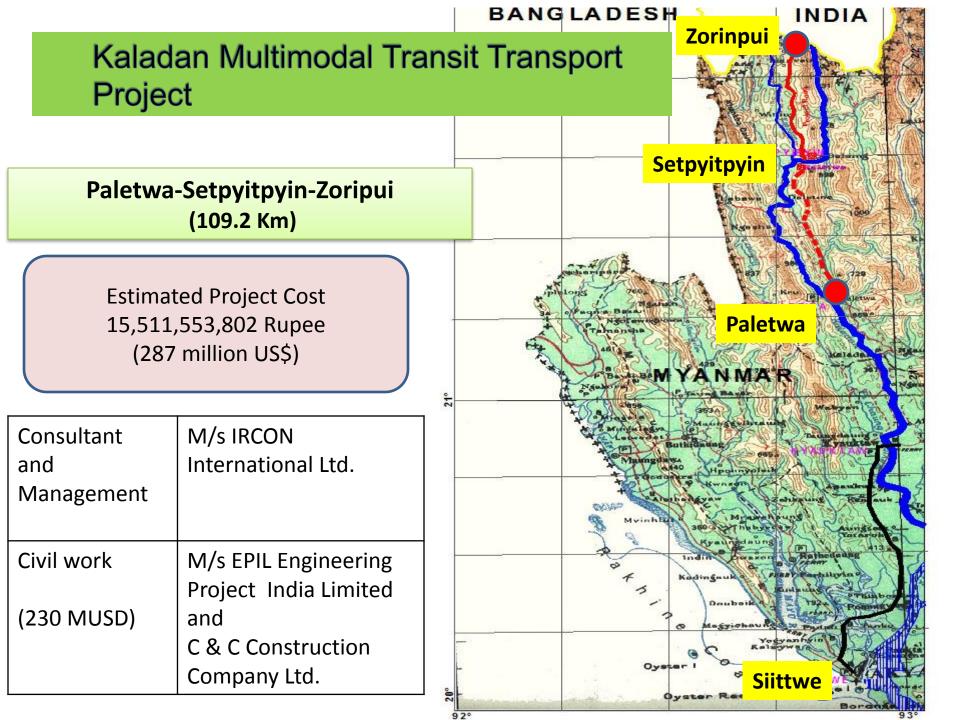




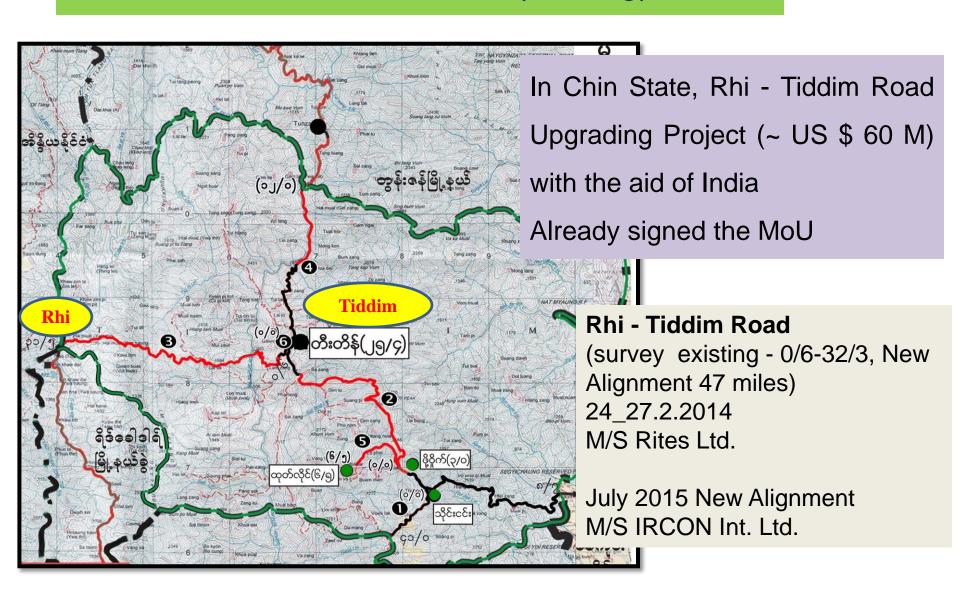
Japanese ODA Loan for Poverty Reduction

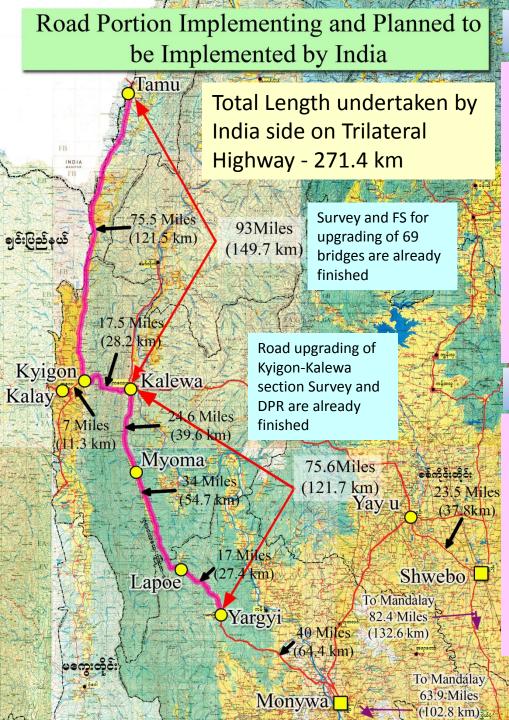
(MY P-2) (5711 Million Yen) (2018-2019 to 2021-22)

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



Rhi - Tiddim Road (Existing)





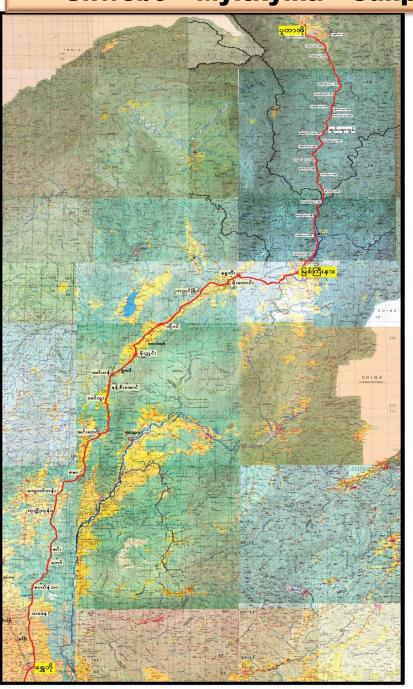
Current Status of Tamu-Kalewa Road

- -Survey and FS for Upgrading of 69 bridges on the road
- Kyigon-Kalewa -Portion (17/4 miles)
- Survey was started on May, 2014 until July, 2014 by M/s IRCON. DPR was already received.
- Road Upgrading has being 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 wasalready 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





Mandalay – Myitkyina Expressway

Length – approximately 460 km

4 lane rigid pavement

Estimated Cost - US\$ 1870 Millions





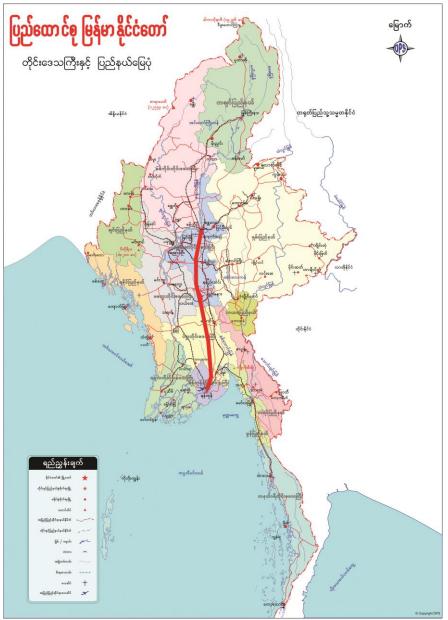
Thilawa – Thanatpin – Kyeikhto Road

Length – approximately 135 km

4 lane rigid pavement

Estimated Cost - US\$ 135 Millions





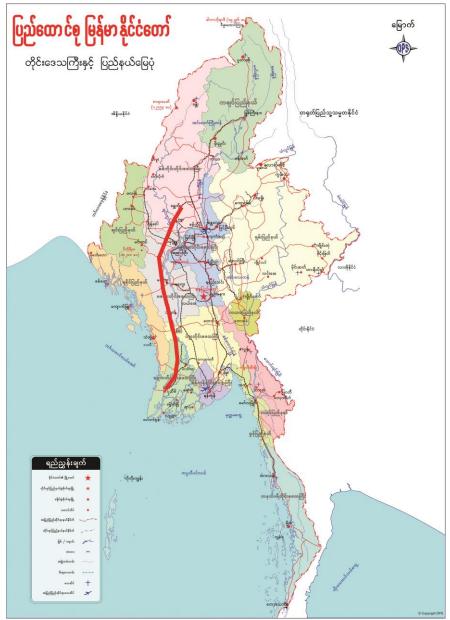
Yangon – Mandalay Expressway

Length – approximately 589 km

4 lane rigid pavement

Estimated Cost - US\$ 560 Millions





Pathein – Monywa – Shwebo Road

Length – approximately 811 km

4 lane rigid pavement

Estimated Cost - US\$ 2028 Millions





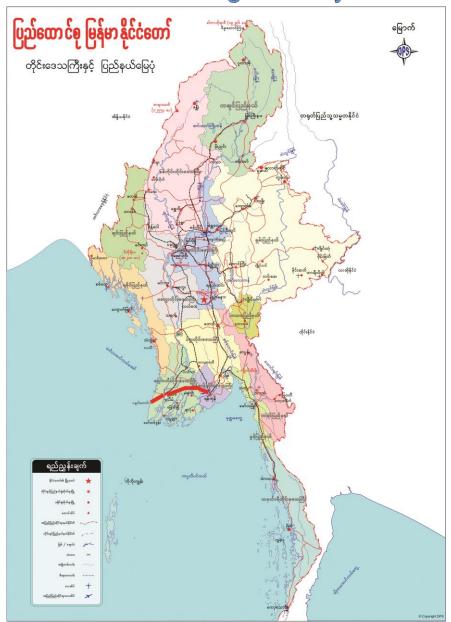
Minbu – Ann- Kyaukphyu Road

Length – approximately 350 km

4 lane rigid pavement

Estimated Cost - US\$ 875 Millions





Yangon – Pathein – Ngayokekaung Road

Length – approximately 304 km

4 lane rigid pavement

Estimated Cost - US\$ 760 Millions





Bridge Developments



Ayeyarwaddy Bridge (Pakokku)

Bayintnaung 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)



Image of New Gyaing (Kawkareik) Bridge



Image of New Gyaing (Zathapyin) Bridge



Image of New Attayan Bridge



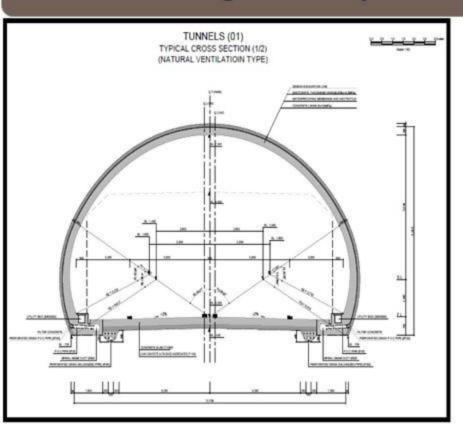
Bago River Bridge

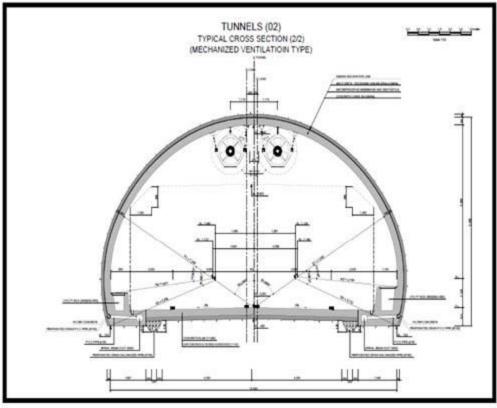


Goat Twin Bridge to be Implemented by PPP Scheme at Mandalay-Lashio-Muse Road



Pontaung –Ponnya Tunnel Projects (Proposal)





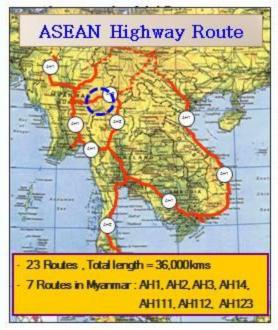


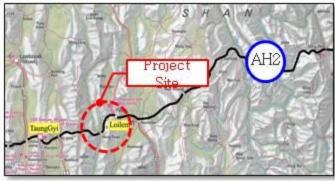
Watalone Tunnel in Shan State (Bi - Directional Tunnel)

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



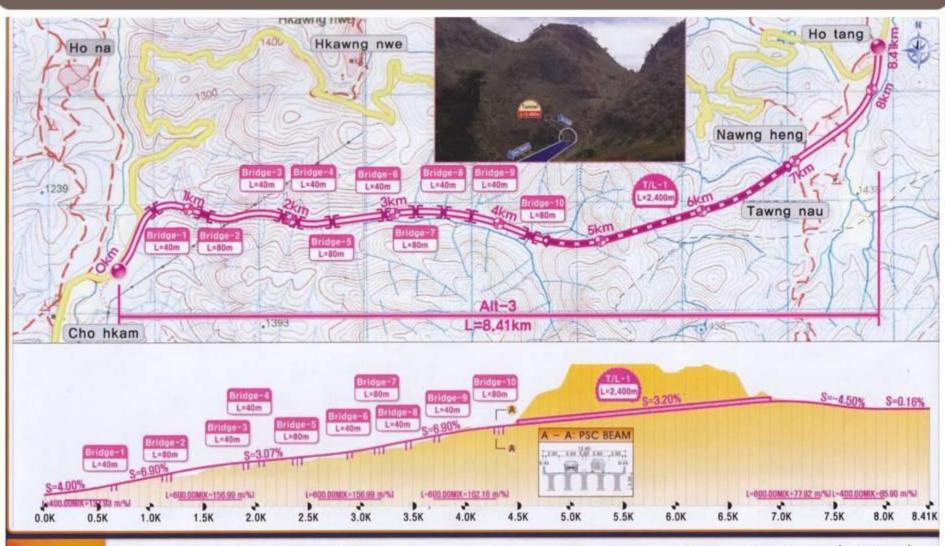








WATALONE Tunnel in Shan State



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

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

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





Thaketa Bridge





Conclusion



The investment in the basic transport infrastructure

such as

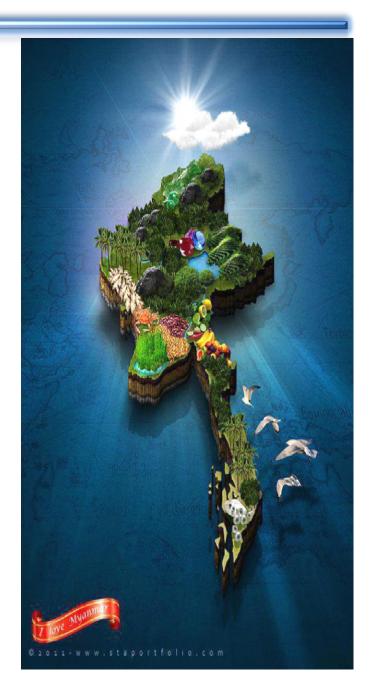
roads and bridges
are the main pillar for
the development of Political and Socioeconomic welfare of the nation

To gain the momentum on systematic development,

Ministry of Construction



set the policy as the first priority



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THANK YOU FOR YOUR KIND ATTENTION

Contact Address:

MINISTRY OF CONSTRUCTION Office No.(11), Naypyitaw. Myanmar