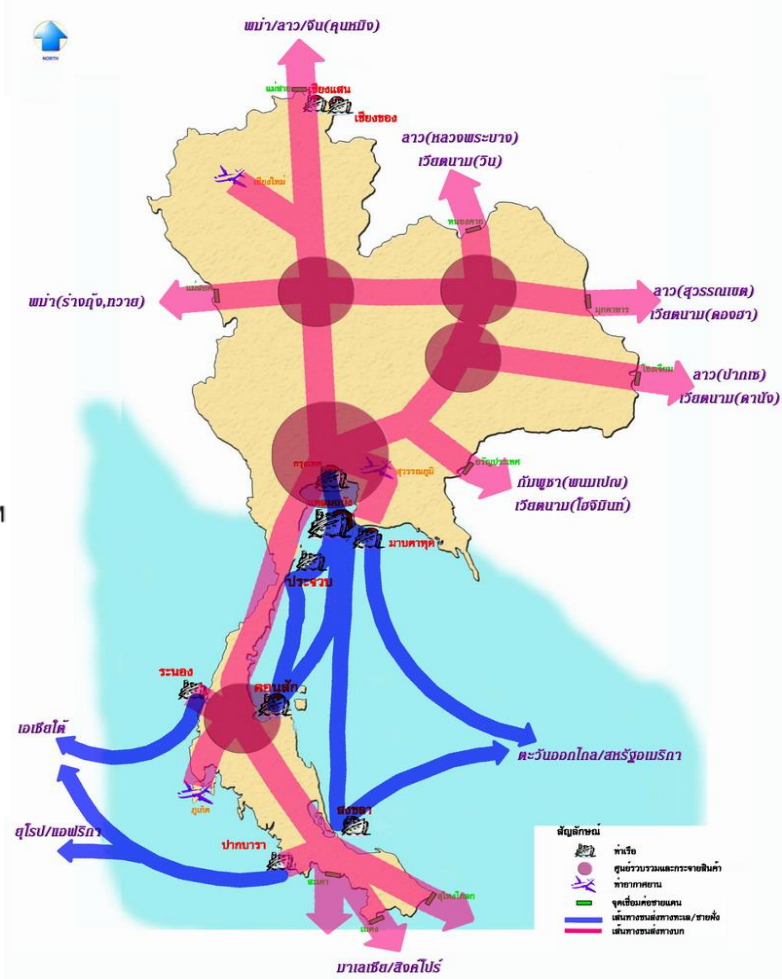
Office of Transport and Traffic Policy and Planning

Thailand's Transport Infrastructure Development Strategy

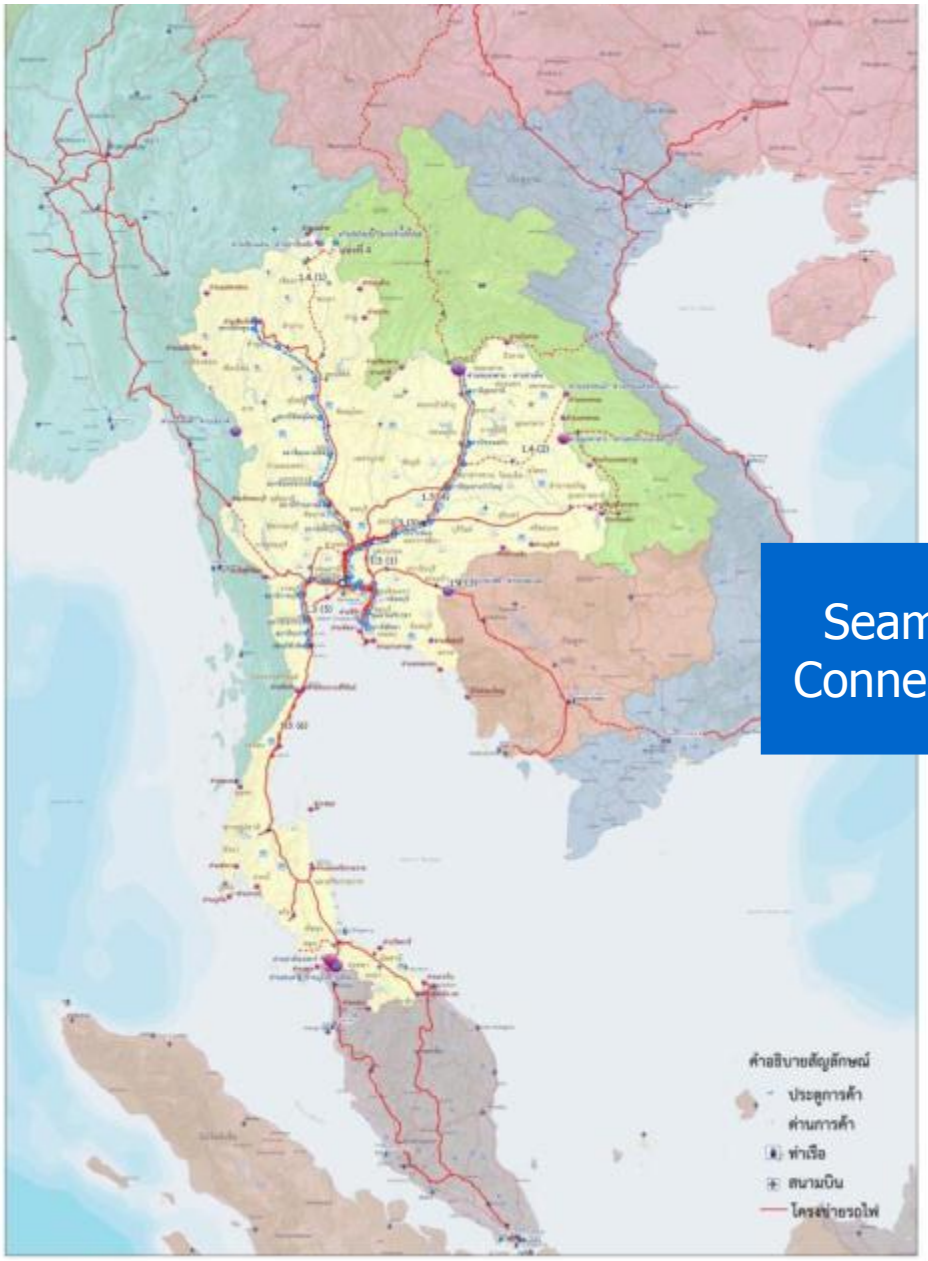
2015-2022

DR. PICHET KUNADHAMRAKS

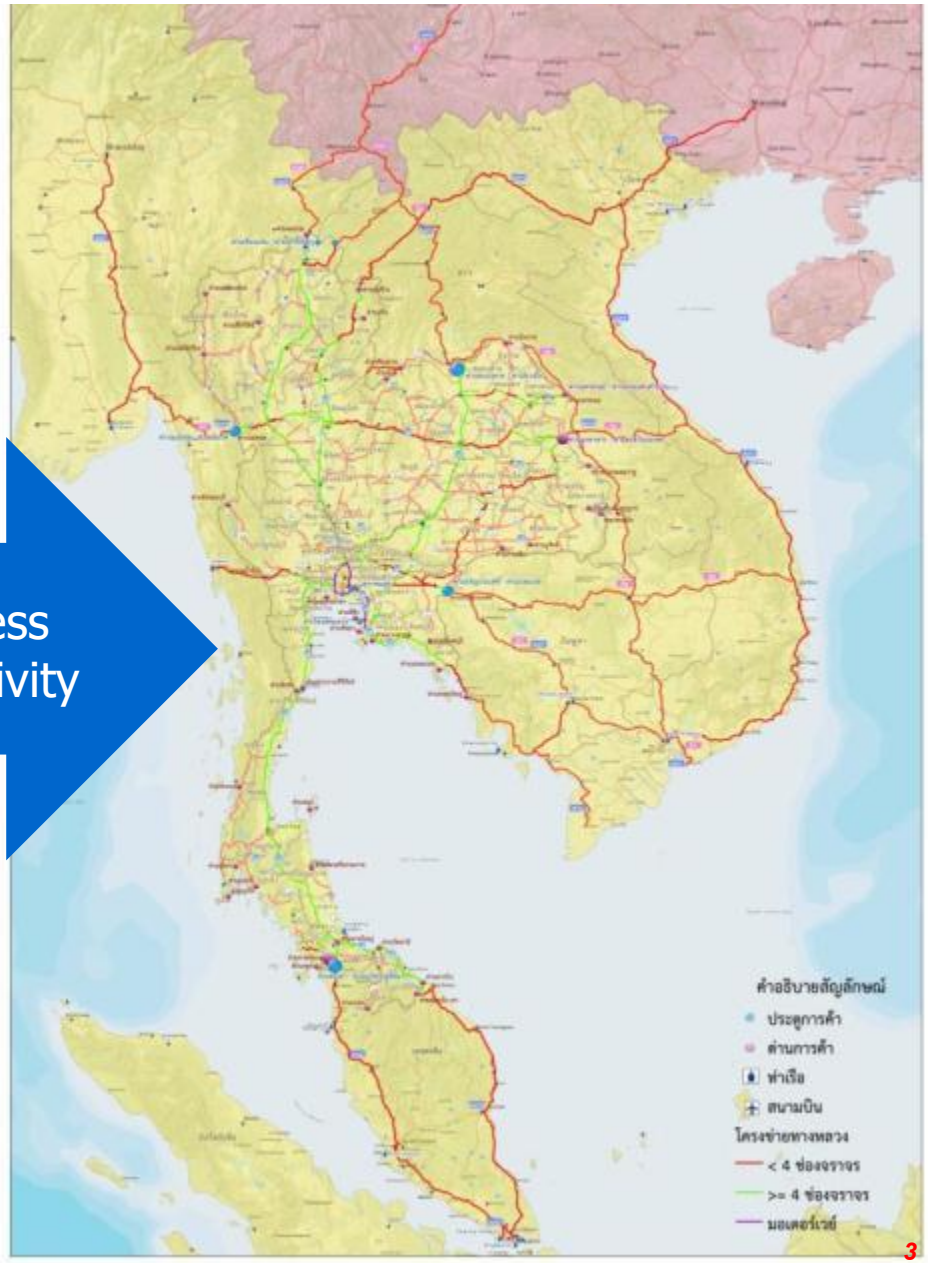
Preparation for ASEAN Community in 2015



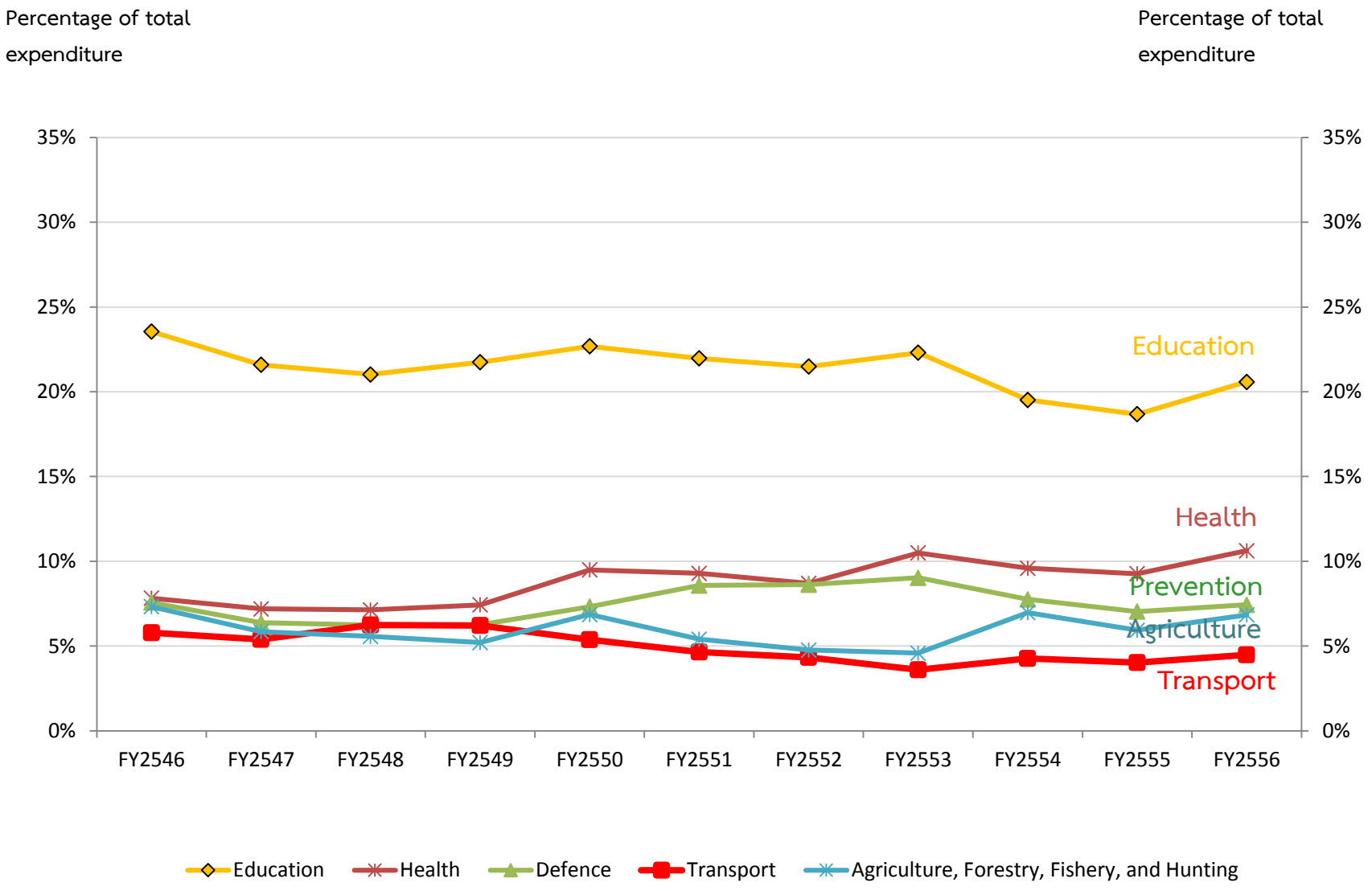
Preparation for ASEAN Community



Seamless Connectivity



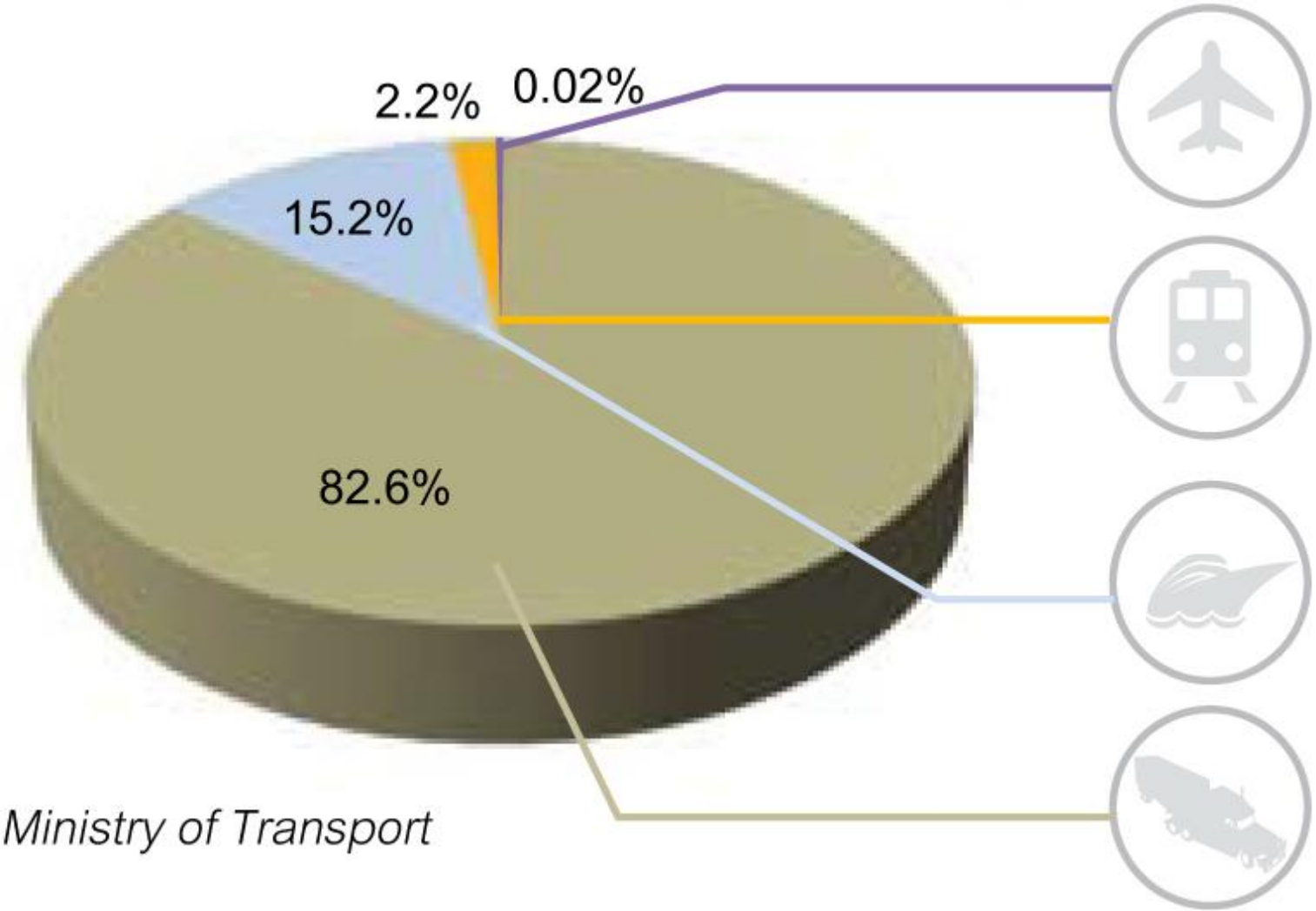
Budget for transport infrastructure development (Fiscal Years 2003-2013)



Existing Transport Network

Primary roads	Highways	66,794 km
	Highways (ETA and Motorway)	(146+207.9) 353.9 km
Secondary roads	Rural roads	47,916 km
	Local roads	352,157 km
Water	Coast	2,614 km
	River	1,750 km
	Canal	883 km
Rail	Single track	3,763 km
	Double/triple track	280 km
Airport	Airport operated by DCA and AOT	(28+6) 34 airports
	Bangkok Airways	3 airports
	Royal Thai Navy	1 airports

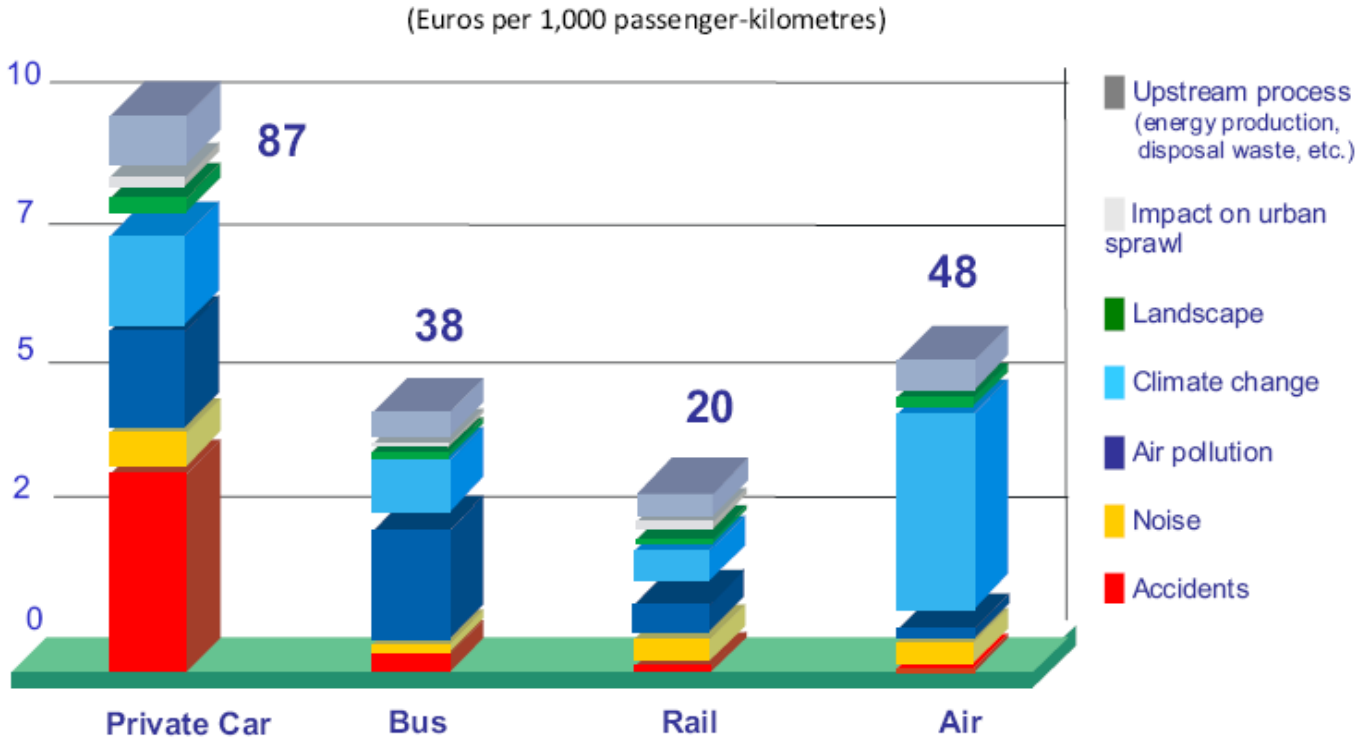
• Road transport, more costly



Source: Ministry of Transport

Transportation issues in Thailand

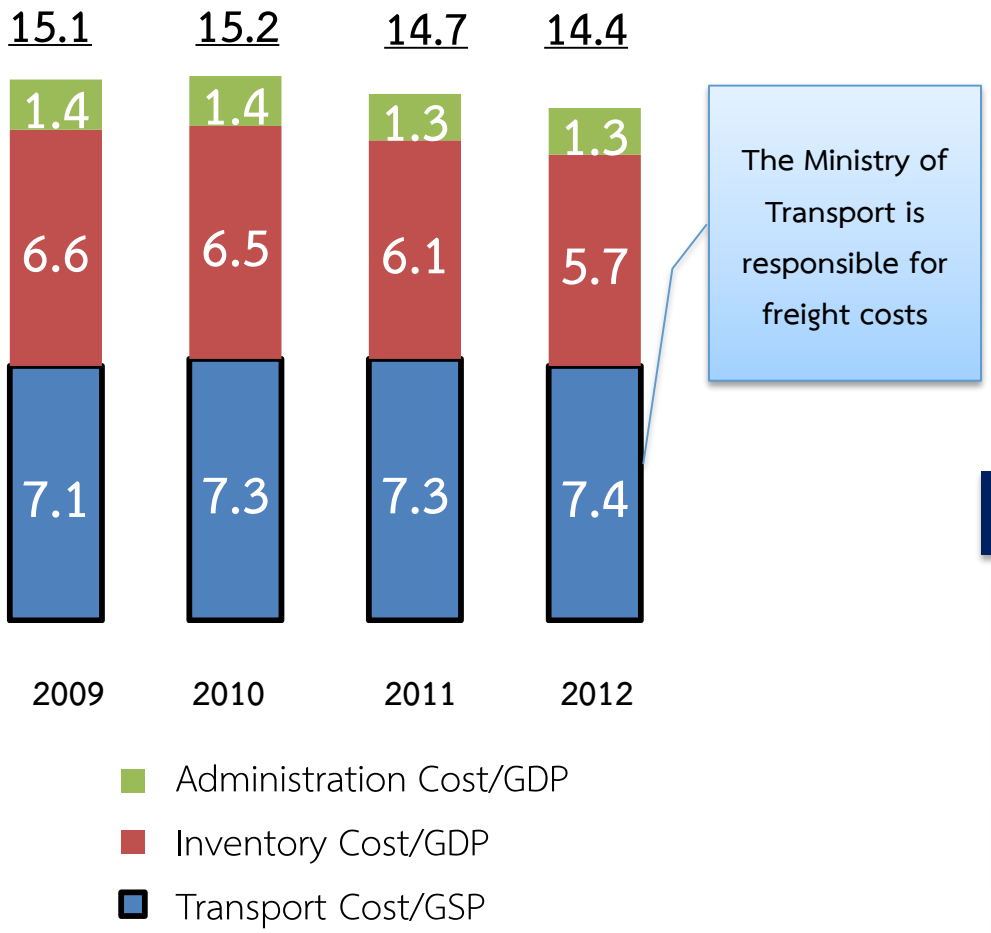
Figure 2: Average external costs – comparison of HSR versus other transport modes



Source: UIC, 2008

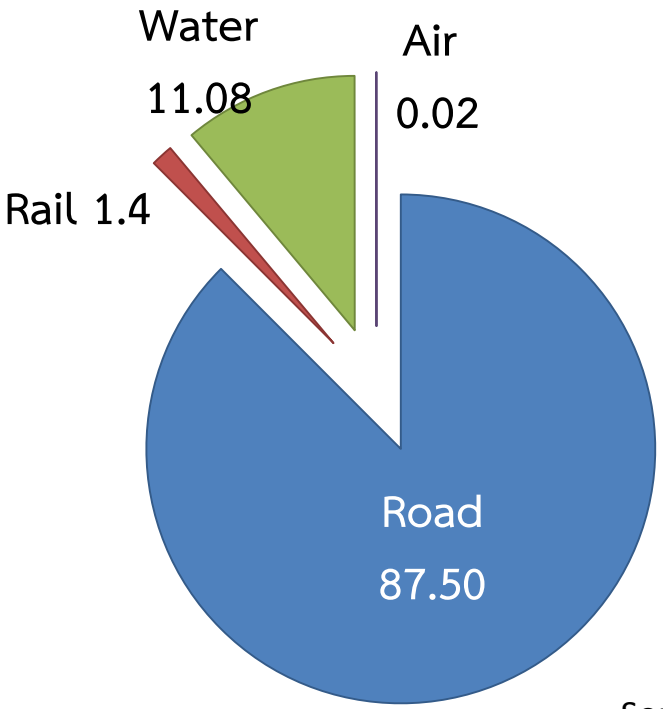
Problems of the Transport and Logistics Systems

- Estimated cost of logistics is about 14.4% of GDP (2013)
- Transport Cost is the majority of Total Logistics Cost (7.4% of GDP)



The Ministry of Transport is responsible for freight costs

Source: NESDB, 2012



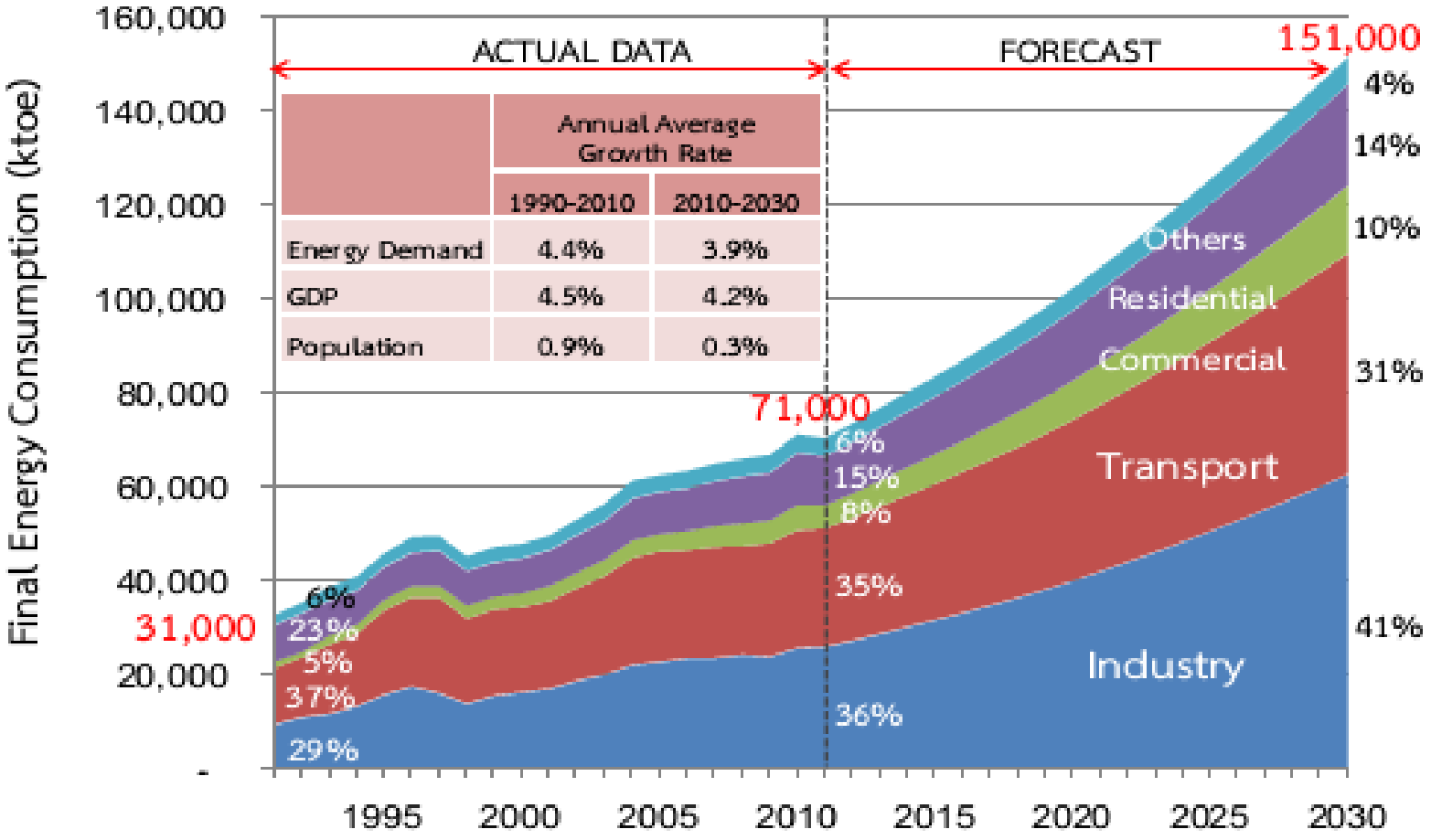
Source: OTP

Transport costs (baht per tone-km) (2013)

Road	2.12
Rail	0.95
Water	0.65
Air	10.0

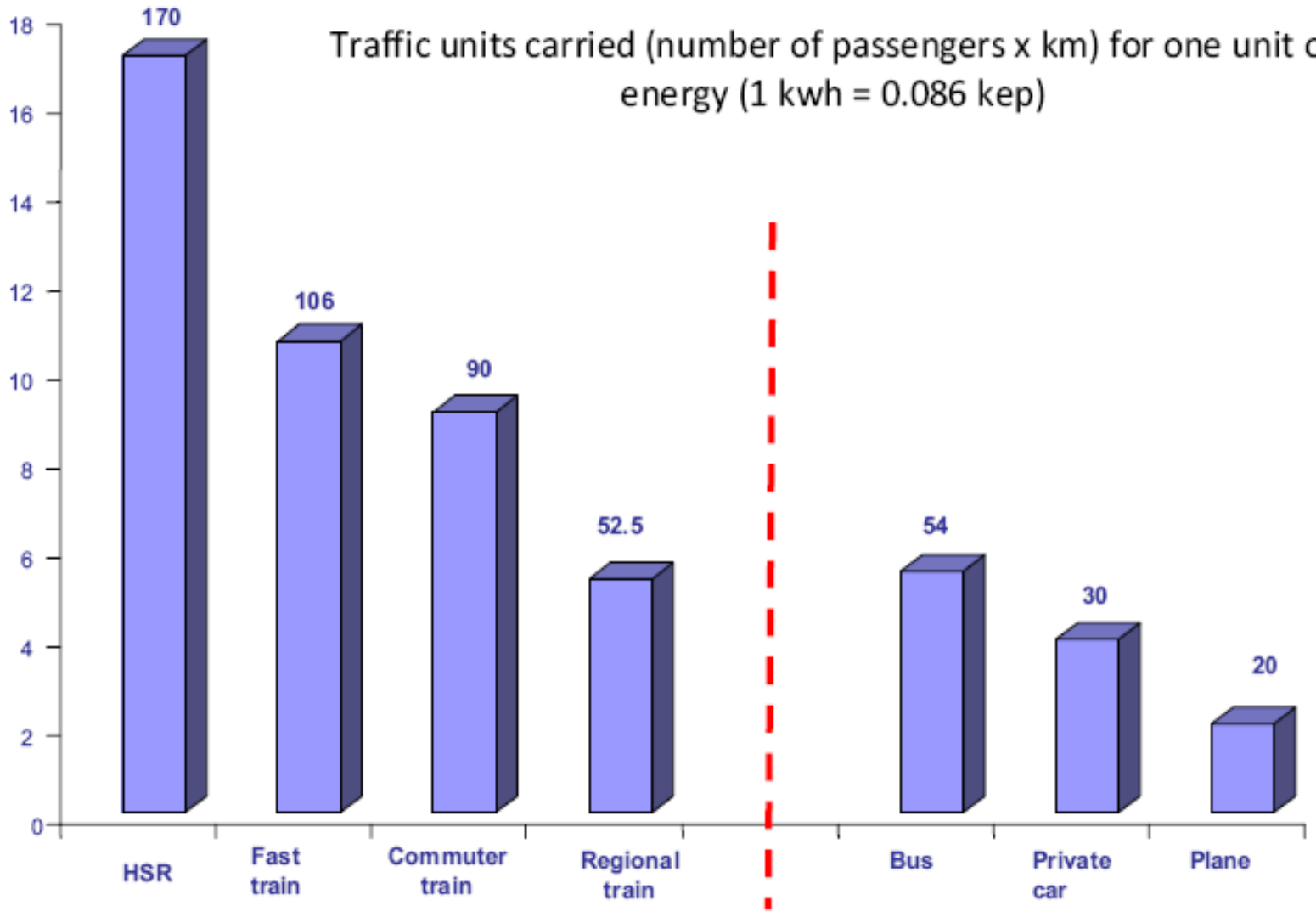
Percentage of Energy Consumption

In 2011 Thailand's total energy consumption was the equivalent of 71 million tonnes at a cost of 700,000 million baht with 36% consumed by the industrial sector and 35% by the transport sector



Source: Thailand 20-year Energy Efficiency Development Plan (2011-2030), Ministry of Energy

Figure 1: Energy efficiency per passenger: comparison HSR versus other transport modes



Source: UIC, 2008

Losses due to accidents in the transport sector

Transport mode	Number of fatalities (people)				
	2008	2009	2010	2011	2012
Road	11,561	10,717	7,468	9,205	8,675
Rail	160	145	87	104	106
Water	54	31	6	18	13
Air	-	1	1	2	1
Total	11,775	10,894	7,562	9,329	8,795

Source : Ministry of Transport

- According to the Global Status Report on Road Safety, Thailand was ranked the third in the world for road accidents
- The World Bank estimates the annual cost of accidents to be up to 232,000 million baht
- Fatalities account for 5.3 million baht
- Disability injuries account for 6.2 million baht

Losses from air pollution

Particulate matter less than 10 microns (PM-10), Sulphur Dioxide (S02), Lead (Pb), Carbon Monoxide (CO), Nitrogen Dioxides (NOx), and Ozone (O3)

Cost of treatment

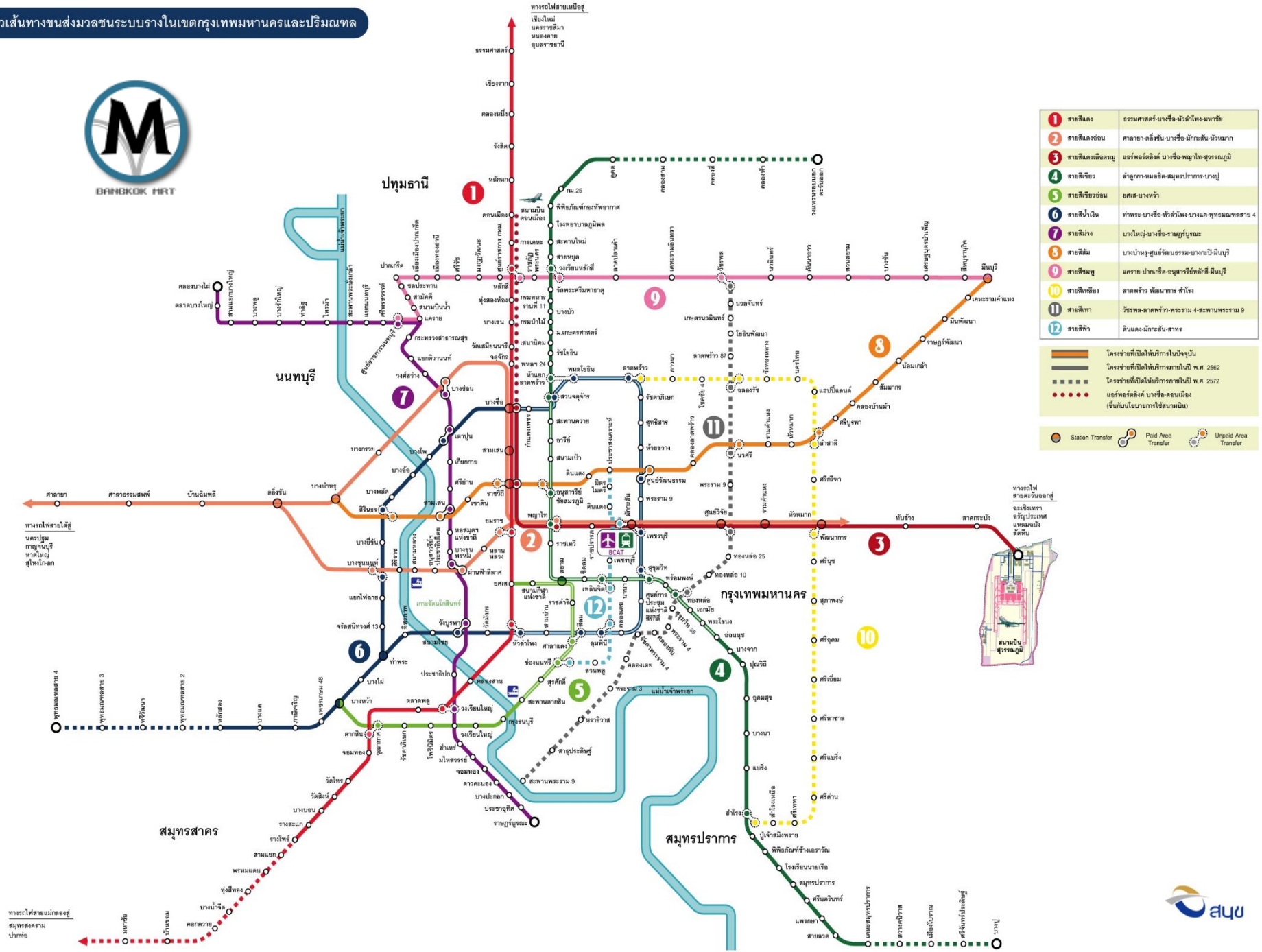
- Out-patient 359 baht per visit
- Pneumonia patient 14,565 baht per person
- Bronchial and Asthma patient 9,400 baht
- Respiratory illness 19,926 baht

Annual cost estimated at 7,214 million baht

Note : Data from 2004 adjusted for annual inflation of 3%

Source: TDRI

แนวเส้นทางขนส่งมวลชนระบบรางในเขตกรุงเทพมหานครและปริมณฑล

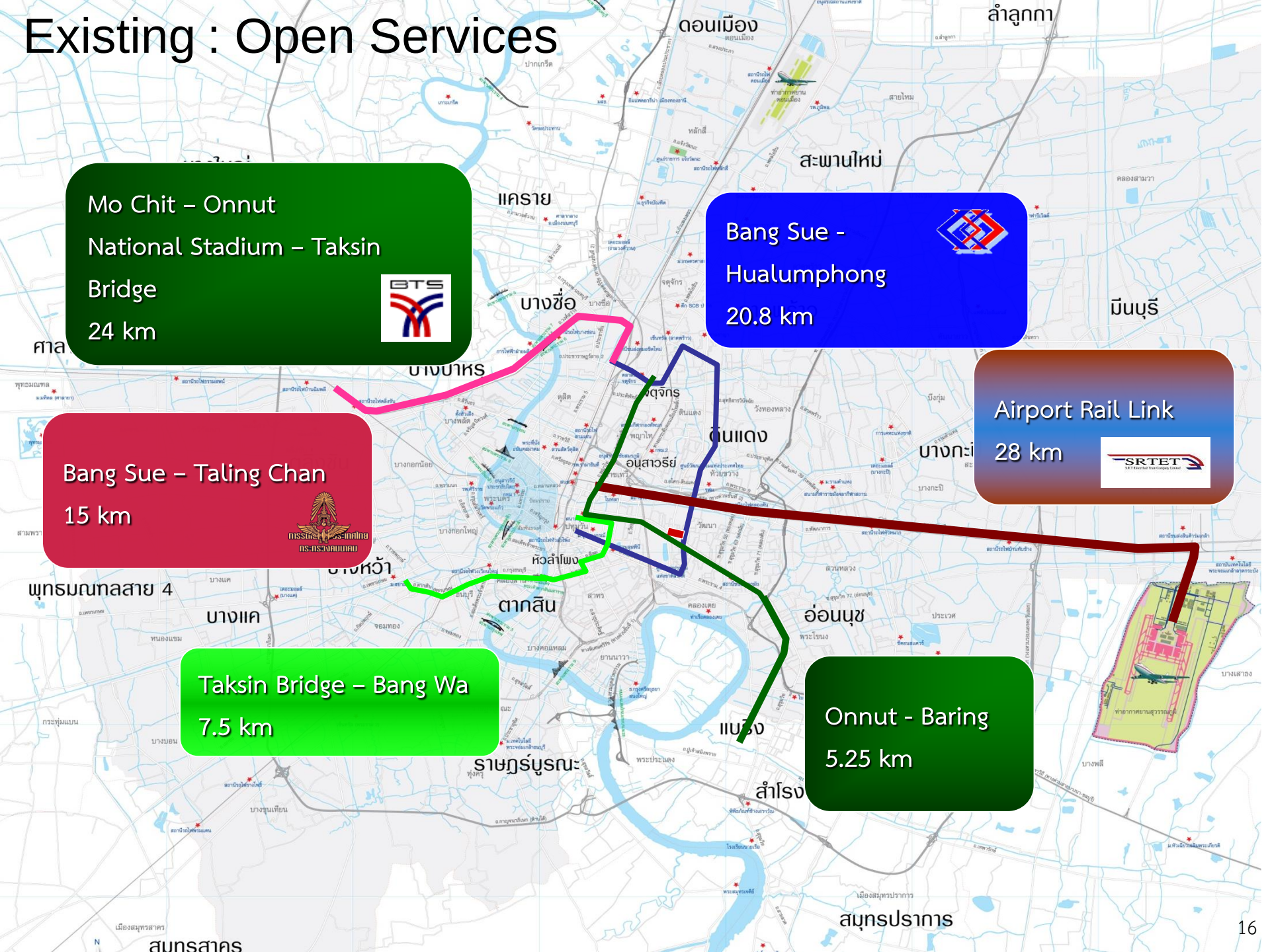


2012, BBC ranked Bangkok as 2nd most congested city

Solutions

“Road for Transport People not Vehicles”

Existing : Open Services



Mo Chit – Onnut

National Stadium – Taksin Bridge

24 km

Bang Sue - Hualumphong

20.8 km

Airport Rail Link

28 km

Bang Sue – Taling Chan

15 km

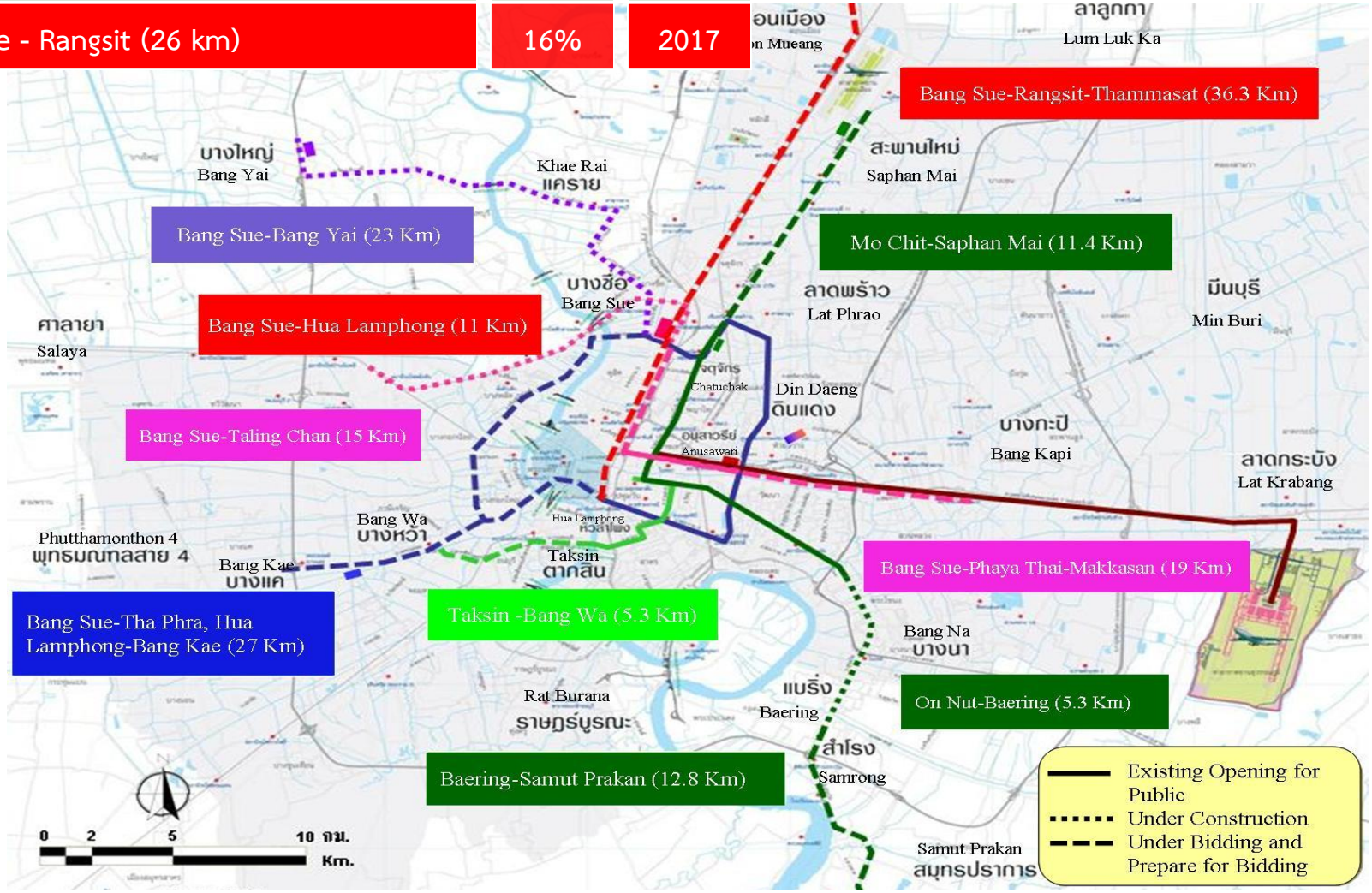
Taksin Bridge – Bang Wa

7.5 km

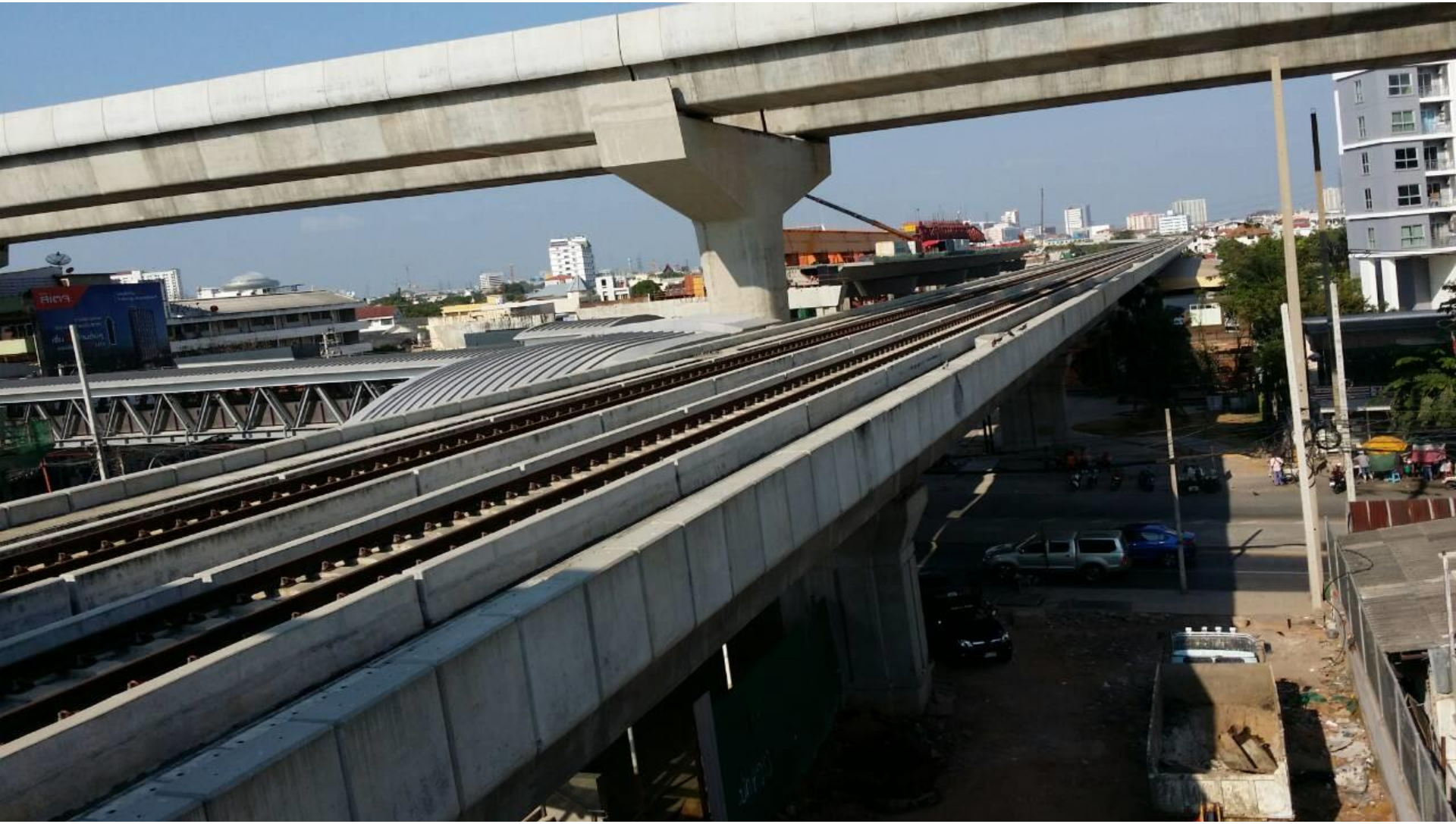
Onnut - Baring

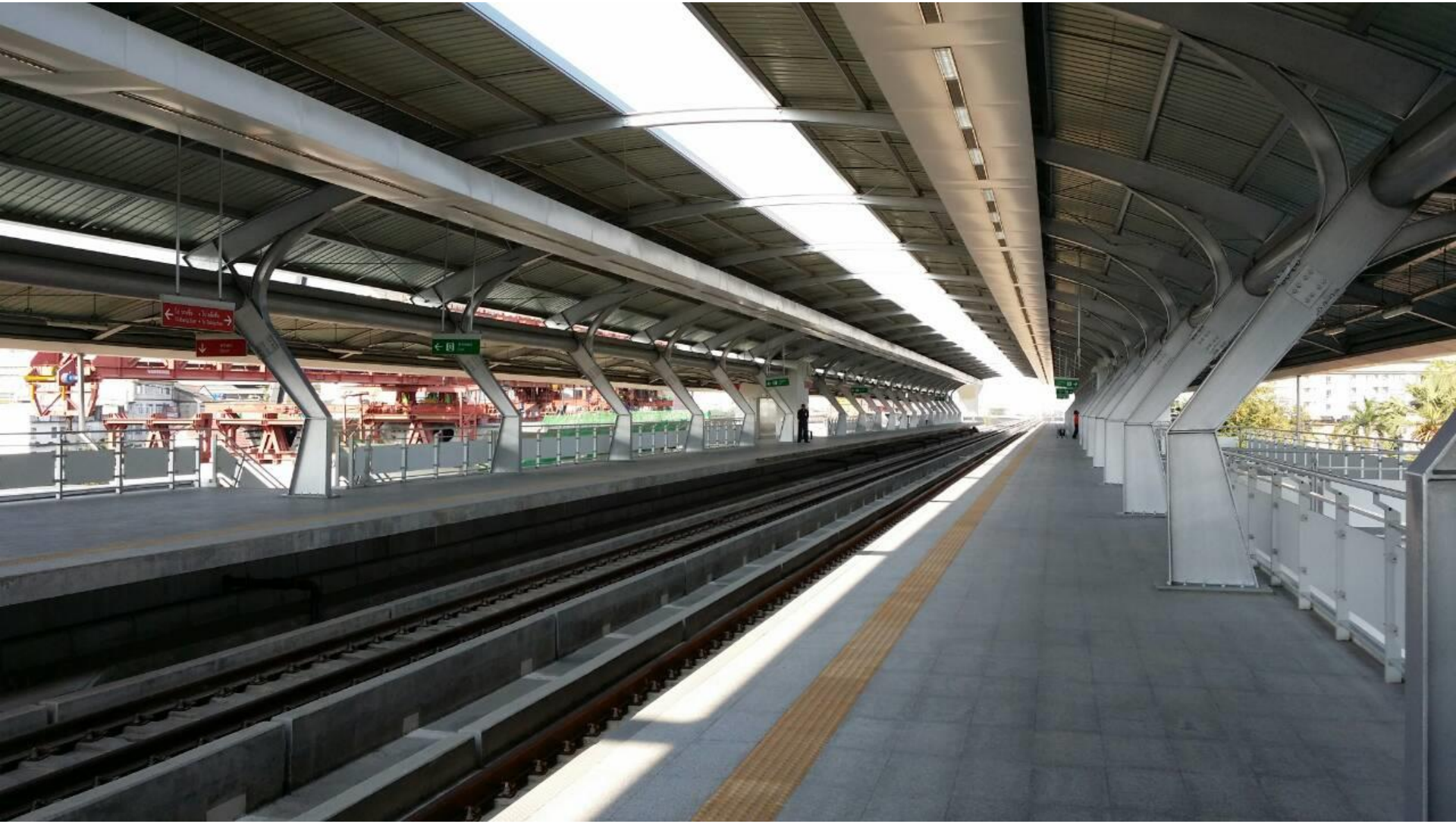
5.25 km

Bang Yai – Bang Sue (23 km)	92%	2016
Bang Sue – Tha Phra – Bang Khae (27 km)	52%	2017
Bearing – Samutprakan (12.8 km)	33%	2017
Bang Sue - Rangsit (26 km)	16%	2017

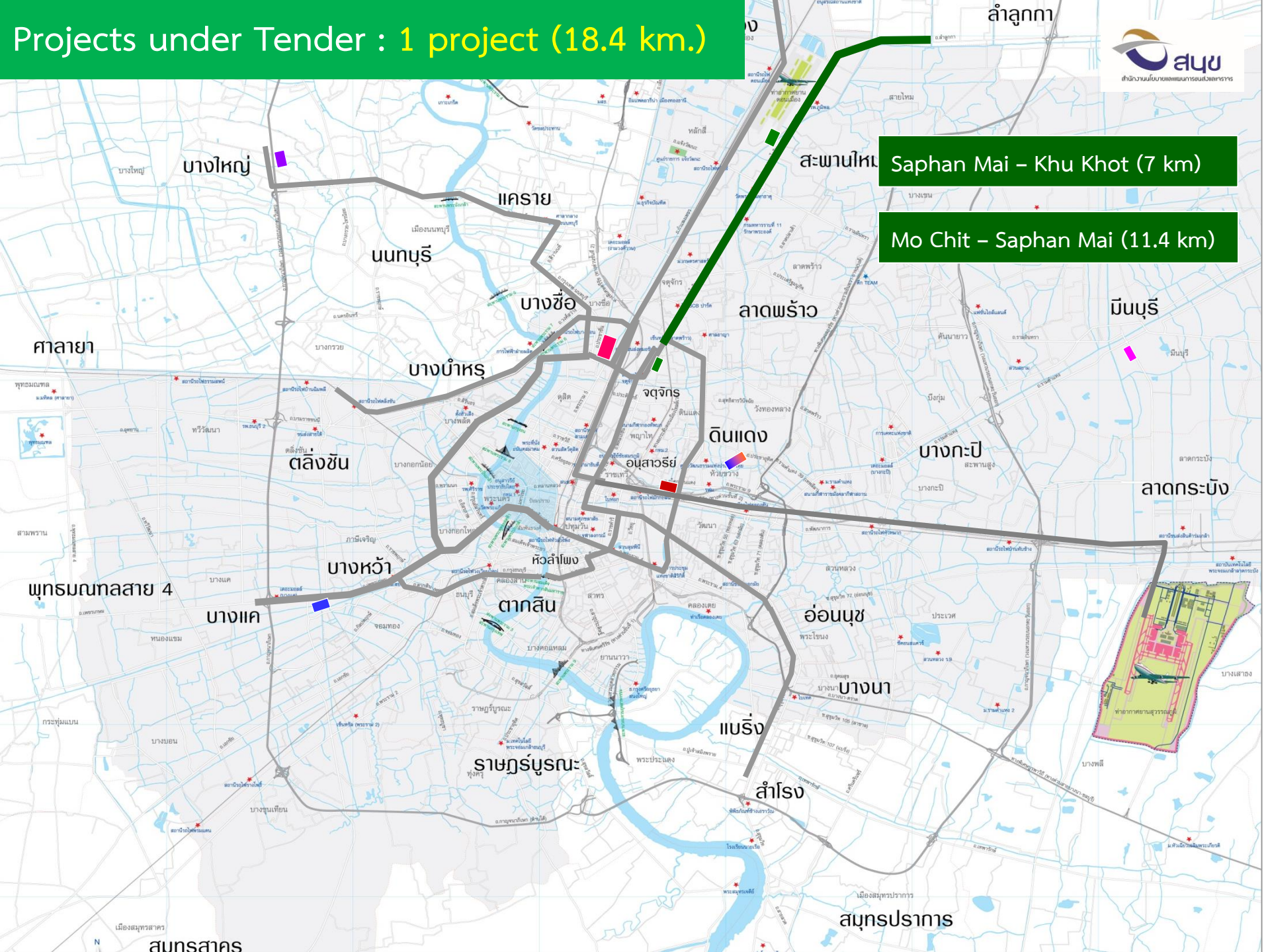


Operational Status of the current Mass Rapid Transit System Project

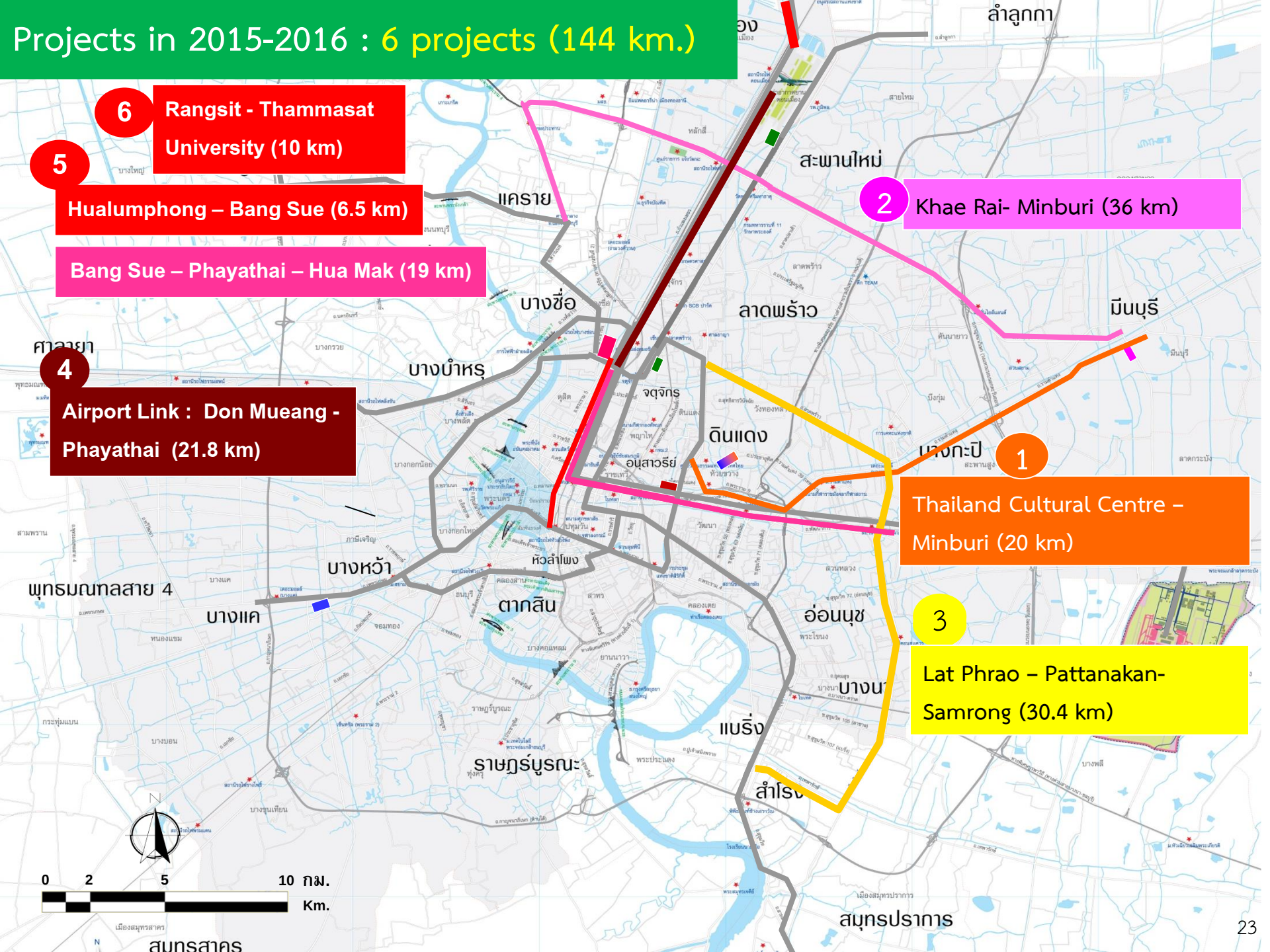


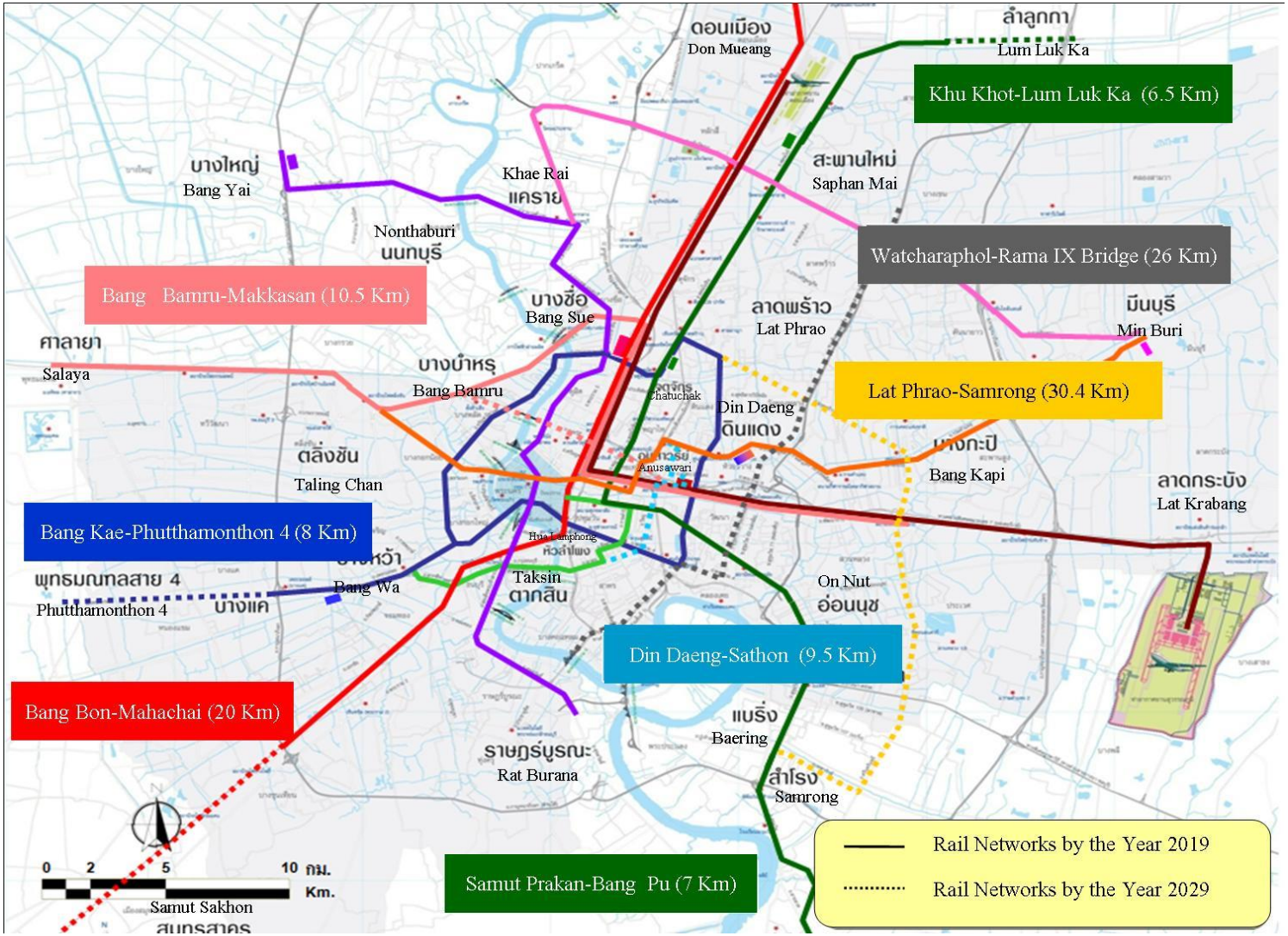


Projects under Tender : 1 project (18.4 km.)



Projects in 2015-2016 : 6 projects (144 km.)




ดอนเมือง
Don Mueang
ลำลูกกา
Lum Luk Ka
Khu Khot-Lum Luk Ka (6.5 Km)
บางใหญ่
Bang Yai
Khae Rai
แคราย
สะพานใหม่
Saphan Mai
Nonthaburi
นนทบุรี
Watcharaphol-Rama IX Bridge (26 Km)
Bang Bamru-Makkasan (10.5 Km)
บางซื่อ
Bang Sue
ลาดพร้าว
Lat Phrao
มีนบุรี
Min Buri
ศาลายา
Salaya
บางบำหรุ
Bang Bamru
Lat Phrao-Samrong (30.4 Km)
Din Daeng
ดินแดง
ตลิ่งชัน
Taling Chan
บางกะปิ
Bang Kapi
ลาดกระบัง
Lat Krabang
Bang Kae-Phutthamonthon 4 (8 Km)
พุทธมณฑลสาย 4
Phutthamonthon 4
บางแค
Bang Wa
Taksin
ตากสิน
On Nut
อ่อนนุช
Din Daeng-Sathon (9.5 Km)
Bang Bon-Mahachai (20 Km)
แบริ่ง
Baering
ราษฎร์บูรณะ
Rat Burana
สำโรง
Samrong
0 2 5 10 กม.
Km.
Samut Sakhon
สมุทรสาคร
Samut Prakan-Bang Pu (7 Km)
Rail Networks by the Year 2019
Rail Networks by the Year 2029

To Be the Regional Hub

- Transform single track lines to **double track lines**

Thailand's railway network currently has a combined length of 4,043 km. The average speed of its passenger trains is 60 km/hr as compared with 39 km/hr for its freight trains. The much slower rate for freight trains is because most of them travel on single track lines. Over the next seven years, these lines will be developed into double or triple track lines, **which will enable the trains to travel at 100-120 km/hr.**

	Present	Over the next 7 Years
Combined Length	**4,043 km**	**5,097 km**
Single Track	3,685 km	1,882 km
Double/Triple Track	358 km	3,215 km
Network	47 provinces	53 provinces
Trip	200 trips/day	>800 trips/day
Goods Transportation	11 million tons/year	>50 million tons/year
Passenger Transportation	45 million passengers-trips/year	>75 million passengers-trips/year

2,857 km of double track lines in the future

Existing Railway Network

Network (Meter Gauge) 4,043 km

- Single Track 3,685 km.
- Double Track 251 km.
- Triple Track 107 km.

Service area 47 Provinces

Double Track Projects 6 routes: Urgent Construction Year 2014-2018

Double Track Project (MG)

Projects	14	15	16	17	18	Cost (million baht)
Project in Progress						
1.Cha Cheng Sao--Kang Koi (106 km.)	Land Acquisition / Tender		Construction			11,272
Waiting for budget approval						
2.Jira-Khon Kaen (185 km.)		Cabinet / Land Acquistion / Tender		Construction		26,007
3.Prachuab-Chumporn (167 km.)	EIA	Cabinet / Tender		Construction		17,292
Waiting for EIA approval						
4. Lopburi-Pak Nam Pho (148 km.)	EIA	Cabinet / Tender		Construction		24,842
5. MabKaBao-Jira (132 km.)	EIA	Cabinet / Tender		Construction		29,855
6. Nakhon Pathom-Hua Hin (165 km.)	EIA	Cabinet / Tender		Construction		20,038
Total (903 km.)						129,308

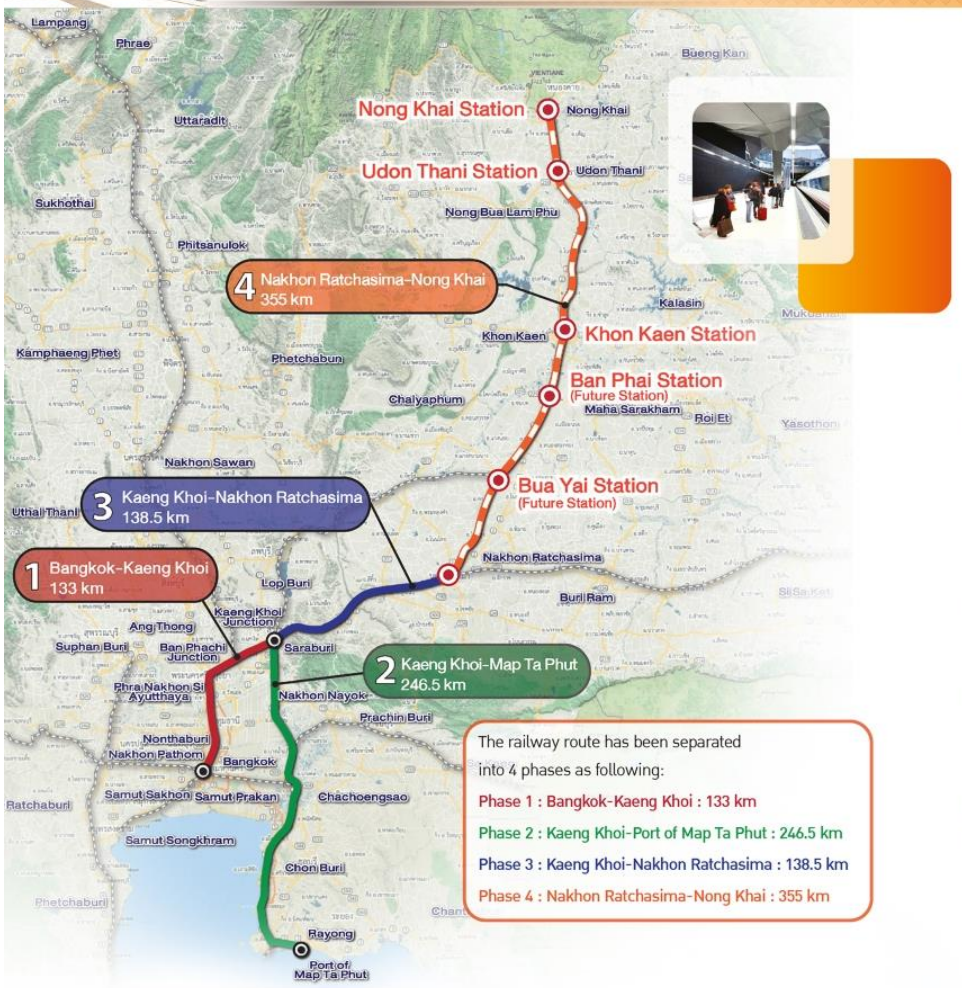
Double Track Project 8 routes : next phase Construction Year 2015-2020:

Double Track Project (MG)

Project	Length (km.)	15	16	17	18	19	20
1. HuaHin-Prachuab KiriKhan	90	Design / EIA / Cabinet / Tender / Construction					
2. Pak Nam Pho-Den Chai	285						
3. Jira-Ubon Ratchthani	309						
4. KhonKaen-NongKhai	174						
5. Chumporn-Suratthani	167	Design / EIA / Cabinet / Land Acquisition / Tender / Construction					
6. Suratthani-SongKar	339						
7. HatYai-Padangbesar	45						
8. DenChai-Chiang Mai	217						
Total	**1,626**						

Double Track Railway Development Network

Network	Distance (km.)		
	Existing	Strategy (8 yrs.)	Total
Meter Gauge			
Single Track	3,685	-	1,156
Double Track	251	2,529	2,780
Triple Track	107	-	107
Total	4,043	2,529	4,043
Standard Gauge			
Double Track	-	1,060	1,060
Total of Double Track	251	3,589	3,840



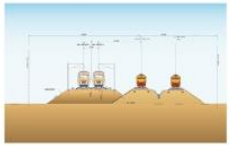
Ministry of Transport

Project Alignments

- The project routes will align with existing railways. To mitigate land expropriation impacts, new double tracks will be constructed in the right of way of the existing railway.
- The routes will be designed in a linear fashion to the extent possible by increasing the degree of curvature for facilitating future high-speed operations.

Railway Structures

- Mostly at-grade railways.



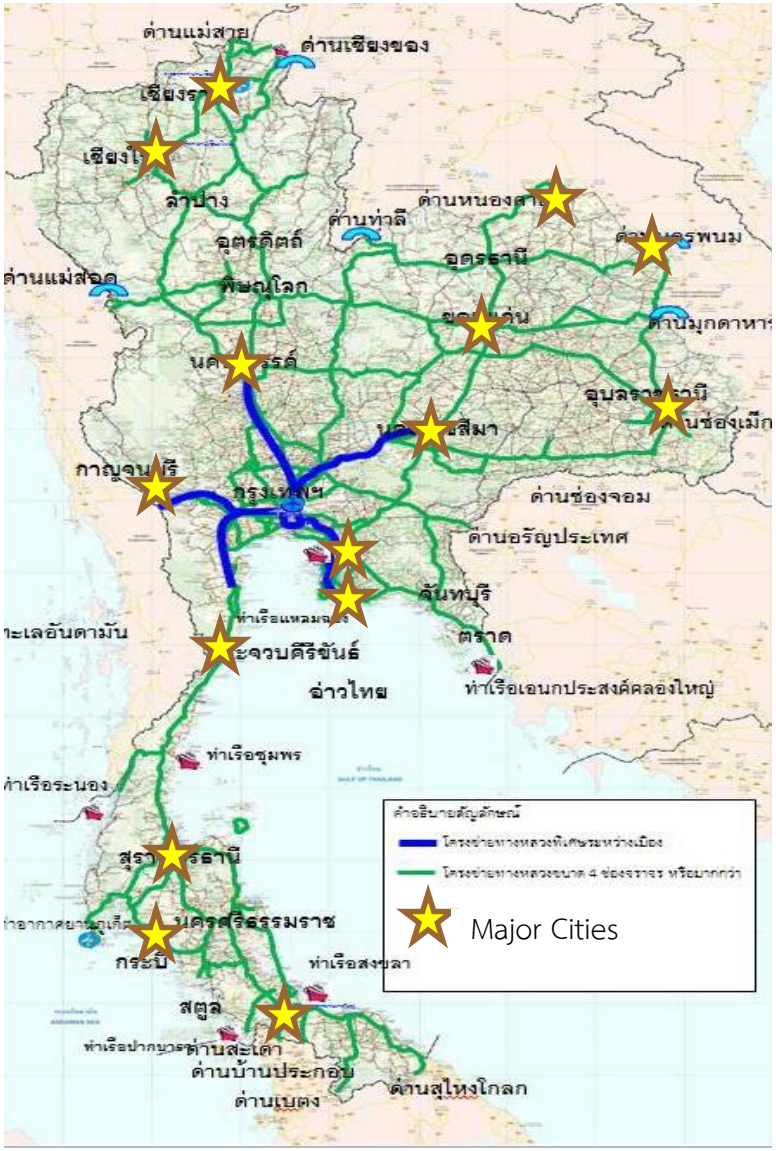
- Railways in some areas with physical constraints, i.e. flood-prone areas, downtown areas, and high-density residential areas (including at level crossings) will be elevated.

- This is a standard gauge (1.435 m) railway project.

Railway Development Strategy : Targets and Benefits by 2020

1. To increase train average speed :
   - freight trains from 39 km/hr to 60 km/hr
   - passenger trains from 60 km/hr to 100 km/hr
2. To increase train passengers
   - Mass transit trips from 5% to more than 30%
   - Railway from 45 million person-trips/yr. to 75 million person-trips/yr.
3. To increase freight proportion by Rail from 1.5% to 5%
4. To reduce intercity travel by private car proportion from 59% to 40%
5. To reduce Oil Consumption more than 100,000 million bath/yr.

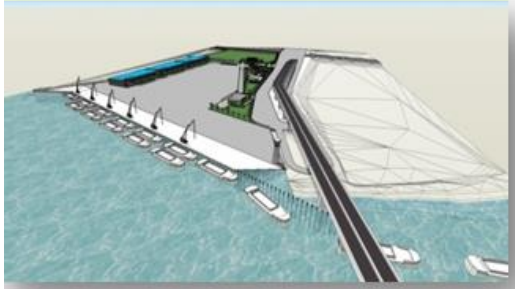
Enhancing connectivity between key domestic production bases & neighboring countries



- **Four lanes highway development**
  - Highway No. 4 Krabi – Hoiyod
  - Highway No. 12 Kalasin– Somdej section 2
  - Highway No. 304 Kabinburi– Paktongchai
  - Highway No. 314 Bangpakong– Chachengsao section 2
  - Highway No. 3138 Banbeng– Bankai section 3
- **Regional highways maintenance**
  - Highway No.1 ,2 , 11 ,32 ,35 ,41 ,43, 117 , 331
- **Motorway development** (Pattaya – Map Ta Phut)
- **Rural road development to support agricultural & tourism sectors**
- **Intermodal facilities development**

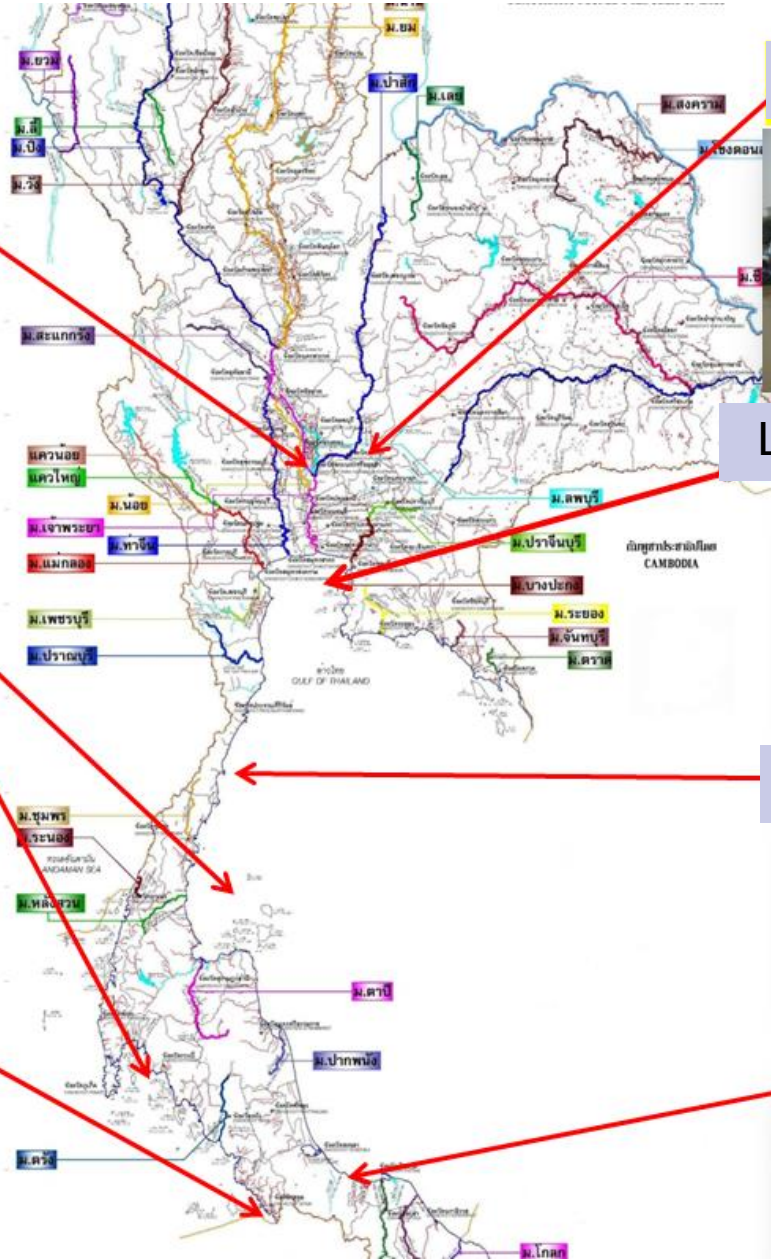
Increasing Water Transport Networks

Ang-Thong



Krabi/Samui (Cruise)

Pakbara Port

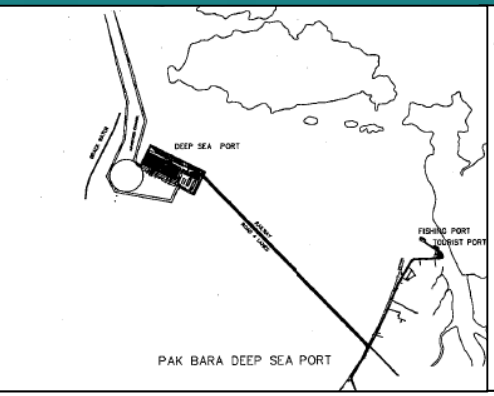


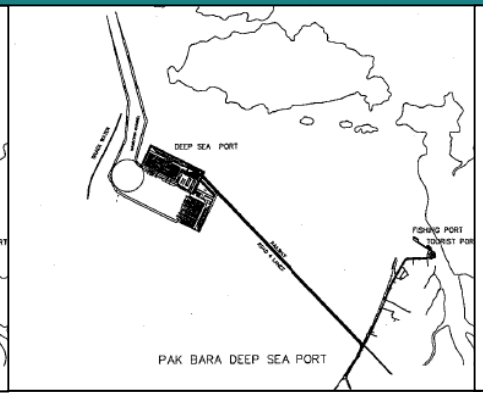
Pa-Sak River

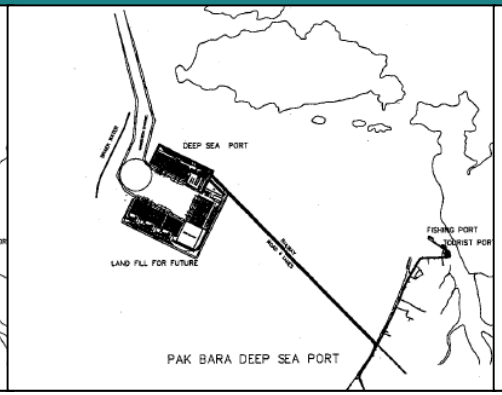
Laem Chabang Port

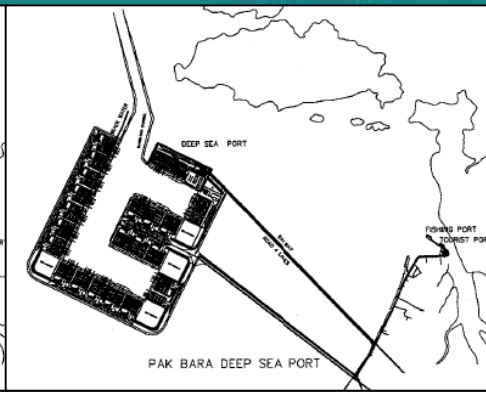
Chumpon Port

Songkhla 2 Port


DEEP SEA PORT
FISHING PORT
TOURIST PORT
PAK BARA DEEP SEA PORT


DEEP SEA PORT
FISHING PORT
PAK BARA DEEP SEA PORT


DEEP SEA PORT
LAND FILL FOR FUTURE
FISHING PORT
PAK BARA DEEP SEA PORT


DEEP SEA PORT
FISHING PORT
PAK BARA DEEP SEA PORT

Laem Chabang Port Project

Total Capacity (Phase I + Phase II + Phase III)

Container : 18.8 m.TEUs.

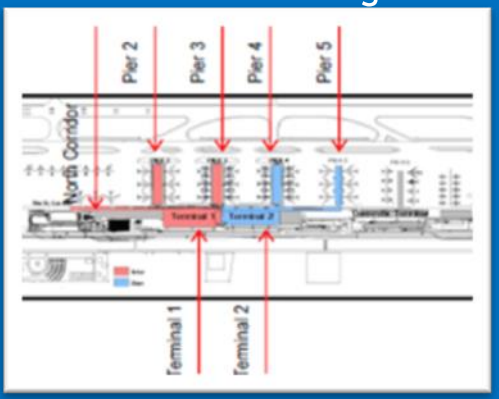
Vehicles : 1.95 m. Units

General Cargo : 2.568 m.Metric Tons

Enhancing Air Transport Capability

Mae Sod

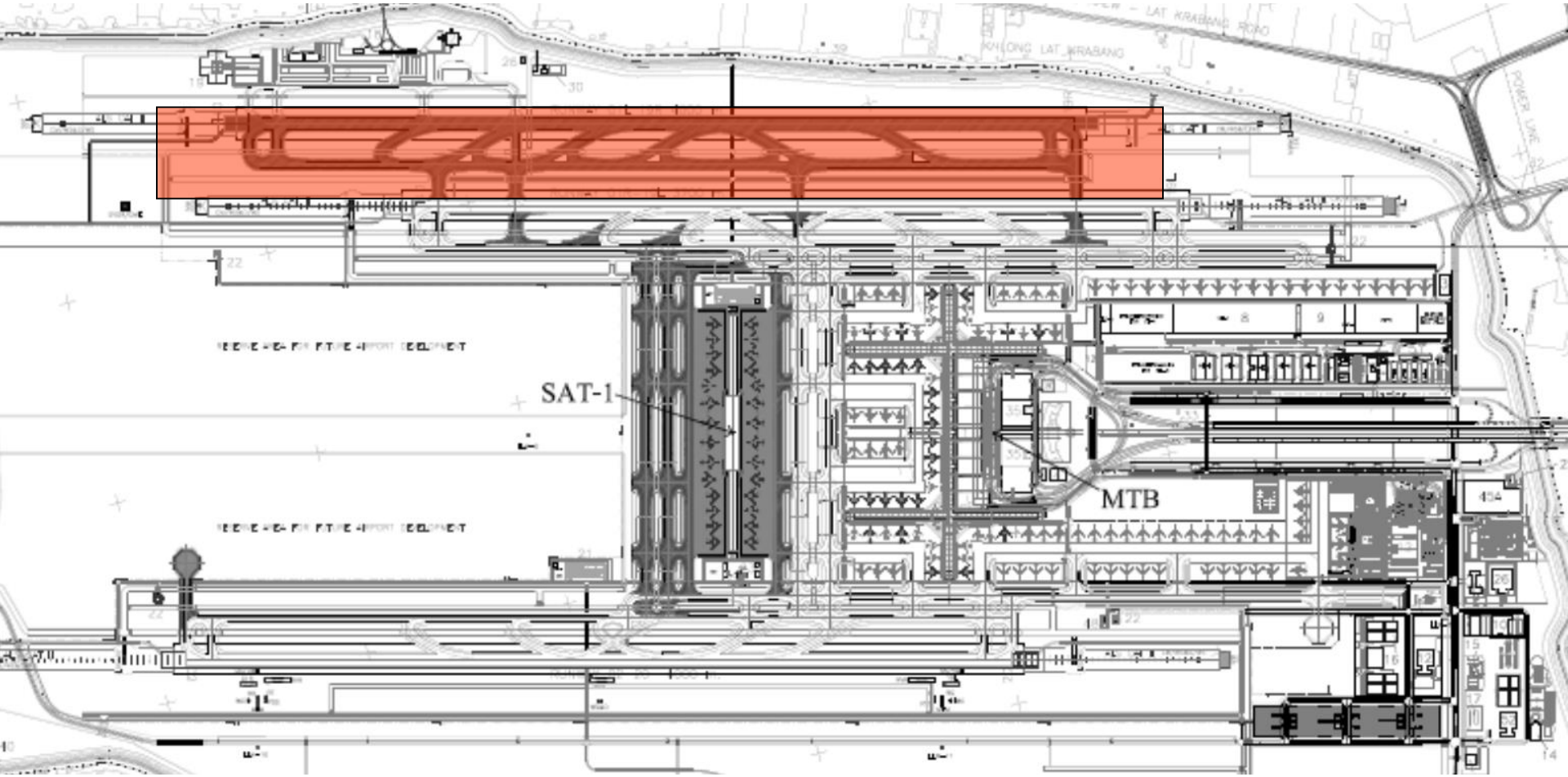
Don Muang



Phuket

Suvarnabhumi

Bae -Tong


SAT-1
MTB

Guidelines for future development of the railway system

Sources of Funding

- Budget
- Government expenditure
- Enterprise income
- PPPs
- Other funding sources such as Infrastructure Funds

Mechanisms

- Restructuring the public administration of transportation by rail. Policies, infrastructure and operations.
- Restructuring SRT

Office of Transport and Traffic Policy and Planning

Thank you

https://www.otp.go.th