TRANSPORT POLICY

- **Provide safe, reliable, effective, efficient, affordable, accessible and fully integrated transport system that will best meet the needs of freight & passenger access and mobility requirements and will be aimed at improving levels of service and cost effectiveness in a fashion that supports governments goal of increasing public welfare through economic growth, and social improvement, poverty reduction and infrastructure and development while being environmentally and economically sustainable and energy efficient.**

TRANSPORT POLICY

Major Issue

- The most general and important issue from the perspective of creating a sustainable, efficient, effective, fair and safe transport system is the lack of cross-modal coordination mechanism at various levels of the government(s) and society

INVESTMENTS IN THE TRANSPORT SECTOR

- Transport and storage in Pakistan is an important sector of the economy
- Contributes about 15% to GDP and makes over 18% GCF (Gross Capital Formation)
- Consumes about 35 per cent of the total energy annually

- Both Federal and Provincial governments attach great importance to the development of Transport Infrastructure and around 15-20% of the Development Budget is earmarked every year for this sector

TRANSPORT INFRASTRUCTURE

AIRPORTS

44

25 Operational, 10 International, 1 BOT

PORTS

03

02 Deep Water - Post Panamax, Landlord Model/ BOT (1990s)

RAILWAYS

7,700 Km Track

Provides Coverage to All Areas and Int. Links to India and Iran (&Afghan)

Shipping

10+8 Ships

Providing Vital Crude Supplies, also to Sri Lanka & Bangladesh

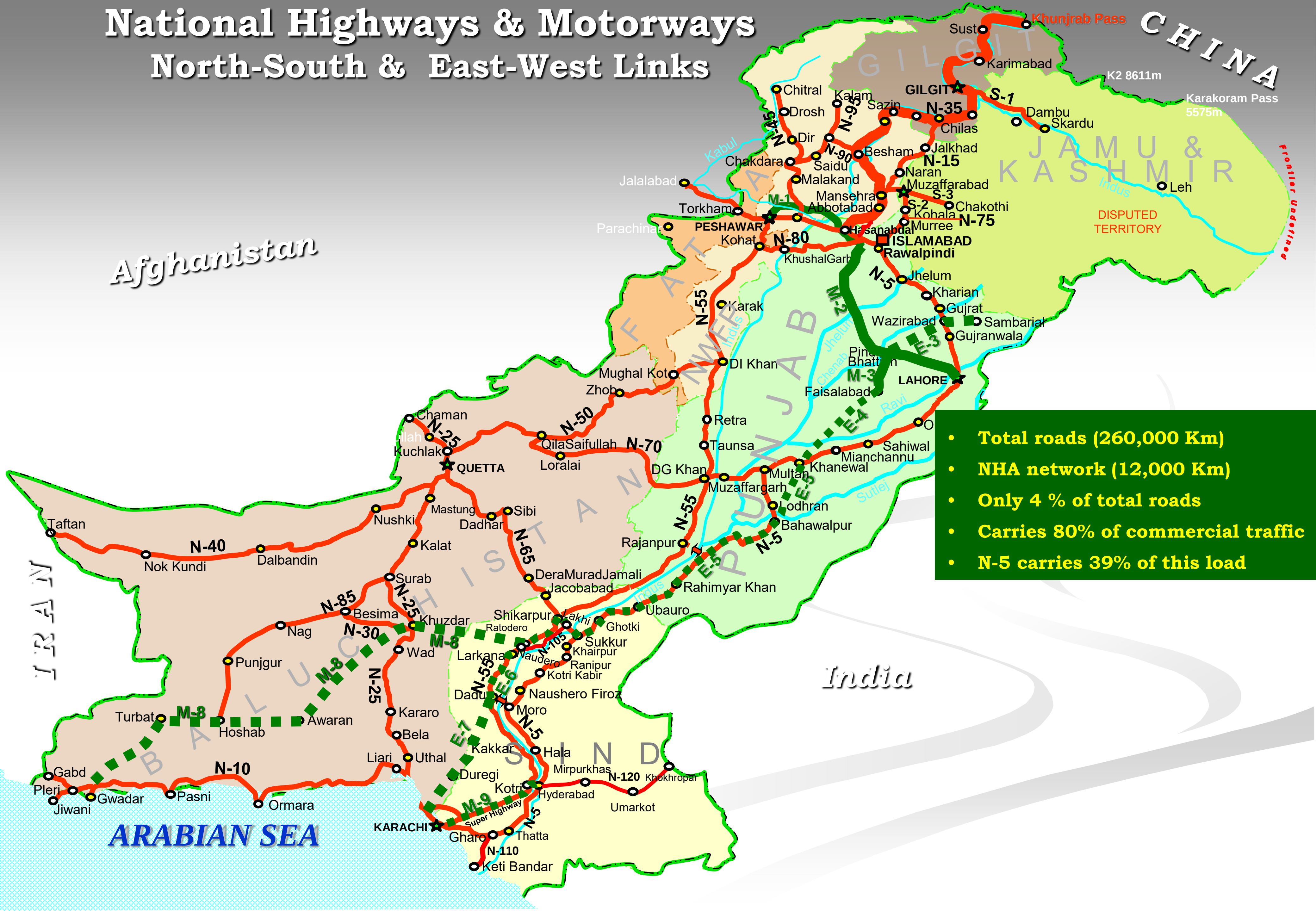
Highways

260,000 km, 2/3 Paved

Adequate Capacity, No Congestion along Inter-urban Routes except Cities

Mobility Index 85

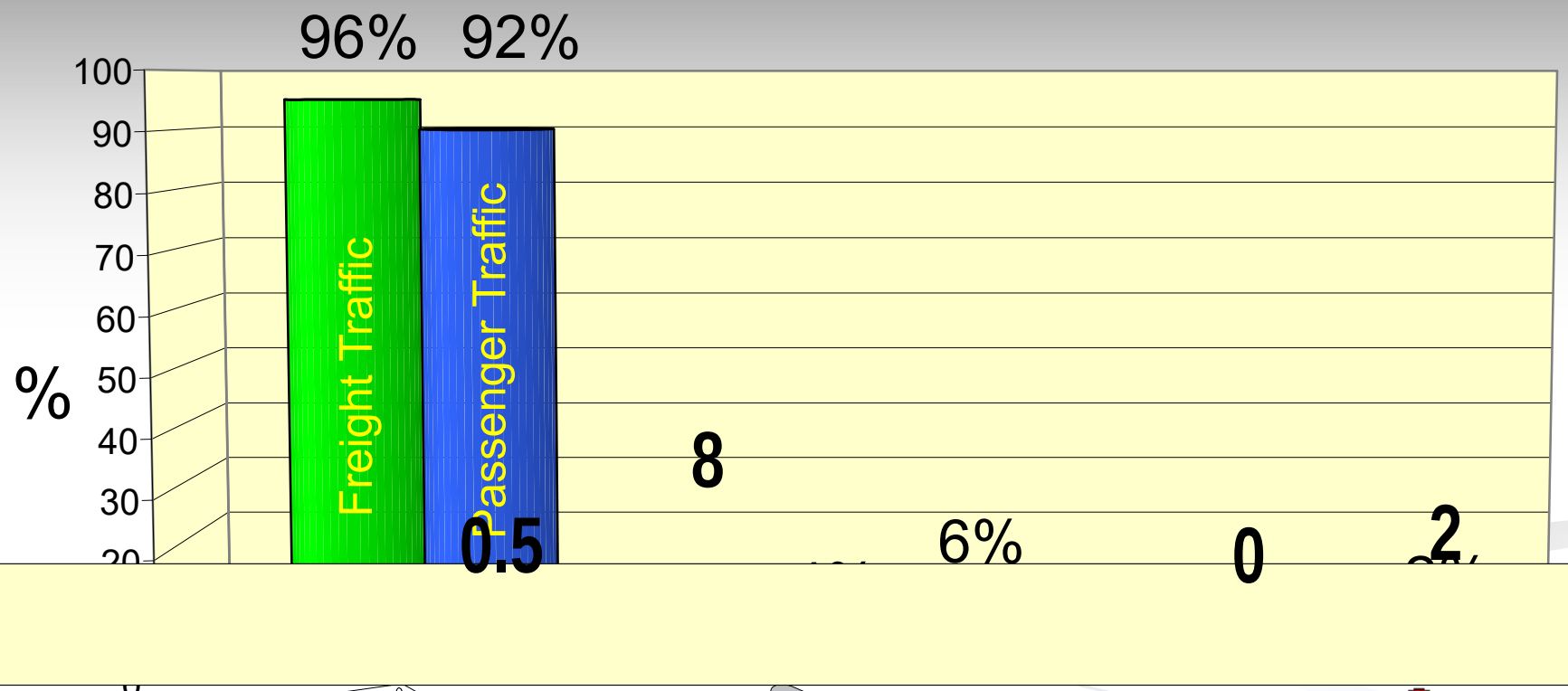
National Highways & Motorways
North-South & East-West Links

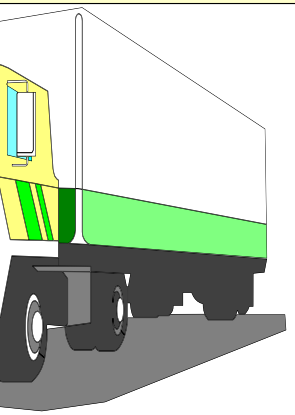


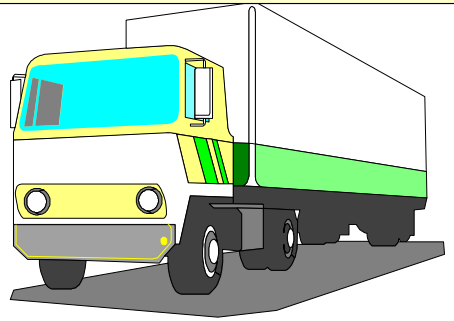
CHINA
Khunjrab Pass
Sust
Karimabad
GILGIT
K2 8611m
Karakoram Pass 5575m
Chitral
Kalam
Drosh
Sazin
N-35
Chilas
S-1
Dambu
Skardu
N-95
N-45
Dir
N-90
Besham
Jalkhad
N-15
Chakdara
Saidu
Naran
Malakand
Muzaffarabad
JAMU & KASHMIR
Leh
Jalalabad
Kabul
Mansehra
Abbotabad
S-3
S-2
Chakothi
Kohala
N-75
Murree
Torkham
M-1
PESHAWAR
Parachinar
Kohat
N-80
Hasanabdal
ISLAMABAD
Rawalpindi
KhushalGarh
DISPUTED TERRITORY
Frontier Undefined
Indus
Afghanistan
FATA
NWFP
N-55
N-5
Jhelum
Kharian
Karak
M-2
Gujrat
Wazirabad
Sambarial
Gujranwala
E-3
Jhelum
Chenab
Pindi Bhattian
M-3
LAHORE
Faisalabad
Mughal Kot
DI Khan
Zhob
PUNJAB
Ravi
E-4
Retra
Chaman
N-25
N-50
Killa Abdullah
Kuchlak
QilaSaifullah
N-70
Taunsa
Sahiwal
QUETTA
Loralai
Mianchannu
DG Khan
Khanewal
Multan
Muzaffargarh
E-5
Sutlej
Taftan
Nushki
Mastung
Sibi
Dadhar
Lodhran
Bahawalpur
N-40
Kalat
N-65
Rajanpur
Nok Kundi
Dalbandin
BALUCHISTAN
Surab
DeraMuradJamali
Jacobabad
Rahimyar Khan
IRAN
N-85
Besima
Khuzdar
Shikarpur
Lakhi
Ubauro
Ghotki
Nag
N-30
M-8
Ratodero
Sukkur
Khairpur
N-105
Larkana
Naudero
Ranipur
Kotri Kabir
India
Wad
Punjgur
N-25
N-55
E-6
Dadu
Naushero Firoz
Moro
Karara
Turbat
Awaran
Hoshab
Bela
E-7
Kakkar
Hala
SIND
Uthal
Liari
N-10
Duregi
Mirpurkhas
N-120
Khokhropar
Gabd
Pleri
Gwadar
Pasni
Ormara
Jiwani
Kotri
Hyderabad
Umarkot
M-9
Super Highway
ARABIAN SEA
KARACHI
Gharo
Thatta
N-110
Keti Bandar

- **Total roads (260,000 Km)**
- **NHA network (12,000 Km)**
- **Only 4 % of total roads**
- **Carries 80% of commercial traffic**
- **N-5 carries 39% of this load**

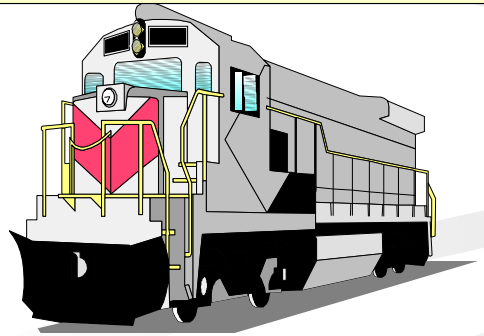
MODAL SHARE IN TRANSPORTATION



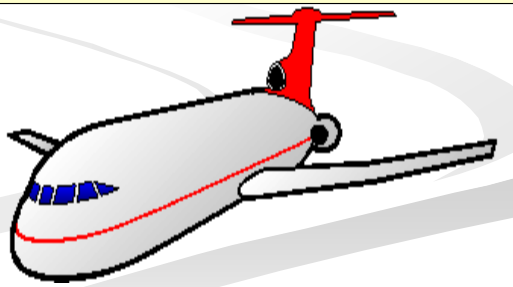




ROAD

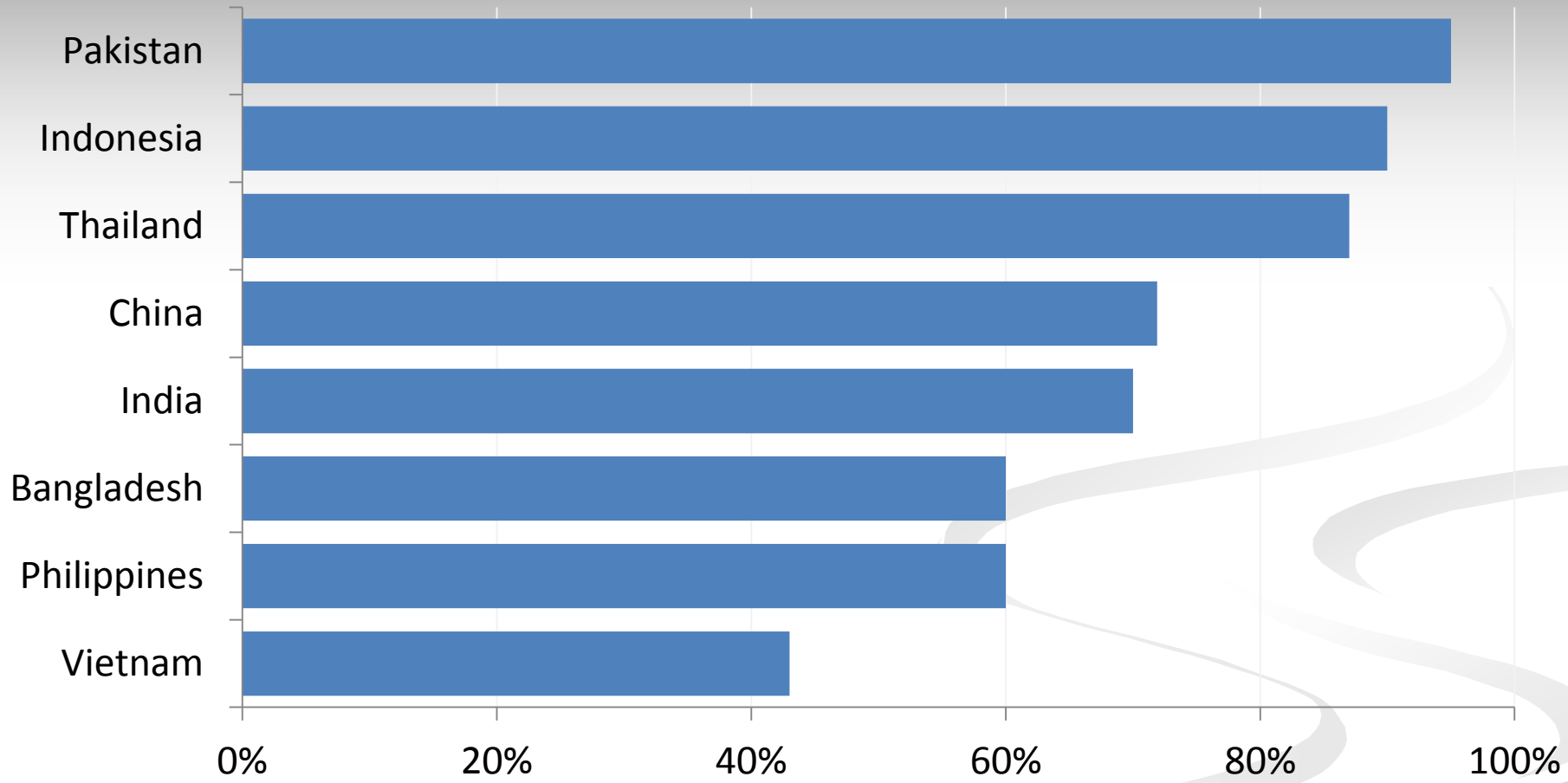


RAIL



AIR

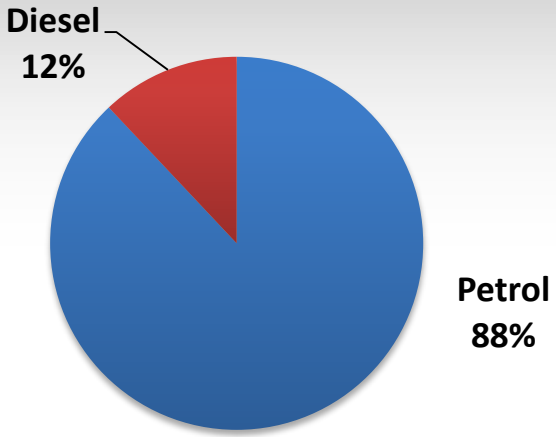
Road Freight Dominates in Asia



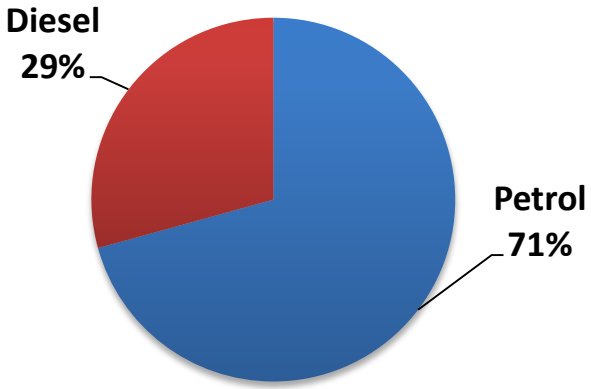
Source: Various sources (ADB, 2008; Sopadang, 2007; Patdu, 2005; Lubis & Isnaeni, 2005, Ministry of Industries (Pakistan) 2006; World Bank, 2008; (Overwhelms in Pakistan)

Trucks Have High Emissions Impact per truck – Example

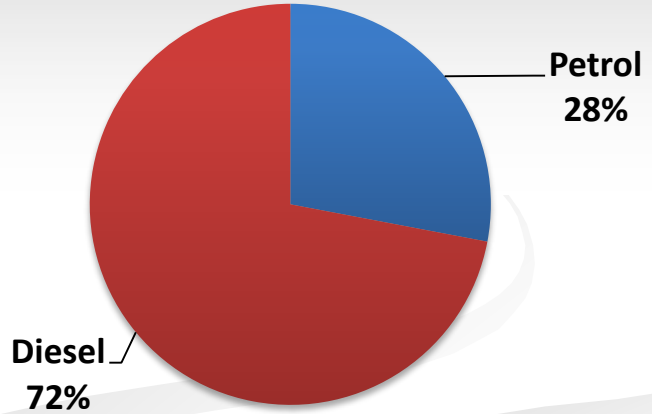
Vehicles -2005



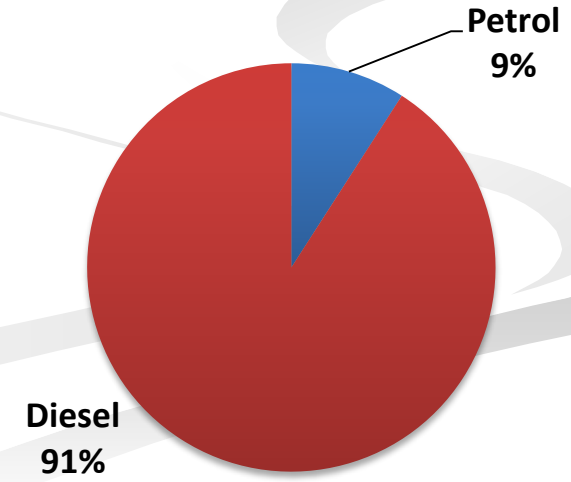
Vehicle Kilometer Travel-2005



CO_2 Emissions-2005



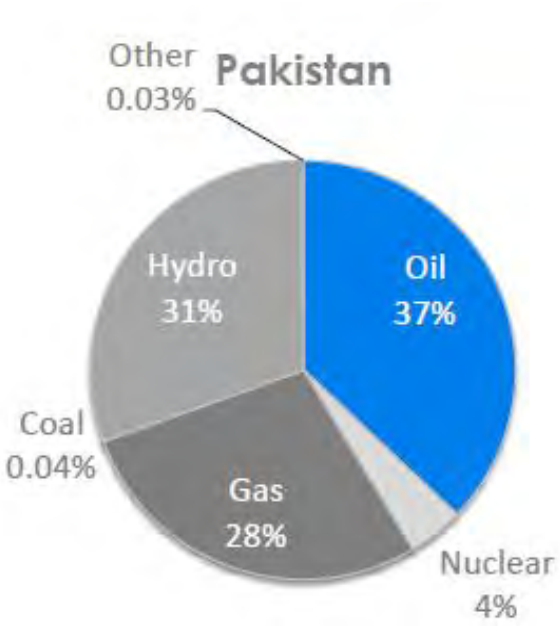
PM Emissions-2005

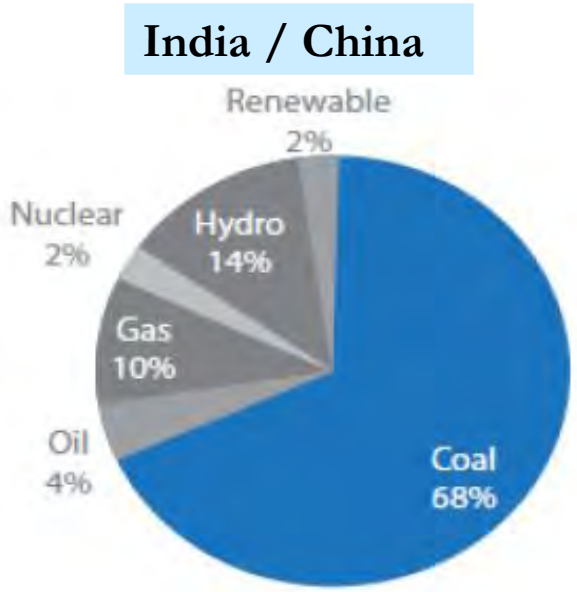


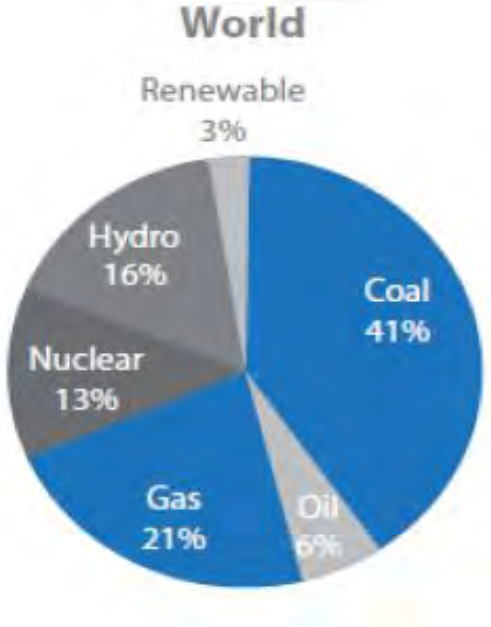
Source: 2008. ADB, CAI-Asia, and Segment Y Ltd

Energy Mix in Pakistan

- Around 3.5 million Vehicles on CNG (50% of 4-wheel population)
- Highest number of CNG refilling stations in the world
- Transportation of Energy Easier & Cleaner in Pakistan, New Pipelines
- Sever CNG Crises compensated by lower Petrol Prices







ANNUAL MEAN VALUE OF DIFFERENT POLLUTANTS FOR MAJOR CITIES OF PAKISTAN 2007-10

City	YEAR	O3	NO2	PM 2.5	CO	SO2
		ug/m3	ug/m3	ug/m3	mg/m3	ug/m3
	2007	40.94	49.85	79.35	1.96	5.88
	2008	47.03	41.76	73.21	1.18	4.65
ISLAMABAD	2009	51.99	48.72	59.28	1.05	12.71
	2007	39.45	46.60	137.02	1.85	56.74
	2008	40.99	37.15	113.35	0.84	67.16
LAHORE	2009	46.27	54.06	54.81	1.58	93.02
	2007	34.36	55.38	99.76	1.88	47.49
PESHAWAR	2008	41.62	52.18	98.78	1.44	26.31
	2009	42.12	46.82	54.81	1.09	33.52
	2007	14.27	45.95	95.89	0.30	36.47
	2008	26.83	38.39	66.89	0.45	21.40
KARACHI	2009	13.42	54.84	60.86	0.08	43.15
	2007	34.68	42.20	68.94	1.45	26.70
	2008	44.48	33.25	55.64	1.05	42.58
QUETTA	2009	51.35	34.78	58.45	0.90	73.09
	Standards	235.00	100.00	35.00	10.00	365.00

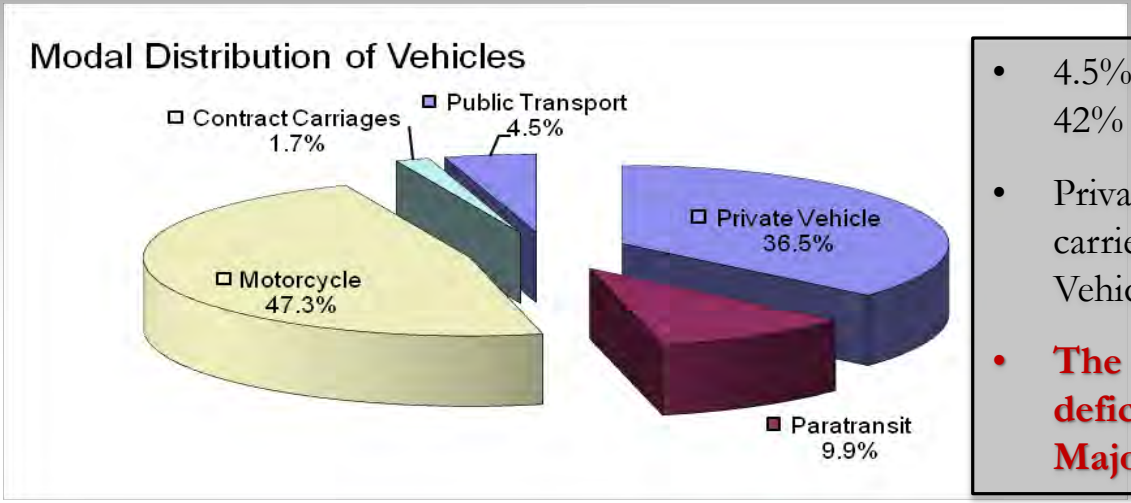
TYPICAL TRAFFIC GROWTH

- Inter-District Passenger Traffic 293 Billion km/year (2015)
- Inter-District Freight Traffic 185 Billion Ton-km/year)
- Inter-District Passenger Traffic 5%
- Inter-District Freight Traffic 12%
- Inter-District No. of Trips 3.5%
- No of Registered Vehicles 8%

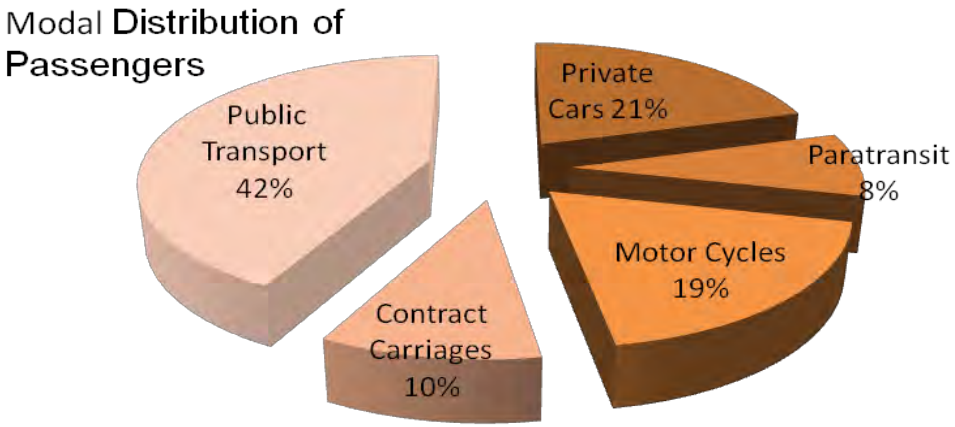
TYPICAL TRAFFIC MIX – INTER URBAN

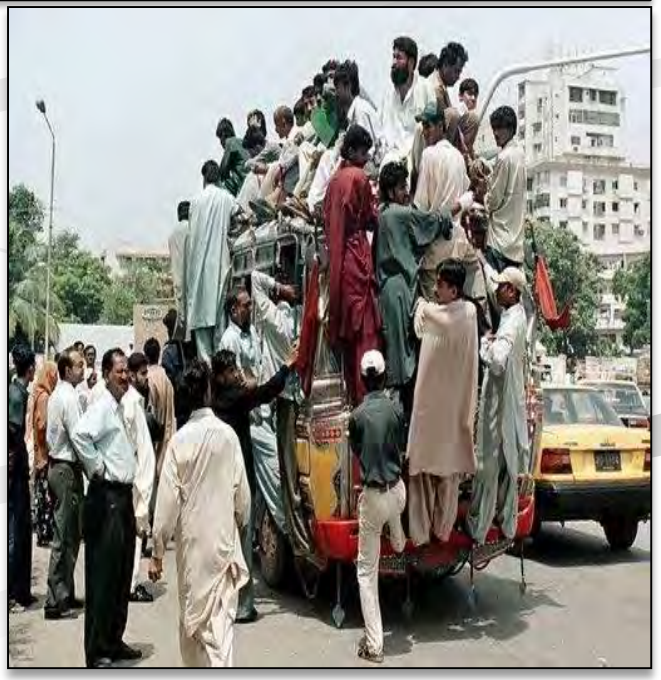
- CAR 37%
- M/B & BUS 15 & 9%
- MED TRUCK 10%
- TRUCK (Rigid) 15 & 8%
- TRUCK (Multi axle) 6%

TYPICAL TRAFFIC MIX - CITIES



- 4.5% composition of Public Transport Vehicles carry 42% of Total Persons Traveling in the City.
- Private Cars which is 36.5% of Total Vehicular Traffic carries only 21% of Persons. Showing Lesser Average Vehicle Occupancy.
- **The above leads to the conclusion that there is still deficiency of Public Transport availability on all Major Routes in the cities.**





CPEC VISION (2013)

- **Strategic** plan to improve logistics, develop business and achieve sustained economic growth
- **Upgrade** existing transport infrastructure & create new assets
- **Create** greater synergy among rural, provincial and federally supported transport infrastructure
- **Develop** broad range of support services such as shipping, freight management, trucking, insurance and banking
- **Bring** about substantive / qualitative changes to the industrial and services base by better economic mix

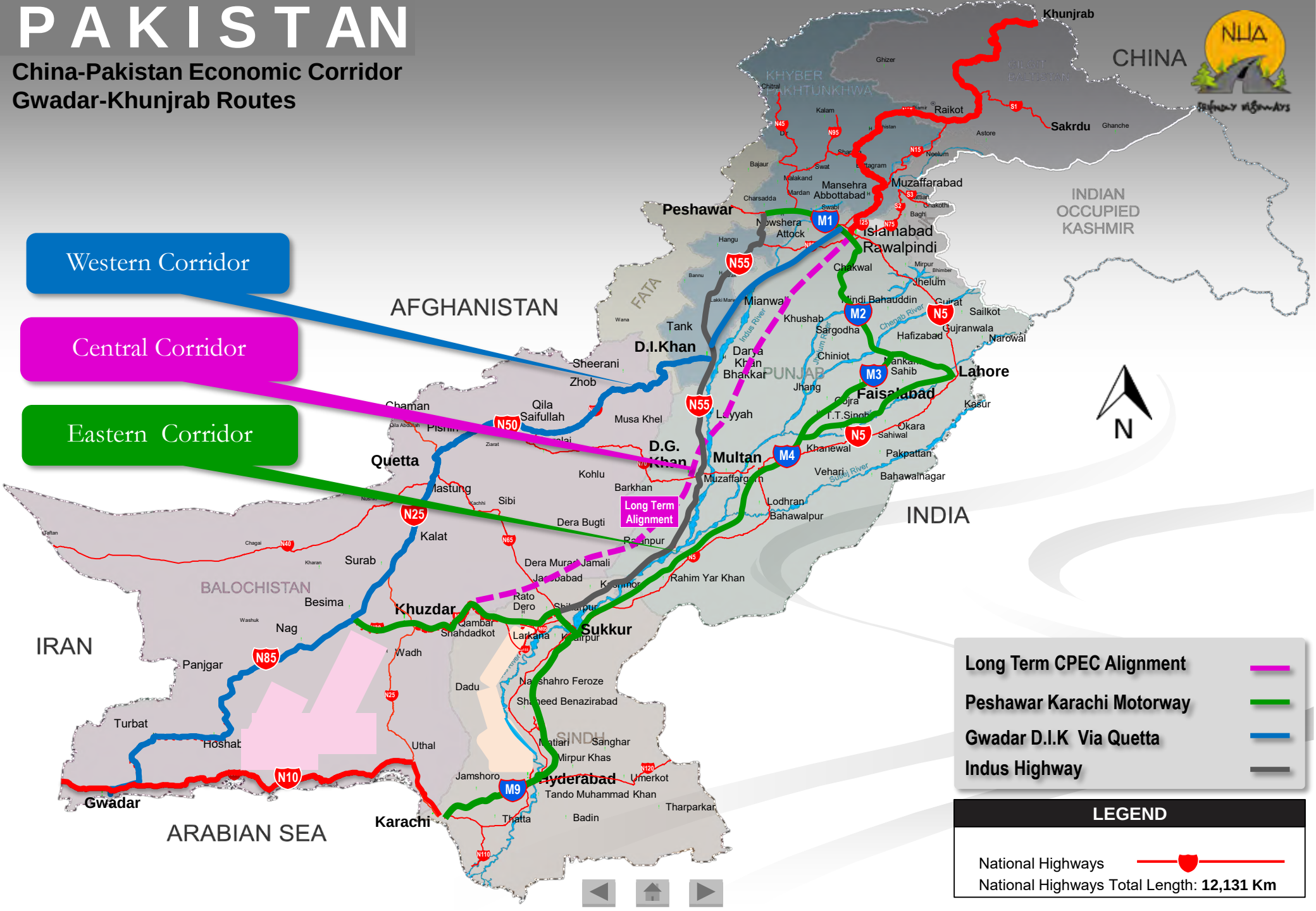
National Trade Corridor Program (2000)

- **Aim**
  - **Upgrading capacity, extending the network, and modernizing the national highways along the NTC**
- **Objective**
  - **Improve trade flows by lowering transit costs & times**
- **Targets**
  - **50% reduction in travel time**
  - **10% decrease in road transport costs**
  - **70% reduction in road fatalities**

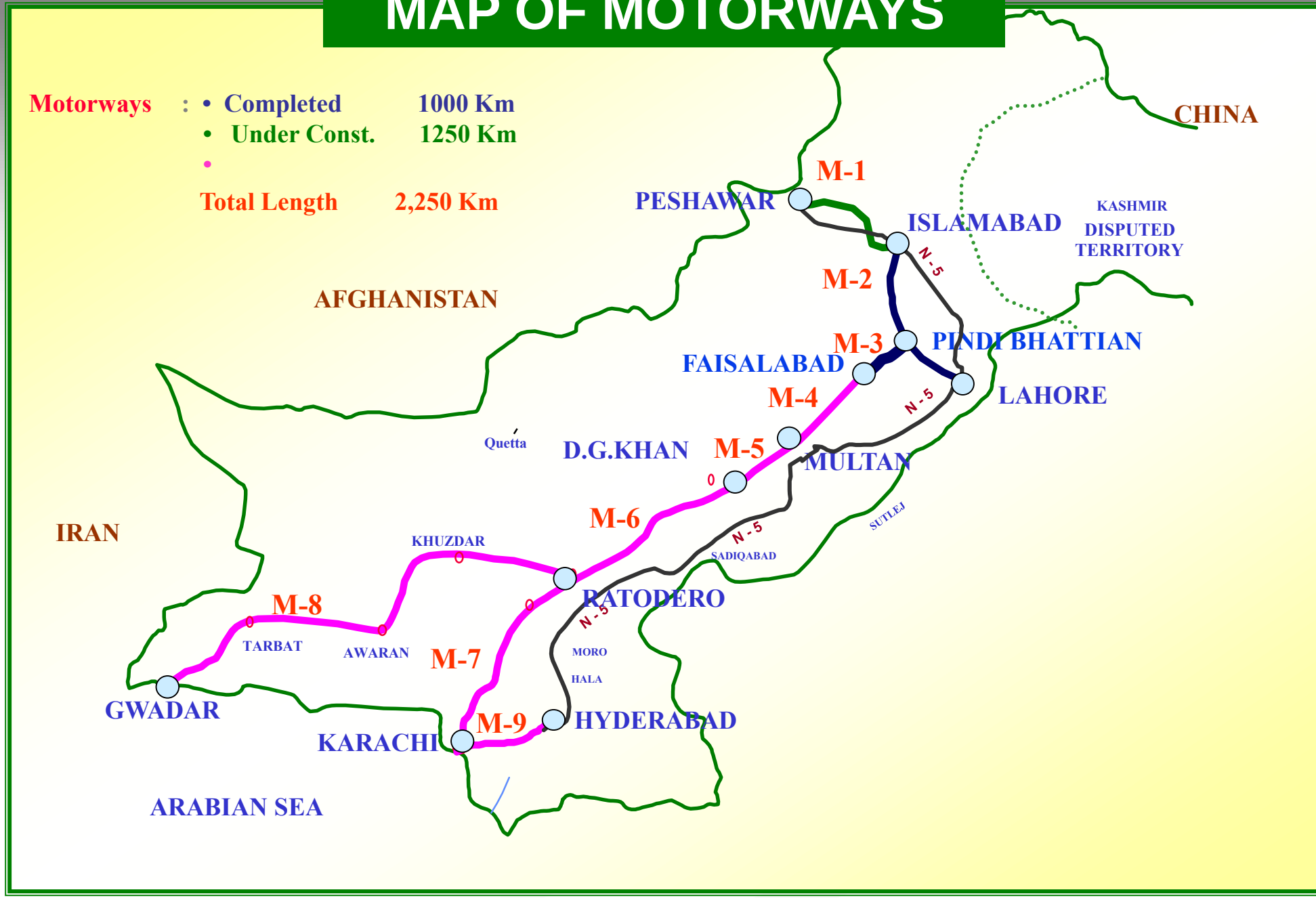
Meets many goals set in the Bangkok Declaration

PAKISTAN

China-Pakistan Economic Corridor
Gwadar-Khunjrab Routes



MAP OF MOTORWAYS



Motorway M-1, Islamabad to Peshawar

Railways

- Feasibility underway to convert to 1st level of High Speed Trains i.e 160 kph along the Main Line 1 (Karachi-Lahore-Peshawar, length, 1800 km)
- Afghanistan Facilitated
- Instead of 2 trains about 2 years ago, now 10 trains leaving daily from Ports

Ice was broken 3-Years back

First Master Plan for Karachi, 1957

(Circular / ring road Railway, 1969)

POPULATION OF MAJOR CITIES OF PAKISTAN

Total population of Pakistan = 190 million (2015) 39% Live in Urban Areas				
S.No.	**CITY**	**1998 CENSUS**	**ACGR(%)**	**2011**
1	**KARACHI**	9,339,023	3.49	14,587,487
2	**LAHORE**	5,143,495	3.32	7,864,217
3	**FAISAL ABAD**	2,008,861	3.58	3,173,487
4	**RAWALPINDI**	1,409,768	3.43	2,185,508
5	**MULTAN**	1,197,384	2.93	1,742,927
6	**HYDERABAD**	1,166,894	2.62	1,633,231
7	**PESHAWAR**	1,132,509	3.79	1,836,806
8	**GUJRANWALA**	982,816	3.29	1,497,028
9	**QUETTA**	565,137	4.09	951,636
10	**ISLAMABAD**	529,180	5.70	1,087,873
	TOTAL	**23,475,067**	**3.45**	**36,560,199**

Islamabad

Expanding Capacity Inviting More Traffic

METRO BUS SYSTEMS

- 2 Vibrant & Operational Bus Systems
- Lahore Metro Bus, 29 km long corridor, Low fare (20 US Cents - 40% of what commuters used to pay), Strong Ridership (180,000 passengers/day)
- Rawalpindi-Islamabad Metro Bus, 23 km long corridor, Low fare (20 US Cents - 40% of what commuters used to pay), Strong Ridership (120,000 passengers/day)
- Multan Metro Bus Under Construction, 18.2 km, completion May 2016,

(at present systems are subsidized to attract commuters)

Lahore Metro Bus - Inauguration

- 10,000 – 30,000 Passengers/Hour/Direction
- Length 28.7 km, Avg. Speed 26 km/hr, Daily 180, 000 pass, Fare Rs 20,

Islamabad Metro Bus Systems

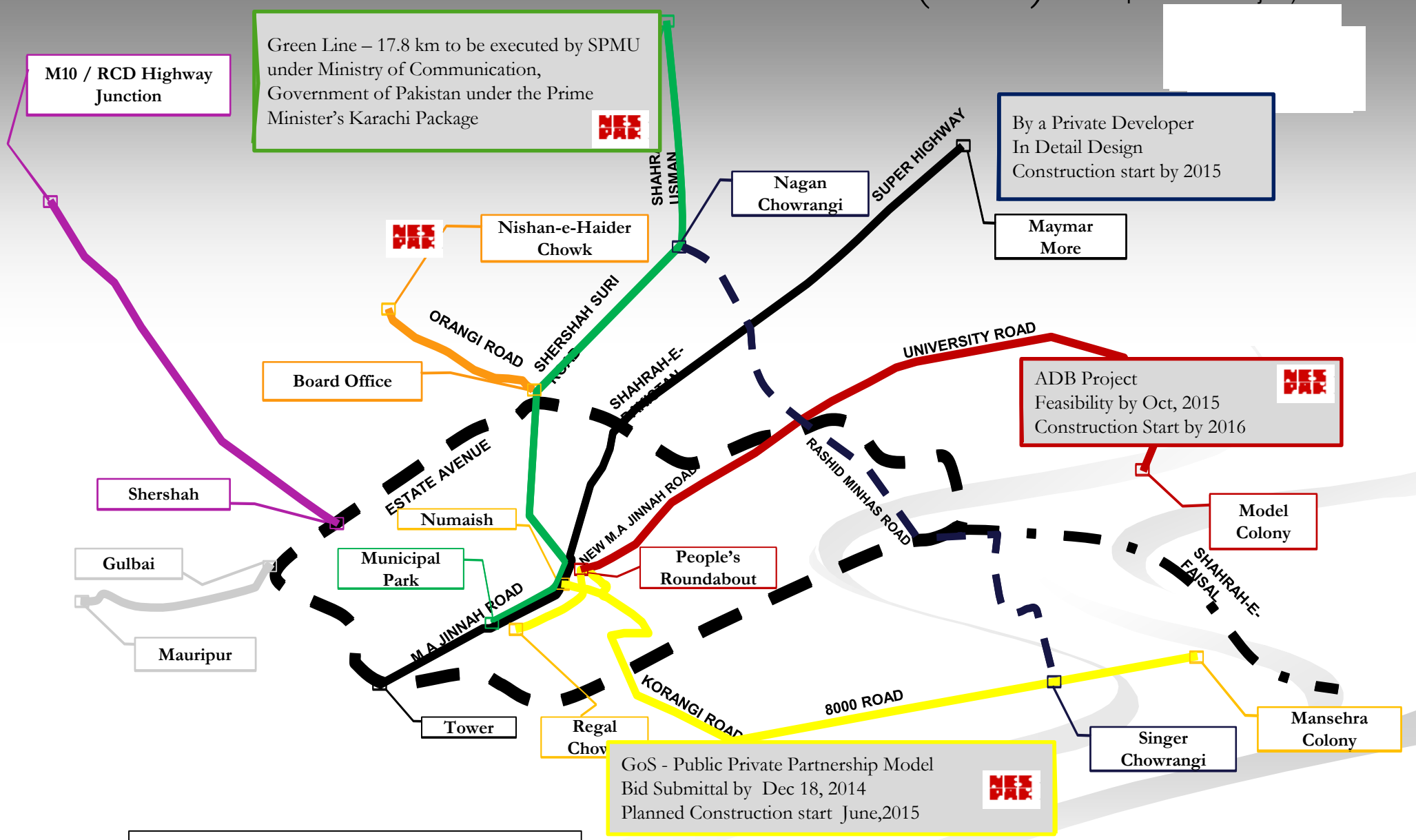
Lahore Metro Train

Lahore Metro Bus

- Construction has started
- Cost US $ 1.6 Billion
- Orange Line Metro 27.1-km 2-lane track
- Elevated 25.4 km
- Service will initially benefit around 250,000 passengers per day.
- Capacity will be increased to 500,000 pax per day by 2025

Planned Mass Transit Corridors – KTIP (2030)

(Karachi Transportation Improvement Project)



BRT GREEN LINE

Corridor Length

17.8 km

Elevated	3.45 km
At grade	14.35 km

No. of Stations: 21

Legend

- At Grade
- Elevated
- Shared Elevated with Blue Line

Project Start
KESC Power House
KDA Chowrangi Surjani Town
Surjani Chowrangi
Two Minute Chowrangi
Road 4200
Power House Chowrangi
Road 2400
UP Mor Intersection
Nagan Chowrangi
Erum Shopping Emporium
Sakhi Hassan Chowrangi
Five Star Chowrangi
Hydari Market
KDA Chowrangi
Board Office
Public Park
Baqai Hospital
Model Park
No. 1 Chowrangi
Lasbela Chowk
Gurumandir
West of Quaid-e-Azam
KGA Ground
Taj Medical Complex
Garden Sqaure
Radio Pakistan
Municipal Park
Congested Corridor

UN Cooperation

Pakistan Sustainable Transport (PAKSTRAN) project (Project ID: 00072773; PIMS No. 3953) is an initiative of UNDP-GEF & Government of Pakistan that aims to provide technical assistance to reduce the growth of energy consumption & related greenhouse gas (GHG) emissions from transport sector in Pakistan, while simultaneously improving urban environmental conditions and improving Pakistan's trade competitiveness

Objective

- *Improve:* energy efficient modes, operations, technologies
  - Fuel economy standards
  - Stricter implementation of anti-overloading laws
  - Technological tools, such radio frequency identification tags (RFID), global positioning systems (GPS) and vehicle routing software

Industry, Trucking Policy, Transport Policy

Project has four components (to achieve outcomes):

- **Outcome 1: An operational sustainable urban transport system in Punjab province**
- **Outcome 2: An operational sustainable urban transport system in Sindh province**
- **Outcome 3: Improved fuel efficiency in truck freight transport &**
- **Outcome 4: Increased public awareness and institutional capacity on sustainable transport concepts (IUCN-Pakistan is the Responsible Partner)**

Pipeline Transportation

- Pakistan has extensive network of Gas and Oil pipelines
- Gas Pipelines
  - 10,000 km (Main)
  - 200,000 km (Distribution)
- Oil Pipelines 2,500 km
- 5000 Trucks taken off the road
- Two more will be constructed for LNG


THANK YOU

Islamabad #3: Islamabad is a big village

Goals and Targets

- The most important is land use,
- Whole Country Industrial Area (1980s) pop Karachi 5 Mill
- Heavy Industries in and around Karachi not allowed except in very few cases
- 4th largest producer of Cotton (USA, China, India); 3rd largest spinning Capacity- Mostly in rural areas/towns


60
HTV
70
CNG
24 hrs

Key Transport Challenges in Urban Areas

- Increasing Urban Population
- Growing Congestion
- Rising Energy consumption
- Increasing Air Pollution & CO_2 emissions
- Adverse Health Effect
- Declining Road Safety

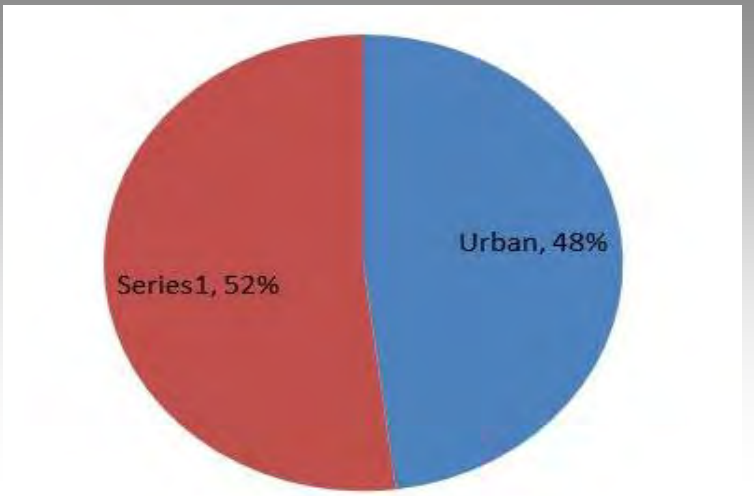
Increasing Urban Population

World Statistics

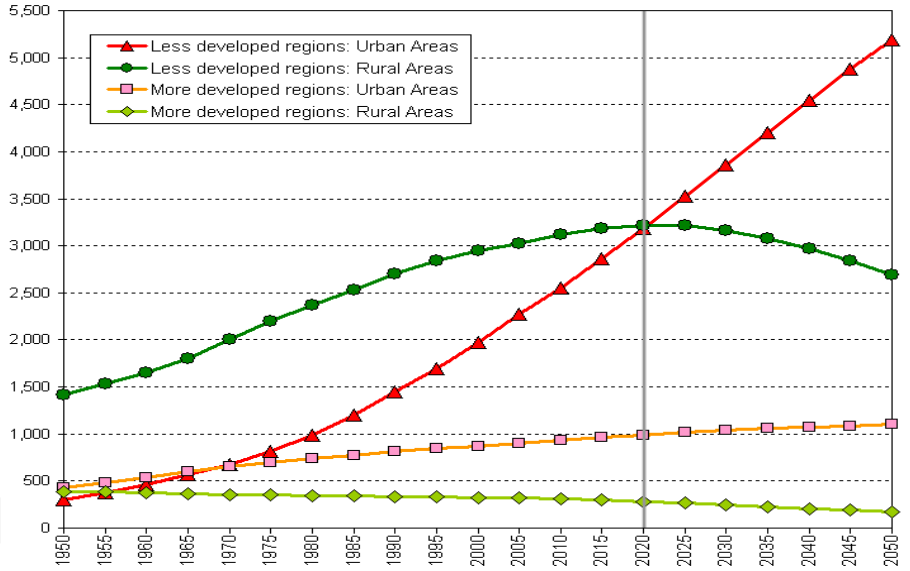
- Total Global population 7.09 billion
- Urban Population – 3.4 billion
- The population has been growing at an average 1.1%
- Highest population in Asian Cities – 60%
- India & China together account for 37% of the total population

Pakistan Statistics

- In 2014 - the population of Pakistan is 188 Million
- 38.5% of population lives in urban areas



Increasing city populations: Urban and rural population by development regions (in millions)



Source: United Nations Population Division, World Urbanization Prospects, The 2009 Revision

METRO BUS SYSTEMS

- Operational
- Lahore Metro Bus
- Rawalpindi-Islamabad Metro Bus
- Under Construction
- Multan Metro Bus
- Under Design Stage
- Karachi= Green Line BRTS

Islamabad METRO BUS SYSTEMS (8 Ac, uS 1 bill)

Lahore Orange Line

Subsidy Yes

Operated by private sector

Background

- **Karachi Metropolitan is the most populous in Pakistan with an estimated population of over 20 million.**
- **The transportation strategy for the city of Karachi must focus on a sustainable and integrated approach.**
- **Karachi Mass Transit Cell in association with Japan International Cooperation Agency (JICA) and World Bank (WB) have performed several studies for the implementation of mass transit facilities. Notable among these are:**
  - Karachi Mass Transit Study (KMTS), 1990 (WB)
  - Person Trip Study, 2005 (JICA)
  - Several studies on KCR Revitalization, 2002-2012
  - Travel Demand Forecasting of Karachi, 2008 (JICA)
  - Confirmatory Green Routes Study in Karachi, 2008 (IPDF)
  - Karachi Transport Improvement Plan (2030), 2012 (JICA)

Project Steering Committee

1.	**Secretary Communication, Government of Pakistan….**	**Chairman**
2.	**Secretary Finance, Government of Pakistan**	**Member**
3.	**Secretary Planning, Government of Pakistan**	**Member**
4.	**Chief Secretary, Sindh**	**Member**
5.	**Chairman, National Highway Authority**	**Member**
6.	**Inspector General Sindh**	**Member**
7.	**Project Director (PM's Karachi Package / SPMU)**	**Member / Secretary**
8.	**Commissioner Karachi**	**Member**
9.	**Administrator, Karachi Metropolitan Corporation**	**Member**
10.	**Secretary Transport & Mass Transit Dept, GoS.**	**Member**
11.	**Mass Transit Expert / Private Sector Representative**	**Member**

The Committee may also coopt any other person for performing its function. Special Project Management Unit (SPMU), under the Ministry of Communications will act as Secretariat of the Committee.

Terms of Reference for the PSC would be:

- To steer the project at strategic level and provide policy guidelines for the project;
- To review performance of the project on regular basis; and
- To consider and approve variations in the project within the approved scope.