
BREAKTHROUGHS AND BREAKDOWNS OF TRANSPORTATION SYSTEM IN THE PHILIPPINES

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY (NAST)

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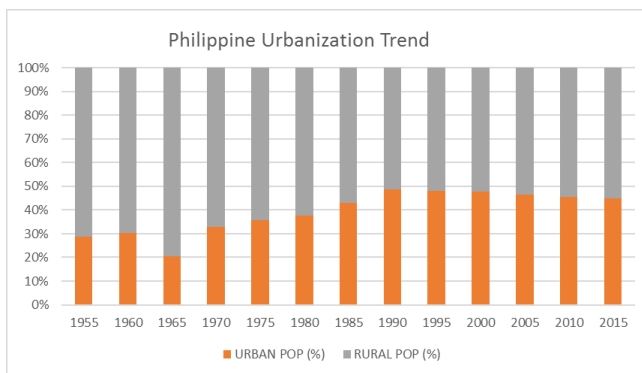
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OUTLINE OF PRESENTATION

- Urban Transportation
- Inter-local linkages
 - Roads
 - Air transport
 - Water transport
- Issues that need to be addressed moving forward

URBAN TRANSPORTATION

CHALLENGES IN URBAN TRANSPORT DEVELOPMENT



Source: <http://www.worldometers.info/world-population/philippines-population/>

- Urban population increased from 29% in 1955 to 45% in 2015
- By 2050, it is projected that the urban population of the Philippines will reach 60%
- Increasing mobility demand
- Transport infrastructure development is slow due to underinvestment and lack of proper maintenance

CHALLENGES IN URBAN TRANSPORT DEVELOPMENT

METRO MANILA

- Economic loss due to congestion in Metro Manila is estimated to be PhP 2.1 B/day and is expected to increase to PhP6B daily in 2030, if no intervention is effectively implemented (JICA, 2014)



Source:
<http://business.inquirer.net/130649/traffic-costs-p2-4b-daily>

CHALLENGES IN URBAN TRANSPORT DEVELOPMENT

CEBU CITY

- Too many PUJs/vehicles with no new infrastructure improvements in the Cebu City
- Uncontrolled/ unlimited issuance of franchises for PUJs
- Slow travel times
- Undisciplined drivers and pedestrians on the streets
- Large scale use of motorcycles for public transport i.e. "habal-habal"
- Illegal parking
- Sidewalk encroachment and sidewalk vendors

Source:
 CITOM/CEBU BRT FS, 2012

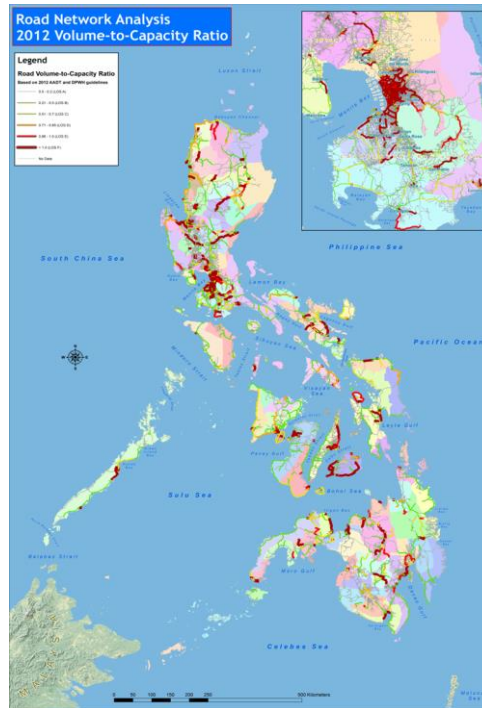
ILOILO CITY

- Heavy traffic will take place on roads not only inside the City but also within the radius of 10km outside the City
- All radial roads within the City will exceed their traffic capacity, most of which have slight to no possibility of widening.
- Most roads except four-lane divided roads, will exceed their capacity and level of service will be aggravated to D, E or F. However, further widening of such roads is extremely difficult.



Source:
 Traffic and Traffic Management for Philippine CDS Cities Project, 2015

CHALLENGES IN URBAN TRANSPORT DEVELOPMENT



Source: Philippine Transport Infrastructure Development Framework Plan, 2014

OTHER ISSUES IN URBAN TRANSPORT DEVELOPMENT

- No link between land use/transport
- Limited information for travelers
- High cost of urban transport, especially for poor
- Public transport system design (routes) not systematically organized (rationalized)
- Air pollution has become a serious concern.
- Dominance of jeepneys, utility vehicles, and tricycles as urban public transport, which contribute to severe traffic congestion, particularly around transit terminals and public markets, particularly in smaller urban centers.
- Need for public transport terminals that integrate different modes of public transport
- Generally, levels of service of public transport is poor due to long travel time, safety, and inconvenient intra/inter modal transfers

Source: Philippine Transport Infrastructure Development Framework Plan, 2014, NEDA/WB//AusAID

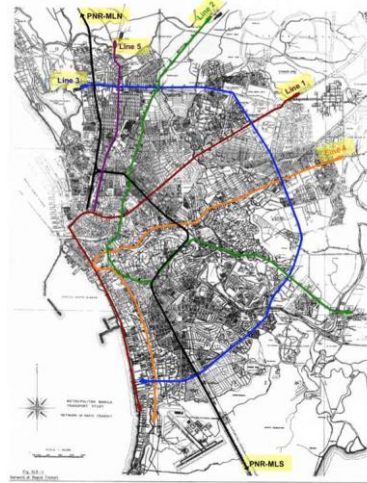
Source: Philippines Transport Sector Assessment, Strategy and Road Map, 2012, ADB

METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2012)

Urban Transport Study in Manila
Metropolitan Area (UTSMMA)

March 1971 to September 1973

- A Rapid Transit Railway (RTR) network was recommended in the form of subways in the inner area bound by EDSA, and elevated in the suburban areas
- Also recommended that buses and jeepneys be used as feeder services to the proposed rail network



METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

Metro Manila Transport,
Land Use and
Development Planning
Project (MMETROPLAN)

*January 1976 to
February 1977*

Recommended strategies
included:

- Cordon pricing
- LRT line along Rizal Avenue
- Other noteworthy recommendations:
Recommended that franchises should be issued for a period of a few years instead of 25 years and to define a minimum LOS
- basis for the current Route Measure Capacity (RMC)

METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

- Soon thereafter, DPWTC was separated into two agencies: Ministry of Public Works (MPW) and Ministry of Transportation and Communications (MOTC)
- Board of Transportation (BOT) is formed

Metro Manila Urban Transport Improvement Project (MMUTIP)

July 1980 to August 1981

- Main recommendation/s: New franchising system to be adopted by the then Board of Transportation (BOT) with standards covering citizenship, route opening, operating performance and financial capability

METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

- The Metro Manila Urban Transportation Strategy and Planning Project (MMUTSTRAP) *November 1982 to April 1983*

- Reviewed the recommendations of MMETROPLAN and MMUTIP
- Concluded that deregulation will not result to quality transport service
- Ranking of projects for implementation in Metro Manila such as potential transit projects, terminal projects, and road projects

METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

The Metro Manila
Transportation Planning
Study I and II

*(More popularly known
as the JICA Update on
Manila Study on Urban
Transport or JUMSUT)*

November 1982 – March
1984 and June 1984 -
March 1985

- Focused on studies to support the implementation of the LRT Line 1 project along Rizal and Taft Avenues

METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

Metro Manila Urban Transport
Development Plan (1990-2000)
Project (UTDP)

- Implemented from 1990, the
UTDP was an inter-agency
collaboration among the DOTC,
DPWH, MMA (precursor of the
MMDA), NEDA, CHPG
(Constabulary Highway Patrol
Group of the Philippine National
Police) and MTPC

- Most relevant studies conducted was the comparison of proposals for a mass transit system along EDSA
- The study concluded that a bus-based system was preferable to the street-level LRT along EDSA

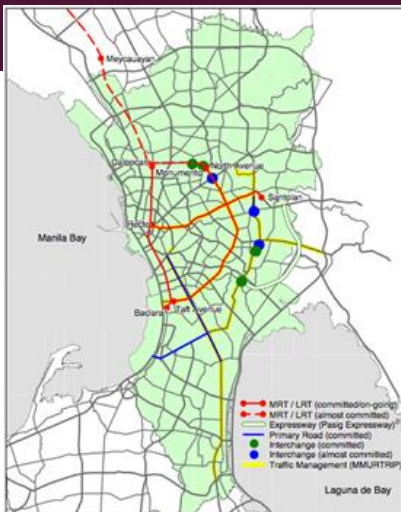
METRO MANILA: MAJOR TRANSPORT STUDIES AND REFORMS (1972-2010)

The Metro Manila Urban Transportation Integration Study (MMUTIS)

Implemented 1996 – 1999

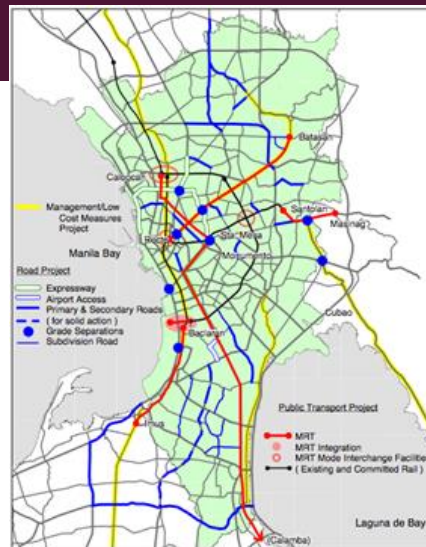
- Recommendations to improve transport and traffic in Metro Manila, particularly a master plan for implementation in the next 15 years, including the MRT Line 2 Extension
- Shift from physical restraints to pricing measures such as road pricing, Area Licensing System (ALS), parking pricing, etc

MMUTIS



1/ LRT Line 1 (Monumento-Bacorzon) is an existing line.
2/ not fully committed yet.

Committed Projects



Proposed Projects

STUDIES ON PT REFORMS FOR THE METROPOLIS

- **Pre-Feasibility Study for a Bus Rapid Transit in the Greater Metro Manila Area**
 - completed in July 2007 with support from the USAID
 - Recommended Ortigas and C5 corridors
- **EDSA Bus Revalidation Survey**
 - Completed in January 2006
 - oversupply of bus units along the section where routes overlapped
 - recommended for simplifying the routes in order to reduce the number of buses along EDSA as well as to examine the possibility of introducing BRT along EDSA

STUDIES ON PT REFORMS FOR THE METROPOLIS

- **Mega Manila Public Transport Study (MMPTS)**
 - Implemented from November 2006 to April 2007 as a follow-up to the EDSA Bus Revalidation Survey
 - Key findings included:
 - Integration of public transport franchise and vehicle records was noted as an issue where cases wherein LTFRB and LTO records do not match
 - Problematic in terms of franchise verification and the proliferation of “colorum” or illegal bus, jeepney and UV express units
 - computerization and interconnectivity among the LTFRB and LTO databases

STUDIES ON PT REFORMS FOR THE METROPOLIS

- **Development of a Mega Manila Public Transport Planning Support System (MMPTPSS)**
 - Implemented from 2010 to May 2012 conducted under a memorandum of agreement between the DOTC and the University of the Philippines –Diliman
 - Developed a planning support system that can be used by both the DOTC and the LTFRB in determining supply requirement

METRO MANILA: URBAN TRANSPORT POLICIES

- Unified Vehicular Volume Reduction Program (UVVRP)
 - started as the Odd-Even Scheme in 1995 and evolved into much of its present form in 1996
- U-turn scheme
 - first implemented in 2003
 - involved the use of median openings along busy arterials to approximate roundabout operations
- Organized Bus Route (OBR) scheme
 - First implemented in 2003 with the objective of weeding out “colorum” (illegal) units

METRO MANILA: HITS AND MISSES

System

- Even as early as 1971, there were already recommendations for the implementation of mass transportation system along the major thoroughfares.
- UTSMMA Study evaluated the Manila Rapid Transit Railway Line (RTR) Line 1 and was found favorable
- but was not implemented after a contrary assessment by a subsequent study, MMETROPLAN.
- Subsequent studies also recommended the implementation of several light railway transit and a bus-based mass transit system along EDSA. However, despite these recommendations, the EDSA MRT was constructed, instead of a bus-based system.

METRO MANILA: HITS AND MISSES



Photos from <http://d0ctrine.com/tag/rail-transport/>

METRO MANILA: HITS AND MISSES

Policy reforms that have been undertaken and sustained

- 1) Reduction of the validity of the Certificates of Public Convenience (CPCs) from 25 years to several years (MMETROPLAN)
 - Implementation of new franchising system with standards covering:
 - 1) citizenship
 - 2) route opening
 - 3) operating performance, and
 - 4) financial capability.

Route opening was rationalized through the adoption of the Route Measured Capacity (JUMSUT2)

METRO MANILA: HITS AND MISSES

Policy reforms that have been undertaken and sustained

- 2) Reduction of competition between PUBs and PUJs by controlling entry of the latter in bus routes (MMUTIP)
- 3) Number coding scheme (which has been sustained through the years)
 - One recommended travel demand management scheme, cordon pricing, has remained a plan.

INITIAL ASSESSMENT



POLITICAL-ECONOMIC CONTEXT OF URBAN TRANSPORT REFORMS

1) Politics of administration

- Term of office of head and key officials of agency co-terminus with the President of the Philippines
- Inter-agency politics
 - Priorities of agencies are not harmonized
 - Need for 'legacy projects'
- Inherent weaknesses of key government organizations
- Failure to develop masterplan beyond political terms

POLITICAL-ECONOMIC CONTEXT OF TRANSPORT REFORMS

2) Politics of politics

- Traffic management of LGUs
- Economic well-being of the PT operators and drivers

MOVING FORWARD: KEY LEARNINGS FROM THE PAST

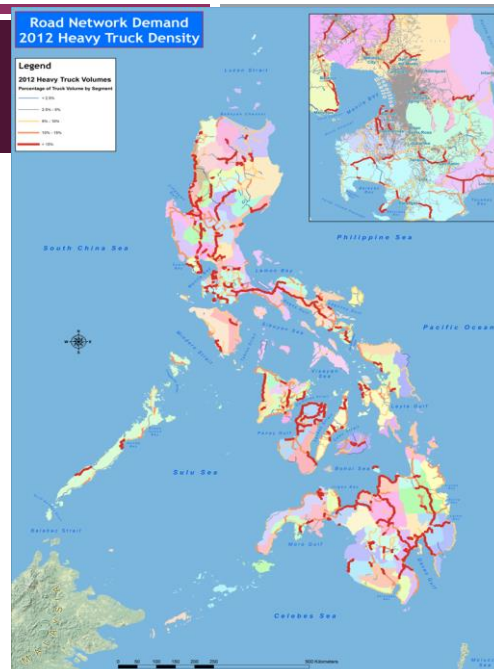
- Importance of a well-prepared technical studies as basis for firm agency decisions
- Definitive master plan by agency as blueprint, even beyond political term of office
- Corresponding capacity building for agency management and technical staff
- Coordination with other pertinent agencies and LGUs (shared goals and vision from the system perspective)

INTER-LOCAL CONNECTIVITY

ROADS

- Roads carry 98% share of passenger and 58% share of cargo traffic
- Need link roads to other modes of transport, particularly improving roads to existing ports and airports or roll-on/roll-off (RORO) nautical transport facilities
- Lax enforcement of the anti-truck overloading regulations has also contributed to the poor road conditions

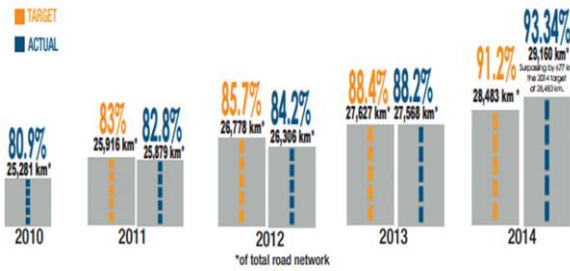
Source: Transport Sector Assessment, Strategy, and Road Map, 2012, ADB



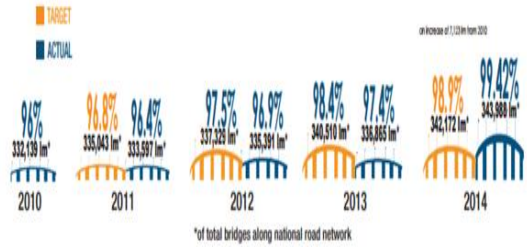
Source: Philippine Transport Infrastructure Development Framework Plan, 2014, NEDA/WB/AusAID

ROADS

NATIONAL ROAD NETWORK PAVED



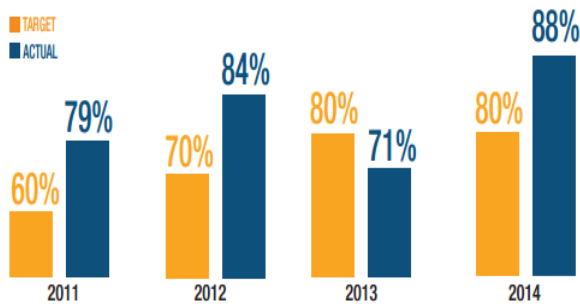
BRIDGES ALONG NATIONAL ROADS MADE PERMANENT



Source: DPWH Annual Report 2014

ROADS

PERCENTAGE OF PROJECTS COMPLETED WITHIN TIME AND BUDGET



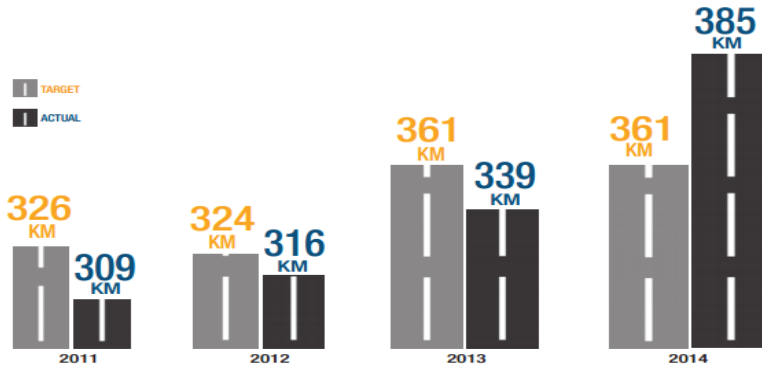
On the objective of increasing the "percentage of projects completed within time and budget", this shall improve from the baseline value of 55% in 2010 to 60% in 2011, 70% in 2012, 80% in 2013, 83% in 2015, 85% in 2016, and 100% in 2030. In 2014, DPWH performance was 88% as against the target of 80%.

Source: DPWH Annual Report 2014

ROADS

LENGTH OF (CONSTRUCTED) EXPRESSWAYS IN KILOMETER

The length of constructed expressways in the country is targeted to improve from a baseline figure of 286 km in 2010, to 324 km in 2012, 361 km in 2013, 387 km in 2015, and 437 km in 2016. In 2014, the DPWH and its concessionaire/private sector partners have constructed a total length of 385 km as against a target of 361 km.



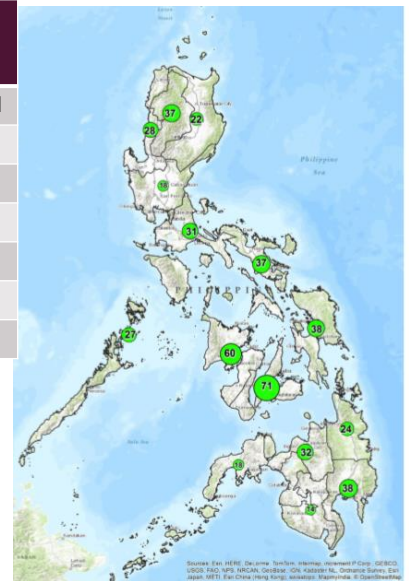
Source: DPWH Annual Report 2014

ROADS

Tourism Road Infrastructure Program (TRIP)

'Convergence Program for Enhancing Tourism Access' forged between the Department of Tourism (DoT) and Department of Public Works and Highways (DPWH) anchored on the National Tourism Development Plan

Road Classification	Length of Road Constructed (km)			
	2013	2014	2015	Total
National	72	7	1	80
Local	144	47	197	388
Total	216	54	198	468
% of total				
National	33.3	13.0	0.5	
Local	66.7	87.0	99.5	

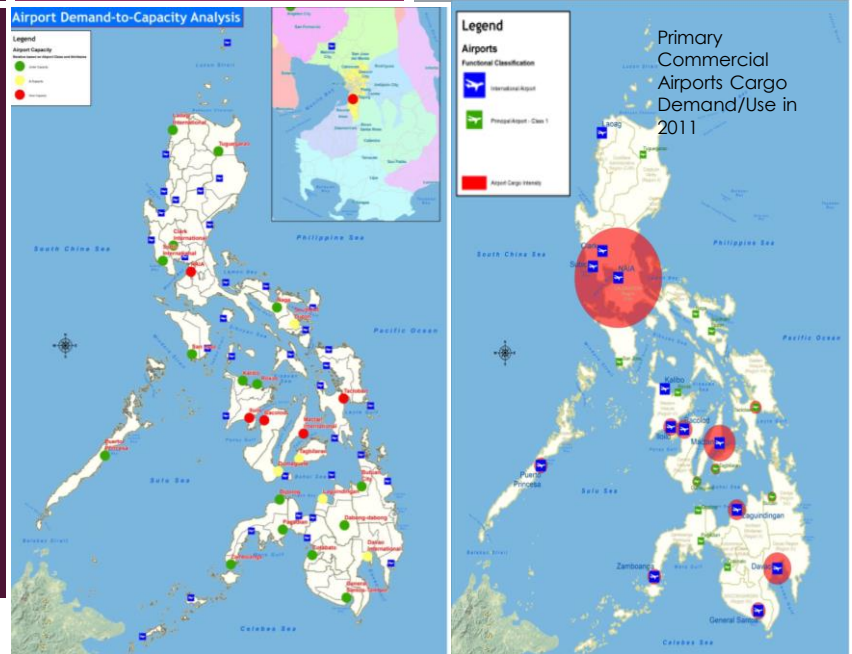


Source: An Assessment of the Tourism Road Infrastructure Program (TRIP) Draft Report, 2015, WB

AIR TRANSPORT

- Overall a number of key airports are now operating over-capacity, including NAIA, Cebu Mactan International, Bacolod, and Iloilo
- Overlap of high passenger demand and high cargo volumes at some airport facilities, specifically in Manila, Cebu, Davao and

Source: Philippine Transport Infrastructure Development Framework Plan, 2014, NEDA/WB/AusAID



AIR TRANSPORT

AIR TRAFFIC HANDLED BY INTERNATIONAL AIRPORTS

AIRPORT	TERMINAL CAPACITY (in million pax)	TOTAL PAX TRAFFIC (in million pax)	DOMESTIC PAX (in M)	INT'L. PAX (in M)	Volume/ Capacity Ratio
Manila	30.00	36.30	19.40	17.20	1.21
Clark	4.00	0.87	0.04	0.83	0.22
Cebu	4.50	7.80	5.80	2.00	1.96
Davao	2.00	4.15	4.10	0.05	2.08
Iloilo	1.20	1.70	1.62	0.06	1.42
Kalibo	0.70	2.40	0.99	1.40	3.43
Palawan	0.35	1.40	1.40	0.01	4.00

AIR TRANSPORT

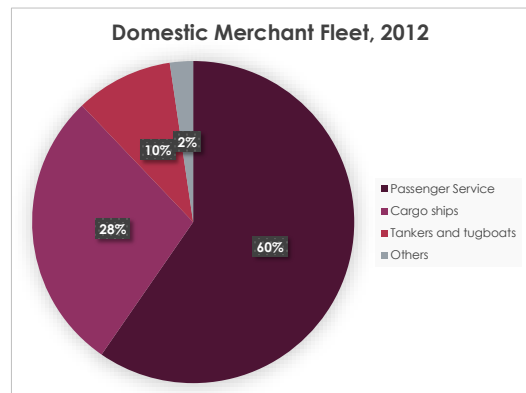
TERMINAL CAPACITY BASED ON EXPANSION

AIRPORT	TERMINAL CAPACITY (in million pax)	EXPANDED CAPACITY
Manila	30.00	30.00
Clark	4.00	7.50
Cebu	4.50	12.50
Davao	2.00	6.70
Iloilo	1.20	4.50
Kalibo	0.70	2.40
Palawan	0.35	2.00
Bohol		1.70
Bicol		2.40

WATER TRANSPORT

■ In 2012, 50,000 fishing vessels were for passenger service, composed mostly of *motorbancas*

- There are about 6,000 plus registered fishing vessels.
- Average age of passenger vessels are 18 to 20 years old, while cargo vessels have average age of 11 years old.
- There were 442 total importations from 2010-2012, mostly for cargo transport.
- There were 2,497 domestic operators, where 509 are corporate entities and 1,95 single proprietors.
- Overall, they serve 14 primary routes and 102 secondary routes.

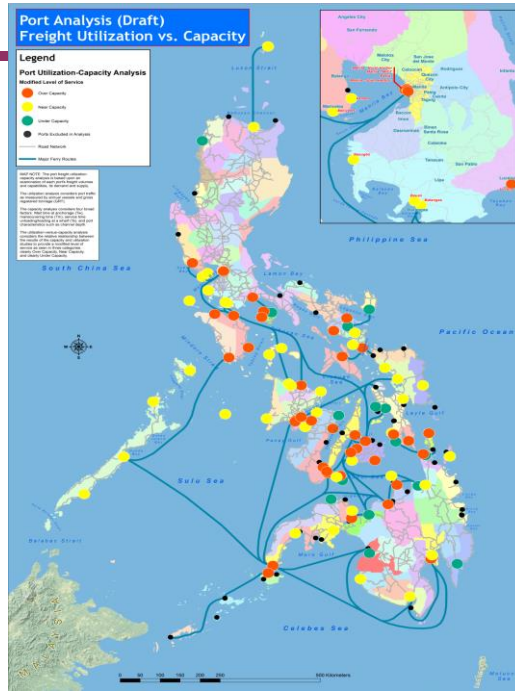


(Source: The Philippine Maritime Industry: Prospects and Challenges in 2013 and Beyond. Planning and Policy Office, MARINA)

WATER TRANSPORT

- Most of our major gateways are already ISO certified as far as Vessel Entrance and Clearance (VEC) is concerned.
- The country's ports serviced 362,994 vessels during the year, up by 1.82 percent compared to 2013.
- Domestic ship calls, which largely accounted for the increase, posted a 2.13 percent growth while foreign vessel traffic suffered a decline of 8.52 percent.

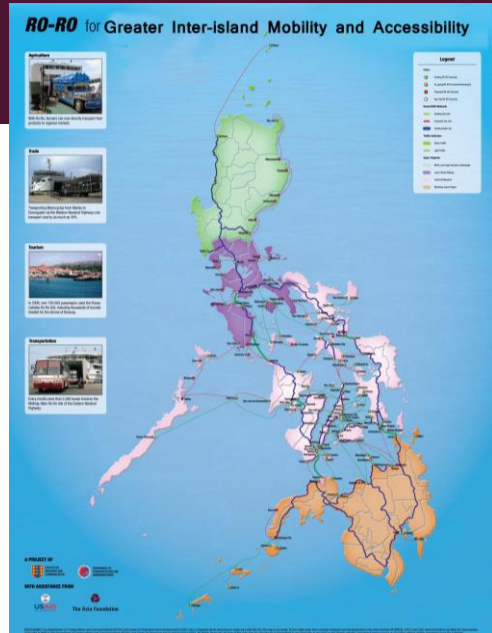
Source: PPA Annual Report 2014



Source: Philippine Transport Infrastructure Development Framework Plan, 2014, NEDA/WB/AusAID

WATER TRANSPORT

- Under the Road RORO Terminal System (RRTS), 18 of the 32 identified routes are now served by 41 shipping companies deploying 129 vessels
- Eight companies are also serving 15 RORO missionary routes



MOVING FORWARD

Infrastructure index	2012-2013 Rank	2015-2016 Rank
Quality of roads	87	97 ☹
Quality of railroad infrastructure	94	84 ☺
Quality of air transport infrastructure	112	98 ☺
Quality of port infrastructure	120	103 ☺

ISSUES THAT NEED TO BE ADDRESSED

- Poor quality of the road network,
- Poor intermodal connectivity hampering ease of transfers
- Lack of quality urban transport systems
- Port and airport congestion

THANK YOU FOR YOUR ATTENTION