

Chapter 6

Infrastructure

Development plans should consider our archipelagic economy. Our islands have to be interconnected by good transport and communications networks that will open up new economic opportunities, reduce transportation and transaction costs of business, and increase access to social services. This interconnection will also strengthen the socioeconomic, cultural and political linkages between and among regions. Eventually, this connection will decentralize progress and bring development to the countryside.

The cost of these infrastructure projects is enormous and beyond the capacity of any one level of government. The government shall thus tap local government units and the private sector to be its partners in the development and implementation of infrastructure. The implementing rules and regulations of the Build-Operate-Transfer (BOT) Law shall be amended to promote wider private sector participation. It must be noted that the first generation of BOT projects brought more than US\$26 billion in new infrastructure to the country at no cost to the Philippine government.

The government, through the Department of Trade and Industry (DTI), will create a Philippine Infrastructure Corporation (PIC) as a subsidiary of the National Development Company so that the government could build, among others, airports, seaports, railways, dams, irrigation systems, and expressways critical to economic growth. The government bonds sale would provide the seed money and the balance provided by attractive, revitalized BOT or similar agreement. The PIC will manage the infrastructure fund by bidding out and awarding construction projects to the most qualified entities. PIC will not have an operating arm but will focus on assuring that funds are properly managed and that target projects are completed on time.

TRANSPORT INFRASTRUCTURE

I. SITUATIONER

An efficient transport network will reshape the country's physical and economic configuration. From fragmented and island economies separated by mountains and seas, the country will develop into a unified, well-integrated economy where people and goods can move and trade swiftly and efficiently, locally and internationally.

While Central Luzon, Metro Manila and the Calabarzon area account for 30 percent of the country's population and about 55 percent of the country's gross domestic product (GDP), these areas have lost or are fast losing their agricultural land. Food will have to be sourced from regions like Cagayan Valley and Mindanao. The transport and logistics system should thus be adequate and efficient to help bring down the cost of food for workers, especially in the country's industrial heartland. This will make food plentiful at reasonable prices and make the country's wages internationally competitive.

The Philippines' transport system relies heavily on the road network which handles about 90 percent of the country's passenger movement and about 50 percent of freight movement. While

national roads are extensive and serve priority production areas and population centers, roads that lead to many tourism destinations and conflict-affected areas are inadequate. Of the approximately 202,000 kilometers (km) of roads nationwide, 15 percent are classified as national roads, and therefore, provided for and maintained by the Department of Public Works and Highways (DPWH). Provincial roads account for 13 percent, while city/municipal roads constitute 11 percent of the total. The balance of 60 percent of the road network is classified as barangay roads, which are mostly unpaved and built in the past by DPWH. Farm-to-market roads fall under this last category. Barangay roads have been devolved to local government units (LGUs). National roads in the Autonomous Region in Muslim Mindanao (ARMM) have also been transferred from DPWH to the ARMM. National arterial and secondary roads are currently 70 percent paved while 93 percent of national bridges are permanent.

There are more than 1,400 ports in the country but many of them are extremely small. There are 408 private ports, mostly dedicated for the private enterprises' exclusive use. There are 213 fishing ports which are handled by the Philippine Fisheries Development Authority. The Philippine Ports Authority (PPA) operates 114 public ports. The remaining ports are very small and serve mainly as feeder ports.

Interisland routes provide regular roll-on roll-off (RORO) vessel operations, connecting the main islands of Luzon, Visayas and Mindanao. The recent implementation of the Strong Republic Nautical Highway (SRNH) connected the islands of Luzon to Mindoro, Panay, Guimaras, Negros and Mindanao.

In past years, social and economic opportunities have been concentrated in Metro Manila, prompting migration to the metropolis. Overpopulation, however, has depleted the resources of the region, deteriorated the environment and increased traffic congestion. Despite the decreased desirability of the living environment, people have continued to flock into the National Capital Region (NCR).

Studies conducted for the Philippines' transport sector identified several challenges, which include the need for efficient transport institutions; increased private sector participation in the implementation of transport infrastructure and services; and improved monitoring and maintenance of existing infrastructure, especially of roads. Addressing the above challenges will be proactive steps to achieving the development goals for the country, as these will greatly improve the transportation backbone.

II. GOALS, STRATEGIES AND ACTION PLANS

Transport infrastructure shall be provided in pursuit of the following:

- Providing easier access to markets at home and abroad to alleviate poverty in the countryside and isolated regions;
- Enhancing peace and order in conflict-affected regions through efficient transport and trade;
- Strengthening national unity, family bonds and tourism by making the movement of people faster, cheaper and safer;
- Facilitating the decongestion of Metro Manila via a transport logistics system that would ensure efficient linkages between its business centers and nearby provinces; and
- Generating more transport infrastructure with minimal budget cover or contingent liabilities. Private sector-initiated infrastructure should be deficit-neutral, with minimum government exposure in the project.

The government will prioritize infrastructure projects that are strategic and critical to stimulate trade and investments, such as: (a) RORO ports and the highways connecting them; (b) roads and rail systems that will decongest Metro Manila, the Clark-Subic Highway, and highways that are catalytic to development in Luzon, Visayas and Mindanao; (c) roads and airports to tourism hubs; and (d) affirmative action projects for Mindanao and other highly impoverished conflict-ridden areas.

The government will pursue a prioritized program of airport development to serve as gateways to regional centers and major tourism destinations. Meanwhile, the Clark (Diosdado Macapagal) International Airport will be upgraded to an international service and logistic center in the Southeast Asian region.

Deregulation and progressive liberalization of civil aviation will be put in operation by adopting a trigger mechanism anchored on the carriers' load factor of at least 60 percent attained over a specified period of time. The commercial viability of airports will be enhanced through full cost recovery of air services, including airport investment.

To enhance mobility and improve linkages between islands/provide access to markets/activity centers, as well as support the agrofiseries sector, the government shall expand the coverage of the SRNH through the completion of the vital links of the Western, Eastern and Central Nautical Highways.

A Maritime Equity Corporation of the Philippines will be established to provide support to the full implementation of the Road-RORO Terminal System through the acquisition of modern RORO vessels to be leased to qualified operators under a lease purchase agreement.

To encourage private sector participation in port development, simplification of the guidelines and procedures in the processing/issuance of required Clearance to Develop/Permit to Construct and Certificate of Registration/Permit to Operate shall be pursued. To further enhance privatization and in support of Executive Order (EO) 170, Promoting Private Sector Participation and Investment in the Development and Operation of the Road Roll-on/Roll-off (RORO) Terminal System, and 170-A, Amending EO 170 to Expand the Coverage of the RORO Terminal System, the Terms of Reference for the privatization of existing government-owned SRNH RORO ports/terminals shall be prepared.

To make the maritime transport more cost-efficient and discourage monopolies/cartels, the government will attract new players in the industry through deregulation of routes and rates. A comprehensive review of the present port tariff system shall be undertaken and consequent development and implementation of a cost-based tariff shall be pursued. The application of the SRNH RORO tariff, which eliminates cargo-handling costs, will be expanded to cover all ports where RORO operations are being carried out. In its place, a RORO Terminal Fee Cash Ticket to facilitate movement and documentation of purely RORO cargo at SRNH ports will be applied.

Priority shall be given to the coordination of port development plans to ensure integrated and efficient port system. The government shall likewise encourage modernization of vessels by giving incentives as embodied in the newly enacted RA 9295, An Act Promoting the Development of the Philippine Domestic Shipping, Shipbuilding and Ship Repair and Ship Breaking, Ordaining Reforms in Government Policies Towards Shipping in the Philippines, and for Other Purposes.

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A “users pay” culture where the road users will be the one to pay at least for the maintenance of the roads shall be pursued.

To allow the strategic allocation of public resources, the hierarchy of priority activities shall be as follows: (a) maintenance of existing assets; (b) rehabilitation of damaged sections; (c) improvement and widening of heavily traveled roads; and (d) construction of new roads and missing links in the road network.

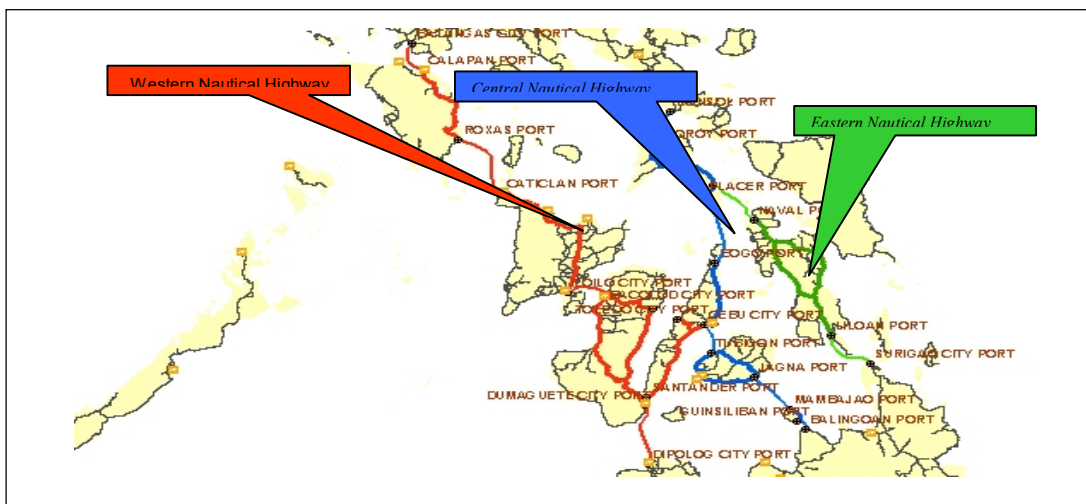
To ensure compliance with international safety standards, the Communications, Navigation and Surveillance/Air Traffic Management will be implemented in accordance with International Civil Aviation Organization standards. Meanwhile, road safety will be actively promoted through the implementation of the Road Safety Action Plan formulated by the interagency Road Safety Committee headed by the Department of Transportation and Communications (DOTC). Maritime safety and security will also be enhanced through the ratification of maritime safety and security related conventions.

A. Nautical Highways to Link the Entire Country (PhP40,000 million)

Transport costs from Mindanao through the Visayas to Luzon shall be reduced. The nautical highway system introduced in 2003 to maximize the use of the RORO system to transport produce from Mindanao through the Visayas to Luzon has reduced travel time by 10 hours, and reduced costs by 40 percent for passengers and 30 percent for cargo. The nautical highway system shall be completed through the following high priority routes:

1. Western Nautical Highway (also known as Strong Republic Nautical Highway)
 - Oroquieta City-Dapitan City-Dipolog City Road
 - Dipolog-Dumaguete City RORO
 - Dumaguete-Samboan, Cebu RORO
 - Samboan-Barili-Toledo City Road
 - Toledo-San Carlos City RORO
 - San Carlos- Dumaguete Road
 - Dumaguete-Bacolod City Roads
 - Dumaguete-Bais-Mabinay-Kabankalan-Bacolod route
 - Dumaguete North Road-San Carlos Coastal-Bacolod North Road
 - Bacolod-Iloilo City RORO
 - Iloilo City-Caticlan (Aklan) Roads
 - Iloilo City-Passi-Calinog-Ivisan-Kalibo-Nabas-Caticlan Road
 - Iloilo East Coast-Capiz Road
 - Caticlan, Aklan-Roxas, Mindoro Oriental RORO
 - Roxas-Calapan, Mindoro Oriental Road
 - Calapan-Batangas City RORO

Figure 6-1 Nautical Highways to Link the Entire Country



Source: DPWH

2. Central Nautical Highway

- Calinan, Davao-Buda, Bukidnon-Misamis Oriental Road
- Butuan City-Agusan del Norte-Misamis Oriental Road
- Balingoan, Misamis Oriental-Guinsiliban, Camiguin RORO
- Guinsiliban-Mambajao Road, Camiguin
- Mambajao, Camiguin-Jagna, Bohol RORO
- Jagna-Tubigon Roads, Bohol
 - Bohol Circumferential Road
 - [Loay Interior Road] Jagna-Sierra Bullones-Clarín-Tubigon Road
- Tubigon, Bohol-Cebu City RORO
- Cebu City-Toledo Road
- Toledo-San Carlos RORO
- San Carlos-Dumaguete Road
- Dumaguete-Samboan RORO
- Samboan-Cebu City Road
- Cebu City-San Remigio, Cebu Road
- San Remigio-Placer, Masbate RORO
- Placer, Masbate-Aroroy, Masbate Road
- Aroroy, Masbate-Boca Engano, Masbate RORO
- Boca Engano, Masbate-Claveria, Masbate Road
- Claveria, Masbate-Pantao, Albay RORO
- Claveria, Masbate-San Pascual, Masbate Road
- San Pascual, Masbate-Pasacao, Camarines Sur RORO

3. Eastern Nautical Highway

- Davao-Compostela Valley-(Alegria-Santiago, Bayugan-San Francisco-Trento-Monkayo)-Agusan-Surigao Road
- Surigao City-Liloan, Southern Leyte RORO
- Liloan, Southern Leyte-Naval, Biliran Highway
- Naval, Biliran-Cataingan, Masbate RORO
- Cataingan-Aroroy, Masbate Highway

B. Decongestion of Metro Manila

Metro Manila or the NCR has consistently dominated the country's economic activities contributing more than 30 percent to the total domestic output. NCR is not only the center of commerce, but is also the seat of government and the financial and educational center of the country.

The challenge, therefore, is to spread development and provide new opportunities for growth in other regions to decongest Metro Manila. The government will lead in this effort through the establishment of new centers of government, business and housing in Luzon, Visayas and Mindanao. This will also entail the creation of a transport logistics system that will facilitate the decongestion of Metro Manila by ensuring efficient linkages between its business centers and nearby provinces.

1. Establish new centers for government, business and housing in Luzon, in the Visayas, and in Mindanao

The promotion of regional development and the decentralization of government departments and agencies will be undertaken through the transfer and establishment of new government centers outside Metro Manila to regions where they are needed most as follows:

- a. Department of Agriculture in Mindanao
- b. Department of Tourism in Cebu
- c. Department of Land Reform in Iloilo
- d. Department of Transportation and Communications in Clark
- e. Department of Public Works and Highways in Bicol
- f. New government center in Clark, envisioned to be ready ten years hence

These new centers shall serve as catalysts to growth by facilitating the entry of investments and other economic activities and eventually create new hubs for business and housing as counter magnets to NCR. To facilitate the transfer of the concerned departments, the President issued EO 352, s. 2004, creating the Office of the Presidential Adviser for New Government Centers.

Each department shall prepare their respective plans to effect their transfer within the next six years. In addition to the benefits that are provided for in the Civil Service Code, a standard package of assistance and benefits for the affected employees will also be prepared, including but not limited to moving out cost, housing and education arrangements, and other measures that will allay the fears of the employees connected with the transfer.

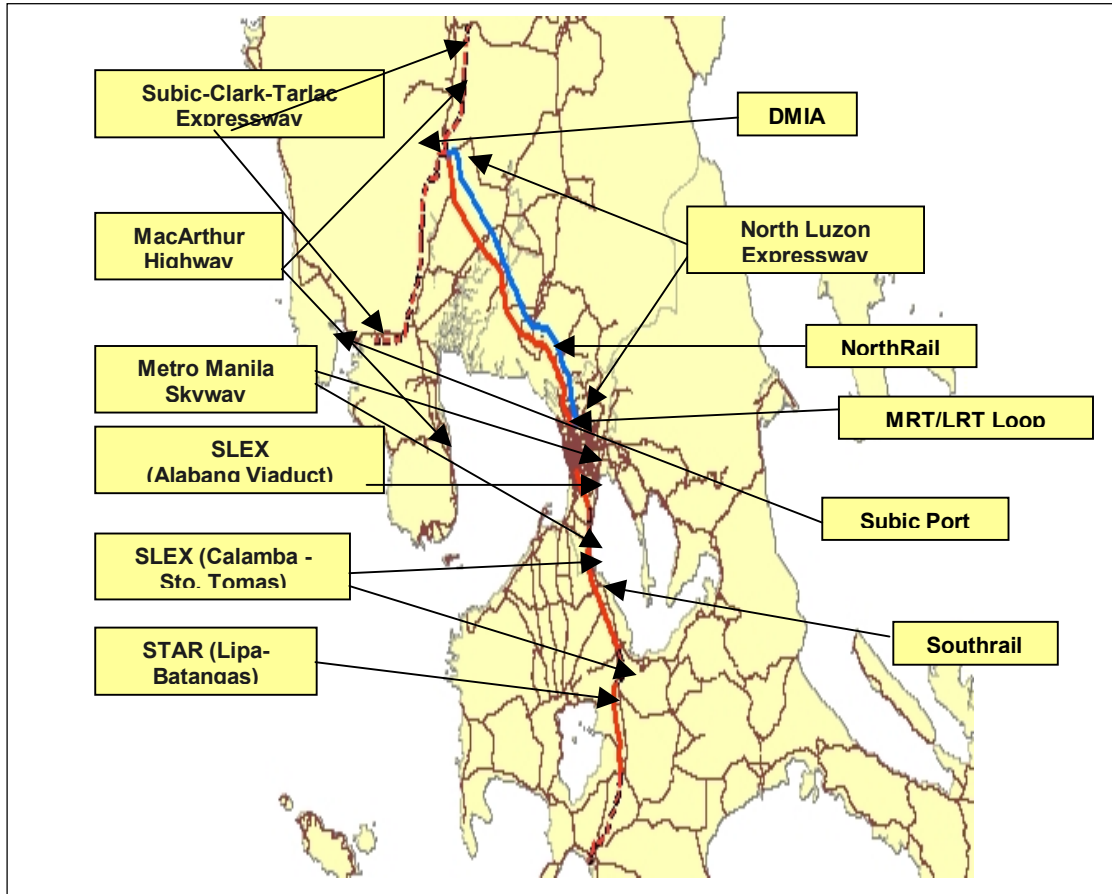
The development of new housing centers outside Metro Manila will be undertaken with the LGUs and the private sector as catalysts guided by their Comprehensive Land Use Plans (CLUPs). Priority areas for new housing development are highly populated and fast-growing urban centers (Chapter 4: Housing Construction).

2. Develop Clark-Subic (See separate section in this chapter)

The Northrail Project will provide efficient transport service between Metro Manila and Central and Northern Luzon thus providing a solution to the metro traffic problem and encouraging the urban settlement outside the Metro Manila area. The entire Northrail project, when completed, is expected to encourage the dispersal of Metro Manila population towards Central Luzon, and potentially, Northern Luzon.

The widening and improvement of the North Luzon Expressway to be completed by early 2005, together with the proposed widening of MacArthur Highway, will induce decongestion of Metro Manila towards Central Luzon.

Figure 6-2 Projects to Decongest Metro Manila and Develop Clark-Subic



Source: DPWH

3. Develop the Southern Luzon Corridor (PhP21,837 million)

The government shall develop the Southern Luzon/Southern Tagalog Arterial Road Expressway all the way to Batangas Port as an industrial belt south of Metro Manila. It will also complete the Southrail to Bicol route and build dormitory suburbs linked to railroad hubs. This will make housing projects outside of Metro Manila, where land is cheaper and the lifestyle more conducive to family, viable. Once developers see the construction of the transport links breaking ground, they will begin work on the ancillary housing projects.

4. Improve transport within Metro Manila

- a. Final Linkage of the MRT/LRT commuter loop (PhP11,424 million)

The mass transport system in Metro Manila will be further enhanced through the implementation of rail-based mass transport system such as the MRT 3-LRT Line 1 Loop as well as the adoption of a

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unified ticketing system for MRT/LRT Lines. LGU involvement in the financing of MRT/LRT projects will also be encouraged.

- b. Rationalization of Metro Manila infrastructure with the following priorities:
 - R-10
 - McArthur Highway
 - Commonwealth Avenue
 - Quezon Avenue
 - Marcos Highway
 - Epifanio de los Santos Avenue (EDSA)
 - C-5
- c. Traffic congestion in Metro Manila and other urban centers will be addressed through traffic management schemes, provision of facilities for safe and efficient pedestrian flow, and the construction of privately funded expressways.
- d. Integrated transfer terminal facilities for provincial buses operating along the Northern Luzon-Metro Manila and the Southern Luzon-Metro Manila routes shall be established at the northern and southern edge of Metro Manila to reduce and eventually remove provincial public buses from the heavily congested thoroughfares of the metropolis.

5. ***Address critical infrastructure bottlenecks along national roads and bridges to speed traffic out of Metro Manila. Among the priority projects are the following:***

- Skyway Extension from Bicutan to Alabang
- SLEX/STAR
- Manila-Cavite Expressways
- North Luzon Expressway
- MacArthur Highway (Widening)
- Marcos Highway to Antipolo

C. **Tourism Infrastructure: Access to Major Tourism Destinations (Chapter 5: Tourism)**
(Roads Component: PhP19,474 million)
(Airports Component: PhP14,650 Million)

Roads, bridges, seaports, airports and other tourism-related infrastructure leading to identified destinations shall be rehabilitated/improved or upgraded/constructed. These transport infrastructure shall serve as gateways to tourism complexes.

1. Cebu-Bohol-Camiguin
 - Panglao Airport
 - Dalaguete-Badian Road
 - Toledo-Tabuelan Road
 - Barili-Carcar-Bato Road
 - Panglao Roads
 - Bohol Circumferential Road
 - Loay Interior Road, Bohol
 - Jagna, Bohol-Mambajao, Camiguin RORO

2. Clark-Subic (See separate section in this chapter)
3. Cordillera
 - San Fernando Airport
 - Kennon Road
 - Halsema Highway
 - Baguio City Roads
 - Ifugao Roads
 - Acop-Kapangan-Kibungan Road, Benguet
 - Gruel-Bocod-Kabayan-Buguias Road, Benguet
 - Ilocos Sur-Benguet/Mt. Province Road
 - Mt. Province-Cagayan Road
 - Mt. Province-Pinukpuk, Kalinga Road
 - Kalinga-Abra Road
4. Davao
 - Davao-Samal Island Garden City – Lupon, Davao Oriental RORO
 - MIAA to manage Davao Airport
 - Davao Gulf Development
5. Ilocos: Laoag Airport Terminal
6. Boracay
 - Iloilo Airport
 - Bacolod Airport
 - Create Boracay Commission
7. Palawan: Coron Airport

For other infrastructure, the Zone Master Plan will be the key tool to plan and prioritize the program and spending.

D. Affirmative Action for Peace and Development in Mindanao and Other Highly Impoverished Areas (PhP 66,635 million)

The road network in underdeveloped regions and road leading to conflict-affected areas will be improved to promote development and to help solve the peace and order problems. Technical and financial assistance will be provided particularly to 5th and 6th class LGUs. The priority road projects are:

1. Mindanao Priorities:
 - Malabang, Dobliston-Kapatagan-Molave Road & Monte Alegre-Tukuran Road, Lanao del Sur, Lanao del Norte and Zamboanga del Sur
 - Lake Lanao Circumferential Road
 - Awang-Upi-Lebak-Kalamansig-Palimbang Road, Maguindanao and Sultan Kudarat
 - Basilan, Sulu, Lanao del Sur and Maguindanao Roads
 - Sibuco-Sirawai-Siocon-Baligayan Road
 - Pagadian-Zamboanga Road
 - Pagadian-Ozamis Road
 - Zamboanga West Coastal Road

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- Iligan-Aurora Road
 - Iligan-Bukidnon Road
 - 2nd Magsaysay Bridge and Butuan City Bypass
 - Surigao-Davao Coastal Road, Surigao del Sur and Davao Oriental
 - Tagum-Mati-Baganga Road, Compostela Valley and Davao Oriental
 - Cotabato-Gen.Santos Road
 - Rural Road Network
 - ARMM
 - Compostela Valley
 - Caraga Region
 - Western Mindanao
 - Bridge Construction and Replacement
 - Western Mindanao
 - Northern Mindanao
 - Davao Region
 - Caraga Region
2. Bicol (the poorest region outside ARMM) Priorities:
- Mabolo Bridge, Naga City
 - Tigaon-Mayong Road, Camarines Sur
 - Ocampo-Tigaon-Goa-Lagonoy-Presentacion-Gachitorena-Caramoan-Guia Road, Camarines Sur
 - Tinambac-Siruma Road, Camarines Sur
 - Camarines Sur-Tiwi-Legaspi-Manito-Sorsogon Road
 - Caramoan Peninsula Roads
 - Ligao-Pio Duran Road, Albay
 - Pilar-Donsol Road, Sorsogon
 - Catanduanes Circumferential Road
3. Region VIII Priorities:
- Southern Leyte: Himayangan-Silago-Abuyog and Liloan-San Ricardo Roads
 - Eastern Samar: Rural Road Network and Jct. Taft-Borongon Road
 - Northeastern Samar; Pacific Coastal Road from Laoang to Oras
4. Negros-Panay Priorities:
- Hinobaan-Basay & La Castellana-Kanlaon Road, Negros Occidental/Oriental
 - Bayawan-Kalumbayan Road, Negros Oriental
 - Iloilo-Antique Road
 - Rural Road Network
5. Other Priority Rural Road Networks
- Ilocos Sur: Santiago-Lidlidda-San Emilio Road
 - Pangasinan: Lingayen-Labrador Road
 - Pampanga: Baliwag-Boundary-Candaba Road
 - Batangas: San Juan-Laiya Road
 - Quezon: Bondoc Peninsula Roads and Infanta-Marikina Road
 - Aurora: Baler-Casiguran Roads
 - Cordillera: Abra, Benguet, Mt. Province, Kalinga, Apayao, Ifugao Arterial and Secondary roads.

E . Bureaucratic and Legislative Reforms (See Part Five)

Regulatory and legal reforms will be implemented by promoting the independence of the regulator and separate operator and regulator functions and by setting/enforcement of safety, quality, environmental, and legal standards. Moreover, institutional reforms will be implemented to ensure transparency and accountability and to mitigate, if not eradicate, administrative impropriety of respective government agencies, and to resolve conflicting mandates among agencies involved in the infrastructure planning and implementation.

Air Transport. Consistent with the scrap-and-build policy of the national government, the conversion of the Air Transportation Office into a corporate body shall be pursued. An independent oversight unit shall be established within the DOTC to handle economic regulation and safety concerns and an independent accident investigation group will be established, also within DOTC.

Water Transport. The government shall restructure port institution to improve port service. Regulatory functions shall be transferred to an independent regulator (or regulators), which shall have jurisdiction over all ports. The amendment of the PPA Charter will be pursued to address, among other things, the dual role of PPA as port regulator and operator.

Rail Transport. To enhance rail services, the sector's institutions will be restructured to separate the policy, planning and regulation functions from the delivery of train services. This will then enable private sector participation. To achieve this objective, a Strategic Rail Authority/Office will be established in DOTC to be responsible for policy/strategy and regulation. A Track Authority will also be established out of the existing Philippine National Railways and Light Rail Transit Authority, which would own the right-of-way and infrastructure. Private concessionaires would provide all rail services.

Furthermore, the role of the Metropolitan Manila Development Authority vis-à-vis transport agencies will be reviewed to rationalize functions of infrastructure-related agencies.

F. Reforms to Resolve Financing Issues

The framework for private sector participation in government projects shall be reviewed and improved. Particularly, the BOT Law and its implementing rules and regulations shall be reviewed and amended and guidelines will be formulated to provide the overall framework for joint ventures.

A “users pay” culture wherein the road users will be the one to pay at least for the maintenance of the roads shall be developed. Related to this, an autonomous Highway Authority will be created out of the existing DPWH that will manage the national roads. The Road Fund will also be expanded by amending RA 8794 (An Act Imposing a Vehicle User's Charge on Owners of All Types of Vehicles and for Other Purposes) to include fuel levy.

Transport infrastructure projects initiated by the national government (NG) should not be taxed by local governments as LGUs are the primary beneficiaries of these NG investments. Benefits gained by LGUs include increased real property values, increased income taxes from flourishing commercial establishments, increased mobility of its citizens and increased accessibility of the area, without any cost to the LGU. Cost-sharing among various stake-holders shall also be explored.

A special levy or higher property taxes should be considered to capture part of the windfall gains or unearned increments in land and property values which appreciate because of the construction of public roads or other transport infrastructure adjoining the land and property. This will

help the government finance the right-of-way and construction costs and make the benefiting land or property owner contribute to the welfare of the public.

DIGITAL INFRASTRUCTURE

I. SITUATIONER

The liberalization of the telecommunications sector which started in 1989 provided impetus to the evolution of a multioperator environment in the country. By 2002, there were 74 local exchange operators, 14 inter-exchange operators, 11 international gateway facility companies, seven cellular mobile phone operators, 11 radio paging firms, 11 public trunk radio service providers, 19 satellite operators and 32 value-added service providers. In addition, there were 776 cable TV operators with 1,373 networks nationwide. To date, only four cable TV companies (SkyCable, Home Cable, Sun Cable and Destiny) control about 50 percent of the country's total subscriber base. Majority of these cable TV operators, however, are willing to offer Internet and voice services but sorely lack the capital for the purpose.

These developments characterized the growth of the country's digital infrastructure over the past years, as more and more Filipinos gained access not only to telephone lines but also to the Internet. Hence, by the end of 2002, total telephone density reached 28.06 per 100 population and stronger awareness of knowledge and information sharing among individuals and organizations through the Internet was realized.

Despite these gains, major policy and regulatory reforms remain to be done to facilitate further growth of the sector. The absence of clear and concise policies allowing innovative and more efficient services at lower costs has discouraged the entry of new players and further investments in the sector. Moreover, the country's connectivity rates are currently considered among the highest in Asia. This situation is highly noncompetitive, discourages investors, and limits the provision of services to benefit and empower the citizenry, especially the OFWs and their families.

In the case of the country's ICT manpower, the Information Technology and E-Commerce Council, the forerunner of the Commission on Information and Communications Technology (CICT), reported that as of 2003, the lack of well-trained and competent trainers/educators in information and communications technology (ICT) and ICT-related subjects has contributed to the declining quality of education in general and of the country's ICT and knowledge workers. The existence of a non-formal training sector operating without adequate regulation further exacerbated the situation, resulting in wide variances in the quality of ICT training in the country. Moreover, the lack of accurate and comprehensive data on available ICT and ICT-enabled skills in the country has made ICT manpower planning and policy-making even more difficult.

Clearly, there is need to sustain the momentum already gained toward the building of a digital infrastructure to interconnect the entire country and realize the goal of universal access. Hence, efforts in pursuit of this goal will be further accelerated, with the private sector playing a major role in these efforts. Policy and regulatory frameworks will be reviewed and rationalized to make them more responsive to technological and market changes, as an appropriate enabling environment, which is fair for both market players and consumers, will be put in place. ICT will be fully exploited to improve the knowledge and skills of Filipinos nationwide, and to provide opportunities for employment that will uplift the economy.

II. GOALS, STRATEGIES AND ACTION PLANS

A. Reduce Cost of Connectivity

The government will push for the reduction of connectivity costs by allowing an enabling environment to permit new entrants of various telecom players, including but not limited to ISPs, to provide ICT and ICT-related services, thus, promoting market competition.

- 1. The government will continue to promote investments that support the provision of physical infrastructure for high-speed connectivity, high capacity and secured network services at low cost.***

The development of the country's digital infrastructure will be accelerated through continuously optimizing the participation of/partnership with the private sector. Provision of high-speed connectivity at low cost will drive the usage of ICT in all sectors and more importantly, enable the country to transform itself into a knowledge and software development and e-services hub of Asia. Given the availability of domestic broadband network capacity with international connectivity, more access points will be offered both in the urban and rural areas, to provide the population with equal access to the global economy.

Efforts will also be pursued toward achieving the "last mile connection" from the network backbone to the end-user. It will also include the optimal use of existing government networks for public data communication process (e.g. Transco fiber optic transmission lines, TelOf network, etc.). Moreover, possible business opportunities and creative ways to optimize existing or new network and bandwidth capacity will be explored.

- 2. The sustainability of these investments in physical infrastructure will depend heavily on market demand for broadband, which will be achieved by the provision of market attractive value-added features.*** The role that government will play is in the development and provision of e-government content. This will allow government service to be delivered directly to the citizens, both locally and internationally through web technologies.
- 3. A prime market attractive value-added feature of a progressive digital infrastructure is VoIP or Internet telephony.*** Issues relative to opening the market to VoIP will be resolved and a clear legal regime covering VOIP, convergence of web, email and voice services through Internet telephony will be provided. Simultaneously, VoIP services will be rolled out. This will immensely benefit overseas Filipino workers and their families and ensure the accessibility and affordability of these services for all. On the other hand, other prime public service value-added features that include distance education, e-health and the delivery of e-learning to all public schools through the Internet will be pursued and supported through the establishment of community e-centers (CeCs) throughout the country.
- 4. The private sector will lead the deployment and expansion of digital infrastructure, especially to unserved and underserved areas, as well as the convergence of telecommunications, IP technology, broadcast media, cable TV, and other technologies to realize the full potentials of ICT as a tool for knowledge creation and diffusion.***

The government will encourage telecommunications carriers that provide cellular mobile telephone services to disperse new cell sites to make their services connect the entire country. Towards this, the government will ensure the interoperability and interconnectivity of all networks.

- 5. *The digital divide within the country will be reduced by establishing more public access points such as CeCs for delivery of e-government and other services to provide universal access to information and communications services in unserved areas, link communities, facilitate trade and commerce, and empower rural communities socially, economically and politically.*** Seed funding will be provided for the development of public access points, which will support the provision of broadband services by the private sector to all municipalities and the connection of all secondary schools where computers will be provided.

In unserved/underserved areas, public access points will be provided to schools, communities, scientific and research centers, health centers and government offices through the establishment of CeCs.

- 6. *Gains already realized in the booming ICT and e-commerce industry will be further accelerated.*** The government will expand distribution points for ICT services utilizing all available and appropriate technologies like media, print, broadcast and mobile for faster access to and delivery of government information and services. With the ICT service boom in the country, the government will ensure that all authorized public network operators and other providers of telecommunications services will provide full interconnection at reasonable costs to all ICT service providers.
- 7. *The requirements of major government ICT projects will be met.*** The efficiency of internal government processes will be improved through ICT. Existing government network infrastructure will be rationalized to enable sharing and interconnection of network resources among all branches of government to facilitate the seamless transfer of knowledge within the government. Where there are gaps between networks that cannot be addressed by sharing of government resources, the services of the private sector will be tapped to establish the necessary infrastructure “bridges” to close the gaps.

B. Develop ICT Human Resource

The country is well positioned to become a globally competitive knowledge-based economy. However, the government should continue to support and develop the quality of its human capital especially in ICT by providing opportunities for skills development and training and by adopting a national standards certification system comparable with those of the rest of Asia to ensure the supply of quality ICT professionals and workers.

- 1. *Fundamental to the development of a globally competitive human resource base is the advancement and modernization of education.*** The schools’ curricula will be consistently designed and updated to equip students with the requisite knowledge and ICT skills. The teaching of Science, Math and English as core subjects and the use of computers will be pursued. Toward this, e-learning programs and technologies will be accelerated to provide alternatives to traditional learning and training methods. Furthermore, wider access to the Internet as a tool for enhancing availability of knowledge will be provided. In addition, industry participation in the form of on-the-job training (OJT) programs will be strengthened in areas

such as the restructuring of OJT learning objectives to enhance the training and skills development process (see also Chapter 18);

2. ***Increasing the quantity and quality of locally available ICT trainers/educators is necessary to meet the fast-growing requirements for quality ICT and knowledge workers.*** In addition, all trainers/teachers must have sufficient knowledge in the use of ICT as a tool for learning.
3. ***Internationally recognized certification programs will be implemented to enhance the competitiveness of the country's ICT professionals and organizations.*** Likewise, new training courses and certification programs will be developed for the five priority areas for ICT services, which are Contact Centers, Animation and Software Development, Medical Transcription, Business Process Outsourcing, Engineering and Design Services (see also Chapter 18 and Chapter 1, Section 7).
4. ***The thriving ICT and e-commerce industries hold promising employment opportunities to Filipinos.*** In relation to this, a sustainable ICT manpower skills survey and tracking system that will provide accurate data on the status of ICT and ICT-enabled skills in the country will be conducted regularly for benchmarking and placement purposes.

C. Pursue Regulatory and Legislative Reforms (See also Part V)

Regulatory and legal reforms will be implemented by promoting the independence of the regulator and separate operator and regulator functions and by setting/enforcement of safety, quality, environmental, and legal standards. Moreover, institutional reforms will be implemented to ensure transparency and accountability and to mitigate, if not eradicate, administrative impropriety of respective government agencies, and to resolve conflicting mandates among agencies involved in ICT planning and implementation.

1. ***The Department of Information and Communications Technology (DICT) will be established as a venue to achieve a web-based Philippines, capable of participating in – and contributing to – the global economy.*** It will also more effectively coordinate and implement the national ICT development agenda, policies, programs, projects to carry it out. Pending such, the President has issued EO 269 creating the Commission on Information and Communications Technology (CICT), which is not merely advisory in nature but serves as the primary policy, planning, coordinating, implementing, regulating and administrative entity of the Executive Branch on ICT and e-commerce initiatives.
2. ***The National Telecommunications Commission will be strengthened and its independence in performing its regulatory function will be ensured, particularly in carrying out decisions and imposing sanctions and penalties for regulatory noncompliance.***
3. ***The passage of the Convergence Bill will be pursued to address current regulatory issues such as Cable Television Classification and Frequency Spectrum Management that will permit the infusion of much-needed investment capital into the industry and enable the development of cable technology for true convergence.***

4. ***The Public Telecommunications Policy Act of the Philippines (RA 7925) will be reviewed and Congress will be asked to amend RA 7925***, taking into consideration new technological developments, speeding up the realization of universal access goals, achieving adequate distribution of basic telephone services throughout the country and encompassing the needed institutional strengthening, sector reform and ICT expansion goals.
5. ***Security measures will be implemented to protect the integrity of digital infrastructure networks, as well as of information and communications.*** Such measures will protect personal privacy and consumer interest, accuracy and completeness of information and all other processing methods involved by enacting, among others, the Cybercrime and Cyberfraud Prevention Law.

WATER (See Chapters 2 and 3)

CLARK-SUBIC

I. SITUATIONER

The assets of the former military facilities in Subic and Clark hold great development potentials to revitalize regional development. Their ideal geographic location in the central Luzon and the Asia-Pacific is a logistical advantage; their manpower and natural resources are competitive local advantages; their accumulated developed facilities and being duly empowered Special Economic Zones contribute to the desirability of the Clark-Subic area as a prime logistics and transport hub. Developments in Subic will spill over the Clark area in Pampanga, while Clark will have access to sea transport to be provided by Subic port.

II. GOALS, STRATEGIES AND ACTION PLANS

The Clark-Subic shall be the best logistics and service hub in the region. The role of the Clark-Subic area shall be strengthened as the country's multimodal distribution and regional logistics center and major transshipment point of goods and services for domestic and regional foreign distribution. It will be directly linked to Metro Manila and surrounding areas through expressways and railways and to major destinations in Asia and the rest of the world with world-class seaport and airport.

A. Subic-Clark Alliance Development Program

The realization of the Clark-Subic area as the country's multimodal distribution and regional logistics center and major transshipment point of goods and services in the Asia-Pacific region is premised on the development of adequate infrastructure that will enhance the competitive advantage of Subic and Clark as prime investment areas. An expressway shall link the Subic and Clark SEZs to each other, and the corridor shall be linked with Metro Manila and the surrounding provinces through expressways and railways.

The following are among the priority projects for the area:

1. World-Class Diosdado Macapagal International Airport (DMIA)
(PhP 25,000 million) (passenger/cargo, aviation)

Originally designed, built and utilized as a military airport, there is a seeming need to rehabilitate and/or upgrade airport infrastructure and facilities for the airport to be suited for international cargo and passenger airlines operations or civilian aviation as a whole. There is a need to enhance operational capabilities of DMIA as an alternative gateway to the Philippines.

2. World-Class Subic International SeaPort (PhP7,038 million)
(passenger/cargo, shipping)

The project aims to construct a new container port at Cubi Point, Subic, rehabilitate the existing port facilities at the Naval Supply Depot and Boton areas, and procure gantry cranes and other cargo handling equipment including the construction of access roads and installation of new navigational equipment.

3. Hard infrastructure (e.g. power, water, telecom, industrial parks, agri/tourism/residential projects)
4. Soft infrastructure (manpower, housing, health, education, incentives, government services)
5. Multi-modal linkages with Metro Manila and the rest of Central and Northern Luzon

B. Flood Control in the Clark-Subic Area (see also Chapter 3)

1. River Basins in the Clark-Subic Area
 - a. Pampanga River Basin 11,000 sq. km. With Arnedo Dike
 - b. Guagua River Basin 2,000 sq. km. With Pinatubo Megadike (Pasig Potrero River)
 - c. Agno River Basin 6,000 sq. km. With Colibangbang Dike (Tarlac River)
2. Flooding and Causes
 - a. Flood Prone Areas Aggravated by Lahar Deposition
 - b. Limited carrying capacity of the river due to the Narrow Cross Section (width and depth) of the River, which is further reduced by siltation, garbage, informal settlers and encroachment.
 - c. Extraordinarily heavy rainfall
3. Completed and Ongoing Projects
 - a. Pinatubo Hazard Urgent Mitigation Project Phase 1
 - b. Pampanga Delta Development Project Phase 1
 - c. Pinatubo Hazard Urgent Mitigation Project Phase 2
4. Plans and Programs
 - Widening of Gapan-San Fernando-Olongapo (GSO) Road including Sta. Cruz Bridge and Emergency Pilot Dredging, 2005-2008
 - Pinatubo Hazard Urgent Mitigation Project Phase 3, 2005-2010
 - (1) Excavation/dredging of Porac-Gumain River
 - (2) Excavation/dredging of local drainage channel
 - (3) Diversion
 - (4) Raising roads/bridges
 - (5) Excavation/dredging of other major rivers
 - Tarlac River Improvement Project, 2006-2010

- Pinatubo Hazard Urgent Mitigation Project Phase 4 2007-2010
 - (1) Widening of third river channel diversion
 - (2) Excavation/dredging of local drainage channels
 - Pampanga Delta Development Project Phase 2, 2008-2012
 - (1) Dredging: 13,313,752 cubic meters (cu.m.)
 - (2) Embankment: 3,831,504 cu.m.
 - (3) Resettlement Area 198 hectares (has.)
 - (4) Affected Families 6,700
 - (5) Affected Lots 1,221 ha
 - (6) Protected Area 142 sq. km., Population 161,000
 - (7) Flood Mitigated Area 113 sq. km., Population 57,000
5. Pampanga River Basin Watershed Management Plan
- Objective: Double amount of forest cover in 6 years
 - (1) From 24 percent to at least 40 percent of forestlands
 - (2) 52.8 million trees to be planted (8.8 million trees per year)
 - Strategies
 - (1) Establish strong forest protection mechanism
 - (2) Fully utilize LGUs and local communities for reforestation and forest protection
 - (3) Plant forest trees and fruit trees to generate income
 - (4) Ensure complementation of watershed rehabilitation with infrastructure and irrigation projects
 - Operational Milestones
 - ❖ End of 2004 – Operational plans completed
 - ❖ 1st Qtr 2005 – 12.69 million seedlings raised
 - ❖ 2nd Qtr 2005 – Start of planting in May
 - ❖ 3rd Qtr 2005 – 13,540 has. planted with 10.58 million seedlings
 - ❖ End of 2005 – 292,397 has. maintained and protected
 - ❖ End of 2007 – 60 percent of target area planted
 - Equivalent to 31.7 million seedlings planted
 - 292,387 has. maintained and protected
 - ❖ End of 2010 – 100 percent of target area planted
 - Equivalent to 52.8 million seedlings planted
 - 292,387 hectares maintained and protected

C. Creation of Hong Kong-type enclaves to capture long-term investors

The government will securitize portions of Clark and Subic in tandem with a move to provide the covered territories with a special charter of good governance. This is like creating a new Hong Kong or Singapore right within the country's backyard where investors can be comfortable and free from political inference.

If it can be assured that an initial area of 10,000 hectares could be securitized for commercial and industrial users, at around PhP5,000 per square meter, the government should be able to generate PhP500 billion in new wealth for the government, approximating the 75-year leases by law.