

PHILIPPINE TRANSPORT INFRASTRUCTURE DEVELOPMENT FRAMEWORK PLAN

Executive Summary

prepared for



REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND
DEVELOPMENT AUTHORITY



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E.1 What is a Transport Framework?

E.1.1 Introduction

Various transport-related agencies and local governments develop their respective transport plans or strategies to address bottlenecks and improve outcomes in the transport sector. However, to be able to bring a more focused or targeted intervention that is more inclusive, these various strategies need to focus on establishing interconnectivity between key urban growth centers and between lagging and fast-growing regions, and creating supporting institutions that promote greater integration.

Upon the request of the National Economic and Development Authority, a Framework Plan was developed to provide policy-makers with a strategic framework to help identify the transport needs of the Philippines and guide in implementing an integrated, more coordinated approach to establishing stronger transport infrastructure linkages to support the country’s inclusive growth agenda.¹ The Framework Plan was developed under the guidance of a vision and goals (Figure ES.1) developed by stakeholders across the Philippines. This comprehensive vision can be summarized as “*Bringing us all closer together for prosperity.*”

Figure ES.1 Vision and Goals



As the scope is nationwide, it is based on high-level, sketch-planning principles using the best available data. The Framework Plan uses this strategic framework to then identify a preliminary set of short- (2014-2016) and medium- to long-term (beyond 2016) policies,

¹This Executive Summary is submitted to the World Bank as part of the Philippine Transport Infrastructure Development Framework Plan (Framework Plan). The Framework Plan is being prepared by Cambridge Systematics, Inc. and its subconsultants (“consultant team”) on behalf of the National Economic and Development Authority (NEDA), and is funded jointly by the World Bank (WB) and the Australian Agency for International Development (AUSAID).

programs, and projects to support the development and realization of needed transportation infrastructure in the Philippines. These recommendations are not intended to be detailed but rather to highlight the key needs in the country and the types of priority projects to be undertaken; more specific analysis of appropriate strategy alternatives (policy, program, project strategies), and costs and impacts of those alternatives, could then be conducted at a later stage.

The geographic focus of the Framework Plan includes all of the Philippines outside of Metro Manila. This Framework Plan does not replicate the work being done by the Japan International Cooperation Agency (JICA) for Metro Manila (the JICA study covers Metro Manila with an approximate radius of 100 kilometers and is being conducted to evaluate specific transport infrastructure projects for the Metro Manila area). Future improvements and needs of transportation infrastructure to meet the demand for long-distance transport to and from Metro Manila and to other urban/economic centers in the Philippines are considered; nevertheless, national-level strategies recommended in this study affect all areas of the Philippines.

E.1.2 The Framework

Any transport framework should be developed with an understanding of the needs of the system stakeholders. Outreach for the Framework Plan was conducted through a series of interviews with representatives from local, regional, and national transportation public agencies and private businesses. Interviews were supplemented with stakeholder workshops. In addition, the consulting team coordinated the development of the Framework Plan with on-going or recently completed studies and plans, to share information, provide progress updates, and support consistency between efforts.

The performance-based framework for planning and programming described in Figure ES.2 below is used as the guiding structure for the planning process developed in this plan. It starts with the goals and objectives developed (as presented in Figure ES.1) through outreach. Performance measures were then identified based on available data and relate back to the goals and objectives. These measures help determine where issues and needs exist and which strategies could best move the Philippines towards those goals. Eventually, specific targets should be set for these measures as better data and tools are developed, and ongoing monitoring of progress towards those targets should be instituted in an overall planning process.

Allocating resources is the step in the process where decision-making takes place: this is where strategies (i.e., projects, programs, and policies) are prioritized and programmed. The flow chart below (Figure ES.3) presents how this process was applied for the Framework Plan. Identifying and evaluating needs – and then strategies – relied on the outreach described above, best practices, past plans, and a performance driven data analysis.

Figure ES.2 Performance-Based Framework for Planning and Programming

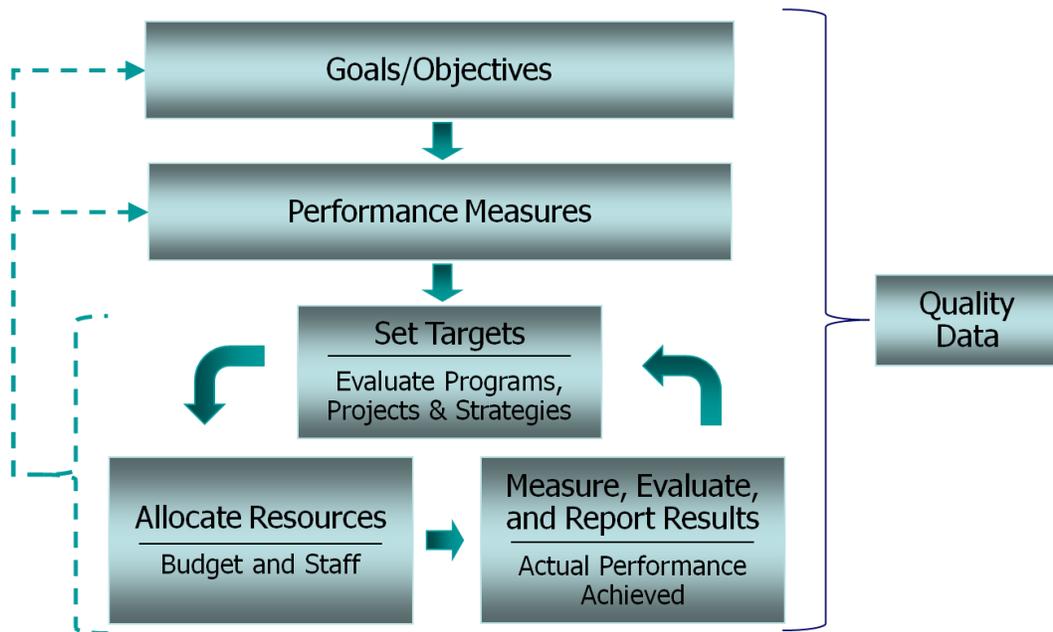
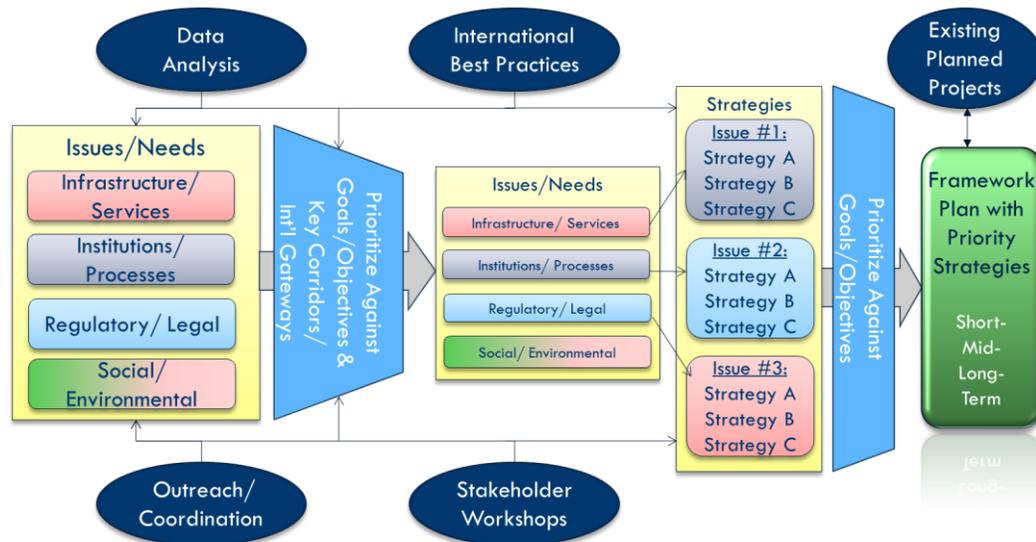


Figure ES.3 Allocating Resources: Connecting Analysis to Needs



E.2 Current Conditions and Trends: Using Data to Help Identify the Philippines' Critical Needs

Selected performance measures, based on currently available data at a national level, guide the identification of needs and the evaluation of solutions as shown in Table ES.1. These performance measures are driven by the elements described above in Figure ES.3: data analysis, international best practices, outreach/coordination, and stakeholder workshops. Data

on socioeconomic conditions, transport system conditions (for all modes), and demand were collected and processed for application (illustrated in the following subsections). These were fed into a geographic information system for data processing and visualization of several of these performance measures. A simple travel demand model, predicting origin-destination passenger and freight flows independent of mode, was also developed and utilized for identifying needs. This model utilizes population and employment data by sector by province to predict current and projected daily person trips and tonnage. These first elements of a travel demand model also provide the seed for the development of a full travel demand model for the Philippines in the future (see “Recommendations” section below).

Table ES.1 Performance Measures

Goals	Types of Measures	Performance Measures	Application
Economic Vibrancy; Environmental and Social Sustainability	Socioeconomic	<ul style="list-style-type: none"> Poverty total (by province) Poverty percentage (by province) Population total (by province) Population growth trends (by province) Employment total (by province) Employment growth trends (by province) Employment by industry (by province) 	Needs or solutions that impact a province.
Economic Vibrancy	Demand versus capacity	<ul style="list-style-type: none"> Passenger and freight volumes on roads, rail, at ports, and at airports (domestic and international) Volume/capacity (i.e., congestion) on roads, rail, at ports, and at airports Overall inter-province demand, passenger and freight, current and projected 	Needs or solutions that impact a specific facility. Needs or solutions that impact a specific facility within a corridor.
Maintenance and Operations	Asset condition	<ul style="list-style-type: none"> Pavement type Pavement age 	Needs or solutions that impact a specific facility.
All	Consistency with local, regional, national plans	<ul style="list-style-type: none"> Stakeholders-identified Identified in RDPs and other plans 	Varied.

The maps below summarize much of the information from which the performance measures are derived to identify needs. These are explained in greater detail in the appendices of the Draft Final Report.

E.2.1 Socioeconomic Conditions

Population. Data reflect an upward trend toward urban versus rural population in the Philippines in the previous decade, which is expected to continue in to the future. This is consistent with the National Spatial Strategy (NSS), which applies population and growth rate estimates to define the spatial distribution of future population clusters. The NSS hierarchy forms a twin spine, which defines the physical structure of the nationwide network of markets and provides redundancy in the interest of vulnerability reduction. Based on data utilized for the Framework Plan, several provinces in CAR, Region IV-B Mimaropa, Region V Bicol, and across Mindanao have been experiencing the highest percent growth in the Philippines. While basic access is also a critical concern for prioritizing certain investments, generally these provinces are prioritized in terms of this performance measure.

Poverty. Mapping poverty data by region and province and reviewing the Philippine Development Plan reveals that:

- Regions with the highest share of poverty overall include Region V – Bicol, Region VIII – Caraga, and the ARMM; specific provinces include Lanao del Sur, Maguindanao, and Camiguin;
- Regions with the highest number of poor include Region V – Bicol, and both Regions VI and VII in Western and Central Visayas, respectively; specific provinces include Zamboanga del Sur, Cebu, and Pangasinan;
- Bicol (southern Luzon) has over 45 percent of the population in poverty, and also has one of the largest total populations and population densities (indicating both severity and extent of poverty); and
- The northern half of Mindanao, as a whole, has high poverty incidence and totals, along with Central Visayas and Eastern Visayas.

These provinces and regions therefore rise to the top for this performance measure.

Employment. The Regions with the highest growth rates of employment between 2007 through 2011 included Regions I (Ilocos) and IV-B (Mimaropa). The regions with the highest shares of national employment in 2011, and therefore highest priorities for this performance measure, are:

- Region IV-A Calabarzon, with 12.5 percent of total employment;
- National Capital Region, with 12.0 percent of total employment;
- Region III Central Luzon, with 10.3 percent of total employment;
- Region VI Western Visayas, with 8.3 percent of total employment; and
- Region VII – Central Visayas, with 7.8 percent of total employment.

Nationally, agriculture is the biggest employer at 30 percent of the workforce. Trade is the largest employer in the NCR, and the NCR has a larger share of these workers than any other region. Manufacturing is centered primarily around the two largest urban centers. The tourism industry is strongest in NCR and IV-A (with 5.5 million persons accommodated per year). Dominance of certain industries by region and province helps to guide the proper types of investments, such as airports in high tourist areas and farm to market roads and ports in high agricultural areas. Figures ES.4 to ES.7 present selected socioeconomic data for the Philippines.

Figure ES.4 Population by Province in 2010

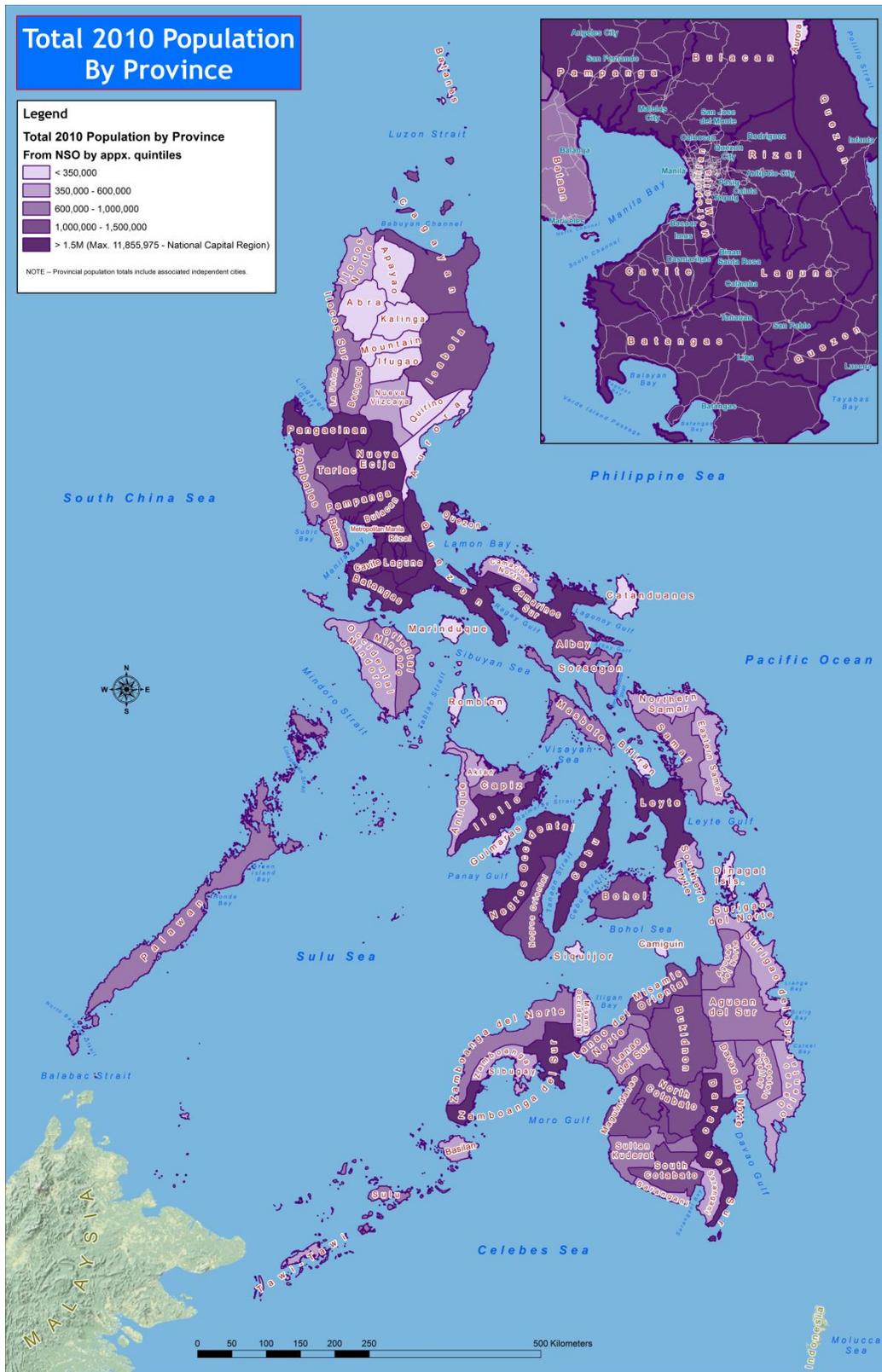


Figure ES.5 Percent Population in Poverty by Philippine Province in 2012

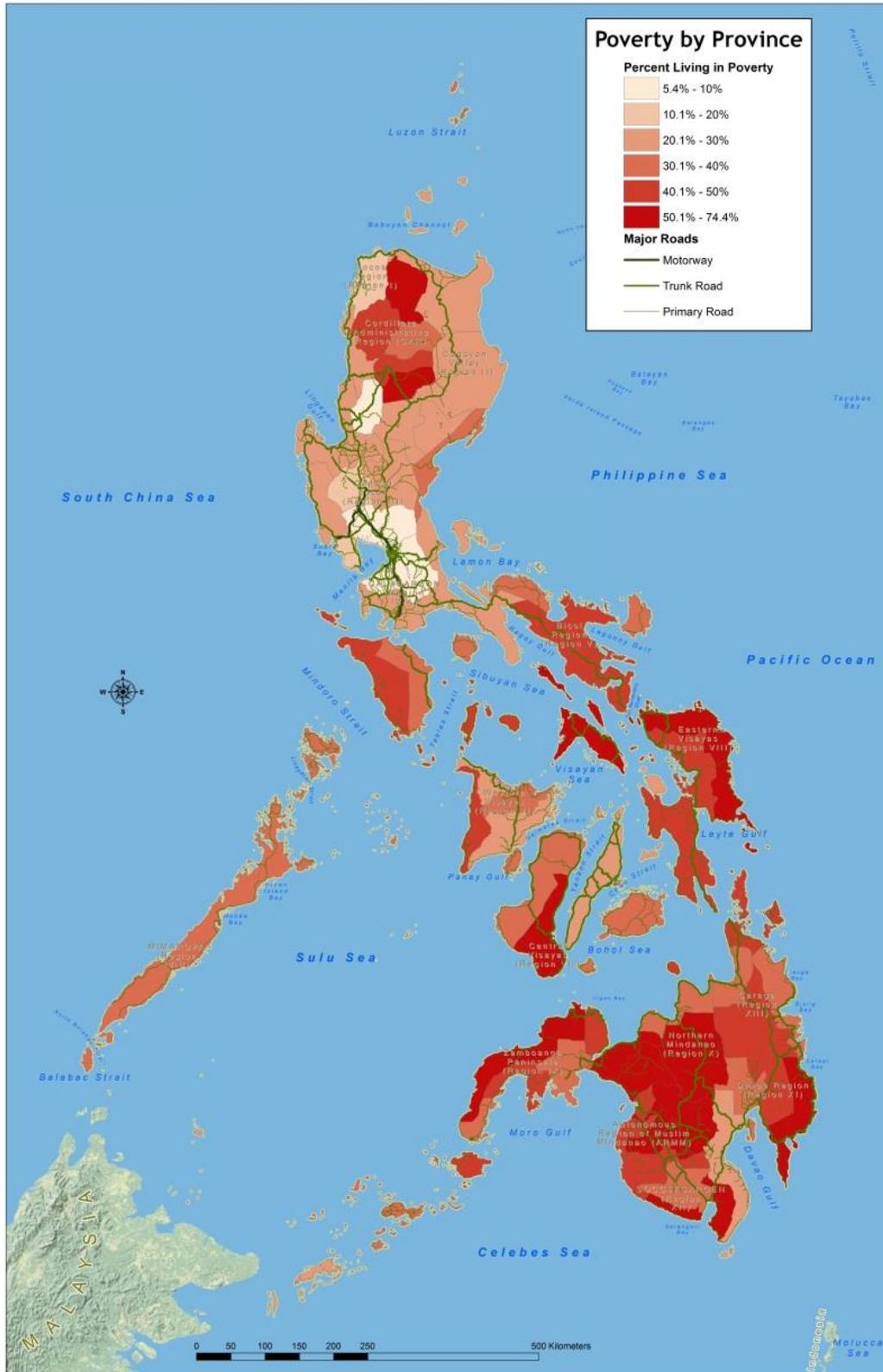


Figure ES.6 Employment Trends by Region from 2007 to 2011

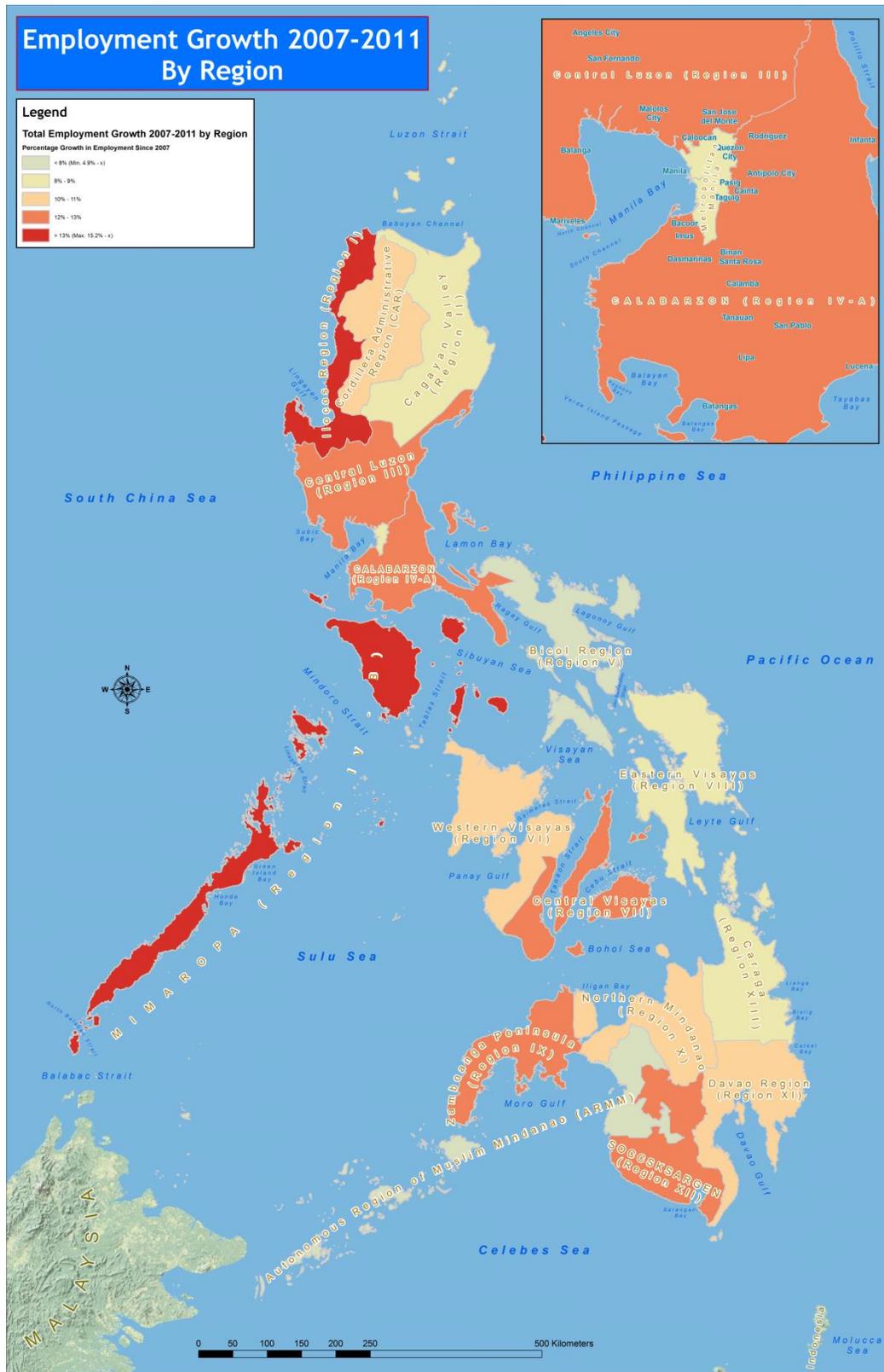
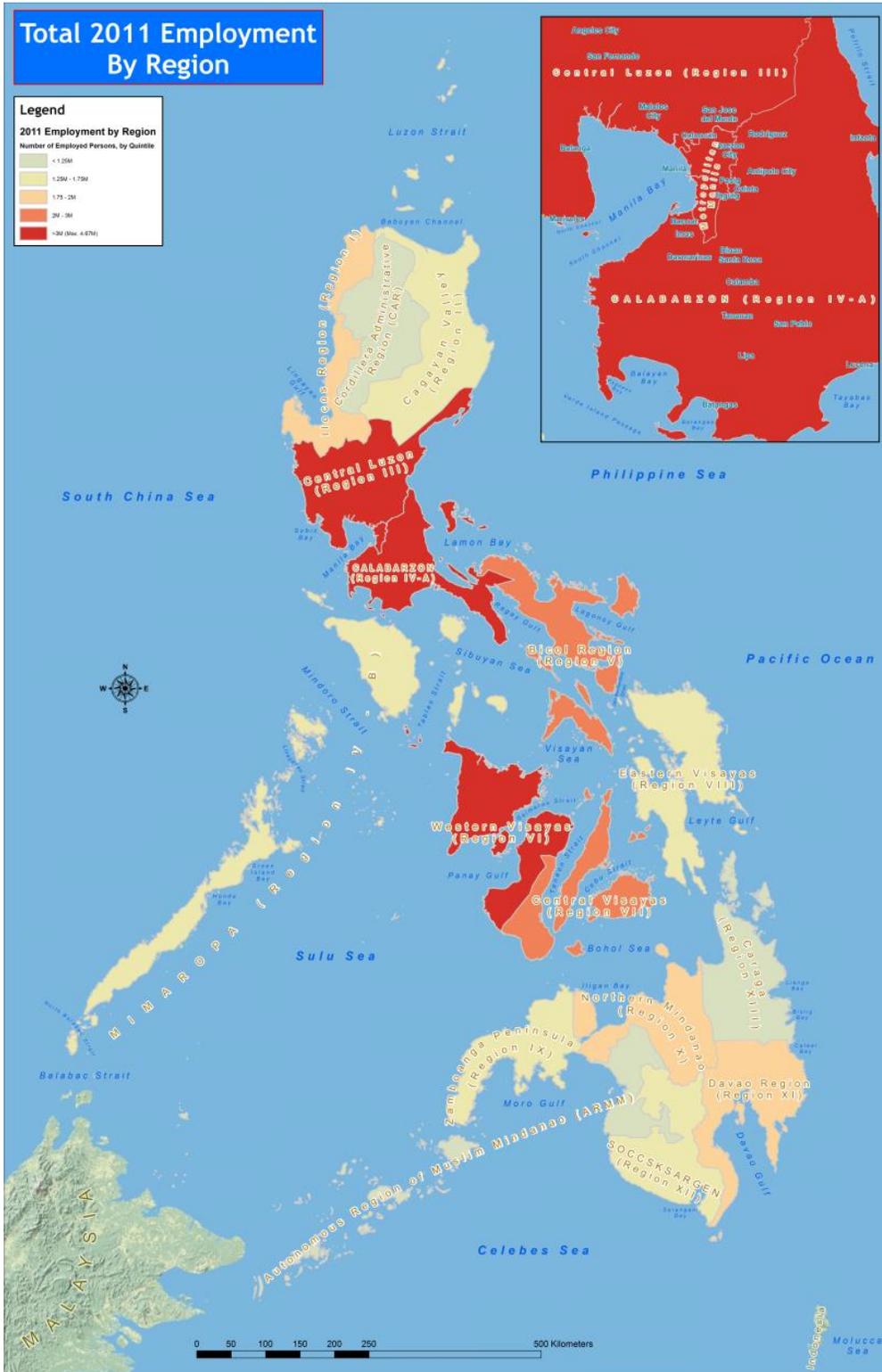


Figure ES.7 Employment by Region in 2011



E.2.2 Road Conditions

Urban roadways have higher levels of traffic volumes, including in the National Capital Region, Davao, Cagayan del Oro, Tagbilaran City, and Cebu City. Important corridors linking metropolitan areas also show higher traffic volumes, including the corridor linking Manila to San Fernando City and another linking Manila to Lucena. In addition, heavy truck traffic as evidenced by heavy truck density is prevalent on roadways throughout the nation. As passenger and freight movements are often concentrated on the same roadway network, the comingling of traffic impacts performance. High levels of truck traffic indicate high amounts of economic activity, and therefore improvements that reduce travel times for trucks are likely to have stronger impacts on economic development.

Data on the national network show that there are many segments throughout Luzon, especially in the NCR, with volume-to-capacity ratios of over 1.0, which are defined as roadways with traffic volumes exceeding capacity and failing levels of service. Other roadways with high volume-to-capacity ratios include circumferential roads on Bohol and northeastern Cebu as well as portions of feeders to major port cities on Mindanao. In Central Visayas and Mindanao, these highly congested corridors also pass through some of the most impoverished areas of the country.

Many of the highest capacity facilities are in Metro Manila, including the National Capital Region, Region III, and Region IV-A. Mindanao, conversely, has lower network coverage – particularly in the hinterlands – and a disproportionately higher percentage of national roads that are unpaved. Figures ES.8 to ES.11 present selected roadway network conditions data representative of the Philippines.

Figure ES.8 Road Network Volume-to-Capacity Ratios in 2012

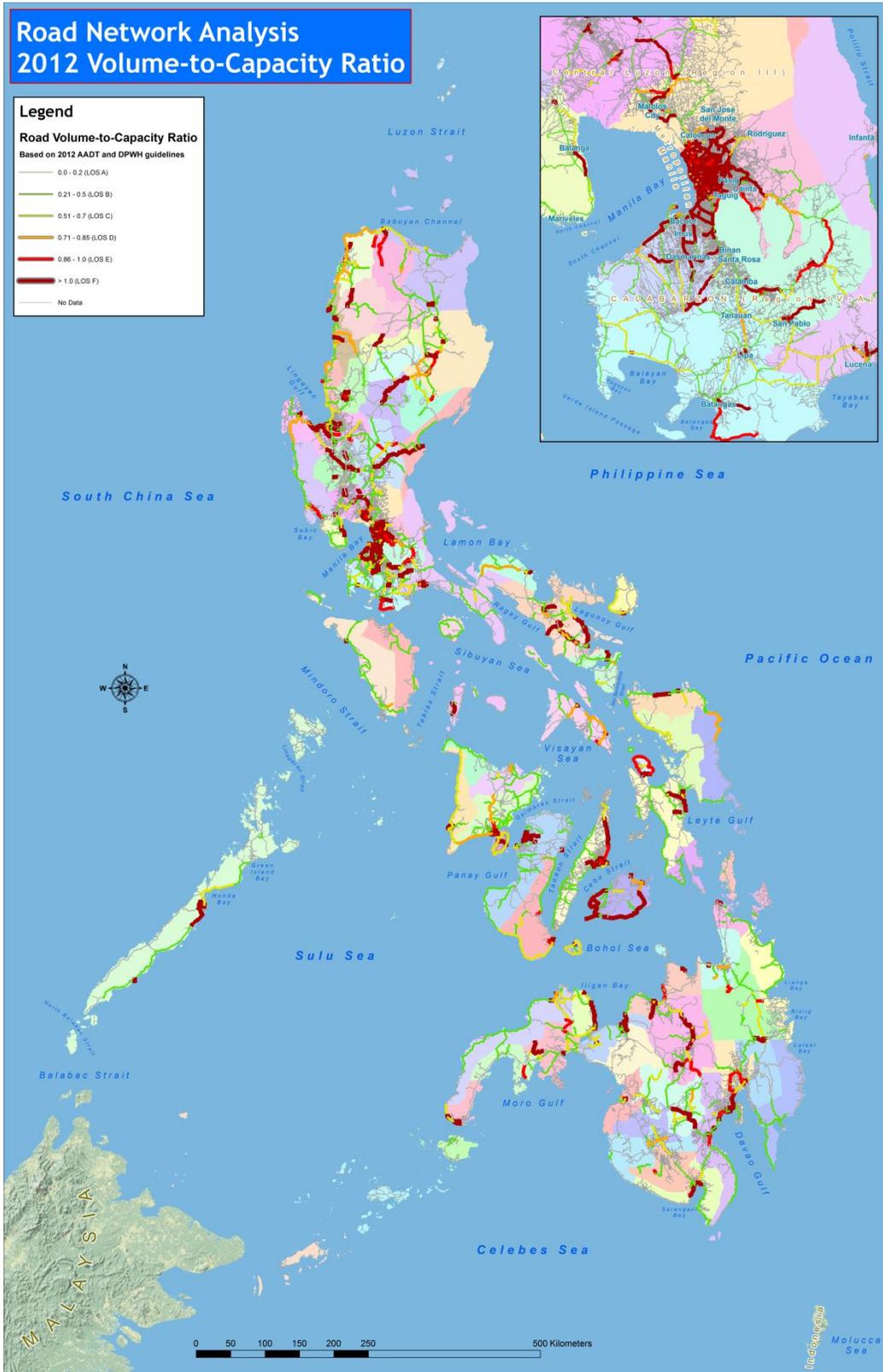


Figure ES.10 Road Network Traffic Volumes in 2012

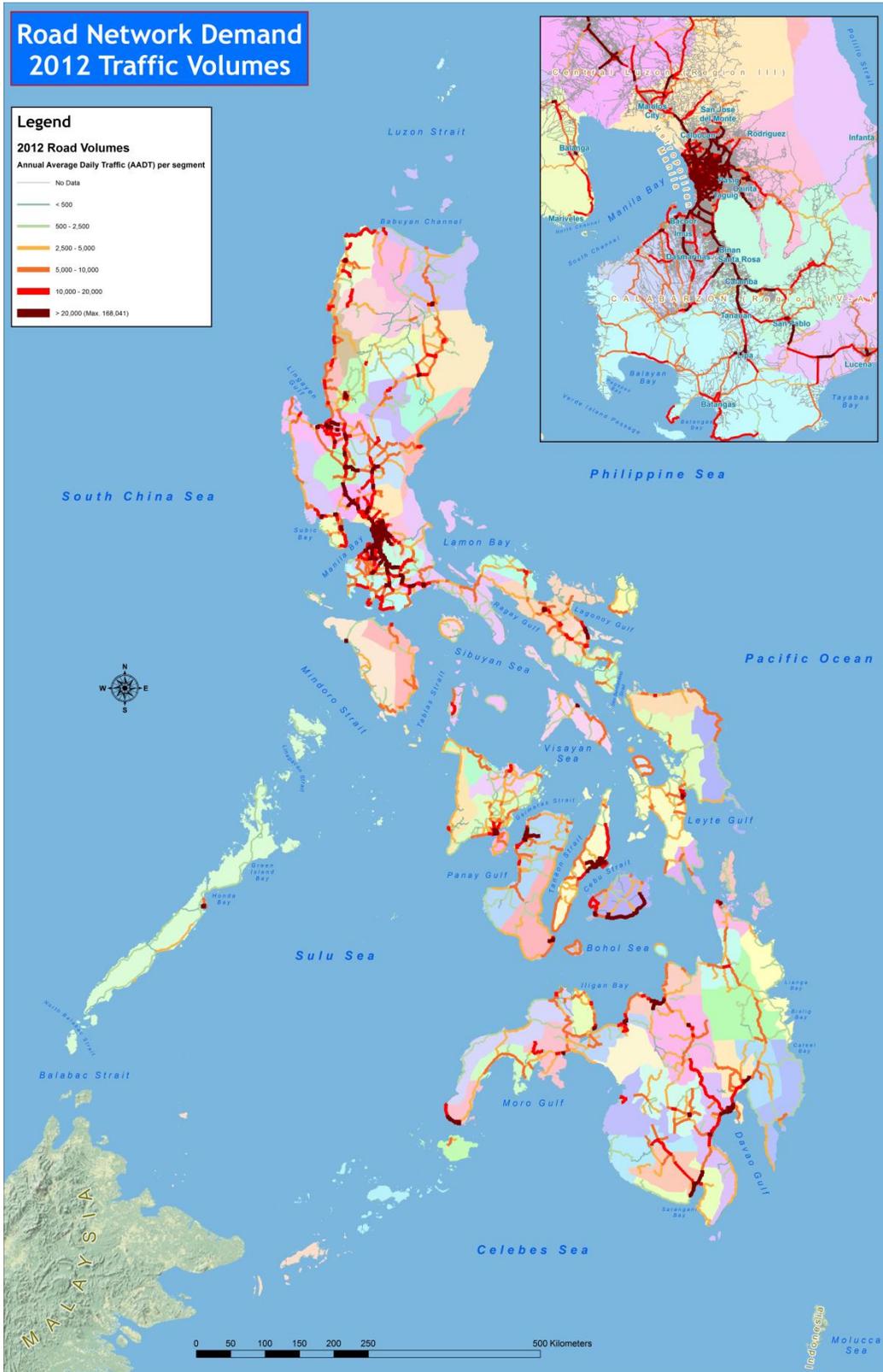


Figure ES.11 Road Network Surface Type and Construction Age in 2011



E.2.3 Airport and Port Conditions

Airports. Overall a number of commercial airports are reaching high levels of demand relative to their size, including NAIA, Cebu Mactan International, Bacolod, and Iloilo. Tacloban has also been experiencing high levels of demand compared to capacity, and also has recently been destroyed by Typhoon Yolanda. Many airports across the country are approaching or at capacity, including some airports that have recently opened for operations, including Southern Luzon (Bicol), Dumaguete, Tagbilaran, Laguindingan, and Davao International. Many commercial airports in the Philippines are under capacity and can accommodate increased passenger levels, while other airports coming online, such as Cagayan de Oro, face terminal capacity issues (e.g., Bohol, Legazpi). There is some overlap of high passenger demand and high cargo volumes at some airport facilities, specifically in Manila, Cebu, Davao and Iloilo.

Air cargo supports high value, time-sensitive trade and related industries (e.g., high-end electronic components). Cargo handling is focused at several airports, with smaller volumes at several others. Manila is the key national and international gateway for air freight. NAIA handles the largest share in the country, Clark has cargo operations, and Subic has capacity for cargo pending final plans for the airport. Cebu and Davao serve as smaller air cargo hubs. Bacolod, Iloilo, and Laguindingan also handle smaller amounts of cargo.

Maritime Ports. Many variables can explain the extent to which ports are utilized. Together, port demand (as measured by port calls) and total cargo tons illustrate the freight demand at individual ports. The map below illustrates the relationship between the utilization of individual ports and capacity using a level of service ranking of over capacity, near capacity, and under capacity. Many of the major ports in the Philippines, including Manila’s North and South Harbors, and its container port, are considered over capacity, as are the ports in Davao, Cebu, Iloilo, Cagayan de Oro, and Zamboanga City.

Due to data limitations, there is limited ability to conduct network analysis of ports and landside access, especially of the local roads to support the port service area. However, many of the country’s largest and most critical ports are located in congested urban areas without any high capacity road or rail access. Figures ES.12 to ES.15 present selected airport and port condition data representative of the Philippines.

Figure ES.13 Primary Commercial Airports Cargo Demand/Use in 2011

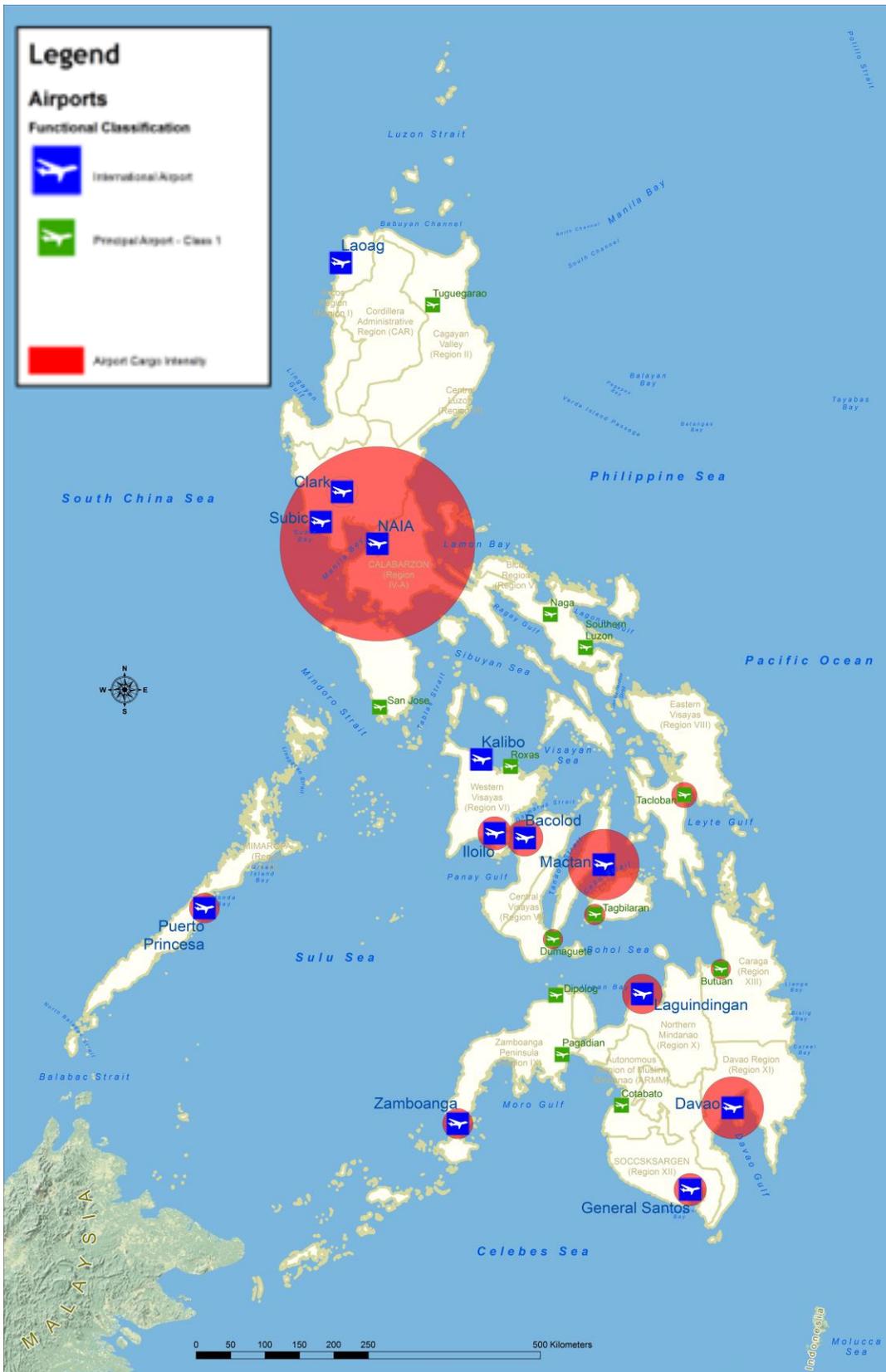
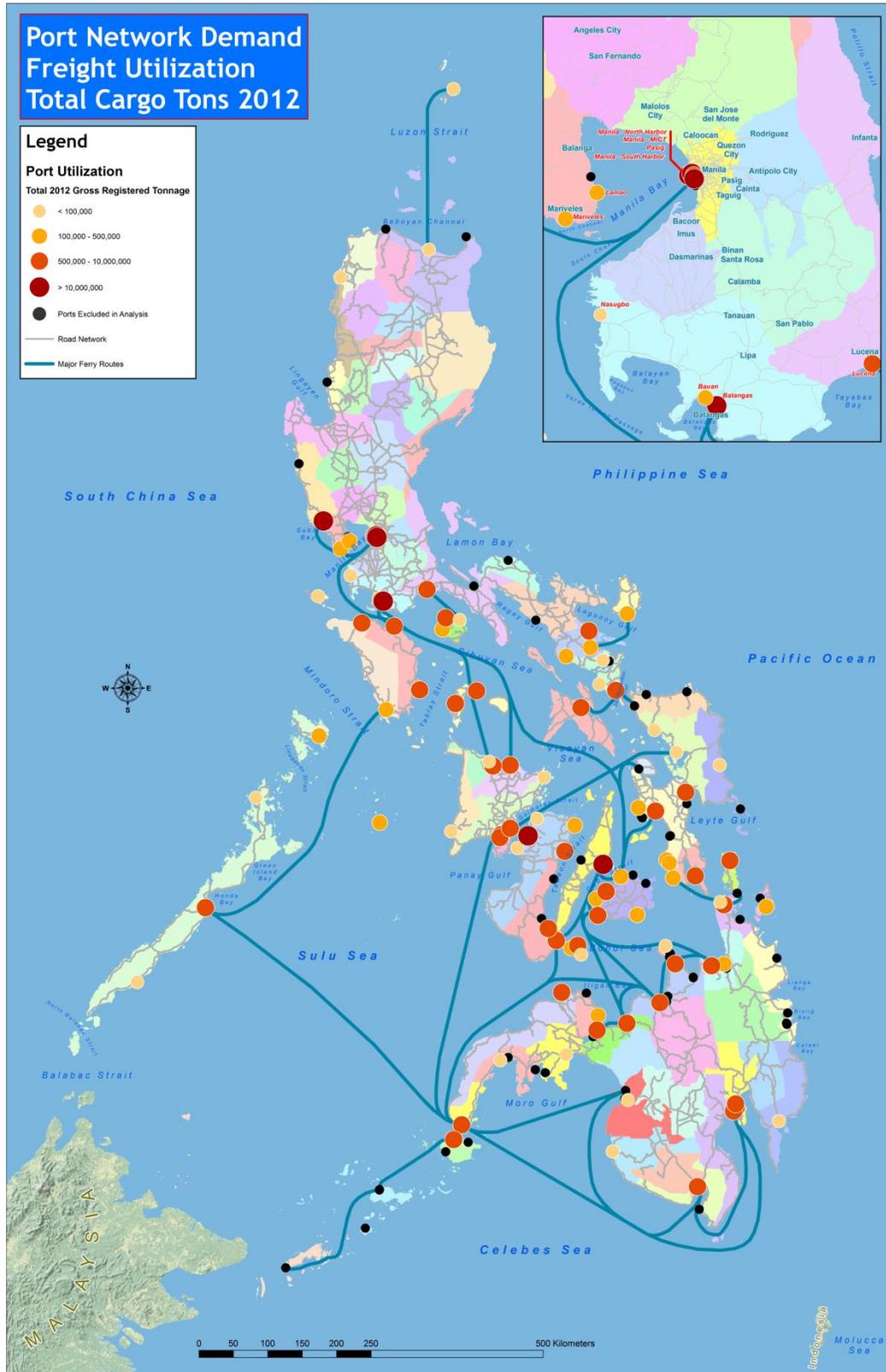


Figure ES.14 Port Demand/Freight Utilization in Total Cargo Tons in 2012



E.3 Issues and Needs

Numerous needs were identified through the processes described above in Figure 3. While there is much overlap in the relationships of these needs, they can be categorized according to “root issues” or “needs” shown in the Tables ES.2 and ES.3 below. The analysis looked at the underlying causes (“root issues”) of the gaps (“subordinate issue/need”) identified in the sector. More detailed assessment of the identification of each need based on the data can be found in the Framework Plan.

Table ES.2 Non-Physical Issues and Needs

Root Issue/Need	Subordinate Issue/Need
Lack of Technical Capacity for Planning (especially LGU level)	<ul style="list-style-type: none"> • Limited staff numbers • Limited staff skills • Limited knowledge of best practices • Lack of data collection systems and analysis • Lack of evidence-based approach to prioritize projects • Inconsistency/irregularity of planning processes
Urban Congestion and Accessibility to Jobs	<ul style="list-style-type: none"> • 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)
High Domestic and International Shipping Cost	<ul style="list-style-type: none"> • Restrictions to competition • Old domestic fleet • Low port productivity • Limited intermodal connectivity • Insufficient post-harvest facilities • Insufficient refrigerated facilities and vehicles • Limited access in rural/agricultural areas • Customs clearance slow and expensive • Poor inter-island connectivity
Transport System has Safety Issues and is not Equipped to Reduce Disaster Impacts	<ul style="list-style-type: none"> • No link between land use/transport • Limited redundancy • Maritime accidents are prevalent • Aviation accidents are prevalent
Limited Accessibility for the Poor	<ul style="list-style-type: none"> • Limited access in rural/agricultural areas • Poor inter-island connectivity • Poor lateral connectivity (not centered on Manila) • Limited redundancy/options

Root Issue/Need	Subordinate Issue/Need
Governance/Organizations not Flexible or Responsive to User Needs	<ul style="list-style-type: none"> • Overlapping/redundant government responsibilities • Limited systems-level, multimodal, intermodal planning • Limited focus on freight/logistics • Inability to acquire/preserve ROW • Delays in project programming, implementation • Continuity of plan implementation
Assets are Not Well-Managed	<ul style="list-style-type: none"> • Poor management of road ROW for transport purposes • Access is not managed • LGUs lack capacity to manage local roads • Overloaded trucks and poor enforcement of limits impact safety and infrastructure condition • Poor condition of roadways, especially on the local network • Construction material not matched to terrain/environment • Some ports in poor condition
Investments do not Always Match Needs	<ul style="list-style-type: none"> • Weak National/LGU interaction • Limited continuity of leadership/staff turnover • Imbalanced programming of projects, resulting in overdevelopment in some areas and underdevelopment elsewhere • Lack of connecting infrastructure (intermodal)

Table ES.3 Physical Issues and Needs

Root Issue/Need	Subordinate Issue/Need
Roads are Congested and Slow	<ul style="list-style-type: none"> • Public transport system design (routes) not systematically organized (rationalized); lack of alternative modes (see Urban Congestion) • Pan-Philippine Hwy, Sante Fe – Cauayan City • Manila North Road corridor up through Region I • Coastal road in/out of Cagayan de Oro • Coastal road in/out of Cebu • Bohol coastal road • West coast of Negros Occidental - East coast Iloilo • Davao-Cagayan de Oro • Davao-General Santos • Routes into/out of Lingayen, esp. to south • Congested roads, length of Bicol

Root Issue/Need	Subordinate Issue/Need
Antiquated/Insufficient Airport Infrastructure	<ul style="list-style-type: none"> • Congestion/capacity issue at Manila Airport • Congestion/capacity issue at Cebu Airport • Congestion/capacity issue at Tagbilaran Airport (Terminal size) • Congestion/capacity issue at Tacloban Airport; reconstruction due to typhoon • Congestion/capacity issue at Iloilo Airport • Congestion/capacity issue at Bacolod Airport • Congestion/capacity issue at Davao Airport • Terminal size issue at Legazpi Airport • Terminal size issue at Laguindingan • Terminal size issue at Kalibo • Terminal size issue at Cauayan • Terminal size issue at Jolo • Terminal size issue at SangaSanga
Antiquated/Insufficient Port Infrastructure	<ul style="list-style-type: none"> • Davao port demand; Sasa Port in poor condition • Northern Mindanao port demand • Bacolod port demand • Manila port demand; Subic and Batangas underutilized • Cebu port demand • Bohol port demand

While much of the passenger and freight movement occurs between neighboring provinces or regions (e.g., between the NCR, Region III, and Region IV-A), at the broader national level there are several key corridors for domestic trade, commerce, and tourism currently, or projected for the future. These corridors were identified based on total current and project demand between provinces, based on population and employment projections by sector and independent of mode of travel. As the Philippines is an archipelago, demand between these islands requires passengers or freight to channel through the main commercial ports and airports, creating additional urgency for the improvement of those facilities or creation of additional capacity. Table 4 below identifies these key corridors and, for the larger islands of Luzon and Mindanao, the main regions generating the demand. This has implications for the key arrival and departure points by air or sea in each region.

Key international gateways are focused on key points of entry to or exit from the Philippines, based on passenger and freight demand and trends. There is overlap between many of the physical needs identified above in the Table ES.3 and the infrastructure needed to support these key corridors and gateways (Table ES.4).

Table ES.4 Key Corridors and International Gateways, with Basis for Inclusion

Corridor or Gateway	Infrastructure Implications	2010 Pass.	2030 Pass.	2010 Freight	2030 Freight
Key Corridors					
Luzon (NCR/Regions III, IV-A, V)– Mindanao (Regions IX, X, XI, XII, ARMM)	Ports/airports in Metro Manila; Batangas; Cagayan de Oro; Davao; Surigao; General Santos; Zamboanga	x	x	x	x
Panay-Negros	Ports at Ilo-Ilo, Bacolod, (especially RORO)	x	x	x	x
Luzon (NCR/Regions III, IV-A) -Mindoro	Ports at Batangas, Calapan, (especially RORO)	x	x	x	x
Luzon (NCR, Region V) – Samar	Pass. ports/airports in Metro Manila/Batangas; Legazpi/Albay; N. Samar (especially RORO/ferry)	x	x		
Cebu-Mindanao (Region X)	Pass. ports/airports at Cebu, Cagayan de Oro		x		
Luzon (NCR, Region V) – Cebu	Ports in Metro Manila/Batangas; Legazpi/Albay; Cebu			x	x
Luzon (NCR/Regions III, IV-A) -Palawan	Ports in Metro Manila/Batangas; Puerto Princesa			x	x
Luzon (NCR/Regions III, IV-A) –Panay	Ports in Metro Manila/Batangas; IloIlo				x
Luzon (NCR, Region V) – Leyte	Ports in Metro Manila/Batangas; Legazpi/Albay; Leyte				x
Key International Gateways (Air)					
Manila/NCR		x		x	
Cebu		x		x	
Davao				x	
Key International Gateways (Sea)					
NCR				x	x
Northern Mindanao				x	x

E.4 Recommended Strategies

Based on the analysis of issues and needs, the following are the recommended strategies – non-physical and physical – classified into timeframe of implementation (short, medium and long-term).

E.4.1 Non-Physical Strategies

Short-Term - Immediate

Short-term strategies are those that can get started now, but may not be fully implemented through 2014-2016. Within these, immediate strategies can and should begin in 2014. Immediate short-term strategies include some of the following, including summaries in Table ES.5:

Institutions and Processes

- Establish a lead agency and process for identifying and programming priority farm-to-market roads (similar to the Tourism Road Infrastructure Program (TRIP)). Design standardization and expertise in road development can be provided by DPWH. Farm-to-market roads and basic accessibility roads are important to improving access to markets and institutions which are crucial in the poverty reduction agenda. *DPWH, with DA and DILG.*
- Conduct gap analysis of management systems (e.g., bridge, pavement, safety, right-of-way). Management systems are fundamental tools for any transport agency to help keep an inventory of the current system, data on the usage of the system, and help make better decisions for maintaining the system. *Various executing agencies.*
- Develop a data management plan for collecting, sharing, and maintaining data across all transport-related agencies. Agencies currently having a stake in transport data collection include DPWH, DOTC and its line agencies, DILG, DOT, DAR, separate port and airport authorities, and LGUs. A transport data management plan should designate the types of data that need to be collected on a regular basis, for what purpose, the processes and standards for each data type, and processes and standards for data management and storage. The plan should identify agencies responsible for collection, funding of the collection, and storage of the data. This plan should address data that can help in monitoring transport system improvements over time (performance reporting); travel demand model development to aid in investment decision-making; safety-related hot spots; and disaster recovery operations. *Inter-Agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*
- Determine the requirements for a national travel demand model and develop terms of reference. Determine a lead agency and strategy for developing a transportation network to include all roadway classifications to feed into a network-based model. A travel demand

model is a fundamental tool that can help the Philippines' transport agencies understand the system level impacts of different project investments. *DPWH and DOTC Responsibility.*

- Explore partnership opportunities with the academe - Commission on Higher Education, Department of Science and Technology and UP National Center for Transportation Studies – to grow involvement and interest in transportation technology, engineering, economics, and environmental science as an immediate strategy to bridge the skills gap in the transport sector. *Inter-agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*
- Confirm the strategy and provide support for planning and funding of mobile weigh scales and for refurbishing and constructing weigh stations along highways. This is currently led by DPWH. This is critical for preventing rapid deterioration of Philippine roadways and helping maintain road safety. *DPWH Responsibility.*
- Standardize road design across all implementing agencies, especially those implementing local roads to ensure consistent levels of standards (e.g. type of pavement, pavement thickness, design speed, drainage, and other ancillary features) and maintenance practices. *DPWH Responsibility.*
- Establish a freight advisory committee composed of public and private sector freight stakeholders. Ensuring efficient freight movement has largely been set aside in favor of urban congestion; but this has a cost to the economy of higher commodity prices and lower trade competitiveness. This problem needs to be discussed openly and strategies and investment plans targeting freight movement need to be developed. *DOTC and DPWH Responsibility with Significant LGU Support.*
- Update the road classification system for all roadways to bring out functions or roles of each roadway and responsibilities for maintaining them, taking into account the capacity of DPWH and different entities to maintain roads. *DPWH Responsibility.*
- Implement a national road routing system to remove confusion on the road network system and enhance people's familiarization with the national road network. *DPWH Responsibility.*

Regulatory and Legal

- Identify inefficient, irrelevant, outdated and/or obsolete laws, statutes, and codes (e.g. the Public Service Act and regulation of public transit), leading to proposal on new policies or if necessary legislation to be more responsive to current needs, existing environment and emerging trends. *Inter-agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*
- Adopt a people-oriented transport policy and identify a lead agency responsible for people-oriented infrastructure (sidewalks, bike lanes, handicap friendly); design guidelines/standards, including national roads. *DOTC leading policy with DPWH development of standards.*

- Evaluate cabotage reform options and assess potential impacts (e.g., cost/benefit analysis) to all stakeholders (e.g., shippers, farmers, and consumers). *National government, NEDA responsibility.*
- Ensure flexibility at PMO, PDO, or port level to be flexible in responding to changing market demands, along with accountability measures on port performance. *DOTC responsibility, jointly with PMOs/PDOs.*

Social and Environmental

- Conduct a transport resiliency analysis on existing infrastructure, starting with areas that are most vulnerable to the impact of climate-change and disasters based on available geo hazard maps and studies. *Inter-agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*
- Consult with the Inter-agency Road Safety Committee on safety enforcement strategies including for 2-3 wheel vehicles, which have the biggest share in the mix of motor vehicles in most regions in the country and higher safety concerns. *Inter-agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*

Table ES.5 Recommendations for Short-Term, Immediate Initiation (2014)

Need or Issue	Institutions and Processes	Regulatory and Legal	Social/Environmental
Lack of Technical Capacity for Planning	Conduct gap analysis of management systems Establish data collection protocol/national data plan Determine travel demand model requirements Explore partnership with academe to promote transport skills	N/A	N/A
Limited Accessibility for the Poor	Create local roads strategy Program priority FMRs		
Governance/Organizations not Flexible or Responsive to User Needs	N/A	Identify legal framework issues Provide more funding flexibility at port level	N/A
Transport System has Safety Issues and is not Equipped to Reduce Disaster Impacts	GIS data management plan for safety (part of overall data management plan)	N/A	Resiliency analysis 2-3 wheel vehicle safety enforcement
Urban Congestion and Accessibility to Jobs	N/A	Implement policies/design standards on people-oriented	N/A

Need or Issue	Institutions and Processes	Regulatory and Legal	Social/Environmental
High Domestic and International Shipping Cost	Establish freight advisory committee	Evaluate cabotage reform options	N/A
Investments do not Always Match Needs	N/A	N/A	N/A
Assets are not Well Managed	Enforce truck weight Roadway design standards Road classification Road routing system	N/A	N/A

Other Short-Term Strategies

The following types of strategies are also recommended for initiation in the short-term (2014-2016) with additional recommendations shown in Table ES.6:

Institutions and Processes

- Combine currently disparate transport planning functions under the DOTC to allow for more comprehensive, system-level, multimodal analysis of transportation investments. This level of planning should be done at an “umbrella” level above the various line agencies within the DOTC, as well as including road planning that is currently done at DPWH, with input and participation from experts in each of these agencies. *DOTC Responsibility with DPWH.*
- Establish a Leadership Program within agencies (NEDA, DOTC, DPWH, and attached agencies) to transfer knowledge, tools, and methodologies to managers within each organization. This can be facilitated by the academe and supported by the national government transport agencies. *Inter-agency, National Agency Responsibility (DPWH, DOTC, etc.) with Significant LGU Support.*
- Establish a transport training program for provincial and local governments to incorporate the Framework Plan-recommended planning processes into provincial/local decision-making. This will help to encourage a more data-driven approach to project selection and recommendation. DILG can facilitate the development of this program with academe providing the content. *Inter-agency, National Agency Responsibility (specifically NEDA and DOTC) with Significant LGU Support.*
- Annually assess and report the condition and performance of the national transport system, building on the data collection protocols recommended in the short term strategies. This should be part of regular data collection and reporting to assess the outcomes of transport investments; assess progress towards goals; ensure accountability; and to have current data for following the process for allocation of resources identified in this Framework Plan. *DOTC responsibility.*

- Rationalize the port system, given many ports were constructed for reasons other than demand. The proliferation of ports throughout the islands means that low cargo volumes are dispersed over many ports, making it difficult for the majority of ports to be operated profitably and for the main ports to achieve economies of scale. However, this should include an established policy for municipal ports for minimum accessibility for rural, impoverished areas. This policy measure works in concert with project recommendations on port consolidation to create prosperous international gateways; risk assessment and feasibility assessment should be included. *DOTC, specifically input from PPA and its PMOs/PDOs.*
- Develop a more robust system of local road development, maintenance, operations, and enforcement, implemented at the provincial/local level but supported by the national government. Such a process should include a standardized approach for data collection; financial support tied to data collection and reporting to the national government to ensure improvement towards projected targets; capacity building and training for provincial and local governments by the national government; and initiation of the program with “good-housekeeping” governments. *DPWH Responsibility, coordinated with DILG, with Significant LGU Support.*
- Extend the horizon of planning documents (e.g., PDP, RDP) to allow time for technical analysis. While medium term programming is still recommended along the current 6 year time frame, this should be within the context of longer-term outcomes (e.g., 20 to 30 years). *National Agency Responsibility (NEDA, DPWH, DOTC, etc.).*
- Develop multimodal transport studies for select metropolitan, regional, sub-regional, and provincial centers (as identified by the NSS). Multimodal transport studies have rarely been done for areas outside Metro Manila. These should be conducted at the regional level (e.g., by provincial or local governments), but supported at the national level. Start with the next “tier” of cities in the Philippines: Cebu, Davao, Cagayan de Oro, and IloIlo. *DOTC Responsibility.*

Social and Environmental

- Establish a performance reporting process for local Comprehensive Development Plans (CDP) and Comprehensive Land Use Plans (CLUP), among others. This should follow a similar process to the performance reporting process described above, and will provide accountability and help show a link between transport investments and policies (and related land use policies) and actual outcomes. *DILG Responsibility.*
- Implement performance-based evaluations of the Philippine Coast Guard's (PCG) and Maritime Industry Authority (MARINA) enforcement of safety standards, rules and regulations. These will be a combination of output-based measures (e.g., number of drills performed) and outcome-based measures (e.g., number of incidents or fatalities). Similar to the performance reporting recommendations above, this helps to provide accountability, monitor progress, and identify areas for improvement in a sector where safety issues have been identified. *PCG and MARINA Responsibility.*

Regulatory and Legal

- Dedicate national funding for purposes of matching LGU resources for planning studies to incentivize LGUs to undertake basic urban transport planning. This should also be linked to the capacity building initiatives being driven by the academe. *Inter-agency, National Agency Responsibility (NEDA, DPWH, DOTC, etc.) with Significant LGU Support.*

Table ES.6 Other Recommendations for Short-Term Initiation (2014-2016)

Need or Issue	Institutions and Processes	Regulatory and Legal	Social/Environmental
Lack of Technical Capacity for Planning	Agency Leadership Program LGU Training Program	N/A	N/A
Limited Accessibility for the Poor	Establish policy for municipal ports for minimum accessibility (part of port system rationalization strategy)	N/A	Local performance reporting
Governance/Organizations not Flexible or Responsive to User Needs	N/A	N/A	N/A
Transport System has Safety Issues and is not Equipped to Reduce Disaster Impacts	N/A	N/A	PCG evaluation
Urban Congestion and Accessibility to Jobs	Create urban transport plans	National matching contribution to LGUs for planning	N/A
High Domestic and International Shipping Cost	Conditions and performance reporting	N/A	N/A
Investments do not Always Match Needs	Define proper planning horizon Incorporate performance-based planning into planning processes Combine all transport planning functions into one agency	N/A	N/A
Assets are Not Well-Managed	Rationalize the port system Local road development, maintenance, funding	N/A	N/A

Medium to Long Term

The following is a summary of recommendations for long-term initiation (beyond 2016) with Table ES.7 providing additional recommendations:

Institutions and Processes

- Develop a national travel demand model for use in forecasting passenger and freight travel flows which would provide improved information and analytical support for national and regional transportation planning and programming decision making. This should be based on the requirements and initial steps developed in the short-term recommendations above. *DPWH Responsibility with Significant Support from DOTC and other national Agencies.*
- Establish and increase capacity-building programs (e.g., basic, advanced) to all aspects of transport planning, investment decision-making, operations, and enforcement at the provincial- and city-levels. This can be driven by the development and extension of NCTS-type entities at local universities around the country, and can be supported by the national government. These local transport centers of excellence can also provide support to LGUs that may lack staff to perform any transport-related functions. Much of the transport responsibilities are divested to provincial and local authorities, despite a lack of technical and staff capacity to take on these duties; this has a directly negative effect on the success and sustainability of transport investments from the national government. *Inter-agency, National Agency Responsibility (NEDA, DPWH, DOTC, etc.) with Significant LGU Support.*
- As part of capacity building, establish internship programs between Universities and the transport agencies and their attached agencies. *National Agency Responsibility (NEDA, DPWH, DOTC, etc.).*

Regulatory and Legal

- Establish regional, metropolitan agencies outside the NCR responsible for coordinating and administering regional transport planning and programming, along with related functions such as land-use planning. *Inter-agency, National Agency Responsibility (NEDA, DPWH, DOTC, etc.) with Significant LGU Support.*
- Rationalize public transit in the Philippines' cities by creating a single, regional transit body in each urban area responsible for planning, implementing, and operating public transit. Each body may be part of the metropolitan agencies identified above (e.g., an MMDA-type body). Private operators may continue to operate individual routes in this scheme, contracted out on a performance basis (combination of revenue and meeting desired service targets), but all road and rail based transit in a region will be identified as, and function as, a single system. *DOTC Responsibility.*

Table ES.7 Recommendations for Medium- to Long-Term Initiation
After 2016

Need or Issue	Institutions and Processes	Regulatory and Legal	Social/ Environmental
Lack of Technical Capacity for Planning	National travel demand model for forecasting Capacity-building programs Internship program	N/A	N/A
Limited Accessibility for the Poor	N/A	N/A	N/A
Governance/Organizations not Flexible or Responsive to User Needs	N/A	N/A	N/A
Transport System has Safety Issues and is not Equipped to Reduce Disaster Impacts	N/A	N/A	N/A
Urban Congestion and Accessibility to Jobs	N/A	Rationalize public transit systems	N/A
High Domestic and International Shipping Cost	N/A	N/A	N/A
Investments do not Always Match Needs	N/A	Establish regional planning entities for urban areas	N/A
Assets are Not Well-Managed	N/A	N/A	N/A

E.4.2 Infrastructure-Based Strategies

More infrastructure-focused priorities are shown in the Tables ES.8-ES.10, and illustrated in Figures ES.16-ES.18. Each infrastructure strategy addresses a need identified through the analyses above. The strategies are prioritized based on the severity of the need and the feasibility of quick initiation of project development. For example, in some cases feasibility studies have already been performed. The tables below indicate a summary of the reasons for prioritizing these locations, which is shown in more detail of Section 4 of the Framework Plan.

Table ES.8 Infrastructure Recommendations for Short Term
Immediate Initiation

Issue/ Need	Infrastructure and Services Strategies	Specific Locations	Reasons for Prioritizing
Roads are Congested and Slow	Designate Freight Network	N/A	N/A
	Identify Metropolitan Areas with severe congestion and develop multimodal system plans with alternative modal choices	<ul style="list-style-type: none"> • High capacity transit in Cebu (e.g., BRT) • High capacity transit in Davao (e.g., BRT "Lite") 	<ul style="list-style-type: none"> • Largest urban areas outside Manila • No existing high capacity transit • Growing population, economy, congestion
	Add capacity to highly congested, truck-/tourism-oriented highways	<ul style="list-style-type: none"> • Manila North Road corridor up through Region I • Coastal road in/out of Cagayan de Oro • Complete bypass road at Cagayan de Oro (to Phividec) • Coastal road in/out of Cebu 	<ul style="list-style-type: none"> • High V/C • High truck % or volumes • High poverty • Access to growth centers for tourism, agriculture, manufacturing • Intermodal connectivity • Limited network of newer, paved roads
Limited Accessibility for the Poor	Prioritize FMRs (and other connecting infrastructure) in areas of high poverty, high agriculture, and low roadway accessibility	<ul style="list-style-type: none"> • Bukidnon • Lanao del Norte/Sur • North Cotabato • Negros Oriental 	<ul style="list-style-type: none"> • Limited network of newer, paved roads • High poverty • High agriculture • Access to intermodal growth centers

Issue/ Need	Infrastructure and Services Strategies	Specific Locations	Reasons for Prioritizing
Antiquated/ Insufficient Airport Infrastructure	Replace air capacity and consider resilience	<ul style="list-style-type: none"> Tacloban 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand High poverty
	Leverage existing capacity in Metro Manila	<ul style="list-style-type: none"> Continue to market Clark as NAIA alternative 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand Major international gateway
Antiquated/ Insufficient Port Infrastructure	Add port capacity	<ul style="list-style-type: none"> Davao (e.g., reconstruct Sasa Port) 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand High poverty High agriculture
	Leverage existing capacity in Metro Manila	<ul style="list-style-type: none"> Continue to market, incentivize Batangas and Subic 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand Major international gateway High tourism, manufacturing
	Invest in refrigeration facilities/plugs at high agricultural ports	<ul style="list-style-type: none"> Davao Cagayan de Oro Iloilo Bacolod 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand High poverty High agriculture

Figure ES.16 Infrastructure Recommendations for Short-Term Immediate Initiation

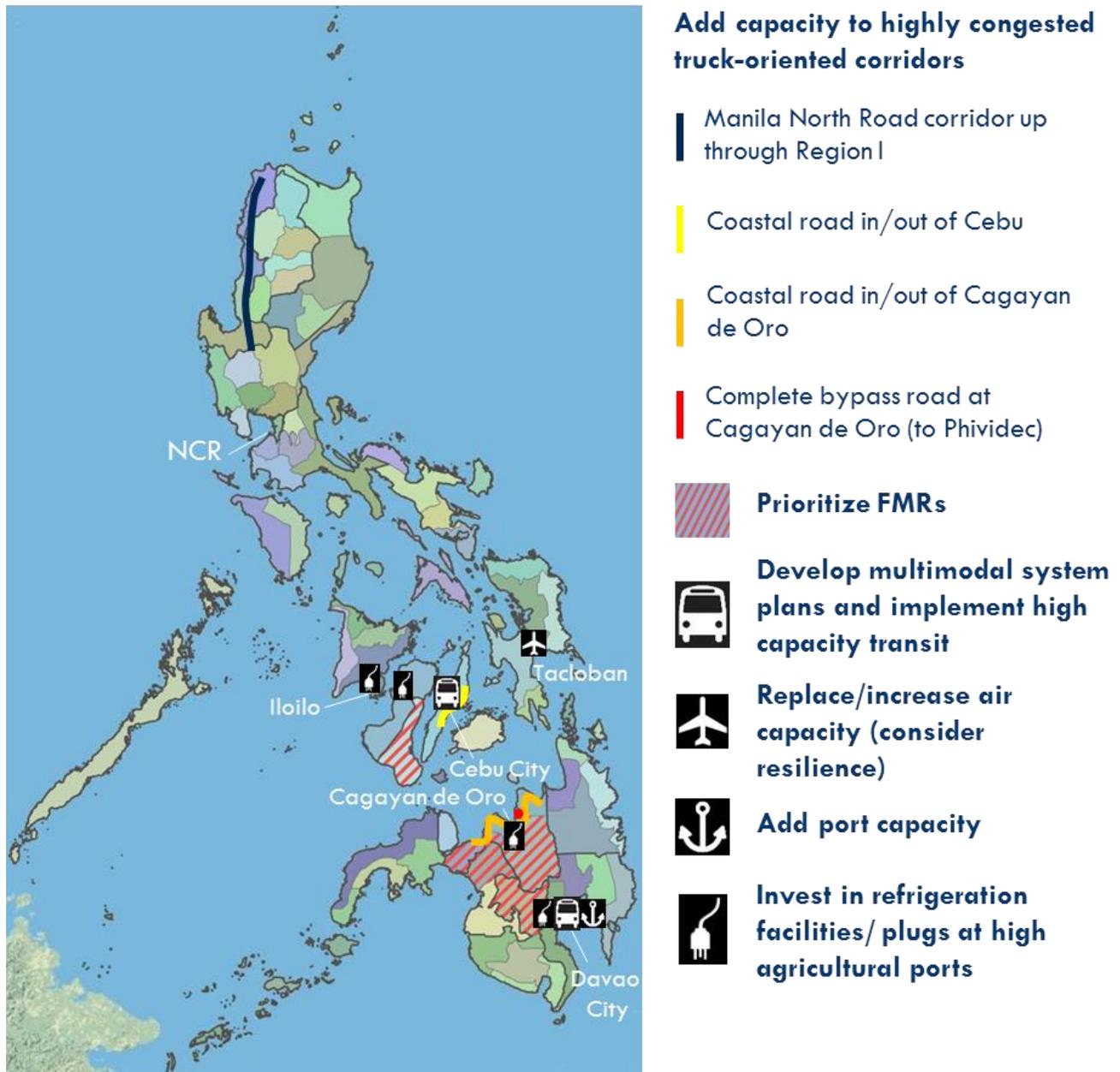


Table ES.9 Other Infrastructure Recommendations for Short-Term Initiation

Issue/Need	Infrastructure and Services Strategies	Specific Locations	Reasons for Prioritizing
Roads are Congested and Slow	Rationalize landside access to key international gateways	(see ports/airports below)	(see ports/airports below)
	Initiate freight-oriented roadway improvements on major freight corridors (e.g., truck-oriented geometric design)	<ul style="list-style-type: none"> • Urban routes providing landside access to key international gateways • Roads/corridors identified in “prioritize highly congested, truck-oriented roadways” strategies 	(see other sections)
	Fill nautical highway system gaps	<ul style="list-style-type: none"> • See recommendations in DOTC “Pre-Feasibility Study for Central Spine RORO Project”. Focus on Bacolod, Iloilo, Bohol port and roadway improvements. 	<ul style="list-style-type: none"> • High passenger and freight demand between islands • High passenger and freight demand at ports • High transport/shipping costs • High V/C • High truck % or volumes • Access to growth centers for tourism, agriculture, manufacturing • Intermodal connectivity
Add capacity to highly congested, truck/tourist-oriented roadways	<ul style="list-style-type: none"> • West coast of Negros Occidental - East coast Iloilo 	<ul style="list-style-type: none"> • High V/C • High truck % or volumes • High poverty • Access to growth centers for tourism, agriculture, manufacturing • Intermodal connectivity • Limited network of newer, paved roads 	

Issue/Need	Infrastructure and Services Strategies	Specific Locations	Reasons for Prioritizing
Antiquated/ Insufficient Airport Infrastructure	Rationalize landside access to key international gateways	<ul style="list-style-type: none"> • Metro Manila (NAIA, Clark) • Cebu • Davao 	<ul style="list-style-type: none"> • High V/C • High projected freight, pax demand • High poverty • High tourism, manufacturing • International gateway
	Add terminal/ramp capacity	<ul style="list-style-type: none"> • Bohol/Albay 	<ul style="list-style-type: none"> • High tourism • Identified terminal capacity issue
	Add capacity	<ul style="list-style-type: none"> • Cebu • Davao • Iloilo 	<ul style="list-style-type: none"> • High V/C • High projected freight, pax demand • High poverty • High tourism, manufacturing • International gateway
Antiquated/ Insufficient Port Infrastructure	Rationalize landside access to key international gateways	<ul style="list-style-type: none"> • Metro Manila (Manila Harbor, Subic, Batangas) • Northern Mindanao (Cagayan de Oro, Phividec, Surigao) 	<ul style="list-style-type: none"> • High V/C • High projected freight, pax demand • High poverty • High tourism, manufacturing, agriculture • International gateway
	Add capacity	<ul style="list-style-type: none"> • Bacolod (RORO) • Bohol • Cebu 	<ul style="list-style-type: none"> • High V/C • High projected freight, pax demand • High poverty • High tourism, manufacturing, agriculture

Figure ES.17 Other Infrastructure Recommendations for Short-Term Initiation

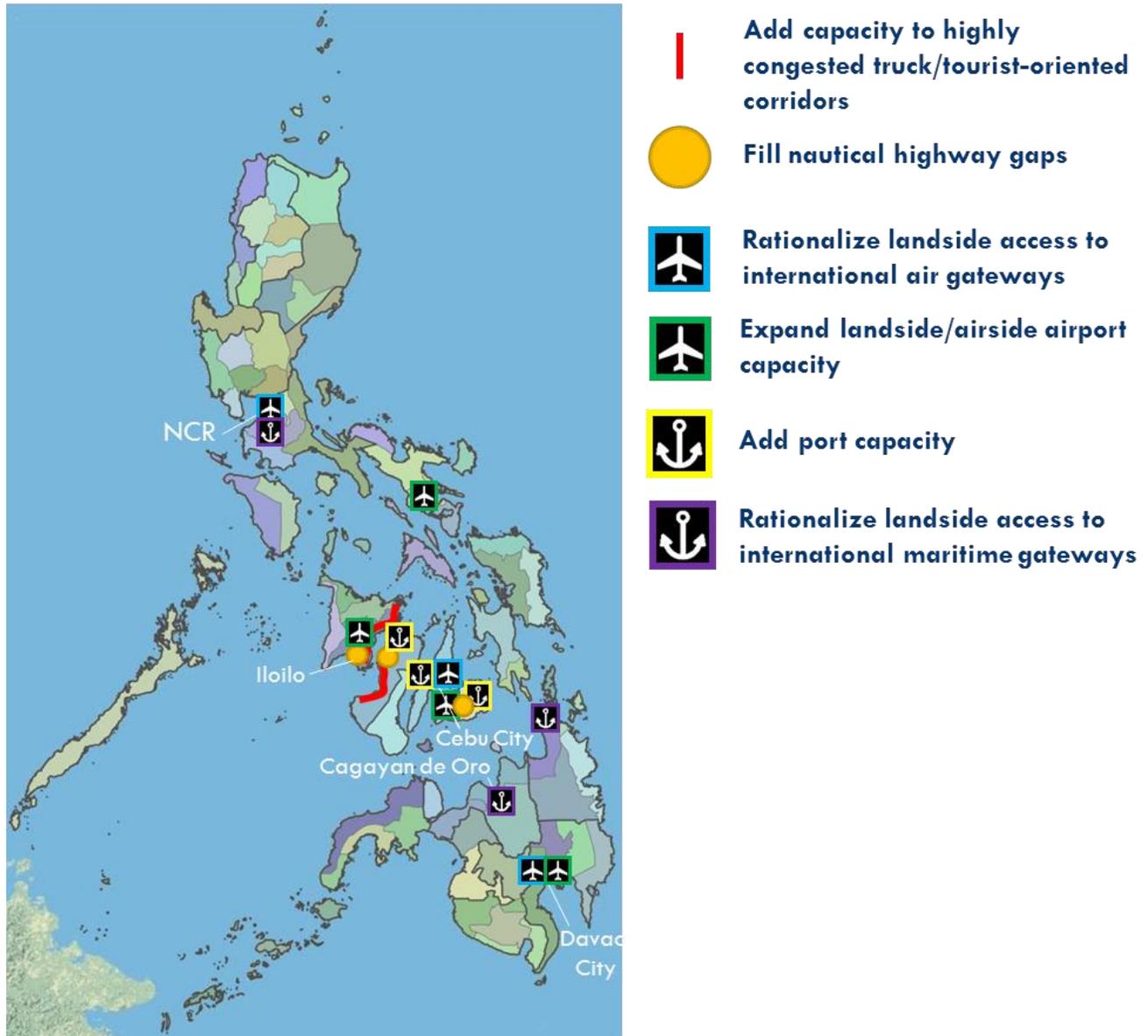
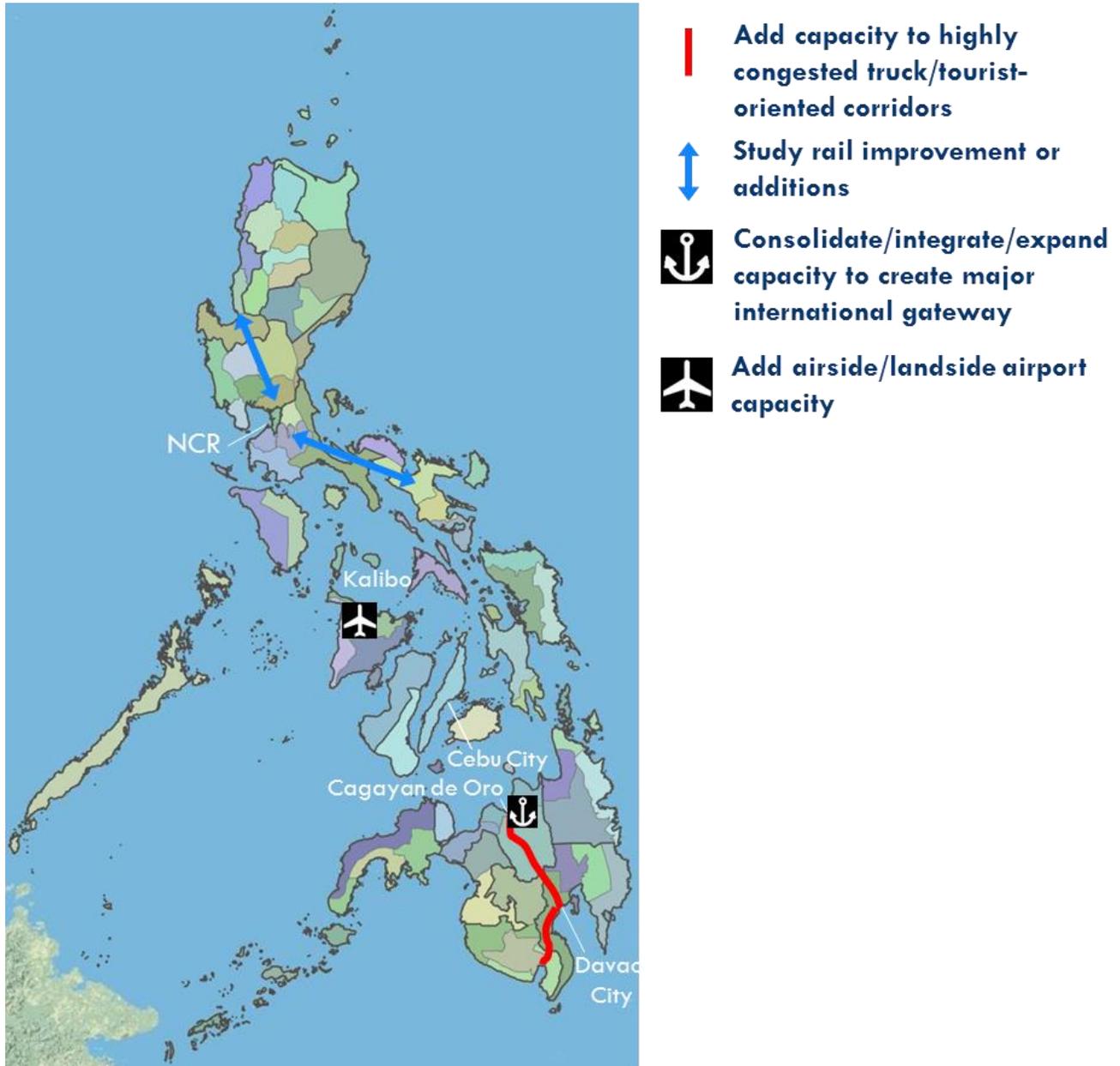


Table ES.10 Infrastructure Recommendations for Medium- to Long-Term Initiation Beyond 2016

Issue/Need	Infrastructure and Services Strategies	Specific Locations	Reasons for Prioritizing
Roads are Congested and Slow	Study the viability and sustainability of extending/improving intercity passenger rail	<ul style="list-style-type: none"> Improvements to existing line/service Manila to Bicol North rail 	<ul style="list-style-type: none"> High V/C High poverty Access to growth centers for tourism, agriculture, manufacturing Intermodal connectivity Limited alternatives/redundancy
	Study freight rail	<ul style="list-style-type: none"> To/from Manila 	<ul style="list-style-type: none"> High V/C High truck % or volumes Access to growth centers for manufacturing Intermodal connectivity Limited alternatives/redundancy
	Add capacity highly congested, truck/tourist-oriented roadways	<ul style="list-style-type: none"> Davao-Cagayan de Oro Davao-General Santos 	<ul style="list-style-type: none"> High V/C High truck % or volumes High poverty Access to growth centers for tourism, agriculture, manufacturing Intermodal connectivity Limited network of newer, paved roads
Antiquated/Insufficient Airport Infrastructure	Add terminal/ramp capacity	<ul style="list-style-type: none"> Kalibo 	<ul style="list-style-type: none"> Identified terminal capacity issues High poverty, tourism, or other economic growth
Antiquated/Insufficient Port Infrastructure	Consolidate/integrate/expand capacity to create major international gateways	<ul style="list-style-type: none"> Cagayan de Oro/Phividec 	<ul style="list-style-type: none"> High V/C High projected freight, pax demand High poverty High agriculture

Figure ES.18 Infrastructure Recommendations for Medium- to Long-Term Initiation (beyond 2016)



Tables 4.12 through 4.17 in the Framework Plan compare the broad infrastructure strategies above to specific projects that have been programmed or planned previously. These projects relate to the corridor or facility specific strategies in the tables above.

The suggested timeframe of initiation relates to a combination of priority (based on the needs analysis above), additional priorities identified in the relevant study, and assessment of overall institutional and engineering feasibility. Additionally, occasional sets of projects fall within a particular need but may be “competing”; in such cases, one of the projects is prioritized over the other again based on feasibility and long-term vision.

Projects may satisfy multiple needs. For example, a port project may help increase demand at an over capacity port, while also contributing to supply of infrastructure in one of the Philippines' key national corridors for passengers and freight.

Some projects have already undergone some level of analysis, as indicated in the tables in the Framework Plan. For those that have not, the first step for implementation will be feasibility analysis.