CHAPTER 6

PROJECT COST ESTIMATE

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(Confidential)

CHAPTER 7

ENVIRONMENT AND SOCIAL CONSIDERATION

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This Chapter presents Draft Environmental Impact Statement (EIS) and Draft Relocation Action Plan (RAP).

7.1 LEGAL/POLICY FRAMEWORK

7.1.1 Philippines Legal/Policy Framework

Environmental related laws in the Philippines are composed under the Presidential Decree (PD) No.1151 as environmental policy and the Presidential Code (PD) No. 1152 as Environmental regulation in relation to the National policy and regulation, these area shown in **Table 7.1.1-1.**

TABLE 7.1.1-1 THE GOVERNED LAW ON ENVIRONMENTAL RELATED LAWS

Item	Governed Law and Decree	Remarks
General	Presidential Decree (PD)No.1151	Environmental policy
	Presidential Code (PD)No. 1152	Environmental regulation

7.1.1.1 Environment

Major environmental law items are the categories of Natural resources, Protection of wild life and bio-diversity, Forest resources, Mining, Coastal and marine, Ambient air, water quality, Waste and disposal, Land use and resettlement, Conservation of historical and cultural assets, Environmental assessment, National integrated protected area system. Major environmental related laws and decrees are shown in **Table 7.1.1-2.**

TABLE 7.1.1-2 LIST OF ENVIRONMENTAL RELATED LAWS AND DECREE

Item	Law, Decree	Remarks
Natural resources	Constitution Article 12. Close2.	Investigation of natural resources, development use
	Presidential Decree (PD)No.1198	Protection of natural environment
Protection of wild life , bio-diversity	Republic Decree No. 826	Preservation of Natural parks and establishment of wildlife protection committee
	Republic Decree No. 1086 (1954)	Prohibition of capture of Mindoro buffalo (Tamaraw)
	Republic Decree No.6147	Preservation of Monkey Eating Eagle
	Statement No. 2141	Preservation of wilderness region
	AdministrativeorderNo.243(1970)	Prohibition of slaughter for buffalo
Forest resources	Presidential Decree (PD)No.209	Encourage of common forest project
	Presidential Decree (PD)No. 277	Encourage of report on offender against forest law
	Presidential Decree (PD)No. 278	Procedural regulation on development application for forest resources and forest land development use
	Presidential Decree (PD)No. 331 (1973)	Sustainable forest development
	Presidential Decree (PD)No. 389	Regulation on forest recovery
	Presidential Decree (PD)No. 705 (1975)	Amendment of regulation on forest recovery

Item	Law, Decree	Remarks
	Presidential Decree (PD)No. 865	Export of lumber (selective deforestation)
	Presidential Decree (PD)No. 953	Request of forestation
	Presidential Decree (PD)No. 1153	Decree of forestation
	DNR DecreeNo.78(1987)	Regulation on permission range for felling and collection of oak, other hard wood
	DNR Decree No.79 (1987)	Establishment of foundation of forest regeneration
	DNRmemorandumNo.8(1986)	Full prohibition of log export
	Notification No. 818	Diminution of forest
	Forest development bureau circular No. 13 (1986)	Full prohibition of land possession within mangrove area, river area, preservation area, wilderness area, National park, wildlife reserve, experimental forest and etc.
Mining	Presidential Decree (PD) No.1251	Prospect mining
	Presidential Decree (PD)No.463 (1974)	Mining resource development Decree
	Presidential Decree (PD)No.1189 (1979)	Landuse of ex-mining site for compensation of the land owner
Coastal, marine	Presidential Decree (PD)No.600 (1974)	Prevention of marine pollution
	Presidential Decree (PD)No. 602 (1974)	Establishment for oil pollution management center
	Presidential Decree (PD)No. 979	Prevention of ocean pollution
Ambient air	Republic law No. 3931	Establishment of National air, water pollution control committee , definition of pollution and penalty
	Presidential Decree (PD)No.1181	Air pollution regulation on incidence origin of travelling
	Presidential Decree (PD)No.1160	Barangay captain Community leader on implementation of law on prevention of public nuisance
	Circulation No. 247	Appointment of highway patrol guard
	Circulation No 551	Equipment of prevention devices of motor vehicles
Water quality	Republic Act No.4850	Establishment of Laguna Lake development Bureau
	Republic Act No.3931	Establishment of National committee for ambient air pollution management
	Presidential Decree (PD)No.600	Establishment of Philippine coastal guard, measure for marine pollution
	Presidential Decree (PD)No.1252	Establishment of foundation for treatment of mining discharge water
	Presidential Decree (PD)No.602	Establishment of National oil pollution management center
	Republic Act No.274	Pasig river pollution measures
	Republic Act No. 361	Establishment of Pasig river development council
	Circulation No.712	Discharge water regulation for Manila

Item	Law, Decree	Remarks
		bay and Laguna lake
	DENR Decree No. 34	Classification of water and use
	DENR Decree No. 35	Regulation on discharge water for Industrial and urban drainage
Waste, disposal	Presidential Decree (PD)No. 825 (1975)	Penalty regulation on illegal dump of disposal, dirt and other wastes
	Presidential Decree (PD)No. 826 (1975)	Regulation on treatment responsibility of solid and liquid wastes by local government
	Presidential Decree (PD)No.1152 (1977)	Regulation on treatment method and treatment management for wastes
Land use, resettlement	Constitution Article 13	Establishment of human protective committee and their responsibility
	DPWH Decree No.65	Land use procedure for public project and expressway project
	DPWH Decree No.120 (1988)	Compensation of private land for DPWH project
	DPWH Decree No.234 (1990)	Amendment of compensation of private land for DPWH project
	Revised administrative code No. 64	Competence of house of justice on private land acquisition by the government
	DPWH Decree No.65 (1983)	Guideline for land use and right of way
	Presidential Decree (PD)No. 1517	Designation of reserve area at reorganization of urban land use
	Senate article No. 328	Decree of temporally prohibition for removal of displaced persons
	Urban development and Housing act (1991)	Procedure for removal of habituated peoples
Conservation of historical , cultural assets	Republic Act No. 4365	Responsibility of National historic committee on authorization , restoration and maintenance for historical assets
	Republic Act No.4346	Responsibility of protection and propulsion of maintenance for cultural assets within National museum
Environmental assessment	Presidential Decree (PD) No. 1586	Environmental assessment system and administrative organization
	Presidential Proclamation No. 2146	3 Industrial sectors with large environmental impacts and 12 environmentally critical regions
National integrated protected area system	National integrated protected area system act (1992)	Review of National integrated protected area

Source: Environmental information maintenance study report (Philippine)

Philippine Government has been ratified international treaties, agreements, and protocols in relation to environmental and social consideration, these are shown as follows:

i) Convention on the international trade in endangered species of wild flora and fauna: 1981
ii) International tropical timber agreement: 1983
iii) United Nations convention on the law of the sea: 1984

iv) World heritage convention concerning the protection of the world cultural and natural heritage: 1985
v) Montreal Protocol on substances that deplete the Ozone layer: 1991
vi) Vienna convention for the protection of the ozone layer: 1991
vii) Convention on biological diversity: 1993
viii) Basel convention on the control of trans-boundary movement of hazardous wastes and their disposal: 1993
ix) Ramsar convention on wetlands of international importance, especially as waterfowl habitat: 1994
x) Framework convention on climate change: 1994
xi) Kyoto protocol 1998
xii) Cartagena protocol on bio-safety to the convention on biological diversity: 2000
xiii) Stockholm convention on persistent organic pollutants: 2001

7.1.1.2 Involuntary Resettlement

Land acquisition intended for Philippine government projects are governed by a set of laws and guideline which all instrumentalities of the public sector and their contractors are mandated to follow. These regulations that shape the country's land policy have been amended over the years to adopt them to prevailing local conditions. Social safeguard policies of international multi-lateral organizations that provide assistance to the Philippine government and NGOs have underwent similar updating. These policies of ODA fund providers have to a certain extent influenced implementation guidelines of these Philippine laws to make them a-tuned to universally acceptable involuntary resettlement best practices. This section provides an overview of Philippine laws, and guidelines related to land acquisition.

The 1987 Philippine Constitution sets the basic policy for ownership of property and requires just compensation for expropriation of private property by the State. The Bill of Rights guarantees that:

a. Article III, Section 1: "No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the laws."
b. Article III, Section 9: "Private property shall not be taken for public use without just compensation" and
c. Article XII, Section 5: "The State…shall protect the rights of indigenous cultural communities to their ancestral lands to ensure their economic, social and cultural well-being. "By an act of Congress, customary laws governing property rights and relations can be applied in determining the ownership and extent of ancestral domains.

Republic Act (RA) 8974 – "An act to Facilitate the Acquisition of Right of Way (ROW) for National Government Infrastructure Projects (November 2000)" and its implementing Rules and Regulations (IRR) provides the basis for land valuation and the different modes of land acquisition which includes donation, quit claim, exchange or barter, negotiated sale and expropriation. In negotiated sale, the zonal land valuation (issued by the BIR) is first offered to the landowner, if this is rejected then a valuation committee/land appraisers will be commissioned to derive the fair market value for consideration of the landowner. Should negotiations fail, then expropriation proceedings will be pursued by the government. The law also states that valuation of improvements and/or structures on the land to be acquired shall be based on replacement cost.

The Land Acquisition, Resettlement, Rehabilitation and Indigenous Peoples' Policy (LARIPP) and its Infrastructure Right of Way (IROW) manual for World Bank assisted project of the Department of Public Works and Highways (DPWH) had been developed for use in World Bank-

assisted infrastructure projects. The LARIPP that had been endorsed by DPWH management, contains a harmonized version of Involuntary Resettlement Policies that conforms to most relevant Philippine government laws but at the same time satisfies World Bank's social safeguard policy. The guidelines cover all of the important IR policies which includes: the legal framework, PAFs eligibility, compensation and other entitlements, indigenous peoples and other vulnerable groups, public participation, grievance redress, institutional arrangements and monitoring & evaluation. While the LARIPP was prepared for World Bank projects, it had been adopted for other Official Development Assistance (ODA) infrastructure initiatives.

Executive Order 1035 (1985), provides for the procedures and guidelines for the expeditious acquisition of properties and rights by the Philippine Government for infrastructure and other government projects. Financial assistance to displaced tenants, cultural minorities and settlers equivalent to the average annual gross harvest for the last 3 years or not less than PhP15,000 per hectare is provided. In addition, disturbance compensation to the agricultural lessees equivalent to 5 times the average gross harvest during the last 5 years. Should there be any improvements on the land, these will be compensated based on Commonwealth Act 141.

Republic Act 6657 (1988) otherwise known as the Comprehensive Agrarian Reform Law provides for in Section 28 that landowner shall retain his share of any standing crop un-harvested at the time the DAR shall take possession of the land under Section 16 of this Act, and shall be given a reasonable time to harvest.

Republic Act 6389 provides for disturbance compensation to agricultural lessees equivalent to 5 times the average gross harvest in the last 5 years.

Commonwealth Act 141 Section 112 (Public Land Act) prescribes a 20 meter strip of land reserved by the government for public use. Payment for damages in the case of land acquisition will only be for land improvements.

Presidential Decree 635 amended Section 112 of CA 141 increasing the width of the reserved strip of 20 meters to 60 meters.

EO 113 (1995) and EO 621 (1980) states that national roads shall have a ROW width of at least 20 meters in rural areas which may be reduced to 15 meters in highly urbanized areas. These directives also provides that the ROW shall be 60 meters in unpatented public land, 120 meters through natural forested areas of aesthetic or scientific value.

MO 65, Series of 1983 provides that payment will be given to landowners for the use of the easement of ROW equivalent to the affected land value. Government retains the right to acquire a 20-60 m width of land for ROW in accordance to CA 141. Only land improvements will be compensated.

Rule 9.5.2.5 of DA DAO 6 (1998) which is the IRR of Republic Act 8435 (1997) popularly known as the "Agriculture and Fisheries Modernization Act" provides that sufficient disturbance compensation shall be given to the farmers whose livelihoods are negatively affected by the land use conversion…"

Indigenous People's Rights Act (IPRA) of 1997 sets the conditions, requirements, and safeguards for plans, programs and projects affecting Indigenous Peoples (IPs). It spells out and protects the rights of IPs. Among the important provisions includes:

a. The right to their ancestral domains (Chap III, Sec. 11);

b. The right to an informed and intelligent participation in the formation and implementation of any project, that will impact upon their ancestral domains (Chap III, Sec 7b);

c. The right to participate fully, if they so choose, at all levels of decision-making in matters which may affect their rights, lives and destinies through procedures determined by them (Chap IV, Sec 16);

d. The right to receive just and fair compensation for any damages inflicted y or as a result of any project (Chap III, Sec 7b);

e. The right to stay in their territory and not to be removed from that territory through any means other than eminent domain. If relocation is necessary as an exceptional measure, it can only take place with the free and prior informed consent of the IPs and ICCs concerned (Chap III, Sec 7c);

f. The right to be secured in the lands to which they have been resettled; (Chap III, Sec 7d);

g. The right to determine and decide their own properties for the lands they own, occupy or use (Chap IV, Sec 17); and

h. The right to maintain, protect and have access to their religious and cultural sites (Chap IV, Sec 33).

NCIP Administrative Order No. 1, Series of 2006 (Free and Prior Informed Consent Guidelines of 2006) provides the procedure for obtaining the "Free and Prior Informed Consent" (FPIC) for affected communities. It narrates the process for conducting Field Based Investigation (FBI) and obtaining the "Certification Precondition" (CP) from the NCIP, which are two basic requirements prescribed under the Indigenous People's Rights Act (IPRA law of 1997) for project to be implemented within declared Ancestral Lands of Ethnic Minorities.

7.1.2 JICA Guidelines and Philippine Social and Environmental Consideration

In order to determine the completeness of the EIA outline vis-a-vis latest Philippine DENR/EMB and current JICA, **Table 7.1.2-1** shows the matrix that compares the outline of both DENR/EMB and JICA EIA reports.

TABLE 7.1.2-1 COMPLETENESS OF EIS BASED ON CURRENT DENR/BEM AND JICA OUTLINES

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
I. Executive Summary	**I. Executive Summary**		**I. Executive Summary**		
	• Project Fact Sheet		• Significant findings		An Executive Summary needs to be prepared. Components of the Fact Sheet (EMB Outline) are found in Chapters 1 and 2.
	• Process Documentation		• Recommendations		
	• Summary of Baseline Conditions				
II. Legal/Policy Framework	***(Legal/policy framework is not required under the latest EMB EIA outline).***		**II. Legal/Policy Framework**		Legal framework needs to be prepared.
III. Project Description	**II. Project Description**		**III. Project Description**		
	2.1. Project Location and Area	X	3.1. Project location map including areas affected	X	
	• Environment Study Area Map	X		X	
	• Geographic coordinates of Project Site			X	
	• Rationale for selection of primary & secondary impact areas.	X		X	
	2.2. Project Rationale	X			
	2.3. Project Alternatives	X			
	2.4. Project Components	X	3.2. Description of project in terms of its geographical, ecological and temporal context.	X	
	• Major Components			X	
	• Other Supporting Facilities	X	3.3. Off-site investments (i.e. access roads, pipelines,	X	*The other supporting facilities (EMB Outline)/ Off-site investment have been discussed in a general manner as the EIA was*

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
			powerplants, housing, raw materials, etc.)		*conducted simultaneously with the Feasibility Study. Details will have to come during the detailed design phase.*
	• Pollution control devices and facilities these are serving				Specific anti-pollution devices (i.e. oil separators, anti-noise walls, septic tanks in workers camp, etc.) should be proposed.
	• Footprint of proposed project layout				Footprint of proposed project layout should be attached to the report.
			3.4. Discussion on the need for a resettlement plan (RAP) or social development plan	X	For updating
	2.5. Process/Technology Options				
	• Production Process/ construction method	X			For updating
	• Power generation and water supply system				A general description on the source of power as well as water supply need to be provided.
	• Waste Management System	X			The description of the waste management system (EMB Outline) is very general and needs to be further elaborated.
	2.6. Project Size				
	• Total project size	X			Needs to be updated as there had already been portions of the overall road project that had been built (i.e. Phase II)
	• Annual Production rate & working days/hrs if process industry				NA
	2.7. Development plan, Description of Project	X			For updating

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
	Phases and Corresponding Time frame.				
	• Pre-construction	X			
	• Construction	X			
	• Operations & Maintenance	X			
	• Abandonment	X			
	2.8. Manpower				
	• Manpower requirements	X			For updating
	• Expertise/skills required	X			For updating
	• Nature & Estimated number of positions for men/women/ethnic minorities	X			For updating
	2.9. Indicative Project Investment Cost				
III. Baseline Data			**IV. Baseline Data**		*Baseline data for EMB Outline are already incorporated in Chapter III (Analysis of Environmental Impact)*
			Description and Assessment of environmental study area in terms of:		
			• Physical conditions	X	
			• Biological conditions	X	For updating (trees along alignment have already been cut due to road widening project by URPO)
			• Socio-economic conditions		For updating
			• Cumulative impact (takes into account	X	Section 5.4 (Population, Development and Environmental Linkages of the Project) which

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
			impact with other projects in the area not related to the project.		is actually Cumulative Impact assessment needs to be updated.
			• Citation of information sources	X	
IV. Environmental Impacts and Mitigation Measures	**III. Analysis of Environmental Impacts**		**IV. Environmental Impacts**		In the DENR/EMB EIS format, the environmental baseline, project environmental impacts and proposed mitigation measures are integrated into one chapter. Whereas in the JICA outline, the Environmental Baseline is in a separate chapter and the combined Environmental Impacts and Mitigation Measures are found in another chapter.
	3.5. Land		Prediction and Assessment of the project's likely:		
	3.5.1. Landuse and Classification		• Positive Impacts	X	
	• Discussion on inconsistencies and possible conflicts of project with existing landuse zoning ordinance	X	• Negative Impacts	X	*Discussion on the land-use conflict was more on the conversion of a number of commercial and residential lands into road.*
	• Discussion on potential change due to project implementation	X	Identifies Mitigation Measures for negative environmental impacts including those that cannot be mitigated.	X	Same as above
	3.5.2. Geology/ Geomorphology				
	Discussion on Projected change as a result of project implementation which		Explores possible enhancement measures for positive impacts	X	

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
	includes:				
	• Change in surface topography				Not necessary as the existing landuse is road.
	• Change in subsurface/ underground geomorphology				Not necessary as only board pilings will be done that affects the subsoil.
	• Inducement of subsidence/ collapse	X			
	• Inducement of landslides or other hazards.				Not applicable
			Identified and quantified the extent and quantity of available data, essential data gaps, and uncertainties associated with predictions		
			• Essential gaps;		
			• Uncertainties with predictions		
			• Specifies topics that do not require further attention		*Contents of the EIS were based on the scope agreed with DENR/EMB representatives, stakeholders, project proponent and EIS preparers.*
	3.5.3. Pedology				
	Analyze project impact and provide mitigation measures for:				
	• Erodability Potential				Not Applicable
	• Bank Stability				Not Applicable
	• Change in Soil Quantity/fertility				Not Applicable

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
	3.5.4. Terrestrial Biology				
	Analyze project impact and provide management measures for the following:				
	• Vegetation removal and loss of habitat	X			
	• Threat to existence of important species				*Not necessary. The project area is an urban environment where only domestic animals (i.e. cats, dogs, etc.) and those wildlife (i.e. rats, pigeons, etc.)That had adapted to the human environment are present.*
	• Threat to abundance, frequency and distribution of important species.				Not applicable
	• Hindrance to wildlife species				Not applicable
	3.6. Water				
	3.6.1. Hydrology/Hydrogeology	X			
	Analyze project's impact and provide management measures for:				
	• Change in drainage morphology				Not applicable
	• Change in stream, lake water depth				Not applicable
	• Reduction in stream volumetric flow				Not applicable
	• Inducement of flooding	X			This is related to flooding of adjacent ~~residential/commercial/institutional areas due~~ to clogging of drainage canals by construction

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
					debris.
	• Water resources use and completion				Not applicable
	• Reduction/depletion of groundwater flow				Not applicable
	3.6.2. Oceanography				
	Analyze project's impact and provide a management measure for:				Not Applicable
	• Change in circulation pattern				
	• Change in stream, lake water depth				
	• Change in bathymetry				
	3.6.3. Water Quality				
	• Identify specific source of pollution load	X			
	• Discuss assimilative capacity of receiving water body				Not necessary as EMB in their "Philippine Environmental Quality Report (1990-1995)" had declared that the Paranaque River traversed by the project is Class D. Water Quality Base-line Sampling had also not been required under the agreed scoping matrix.
	• Include as part of Environmental Management Plan and Monitoring Plan.				Same as above
	• Sampling Map				Same as above
	3.6.4. Freshwater or Marine Ecology				
	• Identify source of threat to				Same as above

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
	ecology and discuss assimilative capacity of receiving ecosystem				
	• Threat to abundance, frequency and distribution of species				Same as above
	• Loss of important species				Same as above
	• Loss of habitat				Same as above
	3.7. Air				
	3.7.1. Meteorology/Climatology	X			
	• Discuss project's possible effect on local climate	X			
	• Discuss project's contribution to global greenhouse gas				Project's contribution to global Greenhouse gas problem needs to be provided using updated air-quality modeling results.
	3.7.2. Air Quality & Noise				
	• Identified specific source of pollution load	X			
	• Discussion on Assimilative capacity considering ambient air quality/noise levels in the area.	X			Needs updating. Current and projected vehicular traffic may have changed since the EIS preparation.
	3.8. People				
	3.8.1. Discussion on Project Displaced Persons	X			Needs updating
	3.8.2. Discussion on migration patterns resulting from project implementation				A short discussion on possible in-migration resulting from the hiring of migrant workers can suffice.
	3.8.3. Discussion on IPs and				Not applicable

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
	culture/ lifestyle				
	3.8.4. Discussion on public health issues relating to project implementation	X			
	3.8.5. Discussion on benefits of local people from the project.	X			
	3.8.6. Discussion on project impact on deliver of basic service to local people and resource completion in the area.	X			
	3.8.7. Discussion on project impact on local traffic conditions.	X			Needs updating
	3.8.8. Institutional Arrangements (accountable persons/ office) for project.				Needs updating as the project is to be implemented under the PPP scheme.
	3.8.9. Discussion on involuntary resettlement impacts such as:				
	• Identify affected properties	X			Needs updating.
	• Relocation of Displaced Persons	X			Needs updating
	• Devaluation of affected properties	X			Needs updating. Impact is more on increase in land valuation of adjacent properties not affected by the road project.

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
V. Analysis of Alternatives	(See Item 2.3 above)		**V. Analysis of Alternatives**		
			Comparison of alternatives to the proposed project including the "No Project" scenario in terms of:		The comparison of project alternatives have been presented on a conceptual approach and focus of discussions is in the suitability of the alternatives including a "No Project" scenario; least number of structures to be affected; and vehicle speed (with and without project).
			• Potential environmental impacts	X	Section 2.3 needs to be updated to show three alternatives namely: a) Alternative 1 – approved road alignment; b) Alternative 2 – section in Domestic Road to be shifted to the banks of the Paranaque River; and c) Alternative 3 – no project scenario. Difference between Alternative 1 and 2 is the number of households and Structures/buildings to be affected. Alternative 2 is expected to have a much more involuntary resettlement issues that Alternative 1. Alternative 3 will further aggravate the vehicular traffic problem in the MIAA complex, discourage tourist and investors to visit the country; can affect the financial viability of commercial and tourism establishments in the privatized Villamor Airbase portion fronting NAIA Terminal 3 and may even cause a security problem as the Philippine Air force may have difficulty responding to security threats or disaster relief operations during natural calamities. Discussions on the other basis for the preferred alternative selection (i.e. economic,
			• Mitigation measures		
			• Cost (capital & recurring)		
			• Suitability		
			• Institutional, training and monitoring requirements		
			• Economic and Financial feasibility		
			• Basis for selection of project alignment	X	
			• Justification for recommended emission level and approaches to pollution prevention and abatement		

CATEGORY	LATEST DENR/EMB OUTLINE		JICA OUTLINE		REMARKS
					financial, engineering, social and institutional consideration) can be made but on a conceptual basis.
VI. Risk Assessment	**IV. Environment and Ecological Risk Assessment**				
	Identify and provide management measures for:				
	• Chronic risks	X			
	• Acute risks/ Worst case scenario	X			
VII. Environmental Management Plan	**V. Impact Management Plan**	X	**VI. Environmental Management Plan**	X	Needs updating
VIII. Public Participation	**VI. Social Development Plan and IEC**	X	**VII. Consultation**	X	Needs updating
IX. Social Development Plan	(See Item VIII)		(See Item 3.4 above)		May need updating depending on the result of the consultation meetings.
X. Environmental Monitoring	**VI. Environmental Compliance Monitoring**	X			Needs updating. There are lesser Project Affected Persons (PAPs) that will be relocated.
XI. Emergency Response Plan	**VII. Emergency Response Policy and Generic Guidelines**	X			Needs updating to conform to the PPP program.
XII. Abandonment/ Decommissioning	**VIII. Abandonment/ Decommissioning/ Rehabilitation Policies and Generic Guidelines**	X			
XIII. Institutional Arrangements for Project Implementation	**IX. Institutional Plan for EMP Implementation**	X			Needs updating as this project will be implemented under the PPP.

7.1.2.1 Gap Analysis

A Gap Analysis was likewise performed with regards to the latest social safeguards policy adopted by JICA as compared to the land acquisition and resettlement related laws of the Philippines. The Gap Analysis is found in **Table 7.1.2-2.**

7.1.2.1.1 Environment

The NAIAX project is the continuation of an existing project, and as such the ECC issued in 2002 includes a phase II (detailed design and construction) not just phase I. While the construction of phase I was completed in 2010, the pursuit of Phase II had not been made until the reporting time. Likewise, the environmental monitoring report that is a basic requirement by EMB for ongoing project, had not been submitted. Formal representation was pursued by DPWH with EMB to determine the status of the ECC issue to the NAIAX project. After over a month of waiting, a favorable response was issued by DENR-EMB recognizing the validity of the ECC that it had earlier issued to the project.

7.1.2.1.2 Resettlement

The presentation of the relevant Philippine government laws and guidelines related to land acquisition as well as those World Bank/ADB social policy safeguards would yield a number of inconsistent policies. These inconsistent policies will have to be harmonized in order that the project would be able to proceed with minimal regulatory encumbrances.

Among the inconsistent policy between the Philippine Government laws with that of the World Bank social safeguard policy includes the following among others:

a. Compensation for affected land if acquisition is through negotiated sale as provided for in RA 8974, is based on the zonal valuation of the area provided by the Bureau of Internal Revenue (BIR); and only when the offered price is rejected by the affected landowner, will an appraisal committee be commissioned to derive the fair market value of the affected land which may be comparable to replacement cost, and transaction cost will be deducted from compensation due to PAFs, while the Banks' Social Safeguard policies calls for full replacement cost;

b. Philippine government's definition of severely affected person is one that loss 20% or more of agricultural land or when the residual portion of the plot is no longer economically viable for cultivation, where as the Banks' policy set the figure at 10% or more of the productive land or even less than this figure when the residual area is no longer economically viable;

c. The Banks also requires proponent of projects to give special attention to affected vulnerable groups (i.e. PAFs with heads that are women, IPs, retired, disabled, etc.) while the Philippine government is silent on this aspect.

There are other operational gaps between the Philippine government laws and the Bank's social safeguard policies which can are described in the subsequent section, however, these inconsistencies are not critical and can be harmonized in the project resettlement policy. **Table 7.1.2-2** lists down the relevant Philippine and World Bank/ADB land acquisition related laws and policies and propose a harmonized guidelines for adoption in the project.

TABLE 7.1.2-2 GAP ANALYSIS BETWEEN WORLD BANK/JICA SOCIAL SAFEGUARD POLICIES AND PHILIPPINE LAND ACQUISITION LAWS AND GUIDELINES

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
1. Basic Policy	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. (JICA GL)	The Bill of Rights of the 1987 Philippine Constitution sets the basic policy for the acquisition of private property by the State, which stipulates that… No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the law (Article III, Section 1), and, Private property shall not be taken for public use without just compensation (Article III, Section 9); DPWH LARRIP, Chapter II E 1 a Involuntary resettlement should be avoided where feasible	No gap	Involuntary resettlement should be avoided where feasible.[1]
2. Land acquisition for government projects		The Public Land Act - a strip of 20-60m of land which the title or free patent described of is not absolutely owned by him/her but the government can exercise its right to use the are reserved by it for public use … no payment shall be made for land acquired under the quit claim(LARRIPP pp4) …but the owner still retains ownership over the land (MO65, Series of 1983) EO 1036 -Government has the power to expropriate in case agreement is not reached.		
3. Compensation package	Compensation must be based on the full replacement cost as much as possible. (JICA GL)	RA 8974 prescribes that: • Land valuation (first offer to PAF) be based on current zonal valuation; if this is rejected by PAFs, an appraisal committee will be formed to derived the fair market value.	• Zonal land valuation is not necessarily the fair market value. Fair market value is equivalent to replacement cost	**Eligible PAF with TCT will be entitled to:** [2] • Cash compensation for loss of land at 100% replacement cost at the

[1] Section 1.E, Chapter II, LARRIP, DPWH, February 2007
[2] Section 5, Chapter III, LARRIP, DPWH, February 2007.

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	OP4.12 Para 2 (c) Displaced people should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real term, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever higher. Provide prompt and effective compensation at full replacement cost for losses of assets (WB: 6-(a)-3) Displaced persons need to be meaningfully consulted, compensated for lost/damaged assets and assisted in restoring or improving their living standards and livelihood.… displaced persons should likewise be assisted in restoring their livelihoods and living standards (World bank) OP4.12 para 11; If "…sufficient land is not available at a reasonable price, non-land-based option built	• Valuation for affected land improvements /structures is based on replacement cost. • Cash compensation for perennials of commercial value as determined by the DENR or concerned appraisal committee.	however, this will be offered to the PAHs after he/she had rejected the first two offers (i.e. land donation and BIR zonal valuation).	informed request of the PAFs; • Cash compensation for loss of a part or whole structures as the case may be, at 100% replacement cost; • Cash compensation for loss of perennials of commercial value as determined by DENR or concerned appraisal committee **Eligible PAF without TCT will be entitled to:** • Cash compensation for loss of a part or whole structures as the case may be, at 100% replacement cost with not deduction for salvage value; • Cash compensation for loss of perennials of commercial value as determined by DENR or concerned appraisal committee [2] • DPWH-LARRIP adapts some WB's policy; "People unavoidably displaced should be compensated and assisted, so that their economic and social future would be generally as favorable as it would have been in the absence of the project."

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	around opportunities for employment or self-employment should be provided in addition to cash compensation…"			
4. Disturbance Compensation	WB OP4.12 Para 6(b): (i) provided assistance (such as moving allowances) during relocation; and (ii) provided with residential housing, or housing sites, or required agricultural sites for which a combination of productive potential, locational advantages, and other factors is at least equivalent to the advantages of the old sites.	EO 1035 -Disturbance Compensation is the amount given to agricultural lessees severely affected by the project equivalent to 5 times the average annual gross harvest during the last 5 years as stipulated under, DPWH LARRIP guidelines provided for the following assistance: - Disturbance Compensation – for agricultural land severely affected, the lessees are entitled to disturbance compensation equivalent to 5 times the average of gross harvest for the past 3 consecutive years but not less than Php15,000 -Income Loss. For loss of business/income, the PAFs will be entitled to an income rehabilitation not to exceed PhP 15,000 for severely affected structures, or to be based on the latest copy of the PAF's tax record for the period corresponding to the stoppage of business; - Inconvenience Allowance in the amount of P10,000 will be paid to PAFs with severely affected structures which will require relocation; - Rehabilitation assistance in the form of skills training and other development activities to be provided to PAFs in the amount of P15,000 per family per municipality should their present means of livelihood is no longer viable and there is a need to have an alternative income source. - Rental subsidy will be provided to PAFs under the following conditions: a. the affected properties are for residential use only and the PAFs are severely affected thus requiring relocation;	No gap. LARIPP guidelines provides for adequate assistance to PAFs. Provision of replacement agricultural sites to shifting PAFs is not appropriate as the displaced persons are non-farmers and affected lands are mostly government institutional lands.	• Appropriate assistance to be provided to shifting PAFs in accordance to LARRIP guidelines which includes: o Disturbance Compensation for lessees of severely affected, agricultural land equivalent to 5 times the average of gross harvest for the past 3 consecutive years but not less than Php15,000 • -Income Rehabilitation assistance for PAFs losing sales/income not to exceed PhP 15,000 for severely affected structures, or to be based on the latest copy of the PAF's tax record for the period corresponding to the stoppage of business; o Inconvenience Allowance in the amount of P10,000 to be paid to shifting PAFs with severely affected structures - Rehabilitation assistance in the form of skills training and other development activities to be provided to PAFs in the amount of P15,000 per family per municipality should their present means of livelihood is no longer viable and there is a need to have an alternative

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		b. The PAFs are physically residing in the affected structure at the time of the cut-off date c. The amount to be given is equivalent to the prevailing average monthly rental for a similar structure of equal type and dimension of the affected house; d. The amount will be given for the period between the payment of house compensation and payment of land compensation. -Transportation assistance will be provided to relocating PAFs. Informal settlers in urban centers who opt to go back to their place of origin in the provinces or be shifted to government relocation sites, will be provided free transportation.		income source; and o Rental subsidy will be provided to PAFs under the following conditions: a. the affected properties are for residential use only and the PAFs are severely affected thus requiring relocation; b. The PAFs are physically residing in the affected structure at the time of the cut-off date c. The amount to be given is equivalent to the prevailing average monthly rental for a similar structure of equal type and dimension of the affected house; d. The amount will be given for the period between the payment of house compensation and payment of land compensation. • Transportation assistance will be provided to shifting PAPs during actual transfer to relocation site or to their place of origin in the Province. • Provide suitable relocation site to displaced persons in cooperation with the concerned local government unit and National Housing Authority (NHA).
5. *Basic Policy-Mitigation of IR when*	When population displacement is unavoidable, effective measures to	DPWH LARRIP guidelines (Chapter II, Section E, 1): b. Where population displacement is unavoidable, it should be minimize by exploring all viable project options.	No gap	a. Where population displacement is unavoidable, it should be minimize by exploring all viable project options.

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unavoidable	minimize impact and to compensate for losses should be taken. (JICA GL)	c. People unavoidably displaced should be compensated and assisted so that their economic and social future would be generally as favorable as it would have been in the absence of the project.		b. People unavoidably displaced should be compensated and assisted so that their economic and social future would be generally as favorable as it would have been in the absence of the project.
6. *Income Restoration*	People who must be resettled involuntarily and those whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL)	Same	No gap	People unavoidably displaced should be compensated and assisted, so that their economic and social future would be generally as favorable as it would have been in the absence of the project.[1]
7. *Schedule of payment*	Compensation and other kind of assistance must be provided prior to displacement. (JICA GL) WB OP4.12 para 10: …taking land and related assets may take place only after compensation as been paid and, …resettlement sites and moving allowance have been provided to the displaces persons.	Republic Act 8974(2000) and its IRR: the State shall ensure that owners of real property acquired for national government infrastructure projects are promptly paid just compensation. AO 50 (1999) Expropriation: proceedings before the proper court under the following guidelines: (a) Upon the filing of the complaint in a court of law, and after due notice to the defendant, the implementing agency shall immediately pay the owner of the property the amount equivalent to the sum of (1) one hundred percent (100%) of the value of the property based on the current relevant zonal valuation of the BIR; and (2) the value of the improvements and/or structures as determined under Section 7 hereof; (b) In provinces, cities, municipalities and other areas where there is no zonal valuation, the BIR is hereby mandated within the period of sixty (60) days from the date of the expropriation case, to come up with a zonal valuation for said area; and (c) In case the completion of a government infrastructure project is	• The time frame prescribed as to when entitlement compensation and assistance will be provided to the PAFs under the country's regulation has been presented in a manner to provide project proponents flexibility in preparing their Resettlement Action Plans.	Entitlement compensation and other assistance must be provided to PAFs prior to displacement.

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		of utmost urgency and importance, and there is no existing valuation of the area concerned, the implementing agency shall immediately pay the owner of the property its proffered value taking into consideration the standards prescribed in Section 5 hereof. Upon compliance with the guidelines above-mentioned, the court shall immediately issue to the implementing agency an order to take possession of the property and start the implementation of the project. Before the court can issue a writ of possession, the implementing agency shall present to the court a certificate of availability of funds from the proper official concerned. In the event that the owner of the property contests the implementing agency's proffered value, the court shall determine the just compensation to be paid the owner within sixty (60) days from the date of filing of the expropriation case. When the decision of the court becomes final and executory, the implementing agency shall pay the owner the difference between the amount already paid and the just compensation as determined by the court.		
8. Preparation of RAP.	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. (JICA GL) Displaced person should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs. (WB: 2-(c))	DPWH DO 187 series 2002 : • A Land Acquisition Plan and Resettlement Action Plan (LAPRAP) shall be prepared for all projects using a standardized compensation package. • LARRIP Guidelines 3rd edition, Chapter II, Section E1, "People affected should be fully informed and consulted on resettlement and compensation options.	No gap	• A land Acquisition Plan and Resettlement Action Plan (LARAP) shall be prepared for all projects with involuntary resettlement impacts. • People affected should be fully informed and consulted on resettlement and compensation options.
9. Consultation Meetings	In preparing a resettlement action plan, consultations must be held with the affected	EO 1035: • Stakeholder participation is done early in the feasibility study stage, where those concerned are informed on the	The DPWH LARRIP guidelines conforms to the World Bank social safeguard policy and at the	• In preparing a LARAP, meaningful public consultations must be held with the affected people and their

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	people and their communities based on sufficient information made available to them in advance. (JICA GL) Displaced person should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs. (WB: 2-(c))	project, its benefits, requirements and environmental impacts. It is also in these venue that the proponent first ask the PAFs to donate the affected land, which is followed by other modes of land acquisition. <u>DENR DAO 96-37</u> • Proponents are required to hold public information campaign and secure proof of social acceptability for their projects from the stakeholders as a requirement for securing environmental clearance. <u>DPWH LARRIP</u> • Chapter V provides the mechanism for public consultation and participation. It conforms to RA 8974 and World Bank requirements for public consultation. Provides for grievance redress mechanism and participation of IPs and vulnerable groups in resettlement planning. <u>DPWH IROW Procedural Manual</u> • Section 2.6 provides guidelines in the conduct of public consultations for infrastructure projects. • LARRIP Guidelines 3rd edition, Chapter II, Section E1, "People affected should be fully informed and consulted on resettlement and compensation options.	same time complies with Philippine regulations related to public consultation meetings. Public Disclosure of LARRAP has not been specifically prescribed in the guidelines.	communities based on sufficient information made available to them in advance. • Public Disclosure of LARRAP to major stakeholders will be an essential part of the public consultation process.
10. PAFs participation in meetings.	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans. (JICA GL) Displaced person should be meaningfully consulted and should have opportunities to participate in planning and	- Same -	No gap	Active and meaningful participation of affected people must be promoted in planning, implementation, and monitoring of LARAP.

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	implementing resettlement programs. (WB: 2-(c))			
11. Language to be used in consultation meetings	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. (JICA GL)	None	There is no specific guidelines that require consultation meetings be conducted in a specific language. Literacy levels even in the rural areas are at a level where people knows how to read and right in English and Pilipino.	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.
12. Grievance Mechanism	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)	IRR for RA7279 (Urban Development and Housing Act) • Prior to resettlement, the Urban Poor Affairs Office or Dept. of Welfare and Development of LGUs, which are also responsible for census, serve as the focal persons for grievance redress. • After resettlement had been effected, the community relations officers of the site owner institutions are the contact office for grievances. • Any grievances addressed to those staff/officers are to be conveyed to the Local Inter-Agency Committee, which includes the Human Rights Commission and Presidential Commission for the Urban Poor as members, for consideration. DPWH LARRIP • Chapter VI provides for the grievance redress mechanism to be followed during land acquisition for infrastructure projects.	No gap. The grievance redress mechanism of the LARRIP guidelines is acceptable.	The grievance redress mechanism as prescribed in the DPWH LARRIP guidelines is to be adopted for the project resettlement action plan.
13. Census of PAPs	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the	EO 1035: • Stakeholder participation is done early in the feasibility study stage, where those concerned are identified and informed on the project, its benefits, requirements and environmental impacts. This activity is followed by inventory of assets to be affected and negotiations for cost of land. DENR DAO 96-37 • Proponents are required to hold public information campaign involving stakeholders and secure proof of social acceptability for their projects from the same as a requirement	DPWH IROW Manual prescribes the conduct of preliminary social surveys and initial inventory of loss for big projects (>PhP300 million) the information generated of which will be used in the Feasibility Study.	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers who wish to take advance of such benefits

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	project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits. (WB OP4.12 Para.6)	for securing environmental clearance DPWH IROW Procedural Manual Section 2.6 (Preparation of LAPRAP) prescribe that a census, socio-economic survey and inventory of loss be conducted for all projects early in the planning phase. This will be done only after the project had been approved by DPWH and NEDA, and that topographic surveys of the road alignment and parcellary surveys of landownership had already been completed. Section 2.1 (Project Identification, Feasibility Study, and IROW Action Plan Preparation) Prescribes that if the project cost is more than P300 milllion, preliminary works (IROW Action Plan) done as part of the Feasibility Study can be pursued to establish initial baseline information and costs for inclusion in the FS, and these information will be essential for the final surveys mentioned above can refer to.		
14. Eligibility Criteria for PAPs	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying. (WB OP4.12 Para.15)	RA 7279 provides the definition of "professional squatters" which are not qualified under the urban development and housing program. It also provides for mechanisms to deal with these individuals or groups/syndicates. Executive Order 129 had established the mechanism against professional squatters and syndicates. DPWH LARRIP • Chapter III provide the guidelines for PAFs eligibility as well as entitlement compensation on every type of relevant loss. Executive Order No.153 (1999)： Instituting the National Drive to Suppress and eradicate Professional Squatters and Squatting Syndicates；the Housing and Urban Development Coordinating	No gap. DPWH LARRIP guidelines conforms to RA 8974 and World Bank requirements.	LARRIP (pp8, 2-a) The absence of a formal legal title to land by some affected groups should not be a bar to compensation, especially if the title can be perfected; particular attention should be paid to households headed by women and other vulnerable groups,… Criteria for Eligibility for compensation:[3] a. Landowners • Legal owners (agricultural, residential, commercial and institutional) who have full title, tax declaration, or who are

[3] Section A, Chapter III, LARRIP, DPWH, February 2007

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	Displaced persons may be classified in one of the following three groups: (a) those who have formal legal rights to land (including customary and traditional rights recognized under the laws of the country); (b) those who do not have formal legal rights to land at the time the census begins but have a claim to such land or assets—provided that such claims are recognized under the laws of the country or become recognized through a process identified in the resettlement plan (see Annex A, para. 7(f)); and19 (c) those who have no recognizable legal right or claim to the land they are occupying.	Council (HUDCC) and the Department of Justice (DOJ), and the National Police Task Force are authorized to prevent squatters.		covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership. b. PAF with Structures • Owners of structures who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership; • Owners of structures, including shanty dwellers, who have no land title or tax declaration or other proof of ownership; • Renters.
15. Priority for Land for Land compensation	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)	Republic Act 8974 (2000): Contains the various modes of land acquisition which includes land swapping or "land for land". DPWH LARRIP, Chapter II (Legal Framework) adopts the RA8974 modes of land acquisition which includes land swapping or "land for land" compensation. Chapter III (Policy on Eligibility, compensation and other entitlements) enumerates the allowable compensation for affected assets which includes land swapping or "land for land".	Not applicable as the affected properties are non-agricultural lands mostly owned by government agencies.	Not applicable. The PAFs are none farmers nor do they depend on agriculture based livelihood for their subsistence.

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16. Base of calculation of compensation	OP4.12 Para 2 (c); as much as it takes "…to restore (livelihoods and standards of living), in real term, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher." OP4.12 Para12; Cash compensation levels should be sufficient to replace the lost land and other assets at full replacement cost in local market.	DPWH LARRIP guidelines (Chapter II, Section E, 1): b. Where population displacement is unavoidable, it should be minimize by exploring all viable project options. c. People unavoidably displaced should be compensated and assisted so that their economic and social future would be generally as favorable as it would have been in the absence of the project.	No gap	a. Where population displacement is unavoidable, it should be minimize by exploring all viable project options. b. People unavoidably displaced should be compensated and assisted so that their economic and social future would be generally as favorable as it would have been in the absence of the project.
17. Base of price of land	OP4.12 para 6 (b); as much as it can "…provide with …housing sites, or …agricultural sites for which a combination of productive potential, locational advantages, and other factors is at least equivalent to the advantages of the old site." (also see para 11) OP4.12 Para 2 (c); as much as it takes "…to restore (livelihoods and standards of living), in real term, to pre-displacement levels or to	RA7279, Article IV, Section 22. Livelihood Component – To the extent feasible, socialized housing and resettlement projects shall be located near areas where employment opportunities are accessible. The government agencies dealing with the development of livelihood programs and grant of livelihood loans shall give priority to the beneficiaries of the Program. DPWH DO 327 Series of 2003, Annex B (Guidelines for LAPRAPs for Infra Projects), Section 3 (Entitlement Matrix) – a. Rehabilitation assistance is provided to Severely affected PAPs whose livelihood is severely affected too as a result of project implementation and as such needs an alternative income source. An amount equivalent to PhP15,000/training for PAPs learning appropriate new livelihood skills. This assistance can also be provided to Vulnerable groups. b. Transitional Allowance equivalent to one month rent of a similar structure within the same area.	Provision of replacement agricultural land is not applicable as the project site are institutional and commercial lands within an urban area. Philippine laws does not guarantee relocation sites would have equal to or better amenities as the original affected site. However, since most project displaced PAFs are informal settlers residing in cramp residential structures beside the polluted Paranaque river, an alternative decent socialized	Same

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	levels prevailing prior to the beginning of project implementation, whichever is higher." OP4.12 Para12; Cash compensation levels should be sufficient to replace the lost land and other assets at full replacement cost in local market.	RA 8974 prescribes that: • Land valuation (first offer to PAF) be based on current zonal valuation; if this is rejected by PAFs, an appraisal committee will be formed to derived the fair market value. • Valuation for affected land improvements /structures is based on replacement cost. • Cash compensation for perennials of commercial value as determined by the DENR or concerned appraisal committee.	housing facilities with secured tenure is a better condition as compared to their pre-project housing situation. Other affected parties are government institutions and commercial establishment lessees of MIAA properties that are not relocating.	
18. Allowances/ Assistance	Provide support for the transition period (between displacement and livelihood restoration). (WB OP4.12 Para.6)	Republic Act 8974 (2000): Guidelines for Expropriation Proceedings are provided which includes among others the provision of assistance to PAFs. • **Disturbance Assistance** will be given (not to exceed PhP10,000. per household) to each PAP/DP who holds full title, tax declaration or some proof of traditional ownership (such as usufruct when the PAP/DP belongs to an indigenous community), to the land where his/her severely affected house stands and who has to shift elsewhere. The same assistance is provided to each PAP/DP doing business on severely-affected independent shops (e.g. store, shop, warehouse, and similar structures) which are constructed on lands that are covered by titles, tax declaration that can be perfected into a title, or some proof of traditional ownership. DPWH LARRIP • Chapter III, 4e enumerates the types of Assistance available to eligible PAFs which includes benefits that were contained in several Philippine laws including the "Disturbance Allowance" prescribed in RA8974.	No gap. DPWH LARRIP guidelines conforms to RA 8974 and World Bank requirements.	Other types of Assistance:[4] • **Income loss.** For loss of business/ income, the PAF will be entitled to an income rehabilitation assistance not to exceed PhP 15,000 for severely affected structures, or to be based on the latest copy of the PAF's tax record for the period corresponding to the stoppage of business activities; • **Inconvenience Allowance** in the amount of PhP10,000 shall be given to the PAFs with severely affected structures, which require relocation and new construction; • **Rehabilitation assistance** (skills training and other development activities) equivalent to PhP15,000 per family will be provided in coordination with other government

[4] Section A, Chapter III, LARRIP, DPWH, February 2007

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				agencies, if the present means of livelihood is no longer viable and the PAF will have to engage in a new income activity; • **Rental subsidy** will be given to the PAFs without sufficient additional land to allow the reconstruction of their lost house under the following circumstances: a. The concerned properties are for residential use only and are considered as severely affected; b. The concerned PAFs were physically residing in the affected structure and land at the time of the cut-off date; c. The amount to be given will be equivalent to the prevailing average monthly rental for a similar structure of equal type and dimension to the house lost; d. The amount to be given for the period between the delivery of house compensation and the delivery of land compensation. • **Transport allowance**. If relocating, PAFs to be provided free transportation. Also affected informal settlers in urban centers who opt to go back to their place of origin in the province or be shifted to government

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				relocation site will also be provided free transportation.
19. Socially disfranchised and vulnerable people	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8)	DPWH LARRIP • Chapter II (Legal Framework) Due recognition is given to rights of indigenous peoples as it is contained in the "Indigenous People's Right's Act" (IPRA). The Chapter also adopts the World Bank's IP Policy (O.P. 4.10); • Chapter IV provides for the policy and implementation guidelines on involuntary resettlement involving IPs and their ancestral lands in accordance to the IPRA. It establishes the procedures for public consultation (including the securing of required clearances from NCIP such as "Certification Precondition, "Free and Prior Informed Consent"), land acquisition, compensation and other entitlements due to IP PAFs. • Chapter V prescribes that vulnerable groups like women and the elderly be allowed to actively participate in public consultation on the project and discuss with them its (project) implications on their socio-economic conditions.	• The DPWH LARRIP conforms to the IPRA Law and World Bank IP policy. It also recognizes vulnerable groups like women and the elderly and affords them meaningful participation in resettlement planning. • NCR is not considered as an ancestral land to Indigenous Peoples, so guidelines on IPs are not applicable to the project.	• Particular attention must be given to the needs of the affected vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. • Adoption of the DPWH LARRIP guidelines on IPs and vulnerable groups.
20. Type of relocation plan	For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared. (WB OP4.12 Para.25)	DPWH DO 187 series 2002： • A Land Acquisition Plan and Resettlement Action Plan (LAPRAP) shall be prepared for all projects using a standardized compensation package. DPWH DO 5, Series of 2003 further defines the content of the LARRIP • DPWH LARRIP which had underwent 3 revisions, contained the harmonized IR policy covering most relevant Philippine Government laws on land acquisition and resettlement, and the World Bank social safeguard policies. The latest edition of the LARRIP already incorporates IP concerns as provided for in the IPRA law and World Bank policy on IPs.	There is no specific guidelines that dictate on the type of RAP to be prepared based on the number of PAFs.	For projects that entail land acquisition or involuntary resettlement of less than 200 people, an abbreviated resettlement plan is to be prepared.
21. Funding	WB OP 4.12, Para 20 The full const of resettlement activities necessary to achieve the objective of the project are	RA 8974：Sec. 9. …Funds for the relocation sites shall come from appropriations for the purpose under the General Appropriations Act, as well as from appropriate infrastructure projects funds of the implementing agency concerned.	In principle, government is obliged to provide adequate funds to cover the cost of ROW acquisition, however, these will	The government shall provide adequate appropriations that will allow the concerned implementing agencies to acquire the required right-of-way, site or

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
	included in the total cost of the project. The costs of resettlement, like the cost of other project activities, are treated as a charge against the economical benefit of the project…. WB OP 4.12, Para 33 The Bank may finance …a free standingresettlement project with appropriate cross-conditionalities, processed and implemented in parallel with the investment that can cause the displacement. The Bank may finance resettlement even though it is not financing the main investment that makes resettlement necessary.	RA 8974:Sec. 10. Appropriations for Acquisitions of Right-of - Way, Site or Location for Any National Government Infrastructure Project in Advance of Project Implementation. - The government shall provide adequate appropriations that will allow the concerned implementing agencies to acquire the required right-of-way, site or location for any national government infrastructure project	come from the budget of several concerned agencies which includes the concerned Local Government Unit (LGU), the proponent DPWH, other support agencies (NHA, NHMFC, etc.). An inter-agency committee needs to be establish to coordinate all efforts related to land acquisition and resettlement including commitment for provision of adequate funds. The cost for development of relocation sites is not free, and normally the amount is pass on to the displaced persons on a long-term payment arrangement.	location for any national government infrastructure project.
22. Responsible government function on relocation		RA7279 (Urban Development and Housing Act of 1992), Article X (Program Implementation), Section 39. Role of Government Units – The local government units shall be charged with the implementation of this Act in their respective localities, in coordination with the Housing and Urban Development Coordination Council, the national housing agencies, the Presidential Commission for the Urban Poor, the private sector and other non-government organizations. DPWH DO 327 Series of 2003 (Guidelines for Land Acquisition Plan and Resettlement Action Plans (LAPRAPs) for Infrastructure Projects.Section 1.0, 1.5: The provision of resettlement site shall be the responsibility of the local government units (LGUs) concerned, with assistance from the concerned government agencies tasked with providing housing. The DPWH shall	Within DPWH (proponent), it is the Implementing Office (BOT-PMO) that is responsible for the overall project coordination including the preparation of the LAPRAP in the event there is involuntary relocation needed. Other concerned DPWH units (IROW-PMO, ESSO, RO and District Office) are to provide appropriate support. However, the office responsible for the	Adopt the provision of DPWH DO 327 Series of 2003, Section 1.5: The provision of resettlement site shall be the responsibility of the local government units (LGUs) concerned, with assistance from the concerned government agencies tasked with providing housing. The DPWH shall coordinate with these LGUs and appropriate government agencies for the resettlement and relocation of qualified PAPs, and the acquisition, planning, and

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
		coordinate with these LGUs and appropriate government agencies for the resettlement and relocation of qualified PAPs, and the acquisition, planning, and development of the resettlement site shall be part of the LAPRAP, with the responsibility resting mainly with the concerned LGUs, Housing and Urban Development Coordinating Council (HUDCC), National Housing Authority (NHA) and other concerned agencies.	relocation of project displaced persons is the concerned LGUs with the support of other government agencies. An inter-agency coordinating committee is necessary to orchestrate all relocation related activities.	development of the resettlement site shall be part of the LAPRAP, with the responsibility resting mainly with the concerned LGUs, Housing and Urban Development Coordinating Council (HUDCC), National Housing Authority (NHA) and other concerned agencies.
23. Implementation structure		DPWH DO 327 Series of 2003 (Guidelines for Land Acquisition Plan and Resettlement Action Plans (LAPRAPs) for Infrastructure Projects.Section 3 (Roles and Responsibilities): The formulation of the LARPRAP shall be the responsibility of the Implementing Office (BOT-PMO), with assistance from the IROW and Resettlement Project Management Office (PMO), and the Environmental Impact Assessment Office (now called ESSO), or private consulting firms. The implementation of the LAPRAP, once approved, is the responsibility of the DPWH District Engineering Offices that have jurisdiction over the municipalities covered by the LAPRAP, with assistance from the Regional Offices (ROs) and EIAPO (now ESSO).	Within DPWH (proponent), it is the Implementing Office (BOT-PMO) that is responsible for the overall project coordination including the preparation of the LAPRAP in the event there is involuntary relocation needed. Other concerned DPWH units (IROW-PMO, ESSO, RO and District Office) are to provide appropriate support. However, the office responsible for the relocation of project displaced persons is the concerned LGUs with the support of other government agencies. An inter-agency coordinating committee is necessary to orchestrate all relocation related activities.	Adopt the provisions of DPWH DO 327 Series of 2003, Section 3: The formulation of the LARPRAP shall be the responsibility of the Implementing Office (BOT-PMO), with assistance from the IROW and Resettlement Project Management Office (PMO), and the Environmental Impact Assessment Office (now called ESSO), or private consulting firms. The implementation of the LAPRAP, once approved, is the responsibility of the DPWH District Engineering Offices that have jurisdiction over the municipalities covered by the LAPRAP, with assistance from the Regional Offices (ROs) and EIAPO (now ESSO).
24. Livelihood rehabilitation program	WB 4.12, Para 6 (c) (i)…support after displacement, for a transition period, based on a reasonable estimate of the time likely to be needed to restore their	RA7279, Article IV, Section 22. Livelihood Component – To the extent feasible, socialized housing and resettlement projects shall be located near areas where employment opportunities are accessible. The government agencies dealing with the development of livelihood programs and grant of livelihood loans shall give priority to the beneficiaries of the Program. DPWH DO 327 Series of 2003, Annex B (Guidelines for	The proposed relocation site is within the MIAA complex which is still within the vicinity of their previous abode, and therefore dislocation from their current livelihood source for the	For the informal settlers (Brgy 191) and affected potential lot awardees (Brgy Tambo), adopt DPWH DO 327 guidelines. For affected commercial establishments,

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
	livelihood and standard of living	LAPRAPs for Infra Projects), Section 3 (Entitlement Matrix) – c. Rehabilitation assistance is provided to Severely affected PAPs whose livelihood is severely affected too as a result of project implementation and as such needs an alternative income source. An amount equivalent to PhP15,000/training for PAPs learning appropriate new livelihood skills. This assistance can also be provided to Vulnerable groups. d. Transitional Allowance equivalent to one month rent of a similar structure within the same area.	employed persons is minimal. For those engaged in small business, establishment of their shop (sari-sari stores and karinderias), the policy under DPWH DO 327 is sufficient to cover income loss. There is no policy with regards to payment of income loss for affected Commercial establishments.	payment for income loss should be made that is equivalent to the average monthly net income as declared in their income tax returns filed at the Bureau of Internal Revenue (BIR) for the period of 3 years, multiplied by the number of none operational months as a result of the project, but not to exceed 6 months.
25. Relocation site development	WB 4.12, Para 6 (c) (ii)provide with development assistance in addition to compensation measures described in paragraph 6 (a); (iii) such as land preparation, credit facilities, training, or job opportunities. OP4.12 para13 (b); In new resettlement sites or host communities, infrastructure and public services are provided as necessary to improve, restore, or maintain accessibility and levels of service for the displaced persons and host communities. Alternative or similar resources are provided to compensate for the loss of	RA-8974-Sec. 9. Squatter Relocation. - The government through the National Housing Authority, in coordination with the local government units and implementing agencies concerned, shall establish and develop squatter relocation sites, including the provision of adequate utilities and services, in anticipation of squatters that have to be removed from the right-of-way or site of future infrastructure projects. Whenever applicable, the concerned local government units shall provide and administer the relocation sites. RA7279, Article IV, Section 22. Livelihood Component – To the extent feasible, socialized housing and resettlement projects shall be located near areas where employment opportunities are accessible. The government agencies dealing with the development of livelihood programs and grant of livelihood loans shall give priority to the beneficiaries of the Program. DPWH DO 327 Series of 2003, Annex B (Guidelines for LAPRAPs for Infra Projects), Section 3 (Entitlement Matrix) – a. Rehabilitation assistance is provided to Severely affected PAPs whose livelihood is severely affected too as a result of project implementation and as such needs an alternative income source. An amount equivalent to PhP15,000/training for PAPs learning appropriate new livelihood skills. This assistance can also be provided to Vulnerable groups.	The existing Philippine laws and DPWH guidelines provide the general legal mandate to concerned government agencies responsible for implement livelihood related support activities to PAFs. However, since there are multiple government agencies with diverse functions, involved in land acquisition and resettlement, an inter-agency committee normally has to be established to pursue the coordinated work. The concerned LGU exercising jurisdiction over the project area, is the lead government agency in providing socialized housing as provided for RA7279 (UDHA).	The DPWH to actively participate in the establishment of the Resettlement Implementation Committee (RIC) to be headed by the concerned LGUs, that is tasked to plan and implement the RAP in accordance to

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
	access to community resources (such as fishing areas…).	b. Transitional Allowance equivalent to one month rent of a similar structure within the same area. DPWH LARRIP • Chapter III, 4e enumerates the types of Assistance available to eligible PAFs which includes benefits that were contained in several Philippine.		
26. Protection of host community	Should project interventions also limit or restrict the access of people to declared protected areas, OP4.12 para13 (b); In new resettlement sites or host communities, infrastructure and public services are provided as necessary to improve, restore, or maintain accessibility and levels of service for the displaced persons and host communities. Alternative or similar resources are provided to compensate for the loss of access to community resources (such as fishing areas…).	RA 8974:Sec. 8. Ecological and Environmental Concerns. - In cases involving the acquisition of right-of-way, site or location for any national government infrastructure project, the implementing agency shall take into account the ecological and environmental impact of the project. Before any national government project could be undertaken, the agency shall consider environmental laws, land use ordinances and all pertinent provisions of Republic Act No. 7160, as amended, otherwise known as the Local Government Code of 1991 DPWH LARRIP, Chapter II, 2d, states that: Existing social and cultural institutions of re-settlers and their hosts should be supported and used to the greatest possible and resettlers be integrated economically and socially into host communities. DPWH DO 327 Series of 2003, Section 1.6: Where relocation is considered necessary, the receiving LGU (under whose political jurisdiction the relocation site will be located) may seek assistance from DPWH for the provision of access roads to the relocation site, and other government agencies for the provision of basic facilities and services.	The shifting PAFs are given a choice either they opt to receive their compensation for lost assets or a developed relocation site (land to be provided by LGU) where the site had been prepared, access roads and connection to basic facilities (i.e. water supply, electric power, drainage, garbage disposal, telephone lines, etc.) are provided. Only transportation allowance for the actual transfer to the relocation site and income rehabilitation for displaced small business will be provided. The other facilities such as low cost houses will have to be provided by the other relevant government agencies (LGU, NHA, etc.).	Adopt DPWH LARRIP. Chapter II 2d and DPWH DAO 327 Series of 2003, Section 1.6.
27. Removal and demolition	WB OP 4.12: para 18: The borrower is responsible for preparing, implementing, …resettlement plan…	RA7279 (Urban Development and Housing Act of 1992), Article X (Program Implementation), Section 39. Role of Government Units – The local government units shall be charged with the implementation of this Act in their respective localities, in coordination with the Housing and Urban Development Coordination Council, the national housing agencies, the Presidential Commission for the Urban Poor, the private sector and	The concerned LGU is the over-all government entity responsible for the implementation of socialized housing and relocation of informal settlers and PAHs affected by government projects.	Adopt DPWH LARRIP guidelines on Institutional Arrangements; as well as the RA 7279 general guidelines on roles of government units for socialized housing.

No.	JICA Guidelines	Laws of The Philippines	Gap between JICA Guidelines and Laws of the Philippines	Relocation Implementation Policy of this Project
		other non-government organizations. DPWH LARRIP, Chapter VII. Institutional Arrangements. The whole chapter provides for the duties and responsibilities of concerned DPWH offices with respect to the preparation and implementation of the LARRIP. It mentions also the role of the interagency committee (Resettlement and Implementation Committee) that is task to support the preparation and implementation of the LARRIP.	Since its resources and personnel are limited, it can call upon other government specialized agencies such as the DPWH to carry-on some of the work that is within its area of expertise.	
28. Monitoring	WB OP 4.12: para 18: The borrower is responsible for …, monitoring a resettlement plan…	(ESSO－Guideline xviii) The IROW and Resettlement PMO shall monitor the releases and disbursement of IROW funds made by the IOs. Prior to, and after the resettlement, the Urban Poor Affairs Office or Dept. of Welfare and Development of LGUs, which were also responsible for census, is the institution responsible for internal monitoring. Monitoring results are to be conveyed to the Local Inter-Agency Committee, which includes the Human Rights Commission and Presidential Commission for the Urban Poor as members, for review. DPWH LARRIP, Chapter VII. Institutional Arrangements. The whole chapter provides for the duties and responsibilities of concerned DPWH offices with respect to the preparation and implementation of the LARRIP. Among the functions mentioned is the internal monitoring roles of each concerned DPWH offices, as well as the Interagency Resettlement Implementation Committee (RIC).	No gap. The DPWH LARRIP guidelines conform to WB/ADB/JICA monitoring requirements.	Adopt DPWH LARRIP guidelines on Monitoring and Evaluation work.

7.1.2.1.3 Means to Bridge the Gap (Harmonized Project Resettlement Policy)

To bridge the gap between the Philippine government laws with that of World Bank/ADB/JICA social safeguard policies, a harmonized resettlement policy for use in the project is proposed. The project resettlement policy is actually an adoption of the LARRIP guidelines that had been issued by the DPWH the 3rd edition of which was released in February 2007, for use in its infrastructure projects having involuntary resettlement impacts that are funded by the World Bank and ADB. This section provides for the policy on eligibility requirements of affected persons, compensation and other entitlements. At the end of this section, a matrix (**Table 7.1.2-3**) summarizes the type of loss, eligibility requirement, type of compensation and other assistance to be provided.

7.1.2.1.3.1 Criteria for Eligibility for Compensation

A. Landowners:

a. Legal owners of affected land (i.e. agricultural, residential, commercial and institutional) who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership;
b. Users of affected arable land who have no land title or tax declaration;
c. Agricultural lessees of affected lands.

B. PAFs with Affected Structures

a. Owners of structures who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership;
b. Owners of structures, including informal settlers, who have no land title or tax declaration or other acceptable proof of ownership;
c. Renters.

7.1.2.1.3.2 Indicator for Severity of Impacts

Affected assets such as land and structures will suffer degrees of impact depending on the portion that will be affected and the viability for use of the remaining part. The severity of impact on land and improvements are defined as follows:

a. Severe – The impact on land or improvements shall be considered severe if the portion of the affected property is more than10% or less than 10% if the remaining portion is no longer economically viable or it will no longer function as intended. The owner of the affected property (land or structures) shall be entitled to full compensation based on replacement cost in accordance to RA 8974.

b. Marginal – The impact on land and improvements shall be classified as marginal if the impact to the property is less than 10% and the remaining portion is still viable for continued use. Compensation will be on the affected portion only based on replacement cost.

7.1.2.1.3.3 Compensation for Affected Assets

The type of assets that are eligible for compensation includes land, structures, other improvements, timber trees, standing crops and perennials. Listed below are the types of

compensation and other entitlements to be paid to the eligible PAFs per type of affected assets.

A. Compensation for Land

i. Compensation for affected land will be based on replacement cost in conformity to RA 8974. The initial offer to the PAFs is the indicated price in the current zonal valuation issued by the BIR for the locality where the property is located. If the offered price is not acceptable to the PAF, the second offer will be the current market value at the time of the taking based on the standards prescribed in Section 5 and 6 of RA 8974.

ii. Land swapping or "land for land" compensation if feasible, will be provided in terms of a new parcel of land of equivalent market value, at a location acceptable under zoning laws; or a plot of equivalent value, whichever is bigger, in a nearby resettlement area with adequate physical and social infrastructure. When the affected plot has a higher value than the replacement plot, cash compensation will be paid to the PAFs to cover the difference in value.

iii. Holders of "Free Patent", homesteads under CA 141 or the Public Lands Act, will be compensated for improvements only;

iv. Holders of Certificates of Land Ownership Award (CLOA) granted under the Comprehensive Agrarian Reform Act (CARA) shall be compensated in accordance to Public Land Act or CA 141 where landowners shall be compensated for the affected land improvements only.

B. Compensation for Structures

Compensation will be in cash at replacement cost for the affected portion, including the cost of restoring the remaining structure, as determined by the appraisal committee, with no deduction for salvaged building materials.

C. Compensation for Other Improvements

i. Compensation will be in cash at replacement cost for the affected portion of public structures/facilities that owned by government, Non-Governmental Organizations or Community that had donated such assets for the general use;

ii. Compensation will be in cash to cover the cost of restoring/reconnection of affected public utilities such as water supply, electric power and telephone.

D. Compensation for Standing Crops, Trees and Perennials

i. Cash compensation will be in cash for perennials of commercial value as determined by the DENR or the concerned Appraisal Committee;

ii. PAFs will be given sufficient time to harvest crops on the affected land;

iii. Compensation in cash for damaged standing crops (palay and corn) will be based on market value at the time of the taking multiplied by the average production level (over the period of 3 consecutive years) per unit area;

iv. Compensation in cash for fruit-bearing trees will be based on the assessment of the Provincial or Municipal Assessors where the project is located.

E. Other Assistance

i. Disturbance Compensation – For severely affected agricultural land, the lessees are entitled to disturbance assistance equivalent to five times the average gross harvest for the past 3 years but not less than PhP15,000.

ii. Income Loss – For loss of business/income, the PAF will be entitled to an income rehabilitation assistance not to exceed PhP15,000 for severely affected structures, or to be based on the latest copy of the PAF's tax record for the period corresponding to the stoppage of business activities.

iii. Inconvenience Allowance – An amount equivalent to PhP10,000 shall be paid to PAFs with severely affected structures which require relocation and reconstruction.

iv. Rehabilitation Assistance – Skills training and other development activities equivalent to PhP15,000 per affected family per municipality will be provided in coordination with other government agencies. If the present means of livelihood is no longer viable and the PAF will have to engage in a new income generating activity.

v. Rental Subsidy – Amounts will be provided to PAFs without sufficient land to allow the reconstruction of their severely affected house based on the following categories:

   a) Severely affected properties are for residential use only;

   b) Concerned PAFs were physically residing in the affected structures built on the affected land at the time of the "cut-off" date;

   c) The amounts to be given will be equivalent to the prevailing average monthly rental rates for a similar structure of equal type, dimension and amenities to the affected structure;

   d) The amount will be given for the period between the actual payment of house compensation and that of the land compensation.

vi. Transportation allowance – Shifting PAFs will be provided with free transportation. Likewise, affected informal settlers (in urban areas) who opt to return to their place of origin (in the provinces) or be shifted to government relocation sites will also be given free transportation.

TABLE 7.1.2-3 ENTITLEMENT MATRIX

Type of Loss	Application	Entitled Person	Compensation/Entitlements
Land (classified as Agricultural, residential, commercial or institutional.	More than 20% of total landholding lost or where less than 20% lost but the remaining plot become economically unviable.	PAF with TCT or tax declaration[5]	PAF will be entitled to: • Cash compensation for loss of land at 100% replacement cost at the informed request of PAFs; • If feasible, land for land will be provided in terms of a new plot of land of equivalent productivity, at a location acceptable to PAFs, or • Holders of free or homestead patents and CLOAs under CA141, Public Lands Act will be compensated on land improvements only[6]; • Holders of Certificates of Land Ownership Award (CLOA) granted under the Comprehensive Agrarian Reform Act shall be compensated for the land at zonal value; • Cash compensation for damaged standing crops at market value at the time of the taking; • Rehabilitation assistance in the form of skills training equivalent to the amount of PhP15,000 per family, if their current means of livelihood is no longer viable and the PAF will have to engage in a new income generating activity.
		PAF without TCT	• Cash compensation for damaged standing crops at market value at the time of the taking; • Agricultural lessors are entitled to disturbance compensation equivalent to five times the average gross harvest for the past 3 years but not less than PhP15,000.
	Less than 20% of the total landholding lost or where less than 20% lost and the remaining plot is still viable for use.	PAF with TCT or tax declaration[5]	PAF will be entitled to: • Cash compensation for loss of land at 100% replacement cost at the informed request of PAFs; • Holders of free or homestead patents and CLOAs under CA141, Public Lands Act shall be compensated on land improvements only; • Holders of Certificates of Land Ownership Award (CLOA) granted under the Comprehensive Agrarian Reform Act shall be compensated for the land at zonal value; • Cash compensation for damaged standing crops at market value at the time of the taking.
		PAF without TCT	• Cash compensation for damaged crops at market value at the time of taking; • Agricultural lessors are entitled to disturbance allowance equivalent to five times the average

[5] Tax declarations that are legalizable to full title

[6] Beneficiaries of homestead and free patents, CLOA under the Land Act and CA141 are obliged to provide a strip of land within the property they have acquired from the state (upon payment of administrative fees) for use as ROW when required for roads.

Type of Loss	Application	Entitled Person	Compensation/Entitlements
			of the gross harvest for the past 3 years but not less than PhP15,000.
Major Structures (classified as residential, commercial & industrial)	More than 20% of the total landholding loss or where less than 20% loss but the remaining structure is no longer functional or no longer viable for continued use.	PAPs with TCT or tax declaration	PAPs will be entitled to: • Cash compensation for entire structure at 100% replacement cost; • Rental subsidy for the time between the submission of complete documents and the release of payment on affected land.
		PAPs without TCT	PAPs will be entitled to: • Cash compensation for entire structure at 100% of replacement cost; • Rental subsidy for the time between the submission of complete documents and the release of payment on affected land.
	Less than 20% of the total land lost or where the remaining structure is still functional and is viable for continued use.	PAPs with TCT or tax declaration	• Compensation for affected portion of structure.
		PAPs without TCT	• Compensation for affected portion of structure.
Improvements	Severely or marginally affected	PAPs with or without TCT, tax declaration, etc.	Cash compensation for affected improvements at replacement cost.
Standing Crops, trees, and perennials	Severely or marginally affected	PAPs with or without TCT, tax declaration, etc.	Cash compensation for affected standing crops, trees and perennials at current market value as prescribed by the concerned LGUs and DENR.

7.1.3 Institutional Arrangements

Environmental Administrative Organization

The main government institution responsible for Environmental Protection is the Department of Environment and Natural Resources (DENR) which had been established in 1987. DENR takes on the role of a guardian of the country's environment thru the formulation of appropriate policies, regulation of all developmental activities of both government and private sectors and enforcement of legislations and other directives/guidelines related to environmental protection.

DENR will Protect and maintain natural resources for development activities and implement environmental management with possible and sustainable resource uses.

Before new constitution was promulgated, the National Pollution Control Commission (NPCC) previously maintained and controlled environmental protection and management function, has been integrated with National Environmental Protection Council (NEPC), and the newly formed organization is now known as the Environmental Management Bureau (EMB). The EMB carries out actual implementation organization on environmental protection and administrative management, and being functioned a management of Ambient air, water quality, chemical substances, prevention study on public nuisances, analysis of various regulation, natural protection and environmental education, Evaluation of environmental impact assessment etc.

DENR has 3 offices as natural resources management office, region office and environmental investigation office.

The natural resources management office has 3 divisions as forest management division, land management division and mining management division. The region office has 3 competence offices in Luzon, Visayas and Mindanao. The environmental investigation office has ecosystem investigation division, conservation district and wildlife-biology division, and environmental management division.

All of planned projects are objectives to evaluate EIS conducted by EMB, and EMB regional office response for evaluation of EIS on the planned project within each superintended region. Beside of EMB administration on assessment related issues wildlife and biology preservation division and public nuisance arbitration committee take responsibility on environmental management and conservation plan.

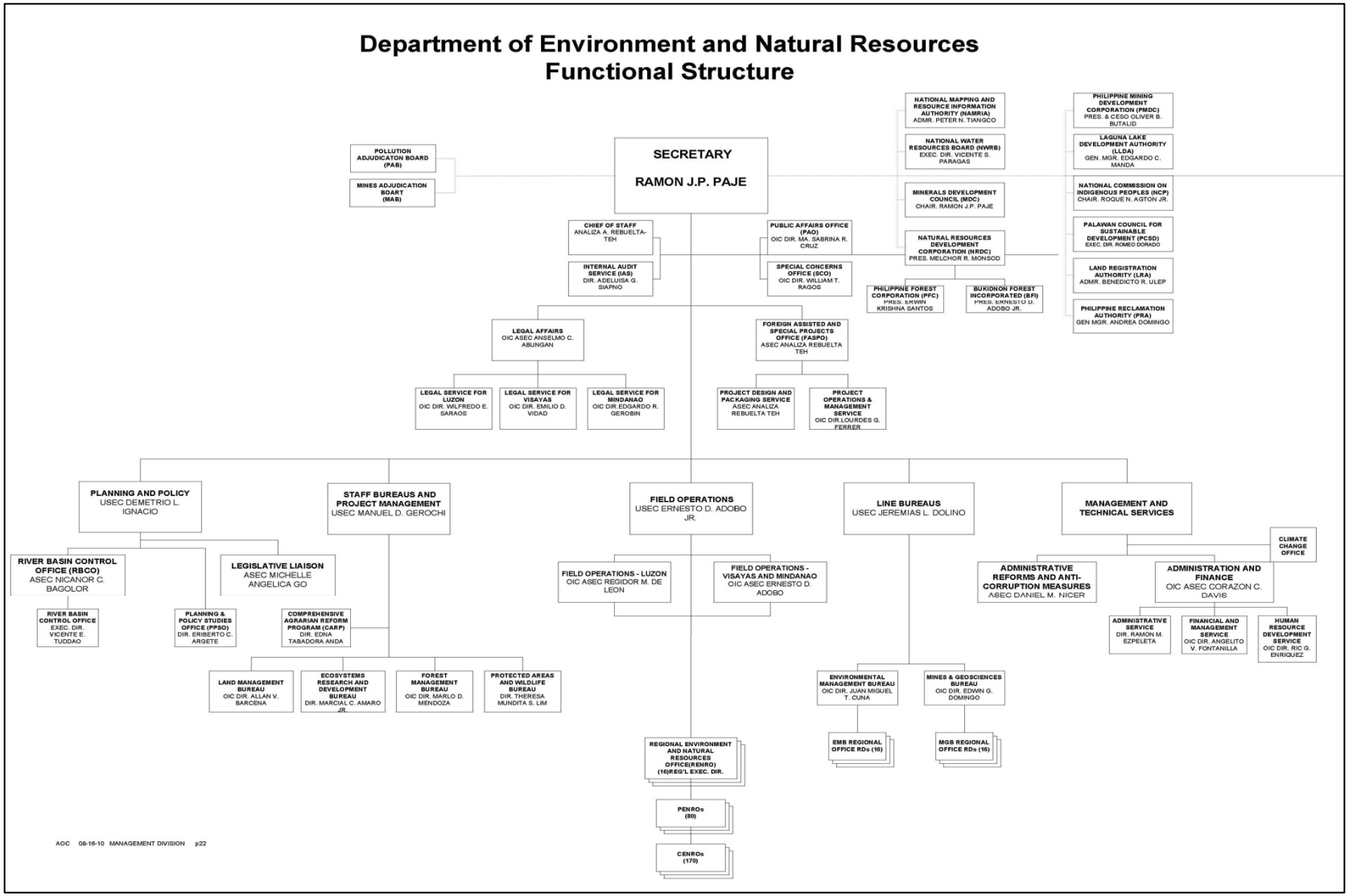


FIGURE 7.1.3-1 ORGANIZATION CHART OF DENR

7.1.3.1 Environmental Consideration

Regarding NAIAX project, EIS has been done for phase 1 and phase 2 in 2000, DENR (Department of Environment and National Resources) was issued ECC (Environmental Compliance Certificate) on 16th June 2002. The issued EEC attached following incidental conditions.

1) This Certificate covers only the construction and operation of the Manila International Airport Access Improvement Project to include the following components

   1.1) A 5.7 km elevated road from the Reclamation Area beside Roxas Boulevard (Boulevard 2000) through Sunset Drive to the corner of Domestic Road and MIA Road, passing through Domestic Road to Airport Avenue until Sales Street going to South Luzon Skyway;

   1.2) Road Width

Villamor Airbase Section	-	26.20 m.
Other Sections	-	20.00 m.

   1.3) Height (average) - 7.5 m.

   1.4) An interchange system at Boulevard 2000, Roxas Boulevard, Manila, a ramp at the corner of Domestic Road and MIA road, an interchange at the NAIA Terminal III and an interchange to connect Sales Street to Luzon Skyway;

   1.5) Toll Plaza - 10 booth per toll

2) The project must strictly adopt the alignment as proposed and as stated in the EIS. Any modification from the original plan and design of the approved alignment should be subject to review, evaluation and approval of this Office;

3) The detailed structural and foundation design of the whole project must conform to the National Structural Code of the Philippines (NSCP) and the American Association of State Highways and transportation Officials (AASHTO) codes;

4) A detailed seismic risk analysis must be conducted using the determination approach and considering the presence of the West Valley Faull which is located east of the project site. Results of such analysis should be used in detailed structural and foundation design;

5) The detailed engineering design of Segment 6 and 7 of the project must consider the results of the following studies;

   5.1) Detailed liquefaction analysis considering the results of detailed seismic risk analysis

   5.2) Detailed seismic and consolidation settlement analysis

   5.3) Bearing capacity determination which include among others the effect of negative side friction on the integrity of the pile

6) A detailed flood frequency analysis must be conducted along critical locations (i.e. Brgy. 183, 184, and 185, intersection of Tramo Road and Andrews Avenue and along Segment 6 and 7

of the project) and results of such analysis should be used in the detailed design of hydraulic structures and in the development of a comprehensive drainage maintenance program;

7) Cargo trucks carrying hazardous materials which include among others toxic and flammable substances must not be allowed to use the elevated road

8) Noise barriers should be installed along critical residential areas in Barangays 183, 184 and 185, school zones in Villamor Airbase and Paranaque, and commercial areas and offices along the Domestic Road;

Reference to the completeness between JICA guideline and Philippine DENR/BEM guideline applied Philippine legal framework, EIS for the NAIAX project will be considered in relation to the above. The environmental consideration of the project is mostly in relation to WB OP 4-12 regarding the relocation implementation policy and summarized matrix in **Table 7.1.2-2.**

7.1.3.2 Social Consideration

The implementation of the RAP will be pursued by various government offices in cooperation with the PAFs and expressway concessionaire. In this section, the various players involved in the RAP implementation are named and their respective roles defined. While the expressway project is pursued under the Project-Private-Partnership arrangements, the primary responsibility for the implementation of the project still lies with government specifically the Department of Public Works and Highways.

A. Department of Public Works and Highways

The DPWH is the Executing Agency (EA) who is responsible to the Philippine government and the donor agency for the planning and implementation of the expressway project under the PPP program of the government. The DPWH will initiate through its relevant departments and PMOs the preparation of all documents necessary for the approval and implementation of the expressway project which includes the updating of feasibility studies, securing of clearances/permits, acquisition of ROW, tendering of the PPP contract to interested capable concessionaires, and monitoring of project implementation. The expressway project will be overseen by the Office of the Assistant Secretary for Planning who shall report directly to the DPWH Secretary on matters related to the project.

B. Built-Operate-Transfer (BOT) - Project Management Office (PMO)

The BOT-PMO has the overall operational responsibility for the planning and implementation of the project. In coordination with other relevant government agencies and the JICA Study team, the BOT-PMO shall manage and supervise the project, including resettlement planning and land acquisition. It shall help ensure that the concerned DPWH implementing office of the RAP will exercise fairness and appropriateness in its dealings with the project affected persons. It shall ensure that funds for the timely implementation of the RAP is available and that expenses are properly accounted for. It will serve as the chairperson of the Resettlement Implementing Committee (RIC). The BOT-PMO will be assisted by the ESSO and IROW-PMO in providing technical guidance and support in the preparation and implementation of the RAP.

C. Environmental and Social Services Office (ESSO)

The ESSO shall provide technical guidance and support in the implementation of the RAP and will be responsible for the following resettlement activities:

i. Oversee the preparation and planning of the RAP;

ii. Submit RAP budgetary requirements for approval and allocation of needed financial resources by the DPWH central office;

iii. In accordance to the Department's resettlement policies, guide the project consultants, District Engineering and Regional Offices in their tasks, such as parcellary survey of project area, verification of PAFs, final inventory of affected assets, and information dissemination;

iv. Amend or update the RAP in the event problems arise during the internal and/or external monitoring of its implementation;

v. Follow-up with the DPWH Accounting Office for the processing of compensation claims of PAFs;

vi. Monitor the actual payment of compensation to PAFs;

vii. Prepare periodic supervision and monitoring reports on RAP implementation for submission to the BOT-PMO and the donor institution; and

viii. Serve as an active member of the Resettlement Implementation Committee (RIC).

D. Infrastructure Right-of-Way (IROW) PMO

i. The IROW PMO will provide guidance to the BOT-PMO and consultants on the preparation of RAP;

ii. Conduct inventories of properties that will be affected;

iii. Oversee the staking-out, verification and validation of the PAF's affected assets;

iv. Spearhead the negotiations with the PAFs and secure agreements on the final valuation of the affected assets which will be used in the payment of compensation;

v. Finalize the compensation plan for the PAFs, based on the result of the negotiation process; and submit the same to the DPWH financial service for approval and payment;

vi. Approve disbursement vouchers/payments on PAFs compensation and other benefits;

vii. Submit disbursement reports on payments to PAFs to the Regional/Central Office accounting office and the BOT-PMO;

viii. In cooperation with the RIC and concerned DPWH District Office, implement the approved RAP;

ix. Submit monthly progress reports to ESSO, Regional Office and the BOT-PMO; and;

x. Serve as the co-chairperson of the Resettlement Implementation Committee (RIC).

E. Local Government Units of Pasay & Parañaque City

i. Monitor the relocation process of informal settlers to ensure that all shifting PAFs are properly compensated for their loss, and appropriate housing facilities and social infrastructures are provided;

ii. Issue a completion certificate to DPWH after ascertaining that the prescribed procedure had been followed.

iii. Participate in public consultation organized for the affected persons and other major stakeholders;

iv. Participate as an active member of the RIC.

F. Regional Office (National Capital Region) of DPWH

The Regional Office shall act as the Liaison between ESSO and the District Office and shall ensure that the RAP is implemented as planned. Its specific activities are:

i. Prepare parcellary maps of the project area;

ii. Monitor the RAP implementation and fund disbursement;

iii. Submit monthly progress reports to ESSO;

iv. Monitor payments to PAFs;

v. Serve as the Grievance Redress Committee (GRC) and act on complaints filed by PAFs related to the project at its office.

G. Manila International Airport Authority (MIAA)

MIAA is a major beneficiary of the NAIAX as access to its 4 airports within the complex will be facilitated. Likewise, it is also the most affected party as much of the land to be acquired, as well as structures that may be demolished are government properties that are entrusted to its (MIAA) stewardship. The role of MIAA in the project is as follows:

i. To assist DPWH Implementing Office (IO) find a suitable relocation site preferably within the MIAA complex for the displaced informal settlers, as well as its seriously affected commercial lease holders;

ii. To assist DPWH IO during discussions/negotiations with its affected commercial leaseholders;

iii. To participate as an active member of the Resettlement Implementation Committee (RIC).

H. Resettlement Implementation Committee (RIC)

The RIC shall be composed of representatives from the BOT-PMO (chairperson), IROW-PMO (co-chairperson), ESSO, Manila International Airport Authority (MIAA), the City/Municipality LGU, National Housing Authority (NHA) and representative of PAFs/PAPs. No NCIP nor ICC/IP representatives are included in the RIC as Metro Manila where the NAIAX is located is not a recognized ancestral land. The establishment of the RIC shall be made through the signing of a Memorandum of Understanding (MOU) between DPWH, the concerned LGU and MIAA. The function of the RIC includes:

i. Assist the project consultants and DPWH Implementing Office engaged in RAP preparation activities in (a) validating the list of PAFs; b) validating the assets of the PAFs that will be affected by the project; (c) assist DPWH in arranging for a suitable relocation facility for the displaced PAFs, and (d) participate in monitoring the RAP implementation;

ii. Assist the DPWH Implementing Office in the public information campaign, public participation and consultation meetings;

iii. Receive complaints and grievances from PAFs and other stakeholders and refer the matter to the Grievance Redress Committee (GRC);

iv. Maintain a record of all public meetings, complaints and actions taken to address complaints and grievances; and

v. In coordination with concerned government authorities, assist in the enforcement of laws/ordinances regarding encroachment into the project site or ROW.

I. National Housing Authority

i. Provide guidance to DPWH on the proper procedure of implementing resettlement work; and
ii. Process the list of affected persons to identify the professional squatters and promptly inform DPWH once these individuals, group or families are found.

7.1.4 Study Methodology (Procedure)

1) EIS System Requirement for the Implementation of the Project

EIS and evaluation system

Philippines Strategy for Sustainable Development (PSSD) of which EMB programmed in corporation with other related administrative authorities was prepared the environmental strategy in the long-range plan. The PSSD is the basis of national environmental policy. Thus EIS system is established as implementation of concrete measure under the Presidential Decree No. 1151 article 4.

The objectives of EIS system are following 4 items in general.

i) Economic profitability: Increase of employment opportunity, expansion of local tax revenue, value added economic project leading with economic growth, creation of new equipment and service for possibility of comfortable community life standard, In the planning stage of the

project prior the project environmental consideration will be given reduction of external project cost.

ii) Comprehensive achievement of objective of the project: Environmental evaluation is important to be required in integrated coordination with diverse nation's objectives as environmental, economic and social aspects. The EMB as implementation organization is established.

iii) Public participation: At the public consultation explanation of information and evidence of the project, public participation is recognized for conduct fair evaluation of the project.

iv) Environmental impact statement system is able to rationalize planning and implementation of the project and the system becomes to be element of the judgment during the process of planning decision make. Under the EIS system when government authorities, public agencies, private sectors and enterprises are conducted projects and activities which are anticipated impacts to the environment, they have to submit EIS to EMB and acquire an Environment Compliance Certificate (ECC) through the Environmental committee approval. Objective projects for EIS are these 9 industries of nonferrous metal, ferrous metal, oil and petrochemical, mining, pulp and paper, dam and reservoir, chemical, agriculture and urban development.EIS procedure is depended on detail of the project and phases as preparation of land acquisition, construction, maintenance and operation. And each evaluation categories of social environment, natural environment and pollution are examined. **Figure 7.1.4-1** shows EIA procedure of DENR/ BEM.

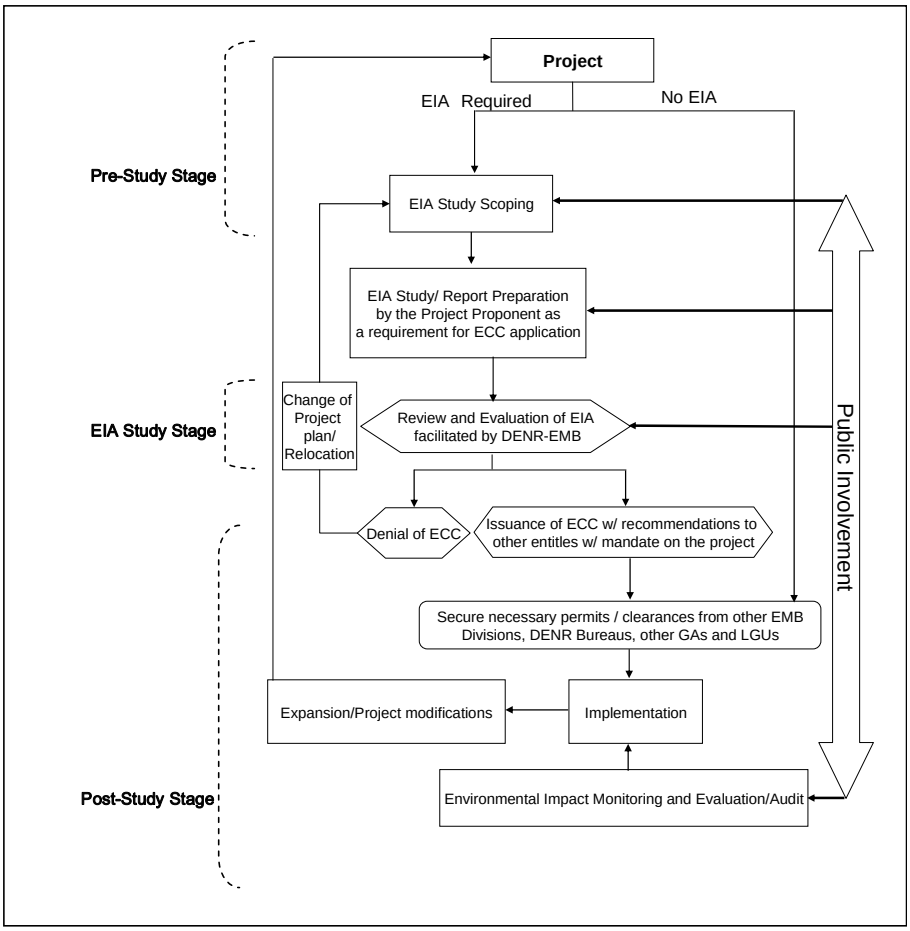


FIGURE 7.1.4-1 EIA PROCEDURE OF DENR/BEM

7.1.4.1 Environmental Impact Assessment (EIA)

1) Details of Environmental Impact Statement (EIS)

Environmental Impact Statement(EIS) is defined 1) basic policy, operating principal, objectives and definition of terms, 2) an application and deciding approval procedure on Environmental Compliance Certificate (ECC), 3) enhancement of implementation of EIS system of Philippine and 4) other related regal measures and procedures. Department of Environment and Natural Resources (DENR) has jurisdiction of EIS system under Presidential Decree No.1586, No. 2146.

The EIS System is concerned primarily with assessing the direct and indirect impacts of a project on the biophysical and human environment and ensuring that these impacts are addressed by appropriate environmental protection and enhancement measures, and the EIS System aids proponents in incorporating environmental considerations in planning their projects as well as in determining the environment's impact on their project.
The review of the EIS by EMB shall be guided by three general criteria:

(a) That environmental considerations are integrated into the overall project planning,

(b) that the assessment is technically sound and proposed environmental mitigation measures are effective, and (c) that social acceptability is based on informed public participation;

2) Documentary Requirements for Proponents

Following **Table 7.1.4-1** shows summary of the required documents, the processing, endorsing and deciding authorities for ECC/CNC applications and timeframe for each project category:

TABLE 7.1.4-1 SUMMARY OF THE REQUIRED DOCUMENTS, THE PROCESSING, ENDORSING AND DECIDING AUTHORITIES FOR ECC/CNC APPLICATIONS AND TIME FRAME FOR EACH PROJECT CATEGORY

		Applied to	Documents required for ECC/CNC application	Processing in responsibility/ Endorsing Official	Deciding Authority	Maximum time to grant or deny ECC Application (working days)
A: Environmentally Critical Projects	A-1: New	Co-located projects	Programmatic EIS based on an eco-profile and focused on the most critical environmental parameters	EMB Central Office (CO) Director	DENR Secretary	180 days
		Single Project	Project EIS	EMB CO Director	DENR Secretary	120 days
				EMB CO/ EIA Division Chief	EMB Central Office Director	120 days
	A-2: Existing and to be expanded (including undertakings that have stopped operations for more than 5 years and plan to re-start, with or without expansion) A-3: Operating without ECC	Co-located projects	Programmatic Environmental Performance Report and Management Plan (PEPRMP)	EMB Central Office Director	DENR Secretary	120 days
		Single Project	Environmental Performance Report and Management Plan (PEPRMP)	EMB Central Office Director	EMB Central Office Director	90 days
B: Non-Environmentally Critical But located in an ECA	B-1:New	Single Project	Project IEE or IEE Checklist if available (IEE may be followed up by full EIA if required by EMB after its review of the IEE	EMB CO/EIA Division Chief	EMB Central Office Director	60 days
				EMB Region/EIA Division Chief	EMB Regional Director	60 days
	B-2: Existing and to be expanded (including undertakings that have stopped operations for more than 5	Single Project	Environmental Performance Report and Management Plan (based on a checklist if available)	EMB Region/EIA Division Chief	EMB Regional Director	30 days
		Co-located	PEPRMP	EMB CO/EIA Division	EMB Central	60 days

	years and plan to re-start, with or without expansion) B-3: Operating without ECC	Project		Chief	Office Director	
C: Environmental Enhancement or Direct Mitigation		Co-located or Single Projects	Project Description	EMB RO/ EIA Division Chief	EMB Regional Office Director	15 days
D: Not Covered			Project Description or Proof of Project Implementation Start Prior to 1982 (if applying for CNC)	EMB CO or RO/EIA Division Chief	EMB CO or RO Director	15 days

Source: DENR; Implementation Rules and Regulations for the Philippine EIS system, DENR

3) Tasks undertaken by the Proponent and Related Organizations

In the way to support the smoothness of development plan of the PPP project development of the NAIAX in Pasay and Paranaque Municipality, which estimated will be impact to social and economy of the community on the time of land acquisition, therefore, it is needed terms of implementation in DPWH Decree No.65, DPWH Decree No.120 and No. 234 concerning to Land use procedure for public project, expressway project and Compensation of private land for DPWH project. The Project proponent is necessary to make a study of Land Acquisition and Resettlement Action Plan. The Development Plan of the PPP project, development of the NAIAX within these Municipality, the document of EIS consist of public information for land condition, land status, building, public facility, social facility, utility and the problems based on survey result to social and economic of the community in project area.

7.1.4.2 Resettlement Action Plan (RAP)

The preparation of the RAP undertook a number of steps following the requirements prescribed in the World Bank social safeguards operational manual as well as the LARRIP and IROW guidelines. This section provides the procedure followed by the preparers in cooperation with other concerned players within the DPWH.

Project Familiarization

The JICA Study Team had commissioned a subcontractor that had been tasked to prepare the RAP. Following mobilization, the subcontractor initially had organized a multi-disciplined that first familiarized themselves with the project, its features, location, alignment details, immediate environment, possible affected areas and implementation schedule. To this end, the subcontractor maintained close coordination with the JICA Study Team to secure as much information that it needs to be able to understand fully the project and on this basis, derive the possible social impact that needs to be mitigated through the preparation of the RAP acceptable to JICA Study Team and the client. Also coordination work had been done with concerned DPWH offices starting with the BOT-PMO for direction linkages with agencies outside of the department, the ESSO and IROW for technical guidance, and the NCR for parcellary surveys that determine the affected persons.

Involuntary Resettlement Policy Review

The subcontractor then: a) collect and review all pertinent Philippine laws, department orders related to land acquisition and resettlement; b) compare these guidelines with World Bank Social Safeguard policies; c) identify the gaps; and d) proposed a harmonized policy for adoption in the project. Whenever there was a disparity identified between the two sets of policies/guidelines, then harmonization was pursued where the minimum requirement will be the World Bank social safeguard policy provisions. During the course of policy review, it was established that DPWH had developed a Land Acquisition, Resettlement, Rehabilitation and Indigenous People's Policy (LARRIPP) and an Infrastructure Right-of-Way (IROW) manual that it had been using for land acquisition and resettlement work for its road projects. The LARRIPP contains a harmonized resettlement policy following most relevant Philippine laws at the same time conforms to World Bank social safeguard policies. A summary matrix had been prepared containing the above information (i.e. Philippine laws, World Bank policies, gaps, and proposed project policy), and a harmonized project policy that adopted the LARRIP guidelines had been prepared.

Public Consultation Meetings (PCM)

Public consultation meetings were initiated involving all the stakeholders with the end in view of informing them on the project, possible impacts, mitigation measures, and reaching consensus on issues that may arise as a result of project implementation. The specific activities carried out included: a) coordination work necessary to hold the PCM (which include preparation of draft invitation letters, follow-up with concerned stakeholders on the confirmation of the meeting date and venue, etc.); b) prepared presentation and other Information, Education and communication (IEC) materials to be used in the meetings; c) facilitate the conduct of the meetings in behalf of DPWH; d) documented the meeting proceedings; e) arranged for follow-up meeting/s if so necessary; f) secured a consensus with stakeholders on the "cut-off date"; and g) took note of issues raised.

Resettlement Surveys

A total of three surveys were performed which are as follows:

A. Socio-Economic Survey (SES)

The socio-economic survey (SES) of Project Affected Persons (PAPs) proceeded as follows:

i. The survey involved 100% of all non-government agency PAPs which includes landowners, informal settlers,and renters of affected structures;

ii. A standard survey questionnaire was prepared for use in the activity;

iii. The data gathered in the survey were processed using an acceptable commercial software (i.e. SPSS, MS Excel, etc.), and the resulting information generated was placed in appropriate output tables for use in the preparation of the RAP specifically the socio-economic chapter; and

iv. All surveys were done in coordination with the JICA Study Team, BOT-PMO, ESSO and the concerned local officials;

v. The holding of focus group discussion involving severely affected and vulnerable groups such as women, displaced persons, elderly,poor and disabled were originally planned. Separate FGDs was scheduled for the MIAA commercial lease holders, as well as officials of

affected government agencies. However, in view of the small number of the informal settler PAPs, the survey teams resorted to interview all of the affected households instead. The specific concerns of the PAPs were documented for use in the RAP. Among the items of interest are relocation preferences of displaced persons (i.e. cash compensation, move to government relocation sites, etc.), preferred income restoration program, cultural sensitivities that need to be observed in the selection of relocation sites/livelihood projects, and timing of shifting, and others.

vi. Efforts were made to interview the affected MIAA commercial lease holders. However, only two establishments agreed to be interviewed. In view of this event, the subcontractor no longer pursued the survey covering the commercial establishments. Affected government agencies were not included in the survey.

B. Inventory of Loss (IOL)and Tagging of Affected Assets

An Inventory of Loss (IOL) covering all assets that may be affected by the project implementation was conducted. The IOL was pursued following the declaration of the "cut-off-date" by the survey team in the presence of DPWH, barangay and PAPs representatives. The specific activities include:

i. Preparation of an IOL inventory sheet/checklist (containing a list of all possible affected assets) that was used in the survey;

ii. Identification on the ground, the relative location of the project alignment and took note of the assets that may be affected by the project implementation;

iii. After the declaration of the "cut-off date", the surveyors proceeded to do the inventory in coordination with DPWH PMO-BOT, ESSO, JICA Study team, concerned local officials and the PAPs. The surveyors provided sufficient time for information on the scheduled inventory to reach the PAPs (whose assets are to be inventoried), through the local barangay officials;

iv. The survey team insured that all structures covered are properly tagged, where the number on the sticker (PAPs code) posted on the affected structure corresponds to the number on the IOL survey sheet. As an added measure, the photograph the PAPs or representative (holding a board/paper showing the PAPs code) position in-front of the affected asset were taken for future reference.

v. The data contained in the accomplished IOL survey questionnaire were processed using an acceptable commercial software (i.e. SPSS, MS Excel, etc.).

vi. The results of the IOL were recorded in appropriate out-put tables for use in the preparation of the RAP specifically for the resettlement impact chapter and resettlement budget.

vii. The IOL database as well as the accomplished questionnaire were properly stored for later retrieval whenever requested by the JICA Study team or DPWH.

C. Valuation of Affected Assets

The activity was intended to assess and estimate the cost for the affected assets that will have to be acquired (i.e. land) or damage/destroyed (i.e. trees, crops, structures, public utilities, etc) as a result of project implementation. The activity was performed concurrent to the Inventory of Loss (IOL) and tagging operations.

i. Valuation for Affected Structures

Affected structures were assessed based on replacement cost, defined as the amount necessary to replace (if totally affected) or restore (if marginally affected) the affected structures without deduction for depreciation nor salvage value. The assessor initially determined the extent of the impact the planned project will have on the affected structure. The work was done with the use of the detailed drawings provided by the consultant engineers, as well as actual site inspection of the affected assets. Real estate property values, as well as construction related information for assets within the area, were likewise secured from the relevant local government offices as well as private construction and supply firms, such as cost for local labor, construction materials, transport and other relevant data for reference. Based on the information gathered, the valuer computed the cost of restoring the affected structures. As earlier mentioned, no depreciation nor salvage value were deducted from the recommended replacement price.

ii. Valuation for Affected Land

For affected land, compensation was based on the zonal valuation as determined by the Bureau of Internal Revenue (BIR). Here the local District tax office normally determines what is the average cost of land within a certain area based on the general land-use and its location relative to the main roads and other access infrastructures. It should be noted that the reference unit values can be rejected by the affected persons should they believe these rates are not enough, which would prompt the project owner to establish an appraisal committee that would study the local properties market and propose the fair market value for consideration of the affected persons.

In the case of the NAIAX, most of the affected land are government properties. Only the Citiland lots along the corner of Roxas Boulevard and NAIA Road are the private lands that need to be compensated. The lots at the former Camp Claudio which have not yet been awarded to beneficiaries are still considered government lands. However, the amount equivalent to the value of the affected property will be deposited by government in an escrow account (when the land acquisition will already commence), ready to be paid to the rightful land owner once the courts have made a decision.

iii. Valuation for affected Trees and Ornamentals

Following the LARRIP, the value of the affected trees and ornamental plants used in the landscaping works within the project alignment were based on the rates provided by the Department of Agriculture and Department of Environment and Natural Resources Offices responsible for valuation.

Preparation of an Income Restoration Program (IRP)

The preferred resettlement mode of the affected informal settler community is the “In-City” relocation which involves the physical transfer of their current residence to: a) adjacent open lot owned by the government specifically the MIAA; b) adjacent abandoned government building now occupied by the PNP K9 unit; or c) nearby Balagbag II property of MIAA which is within the same complex. In view of the preferred mode, the PAPs are not expected to be displaced from the existing: a) livelihood source, b) basic utilities (i.e. light, water, garbage collection); c) social support services (i.e. educational facilities, day care, etc.). In view of this condition, there is no urgent need for livelihood restoration, however, qualified member of these disturbed households may be given preferential hiring by the project’s civil works contractor during the actual construction and start-up stages.

Preparation of a Relocation Site Plan

i. In coordination with the concerned local government (barangay) public consultation meeting were held with the displaced persons to inquire on their relocation preference (i.e. self-relocation with cash compensation, shift to a government relocation facility, return to their place of origin, etc.);

ii. Coordination meetings were held with the concerned local government units of Pasay and Paranaque City, MIAA and NHA, on possible relocation sites and/or facilities near the project site, that can accommodate the potential project displaced persons. The intention of the meetings is to facilitate efforts that will lead towards the displaced persons securing suitable permanent houses/units/lots in an existing or planned relocation site within Pasay or Paranaque City. During these meetings, no concrete agreements were reached on the provision of appropriate relocation facility for the informal settler PAPs.

iii. From the discussions held with the concerned government agencies and informal settler PAPs, what is doable is the "In-City" relocation scheme where the said displaced persons will either: a) move to the adjacent open lot (former California Bus Line garage) owned by MIAA; b) move into the abandoned government building (now occupied by the PNP K9 unit); and c) move to the nearby Balagbag II property of MIAA which had been issued a proclamation for socialized housing. For these three options, there is no need to acquire the land as these are owned by government, and what is necessary is the re-establishment of the affected houses and reconnection of the utilities, drainage pipes and others.

iv. DPWH and MIAA will have to agree on the relocation of the PAPs within the MIAA property described above, and workout the legalization of the PAP's claim to the land thru the drafting and subsequent approval of the President of the Proclamation converting the land use of the said lots from institutional to socialized housing. This proclamation will be followed by the formal transfer of lots to the PAPs.

Preparation of Resettlement Action Plan

A Resettlement Action Plan (RAP) was prepared following the suggested outline prescribed for World Bank assisted projects with Involuntary Resettlement impacts (OP4.12). The draft report was subject to review by ESSO and later on JICA. The relevant comments raised by ESSO were incorporated into the RAP.

A public disclosure meeting will be conducted following the approval of the RAP to inform the PAPs of the result of the study and its recommendations. The RAP preparers will as much as practicable take into account the relevant and doable comments raised by the PAPs during the meeting.

7.2 STUDY AREA

7.2.1 Environmental Study Area

The proposed NAIAX project is located mostly in Pasay City with a small section falling within the Municipalities of Pasay and Paranaque, all within Metro-Manila. The structure will follow the existing road alignment that links the Fort Bonifacio Military Reservation to Villamor Airbase, the Domestic Airport and the NAIA, **Figure 7.2.1-1** shows project location map.

FIGURE 7.2.1-1 PROJECT LOCATION MAP

7.2.1.1 Primary Impact Area

An environmental study area for the project was delineated in **Figure 7.2.1-2.**The study area is composed of the direct impact area, the secondary impact area and the Regional Impact Area. This was defined based on the areal extent of the project activities and the potential impacts that they could generate in the area given the existing bio-physical and socio-economic conditions. The impact zones were subsequently identified corresponding to the areas that would most likely be directly and indirectly affected by the project. Primary impact area of the project is composed of **viaduct** width and 2m on both sides. Involuntary resettlement related area is Barangay 191 in Pasay city and Barangay Tambo in Paranaque City. **Figure 7.2.1-2** shows Primary Impact Area of the project.

FIGURE 7.2.1-2 PRIMARY IMPACT AREA

7.2.1.2 Secondary Impact Area

The secondary Impact Area is composed of 100m from the viaduct edge on both sides. This area will be indirectly affected by the expressway. The secondary impact area basically involves Barangay185 and 191 in Paranaque cityand Barangay Tambo in Paranaque city. **Figure 7.2.1-3** shows Secondary Impact Area.

FIGURE 7.2.1-3 SECONDARY IMPACT AREA

7.2.1.3 Regional Impact Area

Regional Impact Area would cover Pasay City and Paranaque City and neighboring cities. Also **Figure 7.2.1-3** referees administrative boundary of the project vicinity as regional impact area.

7.2.2 The Project Affected Areas

Project Site

The project is located in Pasay and Paranaque Cities all within Metro Manila which is designated as the National Capitol Region. The expressway will be installed within the country's premier airport complex that caters to international as well as domestic passengers and cargo. The complex is owned and operated by the Manila International Airport Authority (MIAA) created primarily to develop the property and manage its facilities. Adjacent to it is Villamor Airbase which is also the headquarters of the Philippine Air force and Fort Bonifactio which is also the headquarters of the Philippine Army.

The elevated expressway will traverse an area mostly within Pasay City that is owned mostly by MIAA a government owned and controlled institution. While there are areas within the complex that are declared as privately owned, these are actually portions of the MIAA property that had been released to the general public in line with the government's social housing program among others. Areas near the alignment along Barangay 183, 185, 187 have been subdivided under the supervision of the National Housing Authority (NHA) to people that have settled in the area which includes families of Philippine Air force servicemen. **Figure 7.2.2-1** contains the

parcellary map containing the owners of the properties along the road alignment that was prepared by DPWH NCR.

General Land use Along NAIAX Alignment

The project will traverse mostly institutional areas that are airport and support facilities related. In these sites are the 3 international airports, the domestic airport, runways, aircraft hangers, maintenance yards, aircraft control tower, training centers for pilots and aircraft maintenance crew, communication facilities and others. The next dominant land-use is commercial areas found mostly along the road alignment whose current users are catering to the airport patrons and aviation support operations. It is in these lots where establishments like hotels, leisure center, restaurants, cargo forwarding, postal service, airline ticketing offices, banks and others are found. Most of these commercial establishments are leasing lands owned by the MIAA who maintains its right to terminate any agreement should the government needs the land for the general public use, on which the commercial establishments have established their facilities.

The Villamor Airbase that used to occupy a big chunk of land adjacent to MIAA had given up the property fronting NAIA Terminal 3 to private commercial developers during the late 1990s in line with the government's privatization program of idle assets. PAF maintained their main headquarters and support facilities in the big lot fronting Sales Street as well as the golf course behind the privatized lot which provides the rest and recreation facility of the Air force officers and personnel. This military camp is also a significant user of the airport facilities specifically its two runways and aircraft control tower. Other park and leisure area within the MIAA property is the former "Layong Pilipino" theme park near NAIA Terminal 2 which is a miniature Philippines showing major features of the country for local and foreign visitors.

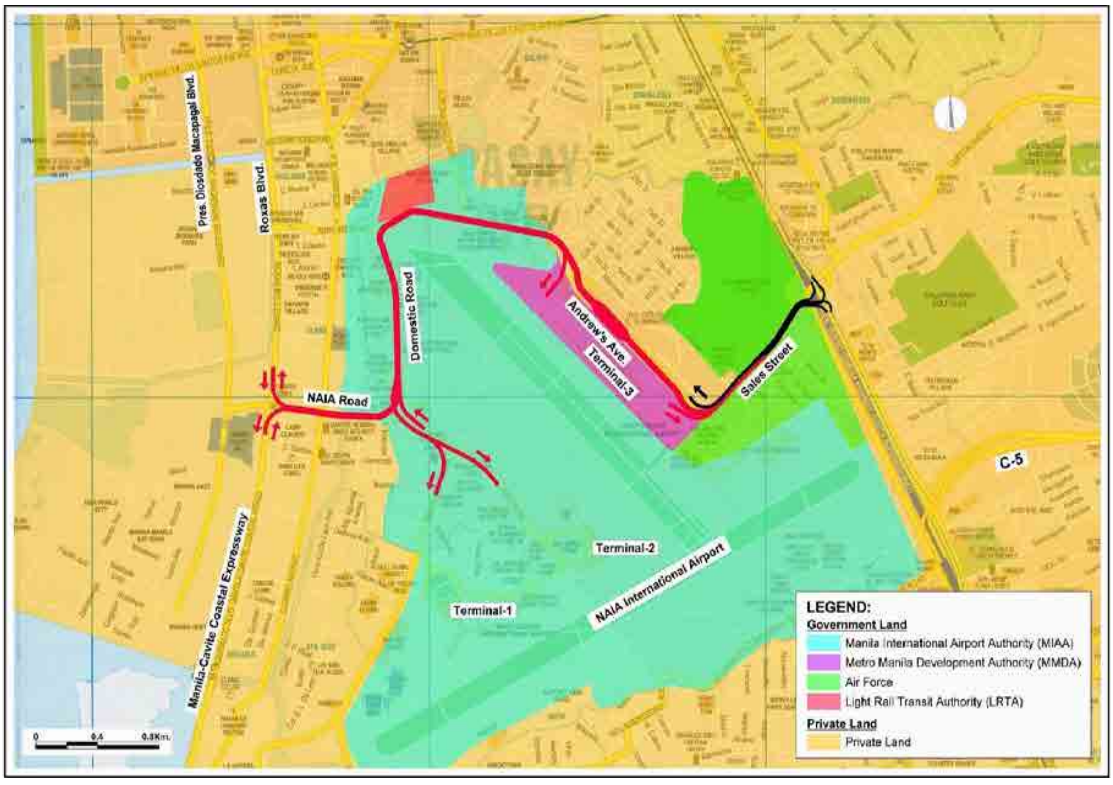


FIGURE 7.2.2-1 PARCELLARY MAP INDICATING LAND OWNERSHIP

The residential areas though significant, are mostly found away from the road alignment with the exception of a few lots along Barangay 185 and 191 in Pasay City and Barangay Tambo in Paranque City. As has been explained earlier, these lands have already been alienated from the public domain for use of settlers that had flock to the area. The titles for lots in Barangay 185 and 187 that had been distributed by NHA to the settlers is still in the name of the government agency as the beneficiaries had not yet been able to pay the minimal administrative fees. **Figure 7.2.2-2** shows the land use map of the project area.

Project Affected Areas

The alignment of the NAIAX had been so selected inorder to avoid involuntary resettlement related issues. The elevated expressway basically follows the alignment of existing roads within the MIAA complex to minimize land acquisition for ROW. However, in conformity to ASHTO guidelines for highway engineering design, avoidance of involuntary resettlement issues and application of engineering remedies to existing site constraints (i.e. ATO height restrictions, Circulo del Mundo landmark, Park & Fly parking lot, etc.) there are still a number of areas that will be still be affected by project implementation.

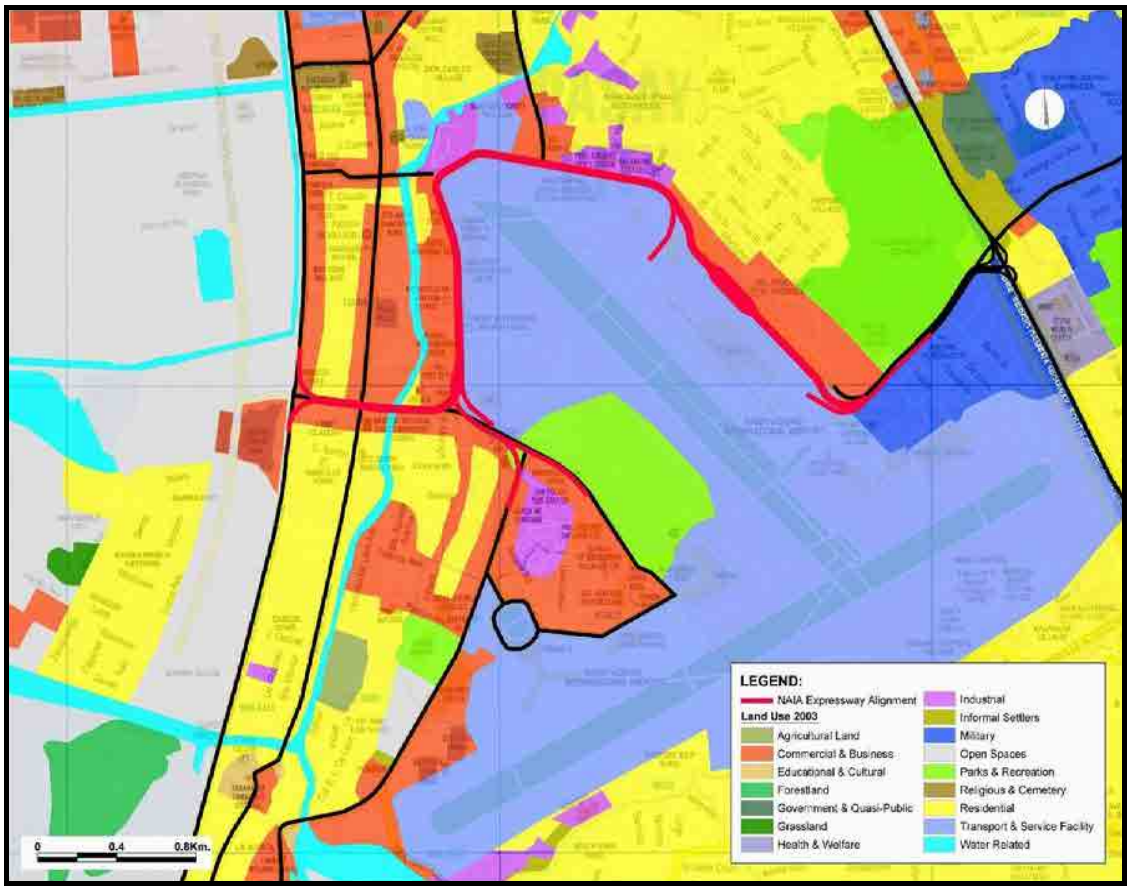


FIGURE 7.2.2-2 LAND USE MAP OF THE PROJECT AREA

The affected properties along Sales Street includes the Philippine Air force lot and fencing that are adjacent to the road near the corner of Andrews Avenue and Air force Museum (**Figure 7.2.2-3**). Along Andrews Avenue fronting the NAIA Terminal III, lot of the airport will also need to be acquired to allow the installation of the toll plaza (**Figure 7.2.2-4**). The elevated road along the Andrews Avenue section traversing Barangay 185, only a portion of the lot owned by MIAA leased to PAL for its maintenance facility would require acquisition and only a small lot fronting the abandoned NHA will be affected. Adjustments were made by the design engineers to avoid

affecting the residential, commercial and institutional establishments along Barangay 185 (**Figure 7.2.2-5**).

Towards the corner of Andrews Avenue and Domestic Road, there are a number of establishments affected starting with the LRTA raw land (government land) along Andrews Avenue and commercial establishments leasing land from MIAA at the Domestic Road (**Figure 7.2.2-6**), MIAA authorities claim that all long term lease contracts have already expired and current leases are renewed on a yearly basis. Towards the end of Domestic Road and its intersection with NAIA Road at Barangay 191, additional properties of MIAA will be affected, which includes the land and a single story helicopter company building, and an empty lot portion of which had been occupied by informal settlers. The alignment tried to avoid the more expensive Park & Fly multi-story parking lot and a gasoline station at the corner of Domestic and NAIA roads. (**Figure 7.2.2-7**).

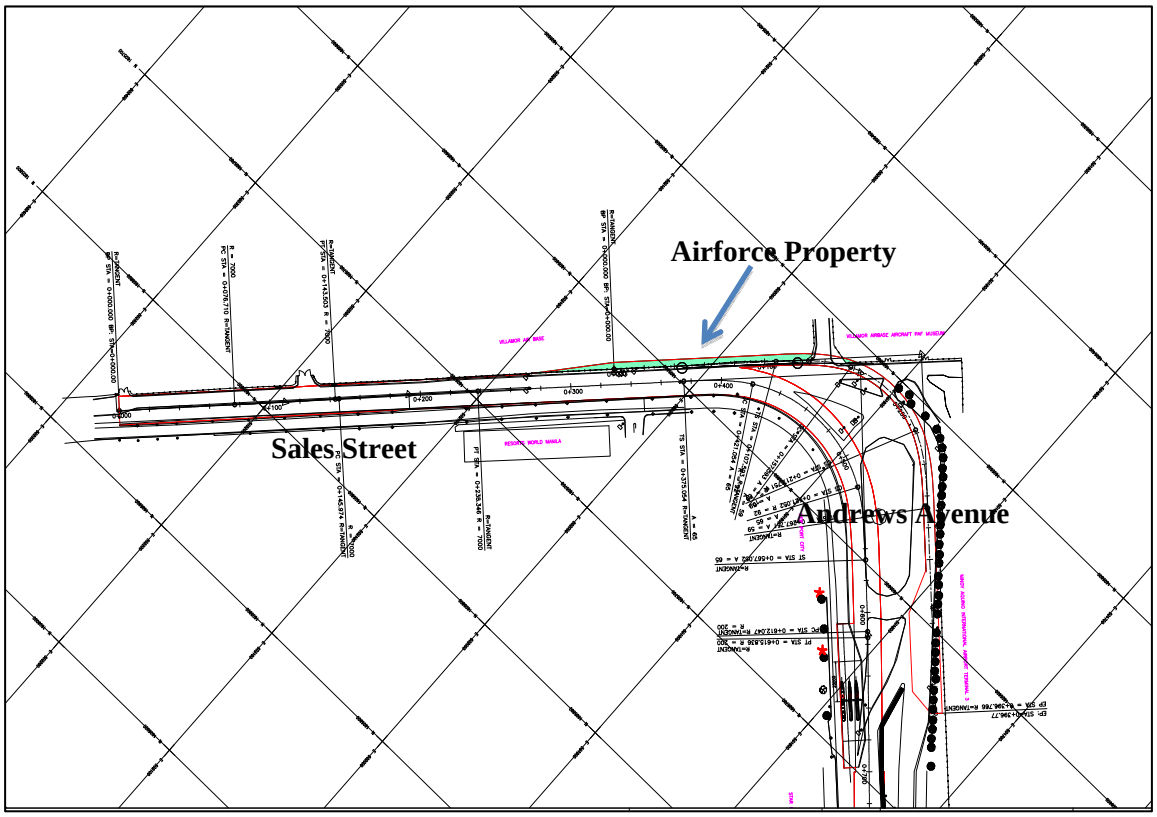


FIGURE 7.2.2-3 AFFECTED AREAS ALONG SALES STREET

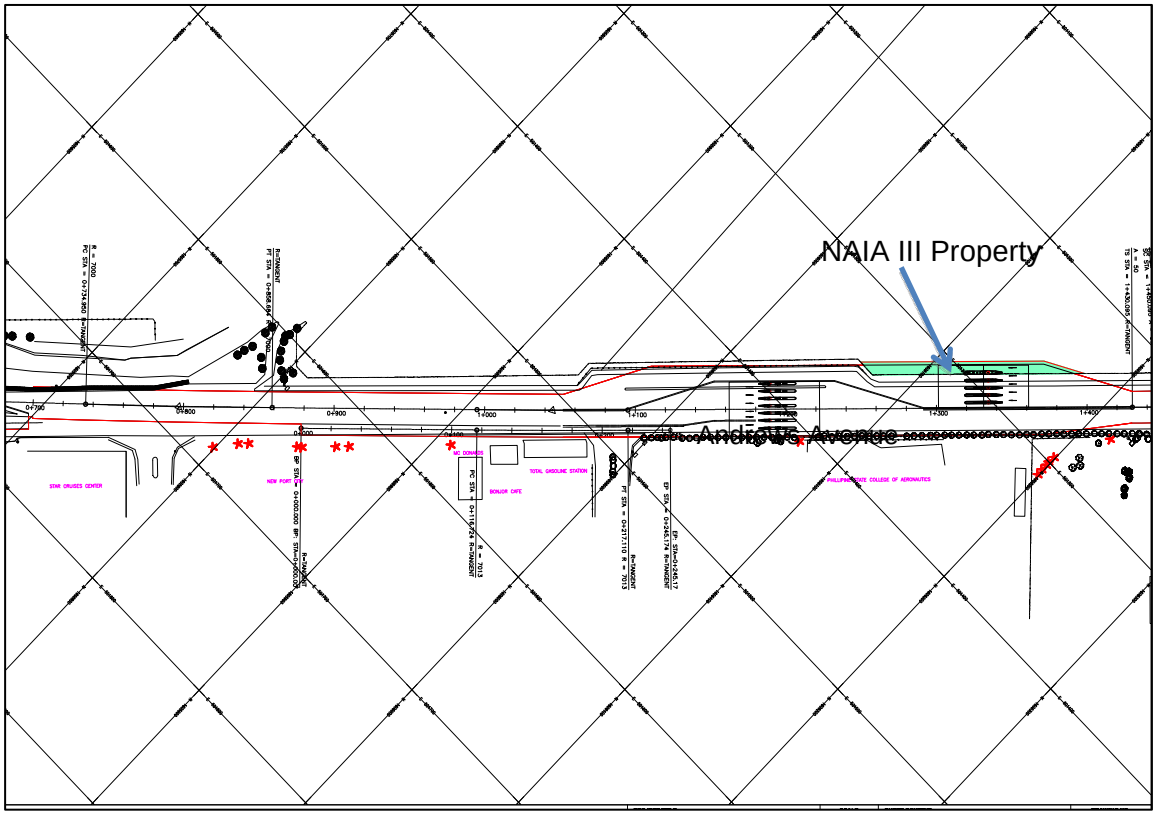


FIGURE 7.2.2-4 AFFECTED AREAS ALONG ANDREWS AVENUE FRONTING NAIA III

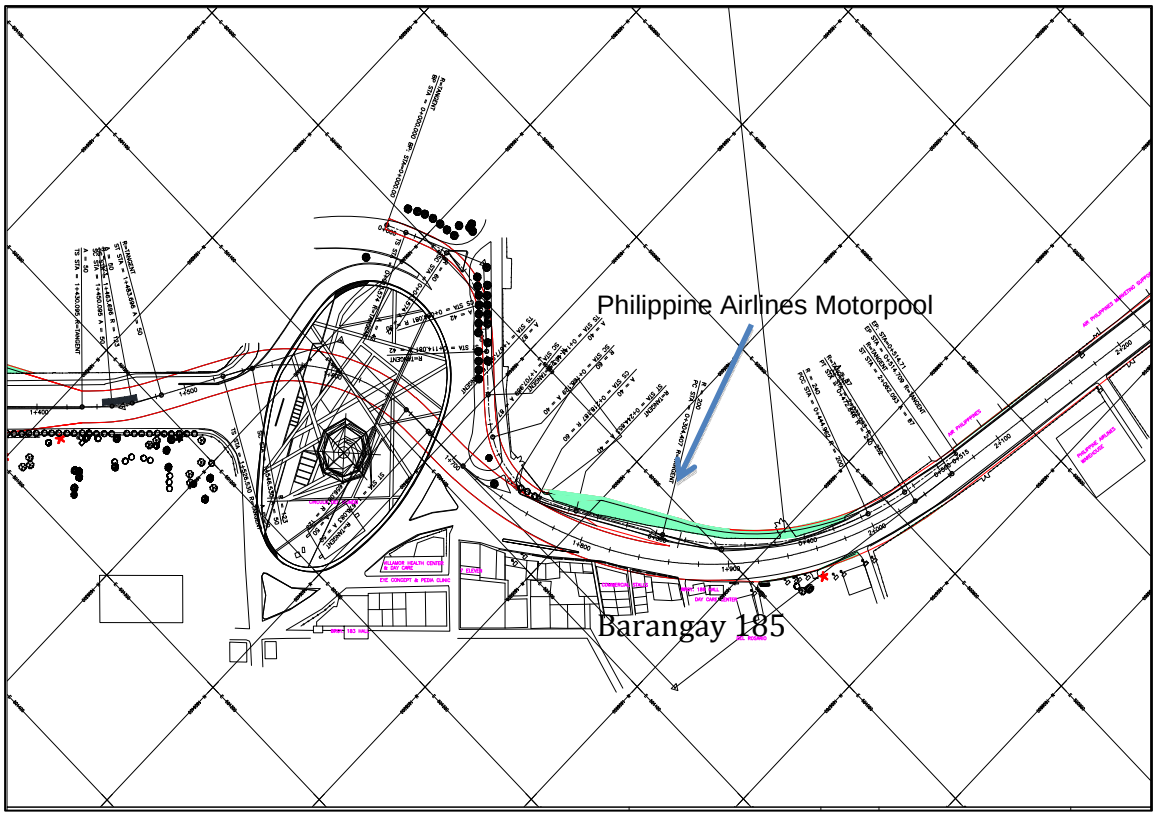


FIGURE 7.2.2-5 AFFECTED AREAS ALONG ANDREWS AVENUE AT BARANGAY 185

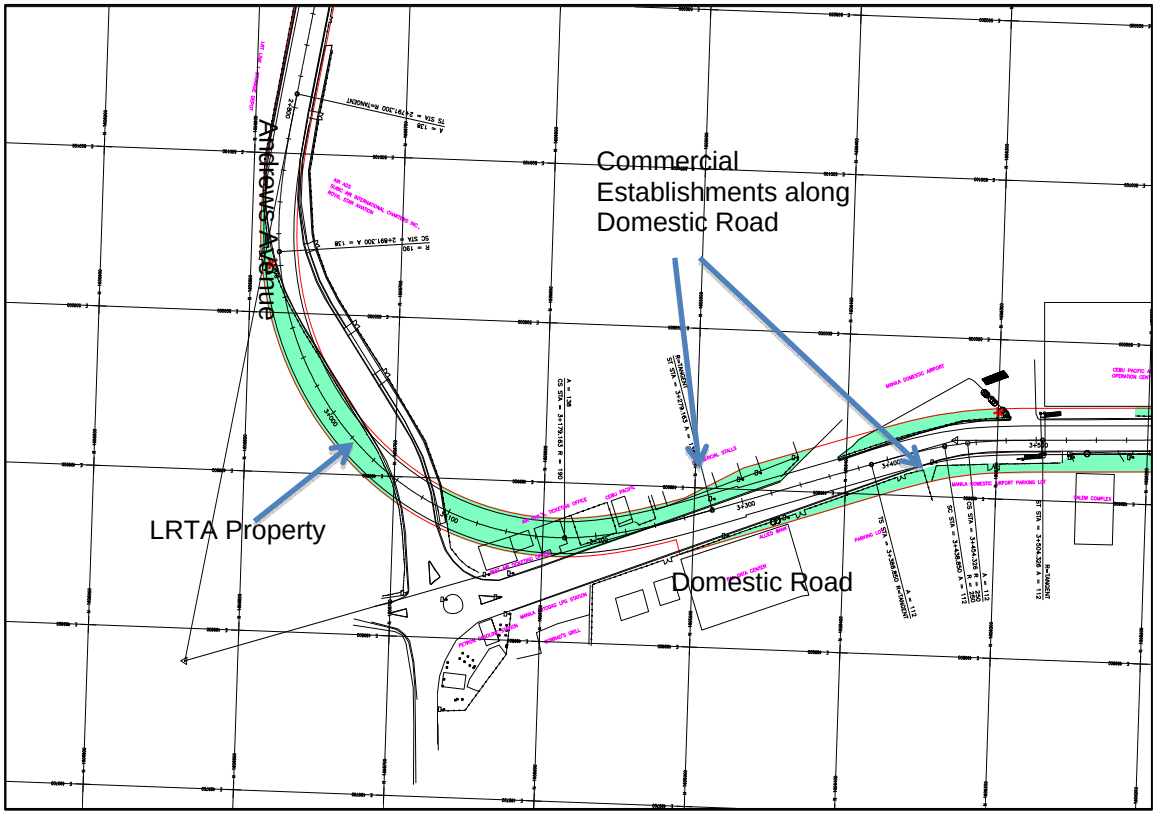


FIGURE 7.2.2- 6 AFFECTED AREAS ALONG ANDREWS AVENUE AND DOMESTIC ROAD INTERSECTION

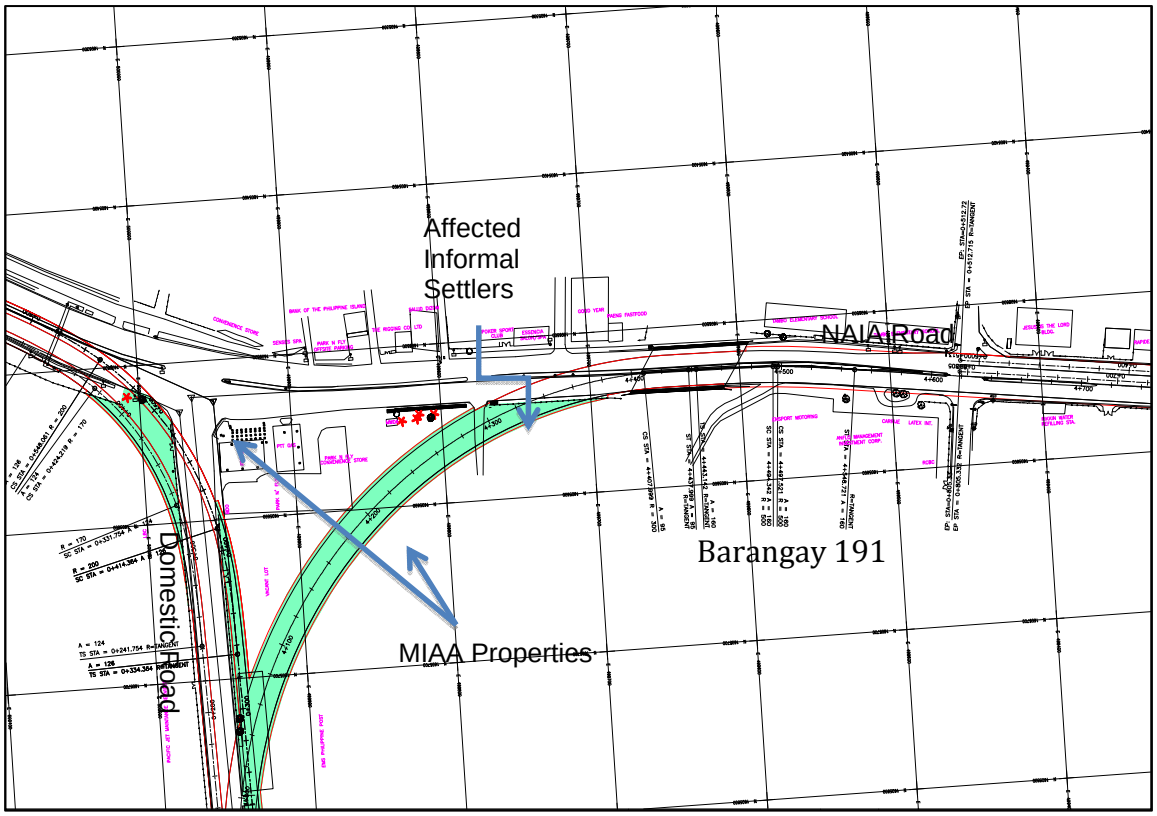


FIGURE 7.2.2-7 AFFECTED AREAS ALONG DOMESTIC ROAD AND BARANGAY 191

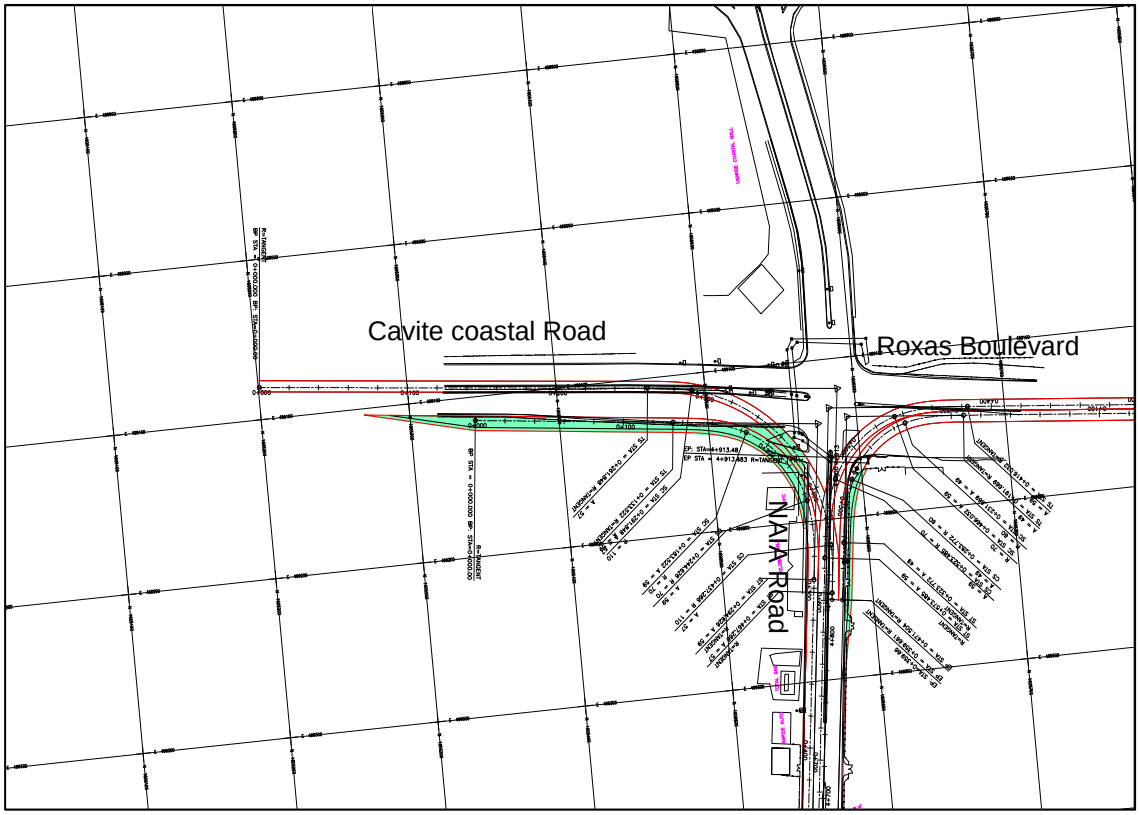


FIGURE 7.2.2-8 AFFECTED AREAS ALONG NAIA ROAD AND CAVITE COASTAL ROAD

Finally at the end of NAIA Road, an empty lot fronting the road near the corner of Roxas Boulevard, as well as another plot fronting the Cavite Costal Road and adjacent to NAIA road will be affected. The affected idle plot fronting the Coastal Road is part of a government relocation site, while the affected fence belongs to the Coastal Road facility (**Figure 7.2.2.1-8**).

7.2.3 Project Rationale

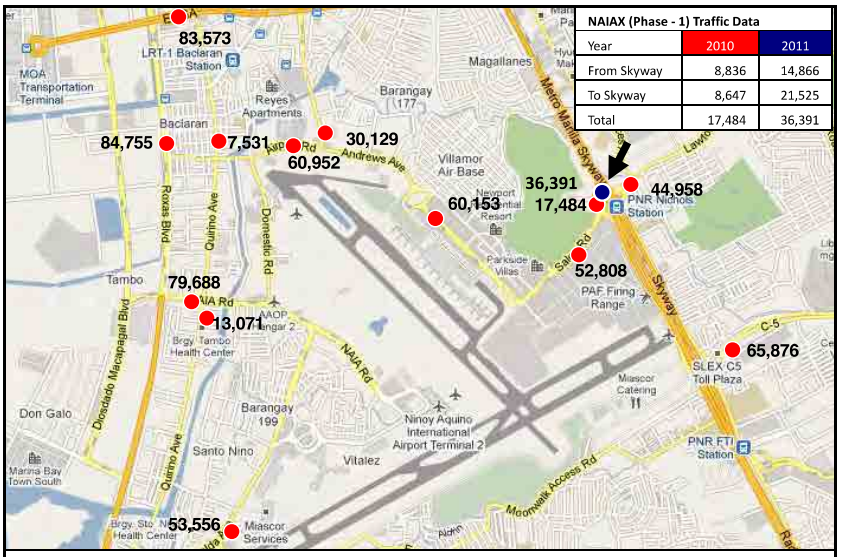
The Ninoy Aquino International Airport Expressway (NAIAX) had been conceived to relieve the chronic vehicular traffic congestion within the country's premier airport by providing a convenient access facility thereby allowing the smooth flow of people, cargo and services not only to and from the airport, but also through traffic coming from the North to the South of Manila and vice versa that can use the expressway as an alternative route.

At present, the volume of vehicular traffic that use the major roads within the MIAA complex had reach amounts that had significantly resulted in longer travel time for airport bound passengers and through traffic commuters passing through the area. Vehicular traffic count in Sales Road conducted in 2010 had indicated that there were 17,484 average annual daily traffic (AADT), which is projected to swell to 36,391 AADT in 2011. The traffic counts in other streets within the MIAA complex include 60,153 at Andrews Avenue fronting NAIA Terminal III; 60,952 at Andrews Avenue fronting the LRTA property; and 79,688 at NAIA Road fronting the Tambo Elementary School.

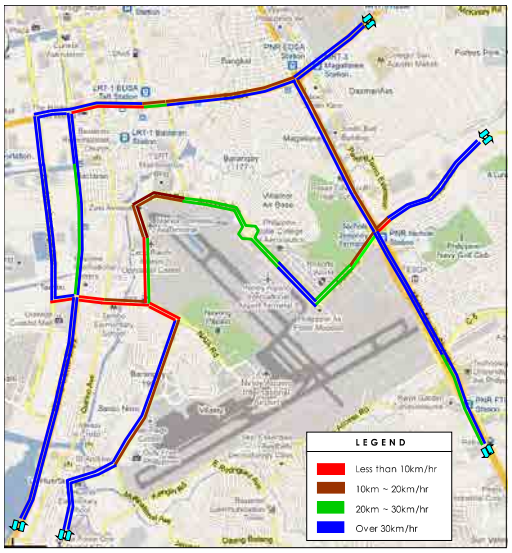
The current traffic volume as described above, greatly influence the speed at which the vehicles using the roads within the MIAA complex would have. Using the 2010 traffic volume, It is estimated that vehicle speed at the Sales Road will be between 10-30 kph; while the portion of Andrews Avenue before NAIA Terminal III from Sales Road will have over 30 kph but this

would slow down to between 20-30 kph after the airport towards Tramo Road. Vehicle speed at the stretch of Andrews Avenue after Tramo Road that connects to Domestic and Airport road will have a slow 10-20 kph; while NAIA Road will have an even slower traffic flow at less than 10 kph. **Figure 7.2.3-1** shows the vehicular traffic count along critical areas within the MIAA complex and adjacent areas, as well as the estimated travel speed.

Whereas, road widening works have been pursued by DPWH URPO within the last 5 years, to held relieve the traffic problem within the project area, the impact of the remedial measure had slowly been overcome by the ever increasing number of cars, vans, trucks, and buses daily plying the route. Should the chronic vehicular traffic congestion continue to be unchecked, then travel time to get through the Philippine's premier gateway to the world will be so long that it may be more convenient that the facility will have to be relocated to another site such as the Diosdado Macapagal International airport in the former American Clark Air force base in Angeles City, Pampanga, Central Luzon, about 4 hours drive from Manila.



Daily Traffic Volume（2010）



Averaged Traveling Speed(2010）

FIGURE 7.2.3-1 DAILY TRAFFIC VOLUME AND AVERAGE SPEED AT MIAA COMPLEX

7.2.4 State of Natural Environment

7.2.4.1 Meteorology

The project is located inside Metro Manila where the climate belongs to Type 1 of the Modified Coronas Classification. This type has two pronounced dry (November to April) and wet season (May to October). The average rainfall is 1849.2 mm. The wettest period occurs during the months of June to October. The driest period extends from January to April with mean monthly rainfall of less than 20mm. February is the driest month with only 2.9mm of mean monthly rainfall. The mean annual number of rainy days is 113. In the months of June to October, the number of rainy days ranges from 15 days in June to 20 days in August and 13 days in October. The driest months from January to April with mean monthly number of rainy days ranges from 1 to 2 days.

The mean annual ambient air temperature is 27.4˚C with mean monthly values from 25.6˚C in May. The warmest month is April with a mean maximum temperature of 34.3˚C while the coldest month is February with a mean monthly temperature of 21.2˚C. The annual mean maximum daily temperature is 31.7˚C while the mean annual minimum is 23.2˚C.

The mean annual relative humidity is 75%. It is highest in August and September with a monthly mean of 83% and lowest in April at 66%. The high values of relative humidity in the wet months of June to October are due to high moisture content in the southwest monsoon air-mass while the slightly high relative humidity in December and January are due to low air temperatures.

The wind directions generally follow the synoptic-scale monsoon circulation. During the months from June to August, the southwest monsoon is most intense while in the months from December to February northeast monsoon prevails. An average of about 19 tropical cyclones of various intensities usually passes the country from 2005 to 2009 and its area of responsibility and an average of eight (8) tropical cyclones were observed made landfall in the country.

7.2.4.2 Hydrology

Two natural waterways would be intersected by the proposed elevated road, namely the Paranaque River that empties into the Manila Bay and the Maricaban Creek, which is a tributary of the Paranaque River. The adjacent area along the Paranaque River and the Estero Tripa de Gallina are flood prone. This occurrence has been blamed on siltation and indiscriminate dumping of garbage and other solid wastes into the waterways. Efforts have been pursued by the government in dredging the river of its sediments and the relocation of the informal settled families.

The development of the viaduct expressway, however, is not expected to affect the two natural waterways showing in **Figure 7.2.4-1**. Metro Manila is highly prone to flooding. The flooding map of Metro Manila indicates that the Domestic Road section of the proposed elevated expressway is prone to flash flooding during thunderstorms or heavy downpours and also seasonal flooding due to overtopping of the Paranaque River banks during rainy season. **Figure7.2.4-2**shows location map of flood discharge system.

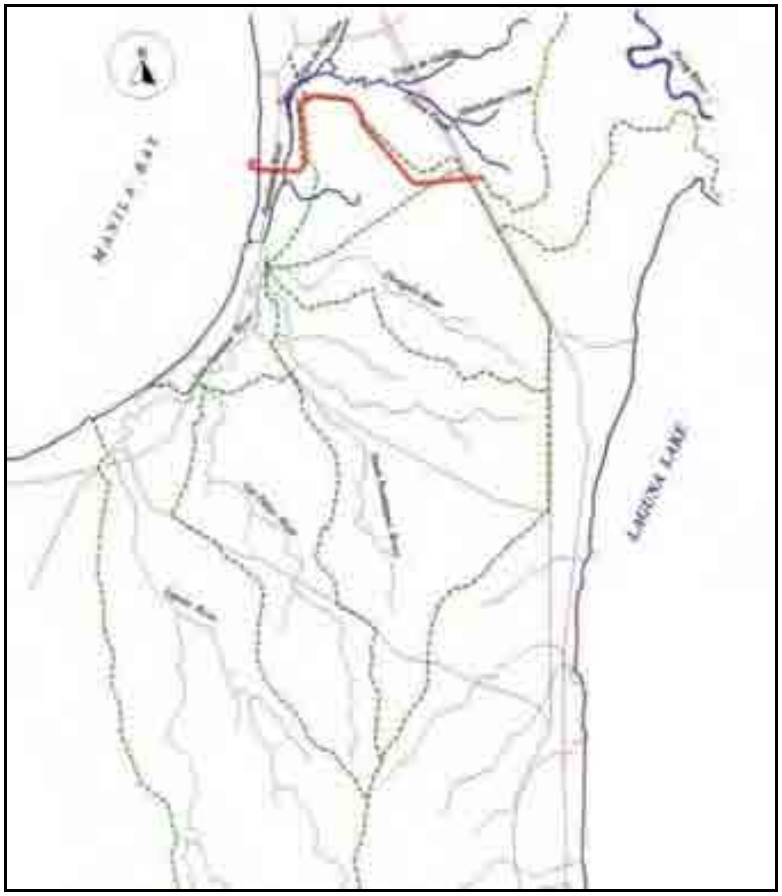


FIGURE 7.2.4-1 RIVER SYSTEM OF THE CATCHMENT

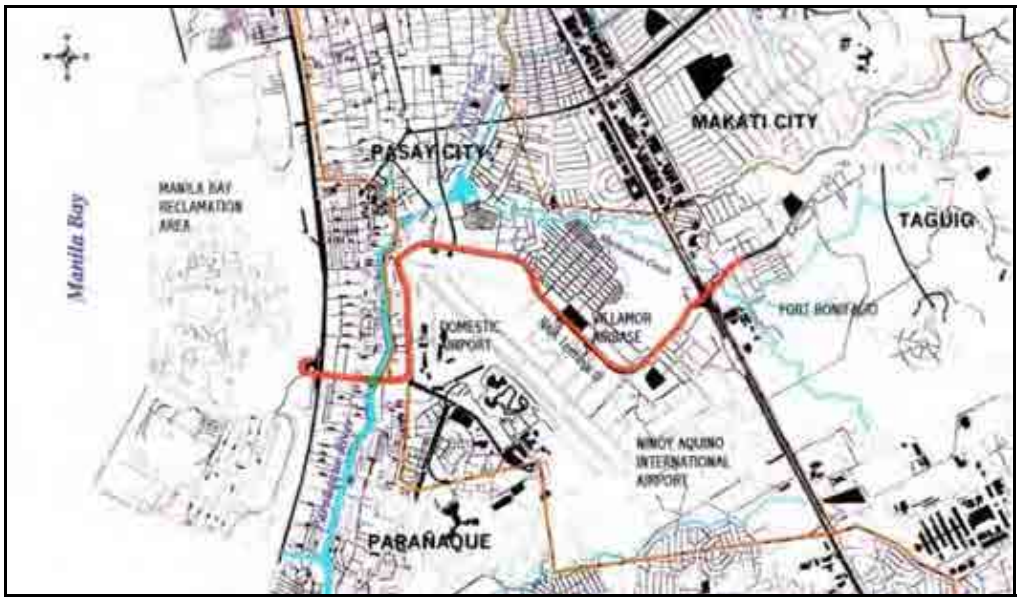


FIGURE 7.2.4-2 FLOOD DISCHARGE LOCATION MAP

7.2.4.3 Topography and Geology

The project area lies within the southernmost edge of the Central Luzon Basin Physiographic Province of the Philippines. It lies almost east-west across from the reclaimed coastline of Manila

Bay to the west, trending along the deltaic plain of Pasig River and finally ramps over the Guadalupe Plateau to the east.**Table 7.2.4-3** shows topographic, map of the region.

The nearest point of the proposed elevated expressway is within (Fort Bonifacio in Taguig City) lies about three kilometers west of the West Marikina Valley Fault surface trace. The regional tectonic setting of the greater Metro Manila area makes it prone to seismic events emanating from two major earthquake generators such as the Manila Trench to the west and Philippine Fault Zone to the east. The graben-bounding faults on both sides of the valley, termed West Marikina Valley Fault and the East Marikina Valley Fault have been recognized by PHIVOLCS to be potentially active. Two other earthquake generators, the Casiguran Fault and the Lubang Fault are also potential sources of seismicity.

The project where unconsolidated alluvium and poorly cohesive soils occur has the geological conditions that may induce severe ground shaking and liquefaction. Based on the Shaking and Surface Rupture Hazard Map of Metro Manila areas, the project site lies within the average severity hazard zone. The reclaimed land along the coastal margin falls within the above average severity of ground shaking hazard classification. Also, within the Liquefaction Hazard Zone Map of PHIVOLCS the project site falls within the moderate to high liquefaction potential or hazard zone, particularly the reclaimed areas along Manila Bay coastal margin.**Table 7.2.3-4** shows geological map of the region.

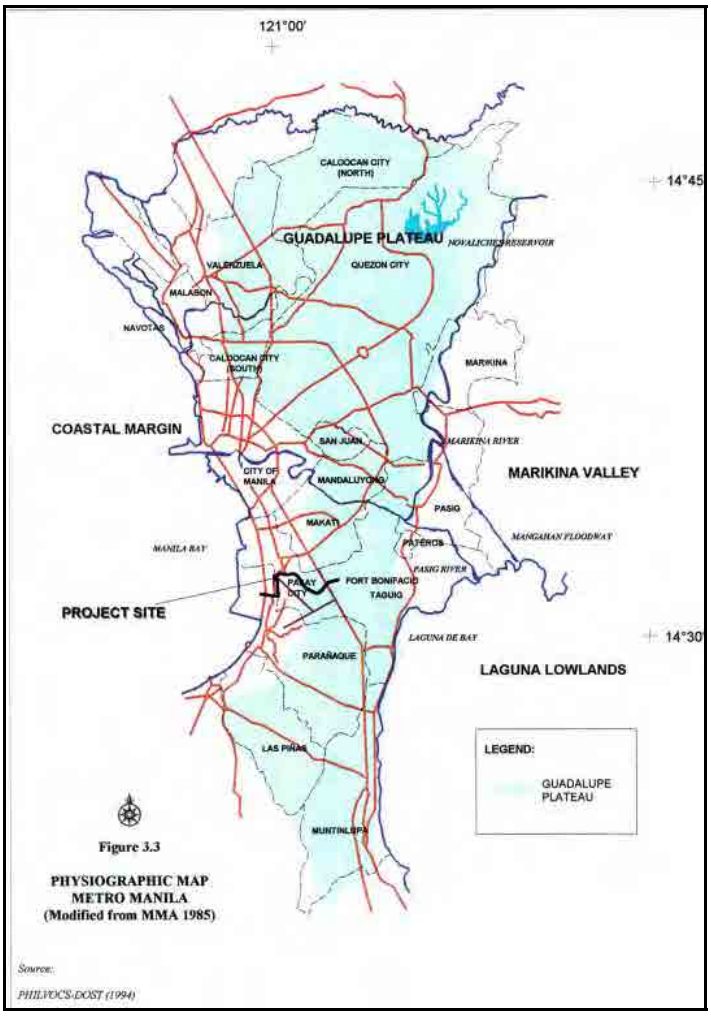


FIGURE 7.2.4-3 TOPOGRAPHIC MAP OF THE REGION

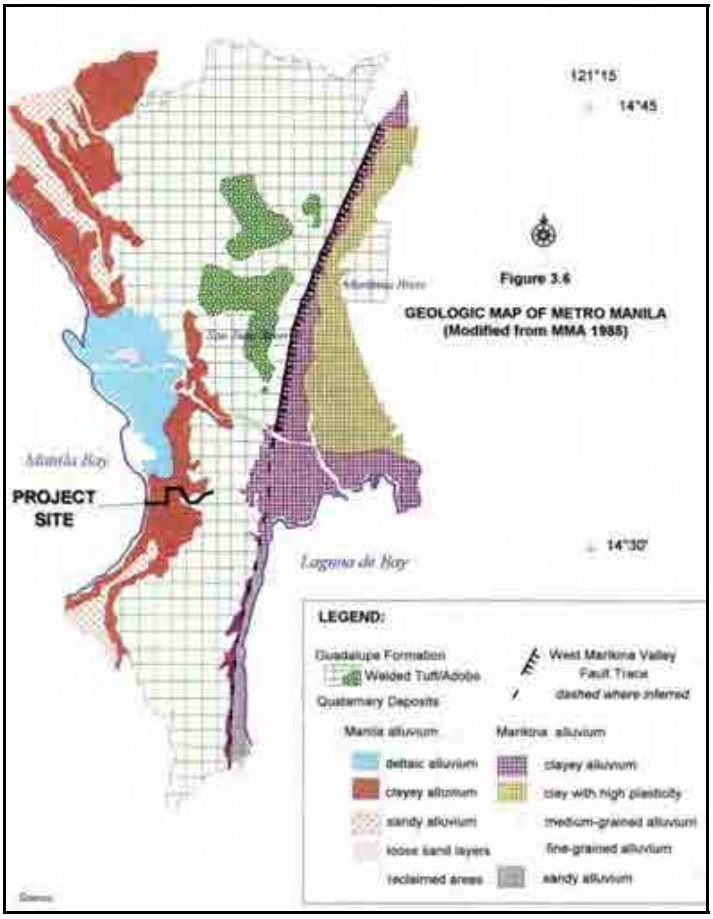


FIGURE 7.2.4-4 GEOLOGICAL MAP OF THE REGION

7.2.4.4 Ecosystem

Since the project is located in an urban setting, most of the flora and fauna associated with the area are human influenced such that the natural ecosystem is replaced by artificial human habitations. The vegetation along the project area is no longer natural, but has been planted as part of the urban landscaping and greenery along the road network.

Since the faunal species along the area are mostly synanthropic associated with urban ecosystems such as domesticated dogs and cats, pests such as rodents and avian species commonly found within such areas, no formal/actual inventory or sampling was done. At the same time, the proposed project is not expected to have any significant impact on this particular biological aspect and in fact, has not been identified as an issue/concern during the scoping process.

7.2.4.5 Protected Areas

The project area is located in an urban setting nearby NAIA and harbor area of Pasay and Paranaque cities in Metro Manila, National Capital Region. No protected area is exist vicinity of the project area, most of the flora and fauna associated with the area are human influenced such that the natural ecosystem is replaced by artificial human habitations. The vegetation along the project area is no longer natural, but has been planted as part of the urban landscaping and greenery along the road networks; therefore no such kinds of protected fauna and flora species are existed.

7.2.4.6 Flora & Fauna

Terrestrial Fauna: Minimal faunal species, mostly domesticated animals (i.e. dogs, cat, and others), have been reported by respondents in the Secondary Impact Area. These animals have been serving mostly as house pets in the residential areas. Other fauna species that have adapted to the urban environment (i.e. rats, birds, in sects and others) have likewise been observed.

Terrestrial Flora: Minimal amount of vegetation can be seen growing within the vicinity of the entire proposed road alignment. These can be classified as trees,shrubs,and grasses.

The tree species include among others Narra (Prerocarpus indicus),mahogany (Swietenia mahogoni), rain-tree (Samanea saman), ipil-ipil (Leucaena leucocephala), golden shower (Cassia fistula),coconut palm (Cocos nucifera) and others. This vegetation may have been planted along the roadside primarily for ornamental purpose shown in **Table 7.2.4-1**. Some of the trees may already be more than 40 to 60 years old. Shrubs such as palms, bougainvillea, arrow-trees , and others have a1so been planted along the road side and on the islands of MIA Road-Sunset Drive for ornamental purposes. Minimal amount of ornamentals can be seen along the other segments of the road alignment.

TABLE 7.2.4-1 FLORA SPECIES INVENTORY

Local/Common Name	Scientific Name	Local/Common Name	Scientific Name
Tree species		**Fruit trees**	
Acacia	Smanea saman	Banana	Musa spp
Falcata	Albezia falcataria	Santol	Sandiricum koetjape
Mimosa	Acacia auriculiformis	Papaya	Carica papava
Narra	Pterocarpus indicus	Atis	Annona squamata
Mahogany	Swietenia mahogani	Caimito/ Star Apple	Chrysophy//um caimito
Ipil-Ipil	Leucaena luecocephala	Ornamental plants	
Yemane (Gmelina)	Gmelina arborea	Bougainvilla	Bougainvi//ea sp
Agoho	Casuarina equisitifolia	Gumamela	Hibiscus rosa-chinensis
Talisay	Terminalia cattapa	Kalachuchi	Plumeria acuminata
Isis	Ficusu ulmifolia	Santan	Ixora sp
Balete	Ficus balete	**Garden plants**	
Mabolo	Dispvrus philippensis	Malunggay	Moringa oleifera
Eucalyptus	Eucaliptus camaldolensis	cassava	Manihot esculenta
Bamboo	Bambusa sp	**Grasses**	
Fruit trees		Cogon	Imperata cylindrica
Coconut	Cocos nucifera	Talahib	Saccharum spontaneum
Mango	Mangifera indica.	Carabao grass	Axonopus compreessus
Sampaloc / Tamarind	Tamarindus indica	Makahiya	Mimosa pudica

Source:

7.2.5 Socio-Economic Conditions

7.2.5.1 Regional Impact Area

The regional impact area (RIA) of the NAIAX is Metro Manila, the political, economic, education, business, industrial and cultural center of the Philippines. Commonly called the National Capital Region, this administrative region is where the seat of government is located and serves as the venue for the head offices of most Philippine government agencies, as well as foreign embassies, international organizations and business establishments both local and foreign in the country. Improvement in the vehicular traffic conditions in the Philippine's premier gateway to the world can have a beneficially affect to the whole Metro Manila area as well as the country as a whole.

7.2.5.1.1 Land-use

The National Capital Region has a total area of about 63,300 hectares which is 0.2% of the total land area of the Philippines (30 million hectares). Of the 17 cities and municipality that compose the NCR, Quezon City has the biggest land area at 17.171 hectares (27.1%), followed by Caloocan City, and Pasig City at 5,580 (8.8%) and 4,846 (7.7%) hectares respectively. Paranaque and Pasay City which are traversed by Phase II of the NAIAX, has a total land area of 4,657 (7.4%) and 1,397 (2.2%) hectares, respectively. **Table 7.2.5-1** contains the breakdown of NCR component cities and municipality's land area.

TABLE 7.2.5-1 LAND AREA OF METRO MANILA COMPONENT CITY / MUNICIPALITY

	City/Municipality	Area (hectares)	%
1	Manila City	2,498	3.9%
2	Caloocan City	5,580	8.8%
3	Pasay City	1,397	2.2%
4	Makati City	1,831	2.9%
5	Mandaluyong City	929	1.5%
6	San Juan	595	0.9%
7	Quezon City	17,171	27.1%
8	Muntinlupa City	3,975	6.3%
9	Paranaque	4,657	7.4%
10	Pasig City	4,846	7.7%
11	Marikina City	2,152	3.4%
12	Taguig	4,521	7.1%
13	Pateros	1,040	1.6%
14	Las Pinas	3,269	5.2%
15	Malabon	3,264	5.2%
16	Navotas	894	1.4%
17	Valenzuela	4,702	7.4%
	Total	63,321	100.0%

Source: MMDA

A paper prepared by the Philippine Center for Development Studies in 2000 had indicated that NCR has a predominantly urban environment. About one third (65%) of the land is devoted to residential areas, more than 10% is for institutional and slightly less than 10% is used for commercial purposes. The large tracks of land within and at the suburbs had been developed for residential area that caters to the big population of the metropolis estimated at 11 million (2009). Similarly, it is in Metro Manila where the business/commercial districts are located in cities such as in Manila, Makati, Mandaluyong, Pasig, and Taguig. The land-use of project area had been discussed earlier sections. **Table 7.2.5-2** contains the land use of Metro Manila.

TABLE 7.2.5-2 LAND USE OF METRO MANILA*

Landuse	Area	%
Residential	41,158.7	65
Commercial	5,065.7	8
Industrial	1,899.6	3
Institutional	6,712.0	11
Utilities	2,532.8	4
Agricultural	2,786.1	4
Open Space	2,532.8	4
Forest Land/Parks	633.2	1
Total	63,321.0	100

Source: Land Use Planning in Metro Manila and the Urban Fringes: Implications of the Land and Real Estate Market, Philippine Institute for development Studies, June 200

7.2.5.1.2 Demography

7.2.5.1.2.1 National Demographic Profile

The National Statistics Office (NSO) that had conducted the national census on 01 August 2007, reported that the total Philippine population is about 88.57 million with an average annual growth rate of 2.04 percent. This figure had exceeded the projected average annual population growth rate for the period 2005 to 2010 placed at 1.95 percent by the 2000 Census of Population and Housing. **Table 7.2.5-3** shows the country's population based on census conducted in year 1995, 2000 and 2007. This data show that from year 2000 to 2007, there was an increase of 12.07 million Filipinos within the span of seven (7) years, while from 1995 to 2000, the increase was at 9.88 million. **Table 7.2.5-4** presents the average annual population growth rate in the Philippines.

TABLE 7.2.5-3 COMPARATIVE PRESENTATION OF THE PHILIPPINE POPULATION FROM 1995 TO 2007

Census Year	Census Date	Philippine Population
2007	August 1, 2007	88.57 million
2000	May 1, 2000	76.50 million
1995	September 1, 1995	66.62 million

**Source: National Statistics Office*

TABLE 7.2.5-4 COMPARATIVE PRESENTATION OF THE COUNTRY'S AVERAGE ANNUAL POPULATION GROWTH RATE FROM 1960 TO 2007

Reference Period	Average Annual Population Growth Rate in the Philippines
2000-2007	2.04 %
1990-2000	2.34 %
1980-1990	2.35 %
1970-1980	2.75 %
1960-1970	3.01 %

**Source: National Statistics Office*

The top three (3) regions with the highest population based on the 2007 Population Census are the Calabarzon (Region IV-A) with 11.74 million, NCR (Metro Manila) with 11.5 million and

Central Luzon (Region III) with 9.72 million. The combined population in the said regions comprised more than one-third (37.3 percent) of the total population in the Philippines. Aside from the ARMM, the three regions likewise have the biggest growth rate between the years 2000 – 2007. **Table 7.2.5-5** contains the population details.

TABLE 7.2.5-5 TOTAL POPULATION AND ANNUAL POPULATION GROWTH RATES BY REGION BASED ON POPULATION CENSUSES 1995, 2000, AND 2007

Region/Province	Total Population			Annual Population Growth Rate (%)		
	1-Aug-07	1-May- 00	1-Sep-1995	2000-2007	1995-2000	1995-2007
PHILIPPINES	88,574,614	76,506,928	68,616,536	2.04	2.36	2.16
National Capital Region	11,553,427	9,932,560	9,454,040	2.11	1.06	1.70
Cordillera Administrative Region	1,520,743	1,365,220	1,254,838	1.50	1.82	1.62
Region I - Ilocos	4,545,906	4,200,478	3,803,890	1.10	2.15	1.51
Region II - Cagayan Valley	3,051,487	2,813,159	2,536,035	1.13	2.25	1.56
Region III - Central Luzon	9,720,982	8,204,742	7,092,191	2.36	3.17	2.68
Region IV-A - Calabarzon	11,743,110	9,320,629	7,750,204	3.24	4.03	3.55
Region IV-B - Mimaropa	2,559,791	2,299,229	2,033,271	1.49	2.67	1.95
Region V - Bicol	5,109,798	4,674,855	4,325,307	1.23	1.68	1.41
Region VI - Western Visayas	6,843,643	6,211,038	5,776,938	1.35	1.56	1.43
Region VII - Central Visayas	6,398,628	5,706,953	5,014,588	1.59	2.81	2.07
Region VIII - Eastern Visayas	3,912,936	3,610,355	3,366,917	1.12	1.51	1.27
Region IX - Zamboanga Peninsula	3,230,094	2,831,412	2,567,651	1.83	2.12	1.94
Region X - Northern Mindanao	3,952,437	3,505,708	3,197,059	1.67	1.99	1.79
Region XI - Davao	4,156,653	3,676,163	3,288,824	1.71	2.41	1.98
Region XII - Socsargen	3,829,081	3,222,169	2,846,966	2.41	2.69	2.52
Caraga Region	2,293,480	2,095,367	1,942,687	1.25	1.63	1.40
Autonomous Region in Muslim Mindanao	4,120,795	2,803,045	2,362,300	5.46	3.73	4.78

**Source: NSO, 2007*

7.2.5.1.2.2 Demographic Profile of NCR (Metro Manila)

Metro Manila has a total population of 11,553,427 million as of August 1, 2007. Of the 32 highly urbanized cities in the country having more than 1 million populations, among them are in NCR which includes the following cities: Quezon City (2.68 million), City of Manila (1.66 million), and Caloocan City (1.36 million). Of the two cities traversed by NAIAX phase II, Parañaque City has a bigger population of 552,660 while Pasay City has 403,064. The other cities within NCR with the highest population includes Taguig City (613,343), Makati City (510,383), Las Piñas City (532,330), Pasig City (617,301), and Marikina (424,610). All of these areas are located with proximity to NAIAX. With respect to population growth rate, Taguig City had registered to have the highest at 3.82% over the period between 2000-2007, which is followed by Caloocan (3.06%), Paranaque (2.88%) and Pasig (2.80%). It is worth noting that the start of NAIAX Phase I is in Taguig City with the highest population growth rate, while the end of NAIAX Phase II is in Paranaque City also having the 3rd highest growth rate. **Table 7.2.5-6** contains the population data for all the component cities and municipality of NCR.

TABLE 7.2.5-6 TOTAL POPULATION, TOTAL NO. OF BARANGAYS, POPULATION DENSITY AND ANNUAL POPULATION GROWTH RATES IN METRO MANILA

Local Government Unit	Total No. of Bgys.	Total Population	Population Density (persons per km^2)	Annual Population Growth Rate (2000-2007)
PHILIPPINES	41,975	88,574,614	-	2.04
NCR (Metro Manila)	1,695	11,553,427	18,246	2.11
City of Manila	896	1,660,714	43,079	0.68
Mandaluyong City	27	305,576	27,138	1.29
City of Marikina	16	424,610	12,500	1.14
City of Pasig	31	617,301	19,913	2.80
Quezon City	142	2,679,450	16,630	2.92
City of San Juan	21	125,338	20,907	0.87
Caloocan City	188	1,378,856	25,855	3.06
City of Malabon	21	363,681	23,076	0.98
City of Navotas	-	245,344	22,780	0.87
City of Valenzuela	32	568,928	12,762	2.21
City of Las Piñas	20	532,330	12,815	1.65
City of Makati	33	510,383	18,654	1.91
City of Muntinlupa	9	452,943	9,699	2.48
City of Parañaque	16	552,660	11,589	2.88
Pasay City	201	403,064	21,214	1.77
Taguig City	18	613,343	12,810	3.82
Pateros	10	61,940	29,495	1.05

Source: NSO, 2007

7.2.5.1.2.3 Demographic Profile of Pasay City

Based on the 2007 Census, Pasay City's population is at 403,064 with an average population annual growth rate of 1.77 percent. While it has the 2nd lowest population growth rate, the City is one of the most congested localities in NCR with a population density of 21,214 persons per square kilometer. Pasay City has 201 barangays and ranks 2nd among the cities in Metro Manila with the largest number of barangays. Out of these barangays, Bgy. 183, and Bgy.184 have the biggest population. These barangays are included in the project's influence areas.

7.2.5.1.2.4 Demographic Profile of Parañaque City

The results of the 2007 Population Census show that the City of Parañaque has a total population of 552,660 with an annual growth rate of 2.88 percent which is much higher than the NCR's annual population growth rate of 2.11 percent. Based on the Socio-Economic Profile of Parañaque, its population in 2008 was projected to reach 568,908 with a total household of 18,960 which constitutes about 4.78 percent of the total population of Metro Manila, and 0.62 percent of the Philippines' total population. **Table 7.2.5-7** shows the population growth trend of the City.

TABLE 7.2.5-7 PARAÑAQUE CITY POPULATION AND ANNUAL GROWTH RATE

Census Year	Total Population	Annual Growth Rate (%)
2007	552,660	2.94
2000	449,811	3.03
1995	391,296	4.57
1990	308,236	3.98
1980	208,552	5.58
1975	158,974	10.37
1970	97,214	4.52

*Source: NSO

For a period of seven (7) years, Parañaque City's population had an increase of 102,849 persons. This is much higher compared to the increase in population in Pasay City from year 2000 to year 2007, when the population census was conducted.

7.2.5.1.2.5 Demographic Profile of the Barangays that will be Directly Affected by the Project

The road project will be traversing 6 Barangays (Brgy 183, 184, 185, 190, 191), in Pasay City and 1 Barangay (Brgy Tambo) in Paranaque. These barangays have an average household size ranging from 3.5 to 6 members per family. The populations of the traversed barangays are presented in **Table 7.2.5-8**.

TABLE 7.2.5-8 TOTAL POPULATION OF THE BARANGAYS TRAVERSED BY THE PROJECT

Name of Barangay	Year of Census	Total Population	Total No. of House holds
Bgy. 183, Villamor (Pasay)	2007	29,4505	6,846
Bgy. 185, Maricaban (Pasay City)	2007	8,850	2,300
Bgy. 184, Maricaban (Pasay City)	2007	9,878	3,300
Bgy. 190 (Pasay City)	2007	7,321	7,507
Bgy. 191 (Pasay City)	2009	3,650	2,706
Bgy. 192 (Pasay City)	2007	5,387	1,500
Bgy. Tambo (Parañaque City)	2009 (1^{st} Qtr.)	28,700	5,000

Most of the Population of the traversed barangays are migrants from various parts of the country such as the Ilocos region, Bicol region, Cagayan Valley, Southern Tagalog region, the Visayas and Mindanao. They had been residing in Metro Manila for more than 10 years. Economic consideration were the primary reason (i.e. easy to look for a job, life is not difficult compared to their areas in the province, better life opportunity and peace and order) for migrating to Metro Manila.

7.2.5.1.3 Local Economic Activities in the Project's Traversed Areas

7.2.5.1.3.1 Pasay City

The City of Pasay serves as a catalyst of trade among its neighboring cities/municipality in Metro Manila and Calabarzon region. It is also an international gateway not only to Metro Manila but also for the country by being the host of both domestic and international airports, which cater to most incoming and outgoing passengers (both domestic and international

flights) and tourists traveling to and from the country. The air and land facilities of the city are vital elements that support the business and tourism industry in the country.

The City is known for its airports, small business, tourism and cultural facilities. Its water front at Manila Bay where one of the world's best sunset is found, its transportation infrastructures (i.e. airport, seaport, road network and rails), proximity to the business centers (Makati & Binondo in Manila) and the seat of Philippine political power (Manila) have all combined to make Pasay City an ideal location to establish tourism and related commercial establishments. About 51% of Pasay City's land area is even devoted to institutional facilities (i.e. airports, leisure centers, theme parks, government buildings, etc.).

Pasay City has an extensive land transport infrastructure. A number of major highways traverse the area including those that link Pasay to the rest of Metro Manila (i.e. EDSA, Roxas Boulevard, Taft Avenue, South Luzon Expressway, Manila Skyway, etc.). Two major train lines converge in the City which includes the Light Rail Transit (yellow line) and the Metro Rail Transit (blue line). Several bus terminals are also located in the area whose bus destination goes to as far as the Northern Luzon (i.e. Ilocos, Cagayan Valley, Cordillera, and Central Luzon regions), the Bicol Region and to the Visayas (via the Philippine Nautical Highway).

The City LGU had recorded about 47 big hotels most of which are 5 star categories (i.e. Mariotte Hotel, Hotel Sofitel, Heritage Hotel & Casino, Hyatt Hotel, etc.), that had located in the area. The Cultural Center of the Philippines (CCP) complex where facilities (i.e. Cultural Center of the Philippines, Folk Arts Center, Philippine International Convention Center, World Trade Center, etc.) had been established in which many of the cultural activities and international and local conventions are held. Theme parks like the Bagong Nayong Pilipino, Star City, Boom-na-boom, are also sited in the reclamation center, which are often visited by local and foreign visitors. Leisure and shopping facilities such as the Shoe Mart (SM) Mall of Asia (MOA) that was acclaimed as one of the biggest mall in Southeast Asia; as well as the Villamore golf course are all located within the City. For the religious sector, the historical San Juan Nepomoceno Parish Church which is a popular stop-over for Roman Catholic devoutees had been established in Pasay.

National government buildings are also found in the area which includes among others the Office of the Vice President, the Philippine Senate (Upper House of the Philippine legislative body), the Headquarters of the Philippine Air force (Villamor Airbase), the Headquarters of the Philippine Navy, the headquarters of the Government Social Insurance System (GSIS), the Department of Foreign-Affairs (DFA) Head Office, the Bangko Central ng Pilipinas (BCP) and the Light Rail Transit Administration (LRTA). Other prominent institutions with head office in the City includes: the Japanese Embassy, Philippine Airlines, Cebu Pacific, Philippine National Bank, and Shoe Mart (SM) Mall of Asia.

The sitting of important national government offices, business establishments, tourism facilities had resulted in the generation of significant livelihood opportunities for support services catering to these locators that are provided by micro, small to medium entrepreneurs. These include merchandizing/trading, transport operators, restaurants and cafes, tour and travel agencies, souvenir shops, bookstores, variety stores, laundry shops, tailors, electrical and electronic supply and repair shops, and many others. In 2000 a total of 8,461 establishments had been registered at the Pasay City Hall of which 56.6% are into trading. Other line of business include a) professional services; b) utility services; c) financial services; d) rest and recreational business services; e) personal services; f) allied medical services; g) public terminals and h) public learning institutions (schools). **Table 7.2.5-9** contains the details on the general business classification of establishments in the City and their number)

TABLE 7.2.5-9 CLASSIFICATION OF COMMERCIAL ESTABLISHMENTS IN PASAY CITY

Business Classification	Number	Percent to Total
General Merchandising and Retail	4,792	56.6%
Professional Services	1,394	16.5%
Utility Services	762	9.0%
Financial Services	462	5.4%
Rest & Recreational Business Services	339	4.0%
Personal Services	258	3.0%
Allied Medical Services	209	2.5%
Manufacturing Fabrication	168	2.1%
Public Terminals and Commercial Garage	41	0.5%
Private Learning Institutions	36	0.4%
TOTAL	**8,461**	**100.0%**

Source: Pasay City Business Permits and License Division, 2000

Further review of the nature of business pursued by the merchandizing and retailing sector would yield that these entrepreneurs are directly and indirectly benefiting from the sectors (National government and private sector offices, tourism related facilities, transport sector etc.) that had established in the city. General merchandisers/retailers provide the locators the supplies and materials needed to continue their operations, sari-sari stores/restaurants/fast-food stores etc. caters to the needs of the said establishments personnel and at times even the local and foreign visitor; and many others. **Table 7.2.5-10** contains the details on the type of entrepreneurs in the trading sector, their number and proportion to the total business establishments in Pasay City.

TABLE 7.2.5-10 PROFILE OF GENERAL MERCHANDIZING AND RETAIL IN PASAY CITY

General Merchandising and Retail Sector	No. of Establishments	Percent of Sector Total	Percent of Total Business Establishment
Gen. Merchandise & Retail	1,964	41.0%	23.2%
Sari-Sari Stores	1,346	28.0%	15.9%
Food Chain Outlets	522	10.9%	6.2%
Dealer/Trading & Marketing	458	9.6%	5.4%
Export/Import	180	3.8%	2.1%
Restaurants/Fastfoods	166	3.5%	2.0%
Bakeshops	156	3.2.%	1.9%
TOTAL	**4,792**	**100.00%**	**58.7%**

Source: Socio-Economic Profile of Pasay City, 2000

Labor Force and Employment

The current labor force in Pasay City is more than two thirds of the population estimated at about 350,000. The big percentage of individuals in the working age is due to the increasing number of teenagers and children who are already working or are engaged in economic activities.Based on the 2000 Socio-Economic Profile of Pasay City, its labor force is more than 291,800 representing 84.5 percent of its total population. Figures indicate that there are those

who were gainfully employed in various enterprises, corporations, government agencies, and some commercial centers. It is also worth noting that there are an increasing number of individuals who are self-employed by venturing in various micro enterprises such managing restaurants or eateries (carinderia), selling cooked foods and various dry goods, fruits, etc. Many of the business firms in Pasay are related to visitors' trade such as travel agencies, transport sector, real estate, foreign exchange business, and various kinds of buy and sell trade. The presence of side walk vendors is highly noticeable along the roads and in any busy streets in Pasay City, going to Baclaran Church, and other adjacent areas.

It is worth noting that an efficient road transport system within the MIAA complex will greatly benefit all sectors that had established its offices and are operating within the City of Pasay. Chronic vehicular traffic congestion within the project area will discourage investors, tourists, and foreign government officials from visiting the country. Governing the country, looking after its security and operating business within the City will continue to be difficult as the years go by should the vehicular traffic congestion not be resolve, of which is the primary objective of the project.

7.2.5.1.3.2 Parañaque City

The current economic activities of the people of Parañaque's are concentrated mainly on small and medium business enterprises. It has increasing number of vendors who are selling various food stuffs, general merchandising, fruits and vegetables, fish, and other goods. Others sell cooked viands and manage "carinderia" or eateries. In year 2008, the city has 15,903 business and commercial establishments and out of this number, 125 are commercial banks, two (2) savings banks and the rest are rural banks. It has also 175 manufacturers and more than 1,169 sari-sari stores.

Parañaque City has only one large public market located at Barangay La Huerta while the remaining 184 are privately owned. Farming and fishing are also identified as source of income of its citizens. The annual production of vegetables in the City reached 42.288 MT as of 2008 while fish production reached 04,940 MT. It has also a total of 195 residents who have fishing boats (15 with motorized oats and 55 non-motorized boats). As reported in 2008, the City has also 25 commercial fishing boats in the coastal waters of Parañaque along Manila Bay

Labor Force

It is estimated that the labor force of Parañaque is about 65.80 percent of its population or 371,274 persons. Based on the NSO 2007 Census, there are about 262,119 (70.60%) economically active persons and 109,117 (29.39%) not economically active persons. Likewise, 195,587 (52.68%) are males and 175,686 (47.32%) are females. On the other hand, the unemployed individuals number to 77,036 persons or 6.8% of total population, while the employed ones comprised 93.20%.

Agriculture Resources

Paranaque still has agricultural and open fisheries area that many of its citizens are dependent on for their livelihood. The annual production of vegetables in Parañaque City reached up to 42,288 MT in 2007 that consists of petchay, mustard and kinchay. The City's fishing industry has 67 registered fishermen that are operating along the coastal areas of Manila Bay. In 2005, the average daily fish catch consisting of banak, salinyasi, buging, kapak, crabs, bangus and other marine resources reached to 49,924 kilos. As of 2007, the City has registered a total of 195 fishing boats of which 15 are motorize boats, 55 non-motorized boats; and 25 commercial

fishing vessels. In 2007, the total fish production of Parañaque City reached 104,940 MT; 125,730MT in 2006; 155,725MT in 2005 and 115,862MT in 2004.

Business and Commercial Establishments

A total of 15,903 business and commercial establishments were issued license and business permits in 2008. Out of this number, 131 are banks; 175 manufacturers and 1,169 sari-sari stores. The City has also 85 markets catering the consumer needs of the population (84 private and 1 public markets).

Tourism Industry

Parañaque City is frequently visited by tourists, both local and foreigners due to presence of some famous historical landmarks such as the Baclaran Church which attracts countless Roman Catholic devotees from all over the country most especially on Wednesdays. Other famous places of interest are the SMMall of Asia, Baclaran Bargain Market, Dampa Restaurant in the Coastal area, Fiesta Shopping Mall, La Huerta, Casino Filipino, Loyola Memorial Park, Manila Memorial Park, SM City branches in Parañaque/Bicutan/Sucat, St. Andrews's Cathedral, and many others. Visits by tourist and devoutees are made possible due to the accessibility of these landmarks from Pasay City and other adjacent areas of Metro Manila through the existing land transportation infrastructures such as major roads (i.e. EDSA, Taft Avenue, Roxas Boulevard, Cavite Costal Road, Quirino Highway, etc.), trains (LRT 1 and MRT 1) and airports (NAIA Terminal 1,2 & 3 and Domestic Airport).

7.2.5.1.4 Social Infrastructure

According to the Community Based Monitoring System (CBMS) survey result of Pasay city, existing transport infrastructure facilities are as follows:

Road network: 158.75km in road length, **Number of bridges**: 8, **Airport**: (NAIA IPT 2 and 3, Domestic airport, Gen. Aviation), **Railway**: Mass Rapid Transit (MRT), Light Rail Transit (LRT-1),**Terminals**: Bus terminal- 28, Jeepney / FX terminal-4, Tricycle terminal-78.

Pasay city has a vision on upgrade infrastructure and utility systems, support business and commercial activities, promote multi-sectoral partnerships, promote welfare of city residents, enhance the city's image, upgrade the level of LGU service, maximize tourism potentials and increase the LGU's revenue. To realize the city's vision, major transport infrastructure projects are identified as i) widening of city streets, ii) construction of bridges, iii) construction of ramp fly over, and iv) development of multi-modal terminal, these are planned at northern area of the city.

Also Pasay city has a master plan scheme of the Park Strip Plan, the plan shows that along the park strip, a bike lane maybe constructed to promote mobility through non-motorized vehicle. Scheme of the Park Strip Plan is shown in**Figure 7.2.5-1**.

According to the Community Based Monitoring System (CBMS) survey result of Pasay city, livelihood related infrastructure case is as follows:

- **Water and sanitation:** proportion of households with no access to safe water-1.8 %, and proportion of households with no access to sanitary toilet facilities-2.7%.
- **Housing**: Proportion of households living in makeshift housing-7%, and proportion of households who are squatters-4%

FIGURE 7.2.5-1 PASAY CITY PARK STRIP PLAN

7.2.5.1.5 Historical/Heritage Sites/Religious Shrines

The historical/religious sites present within Pasay City and Paranaque are the old Roman Catholic Churches that had been built during the Spanish era. Churches like the Baclaran Church (Paranaque) and the San Juan Nepomoceno Parish Church (Pasay) attract countless visitors that pay pilgrimage to these religious artifacts. While none of these two churches are within the project area, access to them can be greatly enhanced if the main roads along the MIAA complex is decongested of its chronic vehicular traffic problem.

7.2.5.2 Primary and Secondary Impact Area (Based on Socio-Economic Survey)

Socioeconomic studies conducted under the NAIAX project over the project area focused on the affected persons such as the severely affected and vulnerable groups (i.e. informal settlers, poor and women-headed households all without support systems.). Structured interviews using an agreed survey questionnaire was pursued involving all of the potentially displaced informal settlers selected in two barangays which includes Barangay 191 (Pasay City) and Barangay Tambo (Paranaque).

Attempts were made to also interview the affected commercial establishments leasing properties of MIAA, however, only two out of 30 companies agreed to cooperate with the survey teams. Since participation in the socioeconomic survey is voluntary in nature, the survey team are unable to get information from the commercial establishment lessees. An overview have also been provided for the other affected institutions having properties along the alignment.

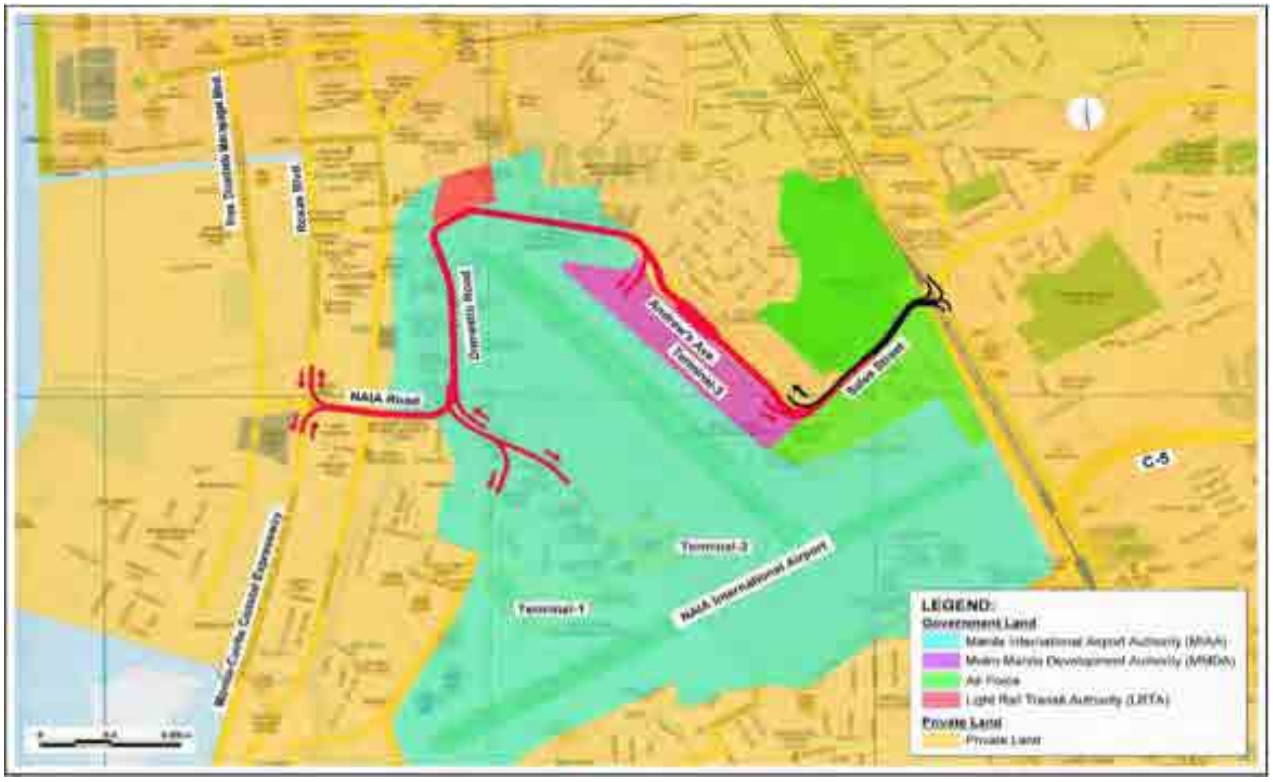


FIGURE 7.2.5-2 LAND-OWNERSHIP MAP OF THE PROJECT AREA

7.2.5.2.1 Occupants of the Study Area

General

The NAIAX is located within a predominantly institutional area owned by government agencies. Within these institutional areas, there are locations that are leased to private commercial establishments, while there are some that are occupied by informal settlers. There are likewise some privately-owned lands, most of which were alienated from the MIAA complex for socialized housing. This section provides an overview of the occupants of the study area and includes a socio-economic profile of the severely affected vulnerable groups.

There are 6 government institutions owning properties within the MIAA complex which includes the: a) Manila International Airport Authority (MIAA), b) Philippine Air Force; c) Light Railway Transit Authority (LRTA); d) Bases Conversion Development Authority (BCDA); and the Philippine Postal Corporation (PPC). Similarly, there are a number of private properties sited near the alignment specifically lands along Andrews Avenue which actually were part of the MIAA complex which were later on released for alienation specifically for socialized housing. These lands were occupied by former military personnel (from Villamore Air Force Base) and informal settlers that had settled the undeveloped portion of the MIAA complex. Also at the end of the NAIAX along NAIA Road reaching as far as Roxas Boulevard, the road alignment did enter into private properties which includes a vacant lot owned by Citiland (corner of Roxas Boulevard and NAIA Road) and government lands (formerly the Philippine Navy's Camp Caludio) that had been released for alienation at the corner of NAIA Road and Cavite Coastal Road that is now administered by National Housing Authority (NHA) for the Bases Conversion Development Authority (BCDA).

An office was established by the National Housing Authority (NHA) within the project site at Barangay 185 responsible for socialized housing development primarily to distribute the released government lands to the lot beneficiaries. It can be noted that while the lots have been subdivided and had been assigned to specific families, most have not paid the minimum administrative fees for such land transfer. It is for this reason that most of the lands in these socialized housing sites are still in the name of the government. This condition is true even for the affected areas in the Camp Claudio socialized housing site in barangay Tambo. **Figure 7.2.5-2** contains the land ownership map that shows the property owners of lands along the MIAA complex.

While most of the land along the road alignment, is owned by government, these areas are currently occupied by a number of institutional, commercial and residential establishments. Structures along the Sales Road are mostly part of the Philippine Air Force Headquarters facilities (i.e. Air Force Museum, Hospital, golf course, etc.) with a small portion belonging to the former Villamore Air Force base that had been release to the general public and is now a commercial complex. Structures along the first segment of Andrews Avenue include the NAIA Terminal 3, and private enterprises occupying the former Air force base land, and small commercial establishments in Barangay 185 near the Circular del Mundo landmark. The second segment of Andrews Avenue are occupied by airport related commercial establishments that are leasing MIAA properties as well as the LRTA. The Domestic Road segment has commercial establishments also leasing MIAA properties. Along the NAIA Road segment, private and government structures can be seen including the affected informal settler colony occupying MIAA lands at the corner of NAIA Road and the Paranaque River.

7.2.5.2.2 Affected Government Institutions

A. Manila International Airport Authority (MIAA)

The Manila International Airport Authority is the government agency under the Department of Transportation and Communications (DOTC) that is authorized to manage the Ninoy Aquino International Airports (Terminals1-4) as well as the properties within the MIAA complex. The agency was given its mandate on 4 March 1982 by virtue of Executive Order 778 which was amended by Executive Order 903 (23 July 1983). Most of the land and structures affected are owned by MIAA including the structures that are leased by affected commercial establishments along Andres Avenue, Domestic Road and NAIA Road, as well as the piece land on which the project affected informal settler colony had built their residential structures on the corner of NAIA Road and Paranaque River.

B. Philippine Air Force (PAF)

The Philippine Air Force is the branch in the Philippine military establishment responsible for safeguarding the country's territorial airspace. The PAF is one of the major services of the Armed Forces of the Philippines (AFP) with headquarters at the Villamore Air Force Base. The AFP is a big bureau under the Ministry of National Defense. The road section along Sales Road will have PAF facilities on both sides of the road. The widening works to be implemented along the Sales Road will affect a strip of land and concrete fencing of Villamore Air Force on which an on-ramp will be built to allow vehicles exiting NAIA Terminal 3 to enter the NAIAX elevated expressway. Figure 2.1-7 shows the location of the PAF land that will be affected.

C. Light Railway Transit Authority (LRTA)

The Light Railways Transit Authority (LRTA) is the premier rail transport institution in the Philippines which is mandated to construct, operate, maintain and/or lease facilities related to light railway transport within the country. It was created by virtue of Executive Order No. 603

(12 July 1980), which was later amended by Executive Order 830 (September 1982) and EO 210 (17 July 1987). LRTA is under the Department of Transportation and Communication (DOTC) and has its offices at the block between Airport Road and Aurora Boulevard (Tramo Road). This government institution will have part of its idle lands and a few minor structures fronting Airport road affected by the road alignment. Figure 2.1-4 contains the location map that indicates the location of the affected LRTA property.

D. Philippine Postal Corporation (PPC)

The Philippine Postal Corporation has a long 250 years history dating back to the year 1767 when the first post office was established by Spain in Manila. The postal service had through the years increase its coverage and grew in its assets and personnel. The office also changed its form from being a postal district of Spain (1779), then a bureau under the Department of Trade and Industry (September 1902), to the Bureau of Post in 1987 under the Department of Transportation and Communications, and finally to the present day Philippine Postal Corporation (2 April 1992) by virtue of RA 7374. The PPC will have a strip of land of its satellite post office fronting the Domestic Road affected, as a result of the road widening works. Figure 2.1-5 contains the drawing of affected lots near the corner of Domestic Road and NAIA Road where the LRTA property will be affected.

E. Bases Conversion Development Authority (BCDA)

The Bases Conversion Development Authority had been created by virtue of RA 7227 (1992) primarily to accelerate the sound conversion of former US Military Bases as well as Metro Manila military camps into productive civilian use. BCDA was responsible for disposing of lands within the Villamore Air Force base fronting NAIA Terminal 3 to civilian commercial use. It is also responsible for the conversion of lands that was once “Camp Claudio” of the Philippine Navy in Barangay Tambo (Paranaque City) into socialized housing area that is under distribution by NHA. It is here in the former Camp Claudio where the structures of 6 affected lot beneficiaries are located fronting the Cavite Coastal Road. While the lots have already been assigned to the beneficiaries, however issuance of TCT cannot yet be pursued at the time of the report writing, since there is an on-going court case on the land where there are overlapping claims over land-ownership. For the moment, the affected land still belongs to BCDA.

7.2.5.2.3 Affected Commercial Lessees

There is an estimated 30 big commercial establishments that are leasing properties of MIAA that will be affected by the implementation of the NAIAX. These establishments are located along Andrews Avenue, Airport Road, Domestic Road and NAIA Road. According to MIAA authorities, most of the long-term lease of these establishments had already expired and renewals are done on a yearly basis. The listing of the affected facilities of commercial lessees located along Domestic Road found in **Table 7.2.5-11.**

TABLE 7.2.5-11 LISTING OF AFFECTED MIAA COMMERCIAL LESSEE FACILITIES

Name of Affected Facility		Location	Nature of Business
1	Zest Air Cargo Logistics & Ticketing Office	Domestic Road	Air cargo services
2	Air Philippines Express Cargo	Domestic Road	Airline Ticketing Office
3	Cebu Pacific Ground Support Equipment Department	Domestic Road	Aircraft ground maintenance
4	LBC Baclaran-Domestic Branch Office	Domestic Road	Cargo and Courier service office
5	Boracay Red Coconut Airline	Domestic Road	Airline office
6	2GO (An Aboitiz Company)	Domestic Road	Cargo and courier service
7	Pacific Pearl Airways	Domestic Road	Airline service and aviation school
8	Lin Lu Restaurant	Domestic Road	Restaurant
9	Carmelino's Grill	Domestic Road	Restaurant
10	AP Cargo Logistic Network Corporation	Domestic Road	Cargo forwarding service
11	Seair Cargo	Domestic Road	Air cargo services
12	Zest Air Ticketing Office (within Domestic airport)	Domestic Road	Airline ticketing office
13	Snacks/Food Kiosk Ala Eh Café	Domestic Road	Restaurant
14	Cebu Pacific Air Operations Center	Domestic Road	Airline operations office
15	Asia Aircraft Philippines (AAOP) Office & Hanger	Domestic Road	Airline operations and aircraft hanger
16	Philippine Airlines (PAL) Data Center/Allied Banking Corpn.	Domestic Road	Airline operations, Banking
17	Salem Complex Administration	Domestic Road	Building administration which hosts restaurants.
18	Cebu Pacific Training Center	Domestic Road	Airline operations training school
19	Varace Air Corp/Aeroshell	Domestic Road	
20	Cebu Pacific Fuel Farm Office	Domestic Road	Airline operations
21	Philippine Airlines (PAL) Motorpool	Domestic Road	Airline ground maintenance
22	DHL	Domestic Road	Cargo forwarding
23	Macroasisa Airport services	Domestic Road	Airline ground support services
24	World Citi Colleges	Domestic Road	School
25	Juan Travel & Tours	Domestic Road	Travel agency

7.2.5.2.4 Informal Settler PAPs

The socio-economic survey (SES) and Inventory of Loss (IOL) had identified a total of 61 affected Persons, 53 from Barangay 191 (Pasay City) and 8 from Barangay Tambo (Paranaque City). The PAPs from Barangay 191 are from an informal settler colony established within MIAA property that is bounded on the South by the NAIA Road and Paranaque Bridge, on the West by the Paranaque River, on the North by the former Bureau of Land Transportation Office (now occupied by the PNP K9 unit) and on the East by the Park & Fly Parking Building and

former California Bus Line Garage. Similarly, the affected PAPs from Barangay Tambo are residing in the relocation site at the former Camp Claudio beside a service road fronting the Cavite Coastal Road on its Western side. The following sections describe the demographic and socio-economic conditions of the informal settler PAPs.

7.2.5.2.4.1 Demography and Basic Information

A. Household Size

Slightly more respondents have household sizes between the range of 1-4 members (54.7%) as compared to those families having between 5-10 members (42.2%). It is interesting to note that there still households (3.13%) that despite their poverty (as will be explained later on), they still choose to have more than 10 family members. The Barangay 191 informal settler respondents have the slightly more households (51.9%) having 1-4 household members as compared to Barangay Tambo who that have 66.7% of respondents. **Table 7.2.5-11** contains the detailed breakdown of house-hold family sizes.

TABLE 7.2.5-12 PROJECT AFFECTED FAMILIES HOUSE-HOLD SIZES

Barangay/City	Unit	House Hold Size (member)			Total
		1-4	5-10	> 10	
Barangay 191/	Members	27	23	2	52
Pasay City	% within Barangay	51.9%	44.2%	3.8%	
Barangay Tambo/	Members	8	4	0	12
Paranaque City	% within Barangay	66.7%	33.3%	0.0%	
	Total	35	27	2	64
	%	54.69%	42.19%	3.13%	

B. Residency at Affected Area

A review of the residency history of the affected persons in the locality, would show that many (46.2%) of the respondents have reported to have been living in the area in the 1980s are earlier. Another 44% of respondents claim that they have been staying in the project area between 1990 to 2000; and the remaining 3% have settled in the area by the 2010s. This statistics is significant to state that a little less than 50% of the total respondents are eligible to avail of socialized housing as provided for the Urban Development and Housing Act (UDHA), and that they cannot be just displaced by government without due process. The early residents (1970s and earlier) may suggest that these households especially in the Barangay Tambo area, may be among the residents of "Camp Caludio" when it was still a naval facility, just like those residents of the Maricaban area (i.e. Barangay 183, 185, 187) that were former Air Force servicemen probably stationed in Villamor Air Force Base. Some of the relatively new comers in the affected community may actually be relocates from other blight areas, and renters or free boarders (with or without owner's consent) of structures established by absentee informal settlers. **Table 7.2.5-13** contains the details on the residency history of the affected persons.

TABLE 7.2.5-13 RESIDENCY HISTORY OF RESPONDENTS

Barangay/ City	Unit	Start of Residency (Decade)					Total
		≤1970s	1980s	1990s	2000	2010	
Barangay 191	Count	1	24	9	20	3	57
Pasay City	% within Barangay	1.8%	42.1%	15.8%	35.1%	5.3%	
Barangay Tambo	Count	7	0	3	2	0	12
Paranaque City	% within Barangay	58.3%	0.0%	25.0%	16.7%	0.0%	
	Total	8	24	12	22	3	69
	%	11.6%	34.8%	17.4%	31.9%	4.3%	

C. Ethnicity of Respondents

Majority of the respondents are Tagalogs (36.2%), followed by Bisayas (27.5%), then Ilonggos (20.3%), Bicolanos (10.1%) and finally Ilocanos (5.8%). As can be gleaned from these statistics, the Tagalog speaking people are more than each of the individual groupings probably due to the comparative shorter distance from where they would have originated from. The ethno-linguistic grouping of Bisaya is quite confusing as this may refer to people speaking the Cebuano dialect that includes people from Central Visayas and most parts of Mindanao. The Waray ethno-lignguistic group that hails from Eastern Visayas may also associate with the Bisaya group as they can also speak the Cebuano dialect. It is interesting to note that many if not all of these respondents came to Metro Manila in search of a better life than the one they had back in their respective provinces. It is unfortunate that these households were unable to find the job they were seeking and were forced to reside in the informal settler colony in Barangay 191. Later on in this chapter, it will be seen that education seem to be not the issue as some respondents did finish their college education. As for Barangay Tambo respondents, they would probably have been relocated there from other areas with the exception of those that had earlier set their residency in the former Camp Claudio naval facility. **Table 7.2.5-14** contains the Ethnicity of Respondents.

TABLE 7.2.5-14 ETHNICITY OF RESPONDENTS

Barangay/City	Unit	Ethno-Linguistic Grouping					Total
		Ilocano	Tagalog	Bicolano	Bisaya	Ilonggo	
Barangay 191/	Count	1	24	9	20	3	57
Pasay City	% within Barangay	1.8%	42.1%	15.8%	35.1%	5.3%	100.0%
Barangay Tambo/	Count	7	0	3	2	0	12
Paranaque City	% within Barangay	58.3%	0.0%	25.0%	16.7%	0.0%	100.0%
	Total	8	24	12	22	3	69
	%	11.6%	34.8%	17.4%	31.9%	4.3%	100.0%

D. Educational Attainment

From the 69 respondents, 37.7% had reach college education level where 14.5% of them actually finished their respective courses. Less than half (43.4%) of the respondents at reached

high school where 24.6% of them graduated. Another 5.8% of those interviewed had finished a vocational course. From the statistics, it can be gleaned that the literacy level in the affected area is fair and that a number of the respondents do have the educational level to qualify for stable professional work or jobs requiring skilled labor. **Table 7.2.5-15** contains the details of the educational attainment levels of respondents.

TABLE 7.2.5-15 EDUCATIONAL ATTAINMENT OF RESPONDENTS

Barangay/ City	Unit	Education Level							Total
		Elementary Under-graduate	Elementary Graduate	High School Under-graduate	High School Graduate	Vocational Course Graduate	College Under-graduate	College Graduate	
Brgy 191	Count	4	2	11	15	4	13	8	57
Pasay City	% within Brgy	7.0%	3.5%	19.3%	26.3%	7.0%	22.8%	14.0%	
Brgy Tambo	Count	1	2	2	2	0	3	2	12
Paranaque	% within Brgy	8.3%	16.7%	16.7%	16.7%	0.0%	25.0%	16.7%	
	Total	5	4	13	17	4	16	10	69
	%	7.2%	5.8%	18.8%	24.6%	5.8%	23.2%	14.5%	

E. Gender of Household-heads

Majority of the household heads interviewed are male corresponding to half of (50.7%) respondents. Women-headed household heads make up one third (36.2%) of total respondents with the remaining number divided into 3 other categories such as child-headed household (7.2%), parent headed household (2.9%), and siblings (2.9%). The women-headed households are those ladies that have lost or separated from their husbands, and are currently standing as the head of the family. The child-headed households, are those families where the guardian are no longer in a condition to provide for their members and as such, the eldest or most responsible son/daughter had taken on the responsibility of leading and providing for the family.

TABLE 7.2.5-16 GENDER OF HOUSEHOLD HEADS

Barangay/City	Unit	Head of Household					Total
		Male	Female	Child	Parent	Siblings	
Barangay 191	Count	30	21	2	2	2	57
Pasay City	% within Barangay	52.6%	36.8%	3.5%	3.5%	3.5%	
Barangay Tambo	Count	5	4	3	0	0	12
Paranaque City	% within Barangay	41.7%	33.3%	25.0%	0.0%	0.0%	
	Total	35	25	5	2	2	69
	%	50.7%	36.2%	7.2%	2.9%	2.9%	

Close-family ties is one of the known characteristics of Philippine society. In a number of cases, extended families have been reported. This (extended family) is a condition where mature children that may have their own families, still live in the house of the parents. Extended families do occur in the survey area which can explain why there are parent-headed households and those families that have 10 or more members. Similarly, there are groups of individuals, brothers, sisters or both that are living in the area without their parents or guardians, which constitute those reported as siblings. **Table 7.2.5-16** contains the details of the household head.

7.2.5.2.4.2 Socioeconomic Characteristics

F. Income and Expenditures

Majority (34.8%) of respondents claim that their primary source of income comes from employment and/or professional practice. These individuals are former employees of the Land Transportation Office (LTO) or "fixers" which are persons who facilitate for a fee, the processing of drivers licenses, motor vehicle registration, public transport franchises, and many others. The LTO South Motor Vehicle Inspection Office (MVIS) that used to occupy a building near the informal settler colony, require among others legal documents (i.e. affidavits, notarial of public documents, etc.) to support applications for permits, licenses, etc. filed by the public at the LTO. These legal documents are prepared by professionals such as lawyers and their support staff.

Similarly, there are small-scale business operators (27.5%) such as "sari-sari" (variety) stores and "carinderias" (small eateries) that are operating within the informal settler colony. The structures that these small establishments occupy are actually part of the residential unit that been modified to allow such business operation. One entrepreneur even occupied a portion of the Electrical road which was used as a carinderia and installed an overhanging nylon roofing to protect their patrons from the sun and rain. These small shops mostly have members of the colony as their customers.

There are also respondents that provide their services as skilled (18.8%) and unskilled labor (8.7%). Skilled labor include carpenters, masons, drivers, heavy equipment operators, automotive mechanics, electricians, and electronics technicians, and others. These individuals may be employed on a fulltime or part-time basis. About 10.1% of the respondents say that they subsist on remittances from members of their family. **Table 7.2.5-17** contains the breakdown of respondents based on their primary income sources.

TABLE 7.2.5-17 PRIMARY SOURCE OF INCOME OF PAFS

Barangay/ City	Unit	Income Source						Total
		Skilled Labor	Unskilled Labor	Professional Employment	Professional Practice	Business Operator	Remittance	
Brgy 191	Count	13	6	20	0	12	6	57
Pasay City	% within Barangay	22.8%	10.5%	35.1%	0.0%		10.5%	
Brgy Tambo	Count	0	0	2	2	7	1	12
Paranaque City	% within Barangay	0.0%	0.0%	16.7%	16.7%	58.3%	8.3%	
	Total	13	6	22	2	19	7	69
	%	18.8%	8.7%	31.9%	2.9%	27.5%	10.1%	

Only a third of the respondents (31.9%) have secondary income source. About 11.9% of them are also engaged in professional employment, 11.6% and 2.9% do additional skilled and unskilled labor respectively; while 5.8% have extra business operation. The location of their colony which is within the MIAA complex where there are numerous commercial and institutional establishments, allows these respondents the opportunity to be engaged in secondary income. **Table 7.2.5-18** contains the details of the secondary income sources of respondents.

TABLE 7.2.5-18 SECONDARY SOURCE OF INCOME OF PAFS

Barangay / City	Unit	Income Source						Total
		Skilled Labor	Unskilled Labor	Professional Employment	Professional Practice	Business Operator	None	
Brgy 191	Count	5	2	8	1	3	38	57
Pasay City	% within Barangay	8.8%	3.5%	14.0%	1.8%		66.7%	
Brgy Tambo	Count	2	0	0	0	1	9	12
Paranaque City	% within Barangay	16.7%	0.0%	0.0%	0.0%	8.3%	75.0%	
	Total	7	2	8	1	4	47	69
	%	10.1%	2.9%	11.6%	1.4%	5.8%	68.1%	

More than two thirds (68%) of the affected households have average annual income above P82,328 which is the National Capital Region's (NCR) annual poverty threshold (Philippine Statistical Yearbook, 2010). These respondents are those that are engaged in small-scale business, perform professional services and work as employees. The remaining 31.8% of respondents have incomes that fall below the poverty threshold, of which 21.7% of them (15 HH) earn below the annual food threshold of P47,228 for a family of four (4). It is these 15 households that are in dire need for assistance. **Table 7.2.5-19** contains the details of the annual average HH income.

TABLE 7.2.5-19 ANNUAL HOUSEHOLD INCOME OF PAFS

Barangay/City	Unit	Annual HH Income (P)			Total
		<47,228	<47,228 - 82,328	>82,328	
Barangay 191	Count	10	6	41	57
Pasay City	% within Brgy	18%	11%	72%	
Barangay Tambo	Count	5	1	6	12
Paranaque	% within Brgy	42%	8%	50%	
Total	Total	15	7	47	69
	%	22%	10%	68%	

Food is the primary expenditure of the affected households with 69% of all respondents reporting to have spent an average of P5.5 million per year of the item. Respondents from Barangay 191 claim to have spent more on food at P6.39 million per household per annum as compared to that of affected persons from Barangay Tambo at P1.14 million. Utilities is the second biggest cost of the respondents at an annual average expenditure of P1.02 million per household, while education comes third at an average of P0.605 million per household. Interesting to note that respondents in Brgy 191 spend more on utilities (P1.17 million) and education (P0.693 million) as compared to those interviewed from Brgy Tambo (P0.342 million and 0.374 million respectively). **Table 7.2.5-20** provides the details on HH expenditures.

TABLE 7.2.5-20 ANNUAL HH EXPENDITURES OF PAFS

Barangay/City	Unit	Annual HH Expenditures (P)			Total
		Food	Utilities	Education	
Barangay 191	Average HH Expenditure	6,390,127	1,168,107	693,190	8,251,424
	Count	40	10	6	57
Pasay City	% within Brgy	71%	18%	11%	
Barangay Tambo	Average HH Expenditure	1,140,975	342,100	374,300	1,857,375
	Count	7	2	2	12
Paranaque	% within Brgy	62%	18%	20%	
Total	Average HH Expenditure	5,586,114	1,024,454	604,916	
	Total	48	12	9	69
	%	69%	18%	13%	

TABLE 7.2.5-21 STRUCTURE OWNERSHIP

Barangay/City	Unit	Ownership of Structures			Total
		Own	Rent	Free Occupants*	
Barangay 191	Count	40	14	3	57
	% within Brgy	70.2%	24.6%	5.3%	100.0%
Barangay Tambo	Count	8	2	2	12
	% within Brgy	66.7%	16.7%	16.7%	100.0%
Total	Count	48	16	5	69
	% overall	70%	23%	7%	100%

*Occupying structures without permission from the owner.

F. Structure Ownership

The survey result shows that majority (70%) of respondents own the structures in which they currently residing in. However, there are more Barangay 191 respondents (70.2%) owning their structures as compared to those from Barangay Tambo (66.7%). It is interesting to note that 16 HH or 23% of respondents are renters of their current abode. There are relatively more renters interviewed in Barangay 191 (14 or 24.6%) as compared to those from Barangay Tambo (2 or 16.7%). While the tenants benefit from the relatively lower residential rental cost in prime location, this also indicates that there are individuals or groups that are taking advantage of government's tolerance to informal settlers, to profit from renting out residential structures without paying lease to the landowner.

Likewise, the survey also discovered that 5 respondents are occupying their structures without permission from its owner/s. These individuals correspond to those that earn below the poverty threshold and may not be in the position of afford the payment of rent and other basic amenities. Additional assistance should be provided to these vulnerable groups under the Project such as hiring preference in the contractor's workforce or office administrative support staff where their current skills would qualify. **Table 7.2.5-21** contains details of the respondent's structure ownership.

H. Availability of Social Services

Lighting

Majority (94%) of respondents reported that electricity is their primary lighting source. All of Barangay Tambo respondents claim be using electric powered lamps, as compared to 93% of households interviewed from Barangay 191. It is worth noting that 1 HH from Barangay 191 is using kerosene lamp and there are 3 households that do not use any lighting at all. In most probability, the 3 households that are free loaders or occupants of structures without the owner's permission are also the 3 that are not using any lighting in view of their poverty. The above statistics further support the recommendations of providing support to the above 3 affected vulnerable groups**. Table 7.2.5-22** contains the details on the lighting sources of PAPs.

Potable Water Supply

TABLE 7.2.5-22 LIGHTING SOURCE

Barangay/ City	Unit	Lighting Source			Total
		Electricity	Kerosene Lamp	None	
Barangay 191	Count	53	1	3	57
	% within Brgy	93.0%	1.8%	5.3%	100.0%
Barangay Tambo	Count	12	0	0	12
	% within Brgy	100.0%	0.0%	0.0%	100.0%
Total	Count	65	1	3	69
	% Overall	94%	1%	4%	100%

More than half (52.2%) of respondents depend on the utility concessionaire Manila Water for their potable water supply. Survey results show that there are relatively more Barangay Tambo interviewees (91.7%) that use piped-in water as compared to those from Barangay 191 that cover less than half of HH (43.9%). Connections have been established from the affected houses to the distribution lines of the Manila Water.

The next popular water source are those provided by individual called "igib" who deliver water in large 4-5 gallon plastic containers which constitute 40.6% of total respondents. About 47.4% of respondents from Barangay 191 avail of the "igib" services while only a single household (8.3%) in Barangay Tambo patronize these suppliers. Likewise, only 1 HH (1.8%) in Barangay 191 takes his water supply from a deep well.

It is worth noting that there are 4 respondents from Barangay 191 that does not avail of the popular water supply source. It was not clear from the interview where the said 4 respondents secure their water, as this is an essential need for life, and it is unthinkable that they will be using the polluted water from the adjacent Paranaque River for their drinking and washing needs. At least 3 of these 4 respondents are those earlier mentioned economically disadvantaged households that need support. **Table 7.2.5-23** contains details of the respondent's potable water supply sources.

TABLE 7.2.5-23 POTABLE WATER SUPPLY SOURCE

Barangay/City	Unit	Potable Water Supply Source				Total
		Deep well	Piped Water*	Local Suppliers**	None	
Barangay 191	Count	1	25	27	4	57
	% within Brgy	1.8%	43.9%	47.4%	7.0%	100.0%
Barangay Tambo	Count	0	11	1	0	12
	% within Brgy	0.0%	91.7%	8.3%	0.0%	100.0%
Total	Count	1	36	28	4	69
	% Overall	1.4%	52.2%	40.6%	5.8%	100%

*Sourced from Commercial Water Supply Concessionaire
**Sourced from Individuals ("igib") supply potable water in large plastic containers

Toilets

All of the respondents have access to toilets. Most of respondents (92.7%) have water-closet type of toilets in their respective residential structures. The remaining 7.3% use a communal toilet located within the area. The most popular toilet type used is the semi-flushed type that had been installed in the respective residential structures of 91.3% (63 HH) of respondents. Both Barangay 191 (91.2%) and Barangay Tambo (91.7%) have relatively similar proportion of the semi-flushed toilet type.

Likewise, for the flushed type, only 1 person (8.3%) from Barangay Tambo has such toilet facility installed in their house. No such respondent from Barangay 191 had report to have installed such toilet facility. Also, only 5 HH (8.8%) of respondents do not have toilets in their respective houses, and all of these are from Barangay 191. As earlier mentioned, a communal toilet facility had been construction in Barangay 191 for those informal setters that are unable to built their own toilet. **Table 7.2.5-24** contains details of the toilet type that are in use by the respondents.

TABLE 7.2.5-24 TOILET FACILITIES

Barangay/ City	Unit	Toilet Facilities*			Total
		Semi-Flush	Flush	None	
Barangay 191	Count	52	0	5	57
	% within Brgy	91.2%	0.0%	8.8%	100.0%
Barangay Tambo	Count	11	1	0	12
	% within Brgy	91.7%	8.3%	0.0%	100.0%
Total	Count	63	1	5	69
	% Overall	91.3%	1.4%	7.2%	100%

*Both semi-flushed and flushed are water closet types of toilet

7.2.5.2.4.3 Public Health

Pasay City: The number primary cause of morbidity stems from respiratory ailments. This may be attributed to the problem of air pollution in the area owing to the volume of vehicles that travel through its thoroughfares daily as shown in the traffic study. This is followed by skin-related illnesses.

This may reflect the poor health and sanitary conditions in the area as well as serve as major carriers of disease causing organisms that affect the skin and other external organs. As shown in **Table7.2.5-25**, the other leading causes of morbidity which may be attributed to the abject state of the physical environment in Pasay City are gastro-intestinal and other infectious diseases.

TABLE 7.2.5-25 LEADING CAUSES OF MORBIDITY IN PASAY CITY (1995)

Cause	Morbidity Rate* /10,000 persons	Cause	Morbidity Rate* /10,000 persons
1. Respiratory	509.08	6. Genito Urinary	33.48
2. Dermatology	98.92	7. Cardio Vascular	16.96
3. Gastro Intestinal	95.00	8. Other Infectious Disease	16.91
4. EENT	65.05	9. Muscoskeletal	15.94
5. Nutritional Deficiency	45.65	10. Minor Wound	5.28

Source: Office of the City Health Officer, Pasay City Hall

7.2.5.2.4.4 Historical/Heritage Sites/Religious Shrines

Within direct and indirectly affected area of the project also vicinity area there is no historical and heritage site existed.

Previously it was a church located along the Andrews Avenue, however the church has been relocated to east wards and any more affected now.

Along MIA road there is Tambo elementary / high school building, the school may be affected indirectly, there are aeronautical flying school and training workshops in the MIA property, these facilities are faced along the local road, and expected partially their building.

7.2.6 Environmental Quality

7.2.6.1 Air Pollution, Noise Level and Water Quality

1) **Air:** Baseline air quality measurements along the alignment of the proposed viaduct expressway and vicinity were conducted on April 18, 2011. The air quality parameters measured were Sulfur Dioxide (SO2), Nitrogen Dioxide (NO2) and Total Suspended Particulates (TSP). Noise levels were also observed at the air quality stations. One-hr (24 hr for AI) sampling was made at five stations. The stations were located at

- Station A1 - NAIA Corner Electrical Road
-Station A2 - Proposed Off-Ramp at Coastal Road
-Station A3 - Andrew Avenue – Brgy 185
-Station A4 - Villamor Airbase Gate
- Station A5 - Proposed On-Ramp at Coastal Road (Brgy Tambo)

The locations of these air quality sampling stations are shown in **Figure 7.2.6-1.** The results of the air quality measurements are presented in **Table 7.2.6-1** and **Table 7.2.6-2.**

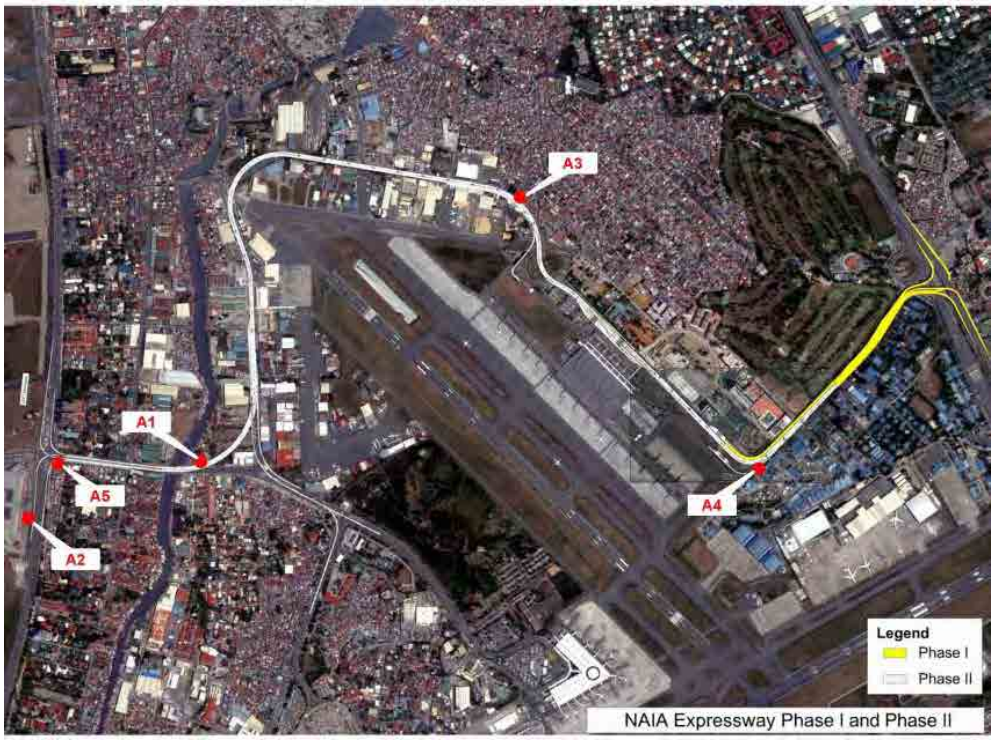


FIGURE 7.2.6-1 MONITORING LOCATION OF AIR AND NOISE LEVEL (SURVEYED IN 2011)

Source: The study team

TABLE 7.2.6-1 MONITORING RESULTS OF AIR QUALITY IN DRY SEASON

Station No.	Time/Date	Concentration in ug/Ncm		
		TSP	SO2	NO2
A1 NAIA Corner Electrical Road	1030-1130H/ 18Apr2011	287	34	26
	1520H 18Apr11- 1520H 19Apr11 (24Hours)	503	49	37
A2 Proposed Off-Ramp at Coastal Road	1010-1110H/ 19Apr2011	278	29	21
A3 Andrew Avenue – Brgy 185	1405-1505H/ 19Apr2011	311	45	30
A4 Villamor Airbase Gate	1050-1150H/ 19Apr2011	214	28	20
A5 Proposed On-Ramp at Coastal Road (Brgy Tambo)	1500-1600H/ 20Apr2011	243	30	23
DENR Standard	1-hour sampling period	300	340	260
	24-hours sampling period	230	180	150
IFC EHS Guideline		150(PM 10)	125	200 (Ave.1 hr)

Source: The study team

TABLE 7.2.6-2 MONITORING RESULTS OF AIR QUALITY IN WET SEASON

Station No.	Time/Date	Concentration in ug/Ncm		
		TSP	SO2	NO2
A1 NAIA Corner Electrical Road	0952-1052H/ 23 July 2011	311	34	26
	1110H 23 July 2011 1110H 24 July 2011 (24Hours)	529	49	37
A2 Proposed Off-Ramp at Coastal Road	1305-1405H 23 July 2011	187	29	21
A3 Andrew Avenue – Brgy 185	0824-0924H 23 July 2011	292	45	30
A4 Villamor Airbase Gate	1637-1737H 23 July 2011	171	28	20
A5 Proposed On-Ramp at Coastal Road (Brgy Tambo)	1450-1550H 23 July 2011	294	30	23
DENR Standard	1-hour sampling period	300	340	260
	24-hours sampling period	230	180	150
IFC EHS Guideline		150(PM10)	125	200 (Ave.1 hr)

2) **Noise:** A sound level meter was used in measuring baseline noise levels. The noiselevels **Table 7.2.6-3** and **Table 7.2.6-4** measured at the air sampling stations range from64 to 94dB(A). These values exceed the DENR noise standards for commercial and residential areas. Except for one of the stations which is a commercial area, the rest of the sampling stations are institutional areas. **Table 7.2.6-5** shows the comparison noise level standard.

TABLE 7.2.6-3 MONITORING RESULTS OF NOISE LEVEL IN DRY SEASON

Station No.	Location	Date and of Time of Measurement	Average Noise Level In dB(A)	Area of Landuse	DENRStandard dB(A)	IFC EHSGuideline dB(A)
A1	NAIA Corner Electrical Road	1010-1020H/ 18Apr2011	78.0 (66-89)	Commercial	65	70
A2	Proposed Off-Ramp at Coastal Road	1115-1125H/ 19Apr2011	81 (66-94)	Commercial	65	70
A3	Andrew Avenue – Brgy 185	1355-1400H/ 19Apr2011	78 (68-92)	Commercial,	65	70
A4	Villamor Airbase Gate	1030-1040H/ 19Apr2011	72 (64-89)	Commercial, Public facility	65	70
A5	Proposed On-Ramp at Coastal Road (Brgy Tambo)	1445-1455H/ 20Apr2011	74 (67-88)	Commercial	65	70

Source: JICA Study team

TABLE 7.2.6-4 MONITORING RESULTS OF NOISE LEVEL IN WET SEASON

Station No.	Location	Date and of Time of Measurement	Average Noise Level In dB(A)	Area of Landuse	DENRStandard dB(A)	IFC EHSGuideline dB(A)
A1	NAIA Corner Electrical Road	1055-1105H23 July 2011	77.0 (63-91)	Commercial	65	70
A2	Proposed Off-Ramp at Coastal Road	1250-1300H 23 July 2011	79.0 (61-87)	Commercial	65	70
A3	Andrew Avenue – Brgy 185	0810-0820H 23 July 2011	77.0 (69-89)	Commercial,	65	70
A4	Villamor Airbase Gate	1740-1750H 23 July 2011	70.0 (60-86)	Commercial, Public facility	65	70
A5	Proposed On-Ramp at Coastal Road (Brgy Tambo)	1555-1605H 23 July 2011	76.0 (68-90)	Commercial	65	70

Source: JICA Study team

TABLE 7.2.6-5 COMPARISON OF NOISE LEVEL STANDARD

	DENR Maximum Allowable Noise Level, dB(A)			IFC EHS Noise Level standard dB(A)		
	Daytime	Morning/ Early Evening	Nighttime	Daytime	Morning/ Early Evening	Nighttime
Schools, Hospitals	50	45	40	55	55	45
Residential	55	50	45	55	55	45
Commercial	65	60	55	70	70	70
Light Industrial	70	65	60	70	70	70
Heavy Industrial	75	70	65	70	70	70

Source: JICA Study team

3) Water Quality: Baseline water quality sampling was undertaken at the Paranaque River, at the Tambo Bridge to establish the existing physic-chemical properties of the said River. Water samples collected from the upstream and downstream portions of the River were carefully prepared, following the standard procedure of preparation and preservation, and later brought to the laboratory for analysis of Total Suspended Solids (TSS) and oil & grease. Field measurements of the pH and temperature were taken using a portable pH meter and a laboratory thermometer, respectively.

Results of the laboratory analyses for the two (2) basic parameters monitored showed that the TSS levels of the water samples from both stations (Sta. 1 38.0 mg/L and Sta.2 22.0 mg/L) are well within the permissible limit set by the DENR for Class C Water. The oil and grease content of the sample from downstream portion of Paranaque River is likewise below the standard limit. On the contrary, the oil & grease level detected in the sample from the downstream portion (6.4 mg/L) of the River as presented in **Table 7.2.6-6** exceeded the 5.0 mg/L limit of the DENR. This was probably due to the spillage of oil from the dredging machine docked near the sampling area. In fact, presence of oil and grease materials was observed on the water surface at the time of sampling.

Water samples from the upstream and downstream portions of the River are relatively basic as indicated by the high pH level recorded. The pH level observed at Sta. is 8.5, while the pH at Sta. 2 is 8.1.

TABLE 7.2.6-6 WATER QUALITY OF PARAÑAQUE RIVER

Sampling Station	Date & Time of Sampling	Parameters			
		Temp (°C)	pH	TSS	Oil & Grease
Sta.1 Downstream Portion	26 April 2011 0815H	27	8.5	38.0 mg/L	6.4 mg/L
Sta.2 Upstream Portion	26 April 2011 0935H	28	8.1	22.0 mg/L	2.5 mg/L
DENR Standards for Class C Water		Max. 3°C increase	6.5 - 8.5	70 mg/L	5.0 mg/L
IFC EHS Guideline				10mg/L	

Source: JICA Study Team

TABLE 7.2.6-7 WATER QUALITY OF PARAÑAQUE RIVER

Parameter	2005	2006	2007	DENR Standard	IFC EHS Guideline
DO (mg/l)	1.3	1.6	1.7	5.0	-
BOD5 (mg/l)	29.5	41.0	39.9	<10.0	30

Source: DENR

7.2.5.2 Other Environmental Concerns (i.e. Security Issue According to the Military)

1) The proposed expressway passes next the Villamor Airbase property; the viaduct of expressway has approximately elevated 12m from the ground level.

The height of the expressway carriage way level is easy to observe inside of the Airbase, therefore as for security reason protection fence along side of the securing distance has to be taken measured with anti-observation fence (height of 3m with opaque fence) should be installed.

2) Also 3 aircraft taxi bays are facilitated on the east corner of the terminal 3, this area also are consider to secure the anti-observation requirement. The anti-observation fence has to be installed.

7.3 ENVIRONMENTAL IMPACTS

7.3.1 Study Methodology (Procedure)

Study of the detail environmental impact assessment is to be conducted by the project proponent through discussions with related agencies on the basis of guideline of DENR/ BEM and other related agencies as such DPWH, NHA, JICA etc. The environmental impact assessment study will be required following items.

1) Review of the EIS Previously Prepared

JICA guideline including WB safeguard policy as new issued format in 2010 and EIS guideline of DENR/BEM are reviewed and they are confirmed no to have a big differentiation between tow guidelines. When some differentiation are found the study of environmental impact assessment of the project will be conducted with complemented items.

The ECC already received will be confirmed that is validity of the ECC up to date, or if in case of the expired validity and re-acquisition of ECC is required, all the process necessitated to the ECC acquisition through EIS preparation based on PEISS will be made. Necessary study items presumed for the project are shown in **Table 7.3.1-1.**

TABLE 7.3.1-1 COMPLEMENTAL STUDY ITEMS

Environmental Item	Study Items	Study Method
Involuntary Resettlement	1.Verification of scale on land acquisition and resettlement 2.Outline resettlement plan making	1. related regal framework, related example etc. 2. Satellite image photo 3. Identification of kinds and numbers of houses/ buildings in the objective project area 4. Verification of landuse by field survey and interviews 5. Summery RAP making
Local economy such as employment and livelihood, etc.	1.Verification of household, family and livelihood etc.	1. Hearing on social survey for objective households
The poor	1.Verification of household, family and livelihood etc.	1. Hearing on social survey for objective households
Conflict on consultation meetings	1. Verification on issues	1. Hearings in the consultation meeting
Hygiene &Sanitation	1.Verification of hygienic issues, work management and safety measure	1. Collection of data and information of hygienic, construction management
Hazards (Risk), Infectious diseases such as HIV/AIDS	1. Verification of infectious disease record at surrounding area and LGUs.	1. Hearing to concerned organization and collection of data and information
Flora	1.Verification of affected trees	1. Field survey and verification
landscape	1. Verification of landscape objectives	1. Field survey and analysis by 3D image
Global warming	1.Verification on volume of construction equipment and vehicle and their volume activities 2. Verification of traffic demand forecast	1. CO2 emission gas calculation base on traffic volume forecast.
Air pollution	1. Verification of related environmental standard 2. Confirmation of current status on air 3. Confirm traffic volume on the target years based on traffic demand forecast 4.Identify houses and facilities of such school and hospital located at vicinity of the project area 5. Impact during the construction	1. Survey of existing data/ information 2. Field monitoring of noise level. 3. Future demand on target years corresponded to traffic volume forecast 4. Field survey and hearing 5. Verification of construction activities, construction works and quantities, construction method and period, operation equipment, operating hours of vehicle and running distances of vehicles.
Water pollution	1. Water quality of Paranaque river, current status of daily water usage on water system	1.Survey on existing data and information 2. Field survey and hearing at the project site 3. Survey and monitor on major parameter of water
Soil contamination	1. Construction safety management, Anti-oil leaking measure	1. Verification of construction activities, construction works and quantities, construction method and period, operation equipment, operating hours of vehicle and running distances of vehicles.
Waste	1. Construction safety management 2. Disposal method of construction wastes etc.	1. Hearing survey for related organizations 2. Survey similar to the project
Noise & vibration	1. Verification of related environmental standard 2. Confirmation of current status on noise and vibration 3. Confirm traffic volume on the target years based on traffic demand forecast 4.Identify houses and facilities of such school and hospital located at vicinity of the project area 5. Impact during the construction	1. Survey of existing data/ information 2. Field monitoring of noise level. 3. Future demand on target years corresponded to traffic volume forecast 4. Field survey and hearing 5. Verification of construction activities, construction works and quantities, construction method and period, operation equipment, operating hours of vehicle and running distances of vehicles.

Environmental Item	Study Items	Study Method
Accident	1. vehicle operation management and traffic safety management around the project site 2. Traffic safety management during operation period.	1. Verification of operation day, duration and operation route for the construction vehicles. 2. Traffic safety management during operation period.
Traffic congestion	1. vehicle operation management and traffic safety management around the project site 2. Traffic safety management during operation period.	1. Verification of operation day, duration and operation route for the construction vehicles. 2. Verification on traffic demand forecast, traffic safety facilities and items of safety management during operation period.
Flooding	1. Excavation and removal of earth during the construction	1. Verification of excavation schedule and removal management during rainy season.

Source: JICAStudy Team

2) Collection of Proper Baseline Information and Data

Baseline information and data collection and compilation are the fundamental requirement for prediction and minimizing those impacts to natural and social environment caused by the implementation of the project. Especially in social environment, data collection on land acquisition, involuntary affected peoples and their houses and buildings is the vital issue, and this is a responsibility for the project proponent.

The study has to have complementally collective data of ambient air (SO2, NO2 and TSP), Noise level (dBa) and water quality (DO, BOD and TSS). Those data are required to up dated due to previous data were taken more than 10 years at past time. The collected data will be also utilized for monitoring baseline at the operation and maintenance period after the construction. Data required for updating also considered.

3) Ensuring of Proper Social Considerations

The most important study items of social environmental consideration for the study are to ensure proper social considerations. It is fully care for Barangay community peoples including involuntary affected peoples. Through information discloser, supporting of stakeholder meetings, the project has to be formulated as most understandable to the concerned local peoples.

A careless discloser of the information may be resulted a land price escalation in the planed project area by speculative land purchase, illegal occupation of land of the proposed project area. So that land for the proposed road may face to some difficulties for acquisition. When information on the project will be disclosed, the proper consideration has to be taken on information without difficult and issues of confusion involved.

4) Prediction and Evaluation of Environmental Impacts

Based on collected and surveyed data, adverse impact on the natural and social environment will be predicted and evaluated during period of pre-construction, construction and operation /maintenance after construction works.

5) Consideration on Environmental Mitigation Measures and Monitoring Plan

Items on the predicted and evaluated environmental impacts, environmental mitigation measures will be considered and previously conducted environmental monitoring plan for utilized last acquisition of ECC will be up dated.

6) Stakeholder Meeting

Stakeholder meetings will be conducted with peoples directly affected by the project, the project information, environmental impact assessment and resettlement concerns will be discussed and these results will be reflected to the preparation of complementary items to EIS and draft RAP. Date, venue and attendance of the meeting, contents of presentation, question, comments and opinion on the project arisen from the participants will be recorded in minutes of meeting. These evidenced documents will be attached with EIS and RAP.

7) Support to Preparation on EIA Report (EIS) and Draft EIS

The EIA and draft EIS reports will be fulfilled both JICA new guideline and current DENR/ BEM system. Regarding EIS complementary items to previous EIS will be submitted to DENR/BEM for approval.

8) Support to Preparation on the Resettlement Action Plan (RAP) and the Land Acquisition Plan (LAP)

Based on confirmation for necessity of RAP, the draft RAP preparation will be supported in regards to fulfill both JICA new guideline (WB SP4-12) and RAP guideline of DENR/BEM. LAP is not required independently by DENR/BEM, but it is involved RAP accordingly. DPWH is required LAP due to current practice in the projects of WB and ADB etc., and DPWH is followed LAP guideline within RAP of DENR/BEM.

LAP is followed to NRIMP (National Road Improvement Management Program), ESSO (Environment, Social Safeguard) is carried out the planning and IROW (Infrastructure Road Right of Way) is respondent an execution of LAP.

7.3.2 Scoping Results

7.3.2.1 Scoping Matrix

Table 7.3.2-1 shows environmental impacts on NAIAX project on each environmental concerns and project activities through the project stage of pre-construction, construction and operation, management after the construction.

TABLE 7.3.2-1 MATRIX TABLE FOR ENVIRONMENTAL IMPACT EVALUATION ON NAIAX PROJECT

Stage			Pre-Construction	Construction									O&M after construction			
Activities / Environment Concerns			Field Survey	Recruitment of Job Opportunity	Mobilization of Equipment and Materials	Site Clearance	Setting up Base Camp	Earth works	Piling and Construction of Substructure	Construction of Viaduct & Bridge	Construction of Road	Construction of Complementary Structures	Recruitment of Job Opportunity	Increase of traffic volume	Maintenance of Toll Road	Operation of Toll Road and Gate
Social Environment	1	Resettlement/Land Acquisition	XXX													
	2	Economic Activities		+			X						+			
	3	Social and Public facilities			X				X	X	X		X		+	
	4	Split of Communities														
	5	Cultural Property														
	6	Water rights and Rights of Common														
	7	Public health Condition												X		
	8	Waste				X	X	X		X	X					
	9	Hazards (Risk)			X	X	X		X		X	X				+
Natural Environment	1	Topography and Geology														
	2	Soil Erosion				X		X			X					
	3	Ground water														
	4	Hydrological situation				XX	X	X		X	XX					
	5	Coastal Zone														
	6	Fauna and Flora				X										
	7	Meteorology												X		
	8	Landscape						X	X	X						
Pollution	1	Air Pollution			XX			X		X	X	X		X		++
	2	Water Pollution					X		X							
	3	Soil Contamination														
	4	Noise and Vibration			XX		X	X	X	X	X	X		X		X
	5	Land Subsidence														
	6	Offensive Odor														

Note: **+:** Positive Impact X: Negative Impact, but its magnitude will not be significant. XX, XXX: Negative Impact, of which special attention has to be paid.

7.3.2.2 Scoping Results

Table 7.3.2-2 shows scoping results covering social and natural environment, and pollution in both during construction, Operation and maintenance period on NAIAX project with rating evaluation.

TABLE 7.3.2-2 MATRIX OF SCOPING RESULTS

Name of Proponent		***Department of Public Works and Highway (DPWH)***		
No	***Impacts***	***Rating***		***Reasons of Evaluation***
		Impacts Construction		
		During	***After***	
*Social Environment: *Regarding the impacts on "Gender" and "Children's Right", might be related to all criteria*				
1	*Involuntary Resettlement*	*A*	*D*	*Approximately 50 households (There are individual houses sited on the ground and not condominium type housing. Number of Affected persons is counted approximately 280) are allocated on the expressway alignment route. Within above figures 40 households in Barangay 191 are identified as informal settlers, they have been inhabited for long years with solid concrete and mortar structure units. Other 9 households are settled in Barangay Tambo and detail of their family and life style are under the social survey process. Other than above said households there are small retail shops, nursery school, basket court, Land transportation office and security guard station of Barangay affected and counted approximately 17 cases. Total of 9 cases of Business establishments and ex-post office remained after burned within the property of MIA are partially affected and they have to move back to their original location. Basically the most of expressway ROW is located within the property belonged to MIA and Philippine Air Force etc., The area for construction of interchanges and ramp ways are to be required for new land acquisition.*
2	*Local economy such as employment and livelihood, etc.*	*B-/ B+*	*+*	*During the construction period, small retail shops and vendor shops which managed especially by women are affected due to reduced numbers of daily customer and as a results their sales accounts may temporally be reduced.* *Meanwhile employment opportunity for construction labor will be increased. Viaduct structure of the expressway provides shade along the route, but the right to sunlight is not a subject to the problem for local peoples in the tropical region. In operation period of the expressway the traffic volume of the project area will divert to the expressway and smooth traffic along the existing road will encourage vicinity business activities therefore vicinity sales accounts will not be decreased so much but increased.* *The users of the expressway will have their trip destination with time saving and no traffic jam, and expressway has this service function to them as to be bypass for the project area. Current status of the existing congested traffic environment of the area will be improved and it will be encouraged to stable and active business activities for the vicinity peoples. Transferring and transporting both peoples and goods are to be harmonized as to be contributed local economy.*
3	*Land use and utilization of local resources*	*D*	*D*	*The existing road and facilities will be improved in conjunction with theexpressway project; therefore existing road condition will be physically much improved. The pass through traffic within the project area will be diverted to the expressway and status of traffic jam along the existing road will be mitigated as to be smooth flow. As a consequence an effective landuse along the road vicinity will be increasing its resource potential and as a result the landuse of the vicinity will be activated and enhanced.*
4	*Social institutions*	*D*	*D*	*Infrastructure will be substantially developed due to the related road facility improvement by the expressway project.*

Name of Proponent		Department of Public Works and Highway (DPWH)		
	such as social infrastructure and local decision-making institutions			*The expressway is consisted viaduct structure and there is almost no physical segregation given to the existing local community system. So that almost no local decision-Making institution is expected.*
5	*Existing social infrastructures and services*	*D*	*D*	*The expected users of toll road have mostly travel destination to airport and port area etc., for easy access with short time trip. The users will save travel time and avoiding traffic congestion instead of using the existing road. Some of total generated traffic volume will be diverted into the expressway while other traffic volume will be flown into the existing road. While traffic volume will be increased at vicinity of existing roads area in long time span by demand forecast analysis. However congested condition of the current status will be improved so as to be improved at vicinity roadside environment and business activities of the area will become stably enhanced. Since the expressway project has toll and viaduct system so that the pass through traffic will be diverted and impact to the existing road will be almost nominal.*
6-1	*The poor*	*B-*	*B+*	*Some poor class peoples are inhabited; little direct impact is expected by the project. Many opportunities on participation of project related business activities and employment are generated during the construction period. After construction vicinity business activities will be increased due to enhancement of the existing road condition and improved roadside environment, employment opportunities also increased consequently.*
6-2	*Indigenous and ethnic people*	*D*	*D*	*No such indigenous and ethnic people are living in the vicinity.*
7	*Misdistribution of benefit and damage*	*D*	*D*	*Impact on some traffic congestion on the existing roads is expected due to the construction activities. Minor misdistribution of benefit and damage are expected under the proper management of traffic control made during the construction period. After construction the damage caused by the current congested traffic will be avoided due to diversion of traffic volume into the expressway. This damage will turn to be a benefit shared by all local peoples...*
8	*Cultural heritage*	*D*	*D*	*No specific cultural and heritage assets exist in the project area and no direct impact is expected. However vicinity of the project area has some public facilities as museum (Philippine Air Force) etc. Accessibility to these facilities may be arising during the construction period if proper management is absence. Also indirect impact to cultural heritage is not existed vicinity of the project area.*
9	*Local conflict of interests*	*C*	*D*	*Land acquisition and resettlement are the vital requirement for the project implementation.* *Some conflicts between local peoples may arise on land acquisition and compensation during conducting consultation meetings at Barangay level.*
10	*Water Usage or Water Rights and Rights of Common*	*D*	*D*	*Water system of daily use by local peoples is not existed. Therefore no impact on right of water usage.*
11	*Sanitation*	*C*	*D*	*Hygienic condition along the construction site will be degraded by activities of foundation works, excavation, unloading construction and borrowed materials, removal of disposals; however this sanitary condition may be degraded temporary. These impacts are expected as a small level when proper construction and safeguard management will be periodically conducted. Less impact will be expected during the construction period.* *After construction sanitary condition along the existing roadside area will be much improved due to development of viaduct and related improvement of existing roads.*
12	*Hazards (Risk), Infectious*	*C*	*C*	*Construction workers from outside of the project area may be less number due to guideline on hiring more than 70 % of the*

Name of Proponent		Department of Public Works and Highway (DPWH)		
	diseases such as HIV/AIDS			*workers from the project area. Dusts and emission guess caused by construction activities will be affected as respiratory diseases to construction workers and local peoples, but it could be temporally and not so serious. Safety management of the construction activities, dust control, periodical watering for settling dust, proper maintenance of construction vehicles and equipment will be necessary. Education on sanitation, safeguard operation to the workers and information on construction schedule and activities to local peoples are necessary.*
Natural Environment				
13	*Topography and Geographical features*	*D*	*D*	*No large scale alteration with cutting and embankment is required by the project. No impact on topography and geographical features is expected.*
14	*Soil Erosion*	*B*	*D*	*Almost no earthwork by cutting and embankment is applied; it may not be caused soil erosion impact. The construction work is viaduct and bridge type, abutments of the bridge is situated outside of the river and no pier installed in the water, side protection of abutment is constructed with concrete wall and no earth embankment, so that soil erosion will be not occurred. In some case of excavation activities for pier foundations, piles of excavated earth will cause temporally*
15	*Groundwater*	*D*	*D*	*Characteristics of the construction work are a continuous viaduct structure and abutment and pier are only earthwork related excavation for their foundations. Excavation required for pier foundation is in 35m intervals and only independent spotted location, so that the construction activities may not give impact to ground water layer.*
16	*Hydrological Situation*	*D*	*D*	*Paranaque river is sited in the project site, abutment and pier of the bridge are not installed within the river, therefore the project would not be expected any impact to hydrological situation of the river.*
17	*Coastal Zone (Mangroves, Coral reefs, Tidal flats, etc.)*	*D*	*D*	*The project area is not belonged to coastal and marine zone. The area is approximately 10km off the coast. The nearest coastal zone to the project site has been developed as port, no such mangrove ecosystem is habited. Paranaque river has brackish water and tidal affection. The river has urban drainage function and is in full of rakish with quite degraded water quality.*
18	*Flora, Fauna and Biodiversity*	*C*	*D*	*The project area has been urbanized and manmade environmental condition. Natural ecosystem in this area is always in artificial creation as street tree planting and landscaping at facility gardens. The project alignment will affect locations where these trees are planted, those trees are to be demolished or transplanted to other locations. Trees obliged to demolish are compensated to planting young trees under the guide line of the law. Fauna biodiversity is almost none but only pets as dog and cat are habited with local people family, rats, sparrows and some insects are survived. Protective species both flora and fauna are not existed in this urbanized project area.*
19	*Meteorology*	*D*	*D*	*The viaduct structure of the project is formulated its pier of 35m span interval, the space under the viaduct is large enough to flow air and wind in any direction. The viaduct will provide shade to the ground and will make cooler condition good for activities of local peoples. An impact is not expected by the project.*
20	*Landscape*	*B*	*B*	*Contrast between location of the viaduct and landmark feature will give quality of perceptional impact to the pedestrian. Probably the location of viaduct sited back side of the feature will be sense of stable due to the design figure and motional direction of the feature. Construction activities will cause busy looks during the*

Name of Proponent		Department of Public Works and Highway (DPWH)		
				construction period especially at roundabout of landmark sited near the front of terminal 3.
21	*Global Warming*	*B*	*C*	*The project will contribute to solve increase of traffic volume and traffic congestion in future, increase of CO_2 will affect global warming impact due to traffic volume increased. Currently Metro Manila has a policy to promote tree planting program to contribute global worming phenomena. Through the study of CO_2 emission comparing the case of with project and without project is preparing.*
				Pollution
22	*Air Pollution*	*B*	*C*	*Air pollution will be expected due to generate vehicle emission and dust by construction activities during the construction period. After construction traffic congestion will be mitigated and less air pollution will be expected than before. However the traffic volume will be increased consequently air pollution become to be worsening unless proper regulations on traffic control vehicle emission gas etc., by the Philippine Government concerned.*
23	*Water Pollution*	*B*	*D*	*Excavation activities of foundation work of piers may cause temporally impact when local drainage and sewerage system will be affected by construction activities. The existing drainage and sewerage system shall be checked together with LGUs engineer and safety management of construction work shall be prepared for avoiding water pollution problems. After construction the storm drainage system will be improved and no water pollution will be expected. Currently water quality of Paranaque river is polluted and functioned as urban drainage channel.*
24	*Soil Contamination*	*C*	*D*	*When lubricant oils and chemicals leaked into the ground from construction vehicles and equipment, soil contamination will be expected. Construction vehicles and equipment will be requested to have proper maintenance avoiding oil leakage to the ground especially construction camp yard... Contaminated soil must be removed to the proper disposal place directed by LGU.*
25	*Waste*	*B*	*D*	*Wastes and refuse materials from construction site and workers camp yard are usually generated, these wastes must be checked either dangerous, toxic, spoiled or not, if these risky wastes are identified disposed to the specific place directed by LGU. Basically these wastes can be managed by the contractor during construction period.*
26	*Noise and Vibration*	*B*	*B*	*Operation activities of construction equipment and vehicles generate certain level of noise and vibration and affect nearby living local peoples. These impacts will be temporally during construction period. After construction numbers of vehicles on the expressway and existing road will cause noise and vibration impacts to the vicinity peoples. Because of high elevation of the viaduct generated noise from the expressway will diffuse in the air, so that noise is not so much level.*
27	*Ground Subsidence*	*D*	*D*	*Operation activities for viaduct and bridge foundation work will not dredge ground water, also no ground subsidence phenomena will be expected according to previous data of boreholes. Therefore impact of ground subsidence is not expected.*
28	*Offensive Odor*	*D*	*D*	*Sanitary facility as toilet and garbage collection area in the worker camp site will cause temporally offensive odor to the nearby settled local peoples. Hygienic and sanitation management by the contractor will be controlled. Basically the project will not cause offensive odor so much.*
29	*Bottom sediment*	*D*	*D*	*No impact will be expected due to excavated soils are removed to disposal yard not disposed near to the river. No impact on river hydraulics and no bottom sedimentation will be expected.*
30	*Accidents*	*B*	*C*	*According to increase numbers of construction vehicle during the construction period, ration of traffic accident will increase. Management of transportation operation in the*

Name of Proponent		Department of Public Works and Highway (DPWH)		
				construction site is one of the important responses for the contractor. After the construction traffic flow will be improved because of improvement of road facilities, so that accident may be reduced. *The expressway will be furnished with all standard safety measures. Very little impact is expected.*
31	*Traffic congestion*	*B*	*+*	*Traffic control management will be required during construction period; an effective road width will be reduced narrow for construction activities, so that traffic congestion will be accelerated. After the construction, traffic volume will be diverted in to the expressway and traffic congestion will be much reduced on the existing road.*
32	*Flooding*	*C*	*D*	*Excavation activities will sometimes give blocked and choked discharge function to the existing drainage systems and this may lead to partial flooding when itis in rainy season. After the construction the storm water on the expressway will be well drained into improved ground drainage system, so that flooding on the ground will be minimal.*

Source: The study team

7.3.3 Prediction and Assessment of Impacts

1) Social Environment

The proposed NAIAX project will create beneficial and adverse effects not only on theresidents of the project site but also on the non-residents, such as establishment owners and commuters.

i) Involuntary Resettlement

During Pre-construction period: Approximately **61**households (There are individual houses sited on the ground and not condominium type housing. Number of Affected persons is counted approximately 280) are allocated on the expressway alignment route. Within above figures **53** households in Barangay 191 are identified as informal settlers, they have been inhabited for long years with solid concrete and mortar structure units. Other **8** households are settled in Barangay Tambo and detail of their family and life style are under the social survey process. Other than above said households there are small retail shops, nursery school, basket court, Land transportation office and security guard station of Barangay affected and counted approximately 17 cases. Total of 9 cases of Business establishments and ex-post office remained after burned within the property of MIA are partially affected and they have to move back to their original location. Basically the most of expressway ROW is located within the property belonged to MIA and Philippine Air Force etc., The area for construction of interchanges and ramp ways are to be required for additional land acquisition.

ii) Local Economy Such as Employment and Livelihood, etc.

During Pre-construction period: The property owners, whose land will be purchased by the proponent for right-of-way acquisition, will mainly benefit from such transactions. The income to be derived by the legitimate landowners is quite significant to increase in their income levels. While affected informal settlers and temporary business establishments will also receive some kind of compensation. However, the amount may not be big enough to their present income levels.

During construction period: Small retail shops and vendor shops which managed especially by women are affected due to reduced numbers of daily customer and as a

results their sales accounts may temporally be reduced. Meanwhile employment opportunity for construction labor will be increased. Construction activities are often associated with the influx of temporary workers. For this period, there will be approximately 1,500 to 2,000 workers to be hired by the project.

As impact on women**,i**n spite of the type of work to be required during the construction of the project, the proponent should adopt a policy of equal opportunity for both men and women in the hiring of workers. There should not be any preference or bias for males over females in the filling of positions, especially during the construction period. The proponent should also not place any restriction against females from applying for specific jobs available, even if they are construction-related.

O/M period after the construction: Viaduct structure of the expressway provides shade along the route, but the right to sunlight is not a subject to the problem for local peoples in the tropical region. In operation period of the expressway the traffic volume of the project area will divert to the expressway and smooth traffic along the existing road will encourage vicinity business activities therefore vicinity sales accounts will not be decreased so much but increased.

The users of the expressway will have their trip destination with time saving and no traffic jam, and expressway has this service function to them as to be bypass for the project area. Current status of the existing congested traffic environment of the area will be improved and it will be encouraged to stable and active business activities for the vicinity peoples. Transferring and transporting both peoples and goods are to be harmonized as to be contributed local economy.

Regarding business or economic opportunities, the local businessmen will have varying experiences depending on their location and type of business.

Increase in land values will benefit landowners and the city governments in terms of increase in real property tax, it will become more prohibitive for the average citizen to acquire or purchase such properties. However, the project area will have a commercial or mixed use land use classification rather than a residential area.

iii) Land Use and Utilization of Local Resources

During construction period: Construction activities will utilize existing trunk roads so that an actual their roads width will be narrower than before, traffic congestion will be often generated. Also this impact will affect connecting other local roads due to the construction activities. These traffic congestion will affect local services resources with some inconvenient conditions.

O/M period after the construction: The existing road and facilities will be improved in conjunction with the expressway project; therefore existing road condition will be physically much improved. The pass through traffic within the project area will be diverted to the expressway and status of traffic jam along the existing road will be mitigated as to be smooth flow. As a consequence an effective landuse along the road vicinity will be increasing its resource potential and as a result the landuse of the vicinity will be activated and enhanced.

iv) Social Institutions Such as Social Infrastructure & Local Decision-Making Institutions

During construction period: Infrastructure will be substantially developed due to the related road facility improvement by the expressway project. The expressway is consisted viaduct structure and there is almost no physical segregation given to the existing local community system. So that almost no local decision making institution is expected.
O/M period after the construction: There is no impact expected.

v) Existing Social Infrastructures and Services

During construction period: Construction activities will utilize existing trunk roads so that an actual their roads width will be narrower than before, traffic congestion will be often generated. Also this impact will affect connecting other local roads due to the construction activities. These traffic congestion will affect local services with some inconvenient conditions.

O/M period after the construction: The expected users of toll road have mostly travel destination to airport and port area etc., for easy access with short time trip. The users will save travel time and avoiding traffic congestion instead of using the existing road. Some of total generated traffic volume will be diverted into the expressway while other traffic volume will be flown into the existing road. While traffic volume will be increased at vicinity of existing roads area in long time span by demand forecast analysis. However congested condition of the current status will be improved so as to be improved at vicinity roadside environment and business activities of the area will become stably enhanced. Since the expressway project has toll and viaduct system so that the pass through traffic will be diverted and impact to the existing road will be almost nominal.

vi) The Poor

During construction period: Some poor class peoples are inhabited; little direct impact is expected by the project. Many opportunities on participation of project related business activities and employment are generated during the construction period.

O/M period after the construction: Vicinity business activities will be increased due to enhancement of the existing road condition and improved roadside environment, employment opportunities also increased consequently.

vii) Indigenous and Ethnic People

No such indigenous and ethnic people are living in the vicinity.

viii) Misdistribution of Benefit and Damage

During construction period: Impact on some traffic congestion on the existing roads is expected due to the construction activities. Minor misdistribution of benefit and damage are expected under the proper management of traffic control made during the construction period.

O/M period after the construction: Damage caused by the current congested traffic will be avoided due to diversion of traffic volume into the expressway. This damage will turn to be a benefit shared by all local peoples.

ix) Cultural Heritage

During construction period: No specific cultural and heritage assets exist in the project area and no direct impact is expected. However vicinity of the project area has some public facilities as museum (Philippine Air Force) etc. Accessibility to these facilities may be arising during the construction period if proper management is absence. Also indirect impact to cultural heritage is not existed vicinity of the project area.

O/M period after the construction: There is no impact expected.

x) Local Conflict of Interests

During Pre-construction period: Land acquisition and resettlement are the vital requirement for the project implementation. Some conflicts between local peoples may arise on land acquisition and compensation during conducting consultation meetings at Barangay level.There are other proposed government projects and initiatives being planned along the same area of the proposed road alignment. These are the proposed road widening project of the DPWH will be done along the stretch of the Domestic Road.

xi) Water Usage or Water Rights and Rights of Common

During construction period: Water system of daily use by local peoples is not existed. Therefore no impact is expected on right of water usage.

O/M period after the construction: There is no impact expected.

xii) Sanitation

During construction period: Hygienic condition along the construction site will be degraded by activities of foundation works, excavation, unloading construction and borrowed materials, removal of disposals; however this sanitary condition may be degraded temporary. These impacts are expected as a small level when proper construction and safeguard management will be periodically conducted. Less impact will be expected during the construction period.

O/M period after the construction: After construction sanitary condition along the existing roadside area will be much improved due to development of viaduct and related improvement of existing roads.

xiii) Hazards (Risk), Infectious Diseases Such as HIV/AIDS

During construction period: Construction workers from outside of the project area may be less number due to guideline on hiring more than 70 % of the workers from the project area.

Dusts and emission guess caused by construction activities will be affected as respiratory diseases to construction workers and local peoples, but it could be temporally and not so serious. Safety management of the construction activities, dust control, periodical watering for settling dust, proper maintenance of construction vehicles and equipment will be necessary. Education on sanitation, safeguard operation to the workers and information on construction schedule and activities to local peoples are necessary.

2) Natural Environment

i) Topography and Geographical Features

During construction period: No large scale alteration with cutting and embankment is required by the project. No impact on topography and geographical features is expected.

O/M period after the construction: There is no impact expected.

ii) Soil Erosion

During construction period: Almost no earthwork by cutting and embankment is applied; it may not be caused soil erosion impact. The construction work is viaduct and bridge type, abutments of the bridge is situated outside of the river and no pier installed in the water, side protection of abutment is constructed with concrete wall and no earth embankment, so that soil erosion will be not occurred. In some case of excavation activities for pier foundations, piles of excavated earth will cause temporally.

O/M period after the construction: There is no impact expected.

iii) Groundwater

During construction period: Characteristics of the construction work are a continuous viaduct structure and abutment and pier are only earthwork related excavation for their foundations. Excavation required for pier foundation is in 35m intervals and only independent spotted location, so that the construction activities may not give impact to ground water layer.

O/M period after the construction: There is no impact expected.

iv) Hydrological Situation

During construction period: Paranaque River is sited in the project site, abutment and pier of the bridge are not installed within the river, therefore the project would not be expected any impact to hydrological situation of the river.

O/M period after the construction: There is no impact expected.

v) Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)

During construction period: The project area is not belonged to coastal and marine zone. The area is approximately 10km off the coast. The nearest coastal zone to the project site has been developed as port, no such mangrove ecosystem is habited. Paranaque River has brackish water and tidal affection. The river has urban drainage function and is in full of rakish with quite degraded water quality.

O/M period after the construction: There is no impact expected.

vi) Flora, Fauna and Biodiversity

During construction period: The project area has been urbanized and manmade environmental condition. Natural ecosystem in this area is always in artificial creation as street tree planting and landscaping at facility gardens. The project

alignment will affect locations where these trees are planted, those trees are to be demolished or transplanted to other locations.

vii) Meteorology

During construction period: The viaduct structure of the project is formulated its pier of 35m span interval, the space under the viaduct is large enough to flow air and wind in any direction.

O/M period after the construction: The viaduct will provide shade to the ground and will make cooler condition good for activities of local peoples. An impact is not expected by the project.

viii) Landscape

During construction period: Contrast between location of the viaduct and landmark feature will give quality of perceptional impact to the pedestrian. Probably the location of viaduct sited back side of the feature will be sense of stable due to the design figure and motional direction of the feature.Construction activities will cause busy looks during the construction period especially at roundabout of landmark sited near the front of terminal 3.

O/M period after the construction:

ix) Global Warming

The project will contribute to solve increase of traffic volume and traffic congestion in future, while increase of CO2 will affect global warming impact due to traffic volume increased.

During construction period: According to the engineering study the construction of the project is consisted of tree works, expressway and ramps, reconstruction of at-grade road and toll plaza. **Table 7.3.3-1** shows construction work items and materials required for the project. Predictive calculation of greenhouse gas (GHG) in relation to global warming effect was conducted on the basis of the construction activities during two year of implementation period.**Table 7.3.3-1**shows list of construction work and materials.

TABLE 7.3.3-1 LIST OF CONSTRUCTION WORKS AND MATERIALS

Construction work items and materials	Unit	Quantity	Construction work items and materials	Unit	Quantity
A. EXPRESSWAY AND RAMPS			3. VIADUCT CONSTRUCTION		
EARTHWORKS			Metal Decking (8 mm thk)	sq. m	75,493
Structure Excavation, Common Material	cu. m.	31,892.2	Rotating Material (Sosrobahu)	each	52
Foundation Back fill	cu. m.	1,987.0	4. DRAINAGE AND SLOPE PROTECTION STRUCTURES		
Embankment from Borrow	cu. m.	727.5	Mechanically Stabilized Earth (MSE) Wall	sq. m	6,926.61
Crushed Aggregate Base Course		958.5	5. MISCELLANEOUS STRUCTURES		
SURFACE COURSES			Warning Signs	each	15
Bituminous Tack Coat, Emulsified Asphalt, SS-1 (0.45 L/m2)	ton	53.2	Regulatory Signs	each	12

Construction work items and materials	Unit	Quantity	Construction work items and materials	Unit	Quantity
Bituminous Concrete Surface Course, Hot Laid	ton	14,797.1	Informatory Signs (Medium)	each	26
Portland Cement Concrete Pavement t=300 mm	sq.m	6,390	Informatory Signs (Large)	each	4
VIADUCT CONSTRUCTION			Reflectorized Thermoplastic Pavement Markings	sq. m.	13,174.0
Concrete Piles cast in Drilled Holes (1500mm) including Re-Bar	l. m	8,730	Reflectorized Studs 100x100x20 DF	each	275
Concrete Piles cast in Drilled Holes (2200mm) including Re-Bar	l. m	1,770	Installation of Fiber Optic	l. m	4,619.343
Concrete Piles cast in Drilled Holes (2500mm) including Re-Bar	l. m	510	Noise Barrier	l. m	800
Railing, (Concrete Bridge Railing)	l. m	16,213	Toll Road Lighting	each	331
DOUBLE METAL BEAM GUARDRAIL (w/Post)	l. m	4,645	Concrete Curb	l. m	29,087.3
Reinforcing Steel, Grade 60 (Bridge)	kg	15,921,413.5	Reinstallation of Longitudinal Expansion Joint (Type B Joint)	l. m	690
Lean Concrete, 17Mpa	cu. m	573.6	A. RECONSTRUCTION OF AT-GRADE ROAD		
Structural Concrete Class AA 28Mpa for Pile Cap	cu. m	13,953.3	1. EARTHWORKS		
Structural Concrete Class AA 28Mpa for Column	cu. m	6,880.0	Removal of Structure and Obstruction (Existing Ramp)	cu. m	1319.1
Structural Concrete Class AA 28Mpa for Coping	cu. m	10,142	Removal of Structure and Obstruction (Masonry)	sq. m	300
Structural Concrete Class AA 28Mpa for Diaphragm	cu .m	1,804.2	Removal of Structure and Obstruction (Median)	sq. m	4,934.3
Structural Concrete Class AA 28Mpa for Deck Slab	cu. m	30,363.8	Removal of Structure and Obstruction (Concrete Pavement)	sq. m	50,835.6
Structural Concrete Class P 35Mpa for Coping	cu. m	6,023	Removal of Structure and Obstruction (Pedestrian Bridge)	lot	2
Structural Concrete Class P 34Mpa for Hollow slab	cu.cm	3,376.4	Removal of Facilities (Tel, Electric, Billboard, Traffic sign etc.,)	each	2
Structural Concrete Class AA 21Mpa for Parapet, Curb, Median	cu. m	3,620.3	Sub-grade Preparation	sq. m	50,416
Non Shrink Grout 41Mpa including wire mesh for Girder Riser	cu. m	57.23	2. SUBBASE AND BASE COURSE		
PSC Member (AASHTO Girder Type IV) L = 11.5m	each	13	Bituminous Tack Coat, Emulsified Asphalt, SS-1 (0.45 L/m2)	ton	33.8445
PSC Member (AASHTO Girder Type IV) L = 22.4m	each	120	Bituminous Concrete Surface Course, Hot Laid (t=5cm)	ton	8,649.2
PSC Member (AASHTO Girder Type IV) L = 24.7m	each	8	Aggregate Sub-base Course	cu. m	4,754
PSC Member (AASHTO Girder Type IV) L = 28.2m	each	20	3. SURFACE COURSE		

Construction work items and materials	Unit	Quantity	Construction work items and materials	Unit	Quantity
PSC Member (AASHTO Girder Type V) L = 27.5m	each	162	Portland Cement Concrete Pavement (250mm thk)	sq. m	23,518
PSC Member (AASHTO Girder Type V) L = 28.5 m	each	59	4. DRAINAGE AND SLOPE PROTECTION STRUCTURES		
PSC Member (AASHTO Girder Type V) L = 29 m	each	122	RCPC, 610 mm dia.	l. m	10,649
PSC Member (AASHTO Girder Type V) L = 31.5m	each	80	Catch Basin Manhole Drop Inlet	each	761
PSC Member (AASHTO Girder Type V) L = 32.25m	each	12	5. MISCELLANEOUS STRUCTURES		
PSC Member (AASHTO Girder Type V) L = 32.5m	each	113	Warning Signs	each	6
PSC Member (AASHTO Girder Type V) L = 33.5m	each	153	Regulatory Signs	each	6
Pre-stressing Steel	kg	530,199	Informatory Signs (Medium)	each	16
Structural Steel	kg	23,099,360	Informatory Signs (Large)	each	2
Elastomeric Bearing Pad (606 x 306 x 60mm)	pcs	1,724	Reflectorized Thermoplastic Pavement Markings	sq. m	5,991
Steel Girder Shoe Type F	each	236	Concrete Curb	l. m	11,360
Rubber Filler (400 x 150 x 50mm)	each	4,148	Concrete Curb and Gutter	l. m	7,305
Hard Rubber Filler & Restrainer Bolts Dia 30mm	each	1,073	Sidewalk	sq. m	9,876
Pile Dynamic Analysis	each	74	B. TOLL PLAZA		
Pile Integrity Test	each	734	Toll Island, Single	each	20
Cast Iron Deck Drain	each	2,312	Crash Attenuators, Single	set	20
Collector Pipe (150mm dia PVC)	l. m	10,249	Toll Booth (Type 1)	each	16
Collector Pipe (200mm dia PVC)	l. m	8,458	Toll Booth (Maxi Type 2)	each	5
Expansion Joint, Type A (M80 Multiplex)	l. m	427	Toll Plaza	sq. m	1,410.1
Expansion Joint, (SR 2.5A Waboflex)	l. m	512.87	Toll Collection System	set	1
			Toll Plaza Lighting System	each	20

Source: The study team

On the basis of work items and materials required for the implementation of the project, required construction equipment with their capacities, activities of operation hours are shown in **Table 7.3.3-2.** Also rate of fuel consumption, per hour consumption, and unit of fuel for equipment are applied. The most largest portion of the predicted CO2 emission will originate from concrete plant (approx.. 45,450tons) and followed asphalt plant (approx. 950tons), while CO2 emission from construction equipment and vehicles will be 1,950 tons during two years construction period. The predicted total CO_2 emission will be predicted 48,368 tons during two years.

TABLE 7.3.3-2 PREDICTED CO_2 EMISSION CAUSED BY THE CONSTRUCTION ACTIVITIES

Equipment	Capacity	Unit	Fuel consump-tion rate (l/kWh)	Fuel consump-tion per hour (l/hr)	Total operation hour	Total fuel consump-tion (l)	Unit of fuel (kgCO2/l)	Total CO2 emission (tonCO2)-1	Total volume	Unit of CO2	Total CO2 emission (tonCO2)-2
Dump truck	11t	run km	0.05	12.00	13,289.3	7,973.66	2.62	20.89	-	-	-
Wheel Loader	4.2m3	hr	0.15	33.00	602.0	3,039.2	2.62	7.96	-	-	-
Motor Grader 14G	3m/200HP	hr	0.11	9.20	25.4	25.2	2.62	0.07	-	-	-
Vibratory Roller	11t	hr	0.15	16.00	407.8	9917	2.62	2.60	-	-	-
Tired Roller	20t	hr	0.10	7.10	407.8	289.5	2.62	0.76	-	-	-
Hydraulic Excavator	1.0m3	hr	0.18	29.00	3,859.7	19,588.2	2.62	51.32	-	-	-
Backhoe	0.6m3	hr	0.18	18.00	2,116.5	6,667.1	2.62	17.47	-	-	-
Vibratory Plate Compactor	7 Hp	hr	0.13	16.00	2,768.5	5,537.1	2.62	14.51			
Track Crane	160 ton, 300Hp	hr	0.44	47.00	2,586.0	53,478.5	2.62	140.11			
Crawler Crane	290t	hr	0.09	23.00	20,643.8	42,257.8	2.62	110.72	-	-	-
Drill Rig for Pile	CWV Model TRM35/31	hr	0.44	48.00	22,020.0	460,834.6	2.62	1,207.39			
Concrete transit Mixer	10t	run km	0.06	13.00	4,866.9	3,732.9	2.62	9.78	-	-	-
Concrete Pump	60yd3	hr	0.41	60.00	4,866.9	119,726.6	2.62	313.68	-	-	-
Concrete									146,0 (m3)	311.3 kgCO2/m3	45452.3
Track Mounted Crane	21-25t, 200Hp	run km	0.04	7.10	1,339.9	418.6	2.62	1.10			
Concrete Vibrator	Gasoline type	hr	0.54	0.27	116,806.4	17,030.4	2.36	40.19			
Semi Trailer	20 ton	run km	0.08	18.00	287.0	581.9	2.62	1.00			
Asphalt Paver	4.7 m, 112 Hp	hr	0.15	4.10	433.8	270.3	2.62	0.71	-	-	-
Asphalt Distributor	5t	hr	0.09	7.40	781.5	520.5	2.62	1.36	-	-	-
Asphalt									23,4 (ton)	0.041 kg/CO2/kg	964.56
Lane Marker	8 ton Track	run km	0.19	4.20	4,471.8	3,568.5	2.62	9.35	-	-	-
Sub-total emission of CO2 (ton)								1,951.0			46416.9
Total emission of CO2 (ton)											48367.8

Source: The study team

Note: Fuel consumption rate (l/kWh), Fuel consumption per hour (l/hr) and Unit of fuel (kgCO2/l) are applied by data of lease rate of construction machines, Japan Construction Mechanization Association 2010

CO2 emission from traffic vehicles at the project vicinity area in target year

Traffic demand forecast in the project area

Traffic demand forecast by vehicle types in the target year for the project area shows in **Table 7.3.3-3**

TABLE 7.3.3-3 TRAFFIC VOLUME IN THE TARGET YEARS

Unit: Vehicle/day

	Traffic volume by vehicle type			
Target year	Passenger car	Bus	Truck	Total
2015	98,800	17,000	17,600	133,300
2020	88,000	23,200	33,700	144,600
2030	128,500	27,100	43,300	198,600

Source: The study team

PCU convert factor and comparison of PCU*km, PCU*hour and traveling speed:
DPWH has PCU convertible factor as Passenger car (1), Jeepney (1.5), Bus (2.2) and truck (2.5) for traffic demand forecast. Following table 7.xx shows comparison of PCU*km, PCU*hour and average travelling speed in the target year of 2015, 2020 and 2030 for the project area.**Table 7.3.3-4**shows comparison of with and without project case in the target years.

TABLE 7.3.3-4 COMPARISON OF WITH AND WITHOUT PROJECT IN TARGET YEARS

Target year		PCU *km	PCU*hour	Average speed (km/hr)	CO2 emission ton/year
2015	With project	14,865,846	494,788	30.0	1,644.6
	Without project	14,727,736	495,330	29.7	1,636.0
2020	With project	16,614,837	599,380	27.7	1,947.3
	Without project	16,495,917	604,628	27.3	1,951.0
2030	With project	19,919,355	795,926	25.0	2,386.5
	Without project	19,602,836	790,071	24.8	2,359.0

Source: The study team

CO2 emission per vehicle type per traveling speed (g-CO2/km. vehicle): CO2 emission volume is depends on traveling vehicle speed, the predictive calculation was applied by the vehicles and circular table of evaluation for road policy of Ministry of land, transport and tourism, Japan. The CO2 emission per km per vehicle was applied 2 type vehicle in accordance with different level of traveling speed. **Table 7.3.3-5** shows CO2 emission g-/km. vehicle.

TABLE 7.3.3-5 CO2 EMISSION

g-/km. vehicle Unit: g-CO2/km. vehicle

km/hr	10	20	25	30	35	40	45	50	55	60	65	70	75	80
Small vehicle	342	229	204	186	172	161	152	146	141	138	137	137	139	142
Large vehicle	1,515	1,133	1,042	963	894	836	788	750	723	706	700	705	719	744

Source: Circular table of evaluation for road policy. MTLT Japan

3) Pollution

i) Air Pollution

During construction period: Air pollution will be expected due to generate vehicle emission and dust by construction activities during the construction period. After construction traffic congestion will be mitigated and less air pollution will be expected than before.

O/M period after the construction: The traffic volume will be increased consequently air pollution become to be worsening unless proper regulations on traffic control vehicle emission gas etc., by the Philippine Government concerned.

ii) Water Pollution

During construction period: Excavation activities of foundation work of piers may cause temporally impact when local drainage and sewerage system will be affected by construction activities. Currently water quality of Paranaque River is polluted and functioned as urban drainage channel.

O/M period after the construction: The storm drainage system will be improved and no water pollution will be expected.

iii) Soil Contamination

During construction period: When lubricant oils and chemicals leaked into the ground from construction vehicles and equipment, soil contamination will be expected. Construction vehicles and equipment will be requested to have proper maintenance avoiding oil leakage to the ground especially construction camp yard. Contaminated soil must be removed to the proper disposal place directed by LGU.

O/M period after the construction: Almost no impact is expected.

iv) Waste

During construction period: Wastes and refuse materials from construction site and workers camp yard are usually generated, these wastes must be checked either dangerous, toxic, spoiled or not, if these risky wastes are identified disposed to the specific place directed by LGU. Basically these wastes can be managed by the contractor during construction period.

O/M period after the construction: Almost no impact is expected.

v) Noise and Vibration

During construction period: Operation activities of construction equipment and vehicles generate certain level of noise and vibration and affect nearby living local peoples. These impacts will be temporally during construction period.

O/M period after the construction: Numbers of vehicles on the expressway and existing road will cause noise and vibration impacts to the vicinity peoples. Because of high elevation of the viaduct generated noise from the expressway will diffuse in the air, so that noise is not so much level.

vi) Ground Subsidence

During construction period: Operation activities for viaduct and bridge foundation work will not dredge ground water, also no ground subsidence phenomena will be expected according to previous data of boreholes. Therefore impact of ground subsidence is not expected.

O/M period after the construction: No impact is expected.

vii) Offensive Odor

During construction period: Sanitary facility as toilet and garbage collection area in the worker camp site will cause temporally offensive odor to the nearby settled local peoples. Hygienic and sanitation management by the contractor will be controlled. Basically the project will not cause offensive odor so much.

O/M period after the construction: No impact is expected.

viii) Bottom Sediment

During construction period: No impact will be expected due to excavated soils are removed to disposal yard not disposed near to the river.

O/M period after the construction: No impact on river hydraulics and no bottom sedimentation will be expected.

ix) Accidents

During construction period: According to increase numbers of construction vehicle during the construction period, ration of traffic accident will increase. Management of transportation operation in the construction site is one of the important responses for the contractor.

O/M period after the construction: Traffic flow will be improved because of improvement of road facilities, so that accident may be reduced. The expressway will be furnished with all standard safety measures. Very little impact is expected.

x) Traffic Congestion

During construction period: The main impact that construction will have on existing traffic is the narrowing down of the main carriageway. In order to accommodate traffic flow, the existing lane widths will be made narrower so as to accommodate the same number of traffic lanes within the narrower available width, a higher volume/capacity ratio will be generated and will likely result in increased travel time so that traffic congestion will be accelerated.

O/M period after the construction: Traffic volume will be diverted in to the expressway and traffic congestion will be much reduced on the existing road.

xi) Flooding

During construction period: Excavation activities will sometimes give blocked and choked discharge function to the existing drainage systems and this may lead to partial flooding when it is in rainy season. The flood prone section of the proposed MIA elevated roadway is within Phase 2 along the Domestic Road fronting the Domestic Airport Terminals 1 and 2. During the construction phase, flash flooding along this road shall impact on the construction activities.

O/M period after the construction: The storm water on the expressway will be well drained into improved ground drainage system, so that flooding on the ground will be minimal.

7.3.4 Assessment of Alternatives (In-Terms of Impacts)

1) Alternative Alignment

In order to ensure the vertical clearance for safety clearance on navigation course of the air field, two route alignments were studied.

Alternative-1 Expressway alignment along Paranaque River, and
Alternative-2 Expressway alignment along Domestic Road.

Table 7.3.4-1 shows the comparison table of Alternative-1 and Alternative-2.

TABLE 7.3.4-1 COMPARISON OF TWO (2) ALTERNATIVES

(Confidential)

2) West End Alternatives

LRT Line-1 Cavite Extension Plan

LRT Line-1 Cavite Extension and Land Ownership
LRT Line-1 Cavite Extension

- LRT Line-1 Cavite Extension will be constructed along Roxas Blvd and Manila-Cavite Coastal Expressway. LRT will not affect existing ROW of both roads.
- LRT MIA Station will be constructed over the NAIA (MIA) road west extension.
- MIA Station will occupy ;

  Width = 20.8 m.
  Height = 15.712 m.

Land Ownership

- Subject land is owned by Manila Bay Development Corp. (MBDC).
- Coastal Mall (or Uniwide) leased land from MBDC and lease contract is going to be expired in 2015.
- Annex building of Coastal Mall is not used anymore.
- Second and Third Floor of Coastal Mall is closed and only a part of ground floor is open for business.

Manila Bay Blvd

- MBDC and PAGCOR have a plan to construct Manila Bay Blvd.

3) Alternatives

There are two alternatives.

Alternative-1: The expressway is to end at Macapagal Blvd.
Alternative-2: The expressway is to end at Roxas Blvd.

Alternative-1 has two sub-alternatives;

Alternative-1(A): Ramp A and B utilizes MBDC land which is currently vacant.
Alternative-1(B): Ramp A and B utilizes Annex Building Area of Coastal Mall.

End point of interchange has tree alternatives on NAIAX phase 2, alternative-A1, alternative -A2 and alternative A2. **Table 7.3.4-2** shows comparison of tree alternatives. The alternative-A2 become a recommended plan.

TABLE 7.3.4-2 COMPARISON FOR NAIAX PHASE 2 END POINT OF INTERCHANGE

(Confidential)

7.3.5 Mitigation Measures

1) Social Environment

i) Involuntary Resettlement

During the Pre-Construction Period: To avoid adverse effects on social life, economy and culture of PAHs, select the best alignment to minimize adverse effects on residential areas. Implement the appropriate plan for residential area acquisition in accordance with the law and local conditions.

During the Construction Period: The proponent should hold a briefing or orientation with the local barangay residents about the process and schedule of hiring, the qualification and application requirements, as well as other job related concerns. This way the residents would become well-informed about the job openings available beforehand for them to be able to prepare for this and not miss out on the chance.

ii) Local Economy Such as Employment and Livelihood, etc.

During the Pre-Construction Period: To avoid adverse effects on local economy and livelihood, Select the best alignment to minimize encroachment into institutional and commercial lands

During the Construction and Period: To avoid conflict between workers and local residents, a) Employ local people as much as possible as the construction workers; prioritize opportunities for the Project affected households (PAHs). b) Properly manage workers and organize training for workers, particularly workers from other LGUs on relations with local residents, c) Quarterly meetings between constructor and Barangay officers on the matters regarding the relations between workers and local residents.

Regarding increase in migrant workers to compete with local employment, local residents will be given priority in terms of employment in the project. The use of migrant workers will only be limited as much as possible to highly specialized jobs or fields of expertise. An effort should be made by the contractor to orient workers about the proper working relationship and conduct teambuilding exercises to avoid confrontations/quarrels between migrants and local workers.

During O/M period after construction: The benefits from time savings come from the increased economic productivity made available by reduced travel time brought about by the project. Vehicle operating cost savings will come from the increased vehicular operating efficiency created by higher travel speeds.

The only slightly negative impact in relation to traffic flows to the existing network relate to the possibility of queuing at toll plazas, and at on-ramps, which could affect other traffic. The location of the main toll collection plaza is at the midsection of the expressway project, near the location of Terminal 3. This is the elevated portion of the expressway, hence the only traffic the toll collection will affect is traffic on the expressway project itself. However, with the use of modern toll collection systems (electronic toll collection), queue times will be shortened and service level will improve.

The job requirement is to be provided the project stakeholder firsthand information about the employment opportunities of the project before outsiders can know about them. The list should be posted in the different barangay halls/centers and included as part of the

information, education and communication (IEC) materials to be made available to the local residents. Once the recruitment office of the project has reviewed all submitted applications from the area and determined the qualified applicants, only then should they invite or open their recruitment to outsiders.

iii) The Poor

During the Pre-Construction Period: The informal settled families to be provided compensation for their dislocation should be given assistance in terms of proper fund management or a business/livelihood seminar to prevent them from squandering the money they receive. They should also be guided on the appropriate livelihood systems that would be suitable or interesting for them.

iv) Local Conflict of Interests

During the Pre-Construction Period: To avoid adverse impacts relating to detailed design are flash flood (waterlogging), impediments to movements of people and risks, Conducting careful surveys and consultation with LGUs, about design works.

During the Construction and Period: For the business establishments that may be adversely affected by the project construction, the contractor will be providing noise and pollution barriers to minimize the dust and noise reaching these establishments. Detour alternative routes will be provided to minimize or lighten the traffic congestion in the area during construction. These measures will allow motorists to continue passing through the area with minimal inconvenience and enable the businesses in the area to continue operating with minimum disturbance.

v) Sanitation

During the Construction and Period: To avoid a generation of domestic solid wastes causing land, water, and air pollution and public health problems, Proper waste management such as;

(i) Do not permit disposal of waste into rivers or fields.
(ii) Properly collect, and segregate domestic wastes at workers' camps, and offices.
(iii) Contract with LGUs service divisions for transport of the solid waste to treatment sites every two days.
(iv) Use of pits with proper lining for disposal of domestic solid wastes, related solid

To avoid wastewater from workers' camps, especially wastewater from toilets causing water, air, and land pollution and a potential for spreading of diarrhea epidemics, to provide good mobile toilets for each construction site. To prevent wastewater from workers' camps, especially wastewater from toilets causing water, air, and land pollution are potential for spreading of diarrhea epidemics.

It is recommended installation of sanitary 2 or 3 chamber septic tank toilets for each worker's camp. At workers' camps located far (over 500m) from inhabited areas, bench latrines may be installed. Latrines should be located over 100m from living places and 50 m from river. Daily care of disinfection for sanitary facilities is required. Fill and disinfect properly before moving the camp to another site. Provide clean water and hand washing soap for washing hands at each toilet area and provide rubbish bins in toilet area for collection of used bathroom paper atconstruction sites, Workers' camp sites .

vi) Hazards (Risk), Infectious Diseases Such as HIV/AIDS

During the Construction and Period: To avoid Transmission of infectious diseases from local people to workers and vice versa, a) Improve awareness of infectious disease prevention, particularly HIV/AIDS and flu for workers, b) Provide a clean water supply at construction camps, c) Provide rubbish bins at construction camps and daily pickups (by LGU unit to LGU's treatment sites), d) Ensure good environmental sanitation conditions and health for workers at construction camps, e) Set up a medical station for construction camps for first aid and health care for workers, f) Supply safe food for workers, g) Properly fill holes created by excavation activities to prevent health risk and eliminate growth of disease vectors, h) Fill water holes and kill rats, bugs, flies and mosquitoes.

Security concerns of the military: As mitigation to this potential problem, the project design will require to install tree meter high aluminum / polymer barriers along the sections of the expressway that will be facing Villamor Airbase and along the ramps that will be crossing through the airspace of the military base. These barriers will serve as enclosures or protective barriers that will prevent motorists from seeing the inside of the base from the elevated road.

2) Natural Environment

i) Soil Erosion

During the Construction and Period: Soil erosion at construction sites, causing damage to roads, fields, river pollution, The contractor will Ensure proper construction method and management applied for excavation during the substructure foundation operation so that soil erosion could be minimized

ii) Flora, Fauna and Biodiversity

During the Pre-Construction Period: Trees to be cut within the project development site should be carefully selected before cutting to minimize unnecessary loss of the existing vegetation along the roadway. The remaining trees should be incorporated in the landscaping of the road network. Unless otherwise saving the trees to be cut would be to ball young trees and transplant them in other sites along the road network. Since it is impossible to avoid tree cutting with the expansion and development of the new road network, it would be prudent to plant new tree species along the thoroughfare as part of the landscaping of the area.

During the Construction Period: Regarding the **c**utting trees outside the project ROW, to avoid reduction of vegetation cover, affecting local biological resources, creating degrading landscape, a) cutting trees outside the project ROW is to be prohibited, b) Replanting of trees destroyed by constructors (if any) at suitable place close to the construction site. Area of trees to be replanted is equal to area of trees lost by viaduct /road/bridge construction.

Since it is impossible to avoid tree cutting with the development of the project, it would be prudent to plant new tree species along the thoroughfare as part of the landscaping of the area. Tree pruning during the construction phase should be done judiciously such that the pruning procedures will not directly affect the growth and development of the tree. Pruning should always consider the minimum such that unnecessary cutting of branches are prevented and shade areas are maintained for construction workers of the project. Furthermore, pruning should also consider the aesthetic value of the tree before cutting its branches.

iii) Landscape

During the Construction Period: The construction contractors should ensure that the work area in the middle of the road will always be kept clean and orderly. No other equipment or structures should be found scattered or placed outside the work area. A creative mitigation measure that can be adopted by the proponent is to maximize the use of the median barriers by having them painted with graphics. So that the solid, metal and concrete structures that will be overwhelmed the scenery.

O/M period after the construction: The tree and vegetation species to be planted for landscaping should be those that will be suitable for the area, particularly those that will be able to survive in an urban environment-resistant to extreme heat and cold temperatures, dust and vehicle emissions. At the same time, the recommended species to be used for landscaping should be able to complement the existing urban scenery and greenery.

iv) Global Warming

Currently Metro Manila has a policy to promote tree planting program to contribute global worming phenomena.

During the Construction Period: Implementation of the project will be required about 2 years of schedule. Numbers of construction vehicles and equipment will be sheduled in operation activities. And it will be predicted approximately 48,400 tons of CO2 generated. (refer to **Table 7.3.3-1** and **Table 7.3.3-2**) As mitigation measures the Government concerned may consider to encourage tree plantation with corporation by DENR where available open spaces in Metro Manila region.

O/M period after the construction: Based on traffic demand forecast and prediction of CO2 emission in the project area for target year of 2015, 2020 and 2030 will resulted approximately 1,640 tons in 2015, 1,950 tons in 2020 and 2,350 tons in 2030 in accordance with increase of traffic volume. As mitigation measures the Government concerned may consider to encourage tree plantation with corporation by DENR where available open spaces in Metro Manila region. Also on the part of the government pollution regulatory agencies, policies may be adopted on (a) preferred types of mass transport, (b) inspection and maintenance programs of vehicles, (c) specifications on fuel and (d) provision of pollution control devices in car engines.

3) Pollution

i) Air Pollution

During the Construction Period: To avoid dust pollution caused by earth works, On rainless days, watering roads and yards at construction sites and roads that pass inhabited areas and commercial areas at least twice per day. To avoid NO2, SO2, CO, TSP pollution caused by vehicles and construction machines, all vehicles and construction machines used for the project should have licenses issued by the Land Transportation Office or police certifying compliance with DENR standards on vehicle emissions.

The main concern is the increase in TSP concentrations due to increased silt loading of the road. Silt may be prevented from being deposited on the road surface by shortening the time of temporary storage of waste earth materials in excavation sites, covering loads of trucks hauling waste earth materials, washing the soiled wheels of trucks used in the project and by

covering stockpiled excavated materials with plastic. The silt materials deposited on the road may be removed by vacuum or broom sweeping and by water flushing.

Gas emissions may be minimized by (a) good traffic management where traffic delay times are minimized, (b) educating drivers on the optimum speed and acceleration rates that minimize vehicular emissions, (c) information drive on cost effectiveness of car maintenance and (d) programs cooperating with government regulatory agencies on the enforcement of vehicular emission standards.

Other mitigating measures which may be related to the design of the project are (a) provision of roadside barriers in expressway to avoid direct horizontal emission towards windows of buildings adjacent to the elevated roadways and (b) road signs reminding drivers of speed limits and proper acceleration rates. Nitrogen oxides are emitted in larger amounts at higher speeds and rapid acceleration rates. Carbon monoxide emission is greater during idling and low speeds.

On the part of the government pollution regulatory agencies, policies may be adopted on (a) preferred types of mass transport, (b) inspection and maintenance programs of vehicles, (c) specifications on fuel and (d) provision of pollution control devices in car engines.

ii) Water Pollution

During the Construction Period: The existing drainage and sewerage system shall be checked together with LGUs engineer and safety management of construction work shall be prepared for avoiding water pollution problems. Currently water quality of Paranaque River is polluted and functioned as urban drainage channel. The contractors have to ensure proper method and management applied for excavation so that soil erosion could be minimized.

Also construction will require the use of volumes of sand and gravel as construction material. Some of these may be transported/hauled to and from the construction site and source area. In the course of transport and hauling, some of these materials may get spilled or thrown off and contribute to the erosion problem, especially if the dump trucks are not properly covered or secured.Unattended construction debris may also add to the potential sediment source and find their way to the nearby water bodies and drainage system.The resultant effect will be an increase in turbidity, suspended solids and oil/grease from equipment in the receiving water bodies.

iii) Soil Contamination

During the Construction Period: Unattended construction waste and oil/ grease may be added to the potential soil contamination source and find their way to the nearby water bodies and drainage system.The resultant effect will be an increase in turbidity, suspended solids and oil/grease from equipment in the receiving water bodies. Proper management of oil and lubricant use is required for construction machines and equipment.

iv) Waste

During the Construction Period: To avoid disposing wastes from outside and inside of construction and camp sites, soil and surface water pollution that affect people's health and bad odors from temporary waste containers, a) build temporary pits with proper lining at each worker's camp sites for rubbish disposal. Fill carefully after moving to other places, b) at workers' camps and construction sites: Wastes are to be segregated into hazardous and non-hazardous wastes before reuse or transport to disposal sites, c) arrange rubbish bins for

collection of domestic waste and hazardous waste around construction, and workers' camp sites, d) make drainage system (ditches etc.) at worker camp sites, e) provide information on waste management in training programs for workers, including how to manage hazardous wastes, f) Make a contract with the environmental services division of LGUs to regularly collect and carry domestic waste, hazardous waste and construction waste from construction sites to local solid waste treatment centers.

The contractors will be required to implement appropriate and adequate solid waste management systems. Workers will be oriented to strictly observe proper sanitation practices in the construction site. Also contractors will be required to provide or arrange for basic medical services (i.e., regular medical check-up, monitoring, first aid, etc.) to ensure that the health and sanitation of workers are safeguarded.

The contractors will be required to undertake regular clean-up operations, as much as practicable, on a daily basis, whereby all generated solid wastes at the end of the day will be collected and properly disposed at a temporary disposal site within the construction area. All accumulated wastes at the site will have to be regularly collected and brought to the designated landfill site of Pasay, Paranaque. In addition, all construction workers shall be oriented on proper waste disposal to avoid littering and soil contamination. Used oil and grease should be placed in appropriate sealed containers prior to selling them to used oil buyers. Other scrap materials such as bottles, cans, paper cartons and boxes and plastics may be sold to junk shops.

v) Noise and Vibration

During the Construction Period: To avoid Noise and vibration pollution, a) Locate high noise and vibration generation sources far from inhabited area, b) Inform local residents of time and plan of construction activities, c) Proper organization of the construction plan, so that the high noise generation machines would not operate during 10 p.m. to 6 a.m. in inhabited areas, d) Ensure truck drivers do not make a great deal of noise during movement through populated areas. e) Install noise barriers at high noise sources that affect sensitive receptors (clinics, schools, etc.).

Noisy construction equipment should be provided with silencers or enclosures and noisy construction activities should be done only at daytime. Workers exposed to noise levels of more than 85 dB(A) should also be provided with and required to use ear muffs. Drilled piles should be preferred over driven piles. The provision of sound barriers or noise screen substantially reduces the perceived effects of noise on nearby residents.

Vibration of the superstructure can be minimized using a conservative value of span-depth ratio between 22 to 24. In addition, the concrete shall have a concrete strength at 28 days of 38Mpa. This design criterion on concrete strength would provide the pre-stressed girders better performance against camber, deflection and vibration.

During O/M period after construction: Install noise barriers at high noise sources that affect sensitive receptors (clinics, schools, etc.). Noise levels emitted by motor vehicles are dependent of the proper maintenance of engines and vehicle mufflers.
The Leq values are equivalent to continuous noise levels and are not comparable to DENR standards which are based on median of peak noise levels measured at short intervals. However, these values can be compared to international standard, the IFC EHS guideline allows a maximum of Leq just outside the windows of 70 dBA (55dBA in residential) during daytime and 70 dBA (45dBA in residential) during nighttime.

If the predicted Leq values are compared to IFC EHS guideline, it is noted that there are already exceeded.. However, even at present, it is exceeded from DENR standards already occur.

vi) Accidents

During the Construction Period: Regarding transport for construction materials, to avoid damage local roads and increase traffic congestion on local roads; a) in cooperation with LGUs, MMDA of Traffic Police to properly organize transport of materials for the project, b) set up clear traffic signal boards at the roads going in and out of the road construction sites, c) repair roads damaged by the project after completing each construction section.

Contractors should also be obligated to barricade all possible working areas where accidents from construction activities may occur. Proper warning signs and instructions to the driving public and pedestrians should be conspicuously posted around the project site.

During the Construction Period: Regarding transport for construction materials, to avoid damage local roads and increase traffic congestion on local roads; a) in cooperation with LGUs, MMDA of Traffic Police to properly organize transport of materials for the project, b) set up clear traffic signal boards at the roads going in and out of the road construction sites, c) repair roads damaged by the project after completing each construction section.

Due to this expected traffic problem during the construction period, a traffic rerouting plan will be put in place to address this. The re-routing plan will require the opening and use of additional traffic lanes to compensate for the increase in V/C ratios which will result in the decrease of road capacity in the project area.

vii) Flooding

During the Construction Period: Regarding transport for construction materials, do not fill water systems at the construction site. In case of the need for filling of a local drainage system it is necessary to consult with LGUs and permission from LGUs is needed. During the construction period, flash flooding impacts along the domestic Road may be mitigated by scheduling major work on ground and foundation diggings during the summer or dry months of the year. To mitigate the impacts of construction waste and debris that may possibly cause flash flooding (by clogging of street canals and storm drains) along the domestic Road section of the elevated roadway during the rainy season, the construction contractors should be required to practice proper waste management and avoid disposing wastes unto the street.

To avoid damaging any existing underground utility, a comprehensive utilities inventory will be conducted by the proponent prior to actual construction to determine their location. Also the project proponent will clean all clogged drainage system, repair or rehabilitate old pipes and replace all damaged, undersized and low capacity pipes. This will significantly minimize any flashflooding hazards during the construction period.

During O/M period after the construction: the project will only have minimal impact on flooding along the underlying street sections. Since during the construction period the project will either be cleaning clogged drainage ways along the road alignment, repairing damaged/defective drain pipes or completely replacing undersized drainage pipes that are no longer adequate to contain the additional runoff water to be generated by the project. This drainage improvement activity will be a positive impact to the public and the communities along the expressway.

7.3.6 Environmental Management Plan

An environmental management plan (EMP) has been prepared and will be updated during detailed design stage. The Proponent will ensure that the contractors prepare a site-specific EMP based on this EMP and the actual situation on-site. The Proponent will monitor the implementation of the EMP, and will report twice a year on EMP compliance.

The bidding documents for construction contracts will be based on standard DENR documents for international competitive bidding, and will include contract clauses requiring the contractor to implement the relevant clauses of the EMP. The construction specifications will incorporate the EMP requirements.

Potential environmental impacts identified throughout theproject implementation for all phases of pre-construction, construction and operation. Of which, there will besignificant and insignificantimpacts. However, all potential environmental impacts identified will have to be mitigated or eliminated by proper measures.

Pursuant to the environmental protection law, the proponent and its contractors will be responsible for implementing environmental protection measures as mentioned in the EMP while monitoring works will be conducted by other relevant agencies and/or organizations.

Details about potential impacts, mitigation measures, responsibility for implementing mitigation measures, responsibility for supervision, and cost estimates for implementation and environmental mitigation works are described below.

TABLE 7.3.6-1 MATRIX OF PROPOSED NAIAX'S ENVIRONMENTAL MANAGEMENT PLAN

Project activities	Potential Environmental Negative Impacts	Responding mitigation measures	Location	Estimated Marginal Cost	Responsibility	
					Implementation	Supervision
Pre-construction Period						
Detailed design	Adverse impacts relating to detailed design are flash flood (waterlogging), impediments to movements of people and risks.	Conducting careful surveys and consultation with LGUs, about design works.	Throughout the project alignment	No marginal cost	Consultant hired by the project proponent	Project proponent
Removal of vegetation by land clearance	Loss of ecological, landscape balance.	Replanting trees to compensate for the vegetation area lost due to site clearance. The main trees to be selected for replanting and the area of the compensating vegetation will be determined in detail at each site.	Throughout the project alignment	No marginal cost		
Acquisition of residential area	Adverse effects on social life, economy and culture of PAHs. Local socio-economic issues.	Select the best alignment to minimize adverse effects on residential areas.	Throughout the project alignment	No marginal cost		
		Implement the appropriate plan for residential area acquisition in accordance with the law and local conditions.				
Acquisition of institutional , commercial lands	Adverse effects on local economy and livelihood	Select the best alignment to minimize encroachment into institutional and commercial lands	Throughout the project alignment	No marginal cost		
Construction Period						
Construction of workers' camps	Generation of domestic solid wastes causing land, water, and air pollution and public health problems.	Proper waste management. (i) Do not permit disposal of waste into rivers or fields. (ii) Properly collect, and segregate domestic wastes at workers' camps, and offices. (iii) Contract with LGUs service divisions for transport of the solid waste to treatment sites every two days. (iv) Use of pits with proper lining for disposal of domestic solid wastes, related solid	Workers' camp sites	No marginal cost		
	Wastewater from workers' camps, especially wastewater from toilets causing water, air, and land pollution and a potential for spreading of diarrhea epidemics.	Provide good mobile toilets for each construction site.	Construction sites	No marginal cost		
		Wastewater from workers' camps, especially wastewater from toilets causing water, air, and land pollution and a potential for spreading of diarrhea epidemics.	Workers' camp sites	No marginal cost		
		Install sanitary 2 or 3 chamber septic tank toilets for each worker's camp.	Workers' camp sites	No marginal cost		
		At workers' camps located far (over 500m) from inhabited areas, bench latrines may be installed. Latrines should be located over 100m from living places and 50 m from river. Daily use of lime for disinfection. Fill and disinfect properly before moving the camp to another site.	Workers' camp sites	No marginal cost		
		Provide clean water and hand washing soap for washing hands at	Construction sites,	No marginal		

Project activities	Potential Environmental Negative Impacts	Responding mitigation measures	Location	Estimated Marginal Cost	Responsibility	
					Implementation	Supervision
		each toilet area.	Workers' camp sites	cost		
		Provide rubbish bins in toilet area for collection of used bathroom paper.	Construction sites, Workers' camp sites	No marginal cost		
	Conflict between workers and local residents	Employ local people as much as possible as the construction workers; prioritize opportunities for the Project affected households (PAHs).	Project Barangay	No marginal cost		
		Properly manage workers and organize training for workers, particularly workers from other LGUs on relations with local residents	Project Barangay	No marginal cost		
		Quarterly meetings between constructor and Barangay officers on the matters regarding the relations between workers and local residents	Project Barangay	No marginal cost		
	Transmission of infectious diseases from local people to workers and vice versa	Improve awareness of infectious disease prevention, particularly HIV/AIDS and flu for workers.	Project Barangay	No marginal cost		
		Provide a clean water supply at construction camps.	Workers' camp sites	No marginal cost		
		Provide rubbish bins at construction camps and daily pickups (by LGU unit to LGU's treatment sites).	Construction and workers' camp sites	No marginal cost		
		Ensure good environmental sanitation conditions and health for workers at construction camps.	Construction and workers' camp sites	No marginal cost		
		Set up a medical station for construction camps for first aid and health care for workers.	Construction and workers' camp sites	No marginal cost		
		Supply safe food for workers.	Construction and workers' camp sites	No marginal cost		
		Properly fill holes created by excavation activities to prevent health risk and eliminate growth of disease vectors.	Construction and workers' camp sites	No marginal cost		
		Fill water holes and kill rats, bugs, flies and mosquitoes.	Workers' camp sites	No marginal cost		
Construction of roads, and auxiliary facilities	Soil erosion at construction sites, causing damage to roads, fields, river pollution	Ensure proper method and management applied for excavation so that soil erosion could be minimized	Project area	No marginal cost		
Earthworks/ Excavation	Noise and vibration pollution	Locate high noise and vibration generation sources far from inhabited area.	Construction site	No marginal cost		
		Inform local residents of time and plan of construction activities.	Construction site	No marginal cost		
		Proper organization of the construction plan, so that the high noise generation machines would not operate during 10 p.m. to 6 a.m. in inhabited areas.	Construction site	No marginal cost		
		Install noise barriers at high noise sources that affect sensitive receptors (clinics, schools, etc.)	Construction site	No marginal cost		
		Ensure truck drivers do not make a great deal of noise during movement through populated areas.	Project communities	No marginal cost		

Project activities	Potential Environmental Negative Impacts	Responding mitigation measures	Location	Estimated Marginal Cost	Responsibility	
					Implementation	Supervision
	Dust pollution caused by earth works.	On rainless days, watering roads and yards at construction sites and roads that pass inhabited areas and commercial areas at least twice per day.	Construction site and transport roads	No marginal cost		
	NO2, SO2, CO, TSP pollution caused by vehicles and construction machines.	All vehicles and construction machines used for the project should have licenses issued by the Land Transportation Office or police certifying compliance with DENR standards on vehicle emissions.	Construction site and transport roads	No marginal cost		
Disposing wastes from outside and inside of construction and camp sites	Soil and surface water pollution that affect people's health and bad odors from temporary waste containers.	Build temporary pits with proper lining at each worker's camp sites for rubbish disposal. Fill carefully after moving to other places.	Workers' camp sites	No marginal cost		
		At workers' camps and construction sites: Wastes are to be segregated into hazardous and non-hazardous wastes before reuse or transport to disposal sites.	Workers' camps and construction sites	No marginal cost		
		Arrange rubbish bins for collection of domestic waste and hazardous waste around construction, and workers' camp sites.	Workers' camps and construction sites,	No marginal cost		
		Make drainage system (ditches etc.) at worker camp sites.	Workers' camp sites	No marginal cost		
		Provide information on waste management in training programs for workers, including how to manage hazardous wastes.	Workers' camps and construction sites	No marginal cost		
		Make a contract with the environmental services division of LGUs to regularly collect and carry domestic waste, hazardous waste and construction waste from construction sites to local solid waste treatment centers.	Project area	No marginal cost		
	Soil, water, and air pollution caused by construction wastes.	Organize a team for collection and segregation of construction wastes at each construction site.	Project area	No marginal cost		
		Properly collect and segregate construction wastes into non-hazardous and hazardous wastes.	Project area	No marginal cost		
		Install a temporary hazardous waste storage site for solid wastes (oily contaminated wastes, used batteries, used fuel dumps etc.) with roof, brick wall and concrete or cement floor, located over 50m from living/office and river. Daily transporting of segregated hazardous wastes from each place on the construction site to this hazardous waste storage site.	Project area	No marginal cost		
		Collect non-hazardous dredged materials to be used for road construction.	Project area	No marginal cost		
		Disposal of construction wastes, including non-hazardous and hazardous wastes into surrounding land, fields and rivers is to be prohibited.	Project area	No marginal cost		
Cutting trees outside the project ROW	Reduction of vegetation cover, affecting local biological resources, creating degrading landscape.	Cutting trees outside the project ROW is to be prohibited.	Project area	No marginal cost		
		Replanting of trees destroyed by constructors (if any) at suitable place close to the construction site. Area of trees to be replanted is equal to area of trees lost by viaduct /road/bridge construction.	Project area	No marginal cost		
Transport for	Damage local roads and increase	In cooperation with LGUs, MMDA of Traffic Police to properly	Project communities	No marginal		

Project activities	Potential Environmental Negative Impacts	Responding mitigation measures	Location	Estimated Marginal Cost	Responsibility	
					Implementation	Supervision
construction materials	traffic congestion on local roads	organize transport of materials for the project.		cost		
		Set up clear traffic signal boards at the roads going in and out of the road construction sites.	Project communities	No marginal cost		
		Repair roads damaged by the project after completing each construction section.	Project communities			
		Do not fill water systems at the construction site. In case of the need for filling of a local drainage system it is necessary to consult with LGUs and permission from LGUs is needed.	Construction communities	No marginal cost		
Construction of viaduct and bridge	Construction worker camps.	Mitigation measures similar to those indicated in the above section on road construction.	Bridge construction site	No marginal cost		
	Increased noise and vibration.	Mitigation measures similar to those indicated in the above section on road construction.	Bridge construction site	No marginal cost		
	Domestic and construction waste generation.	Mitigation measures similar to those indicated in the above section on road construction.	Bridge construction site	No marginal cost		
	Air pollution caused by material transport.	Mitigation measures similar to those indicated in the above section on road construction.	Bridge construction site	No marginal cost		
	Soil erosion at viaduct and bridge construction site.	Do not cut the existing vegetation cover in the surrounding area.	Bridge construction site	No marginal cost		
		Construct solid stone/concrete protection structures for the riverbanks at bridge construction site.	Bridge construction site	No marginal cost		
	Increased noise pollution alongside of the route	Works sensitive to noise (clinic, school etc.) are required to be constructed at a minimum distance of 200m from the road edge to avoid impacts of noise.	Bridge construction site	No marginal cost		
		Prohibit drivers to make loud noises in the populated areas along the route.	Bridge construction site	No marginal cost		
	Increased air pollution alongside of the project route	Ensure vehicles moving on the project route have licenses showing "compliance with the DENR standard for Vehicle Exhaust Emission" issued by the Land Transportation Office or Traffic Police.	Bridge construction site	No marginal cost		
		Operation and Maintenance Period				
Operation of the expressway	Disposal of rubbish by passengers and drivers on roads	Disposal of rubbish by passengers and drivers on roads is to be prohibited.	Roadside water sources	No marginal cost		
		Build Stop Over Station (Toll gate area) is necessary for this expressway) with installation of sanitary toilets and waste collectors.	Roadside water sources	No marginal cost		
		Carry out daily road cleaning.	Roadside water sources	No marginal cost		
	Traffic accidents, causing health and social impacts	Ensure drivers are well educated on road safety requirements.	Throughout the route	No marginal cost		
		Ensure local people are well educated on the Road Transport Law.	Throughout the route	No marginal cost		
		Install traffic signboards at appropriate places.	Throughout the route	No marginal		

Project activities	Potential Environmental Negative Impacts	Responding mitigation measures	Location	Estimated Marginal Cost	Responsibility	
					Implementation	Supervision
				cost		
		Regularly repair road and bridges to ensure good condition for vehicle movement.	Throughout the route	No marginal cost		
	Increased environmental problems cause by increasing traffic volume	Proper action plan of the GOV concerned mitigation measures, traffic control regulation, and traffic information system, legal development for safety transportation in future scheme.	Throughout the route			
		Proper implement of Laws on Environmental Protection, Forestation and Development, eco-system, and relevant laws, decisions, and standards for measure on GHG emission increase.	Throughout the route	No marginal cost		
		Properly prepare and implement a Socio-Economic Master Plan for the project LGUs, included Strategic Environmental Assessment (SEA).	Throughout the route			
Consequences of Micro-Climate Change	Increased run-off and flood	Proper design and construction of solid road viaduct and bridges.	Throughout the route	No marginal cost		
		Proper design and construction of drainage systems at the existing road.	Throughout the route	No marginal cost		
		Proper implement of Laws on Environmental Protection, Forestation and Development, eco-system, and relevant laws, decisions, and standards for measure on GHG emission increase.	Throughout the route			

7.3.7 Environmental Monitoring Plan

The Environmental Monitoring Plan shows the framework on which the NAIAXProject Proponent and the various stakeholders are willing to implement to continuously supervise the environmental protection measures during the Pre-construction/Construction, Operation/Maintenance , and Abandonment periods of the proposed NAIXProject.

This Environmental Monitoring Plan provides the NAIXProject Proponent a guideline on monitoring, verification, and making of the necessary corrective actions on the Project's various environmental impacts. In addition, this will also provide the NAIXProject Proponent some baseline information in recording and examining the long-term effects of the Project's different environmental aspects and corresponding impacts, on which future strategies (i.e. remediation, clean-up activities, etc.) can be formulated and applied. **Table 7.3.7-1** shows the Environmental Monitoring Plan of the proposed Project.

TABLE 7.3.7-1 MATRIX OF THE NAIAX 'S ENVIRONMENTAL MONITORING PLAN

(Confidential)

(Confidential)

7.4 RESETTLEMENT ACTION PLAN

The implementation of the NAIAX is expected to yield a number of involuntary resettlement impacts as a result of land acquisition for ROW. Much of the affected area belongs to the government that have facilities established along the project alignment. Other social impacts involve the displacement from their abode are an estimated 53 informal settler families that are residing beside the Paranaque River at Barangay 191, as well as another 8 from Barangay Tambo. Refinements to the road alignment had avoided displacing other landed families and barangay offices in Barangay 185. Other affected areas are commercial establishments with expired leases (with MIAA) that have partially affected offices and facilities along the road alignment. In this section, an overview will be provided on the project relocation policy, an inventory of losses that may be created by the project implementation, the displaced persons' accepted mode of relocation, and expound on the road alignment alternatives and the reason for the preferred alignment selection.

7.4.1 NAIAX Project Resettlement Policy

Under the project's involuntary resettlement policy, in conformity with the DPWH LARRIP guidelines and World Bank social safeguards, involuntary resettlement impacts are to be avoided whenever possible. Should these IR impacts are unavoidable, appropriate mitigation measures are to be implemented to restore project affected persons to at least their pre-project socio-economic conditions. Severely affected PAFs as in the case of the informal settlers in Barangay 191, are entitled to compensation for loss structures (at replacement cost) and other allowances (i.e. income loss, inconvenience allowance, rehabilitation assistance, rental subsidy and transportation assistance). **Section 7.1.2.1.3** (Means to Bridge the Gap) enumerates the NAIAX project involuntary resettlement policy, and **Table 7.1.2-3** Entitlement Matrix summarizes the type of compensation and other benefits due to affected persons including those severely affected that require shifting.

7.4.2 Inventory of Loss

7.4.2.1 Loss of Land

The implementation of the NAIAX project will require the acquisition of lands for Road Right-of-Way (ROW) belonging mostly to the government. It is estimated that a total of 2.9 hectares of mostly institutional lands belonging to the Manila International Airport Authority at 19,850 m^2 (67.9%), followed by the Philippine Postal Corporation at 4,600 m^2 (15.7%) and the Light Rail Transit Authority at 2,200 m^2 (7.5%). Only a 400 m^2 (1.4%) property belonging to a private company called CityLand Corporation located at the corner of Sunset Road and Roxas Boulevard will be affected. A portion of the said vacant private land located within Barangay Tambo will be acquired to give way to the installation of the on-off ramps to Roxas Boulevard.

There are about 1,200 m^2 of government lands currently under the name of BCDA that will be affected by the installation of on-off ramps at the Cavite coastal Road. These lands located at the former Camp Claudio of the Philippine Navy were turned over to the BCDA for use for socialized housing project. Already, the area has been allocated to numerous beneficiaries, however, actual titling cannot be done until a number of court cases for overlapping claims can be resolved. The affected beneficiaries of the socialize housing project are entitled for compensation for the land even if they have not been actually issued the corresponding land patent.

The colony of the affected informal settlers from barangay 191 is located within the MIAA property between NAIA Road and Electrical Road along the Paranaque River. The colony

straddles between the Park & Fly Parking Building and the Philippine Air Force K9 unit that is housed on an abandoned LTO building. **Table 7.4.2.1-1** contains details of the affected lands.

TABLE 7.4.2-1 LOST OF LAND

City	Name	Area (m^2)	%	Remarks
1 Pasay	Manila International Airport Authority	19,850	67.9	Government land
2 Pasay	Light Rail Transit Authority	2,200	7.5	Government land
3 Pasay	Philippine Air Force	1,000	3.4	Government land
4 Pasay	Phil Post	4,600	15.7	Government land
5 Paranaque	Bases Conversion and Development Authority (BCDA)*	1,200	4.1	Government land not yet distributed to beneficiaries due to on-going court cases for overlapping claims.
6 Paranaque	CityLand	400	1.4	Private land
Total		29,250		

*Land titles not yet given to beneficiaries due to on-going court cases

7.4.2.2. Loss of Structures

There are a number of major structures that are expected to be affected by the implementation of the NAIAX which includes residential structures, government buildings mostly belonging to MIAA that are leased to airport related commercial establishments, as well as minor structures that are part of the main structures.

An inventory of the affected residential structures on the other hand, would yield 33 total housing units that may be demolished. Most of the structures (53 units) are found in Barangay 191 within the informal settler colony, and the remaining 8 structures are situated in the former Camp Claudio in Barangay Tambo. There are slightly more male-headed households at 33 units loosing residential structures to female-headed households (28 units). Further, the total floor area of affected residential units amounts to 1,596 m^2 most of which are found in Barangay 191(78.6%), while the remaining 342 m^2 corresponding to 21.4% are from Barangay Tambo. Details of the affected residential structures are found in **Table 7.4.2-2** below.

TABLE 7.4.2-2 AFFECTED RESIDENTIAL STRUCTURES

Barangay	City	Unit	Male-Headed HH	Female Headed HH	Total
191	Pasay	Number	29	24	53
		Area (m^2)	653	602	1,254
Tambo	Paranaque	Number	4	4	8
		Area (m^2)	156	186	342
Total		Number	33	28	61
		Area (m^2)	809	787	1,596

*Source: NAIAX socio-economic survey.

7.4.2.3 Loss of Trees

Along the existing roads, there are a number of trees and ornamentals that had been planted on the roadside and front of buildings as part of the landscaping works. These vegetation are maintained by MIAA as well as the Metro Manila Development Authority (MMDA). The implementation of the NAIAX project may affect an estimated 223 trees and ornamentals that had been planted along the planned alignment which mostly follows the existing roads.

For timber trees, the tree inventory had listed down a total of 10 species affected, numbering to about 88 pieces. The hardwood narra accounts for most of the affected trees numbering to about 40 pieces, followed by Talisay (12 pcs), ipil-ipil (11 pcs) and mahogany (8 pcs) among others. Other trees include molave, eucalyptus, kapok, balite, Benjamin fig, and ear pod wattle. **Table 7.4.2-3** contains the detailed inventory of affected timber trees.

TABLE 7.4.2-3 AFFECTED TIMBER TREES

	Name	Unit	No.
1	Narra	tree	40
2	Molave	tree	2
3	Ipil-ipil	tree	11
4	Eucalyptus	tree	2
5	Kapok	tree	1
6	Balite	tree	1
7	Benjamin Fig	tree	7
8	Ear Pod Wattle	tree	4
9	Mahogany	tree	8
10	Talisay	tree	12
	Total		88

It was identified that there were also a total of 15 species of fruit-bearing trees that had been planted along with the timber trees as part of the landscaping works. There are about 55 pieces of these perennial trees that were planted throughout the road alignment. Some of these trees are already in their fruit-bearing stage. The most number of the affected fruit-trees are the Indian Mango (13 pieces), followed by coconut (8 pieces), jackfruit (7 pieces), and malunggay (7 pieces), among others. Other trees include: sampaloc, aratilles, duhat, kalamansi, rambutan and banaba. While the trees were planted purely for landscaping purposes, the fruits when in season, may have been harvested for personal consumption by the maintenance crew. **Table 7.4.2-4** contains the detailed inventory of affected fruit-bearing trees.

TABLE 7.4.2-4 INVENTORY OF AFFECTED FRUIT-BEARING TREES

	Name	Unit	No.
1	Jackfruit (FB)	tree	1
2	Jackfruit (M)	tree	6
3	Indian Mango (FB)	tree	12
4	Indian Mango (M)	tree	1
5	Coconut	tree	8

Name	Unit	No.
6 Sampaloc (FB)	tree	1
7 Santol (FB)	tree	2
8 Santol (M)	tree	2
9 Aratilles	tree	2
10. Duhat (FB)	tree	4
11. Duhat (M)	tree	2
12. Kalamansi	tree	1
13. Malunggay	tree	7
14. Rambutan	tree	1
15. Banaba	tree	5
Total		55

Similarly, there are also several ornamentals planted along the road and the MIAA complex that may be affected by the NAIAX. A total of about 5 species of ornamentals numbering to about 80 pieces have been inventoried along the alignment. Assorted ornamental plants numbering to 53 pieces may be affected, followed by tuba-tuba (19 pieces), and Indian tree (5 pieces) among others. The tuba-tuba is a tropical plant that has medicinal properties, usually used for treating muscle swelling caused by sprains, and related orthopedic problems. **Table 7.4.2-5** contains details on the affected trees.

TABLE 7.4.2-5 INVENTORY OF AFFECTED ORNAMENTAL PLANTS

NAME	UNIT	NO.
1 Indian Tree	tree	5
2 Palm	palm	1
3 Ornamentals	plants	53
4 Tuba-tuba	plants	19
5 Kalachuchi	tree	2
Total		80

7.4.2.4 Institutional Characteristics

7.4.2.4.1 MIAA

As earlier mentioned, the most affected party by the NAIAX project is the MIAA, a corporate organization under the Ministry of Transportation and Communications. This institution will be loosing land, structures and income from lost rentals, as a result of project implementation. However, MIAA is also one of the main beneficiary of the project by being provided by the Philippine central government with a better access facility to and from its airport terminals for passengers and cargo.

In view of the benefits MIAA would stand to gain from the project, discussions with the agency have been very cordial, and its leaders will be instrumental in negotiations with their affected commercial lease holders for the final compensation for loses and relocation site within the MIAA compound for displaced companies.

7.4.2.4.2 Barangay LGUs

The informal settlers along the NAIA road and Electrical Road are residing within the MIAA compound at Barangay 191. Under the Philippine context, the Barangay LGU plays a significant role in responding to the needs of its constituents most especially those indigent households. Consistent with the practice of allowing the concerned Barangay officials to handle relocation proceedings, it is recommended that the concerned local leaders to play a major role in coordinating with the affected persons most especially during the public consultation meetings for the project, and coordinating the actual transfer of the displaced persons to the proposed relocation site.

7.4.3 Resettlement Measure

In order to achieve the objective of the Resettlement Action Plan, measures are proposed inorder to mitigate the negative social impact the implementation of the project will create on the project affected persons. There are fiver categories of PAPs namely: a) Philippine Government Institutions (MIAA, PAF, LRTA, PPC); b) Commercial Leaseholders of MIAA Properties; c) Informal Settlers residing within the MIAA property at Barangay 191; d) Private landowners in Barangay Tambo; and e) beneficiaries of lots within the government relocation site at Barangay Tambo.

Appropriate resettlement measures have been devised to suite each of these five types of PAPs. Whereas, government is the most affected party in the implementation of the project at loosing **2.88 hectares** of land, numerous non-moveable structures, and lost income from office rentals and taxes from sales of affected commercial establishments, much concern was placed on the treatment of vulnerable groups such as the poor that are among the informal setters.

Informal settlers have also been afforded their rights under the UDHA Law (1992). Relocation measures that include “In-City” Relocation Package, and “Balik-Probinsya” (Return to Province) Package, and other support have been crafted to meet their needs in conformity with the Project Resettlement policy and those of the ODA funding source and existing government laws. The relocation packages were presented briefly to the PAPs during the consultation meetings held at the various traversed Barangays as well as the affected commercial Concessionaires of MIAA.

7.4.3.1 Replacement Cost Payment to Government Institutions for Lost Non-Movable Assets

As described earlier, the Philippine government is the most affected party in the implementation of the NAIAX project. Among the affected assets are government lands along the road alignment that are needed for ROW, buildings and other structures that have been established on these lands, and the income from lease and foregone tax revenues resulting from lost sales. However, the feasibility study prepared for the project had indicated that the economic gains for the country and to the local community outweighs the cost to be incurred. It is for this reason that the project had been approved for implementation. The amount needed to defray the resettlement cost for lost public properties will be earmarked from government coffers to pay for these lost non-movable assets. Lost government income will however not be covered.

7.4.3.2 Relocation of Commercial Lease Holders of MIAA Properties

The second biggest number of affected persons are the commercial lease holders of MIAA properties. These private business have been leasing government properties for quite some time for profit, and most have expired lease which are renewed on a yearly basis. DPWH will through MIAA, inform the affected lease-holders at least 6 months in advance of the scheduled land acquisition activity, in-order that these parities will be able to plan out their relocation strategy. Likewise, MIAA will no longer extend the lease of those parties whose offices (located in government buildings) that will be severely affected by the NAIAX. However, MIAA will provide these affected companies assistance in finding a suitable replacement office space/location within the NAIA complex to continue their operations.

7.4.3.3 "In-City" Relocation Package for Eligible Informal Settlers in Barangay 191

Eligible Informal Settlers will be given an "In-City" Relocation Package composing of the following: a) Replacement cost in cash for affected structures with no deduction for salvage value of building materials nor transaction cost; b) transportation assistance to the relocation site; c) assistance for the restoration of public utilities (i.e. water, electric power, and garbage collection); and d) income restoration assistance. If the PAPs choose to dismantle their own structure, then he/she will be paid by DPWH an additional amount for the effort and allow the household to keep the materials. The PAPs will be informed by the RIC at least 6 months in advance of any planned demolition work on their affected structures.

The NHA will be responsible for processing the PAPs to identify the professional squatters. While these groups may be compensated for their affected structures, other benefits due to PAPs will not be given to them.

For renters of shanties within the affected colony, they will be assisted by the RIC to find a suitable replacement lodging place. This is in addition to the one month rental assistance. Similar to the affected informal settler PAPs, the renters of shanties will be informed at least 6 months prior to any scheduled demolition works of their rented structures.

7.4.3.4. "Balik-Probinsya" (Back to the Province) Package

Eligible Informal Settlers who opt to return to the province will be provide with a package composed of: a) replacement cost for lost structures with no deduction for salvage value of their building materials nor transaction fee; b) one-way transportation allowance to the province; and c) disturbance allowance of P15,000 which the PAPs can use as a seed capital to start a small business. While during the consultation meeting no PAPs have signified their intention to avail of this scheme, the option is still available just in case there will be some displaced persons who would change their mind.

7.4.3.5. "In-City" Relocation Package for Relocation Site Beneficiaries in Barangay Tambo

The PAPs in Barangay Tambo will have a similar package to those Informal Settler PAPs in Barangay 191. In addition, they will be paid replacement cost for the affected land. While these 12 households still do not have the titles to the land they are occupying due to whatever reason, they are considered as landowners and as such are entitled to payment for the lost land.

7.4.3.6. Availment of Units in Existing National Housing Authority (NHA) Relocation Projects

The National Housing Authority (NHA) has a number of relocation projects that had been established in various areas within and near Metro Manila. These facilities were built primarily for informal settlers that had been moved away for safety reasons from waterways and other hazardous areas, as well as areas required for government projects intended for the general good. Interested eligible project displaced persons can be referred by the DPWH Implementing office to NHA to secure available units in these facilities. Of interest are those sites that had been selected by the affected persons themselves. NHA served only as a facilitator to establish the relocation site, which includes providing the PAPs with site options, financing plan, and prequalifying building contractor. It is the PAPs that will eventually select the contractor based on the proposed project package they (contractor) will present to the PAPs.

Consultation with NHA management had indicated that there are no available units at the time of the report preparation, however, it is possible to issue a change order effecting the construction of additional units based on a minimum number of beneficiaries. Processing and approval of the housing loans to pay for the cost of the units will be done by NHA once the displaced persons are assessed to be eligible for the credit assistance. While there were no PAPs that had signified their intention of availing of the NHA relocation site units, this option will be made available in the event there will be PAPs that will change their minds.

7.4.4 Relocation Plan

7.4.4.1 Site Selection

Initial consultation meetings carried out with the Barangay and City Officials of the affected Informal settler colony specifically Barangay 191 and Tambo had indicated the preference for "in-City" type of relocation. This choice of relocation mode was confirmed during the actual public meeting (Barangay 191 and Tambo) with the affected persons.

Presidential Proclamations under TCT6735-1

Following the said consultations, possible sites within the MIAA complex was explored to identify possible relocation sites suitable for the displaced persons. The huge airport complex had in the past lay host to numerous informal settler families, many of them have become beneficiaries of "on-site resettlement" or were awarded by government the land on which they have settled. This land awarding was made possible by the issuance of a Presidential Proclamation, declaring portions of the MIAA complex for use in Socialized Housing Projects. There have been four (4) recent proclamations within the MIAA complex covering a total area of about 36 hectares, which were mostly administered by the National Housing Authority (NHA) for distribution to qualified beneficiaries which includes: Proclamation 135 (dated 12/7/1999), Proclamation 144 (dated 18/01/2002), Proclamation 595 (dated 2/4/2005) and Proclamation 1225 (dated 30/01/2007). Among the project affected areas that was part of this socialized housing program include portions of Barangay 185. A section of Barangay Tambo that had also been affected was part of Camp Claudio that also was covered by another Presidential Proclamation for use in Socialized Housing. **Table 7.4.4.1-1** contains more details on the recent Presidential Proclamations while **Figure 7.4.4.1-1** contains the location of the Proclamations.

7.4.4.2 Balagbag II Property

A review of existing Presidential Proclamations within the MIAA complex would show that most of them are already occupied by informal settler families. Only one such area called "Balagbag II" which used to be a garage leased out to a transport company, can be developed into a

relocation site. The facility which is located at the Southeastern-most portion of the MIAA complex beside the exclusive Merville Subdivision is about 4,000 m^2 in area, has concrete flooring and galvanized iron roofing with steel support; is accessible by a good concrete road connected to the MIAA complex, has essential utility connections (i.e. water supply, drainage, power supply, garbage collection) and is still within the administrative boundary of Pasay city so the local government will not loose its constituent registered voters. At present, the enclosure is being used as a garage by a small group of jeepneys. The property is part of the "Balagbag II" area can be seen in **Figure 7.4.4-1** as part of the original Balagbag II (30,000 m^2).

The MIAA has plans to develop a multi-story apartment type relocation building on the property to house the informal settler families still residing within their property. There however, is no definite schedule when the facility will be built and made operational to accept the displaced persons. Should the option of shifting the NAIAX PAPs to the planned MIAA relocation facility be selected, then the moving informal settlers should first be allowed to built and live in temporary structures within the property. Once the relocation facility will be established, then the PAPs will be first to occupy such building.

TABLE 7.4.4-1 PRESIDENTIAL PROCLAMATIONS FOR SOCIALIZED HOUSING WITHIN THE MIAA COMPLEX

Proclamation No.		Date	Project Title	Area
1	135	12-Jul-99	Sitio San Juan	8,168
			Sition Santa Rita	6,851
			Sitio Maligaya	7,745
			Sitio Puyat Compound	14,583
			Subtotal	**37,347**
2	144	18-Jan-02	Balagbag Area	58,817
			Don Carlos	69,689
			Maricaban	13,300
			Bo. Pilipino Putol	1,000
			Subtotal	**142,806**
3	595	2-Apr-05	Rivera Village	36,498
			Pidera 1	41,571
			Pidera 2	143,279
			Remaining portion of Balagbag	30,000
			Subtotal	251,348
4	1225	30-Jan-07	**Balagbag I**	**2,000**
			Grand Total	**433,501**
Less: Setback & retained area for MIAA-BRIDD				
			Balagbag 1	20,000
			Balagbag 2	4,000
			Pidera 1 & 2	12,175
			Subtotal	**36,175**
Less Proclamation 135 area already distributed				37,347
		TOTAL		**359,979**

In view of road alignment modification done by the project engineers, possible affected Barangay 185 structures are no longer required to be demolished, and instead MIAA properties on the other side of Andrews Avenue will suffer. Similar adjustments are also being done in Barangay Tambo where the 8 affected households may likewise be spared. However, at the time of this report writing, the adjusted alignment had not yet completed.

FIGURE 7.4.4-1 LOCATION MAP OF VARIOUS PROCLAMATIONS COVERED TCT 6735

7.4.4.3 MIAA Properties at Barangay 191

Former California Bus Line Garage

The other suitable relocation site identified within the MIAA property is the open space beside the informal settler colony and the Park & Fly Parking Building which was rented before by the California Bus Line (CBL). This sprawling open-air garage with concrete pavement has an area of about 2 hectares which is more than enough to accommodate all of the PAPs. The property has access to the Domestic Road as well as NAIA Road, the connections to basic utility lines (i.e. electric power, water supply, drainage, garbage collection etc.) that support the former bus garage can be restored.

The residual area of the property once the NAIAX is completed, will have bisected layout which may not be suitable for a mixed-use property development. Besides, there are still a lot of idle and underdeveloped properties within the MIAA complex which have a better real estate potential compared to the residual area of the former CBL garage. In this view, the property may best be used to house the informal settlers to be displaced by the NAIAX.

About 2,000 m^2 (100m X 20m or 50m X 40m) may only be needed from the residual portion of the former CBL garage. Rows of 2 story multi-door apartment or townhouse buildings can be constructed for the informal settlers. Each 2 story apartment unit may have about 2.5m X 4.0m per floor for a total of about 20 m^2 per unit.

A major advantage of the former California Bus Company leased MIAA property is its near proximity to the current PAPs colony where-by very minimal dislocation impact related to the physical transfer of the existing residential structures from its present location to the adjacent site; restoration of utility lines, and disruption of the PAPs lives during the shifting period.

Should the shifting of PAPs to the adjacent empty lot option be considered, minimal income restoration work will be required. Those that are engaged in the exercise of their respective profession or are employed will only be briefly disrupted from their means of livelihood during the shifting period. Those who are in the small scale trading (sari-sari store) and small eatery ("karinderia") will also need minimal time for restoring their respective stalls. If the PAPs are informed well in advance of the shifting schedule, then arrangements can be made such that the stores can be installed at the new residential site in advance of the actual shifting schedule thereby not allowing any income disruption at all.

The only issue with the use of the adjacent open lot as a relocation site is that this property has not yet been included in the earlier Presidential Proclamations to change the landuse of the site into Socialized Housing. DPWH will have to recommend to the Office of the President for the issuance of another Presidential Proclamation converting the MIAA property (open space beside Park & Fly Parking Building) for socialized housing. Under the UDHA Law, government is mandated to identify unutilized government lands that can be used for socialized housing, and as such, the said property falls into this category. **Figure 7.4.4-3** shows the photograph of the empty lot that used to host the California Bus Line Garage.

Former Bureau of Land Transportation Office Building

Another potential relocation site is the former Bureau of Land Transportation (BLTO) Office Building at Barangay 191 beside the informal settler colony. This single story building is currently being used by the K-9 unit of the Philippine National Police Airport Security Group (PNP-ASG). The facility still has its utility connections, has a good building structure which does

not appear to require any repairs, and has an existing cyclone-wire fencing. It has access to the NAIA Road, as well as the Electrical road.

Similar to the option on the use of the former California Bus Line open-air garage, shifting the PAPs to the former BLT building will entail very minimal disruption to the lives of the informal settlers, as the building is just adjacent to their present abode. Arrangements will just need the modification of the building to accommodate the individual displaced PAPs households, which may include installation of dividers to have a place for each household, reallocation of utilities, kitchen, toilets and others.

The current occupants of the building (PNP-ASG K-9 unit) will have to be relocated to other military installations at the nearby Villamore Airbase or Fort Bonifacio. There are suitable barracks for these canine units at the military camps and arrangements will also need to be made by DPWH with their commanders to allow the allocation of space for them at the time for their (PNP-ASG K9 unit) shifting.

Just like the use of the former California Bus Line-leased MIAA property, the former BLTO building had been built on government property that had not been covered by the recent Presidential Proclamations that changed the landuse of such lands from institutional to socialized housing. Should this option (use of former BLTO building) be considered as the preferred mode of relocation, then appropriate representation should be made by DPWH with the Office of the President to issue a Proclamation for the land on which the BLTO building had been built, for socialized housing. Also, the building will have to be donated to the shifting informal settlers for use as their dwelling place. **Figure 7.4.4-2** contains the photograph of the former BLTO building.

Former ARPA Travel and Tours

A fourth option is the former ARPA Travel and Tours Office at the back of the Petron Gas Station along Airport Road near the corner of Domestic Airport Road. The lot is about 800 m2, and can be developed into a medium rise (4 stories) condominium-type building to accommodate the Barangay 191 displaced persons. **Figure 7.4.4-4** contains the photograph of the former ARPA Travel and Tours lot.

FIGURE 7.4.4-2 ABANDONED FORMER BUREAU OF LAND TRANSPORTATION BUILDING WHICH IS NOW USED AS THE PNP AVIATION SECURITY GROUP K-9 OFFICE. THE COMPOUND CAN SERVE AS A RELOCATION SITE FOR THE INFORMAL SETTLER PAPS WHOSE COLONY IS ADJACENT TO THE STRUCTURE

FIGURE 7.4.4-3 OPEN SPACE AT THE NORTHWEST CORNER OF THE FORMER CALIFORNIA BUS LINE COMPOUND THAT MAY BE USED AS RELOCATION SITE FOR THE NAIAX DISPLACED HOUSEHOLDS SUCH AS THOSE FROM BARANGAY 191 AND TAMBO

FIGURE 7.4.4-4 EMPTY LOT BEHIND THE PETRON GAS STATION ALONG AIRPORT ROAD AND ADJACENT TO BARANGAY 191 WHICH CAN SERVE AS A RELOCATION SITE FOR NAIAX PAPS

7.4.4.4 National Housing Authority (NHA) Existing Relocation Facilities

There are existing NHA Relocation Facilities that had been established primarily to accommodate informal settlers that had been moved from dangerous grounds to their own safety. These dangerous grounds include areas where the health and safety of residents are at risk such as river banks, dangerous slopes, beside railroad tracks, and many others. Also, these sites are made available for persons/households that are displaced by government projects that require road right-of-way among others. Among the successful relocation sites are those that were established with strong community participation. This community initiative approach, allows the PAPs to identify areas where they want to relocate, select the financing arrangement that suit their capacity to pay, and choose the contractor that will procure the land and built the resettlement facility. NHA will only guide the PAPs through the process, explaining what is required for each process; provide the financing necessary to build the project, prequalify the contractors tasked to build the facility, and do credit collection from the beneficiaries.

PAPs who choose to move to an existing NHA relocation site will first undergo screening the NHA, to weed out, the professional squatters. Then only qualified PAPs will be allowed to avail of the relocation facility. Likewise, NHA will provide the list of the relocation sites, complete with vital information that the PAPs will need to decide where to go. If there is no available slot in these facilities, then expansion of the existing site is allowed at a uniform rate of P150,000 per household. However, at least 200 displaced HH is required before a new building will be built. The minimum number of beneficiaries is based on economics of the structure's establishment.

7.4.5 Phasing of Relocation

7.4.5.1 Shifting Arrangements

Use of Bureau of Land Transportation Office Building

The various options presented can be implemented different ways. The fastest option is the transfer to the former Bureau of Land Transformation Office. Following a decision to be made jointly by MIAA, DPWH and PNP, through a memorandum of agreement, the current PNP K-9 unit will transferred to another military facility within the adjacent camps, modification of the building to suit the requirements of the displaced persons, and physical transfer of the PAPs proceeding the completion of the modified building, and then dismantling of the current informal settler colony can be pursued right after. Once the PAPs have already transferred to the new site, efforts by DPWH to secure the Presidential Proclamation of the building's land for socialized housing, as well documentation of the structure's donation to the PAPs can follow.

Former California Bus Lines Compound

The second desired shifting arrangement, is the physical transfer of the PAPs from their present abode, to the empty space in the adjacent former California Bus Line Compound. The PAPs an either use their existing housing materials to build their new abode, and secure the assistance of DPWH to arrange for the restoration of the utility connections. Should the PAPs opt for an apartment type relocation site, then the house built from their dismantled structures can serve as a temporary shelter, meanwhile efforts are being made by DPWH or NHA to design and build a more decent apartment type housing with in the property. Under such arrangement the NHA can be tapped to provide the financing to complete the relocation site for eligible PAPs.

Similar to the use of the former Bureau of Land Transportation Office, the California Bus Line compound will require efforts by DPWH to secure the appropriate Presidential Proclamation for

the site to be use for socialized housing. Such effort can be done even when the PAPs are already settled in the said open space that belongs to the MIAA.

Balagbag II

Following the same arrangement for the use of the former California Bus Line compound, the Balagbag II property of MIAA, can also immediately accommodate the shifting PAPs who can build temporary housing units utilizing the dismantled portion of their houses to be supplemented by other construction materials, These temporary shelter will serve as the displaced household abode, meanwhile the planned MIAA multi-story residential facility to accommodate the informal settler community within its territory had not yet been built. The only difference of this approach compare to the others, is that the land has already been declared for socialized housing, and thus there are no legal impediment for eligible beneficiaries to avail of such arrangement when the facility had already been completed. However, MIAA had not yet announced as to when such relocation facility will be built.

Another possible arrangement, is for MIAA and DPWH to allow the displaced informal settlers to established temporary shelters at the former California Bus Lines compound or at the former Bureau of Land Transportation Office meanwhile the relocation facility at Balagbag II had not yet been constructed. This arrangement however, will entail the dislocation of the affected person's living twice which is not desirable.

7.4.5.2 Processing of PAPs for Eligibility

The National Housing Authority (NHA) can be tapped to process the informal settler PAPs for eligibility. This screening is done by NHA thru their field units, one of which maintains an office at the Maricaban Area (Barangay 185). The PAPs are interviewed by trained government personnel to secure their basic personal information, and then check these with their (NHA) data base of informal settlers that had already availed of benefits from government relocation programs. Those displaced households that have been beneficiaries of other socialized housing projects are automatically tagged as non-eligible to get further relocation assistance. While these displaced persons may get compensation for their affected houses, they may not be given the privilege to buy units in relocation sites.

It could be noted that there are some PAPs that are renters of other people's residential structures. The eligible renters (non-professional squatters) may be given the privilege to build a house at the relocation site. However, if the owner of the structures if be found to be a professional squatter, may only get compensated for the affected structure, but not allowed to build a house on the relocation site.

7.4.6 Restoration of PAPs to their Pre-Project Socio-Economic Condition

The "In-City" type of relocation is ment to minimize dislocation of the PAPs from their source of livelihood, social structures or kinship, access to basic social services, and other support systems that had enjoyed while staying in their present colony. The physical transfer of the PAPs to a nearby relocation site such as the adjacent former Bureau of Land Transportation Building or the former California Bus Line Compound will provide such minimal displacement. The children can still continue to attend school at the nearby Tambo Elementary School, continue to have their access to the Barangay Hall facilities (i.e. Day-Care Center, multi-purpose hall, etc.), potable water supply, electric power supply and others.

The physical transfer of the PAPs to the Balagbag II property will to a certain extent give a minimal social impact to the PAPs as the site is well within the MIAA Complex and is accessible

to their current source of livelihood and social amenities. However, the children will have to commute to their school which had just been a few feet away in their current abode.

Restoration of utility services will not be a problem since, the two "In-City" relocation site is adjacent to the affected area. Minor connections will be necessary to extend existing lines a little longer to reach the new relocation site as in the case of the former California Bus Lines compound if used as a relocation site. For the former Bureau of Land Transportation Building, there are already existing utility connections that need to be modified to ensure that each unit of the modified structure will have such services. DPWH can provided assistance to the PAPs in the designing the renovated structure such that it is suitable for use of the displaced persons. The designs include, partitioning of the building into confortable residential units, complete with electrical and water supply, sanitary and sewerage system.

7.4.7 Grievance Redress Mechanism

Grievances related to the project will be handled through discussions aimed at achieving consensus following procedures as set forth in the LARRIP guidelines which are as follows:

i. The grievance shall be filled by the PAP with the Resettlement Implementation Committee (RIC) who will act within 15 days upon receipt of the case, except complaints that specifically pertain to the valuation of affected assets, as this shall be decided upon by the proper courts;

ii. If no resolution or amicable solution can be reach, or the PAPs does not receive a response from the RIC within 15 days of filing of the complaint, the petitioner can appeal the case to the concerned DPWH Regional Office, which should act on the grievance within 15 days from the receipt of the document;

iii. If the PAPs is still not satisfied with the decision of the DPWH Regional office, he/she, as a last resort, can submit the complaint to any court of law.

The PAPs shall be exempted from all administrative and legal fees incurred when seeking grievance redress for project related issues.

All complaints weather in writing or verbal (to be put in writing by RIC staff) from the PAPs will be documented and shall be acted upon immediately according to the procedures mentioned above.

7.4.8 Implementation Arrangements

The DPWH is the Executing Agency that is responsible for the implementation of the NAIAX project. The BOT-PMO is the implement office that is responsible for the day to day operations of the project in behalf of the DPWH and reports directly to the Assistant Secretary for Planning on matters related to the project. The OIC-Director of the BOT-PMO also serves as the Project Director and will assign a focal person to coordinate all activities of the NAIAX.

The ASEC for Planning will issue a special order establishing the technical working group composed of representatives from the relevant DPWH units concerned with land acquisition and resettlement (i.e. ESSO, IROW, DPWH NCR, project consultants) to assist the BOT-PMO in the planning and implementation of the RAP. The NAIAX technical working group will periodically meet to discuss the progress of the resettlement planning and will appropriate support to the BOT-PMO and consultant team in matters like guidance/technical support; attendance in meetings with other concerned government agencies related to the project, public consultation meetings, and RAP disclosure meetings with PAPs.

The representative from DPWH NCR will also coordinate the parcellary survey of affected lots and will assist the consultant in tagging and inventory of affected structures. The technical working group will likewise review the draft RAP and provide its comments prior to the plan's approval and endorsement to donor agency for concurrence, and finally implementation of the perfected document. Concurrent to the RAP review process, the PMO-BOT will likewise request the DPWH financial department to allocate an amount equivalent to the project resettlement cost as well as administrative cost of project management.

Upon the approval of the RAP, the Assistant Secretary for Planning through the PMO-BOT will issue an order instructing the IROW to initiate its implementation thru the conduct of negotiations with the PAPs in order to derive the replacement cost of affected land, and finalize the resettlement cost of the project based on the approved RAP. Based on the final RAP budget and disbursement schedule, the PMO-BOT will request for the release of the necessary amount for the payment of compensation and other entitlements; as well as other costs.

The Assistant Secretary for Planning through the PMO-BOT will initiate the establishment of the Resettlement Implementation Committee (RIC) that will take charge of the implementation of the RAP. Representatives from concerned DPWH offices will be assigned to the RIC which includes the ESSO, IROW, DPWH NCR and the District Engineers Office having jurisdiction over the project area. NCR and DEO will be directly involve In the physical execution of the RAP while ESSO and IROW will monitor the implementation and financial disbursements. Progress reports will be prepared by the DEO to be indorsed by NCR, while ESSO and IROW will review and process the reports in line with their monitoring and evaluation functions. ESSO and IROW will immediately call the attention of the implementers if deviations to the original plan are made, and appropriate corrective measures to be made both in the site and in the RAP. Periodic progress reports are to be prepared by ESSO and IROW for submission to PMO-BOT and the donor.

7.4.9 Implementation Schedule

The preparation and implementation of the RAP would take about one year and nine months to complete. Activities include: a) the preparation of the draft RAP, b) RAP review and approval process; c) Creation of a Resettlement Implementation Committee (RIC) to implement the RAP in the field; d) Signing of the Memorandum of Understanding among DPWH, MIAA, NHA and LGU Pasay City purposely to plan and develop the relocation site; e) Delivery or actual payment of Compensation and other benefits to PAFs; f) Preparation and implementation of Income Restoration Programs (IRP); and g) monitoring and evaluation.

The longest activity in the RAP implementation is the planning and establishment of the suitable relocation site for the informal settlers in Barangay 191. While there is a potential relocation site within the MIAA complex, the planning, financing and construction of the multi-story apartment type facility will definitely take a lot of time which may even go beyond the 1.5 years allocated to the activity. Planning and implementation of Income Restoration Program (IRP) for the FAPs my just take a year as the type of livelihood projects envisioned by the severely affected families are those in the micro to small scale enterprises such as sari-sari stores, small eatery (karinderia), transport service (tricycle/passenger jeepney) and others. Monitoring & Evaluation may take about 3.5 years up to the end of construction.

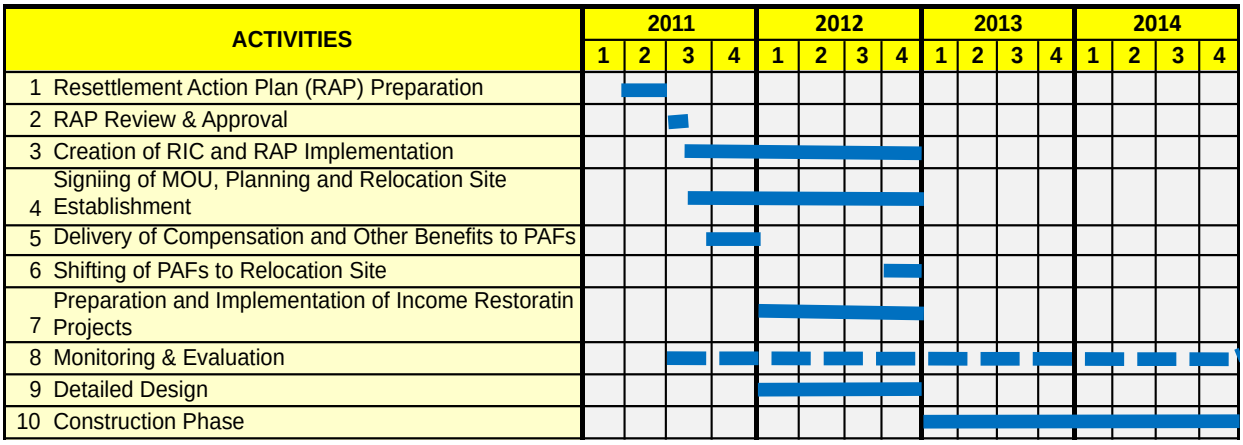


FIGURE 7.4.9-1 RESETTLEMENT SCHEDULE

7.4.10 Financial Arrangements

TABLE 7.4.10-1 RESETTLEMENT COST

(Confidential)

7.4.11 Monitoring and Evaluation

A. Objective

The main objective of monitoring the implementation of the RAP is to determine whether or not these are carried out in accordance to the project IR policy as well as the LARRIP. The work involves the monitoring of land acquisition, payment of compensation for lost assets and resettlement of persons severely affected by the project.

B. Scope

The RAPs to be prepared, implemented and monitored, shall cover all the items mentioned in the RAP outline including the identification and compensation for the affected land, structures and other improvements, as well as for income restoration.

C. Monitoring Mechanism

Supervision and Internal Monitoring

The ESSO shall conduct supervision and internal monitoring of RAP implementation and will be called the Internal Monitoring Agent (IMA).

The specific task of the IMA includes the following:

i. Regularly supervise and monitor the implementation of the RAP in coordination with the concerned District Engineering Office (DEO), Region (NCR) and the Resettlement Implementation Committee (RIC). Regular quarterly progress reports are to be prepared and submitted to the BOT-PMO and to the donor;

ii. Coordinate with the NCIP regarding the monitoring and evaluation of RAP implementation with affected IPs;

iii. Verify if the re-inventoried base-line information of all PAFs had been carried out and that the valuation of affected assets, the payment of compensation and delivery of other benefits, and actual relocation of displaced persons; had been carried out in accordance to the submitted RAP progress report and the LARRIP;

iv. Ensure that the RAPs are implemented as planned;

v. Verify if whether funds implementing the RAP and MOAs, are provided by the BOT-PMO in a timely manner and adequate amounts; and

vi. Record all grievances and their resolution, and ensure that complaints are resolved properly;

External Monitoring

An External Monitoring Agent (EMA) will be commissioned by BOT-PMO to perform a third-party external monitoring and evaluation. The EMA will either be a qualified individual or a consultancy firm with qualified and experience staff. The Terms of Reference of the EMA shall be prepared by the DPWH and shall be acceptable to the donor prior to engagement. The EMA is accountable to the BOT-PMO but reports to the ESSO. The BOT-PMO submits a copy of the EMA and IMA's reports to the donor.

The task of the EMA are as follows:

i. Verify the findings of the IMA;

ii. Verify and assess the results of the information campaign for PAFs rights and entitlements;

iii. Verify that the payment of compensation and other benefits have been carried out based on the process as explained to the PAFs;

iv. Assess whether the resettlement objectives have been met; specifically whether the livelihood and living standards of PAFs have been restored and/or even enhanced;

v. Assess the efficiency, effectiveness, impact and sustainability of resettlement implementation, drawing lessons as a guide to future resettlement policy making and planning;

vi. Ascertain whether the resettlement entitlements were appropriate to meet the objectives, and whether the objectives are were suited to PAFs conditions;

vii. Suggest modification in the implementation procedures of the RAPs, if necessary, to achieve the principles and objectives of the Project Involuntary Resettlement Policy;

viii. Review how the compensation rates were derived; and

ix. Review the handling of compliance and grievance cases.

Stages and Frequency of Monitoring

The stages and monitoring frequency of the RAP implementation by the IMA and EMA is as follows:

i. Compliance Monitoring - This is the first activity to be pursued by both the IMA and EMA, to determine whether or not the RAP was carried out as planned and according to the Project Policy. The EMA will submit an Inception Report and Compliance Monitoring Report one month after the Notice to Proceed for the work. The commissioning of the EMA shall be so scheduled to meet the Project's IR policy's requirement of conducting RAP implementation activities at least one month prior to the start of civil works.

ii. Semi-Annual Monitoring – The EMA will be required to conduct a monthly monitoring of RA implementation activities.

iii. Final Evaluation – The final evaluation of the RAP implementation will be conducted 3 months after the completion of all payments of compensation and other benefits to the PAPs.

iv. Post Evaluation – This activity will be undertaken a year after completion of the project, to determine whether the socio-economic conditions of the PAPs after project implementation have improved or not.

D. Schedule of RAP Implementation and Monitoring

The BOT-PMO in coordination with the ESSO, will finalize if necessary the RAP implementation schedule after its (RAP) approval, including the monitoring work taking into account the project's implementation schedule. It is expected that one month prior to the start of civil works, all RAP activities have been determined by the IMA and EMA to be completed.

7.5 ECC STATUS

Environmental Compliance Certificate (ECC) for the "Manila International Airport Access Improvement Project" which is now called as "NAIA Expressway Project" was issued on June 26, 2002. Based on this ECC, Phase I of NAIAx was implemented. DPWH inquired EMB of DENR of validity of the existing ECC. On June 17, 2011, EMB replied that the existing ECC is still valid since NAIAx Phase I Project started within 5 years from the issuance of the original ECC.

CHAPTER 8

ECONOMIC EVALUATION

CHAPTER 8
ECONOMIC EVALUATION

(Confidential)

CHAPTER 9

FINANCIAL ANALYSIS

CHAPTER 9
FINANCIAL ANALYSIS

(Confidential)

CHAPTER 10

PROJECT EFFECTS

CHAPTER 10
PROJECT EFFECTS

10.1 INTRODUCTION

In order determine the impact of the project, improvement to the transportation's efficiency is measured. Other expected benefits that might be derived from the project however difficult to quantify were also presented.

To achieve the first goal, traffic assignment of (i) without the project case and (ii) with the project case was carried out and corresponding outputs were compared.

10.2 QUANTIFIABLE EFFECTS

a. Comparison of Average Travel Time and Travel Speed of At-grade Road and Expressway

One of the benefits that can be derived by motorists from NAIA Expressway is the reduction of travel time and improvement of travel speed. The figure below shows the compared route between ordinary road and expressway.

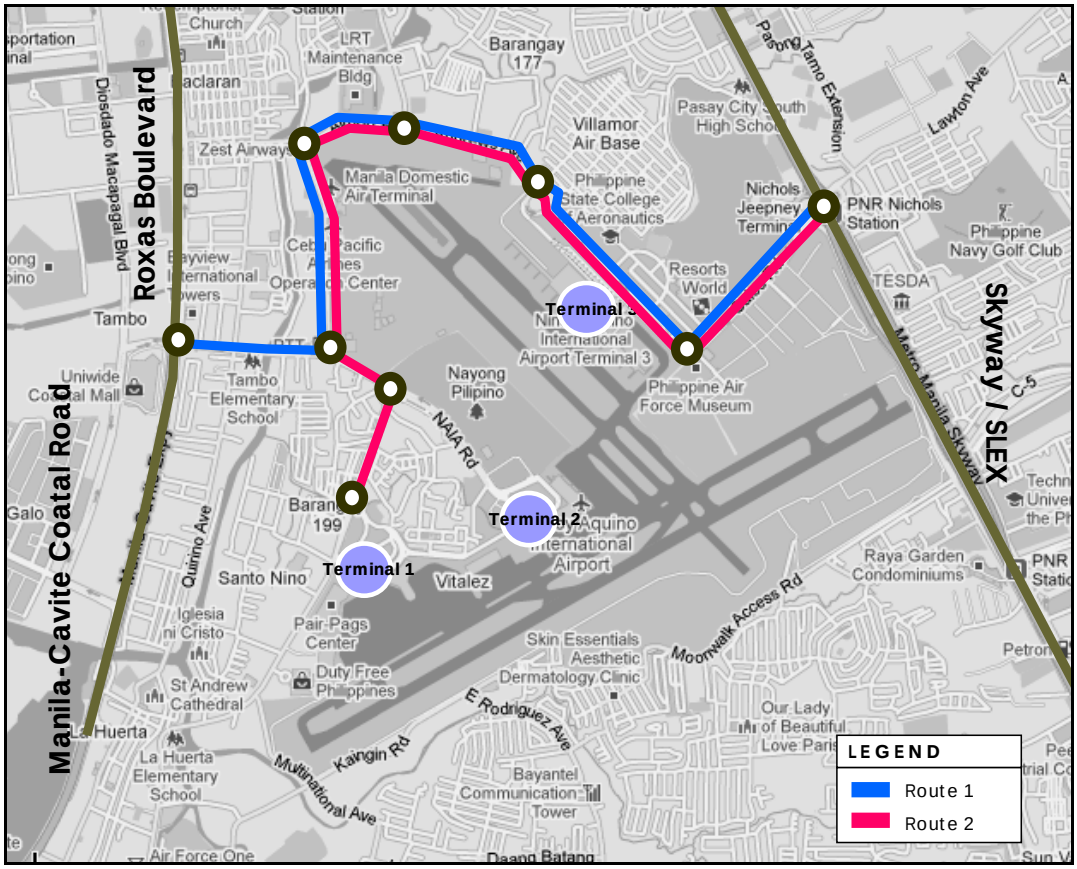


FIGURE 10.2-1 LOCATION OF COMPARED SECTIONS

From **Figure 10.2-2** (Route 1), the following were observed:

- During peak period, it would take 36.7 minutes (5:00 PM) to travel from SLEX to Roxas Boulevard and travel speed is about 9 km/hr. On the opposite direction, it would take around 25.6 minutes (2PM).
- If NAIA expressway is built expected travel time is just 7.5 minutes (without stop time at

toll both) from Roxas Boulevard to Skyway. The travel speed is about 45 km/hr for the entire 5.6 km expressway stretch.

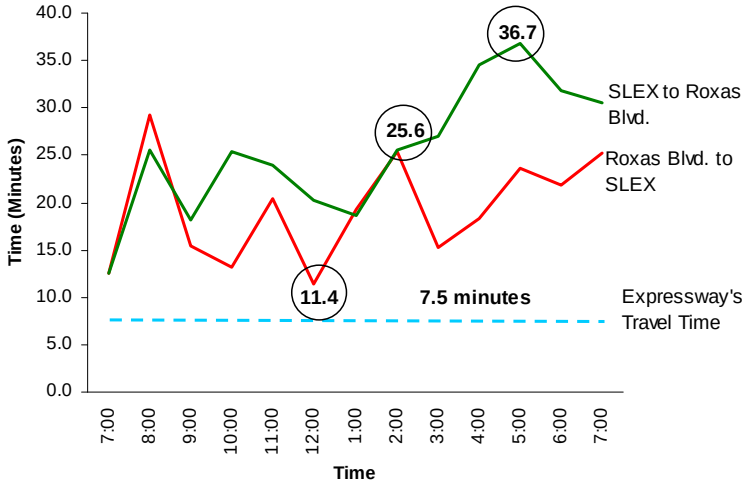
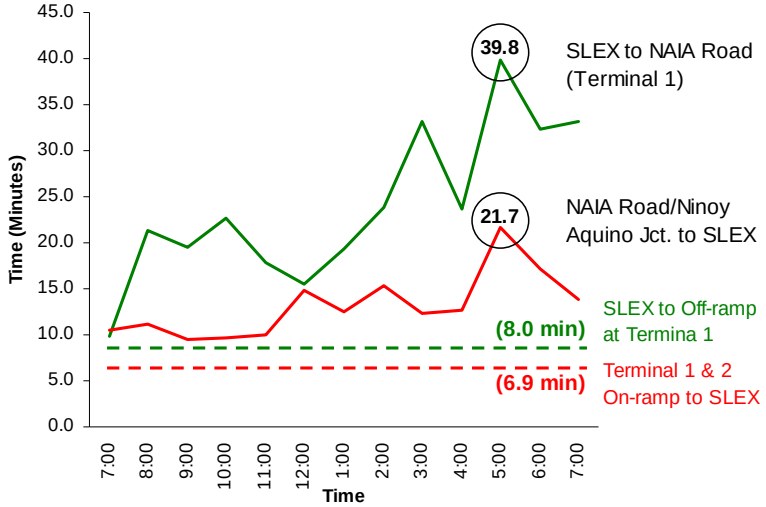


FIGURE 10.2-2 TRAVEL TIME FROM ROXAS BLVD. TO SLEX (ROUTE 1)

From **Figure 10.2-3** (Route 2), the following were observed

- From SLEX exit to NAIA Road (at the location of Off-ramp for Terminal 1) using ordinary road, it would take almost 40 minutes to traverse the entire section.
- If expressway is built, travel time is about 8.0 minutes (without the stop time at toll both) which means motorists will save about 32 minutes during this period.
- From NAIA Road (at the location of On-ramp for Terminal 1 and 2) to SLEX using ordinary road, it would take 21.7 minutes (5:00PM) to travel the entire section.
- If expressway is used, travel time is around 6.9 minutes (without the stop time at toll both). Motorists will save around 14 minutes during this peak hour.



Note: SLEX to Off-ramp has higher travel time (8 minutes) than SLEX to Roxas (6.9 minutes) due to long down-ramp (1.18 km) which only have 35 km/hr allowable travel speed

FIGURE 10.2-3 TRAVEL TIME FROM SLEX TO TERMINAL 1 AND 2 (ROUTE 2)

Figure 10.2-4 shows the recorded average travel time at Route 1 and Route 2 in comparison to the expected average travel time using the NAIA expressway. The difference between Route 1 and Expressway is 14.9 minutes and between Route 2 and Expressway, the difference is 11.1 minutes. This difference is quite big and when this savings in travel time (vehicle hour) is multiplied to the total number of vehicles using the road, this number become very significant.

Reduced vehicle hour will contribute to improvement of environment.

For travel speed, the average travel speed using ordinary road in Route 1 is about 17 km/hr while expressway's travel speed is between 40 to 45 km/hr. Likewise, average travel speed using ordinary road in Route 2 is 21.4 minutes which is still lower that the expected travel speed of vehicles using the expressway. This means that travel speed for Route 1 will improve by about 11 km/hr and travel speed for Route 2 will improve by about 23 km/hr using expressway. See Figure 10.2-4.

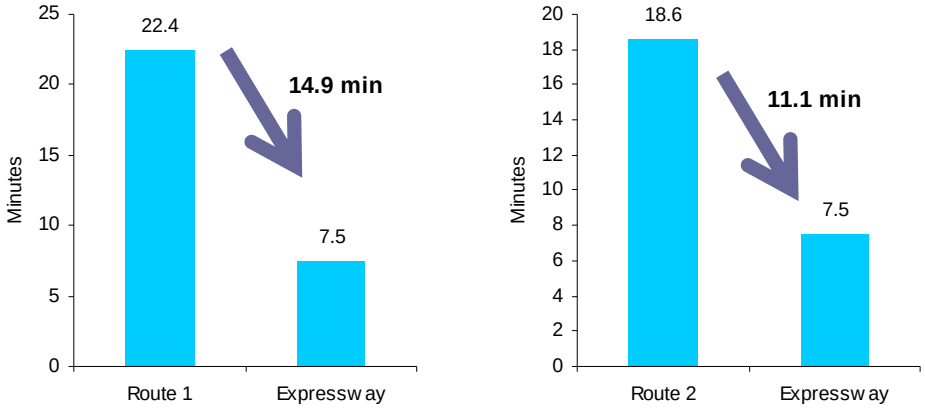


FIGURE 10.2-4 COMPARISON OF AVERAGE TRAVEL TIME BETWEEN ORDINARY ROAD AND EXPRESSWAY

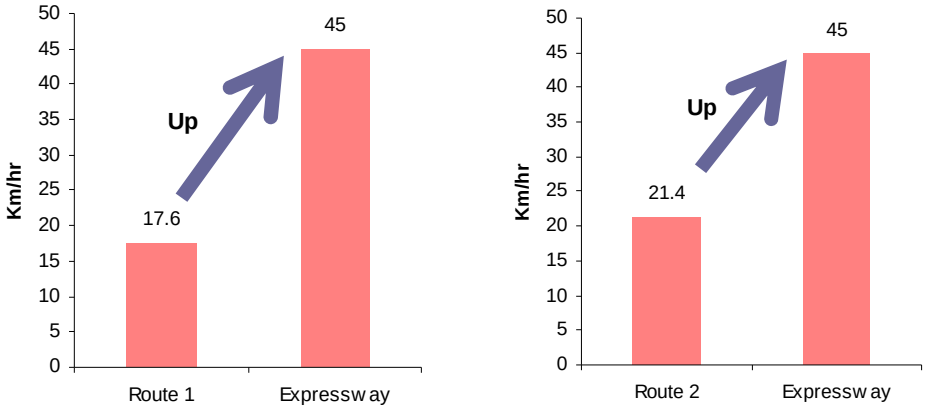


FIGURE 10.2-5 COMPARISON OF AVERAGE TRAVEL SPEED BETWEEN ORDINARY ROAD AND EXPRESSWAY

b. Vehicle Travel Hour

The savings in vehicle travel hour which is estimated by traffic assignment is presented in **Figure 10.2-6**. If NAIA expressway is constructed, around 7,245 vehicle-hour will be saved in 2015. This number increases to about 24,319 in 2020 and about 28,708 in 2030. Saving in vehicle-hour will help in improvement of environment.

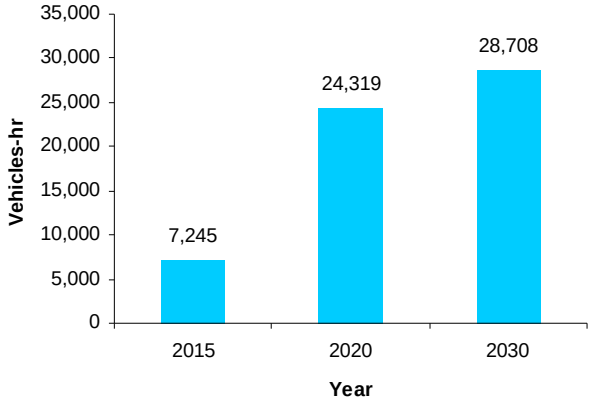


FIGURE 10.2-6 SAVINGS IN VEHICLE TRAVEL HOUR/DAY (WITH PROJECT – WITHOUT PROJECT)

c. Reduction of Traffic Volume on At-grade road

Construction of new road is sure to increase the capacity of the road network in handling traffic. If NAIA expressway is constructed, some of the traffic handled by ordinary road will be diverted to the expressway. This is particularly true to time-sensitive motorists who want to get to their destination as early as possible. **Table 10.2-1** shows the volume of traffic in the ordinary road if the expressway is constructed or not.

TABLE 10.2-1 COMPARISON OF TRAFFIC VOLUME (WITH AND WITHOUT PROJECT) AT THE ORDINARY ROAD

Unit: Vehicle/day

Road	2015		
	With Project (a)	Without Project (b)	Difference (b)-(a)
NAIA Road (MIA Road)	61,200	73,200	12,000
Domestic Road	30,300	34,600	4,300
Andrew's Avenue (near Aurora Road)	46,300	51,100	4,800
Andrew's Avenue (near Terminal 3)	46,400	49,400	3,000
Sales Road	55,500	53,300	(2,200)

d. Average Travel Speed of At-grade road

The average travel time to cross the entire stretch (Roxas Boulevard to SLEX) is estimated based on the travel time survey carried out by the Study Team. In 2015, the travel time during peak hour (5PM) without construction of NAIA expressway will deteriorate to 42.4 minutes (36.7 min in 2011) as shown in **Figure 10.2-7**. However, if expressway is built, travel time will show improvement at 30.1 minutes.

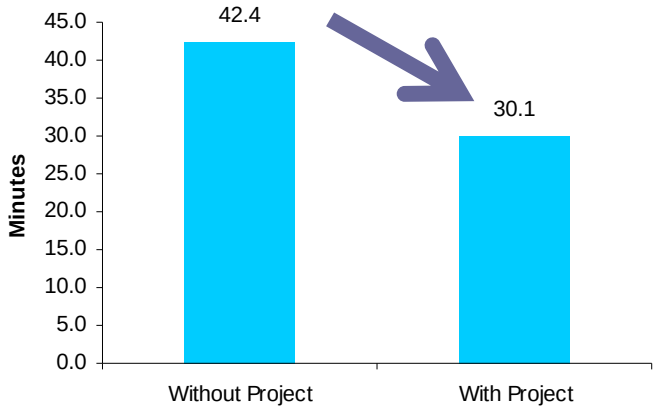


FIGURE 10.2-7 PEAK HOUR TRAVEL TIME IN 2015 (ROXAS TO SLEX)

e. Vehicle Travel Distance

Vehicle travel distance per day is shown in **Table 10.2-2**. It can be seen in the table that in terms of vehicle travel distance, the impact of the project is very minimal since it is a very short expressway project.

TABLE 10.2-2 VEHICLE TRAVEL DISTANCE

Unite: 1,000 veh-km/day

	2015	2020	2030
With Project (a)	107,378	134,208	174,337
Without Project (b)	107,323	134,297	174,349
(b)-(a)	-56	89	11
Ratio = (b)/(a)	1.0	1.0	1.0

10.3 UNQUANTIFIABLE EFFECTS

In addition to improvement of transport efficiency and direct economic impacts, the following positive impacts are expected to be generated from the NAIA Expressway.

a. Contributes to Formation of Expressway Network

One of the serious constrains of the existing expressways in the country is the lack of network formation which would provide seamless linkages among the expressways. NAIA Expressway can contribute in the formation of expressway network by linking Skyway to Cavite Coastal Road Expressway.

b. Contributes to Economic Development

Interview results to manufacturing industries located inside the economic zones in Cavite mentioned that one of the problems affecting their business operation is the heavy traffic congestion particularly roads connecting to ports and airports. Construction of NAIA Expressway will remove one of the problems mentioned by industry players.

c. Contributes to Promotion of Tourism Industry

Upon exiting from airport's terminal, tourists of the country are exposed to the chaotic transportation situation of the country. Travel time survey indicated that during peak hours, it took more than 21-minutes to reach SLEX from Terminal 1 and 2 and it took almost 40-minutes for motorists moving in opposite direction. Travel speed is between 8 to 15 km/hr.

This level of congestion leaves many tourists of the country frustrated and creates a negative impression that will discourage them to promote the country to their friends and associates or to return back in the future. Construction of NAIA Expressway although will not totally erase this problem is expected to lessen this negative impression.

d. Contributes to Social Development

Large scale construction work will need large number of labour forces. Jobs created from this project will help reduce the number of unemployed workers. And during operation and maintenance stage, long term or stable jobs will be generated which would help uplift people's lives.

e. Contributes to Affect Disaster Response

During national emergency causes by disasters, transportation hubs like ports and airports are very critical facility to realize swift movement of people and goods. The proposed NAIA Expressway will be constructed taking into account ability to withstand disaster. When disaster struck in distant places, the NAIA Expressway will form part of Skyway/SLEX and Coastal Road Expressway that will feed the airport to affect emergency response.

f. Contributes to Growth of Construction Industry

Project of this scale will contribute to the growth of construction industry in the country. Constant availability of jobs will improve their financial conditions which would allow them to invest more for technology innovation, employment of regular engineers, and capacity development of employees.

g. Improvement of Environment along Existing Roads

A large volume of traffic will be diverted to the new expressway from the existing roads, thus traffic load on existing roads will be reduced, resulting in improvement of environment along existing roads.

CHAPTER 11

PREPARATION OF BID DOCUMENTS

CHAPTER 11
PREPARATION OF BID DOCUMENTS

11.1 RELATED LAWS AND REGULATIONS

Related laws and regulations for PPP projects are shown in **Table 11.1-1.**

The Project will be implemented under the amended BOT Law and its Implementing Rules and Regulations (R.A. 7718). In the past, the following three PPP projects were bidded under the amended BOT Law;

- STAR
- TPLEX
- Daang Hari – SLEX Link Road

TABLE 11.1-1 PPP RELATED LAWS AND REGULATIONS

Decrees/Orders Date	Main Subject	Outlines
RA No. 7718 5th May, 1994	Amendment of BOT Law and its Implementing Rules and Regulations (IRR)	• Amended RA No. 6957 by, among others, - Allowing more variants of BOT scheme - Recognizing the need of private investors for rates of return reflecting market conditions - Authorizing government support for BOT projects - Allowing unsolicited proposals
Executive Order (EO) 144 2nd November, 2002	BOT Center	• Reorganized the Coordinating Council for Private Sector Participation into the BOT Center under the Department of Trade and Industry, to promote, market, coordinate and monitor the BOT/ Private Sector Participation (PSP) Program of the Government
Executive Order (EO) 380 26th October, 2004	Transforming the PEA	• Transforming PEA into the Philippine Reclamation Authority (PRA), • Transferring its Non-Reclamation Assets and Liability to the Department of Finance, and • Separating there form the PEA-Tollway Corporation for Purpose of Management
Executive Order (EO) 423 30th April, 2005	Rules and Procedures on the Review and Approval of all Government Contract	• Conform with RA No. 9184 "The Government Procurement Reform Act" • Guidelines and procedures for entering into Joint Venture Agreement between Government and Private Entities
Executive Order (EO) 686 19th December, 2007	Transfer of TRB to DOTC and its Mandate (Delineation of mandates between DPWH and TRB)	• Transferred back TRB from DPWH to DOTC and clarified its mandate. • Vested in DPWH the following powers: - Enter into contract for the construction, operation and maintenance of toll facilities for highways, roads, bridges and thoroughfares. - Determine the kind, type and nature of highways, roads, bridges and thoroughfares. - Condemn private property for the same

Decrees/Orders Date	Main Subject	Outlines
		• Orders TRB to concentrate on the following powers; - Issue, modify and proclaim the rates of toll and approve or disapprove petitions for the increases; and - Grant authority to operate a toll facility and issue the necessary "Toll Operation Certificate".
Executive Order (EO) 8 9th September 2010	BOT Center renamed to PPP Center and transferring from DTI to NEDA to revitalize BOT Center	• BOT Center renamed to PPP Center • Transferred from DTI to NEDA • Conduct project facilitation and assistance to National Agencies and Corporation and LGUs • Provide advisory services and technical assistance • Manage and administer Project Development and Monitoring Facility • Monitor and facilitate PPP projects
PD No. 1112 31st March, 1977	Toll Operation Decree	• Authorized the establishment of toll facilities on public improvements, • Created the Toll Regulatory Board (TRB) with the following powers and duties: - Enter into contracts for the construction, operation and maintenance of toll facilities. - Determine the kind, type and nature public improvements that can be constructed and operated as toll facilities. - Condemn private property for public use - Promulgate the rates of toll - Grant authority to operate a toll facility and issue "Toll Operation Certificate"
PD No. 1113 31st March, 1977	CDCP Franchise (North and South Luzon Toll Expressways)	• Granted CDCP a franchise to operate, construct and maintain toll facilities in the North Luzon Toll Expressway (Balintawak-Rosales) and South Luzon Toll Expressway (Nichols-Lucena). • Franchise was for 30 years from May 1, 1977.
PD No. 1084 4th February, 1977	Charter of Public Estates Authority (PEA)	• Created the Public Estate Authority for the following purposes, among others. - To reclaim land - To develop all kind of lands and other real estate owned/operated by the government. - To provide services for the efficient utilization of the properties.
PD No. 1894 22nd December, 1983	Amendment of PNCC Franchise	• Amended the franchise of PNCC (formerly CDCP) • Included the Metro Manila Expressway to link the North and South Luzon Expressways. • Granted PNCC the right to construct, maintain and operate any and all such extensions, linkages or stretches. • Franchise shall have a term of 30 years from

Decrees/Orders Date	Main Subject	Outlines
		the date of completion of the project.
RA No. 6957 9th July, 1990	Implementation of Infrastructure Projects by the Private Sector (BOT Law)	• Authorized the financing, construction, operation and maintenance of Infrastructure projects by the private sector..
R A No. 727 13th March, 1992	Bases Conversion and Development Authority (BCDA)	• Created BCDA to construct, own, lease, operate and maintain public utilities as well as infrastructure facilities to support the productive uses of the Clark and Subic Bay reservations.

Source: Preparatory Survey for PPP Infrastructure Development Project, JICA, 2010

11.2 TECHNICAL RISKS OF THE PROJECT

The Project is situated in the highly urbanized area with heavy traffic. The Project will be constructed over the existing roads. There are various technical issues and risks as follows;

1) ROW Acquisition Delay Risk

- Although most sections utilize existing road ROW, however, along Domestic Road, a part of section of Andrews Avenue and Sales Road, some section of MIA Road requires widening and ROW acquisition is required.
- In Toll Concession Agreement (TCA), the date for delivery of ROW will be specified and DPWH will be imposed liquidated damage, if failed.
- DPWH should start the parcellary survey as soon as possible and all necessary preparation for ROW should be started.
- Soon after the project is approved by the NEDA Board, DPWH should start ROW acquisition.

2) Delay Risk of Relocation of Informal Settlers

- Some informal settlers are affected by the project.
- If relocation of informal settlers is delayed, delivery of ROW will also be delayed.
- DPWH should start discussion with the concerned LGUs to determine the relocation site.
- DPWH should also start the coordination with NHA for their possible assistance in relocation of informal settlers.

3) Construction Cost Increase and Construction Schedule Delay Risk

- Construction work must be undertaken along heavily traffic and congested existing roads.
- Proper traffic management plan must be prepared and approved by concerned LGUs.
- Implementation of traffic management plan must be carried out with close coordination with the local traffic police and MMDA.
- Otherwise, LGUs may order temporary suspension of construction work.
- Construction execution plan must be carefully prepared by contractor(s) employed by a concessionaire in due consideration of traffic conditions of the project area.

4) Risk Related to Relocation of Public Utilities

- There are many public utilities of both overhead and underground.
- During the detailed design, location of all public utilities must be identified and selection of pier locations must be so selected to minimize relocation of public utilities.

- Since public utility companies are allowed to install utilities within the road ROW with no payment for land lease, they are required to relocate them at their cost when road project requires relocation of public utilities.
- Contractor(s) employed by the concessionaire must start discussion with utility companies how to and when to relocate affected utilities during the detailed design stage and agree on when utility companies can complete relocation of utilities.
- Utility relocation work needs to be simultaneously done with construction work of pier foundations and double digging of existing road shall be avoided.
- Delay in public utilities relocation work will lead to delay in construction work of the expressway. Contractor(s) employed by the concessionaire must fully coordinate with utility companies with regard to public utility relocation.

5) <u>Risk Related to Height Limitation Due to NAIA Navigational Clearance</u>

- Height limitation is imposed along the western section of Andrews Ave. and northern section of Domestic Road due to NAIA navigational clearance.
- Construction work must be implemented within the allowed height in this area. Usage of toll cranes over height limit will be prohibited. Viaduct construction methods must fully take this limitation into account.
- During preparation of a bid, appropriate cost must be incorporated to cope with this limitation.

6) <u>Delay Risk Due to Coordination with Many Agencies</u>

- Multi-agencies and organizations are involved such as Manila International Airport Authority (MIAA), Air Force, Light Rail Transit Authority (LRTA), two (2) LGUs, Public Utility Companies, Land Development Companies, etc.
- The concessionaire is required close coordination with all concerned agencies, organizations and private companies.
- If coordination do not go well or smooth, the construction schedule will be delayed and additional cost will be required to recover delayed schedule.
- The concessionaire and DPWH should plan coordination schedule in advance and any delay should be mitigated.

11.3 BRIEF HISTORY OF BID DOCUMENTS PREPARATION

Preparation of bid documents for the selection of the concessionaire started at the last quarter of 2010, which has prior to the start of this Study.

Joint work force composed of the following was organized for the preparation of bid documents;

- Department of Public Works and Highways (DPWH)
- Department of Finance (DOF)
- NEDA PPP Center
- Office of the Solicitor General (OSG)
- Development Bank of the Philippines (DBP)
- International Finance Corporation (IFC)
- JICA Study Team

Joint work force met weekly to discuss issues and corresponding amendment of bid documents.
In the process of preparation of bid documents, NEDA Board turned down this project, therefore, preparation of bid documents was suspended. In this report, bid documents in the process of finalization are presented.

11.4 COMPOSITION OF BID DOCUMENTS

Draft bid documents are composed of the following parts;

Part 1 : Invitation to Bid
Part II : Instruction to Bidders
Part III : Minimum Performance Standards and Specifications
Part IV : Draft Concession Agreement

11.5 MAJOR DIFFERENCES BETWEEN ORIGINAL AND PRESENT PROVISIONS

Although the bid documents were not finalized, differences between the original stage and the present (or at the time of suspending the preparation of bid documents) are shown in **Table 11.5-1.**

11.6 TIME FRAME FOR BIDDING

Draft Time frame for bidding and project implementation is shown in **Table 11.6-1.** Draft bidding process stipulated in the bid documents is shown in **Table 11.6-2.**

TABLE 11.5-1 NAIAX BIDDING DOCUMENTS: MAJOR DIFFERENCES BETWEEN ORIGINAL AND PRESENT PROVISIONS

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
Instructions to Bidders		
1. Procurement involves single-stage bidding, with simultaneous submission of prequalification application and bids.	1. Procurement involves two-stage bidding – prequalification first, followed by submission of bids from prequalified bidders.	The single-stage scheme is faster and less-prone to collusion. The two-stage scheme, however, will encourage more firms to apply for prequalification which is simple and inexpensive; only those that prequalify will have to do due diligence in preparing bids. Applies international standards
2. The bid parameter is the proposed toll rate, with DPWH fixing the Government Financial Support (GFS). The winning bidder will be the one that submits the lowest proposed toll rate.	2. The bid parameter is the required GFS, with DPWH fixing the initial toll rates. The winning bidder will be the one that submits the lowest proposed GFS.	Either bid parameter/criterion is acceptable. Accepted practice in selection criteria is applied. (Chile, for example, has toll road selection criteria based in minimized Government financial inputs). World Bank model arrangements provided for these selection criteria as well
3. For prequalification, the applicant must designate a construction contractor with adequate construction experience and equipment.	3. For prequalification, the applicant must propose itself or 1-5 construction contractors, each with adequate construction experience. The Concession-aire may use any of the proposed contractors. A construction contractor may be nominated in more than one bid.	The present provision is more liberal and flexible for the applicant. But it is not standard international practice. Care will need to be taken to prevent collusion
4. For prequalification, the applicant must designate an O&M contractor with adequate O&M experience.	4. For prequalification, the applicant must propose itself or 1-5 O&M contractors, each with adequate O&M experience. The Concessionaire shall designate the Facility Operator within 10 days after the Notice to Proceed with the Construction. An O&M contractor may be nominated in more than one bid.	-do-
Concession Agreement		
1. Concession Period is 35years, including design and construction period, commencing from the signing date of the Concession Agreement	1. Concession Period is 35years, including construction period, commencing from the Notice to Proceed, which is the later of the date of Basic ROW delivery by DPWH, or the date	DPWH requested the present provision since it anticipates difficulties in delivering the Basic ROW. The best practice requires the ROW to be in place

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
(CA).	of certified DED delivery by the Concessionaire.	prior to bidding. This practice is an acceptable alternative
2. The Concessionaire shall be responsible for the maintenance of Phase I until the issuance of the Toll Operations Certificate (TOC).	2. The Concessionaire shall no longer be responsible for Phase I maintenance until the issuance of the TOC.	DPWH must provide adequate arrangements for Phase I maintenance until the TOC issuance.
3. DPWH shall ensure that TRB automatically grants the TOC within 15 days from signing of CA, with the TOC to become effective upon issuance of the Certificate of Final Completion (CFC) of the Construction.	3. DPWH shall ensure that TRB issues the TOC within 10 days after TOC application by the Concessionaire/Facility Operator and after issuance by DPWH of the CFC.	The original provision would have given more comfort to the Concessionaire, and would be in keeping with the intent of the BOT law for the automatic grant of franchise. It would provide the Concession Contract with certainty as opposed to being subject to a further decision by an organization (TRB) that is not subject to the CA International practice is to ensure that the CA has force and effect from the date of signing subject to Conditions Precedent
4. DPWH shall deliver the Basic ROW, clear of all occupants and utilities, within 3 months after CA signing.	4. DPWH shall deliver the Basic ROW, without removing utilities, within 12 months after CA signing. DPWH shall cause the removal of public utilities by the utility owners in accordance with the Concessionaire's construction schedule. If DPWH fails to deliver the Basic ROW within 12 months after CA signing, DPWH is given a curing period of 3 months, beyond which DPWH/the Concessionaire may terminate the CA,	The proposed provision for the relocation of utilities is more practical and based on engineering considerations. It will require a tripartite agreement among DPWH, the Concessionaire, and the Public Utility Owners. International practice requires cooperation between the three parties for handling public utility relocation. Australian practice is to adopt a tripartite agreement.
5. DPWH shall issue a Certificate of Substantial Completion (CSC) upon accomplishing 95% of the works, and then a CFC upon full completion.	5. There is no more CSC. DPWH shall issue the CFC upon the Concessionaire's 100% completion of construction and other requirements.	The present provision is more expedient. It applies international standards
6. Independent Consultant (IC): a) The IC shall be engaged for both design/ construction and O&M. b) The IC shall certify and	6. Independent Consultant (IC): a) The IC shall only be for design/construction. DPWH may engage its own agent for O&M supervision.	a) The original provision would have been more effective as an IC is needed also for the independent supervision of O&M, especially since this involves liquidated damages on the

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
recommend the Concessionaire's detailed engineering design (DED) and CFC issuance. DPWH shall approve the DED and issue the CFC.	b) Within 30 days after the Concessionaire delivers the DED to the IC, DPWH may provide comments if, in its opinion, the DED does not conform to the CA requirements, including the MPSS and the Conceptual Engineering Design. The IC shall consider the DPWH comments. The IC shall then certify the DED, and the Concessionaire shall deliver the certified DED to DPWH within 12 months after the CA signing date. For Construct-ion, IC shall certify that the CFC requirements are met, and DPWH shall then issue the CFC.	concessionaire for violation of KPIs. b) International practice sometimes applies the IC role to the O&M period. c) The present provision is more efficient, since the IC engaged by DPWH is expected to work for the interest of the project.
7. Toll Rate Adjustments: a) Periodic toll rate adjustments shall be once every 2 years, according to a formula which makes the toll increase vary with 50% of the CPI increase. b) Remedies for disallowance of authorized toll rates are (i) compensation for foregone toll income using a formula or (ii) extension of concession period based on the Concessionaire's financial model	7. Toll Rate Adjustments: a) Periodic toll rate adjustments shall be done annually, according to a formula which makes the toll increase vary with 100% of the CPI increase. This will be adjusted by a factor reflecting the real increase (between 0 and 3%). b) Remedies for disallowance of authorized toll rates are either (i) compensation for foregone toll income using a preset formula or (ii) extension of concession period, as may be mutually agreed upon by the parties.	a) The present provision will enable to toll rate adjustments to reflect the actual price increases due to inflation. b) Remedies under the present provision will effect adequate compensation. The Concessionaire, however, should have been given the option to choose the form of the remedies. The proposed adjustment formula and timing applies international practice. The option to choose the means of adjustment is also expected international practice. It varies from jurisdiction to jurisdiction.
8. Operation and Maintenance: a) Penalties – in pesos - for non-compliance of Key Performance Indicators (KPIs) for O&M. b) Maintenance Fund Account for 3 months expenses.	8. Operation and Maintenance: a) Liquidated damages (LDs) – in Toll Equivalent Units (TEUs) - for non-compliance of KPIs for O&M. b) No more Maintenance Fund Account. Integrate the requirements under O&M Performance Security.	a) The present provision for LDs in terms of TEUs is better related to foregone revenues in case of non-compliance with KPIs. TEUs introduces international standard principles of LDs related to performance and toll revenues b) A Maintenance Fund would have set aside in

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
		escrow a part of the Concessionaire's O&M budget to promptly do maintenance work. The O&M fund is practice in some jurisdictions to introduce certainty for achieving maintenance standards.
9. Force majeure FM): FM would include Government expropriation, requisition, confiscation, and nationalization by Government.	9. Force majeure (FM): Government expropriation, requisition, confiscation, and nationalization have been moved from FM to events of DPWH default.	This applies a more standard international definition.
10. Concessionaire's default and termination: a) Before construction – failure to achieve financial closure, and to submit the DED on time. b) During construction – 20% slippage, persistent failure to remedy defects, failure to complete the construction and secure the CFC on time. c) During O&M –failure to operate 30 days after TOC issuance, failure to sustain the Maintenance Fund, persistent breach of O&M Manuals. d) Others – material breach of its obligations, etc. Curing period is 90 days. If default is not cured, DPWH may terminate the CA, with proper compensation to the Concessionaire.	10. Concessionaire's default and termination: a) Before construction – failure to deliver the certified DED on time. b) During construction – failure to submit evidence of financial closure on time, failure to submit O&M Manuals on time, failure to complete the construction and secure the CFC on time. c) During O&M –failure to operate 30 days after TOC issuance, failure to submit monthly O&M reports, failure to submit as-built drawings and asset register on time. d) Others – material breach of its obligations, etc. Curing period is 90 days. If default is not cured, DPWH may terminate the CA, with no compensation to the Concessionaire.	There is a need for a regime for liquidated damages before default and termination. International approaches are based around keeping the CA in place and applying LDs/penalties for non-conformances rather than using the default system.
11. DPWH's default and termination: a) Failure to provide the GFS per	11. DPWH's default and termination: a) Failure to provide the GFS per CA.	There is a need for a regime for liquidated damages before default and termination.

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
CA. b) Failure to compensate the Concessionaire in case of disallowance of authorized toll rates. c) Failure to deliver the ROW on time. d) Failure to approve the DED or appoint the IC on time. e) Material breach of its obligations. Curing period is 120 days. If default is not cured, the Concessionaire may terminate the CA, with proper compensation to the Concessionaire.	b) Failure to secure from TRB the TOC within 10 days from application date. c) Failure to compensate, with delay interest, the Concessionaire within 2 years in case of disallowance of authorized toll rates. d) Material breach of its obligations. e) Taking control or ownership of Concessionaire or expropriation of its assets. Curing period is 120 days. If default is not cured, the Concessionaire may terminate the CA, with DPWH making termination payments using the preset formulas.	International approaches are based around keeping the CA in place and applying LDs/penalties for non-conformances rather than using the default system.
12. Guarantee on political risks: No specific provision – to guarantee payment of compensation for disallowing authorized toll rates, providing GFS as agreed, expropriation, undue cancellation of TOC, etc.	12. Guarantee on political risks: Consider (a) use of insurance guarantee facility of ADB/WB to compensate the Concessionaire in case of DPWH's/government's failure in its performance undertakings (Pus), and (b) special provision in the General Appropriations Act to use appropriated funds to guarantee the Pus.	Guarantee instruments are still being explored with ADB/WB and DBM.
13. Insurance: a) During construction: Contractor's all-risk insurance (CARI) covering 100% of assets; force majeure, third party liability. b) b. During operation: force majeure including damage from calamities, third party liability	13. Insurance: a) During construction: CARI covering 50% of assets; third party liability; workmen's compensation; other insurance against damage such as from force majeure. b) During operation: property damage of 50% of book value; third party liability; workmen's compensation; other insurance against damage such as from force majeure.	The main difference is in the CARI coverage.
14. Dispute resolution:	14. Dispute resolution:	The Dispute Resolution Board will provide a more

ORIGINAL/EARLIER PROVISIONS	PRESENT PROVISIONS	REMARKS
a) Originally, a Dispute Resolution Board – one representative from DPWH, one from the Concessionaire, and 1 chosen by the first two – was envisioned. b) The idea of the Board was later dropped, and disputes would be resolved between the DPWH Secretary and the CEO of the Concessionaire.	The Dispute Resolution Board is back in the present provisions.	practical instrument to resolve disputes or disagreement than having the top officials of the parties to resolve them.
15. Termination Payments Termination payments were based on a range of different formulas including valuation of assets, cash flow arrangements etc	15.To be proposed by IFC/DBP	
16. Turnover No substantial Turnover provisions at the end of concession period	16. Turnover Introduction of detailed "Turnover" provisions at the end of the Concession period, including: a) Joint inspection; b) Asset inventory c) Defects performance security	Introduction of more substantial "Turnover" provisions makes the obligations clear and the process clear at the end of the Concession. The provisions are in line with international standards.

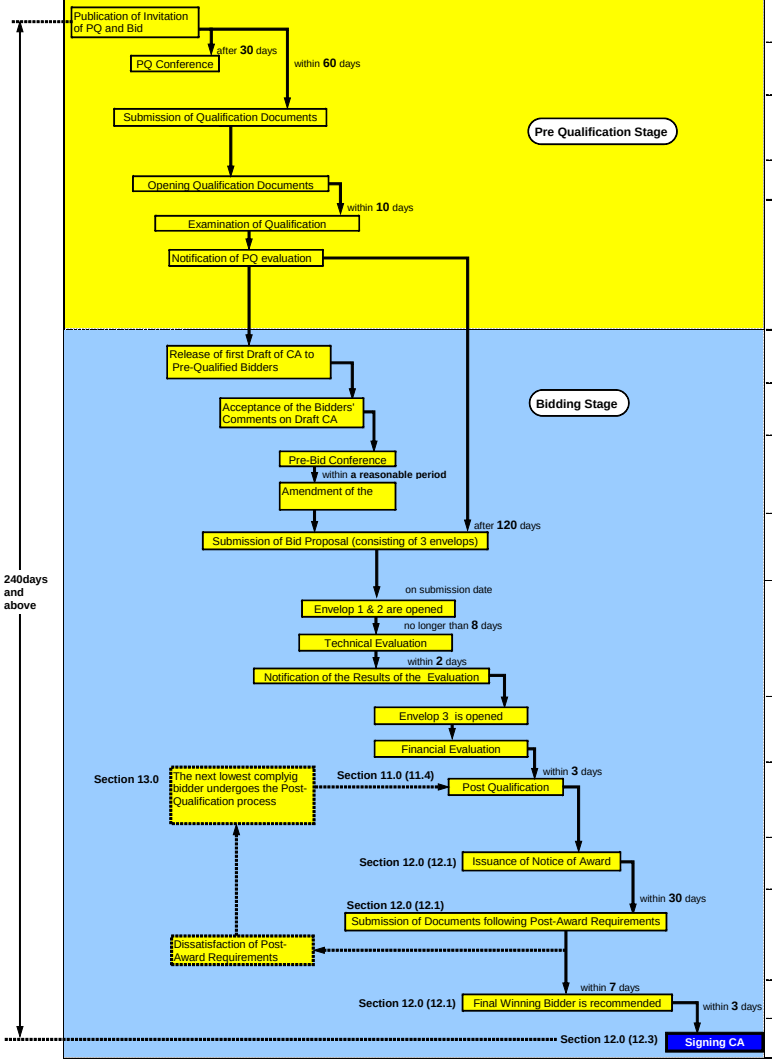
Source: JICA Study Team

TABLE 11.6-1 DRAFT TIME FRAME FOR BIDDING AND PROJECT IMPLEMENTATION

	Responsible Body					Stipulations in TCA
	DPWH	IC	Conces -sionaire	Facility Operator	TRB	
Signing CA						
within **3** months the DPWH procures the **IC**	●					The DPWH shall prepare the short-list of three candidates for the **Independent Consultant (IC)**. The DPWH shall complete the procurement of **IC** within **3 months** after the Signing Date
within **9** months the Concessionaire sends the ***DED*** to the **IC** within **30** days the DPWH provides comments on the draft ***DED*** to the **IC** the **IC** reviews the submitted ***DED*** ***DED*** rejection within **15** days The Concessionaire sends revised ***DED*** to the **IC** ***DED*** certification within **12** months the Concessionaire sends the certified ***DED*** to the DPWH	**DED and some Preparatory Stage** ●	●	●			The Concessionaire shall prepare the **DED** in conformity with the requirements of the Concession Agreement and submit it to the IC not later than **9 months** after the Signing Date. If the IC concludes that the **DED** does not conform with the requirements of thi
within **12** months Delivery of Basic ***ROW***	●					The Basic **Right of Way (ROW)** shall be made available by the DPWH to the Concessionaire within **12 months** after the Signing Date.
after **3** months ***Financial Closure***			●			The Concessionaire shall achieve **Financial Closure** not later than **3 months** after certification by the IC of delivery of the Basic ROW.
within **5** days ***Notice to Proceed (NTP)*** is issued by the DPWH	●					The DPWH shall issue the **Notice to Proceed (NTP)** within **5 days** after: (i) the date of delivery of the Basic ROW, or (ii) the date of delivery of the Certified DED
within **10** days the Concessionaire notifies the DPWH of the identity of the **Facility Operator** Disapprove by the DPWH within **30** days the Concessionaire propose another candidate **Facility Operator**	**Construction Stage**		●			Within **10 days** after the issuance of the NTP, the Concessionaire shall: (i) Notify DPWH of the identity of its proposed **Facility Operator**; (ii) Provide evidence incorporated and fulfills the requirements; and (iii) Request DPWH's written approval of such
within **18** months the Concessionaire submits ***O&M Manuals*** to the DPWH			●			The Concessionaire submits the **O&M Manuals** to the DPWH for approval within **18 months** after issuance of the **NTP**.
30 days the IC is in charge of final tests and issue the notice of completion of construction within **7** days ***Certificate of Final Completion*** issued by	●	●	●			The Construction and other requirements for the issuance of the **Certificate of Final Completion** shall be completed no later than the Construction Completion Deadline (**24 months** after the issuance of NTP) The DPWH shall issue the **Certificate of Final Completion** to the Concessionaire within **7 days** after its receipt of the IC's notice
Facility Operator applies for the ***Toll Operation Certificate***	**O & M Stage**			●	●	The Facility Operator applies for the issuance of the **Toll Operation Certificate (TOC)** with the TRB.
Facility				●		Upon issuance of the **TOC** issued by the TRB, the Concessionaire shall carry out the Operation and Maintenance of the NAIA Expressway
Turnover	●	●	●	●		**2 years** prior to the end of the Concession Period, the DPWH and the Concessionaire shall conduct a **Joint Inspection and Survey** of the condition of the NAIA Expressway. **1 year** prior to the end of the Concession Period, deliver to the DPWH the **Defects Per**

Source: JICA Study Team

TABLE 11.6-2 DRAFT BIDDING PROCESS STIPULATED IN THE BID DOCUMENT (As of July 3, 2011)



Responsible Body					Stipulations in ITB	Stipulations in BOT Law (amendment)
BAC	DPWH	Prospec -tive Bidders	Pre-qualified Bidders	Winning Bidder		
	●				Invitation of the Prospective Bidders to apply to **Pre-Qualification (PQ)**, who are satisfied with the **Qualification Requirements** consisting of legal eligibility, technical capability and financial capability, are publicly announced by the ***DPWH***	
	●				Instructions of PQ, Qualification Requirements and answers to the Prospective Bidders' queries are provided at the **PQ Conference** which is held **30 days** by the ***DPWH*** after the public invitation of the Prospective Bidders	
		●			**Qualification Documents** are submitted by the Prospective Bidders to the ***BAC*** within **60 days** after the publication of the invitation consisting of business plan, Bidder's experiences in construction/O&M, key personnel list and proof of financial capability	Section 5.3 prescribes **30 calendar days** from the last date of publication of the invitation, instead of "**60 days**"
●					The ***BAC*** opens Qualification Documents on the Qualification Documents submission date	
●					The ***BAC*** examines and evaluates Qualification Documents over a period of no longer than **10 days** after the Qualification Documents submission date **Notice of Pre-Qualification** of whether pre-qualified or not is issued to all Prospective Bidders by the ***BAC***	Section 5.4 stipulates **20 calendar days** instead of "**10 days**" Section 5.5 stipulates that the Agency determine pre-qualified Bidders within **20 calendar days** and notify the result within **5 days**. total timeframe is **25 days** instead of "**10 days**"
	●				The first draft TCA is released to the pre-qualified bidders by the ***DPWH***	
	●				**Bidder's Comments** are provided to the ***BAC*** by the Pre-Qualified Bidders after release of the first draft TCA. The ***DPWH*** reserves the right to accept or reject the Bidder's Comments	
	●				**Pre-Bid Conference** is held by the ***DPWH*** to confirm the bidding documents. Within **a reasonable period** after the Pre-Bid Conference, all amendments and minutes of the conference will be issued by the ***DPWH*** to Pre-Qualified Bidders	Section 6.3 clearly stipulates **60 to 120 calendar days** before the submission of bids
●			●		**Bid Proposals** are submitted by Pre-Qualified Bidders to the ***BAC*** within **120 days** after the issuance of the Notice of PQ, which consist of three envelops. The envelop 1: mainly additional qualification documents, the envelop 2 : technical proposals and the	BOT Law amendment only says before the deadline stipulated in the ITB, no specific timeframe is stipulated
●					The ***BAC*** opens envelop 1 and 2 on the Bid Proposals submission date The envelop 2 is examined as **Technical Evaluation** by the ***BAC*** over a period of no longer than **8 days** after the opening of envelop 2 The ***BAC*** informs the Bidders of the results of the eval	Section 8.1 stipulates **20 calendar days** from the date the technical proposal is opened
●					The envelop 3 is opened by the ***BAC*** in front of the observers dispatched from all bidders who passed the Technical Evaluation for the envelop 2. The envelop 3 is examined from the viewpoint of the lowest Bid Amount and appropriate Supporting Financial Mod	Section 8.2 stipulates **15 calendar days** from the date of completion of technical evaluation. It is the period for evaluation of financial proposal
●					**Post-Qualification** to all documents submitted by the bidder who proposed the lowest bid amount will be made by the ***BAC*** over a period not to exceed **3 days**. When verification is passed, its bid is declared the lowest complying post-qualified Bid and the ***BA***	Section 11.1 stipulates **7 calendar days** after completion of financial evaluation for recommendation of award, instead of "**3 days**"
	●				**Notice of Award** is issued by ***DPWH*** to the Winning Bidder with the lowest complying post-qualified Bid, immediately after the approval of award by DPWH secretary.	Section 11.2 stipulates **7 calendar days** after approval
	●			●	Documents following **Post-Award Requirements** for the execution and signing of the TCA is submitted by the Wining Bidder to the ***DPWH*** within **30 days** from the Winning Bidder's receipt of the Notice of Award	
	●				The ***DPWH*** will determine and notify the Winning Bidder of its compliance of all conditions within **7 days** upon receipt of the Post-Award Requirements	
	●			●	The Winning Bidder and the ***DPWH*** sign the CA within **3 days** from its receipt of the notification of compliance	

Source: JICA Study Team

11.7 DRAFT BID EVALUATION CRITERIA

11.7.1 Introduction

The purpose of these Bid Evaluation Criteria and Procedures (BECP) is to provide a guide to the Special Bids and Awards Committee (SBAC) for Public-Private Partnership (PPP) Projects of the Department of Public Works and Highways (DPWH) and its Technical Working Group in the evaluation of the Pre-qualification Documents and Bids to be received by the DPWH for the NAIA Expressway Project - hereinafter called the Project - under the Build-Operate-Transfer (BOT) Law.

The documents which describe the Project and govern the process for pre-qualification are (a) the Invitation to Pre-Qualify to Bid, (b) the Instructions to Prospective Bidders (ITPB) including its Annexes, and (c) the Information Memorandum (IM).

The procurement for the Project follows the two-stage process consisting of (a) pre-qualification and (b) submission of bids.

In the first stage, the Bidders are required to be pre-qualified first by the SBAC. The pre-qualification consists in determining if the Bidder's legal, technical and financial capability, as shown in its Qualification Documents submitted to the DPWH, comply with the established qualification criteria and requirements for the Project.

In the second stage, only those Bidders that pass the pre-qualification shall be allowed to submit their respective Bids to the DPWH. Each Bid shall consist of the Bidder's (a) Bid Letter (including Bid Security), (b) Technical Proposal, and (c) Financial Proposal, in three envelopes. The SBAC shall open and evaluate the contents of these envelopes in sequence. Only the Bidders that meet the requirements of the Bid Letter shall have their Technical Proposals opened and evaluated by the SBAC. The Bidders that comply with all the requirements of the Technical Proposals shall be considered to be on equal footing, and the Winning Bidder shall be determined by the Financial Proposals. The SBAC shall open and evaluate the Financial Proposals, and rank those complying, from the lowest to the highest Bid Amount (in terms of the proposed Government Financial Support for Construction).

The SBAC shall conduct post-qualification on the Bidder with the lowest complying Bid Amount - i.e., validation of all statements in the Qualification Documents and Bids. If that Bidder is post-qualified, the SBAC shall declare its Bid as the lowest complying and post-qualified Bid and, thus, recommend to the DPWH Secretary to award the Concession Agreement to that Bidder.

The overall process for pre-qualification and evaluation of Bids is depicted in **Figure 11.7.1-1**.

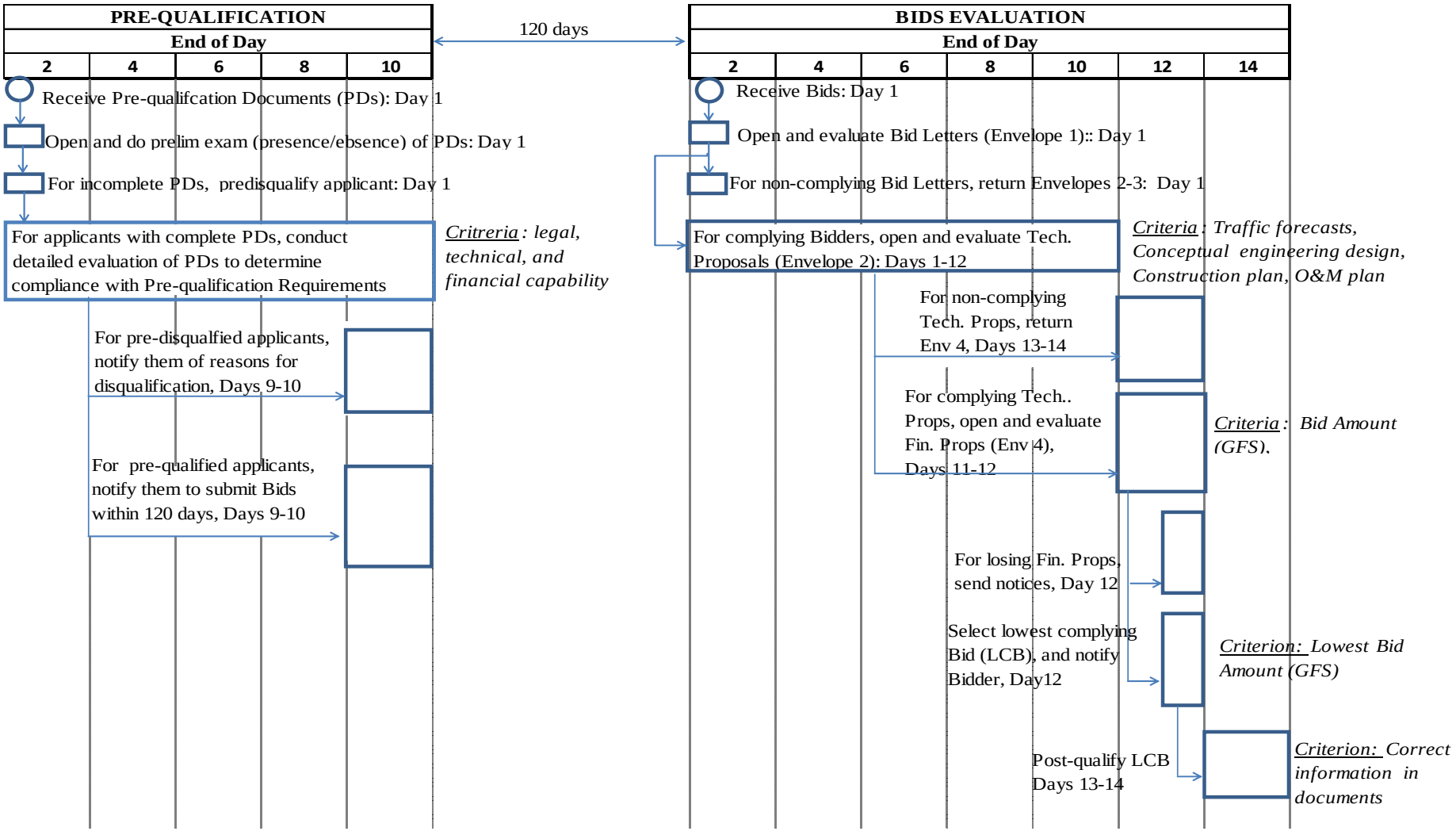


FIGURE 11.7.1-1 PRE-QUALIFICATION AND BID EVALUATION PROCESS

11.7.2 Pre-Qualification Criteria

The criteria to determine the pre-qualification of Bidders for the Project in these BECP are drawn from Section 11.0 of the ITPB for the Project.

11.7.2.1 Legal Requirements

The Bidder must be either of the following:

(1) A partnership or corporation registered with the Philippine Securities and Exchange Commission (SEC) or in case of a foreign entity, the appropriate government agency equivalent to the SEC in the foreign country where the foreign entity was registered for recognition or creation of its juridical personality or capacity. The Prospective Bidder must certify that it and its Affiliates whose projects and experience are being submitted as evidence of fulfillment of the requirements in Section 11.2 of the ITPB have no unsatisfactory performance record.

(2) A Consortium. All Consortium Members must certify that they and their Affiliates whose projects and experience are being submitted as evidence of fulfillment of the technical requirements in Section 11.2 of the ITPB have no unsatisfactory performance record. If the Prospective Bidder is a Consortium and becomes the Winning Bidder, it will have to show proof of incorporation prior to signing the Concession Agreement.

11.7.2.2 Technical Capability Requirements

To qualify for the Project, the Bidder must meet the following technical capability requirements:

a. Construction Experience.

The Prospective Bidder or a related entity, as described below, must have satisfactorily completed, within the last ten (10) years, the construction of expressways/viaducts/ flyovers/bridges or similar projects with a cumulative cost of at least Six Billion Philippine Pesos (PhP 6,000,000,000.00), including at least one completed horizontal segment or single structure project with a cost of at least One Billion Philippine Pesos (PhP 1,000,000,000.00).

The related entity which fulfils this requirement may be one of the following:

(1) If the Prospective Bidder is a partnership or corporation:
   (a) The Prospective Bidder itself
   (b) A Construction Contractor

(2) If the Prospective Bidder is a Consortium:
   (a) A Consortium Member with at least ten percent (10%) interest in the Consortium
   (b) A Construction Contractor

If this requirement is to be fulfilled by a Construction Contractor, the Prospective Bidder must propose at least one, and up to five, Construction Contractors, each of which must have the relevant experience. In addition, any Construction Contractor so proposed must possess the following:

(1) A valid license issued by the Philippine Contractors Accreditation Board (PCAB) for Large B Classification/License Category AAA, in the case of a Filipino Construction Contractor or, in the case of a foreign Construction Contractor, by an equivalent accreditation institution in the Construction Contractor's country of origin, provided that such foreign Construction Contractor must secure a license and accreditation from the PCAB after the Bidder is awarded the Project.

(2) A valid International Organization for Standardization (ISO) 9001:2000 certification.

For the purpose of counting and calculating the value of projects completed by the Prospective Bidder, a Consortium Member, or a Construction Contractor, the SBAC will count projects completed by an Affiliate of the Prospective Bidder as if it had been completed by the Prospective Bidder, projects completed by an Affiliate of a Consortium Member with at least ten percent (10%) interest in the Consortium as if it had been completed by that Consortium Member, and projects completed by an Affiliate of a Construction Contractor as if it had been completed by that Construction Contractor. However, projects completed by a Prospective Bidder (along with its Affiliates) and a Construction Contractor (along with its Affiliates) will not be counted together: either the Prospective Bidder and its Affiliates must have sufficient construction experience on their own, or a Construction Contractor and its Affiliates have sufficient construction experience on their own. Similarly, projects completed by different Consortium Members (along with their Affiliates) and Construction Contractors (along with their Affiliates) will not be counted together: each of these entities and their Affiliates must have sufficient construction experience on their own.

The entity whose completed projects are being submitted in fulfillment of this requirement - whether the Prospective Bidder, a Consortium Member, or a Construction Contractor - and any Affiliates of any of these entities whose completed projects are being submitted in fulfillment of this requirement, must certify that they have no unsatisfactory performance record. Any proposed Construction Contractor must also provide a statement of willingness to participate in, and capacity to undertake, the requirements of the Project. After pre-qualifying, Construction Contractors may be asked to reiterate their willingness to participate in, and capacity to undertake, the requirements of the Project at the time that the Bid Proposals are submitted.

Under the terms of the Concession Agreement, the Winning Bidder will be required to use only Construction Contractors which fulfill this Construction Experience Requirement and have the necessary PCAB license and ISO certification. If the Prospective Bidder fulfills this requirement by proposing a Construction Contractor or Construction Contractors, and these Construction Contractors are pre-qualified as described in Section 16, then the Concession Agreement will identify the pre-qualified Construction Contractors and the Concessionaire will be allowed to use any of them without need for further consent from the DPWH. The use of any Construction Contractors not pre-qualified during the Bidding Process will require prior written consent of the DPWH, and will be subject to the Concessionaire's demonstration that the proposed Construction Contractor meets the requirements in this Section.

b. Operation and Maintenance Experience.

The Prospective Bidder or a related entity, as described below, must have experience in the operation and maintenance of a toll expressway of at least three years in the past ten (10) years.

The related entity which fulfills this requirement may be:

(1) If the Prospective Bidder is a partnership or corporation:
   (a) The Prospective Bidder itself
   (b) An O&M Contractor

(2) If the Prospective Bidder is a Consortium:
   (a) A Consortium Member with at least ten percent (10%) interest in the Consortium
   (b) An O&M Contractor

If this requirement is to be fulfilled by an O&M Contractor, the Prospective Bidder must propose at least one, and up to five, O&M Contractors, each of which must have the relevant experience.

For purposes of determining whether an entity has the relevant Operation and Maintenance Experience, the SBAC will count the experience of an Affiliate of the Prospective Bidder as the experience of the Prospective Bidder, the experience of an Affiliate of a Consortium Member with at least ten percent (10%) interest in the Consortium as the experience of that Consortium Member, and the experience of an Affiliate of an O&M Contractor as the experience of that O&M Contractor.

The entity whose completed projects are being submitted in fulfillment of this requirement - whether the Prospective Bidder, a Consortium Member, or a Construction Contractor - and any Affiliates of any of these entities whose completed projects are being submitted in fulfillment of this requirement, must certify that they have no unsatisfactory performance record. Any proposed O&M Contractor must also provide a statement of willingness to participate in, and capacity to undertake, the requirements of the Project. After pre-qualifying, O&M Contractors may be asked to reiterate their willingness to participate in, and capacity to undertake, the requirements of the Project at the time that Bid Proposals are submitted.

Under the terms of the Concession Agreement, the Operation and Maintenance of the NAIA Expressway will have to be undertaken by a Facility Operator. The Facility Operator will have to meet the following requirements:

(1) Be at least sixty percent (60%) Filipino-owned and controlled.

(2) Have experience in the operation and maintenance of toll expressways of at least five years in the past ten (10) years, or be at least twenty percent (20%) owned by an entity which has such experience, as provided below.

If the Winning Bidder (or if it is a Consortium, the corporation it shall form after being issued the Notice of Award) fulfils these requirements itself, then it may designate itself as the Facility Operator. If it does not, then the entity, or one of the entities proposed by the Bidder to fulfil the Operation and Maintenance Experience requirement must be designated as Facility Operator or own at least twenty percent (20%) of the Facility Operator. In case of the latter, the entity owning at least twenty percent (20%) of the Facility Operator must maintain such interest for at least five years starting from issuance of the Toll Operation Certificate for the Project, unless its obtains prior written consent from the DPWH.

c. <u>Qualified Key Personnel</u>

The Prospective Bidder, its Consortium Members, proposed Construction Contractors, or proposed O&M Contractors, must have, among their and their Affiliates' collective personnel, individuals with the following required qualifications and experience:

Position	Minimum Qualifications and Experience Required	Min. Years of Experience
1. Project Manager	Registered Civil Engineer and must have been the Project Manager of expressways/viaducts/ flyovers/bridges/similar projects.	20
2. Manager, Design	Registered Civil Engineer and must have been the Designer of expressways/viaducts/ flyovers/bridges/similar projects.	15
3. Manager, Operation and Maintenance	Must have been the General or Operations Manager of at least one project involving the operation and maintenance of expressways/ tollways during the past 10 years.	5

11.7.2.3 Financial Capability

To qualify to bid for the Project, the Prospective Bidder or a related entity, as described below, must meet the following financial capability requirements:

a. Have a net worth of at least One Billion Two Hundred Million Philippine Pesos (PhP 1,200,000,000.00) or its equivalent as of its latest audited financial statements, which must be dated not earlier than 31 December 2010.

b. Have a total taxable income for the taxable year 2010 or later of at least Five Hundred Eighty Million Philippine Pesos (PhP 580,000,000.00) or its equivalent.

c. Provide evidence that it has the capability to raise loans of at least Four Billion Eight Hundred Million Philippine Pesos (PhP 4,800,000,000.00) for the Project. This amount can be reduced by the excess of the Prospective Bidder or related entity's net worth over One Billion Two Hundred Million Philippine Pesos (PhP 1,200,000,000.00).

The entity which fulfills this requirement may be any of the following:

a. If the Prospective Bidder is a partnership or corporation:
   (1) The Prospective Bidder itself
   (2) An Affiliate of the Prospective Bidder

b. If the Prospective Bidder is a Consortium:
   (1) The Lead Member of the Consortium
   (2) An Affiliate of the Lead Member of the Consortium

A single entity - whether the Prospective Bidder, Lead Member, or an Affiliate of either - must meet each of the financial capability requirements in their entirety. For example: either the Prospective Bidder or its Affiliate, or the Lead Member or its Affiliate must, by itself and not along with any other entity, fulfill the net worth and taxable income requirements and provide evidence of capability to raise loans.

11.7.3 Qualification Documents

On or before the Qualification Documents Submission Date, the Prospective Bidder must submit to the SBAC the following documents, using the relevant forms in the Annexes:

a. Business Plan - using the form in Annex QD-1A for partnerships or corporations, or Annex QD-1B for Consortia. For Consortia, this document must show the Lead Member and all Consortium Members, and the total percentage interest of all Consortium Members must be one hundred percent (100%). The Business Plan must also indicate the entities which fulfill the Qualification Requirements in Sections 11.2 and 11.3 of the ITPB.

   Required attachments: If the Prospective Bidder will use an Affiliate or Affiliate of the Lead Member to comply with the Financial Capability Requirements in Section 11.3, of the ITPB, attach evidence of such affiliation.

b. Basic Information Sheet - using the form in Annex QD-2.

   (1) To be submitted by all entities listed in all sections of the Business Plan (Form QD-1A or QD-1B).
   (2) Required attachment: For all entities submitting this form, a certified true copy of its latest General Information Sheet, stamped "received" by the SEC or for a foreign entity, the equivalent document submitted to and acknowledged by the appropriate government agency equivalent to the SEC in the foreign country where the foreign entity was registered for recognition or creation of its juridical personality or capacity.

c. Certified True Copy of SEC Certificate of Incorporation, Articles of Incorporation, and By-Laws, or for a foreign entity, the equivalent document submitted to and acknowledged by the appropriate government agency equivalent to the SEC in the foreign country where the foreign entity was registered for recognition or creation of its juridical personality or capacity. equivalent documents - Annex QD-3.

   To be submitted by all entities identified in the Business Plan (Form QD-1A or QD-1B).

d. Notarized Certification of Absence of Unsatisfactory Performance Record - using the form in Annex QD-4 without modification.

   To be submitted by all entities listed in all sections of the Business Plan (Form QD-1A or QD-1B).

e. Construction Experience - using the form in Annex QD-5.

   (1) To be submitted by the entity or entities which fulfill the Construction Experience requirement in Section 11.2a of the ITPB, as identified in the Business Plan (Form QD-1A or QD-1B), item 3.
   (2) Required attachment for each project:
      (a) Certificate of Project Completion from the project's owner.
      (b) If the project was completed by an Affiliate of the entity which fulfills the Construction Experience requirement, evidence of such affiliation.

f. Construction Contractor's Notarized Statement of Willingness to Participate In, and Capacity to Undertake the Requirements of, the Project – using the form in Annex QD-6 without modification.

To be submitted by any Construction Contractors proposed by the Prospective Bidder to fulfill the Construction Experience requirement in Section 11.2a of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 3.

g. Certified True Copy of Proposed Contractor's License from PCAB for Large B Classification/License Category AAA - Annex QD-7.

To be submitted by any of the Construction Contractors proposed by the Prospective Bidder to fulfill the Construction Experience requirement in Section 11.2a of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 3.

h. Certified True Copy of Valid ISO 9001:2000 Certification - Annex QD-8.

To be submitted by any Construction Contractors proposed by the Prospective Bidder to fulfill the Construction Experience requirement in Section11.2a of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 3.

i. Operation and Maintenance Experience – using the form in Annex QD-9.

(1) To be submitted by the entity which fulfills the Operation and Maintenance Experience requirement in Section 11.2b of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 4.
(2) Required attachment for each project
  (a) Certificate of Project Completion or Ongoing Project from Owner.
  (b) If the project was or is being undertaken by an Affiliate of the entity which fulfills the Operation and Maintenance Experience requirement, evidence of such affiliation.

j. O&M Contractor's Notarized Statement of Willingness to Participate In, and Capacity to Undertake the Requirements of, the Project - using the form in Annex QD-10 without modification.

To be submitted by any of the O&M Contractors proposed by the Prospective Bidder to fulfill the Operation and Maintenance Experience requirement in Section 11.2b of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 4.

k. Key Personnel - using the form in Annex QD-11.

(1) To be submitted by the Prospective Bidder.
(2) More than one name can be submitted for each position; however, at least one must be submitted.

l. Proof of Financial Capability - using the form in Annex QD-12.

(1) To be submitted by the entity which fulfills the Financial Capability requirement in Section 11.3 of the ITPB, as identified in the Business Plan (Form QD-1A or Form QD-1B), item 5.
(2) Required attachments:
  (a) Certified True Copy of audited financial statements for 2010, stamped "received" by the Bureau of Internal Revenue (BIR) or for foreign entities, the appropriate government agency equivalent to the BIR in the foreign country where the foreign entity was registered for recognition or creation of its juridical personality or capacity.
  (b) Certified True Copy of Annual Income Tax Return for 2010 (BIR Form 1702 stamped "received" by the BIR, or for foreign entities, the appropriate government

agency equivalent to the BIR in the foreign country where the foreign entity was registered for recognition or creation of its juridical personality or capacity.

(c) Letters from the Prospective Bidder or Lead Member's banks or potential lenders expressing their willingness to lend it, or the entity it will form if it becomes the Winning Bidder, at least Four Billion Eight Hundred Million Philippine Pesos (Php 4,800,000,000.00). This amount can be reduced by the excess of the Prospective Bidder or related entity's net worth over One Billion Two Hundred Million Philippine Pesos (PhP 1,200,000,000.00).

m. Notarized Letter to Apply for Pre-Qualification – using the form of Annex QD-13 without modification.

To be submitted by the Prospective Bidder.

n. Notarized Corporate Authorizations and Designation of Authorized Representative:

(1) For Partnerships or Corporations: Authority to Apply to Pre-Qualify and Designation of Authorized Representative, using the form in Annex QD-14A without modification.

To be submitted by the Prospective Bidder.

(2) For Consortia: Consortium Member's Authority to Participate in Consortium and Apply to Pre-Qualify, and Designation of Lead Member and Authorized Representative of Consortium, using the form in Annex QD-14B without modification.

To be submitted by each Consortium Member

11.7.4 Opening and Evaluation of Qualification Documents: Days 1-10

The SBAC shall undertake the following for each applicant Bidder:

a. The SBAC shall open the envelope containing the Qualification Documents and undertake a preliminary examination to determine the presence or absence of the required documents and forms, and summarize the results of such examination in **Table 11.7.4-1**.

TABLE 11.7.4-1. PRESENCE/ABSENCE OF QUALIFICATION DOCUMENTS PER BIDDER

Name of Bidder: _____

Document	Annex No.	Present/ Absent	Remarks
Business Plan	QD-1A/ QD-1B		
Basic Information Sheet	QD-2		
Certified True Copy of SEC Certificate	QD-3		
Notarized Certification of Absence of Unsatisfactory Performance Record	QD-4		
Construction Experience	QD-5		
Construction Contractor's Notarized Statement of Willingness to Participate	QD-6		
Certified True Copy of Contractor's License from PCAB for Large B Classification/License Category AAA	QD-7		
Certified True Copy of Valid ISO 9001:2000 Certification	QD-8		
Operation and Maintenance Experience	QD-9		
O&M Contractor's Notarized Statement of Willingness to Participate	QD-10		
Key Personnel	QD-11		
Proof of Financial Capability	QD-12		
Letter to Apply for Pre-Qualification	QD-13		
Corporate Authorizations and Designation of Authorized Representative	QD-14		
Overall Rating of Applicant Bidder - Complete/Incomplete			

b. If all the required Qualification Documents of a Bidder are present, the Bidder shall be rated "complete." If any required Qualification Document is absent, the Bidder shall be rated "incomplete," and the SBAC shall forthwith pre-disqualify the applicant Bidder with such "incomplete" Qualification Documents.

The SBAC shall complete the process in Sections 4.0-a and 4.0-b of these BECP within Day 1.

The SBAC shall then conduct a detailed evaluation of the Qualification Documents of the remaining Bidders with complete Qualification Documents over a period of not longer than ten (10) days after the Bid submission deadline. It shall notify all Bidders as to whether they passed the pre-qualification stage within two (2) days of completing such evaluation. The detailed evaluation shall be conducted on a "pass-fail" basis as to the compliance of each of the submitted Qualification Documents with the legal, technical, and financial criteria set in Sections 3.0 and 5.4 of the ITB (Sections 2.0 and 3.0 of these BECP). The overall rating of each Bidder shall be "pre-qualified" if the Bidder "passed" all Pre-qualification Requirements. The overall rating shall be "pre-disqualified" if the Bidder "failed" any Pre-qualification Requirement. The SBAC shall summarize the results of the detailed evaluation in **Table 11.7.4-2**.

TABLE 11.7.4-2 EVALUATION OF QUALIFICATION DOCUMENTS PER BIDDER

Name of Bidder: _____

Criterion	Passed/ Failed	Reference Document	Remarks
1. Legal Requirements:			
1.1 If the Prospective Bidder is a partnership or corporation: a. Is it registered with SEC or equivalent entity? b. Does it have no unsatisfactory performance record?	_____ _____	QD-1A, 2, 3, 4	
1.2 If the Prospective Bidder is a consortium, do all members have no unsatisfactory performance record?	_____	QD-1B, 2, 3, 4	
2. Technical Requirements:			
2.1 Construction Experience a. Is the Prospective Bidder/related entity's cumulative cost of its completed similar projects at least equal to Php 6.0 B, including one project/structure costing at least Php 1.0 B? b.Is the Construction Contractor willing to participate in the Project? c. Does it have a valid Contractor's License from PCAB for Large B/Category AAA? d.Does it have a valid ISO 9001:2000 certification?	_____ _____ _____ _____	QD-5 QD-6 QD-7 QD-8	
2.2 Operation and Maintenance Experience a. Does the Prospective Bidder/related entity have experience in O&M of a toll expressway of at least three years in the past ten years? b. Is the O&M Contractor willing to participate in the Project?	_____ _____	QD-9 QD-10	
2.3 Qualified Key Personnel Does the Prospective Bidder/related entity have the following key personnel: a. Project Manager - CE, 20 years experience b. Design Manager - CE, 15 years experience c. O&M Manager – one project in last 10 years	 _____ _____ _____	QD-11	
3. Financial Capability Requirements			
3.1 Net Worth Does the Prospective Bidder/related entity have a net worth of at least PhP 1.2 B as of its latest audited financial statements, not earlier than 31 December 2010?	_____	QD-12	
3.2 Taxable Income Does the Prospective Bidder/related entity have a total taxable income for 2010 or later of at least PhP 580 T?	_____	QD-12	
3.3 Borrowing Capability Does the Prospective Bidder/related entity have letters from its banks/lenders stating that they are willing to lend it at least PhP 4.8 B for the Project? (This can be reduced by the excess of its net worth over Php 1.2 B)	_____	QD-12	
Overall Rating of Applicant Bidder – Pre-qualified/Pre-disqualified			

In reviewing the Prospective Bidder's compliance with the Construction Experience requirement in Section 11.2a of the ITPB, if a Prospective Bidder submits the name of more than one Construction Contractor to fulfill this requirement, then as long as at least one Construction Contractor is "passed," then the Prospective Bidder will be rated "passed" for that criterion.

Similarly, in reviewing the Prospective Bidder's compliance with the Operation and Maintenance requirement in Section 11.2b of the ITPB, if a Prospective Bidder submits the name of more than one O&M Contractor to fulfill this requirement, then as long as at least one O&M Contractor is "passed," then the Prospective Bidder will be rated "passed" for that criterion.

Apart from failure to meet any of the prequalification criteria and requirements mentioned above,

a. Prospective Bidder may also be disqualified for any of the following reasons:

b. Failure to comply with any terms, conditions, and instructions of the Invitation Documents.

c. Material misrepresentation in any Qualification Documents or other communication with the DPWH and the SBAC.

d. Illegal conduct or attempt to influence the DPWH and the SBAC's evaluation of the Qualification Documents or the results of the Pre-Qualification process.

e. Other grounds for disqualification of Bidders under the BOT Law and all applicable laws.

The SBAC shall summarize the results of the evaluation of the Qualification Documents of all Bidders in **Table 11.7.4-3**.

TABLE 11.7.4-3. SUMMARY OF EVALUATION OF QUALIFICATION DOCUMENTS OF ALL BIDDERS

Name of Bidder	Pre-qualified/ Pre-disqualified	If Pre-disqualified, Reasons
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

The SBAC shall recommend to the DPWH Secretary, for approval, the results of the pre-qualification process.

Upon the DPWH Secretary's approval of the results of the pre-qualification, the SBAC shall send a written notice to each Bidder that was rated "pre-qualified" and invite it to submit its Bid to the SBAC within one hundred (120) days.

The SBAC shall also send a written notice to each Bidder that was rated "pre-disqualified," stating the reasons for his pre-disqualification.

The SBAC shall complete the entire pre-qualification process, including issuance of notices of results, within ten (10) days after the deadline for the submission of the Documents, i.e., within Days 1-10.

11.7.5 Documents Comprising the Bid

The requirements in this Section 5.0 of these BECP are drawn from Section 4.0 of the Instructions to Qualified Bidders (ITQB) for the Project.

11.7.5.1 Contents of Bid

Each pre-qualified Bidder shall submit to the DPWH its Bid composed of three sets of documents in separate envelopes, as follows:

a. Bid Letter including Bid Security - Envelope No. 1.

b. Technical Proposal - Envelope No. 2.

c. Financial Proposal - Envelope No. 3.

11.7.5.2 Bid Letter including Bid Security, and Additional Requirements for Consortia with New Members - Envelope 1

The Pre-Qualified Bidder shall submit the following documents in Envelope 1:

a. Bid Letter, using the form in Annex BL-1 of the ITQB without modification.

b. Authority to Participate in the Bid and Designation of Authorized Representative.

(1) For a Pre-qualified Bidder which is a partnership or corporation: using the form in Annex BL-2A of the ITQB without modification.
(2) For a Pre-qualified Bidder which are Consortium: using the form in Annex BL-2B of the ITQB without modification, to be submitted by each Consortium Member

c. Bid Security, using the form in Annex BL-3 without modification. The Bid Security must be an irrevocable standby letter of credit issued by a universal bank or commercial bank licensed by the Bangko Sentral ng Pilipinas, payable to the DPWH, in the minimum amount of One Hundred Fifty Million Philippine Pesos (PhP 150,000,000.00). A list of such banks is given in Annex BL-5 of the ITQB. The Bid Security shall be valid for one hundred twenty (120) calendar days after the Bid Proposal Submission Date. The Bid Security shall guarantee that the Pre-qualified Bidder complies with all its obligations under the Instructions to Bidders.

d. For a Pre-qualified Bidder which is a Consortium, the following additional requirements:

(1) An updated Business Plan using the form in Annex BL-4 of the ITQB, providing information on the final composition of the Consortium and the percentage interests of each Member. The information in this updated Business Plan shall supersede any information previously provided in Annex QD-1B of the ITQB, and must be submitted even if there are no changes in the composition of the Consortium or the percentage interests of each Member since the Qualification Documents Submission Date

(2) Required attachments to Annex BL-4 of the ITQB: for any new Consortium Members substituted for a Consortium Member which has withdrawn from the Consortium:

(a) Basic Information Sheet using the form of Annex QD-2 of the ITQB, including its required attachments.
(b) Notarized Certification of Absence of Unsatisfactory Performance Record- using the form in Annex QD-4 of the ITQB without modification.

11.7.5.3 Technical Proposal - Envelope No. 2

The Technical Proposal of the Pre-qualified Bidder shall include the following information in Envelope No. 2:

a. Traffic Study - Annex TP-2 of the ITQB. This shall indicate the following:

(1) Pre-qualified Bidder's estimates of the traffic growth rates and projections on the Project.

(2) Assumptions and methodology used in calculating them.

b. Conceptual Engineering Design - Annex TP-3 of the ITQB. This shall indicate the following elements of the Conceptual Engineering Design for the Project, which shall conform to the prescribed Minimum Performance Standards and Specifications (MPSS) included as Part III of the Bidding Documents, and provide a level of detail that will enable quantities to be estimated up to the plus/minus fifteen percent (±15%) of the final quantities.

(1) Phase II Works:

(a) Conceptual engineering design of the expressway, on and off ramps, Phase I-Phase II interconnection, at-grade roads, and appurtenant structures, including the following:

i. Layout plan of the expressway including location of on and off ramps, and other major structures, at a scale of 1:1000. This should show, among other things, the layout of the foundation of the expressway and ramps.
ii. Profile for the main expressway in relation to the existing ground, at a scale of Horizontal-1:1000 and Vertical-1:100.
iii. Typical cross-sections of the expressway at a scale of 1:200.
iv. Plans, elevations, and typical cross-sections, at scales of 1:1000, 1:100, and 1:100, respectively, of the on and off ramps, at-grade roads, and other structures.
v. Preliminary design drawings of viaduct structures including superstructure, substructure, foundation and drainage system at a scale of 1:200.
vi. Preliminary design analyses and computations for the main expressway and structures.

(b) Conceptual design of the toll facilities:

Layout plan, at a scale of 1:1000, showing the location of the toll facilities, including toll plazas and traffic safety devices.

(c) Conceptual design of the toll plazas:

i. Layout plan indicating the elements of the toll plazas, including carriageway

tapers, platform, lighting, inspection tunnel, control building and parking areas; longitudinal section on the corner line of the plaza.

ii. Toll platform indicating the layout of the lane area in the initial (opening year) configuration and all subsequent expansions.

iii. Toll islands indicating the toll booths and protection structures.

iv. Toll lanes, both entry and exit.

v. Canopy showing the minimum clearance, shape, form, material and signs.

vi. Toll plaza building, indicating the layout with approximate areas of each room and elevations of at least two sides.

vii. Parking areas.

viii. Technical gallery for power and data cables.

ix. Road signs.

x. Fences.

xi. Power and lighting.

xii. Tolling systems/equipment.

(d) Conceptual design of expressway traffic safety devices.

i. Pavement markings.

ii. Traffic signs,

iii. Crash cushions

(2) Phase I Adjustment Works

Plans, elevations, and typical cross-sections, at scales of 1:1000, 1:100, and 1:100, respectively, of the adjustment works.

.

c. Construction Plan - Annex TP-4 of the ITQB. This shall include the following elements to be prepared in accordance with the prescribed MPSS for Construction:

(1) Construction organization for the Project, identifying key personnel and positions, and subcontractors.

(2) Construction methodology and procedures.

(3) Quality control system.

(4) Construction schedule, milestones, and S-curve.

(5) Major construction equipment to be used.

(6) Traffic management plan during Construction.

(7) Health, safety, and security program for Construction, in accordance with the rules of the Philippine Department of Labor and Employment and Department of Health.

d. Operation and Maintenance (O&M) Plans - Annex TP-5 of the ITQB. This shall indicate the following elements which shall meet the prescribed MPSS for O&M.

(1) Operation Plan.

(a) Organization for operation of the NAIA Expressway, including staffing pattern.

(b) Toll operation and collection system

(c) Traffic safety and control system.

(2) Maintenance Plan.

(a) Method and procedures for routine and periodic maintenance, including preventive maintenance and rehabilitation, of the main expressway and related structures on a life-cycle basis
(b) Method and procedures for maintenance of toll plazas, buildings, equipment and utilities.

11.7.5.4 Financial Proposal - Envelope No. 3

a. The Pre-Qualified Bidder's Bid Amount shall be indicated in Annex FP-2 of the ITQB. The Bid Amount is a fixed amount, expressed in pesos, equivalent to the Government Financial Support (GFS) which, if the Pre-Qualified Bidder becomes the Winning Bidder, the DPWH shall disburse to the Bidder during the construction of the NAIA Expressway, subject to the terms of the Concession Agreement. The Bid Amount shall not exceed the ceiling of PhP _____ (*amount to be specified by the DPWH in the ITQB).*

b. Supporting Financial Model – using the format in Annex FP-3 of the ITQB, to be submitted in both hard copy and electronic form, in Microsoft Excel format, showing all relevant formulas. (compact disc). The model shall contain the following minimum information, on at least an annual basis, until the end of Concession Period the details of which are given in Annex FP-3 of the ITQB:

(1) Summary of Financial Analysis

(2) Project Costs, Totals and by Year

(3) Projected Cash Flow Statements, by Year

(4) Projected Income Statement, by Year

(5) Balance Sheet, by Year

(6) Amortization Schedule, by Year

(7) Operation and Maintenance Expenditures

(8) Application of Toll Rate Adjustment Formula, by Year

(9) Assumptions

11.7.6 Opening and Evaluation of Bids

The requirements for the Opening and Evaluation of Bids provided in this Sections 6.0 of these BECP are based on Sections 4.0 and 5.0 of the ITQB for the Project.

The SBAC shall evaluate the Bids based solely upon the documents in Envelopes No. 1 to 3 submitted by the Bidders. The SBAC shall conduct the evaluation on a "pass-or-fail" basis using

the criteria and procedures set out in Sections 4.0 and 5.0 of the ITQB (Section 5.0 of these BECP).

11.7.6.1 Opening and Evaluation of Bid Letter including Bid Security (Envelope No. 1): Day 1

The SBAC shall undertake the following for each Bid:

a. The SBAC shall first open Envelope No. 1 - Bid Letter including Bid Security - and evaluate the documents to determine if they pass or fail the criteria enumerated in Sections 4.2 and 4.3 of the ITQB (Section 5.2 of these BECP). The SBAC shall summarize the results of the evaluation for every Bidder in **Table 11.7.6.1-1**.

TABLE 11.7.6.1-1. EVALUATION OF BID LETTER INCLUDING BID SECURITY (ENVELOPE NO. 1) PER BIDDER

Name of Bidder: _____

Document	Annex	Passed/ Failed	If Failed, Reasons
1. Bid Letter Is the Bid Letter complete and signed using BL-1?	BL-1		
2. Authority to Participate in the Bid and Designation of Authorized Representative			
a. For a Pre-Qualified Bidders which is a partnership or Corporation: Is the authority complete and complying with BL-2a?	BL-2a		
b. For a Pre-Qualified Bidders which is a Consortium, to be submitted by each Consortium Member: Is the authority complete and complying with BL-2b?	BL-2b		
3. Bid Security: a. Form submitted: _____ Is the form compliant with the requirement, including the conditions? b. Amount submitted: Php _____ Is the amount sufficient as required?	BL-3		
4. For Pre-Qualified Bidders which are Consortiums, the following additional requirements:			
a. Updated Business Plan Does this provide the final composition of the consortium and the % interest of each member?	BL-4		
b Required attachments for new/substitute Consortium Members			
(1) Basic Information Sheet: Is this complete?	QD-2		
(2) Notarized Certification of Absence of Unsatisfactory Performance: Does this show that the entity has no unsatisfactory performance record?	QD-4		
Overall Rating of Bid Letter including Bid Security (Envelope No. 1) – Complying/Non-complying:			

b. If the documents in Envelope No. 1 "passed" all the set criteria, the overall rating for Envelope No. 1 shall be "complying" - and the evaluation shall proceed to the Technical Proposal in Envelope No. 2 (Section 6.2 of the ITQB).

c. If any document in Envelope No. 1 "failed" any of the set criteria, the overall rating for Envelope No. 1 shall be "non-complying." The SBAC shall automatically reject the entire Bid, and immediately return the unopened Envelopes No. 2 (Technical Proposal) and 3 (Financial Proposal) to the Bidder concerned.

The SBAC shall summarize the results of the evaluation of the Bid Letters of all Bidders in **Table 11.7.6.1-2**.

TABLE 11.7.6.1-2. SUMMARY OF EVALUATION OF BID LETTERS OF ALL BIDDERS

Name of Bidder	Complying/ Non-complying	If Failed, Reasons
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

The entire process of evaluation of the Bid Letter, including Bid Security, shall be completed within Day 1.

11.7.6.2 Opening and Evaluation of Technical Proposals (Envelope No. 2): Days 1-10

The SBAC shall undertake the following for each Bidder that were rated "qualified" in the qualification stage:

a. The SBAC shall open the Technical Proposal (Envelope No. 2) of each Bidder in the presence of all qualified Bidders. The SBAC shall conduct a preliminary examination of the Technical Proposal to determine the presence or absence of the required documents as against the checklist in Annex TP-1 of the ITQB, and summarize the results of such examination in **Table 11.7.6.2-1**.

TABLE 11.7.6.2-1 PRESENCE/ABSENCE OF TECHNICAL PROPOSAL DOCUMENTS (ENVELOPE 2) PER BIDDER

Name of Bidder: _____

Document	Annex	Present/ Absent	Remarks
1. Traffic Study	TP-2		
2. Conceptual Engineering Design	TP-3		
3. Construction Plan	TP-4		
4. Operation and Maintenance (O&M) Plans	TP-5		
Overall Rating on Presence/Absence of Technical Proposal Documents - Passed/Failed:			

b. If all required documents are present, the Bidder is declared "passed." If any required document is absent, the Bidder shall be rated "failed." The SBAC shall automatically reject the entire Bid of such "failed" Bidder, and immediately return the unopened Envelope No. 3 (Financial Proposal) to that Bidder.

c. The SBAC shall then conduct a detailed evaluation of the Technical Proposal of each remaining complying Bidder over a period of not longer than eight (8) days after the opening of Envelope No. 2. The evaluation shall assess the compliance of the elements of the Technical Proposal with the criteria set in Section 4.5 of the ITQB (Section 5.3 of these BECP).

d. The SBAC shall summarize results of the detailed evaluation of the Technical Proposal for each Bidder in **Table 11.7.6.2-2**.

TABLE 11.7.6.2-2 SUMMARY OF EVALUATION OF TECHNICAL PROPOSAL PER BIDDER

Name of Bidder: _____

Element	Passed/ Failed	If Failed, Reason
1. Traffic Study		
a. Does the study indicate the traffic growth rates and projections over the Concession Period?	_____	
b.Does the study give the assumptions and methodology used in making the traffic projections?	_____	
2. Conceptual Engineering Design (CED)		
a.Does the CED present all the required elements of the Phase II Works in conformance to the MPSS, including plans and design analyses in the required degree of detail for: (1) Expressway, ramps and related structures? (2) Toll facilities? (3) Toll plazas? (4) Traffic safety devices?	 _____ _____ _____ _____	
b. Does the CED present all the required elements of the Phase I Adjustment Works in conformance to the MPSS, including plans in the required degree of detail?	_____	
3. Construction Plan		
a. Is the Construction organization for the Project presented?	_____	
b. Are the Construction methodology and procedures explained?	_____	
c. Is the quality control system provided?	_____	
d. Are the Construction schedule, milestones, and S-curves shown?	_____	
e. Are the major pieces of equipment to be used presented?	_____	
f. Is the traffic management plan during Construction presented?	_____	
g. Is the health, safety and security program given?	_____	
4. Operation and Maintenance Plans		

Element	Passed/ Failed	If Failed, Reason
a. Are the organization for operation, toll operation and collection system, and traffic safety and control system presented in the Operations Plan?	_____	
b. Are the methods and procedures for routine and periodic maintenance of the expressway on a life-cycle basis, and the maintenance of the toll plazas, buildings, and utilities presented in the Maintenance Plan?	_____	
Overall Rating of Technical Proposal - Complying/Non-complying:		

e. If the Bidder "passed" all the requirements of all the elements of the Technical Proposal, it shall be rated "complying." If the Bidder "failed" any requirement of any element of the Technical Proposal, it shall be rated "non-complying." The SBAC shall summarize the results of the evaluation of the Technical Proposals of all Bidders in **Table 11.7.6.2-3**.

TABLE 11.7.6.2-3 SUMMARY OF EVALUATION OF TECHNICAL PROPOSALS OF ALL BIDDERS

Name of Bidder	Complying/ Non-complying	If Non-complying, Reasons
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

f. Within two (2) days after completing the evaluation of the Technical Proposals, the SBAC shall send written notices to the Bidders with complying and non-complying Technical Proposals on the results of the evaluation of their respective Technical Proposals. The notices to the Bidders with non-complying Technical Proposals shall likewise indicate the reasons for their non-compliance.

The SBAC shall complete the evaluation of the Technical Proposals, including the issuance of the written notices to the Bidders on the results of the evaluation, within ten (10) days after the opening of the Technical Proposals, i.e., within Days 1-10.

All Bidders whose Technical Proposals have been rated as "complying" shall be considered on equal footing insofar as the Technical Proposals are concerned - i.e., no bonus is given to Technical Proposals that include a CED/Construction Plan/O&M Plans which exceed the MPSS requirements. Hence, the Winning Bidder shall be determined on the basis of the Financial Proposals - i.e., it shall be the Bidder with the lowest complying Bid Amount, subject to post-qualification (Sections 6.3 and 7.0).

11.7.6.3 Opening and Evaluation of Financial Proposals (Envelope No. 3): Days 11-12

The SBAC shall undertake the following for each Bidder whose Technical Proposal has been declared "complying:"

a. The SBAC shall open the Financial Proposal (Envelope No. 3) of each Bidder with a complying Technical Proposal. The opening shall be done in view of all such complying Bidders.

b. The SBAC shall evaluate, in detail, the Financial Proposal of each such Bidder, particularly the Bid Amount. It shall indicate the results in **Table 11.7.6.3-1**.

TABLE 11.7.6.3-1 SUMMARY OF EVALUATION OF FINANCIAL PROPOSAL PER BIDDER

Name of Bidder: _____

Element	Passed/ Failed	If Failed, Reasons
1. Bid Amount: _____ a. Is the Bid Amount presented in terms of the required GFS in Pesos? b. Is the Bid Amount within the set GFS ceiling?	_____ _____	
2. Supporting Financial Model: Does the Financial Model include all the required minimum information?	_____	
Overall Rating of Financial Proposal – Complying/Non-complying:		

The SBAC shall summarize the results of the detailed evaluation of the Financial Proposals of all Bidders in **Table 11.7.6.3-2**.

TABLE 11.7.6.3-2 SUMMARY OF EVALUATION OF FINANCIAL PROPOSALS OF ALL BIDDERS

Name of Bidder	Bid Amount (GFS)	Complying/ Non-complying	If Failed, Reasons
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

The SBAC shall then rank the Bid Amounts (GFS) of all Bidders with "complying" Financial Proposals from the lowest to the highest. The SBAC shall declare the lowest Bid Amount as the lowest complying Bid (LCB). The ranking shall be shown in **Table 11.7.6.3-3.**

TABLE 11.7.6.3-3 RANKING OF BID AMOUNTS OF COMPLYING FINANCIAL PROPOSALS

Name of Bidder	Bid Amount (GFS)
1.	
2.	
3.	
4.	
5.	

The SBAC shall, by Day 12, send written notices to the Bidders on the results of the evaluation of their respective Financial Proposals.

The entire process of financial evaluation, including the issuance of notices to the Bidders on the results of the evaluation, shall be completed within two (2) days after the opening of the Financial Proposals, i.e., within Days 11-12.

11.7.7 Post-Qualification of Bidder with the Lowest Complying Bid (LCB): Days 13-14

a. The SBAC shall conduct a post-qualification of the Bidder with the LCB. The post-qualification consists in verifying the information and statements made in the Bidder's Prequalification Documents, Bid Letter, Technical Proposal, and Financial Proposal as to their correctness and validity. Post-qualification shall be conducted over a period not to exceed two (2) days after the determination of the Bidder with the LCB, i.e., within Days 13-14.

b. If the Bidder with the LCB passes the post-qualification, the SBAC shall declare its Bid GFS as the lowest complying and post-qualified Bid (LCPB), and the SBAC shall recommend to the DPWH Secretary the award of the Concession Agreement to that Bidder.

c. If the Bidder with the LCB fails the post-qualification, the SBAC shall declare the Bidder with the second LCB as the Bidder with the LCB and shall undertake post-qualification on that Bidder. If that Bidder passes the post-qualification, the SBAC shall declare it as the Bidder with the LCPB, and the SBAC shall recommend to the DPWH Secretary the award of the Concession Agreement to that Bidder. Otherwise, the same process is repeated until the LCPB is declared.

11.8 NEDA ICC EVALUATION

NEDA ICC-Project Evaluation (PE) Form was jointly prepared by PMO-BOT, DBP, IFC, and the JICA Study Team and submitted to NEDA on May 26, 2011.

NEDA Technical Board started evaluation of PE Form and technical questions on how traffic forecast were made. The JICA Study Team explained about the JICA STRADA Software.

The Project Evaluation report was prepared by NEDA Technical Board on June 14, 2011 and the project was favorably forwarded to ICC Cabinet Committee (ICC-CC).

Meanwhile, the preliminary investors' forum was held in June 2011 inviting domestic and foreign investors, banks and existing expressway concessionaires.

The ICC-CC favorably evaluated the project and forwarded to NEDA Board for final approval of the project in July 2011, however, NEDA Board turned down the project due mainly to high cost of the project, unfavorable alignment and high government subsidy.

Thus, further action for the project was suspended.

CHAPTER 12

SUPPLEMENTAL WORK

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SUPPLEMENTAL WORK

12.1 GRADE SEPARATION ALTERNATIVE STUDY

As alternative project of NAIAX, Grade Separation Alternative Study and C-5 Extension Alignment Study was conducted. This chapter described the summary of these studies and results only. The traffic analysis result and drawing was attached in Appendix Report.

(1) Location of Intersection

The grade separation plans in critical intersections along NAIAX were studied. The location of the targeting intersections is indicated in **Figure 12.1-1**.

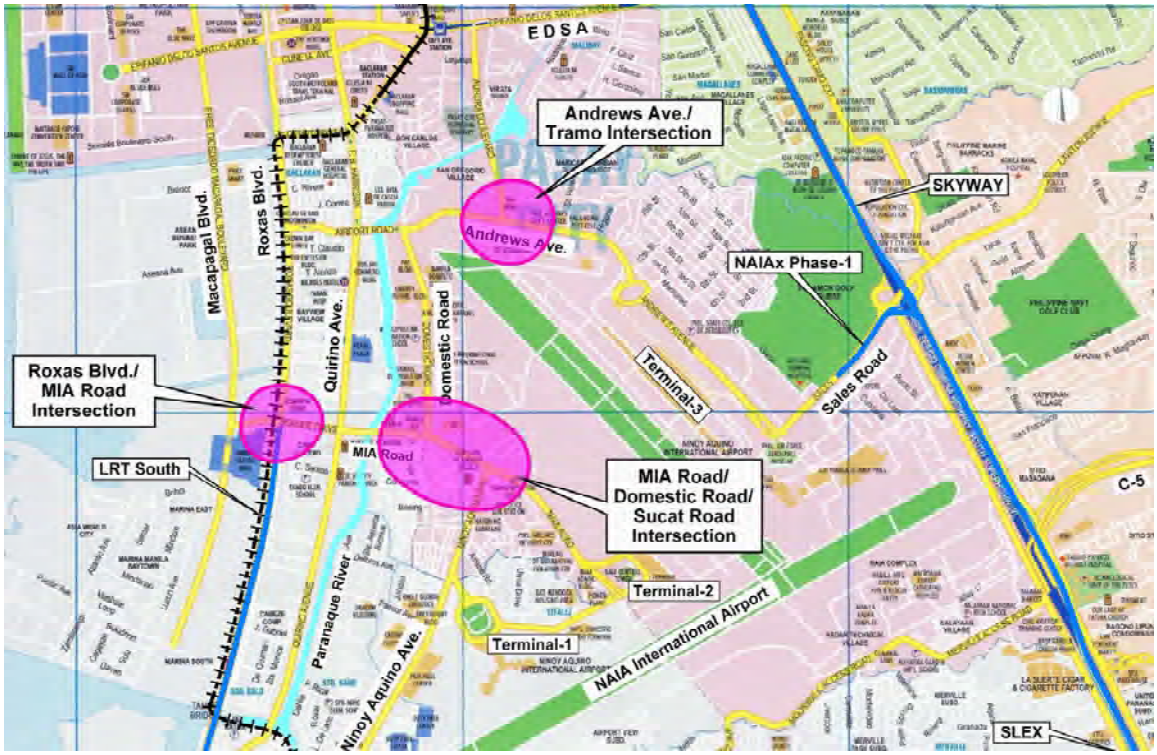

FIGURE 12.1-1 LOCATION OF CRUCIAL INTERSECTION ALONG NAIAX PHASE-2

(2) Recommended Schematic Design of Grade Separation

The three (3) grade separations on the crucial intersection were planned and designed. The schematic designs on each grade separation are illustrated as **Figure 12.1-2**.

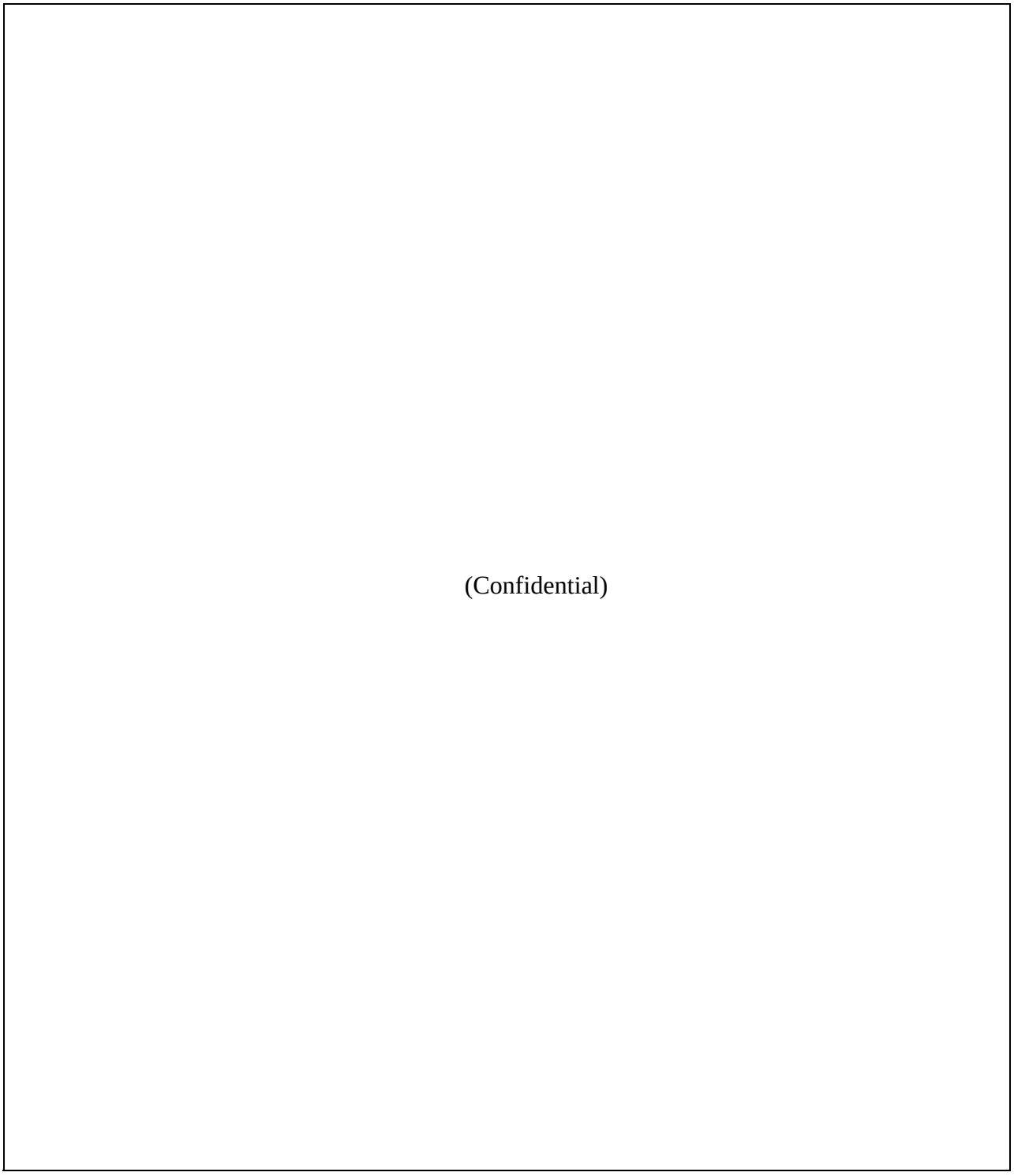

FIGURE 12.1-2 SCHEMATIC DESIGN OF GRADE SEPARATION

12.2 FURTHER NAIAX ALIGNMENT ALTERNATIVE STUDY

Concerned to the NAIAX alignment, further alternative study has been done. The three (3) alternatives are prepared, Parañaque River alignment, Airport Road alignment and MIAA Compound alignment. **Table 12.2-1** explained the comparative analysis among alternatives. In the result, compared with the original alignment, all three alternatives are not recommended.

TABLE 12.2-1 COMPARATIVE ANALYSIS FOR NAIAX FURTHER ANALYSIS

(Confidential)

12.3 C-5 EXTENSION ALIGNMENT ALTERNATIVES

(1) Alignment Study of C-5 Extension

Three (3) alignment alternatives of C-5 extension have been prepared. The comparative analysis is indicated as **Table 12.3-1**. The Alternative 3 was recommended for both Expressway and National Road Standard. The alternative 3 was recommended among Expressway Standard, and the alternative 3C among National Road Standard.

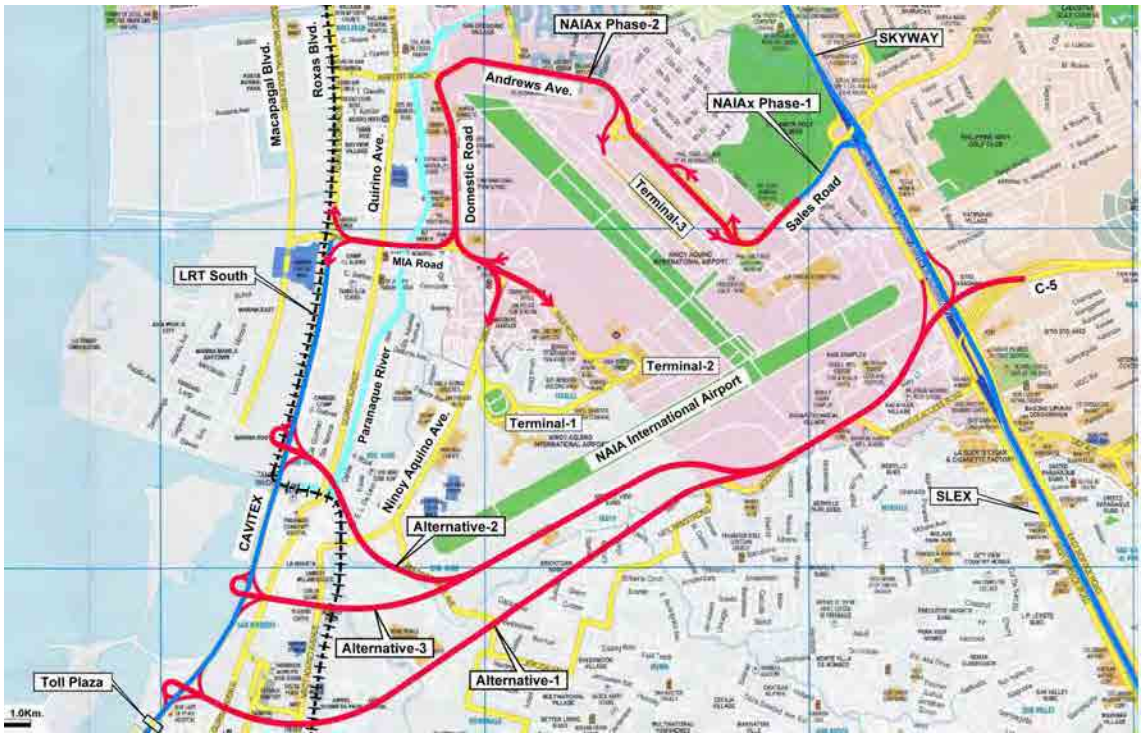

FIGURE 12.3-1 C-5 EXTENSION ALIGNMENT ALTERNATIVES

TABLE 12.3-1 COMPARATIVE ANALYSIS RESULT OF C-5 EXTENSION ALIGNMENT ALTERNATIVES

(Confidential)

(2) FRANCHISE ISSUE OF C-5 EXTENSION

There are some issues on the franchise of C-5 Extension as follows:

- UEM-MARA has a franchise for R-1 to R-3.
- Citra Metro Manila Tollways Corp. has a franchise of Skyway with which C-5 Extension is connected.
- If C-5 Extension is implemented by PPP, will an open bidding be done, or negotiated with UEM-MARA?
- If C-5 Extension is implemented by DPWH as National Road Standard, UEM-MARA will complain.
- It may take a long time to conclude a franchise issue.

12.4 ALTERNATIVE ANALYSIS BETWEEN NAIAX, GRADE SEPARATION AND C-5 EXTENSION

The comparative analysis among the alternatives, Original NAIAX plan, Grade Separation, C-5 Extension with expressway standard and C-5 Extension with National road standard have been carried out. **Table 12.4-1** explains the route of the alternatives.

TABLE 12.4-1 COMPARATIVE ANALYSIS BETWEEN NAIAX, GRADE SEPARATION AND C-5 EXTENSION ALTERNATIVE

(Confidential)

12.5 RECOMMENDATION

Based on the comparative analysis, the following are concluded and recommended.

(1) NAIAX Phase-2

- Being recommended to implement this project.
- It is a long term solution for traffic capacity expansion.
- Accessibility to NAIA Terminals will be greatly improved.
- Image of the country will be highly improved by foreign/domestic investors due to easy access to NAIA: International/Domestic Gateway.
- NAIAX will reduce traffic congestion of at-grade roads.
- The Project is ready for tendering.

(2) Grade Separation Alternative

- It improves traffic condition at the intersection, but not for adjacent sections, thus it is not a long term solution.
- If grade separation structures are built, construction of an expressway in the future will be practically impossible.

(3) C-5 Extension

- Timing of the implementation is uncertain due to franchise issue.
- Franchise issues should be firstly concluded.
- All kinds of efforts should be made to reduce negative social impacts. (over 500 houses or 3,000 people will be affected)

CHAPTER 13

DPWH’S CURRENT PLAN OF NAIAX

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DPWH'S CURRENT PLAN OF NAIAX

13.1 PRESENT STATUS OF NAIAX

The Philippine Amusement and Gaming Corporation (PAGCOR) has a plan to develop "Entertainment City" at the Manila Bay Reclamation Area which is located at the west end of NAIAX. The "Entertainment City" needs efficient access to NAIA Terminals I, II, and III.

The DPWH and PAGCOR discussed how to revive the NAIAX Prject and came to the conclusion that;

a) NAIAX is re-planned to provide efficient access to NAIA Terminals I, II and III. Ramps will also be extended towards the "Entertainment City".
b) Locators at "Entertainment City" will provide construction fund for NAIAX through PAGCOR. With this financing, DPWH can drastically reduce the Government's subsidy for construction cost.
c) Memorandum of Agreement (MOA) was signed between the DPWH and PAGCOR to realize the above scheme.

13.2 PRESENT SCHEME OF NAIAX

Based on the above development, the present (as of May 2012) scheme of NAIAX) is as shown in **Figure 13.2-1.**

NAIAX Project under the above new scheme, the project is being assessed by NEDA-ICC (as of May, 2012).

FIGURE 13.2-1 REVISED NAIAX CONFIGURATION