

Resettlement Action Plan (RPF) Vitas Pumping Station Rehabilitation Sub- Project

Project Name:

Metro Manila Flood Management Project



May 1, 2017





Metro Manila Flood Management Project

Resettlement Action Plan

Vitas Pumping Station Rehabilitation Sub-Project

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TABLE OF CONTENTS

A.	Project Description and RAP Overview.....	1
B.	RAP Objective	3
C.	Baseline Socio-Economic Survey.....	3
D.	Project Impacts.....	15
E.	Legal Framework.....	16
F.	Project Eligibility and Entitlement.....	19
G.	Relocation and Livelihood Action Plan	23
H.	Analysis on the Livelihood Restoration Plan and Measures to Mitigate the GAPS under the Project	29
I.	Valuation of Assets and Compensation for Losses	33
J.	Consultation and Community Participation.....	33
K.	Institutional Framework and Organizational Responsibility	35
L.	Grievance procedures.....	37
M.	Implementation Schedule	42
N.	Monitoring and evaluation.....	44
O.	Budget.....	45
	ANNEX A: DEFINITION OF THE “PROJECT FOOTPRINT” FOR PY1 SITES	47
	ANNEX B: CENSUS LIST (SEE SEPARATE EXCEL FILES).....	51
	ANNEX C: BASELINE SURVEY QUESTIONNAIRE.....	52
	ANNEX D: MINUTES OF CONSULTATIONS – OCTOBER 2016.....	64
	ANNEX E: STRUCTURAL MAP AND PHOTOS WITHIN PROJECT FOOTPRINT.....	85
	ANNEX F. BV8/AGOM PEOPLE’S PLAN (SEPARATE PDF FILE).....	87

Acronyms

AGOM – Ang Grupo ng Organisadong Mamamayan
DENR –Department of Environment and Natural Resources
DDR – Due Diligence Report
DPWH – Department of Public Works and Highways
GOP – Government of the Philippines
HDH – High Density Housing
HH - Household Head
HUDCC- Housing and Urban Development Coordinating Council
ISF – Informal Settler Family
LGU – Local Government Unit
M&E – Monitoring and Evaluation
MMDA – Metro Manila Development Authority
MMFMP - Metro Manila Flood Management Project
NHA – National Housing Authority
PAP – Project-Affected Person
PCUP – Presidential Commission for the Urban Poor
PMO – Project Management Office
PRRC – Pasig River Rehabilitation Commission
PS – Pumping Station
RAP – Resettlement Action Plan
RPF – Resettlement Policy Framework
SHFC – Social Housing Finance Corporation
TESDA – Technical Education and Skills Development Authority

Vitas Resettlement Action Plan

A. PROJECT DESCRIPTION AND RAP OVERVIEW

1. Vitas Pumping Station (PS) is one of the five sub-projects for rehabilitation and modernization programmed for implementation in the first year of the 6-year Metro Manila Flood Management Project (MMFMP). It is located in Manila City Local Government Unit (LGU).
2. Rehabilitation and modernization of the Vitas Pumping Station will replace pumps and related equipment with new, more efficient, and higher capacity units. The sub-project will also finance cleaning and improvements to key sections of waterways and drainage channels serving the pumping stations to ensure unobstructed flow into the facility and enable unencumbered access for waterway maintenance. More specifically, the proposed scope of works in Vitas PS will be:
 - Replacement of prime movers from diesel engine to electric motor
 - Modernization of pumps with optimum pump capacity
 - Supply and installation of two (2) generator sets as standby power
 - Connection to Meralco power supply as primary power
 - Rehabilitation/replacement of auxiliary equipment
 - Rehabilitation/replacement of horizontal and inclined conveyor system
 - Rehabilitation/replacement of one (1) unit trash racks assembly
 - Rehabilitation of one (1) unit garbage hopper
 - Replacement of five (5) units secondary screens
 - Replacement of all LCP, MCC, and electrical wirings
 - Rehabilitation of building and lightings
 - Rehabilitation of three (3) units floodgates
 - Installation of additional storage tank
 - Rehabilitation of additional crane
 - Rehabilitation and upgrading of Vitas Warehouse
3. Figure 1 shows the aerial view of Vitas PS. It is located in a congested area of the Manila LGU in the general vicinity of the seaport. The environs are characterized by warehouses and similar facilities related to the seaport and the transit of goods. Adjacent residential

and commercial areas are generally low-rise but are densely occupied, while informal settlements are commonplace along roads and public rights-of-way in the area.

Figure 1: Vitas Pumping Station and Waterway



4. The red line in Figure 1 shows the area of impact or the sub-project's technical footprint where obstructions under the Raxabago / Capulong Street Bridge and along the right bank of the waterway immediately below the bridge where structures have been sited on accumulated silts and debris along the inner wall of the waterway. The technical footprint covers the pumping station and sections of waterways serving the pumping stations, where informal settler families (ISF) would impact the proper operation and maintenance (O&M) of the pumping station and associated waterway. The physical limits of the technical footprint are established on the basis of hydrological and engineering criteria for each

drainage area. Waterway sections within the technical footprint are typically in relatively close proximity to the pumping facility. Those who live or have properties within the MMFMP technical footprint are considered project-affected persons (PAPs) under the Project.

5. In a census validation survey conducted by MMDA in November 2015, the census team identified and profiled 165 informal settler families within the technical footprint. Rehabilitation of the Vitas PS would have necessitated the relocation of these 165 families. However, these families are already covered by ongoing resettlement as they belong to a sub-set of a much larger number of ISFs (over 400 ISFs) due for relocation under the government resettlement program called Oplan Likas, a program of the government to resettle ISFs residing in danger zones along the waterway. The ISFs census list under the Oplan Likas has been secured by the government prior to 2014. The Pasig River Rehabilitation Commission (PRRC) and the National Housing Authority (NHA) provided the ISFs the following options: (a) relocation to peri-urban relocation sites and (b) relocation to a 5-story walk-up building within the city. The ISFs chose the peri-urban relocation option. Specifically, 88 of the 165 PAPs selected to be with a People's Plan resettlement while 77 opted to be in peri-urban relocation sites offered by NHA.

B. RAP OBJECTIVE

6. To provide assistance to ensure that the resettlement of the 165 project-affected households is carried out in accordance with the Resettlement Policy Framework for the Metro Manila Flood Management Project.

C. BASELINE SOCIO-ECONOMIC SURVEY

7. The survey was carried out by a team of qualified personnel who undertook face-to-face interviews with the use of structured questionnaires. The census team was provided with a master list of more than 400 informal settler families previously surveyed for another government resettlement program undertaken by the Pasig River Rehabilitation Commission (PRRC). Of the long list, one hundred and sixty-five (165) ISFs located in the project footprint were interviewed for the census validation in November 2015.
8. Quality control measures were performed by field supervisors observing the work of interviewers and randomly checking the work done during the data gathering stage. Enumerators were instructed to locate and map the houses and interviewed household heads (or a household member of legal age) for the survey. The enumerators also did an inventory of structures and other assets for each ISF interviewed.

Key Findings

9. The findings of the census/socio-economic survey are organized into six parts: (1) household demographic profile, (2) household expenditures), (3) occupation, employment

and income sources, (4) household assets, (5) access to services, and (6) inventory of fixed assets.

10. Demographic Profile. The majority (79%) household heads are male; 21% (16) are females. Average household size is 3.7, which is below the 4.6 average for household members in the country, (Philippine Statistics Authority, 2012). This suggests younger families; the average age of household heads is 39.6 years.

Table 1: Age of Household Head (HH)

Age of Household head	Number
Mean	39.6
Minimum	18.0
Maximum	76.0

11. Based on a 2-week recall, household members appear to be generally healthy with 97% (160) citing no ailments within the household.¹ Only 2% (4) mentioned that they recently had a fever. In terms of disabilities, only 1 of the 165 Households mentioned a disability and the inability to work.

Table 2: Health Status

Health Status 2-week recall	Number	%
Skin ailment	0.0	0%
Stomach/Diarrhea	1.0	1%
Fever	4.0	2%
No ailment	160.0	97%
Total	165.0	100%

12. The highest educational attainment of most HHs is high school graduates, for both males and females. Three (3) indicated that they had completed college.

¹ It is important to note however that ISFs tend to report only their major illnesses.

Table 3. HHs Educational Attainment by Gender

Educational Attainment	Female	Male	Total
Some Elementary School	6	35	41
Elementary Graduate	4	12	16
Some High School	10	40	50
High School Graduate	7	25	32
Some Vocational Training	0	10	10
Vocational Course Graduate	1	1	2
Some College	1	1	2
College Graduate	1	2	3
No Education	0	1	1
Total	30	127	157

Table 4. Education Level and Employment

Level	Gov't employee	Office worker/ Company employee	Shop-keeper/ shop-owner	Skilled work	Unemployed	Unskilled/ semi-skilled	Vendors/ Street hawker	No answer	Total
Some Elementary	1	1	1	5	0	29	4	0	41
Elementary Graduate	0	0	0	0	1	13	1	1	16
Some High School	0	2	2	6	0	35	4	1	50
High School Graduate	0	4	1	10	0	14	3	0	32
Some Vocational	1	0	0	5	0	4	0	0	10
Vocational Course Graduate	2	0	0	0	0	0	0	0	2
Some College	0	2	0	0	0	0	0	0	2
College Graduate	0	1	0	1	0	1	0	0	3
Others	0	0	0	0	0	1	0	0	1
Total	4	10	4	27	1	97	12	2	157

13. Tables 5 and 6 show the distribution of males and females by educational level with respect to the weekly hours of work. Half (50%) of the HHs work less than 40 hours a week followed by 44% who work at least 40 hours per week. Some 95% or 157 of 165 household heads interviewed indicated that they had income streams provided on a weekly basis. The bulk of employment for those with some high school education and high school graduates is in unskilled or semi-skilled occupations; (such as laborer, helper, street sweeper, janitorial work, pedicab driver, messengers, and other similar occupations.) Women have bigger proportion of less than 40 hours of work per week.

Table 5. Female HH's Education Level and Hours of Work / Week

Educational Attainment	< 40 hrs/wk	>+ 40 hrs/wk	Unemployed	Total
Some Elementary	6	0	0	6
Elementary Graduate	3	1	0	4
Some High School	7	2	1	10
High School Graduate	3	4	0	7
Vocational Course Graduate	0	1	0	1
College Undergraduate	0	1	0	1
College Graduate	0	1	0	1
Total	19	10	1	30

Table 6. Male HH's Education Level and Hours of Work / Week

Educational Attainment	< 40 hrs/wk	>+ 40 hrs/wk	Unemployed	Total
Some Elementary	23	12	0	35
Elementary Graduate	7	3	2	12
Some High School	15	24	1	40
High School Graduate	10	15	0	25
Some Vocational	6	4	0	10
Vocational Course Graduate	0	1	0	1
Some College	0	1	0	1
College Graduate	1	1	0	2
Others	1	0	0	1
Total	63	61	3	127

14. When asked about their work location, 78% (68) indicated that they work within the City LGU, while only 15% work outside their home city / LGU. The remaining 7% are unemployed.

Table 7. Distribution of Household's Work Location by Gender

Work Location	Female	Male	Total
Within LGU	27	101	128
Outside LGU	2	23	25
No answer	1	3	4
Total	30	127	157

Table 8. Distribution of Household's Religious Affiliation

Religious Affiliation	Number	%
Catholic	162	98.18%
Christian	1	0.61%
Iglesia Ni Cristo	1	0.61%
Islam	0	0.00%
Others	1	0.61%
Mormons	1	0.61%
Total	165	100.00%

15. Almost all of the households (98%) said they are Catholic.

16. In terms of ethnicity, majority of the households (79%) identify themselves as Tagalog. Ten percent (10%) said that they are Bisaya; some 4% mentioned that they are Ilocano.

Table 9. Distribution of Household's Ethnicity

Ethnicity	Number	%
Tagalog	131	79%
Bisaya	16	10%
Kapangpangan	3	2%
Ilocano	6	4%
Ilonggo	2	1%
Others	7	4%
Bicolano	2	1%
Pangalatok/ Bicolano	1	1%
Waray	1	1%
Not Specified	3	2%
Total	165	100%

17. When asked about their membership to any social organization, majority (94%) mentioned that they are not a member of any organization while 5% said they are members of AGOM. Responses on membership in social organizations appear to be under-reported. Given the various resettlement programs being discussed in the area, many ISFs may not want to reveal their affiliation to keep their options open. Subsequent discussions with AGOM indicated that 88 of the 165 households were officially registered as members of the AGOM/SHARE Foundation resettlement project (BV8).

Table 10. Membership in Social Organizations

Membership in Social Organizations	Total	%
AGOM	8	5%
Senior Citizen Association	2	1%
No Membership	155	94%
Total	165	100%

18. Household Expenditures. When asked to estimate basic monthly household expenditures, the average monthly amounts reported are:

Table 11: Average Household Monthly Expenditures

Expenditure	PhP
Rent	861
Electricity	774
Water	594
Transportation	865
Education	1,634
Food	5,025
Clothing	137
Medicine	294
Total	9,084

19. Occupations, Employment and Sources of Income. When asked about their primary occupation, more than half of the households mentioned that they are unskilled or semi-skilled workers. Some 17% (27) said that they are skilled workers. Eight percent (8%) of the households reported that they are either street vendors or street hawkers closely followed by the 6% who work for companies.

Table 12: Primary Occupations by Gender

Type of Employment (Primary)	Female	Male	Total
Government employee	1	3	4
Office worker/ Company employee	4	6	10
Skilled worker	2	25	27
Unskilled/semi-skilled	14	83	97
Shopkeeper/shop-owner	2	2	4
Vendors/Street hawker	7	5	12
Unemployed	0	1	1
No answer	0	2	2
Total	30	127	157

20. In terms of income from their primary occupations, the average monthly income is Php 7,123. It must be noted that the range of income is wide: the minimum income was documented at Php 500 for a household with 3 members composed of a grandmother working as a shopkeeper and her two grandchildren. In contrast, the maximum income was reported at Php 20,000 for a respondent who is a government employee.

Table 13: Monthly Income from Primary Occupation

Income	PhP
Mean	7,123
Median	7,200
Mode	9,000
Standard Deviation	3,782
Minimum	500
Maximum	20,000

21. With regard to a secondary occupations, only 4% of households mentioned that they have another line of work as an unskilled/semi-skilled worker while the remaining 96% do not have second jobs. For those who do have a secondary occupation, the average income is PhP 1,786.

Table 14: Monthly Income from Secondary Occupation

Income	PhP
Mean	1,786
Median	1,500
Mode	1,500
Standard Deviation	1,321
Minimum	800
Maximum	4,500

22. The great majority of households (97%) do not receive remittances or have other external sources of income. Only 5 households mentioned receiving income from other sources: 1% of that they receive remittances, 1% receives a government subsidy, 1% earns from business and another 1% has income from rent.

Table 15: Income from Other Sources

Other Sources of Income	Female	Male	Total
Business	0	1	1
Government subsidy/pension	0	1	1
Remittance from relative	0	1	1
Rental Income	0	2	2
Total	0	5	5

23. The average income of those who receive remittances is PhP 2,000. The total monthly household income of Households from the Vitas Pumping Station is PhP 10, 852.56.

Table 16: Total Household Income

TOTAL HOUSEHOLD INCOME	
Mean	10,852.56
Median	9,600.00
Minimum	500.00
Maximum	45,400.00

24. Household Debt. Just over one-quarter (26%) of the households reported having debts at the time of the survey. The average amount of household debt for this group is PhP 6,474. More than half of these household (60%), identified borrowing from moneylenders, with interest rates on the order of 20 % per month. Other sources are shown in the table below. It is likely that debts are under-reported and that larger amounts may be sourced from money lenders and smaller amounts from relatives, friends and neighbors.

Table 17: Sources of Loans

Source	Number	%
5/6 lending (moneylenders)	26	60%
Store	5	12%
Employer	4	9%
Friend or relative	3	7%
Eatery	1	2%
Food	1	2%
Neighbor	1	2%
Paluwagan	1	2%
TSPI- (microfinance)	1	2%
Total	43	100%

25. Household Assets. Respondents were asked about ownership of basic household assets.

Table 18: Household Assets

Item	Number / Σ	%
Radio	39 / 165	24%
TV	53 / 165	32%
Refrigerator	2 / 84	2%
Washing Machine	15 / 165	9%
Gas Stove	15 / 165	9%
Electric Fan(s)	128 / 165	78%

26. Only 3% of households reported owning a sofa; 3% reported having a dining table and chairs. None of the Households own a motor vehicle (car or a jeep); only a few (4%) owns a tricycle (motorcycle with sidecar). Some 31% of the households said they own 1 telephone or mobile phone, 16% own at least two phones, but the majority (53%) of have no mobile phone. Only 3% said they own a computer.

27. Access to Services. When asked about their access to electricity, majority (79%) mentioned of being connected to the power grid through a sub-meter; a significant number of the Households (13%) do not have access to electricity.

Table 19: Access to Electricity

Source of Electricity	Number	%
Gen set private	1	1%
Gen set from developer	0	0%
Power Utility / Grid	131	79%
Jumper from neighbor	3	2%
Other sources	9	5%
None	21	13%
Total	165	100%

28. Most of the Households (85%) visit the barangay health center for their health service needs while only 9% mentioned of going to the nearby village center or hospital.

Table 20: Access to Health Services

Where do you go for health service's needs?	Number	%
Barangay/village health center with medical staff and supplies	141	85%
Barangay/village health center without medical staff and supplies	5	3%
Nearby Barangay/town health center/hospital	15	9%
Others	1	1%
Jose Reyes	1	1%
None within thirty minutes of travel	3	2%
Total	165	100%

29. In terms of their household's main source of drinking water, majority of the households (83%) mentioned of fetching water, while 10% buy their drinking water from resellers. Only 7% said that they have access to piped water (i.e. Manila Water or Maynilad).

Table 21. Access to Potable Water

What is the family's main source of drinking water?	Number	%
Piped water (municipal system)	11	6%
Resellers/private sources	16	10%
Other sources / <i>Igib</i> system / shared	138	84%
Total	165	100%

30. More than half of the households (64%) reported that the LGU collects their garbage; some 18% said that their solid wastes were collected by the Barangay garbage truck. Sixteen percent (16%) do not have access to a solid waste disposal service. All households dump their water wastes into the estero.

Table 22: Solid Waste Disposal

Where do you dispose your solid waste?	Number	%
Provided by LGU	106	64%
Provided by Barangay	30	18%
Private collection service	3	2%
None	26	16%
Total	165	100%

Table 23: Disposal of Liquid Waste

Where do you dispose of your liquid wastes?	Number	Percentage
Septic tank	0	0%
River/Estero	165	100%
Total	165	100%

31. Access to government programs is generally very low. The most accessed programs are the PhilHealth services (34%), closely followed by the Pantawid Pamilyang Pilipino Program (32%). Seventeen percent (17%) of the households access the government's supplemental feeding and some 7% take advantage of the subsidized rice program.

Table 24: Access to Government Programs

Do you have Access to the following Government Programs? (multiple answers)	Access				Total
	Yes	Percentage	No	Percentage	
Scholarships	9	5.45%	156	94.55%	165
4Ps/CCT	52	31.52%	113	68.48%	165
Phil-Health	56	33.94%	109	66.06%	165
Supplemental Feeding	28	16.97%	137	83.03%	165
Subsidized Rice	12	7.27%	153	92.73%	165
Housing Program	2	1.21%	163	98.79%	165
Others (1)	7	4.24%	158	95.76%	165
DSWD Homeless Program	1	0.61%	164	99.39%	165
Manila Health Care System	1	0.61%	164	99.39%	165
NHA Housing Program	1	0.61%	164	99.39%	165
Senior Citizens' Program	1	0.61%	164	99.39%	165
SSS	3	1.82%	162	98.18%	165
Pag-Ibig Fund	1	0.61%	164	99.39%	165

32. Inventory and Ownership of Fixed Assets. The baseline survey also inventoried household structures and fixed assets. Of the 165 households, only 12% mentioned that they rent while another 12% share their house. Just over three-quarters (76%) of the households owned their structures.

33. More than half (63%) of the Households' roofing materials used galvanized iron, aluminum, tile, concrete, brick, stone, asbestos while 20% mentioned of using light materials such as cogon, nipa or anahaw. The total average area for the roof was noted at 10.26 square meters.

Table 25: Distribution of Roofing Materials

Roofing Material	Number	%
Strong materials (galvanized iron, aluminum, tile, concrete, brick, stone, asbestos)	104	63%
Light materials (cogon, nipa, anahaw)	33	20%
Mixed but predominantly strong materials	13	8%
Mixed but predominantly light materials	15	9%
Total	165	100%

34. The walls of the surveyed houses were predominantly (68%) made out of wood; 12% were constructed using half concrete, brick, stone and wood and another 10% used makeshift and salvaged materials. The total average area for the walls was reported at 20.68 square meters.

Table 26: Construction Materials Used for Walls

Walls	Number	%
Wood construction	113	68%
Hollow brick construction	15	9%
Makeshift/salvaged/improvised	17	10%
Half concrete/brick/stone and half wood	19	12%
No wall	1	1%
Total	165	100%

35. The average floor area for the structures is 9.63 square meters. Materials used for flooring are given below.

Table 27: Flooring Materials

Floors	Number	%
Wood	118	72%
Cement with tiles	6	4%
cement with wood	12	7%
cement only	27	16%
dearth flooring	2	1%
Total	165	100%

36. Columns for the majority of the households (87%) were made of wood. Six percent (6%) of the households stated their houses do not have columns.

Table 28: Distribution of Construction Materials Used for Columns

Columns	Number	%
Wood construction	144	87%
Hollow brick construction	6	4%
Makeshift/salvaged/improvised	0	0%
Half concrete/brick/stone and half wood	5	3%
No columns	10	6%
Total	165	100%

37. Of the 165 households, only six (4%) were seen to have a second floor² in their dwelling. Of the six, most (67%) used strong materials such as galvanized iron, aluminum, tile, concrete, brick, stone, or asbestos for the roofs. All used wood construction for the walls, floors and columns.

D. PROJECT IMPACTS

38. Impacts identified in this project are as follows:

- Loss of Shelter.* Significant social impact of the Vitas sub-project is the group of 165 informal settler families (ISFs), including 30 women headed households, residing within the technical footprint of the project that will lose their housing as dwellings.
- Potential loss of income from jobs and income activities of the PAPs.* Most of their employments are from the establishments and businesses nearby their residence. Unskilled households may potentially lose their income particularly those that derive income from sifting salvageable floating garbage from the waterways for cash, vending and tending shops/stores in the market nearby the Vitas pumping station.
- Loss of social and economic networks.* Some of these are access to borrowing cash, items and goods for daily subsistence from neighbors and friends, and potential loss of access to lending facilities for livelihood capital and income generating activities.
- Potential loss of access to welfare services.* Some 56 families are beneficiaries of the government's health insurance, 52 are covered by Pantawid Pamilyang Pilipino Program (4Ps) – the government's conditional cash transfer (CCT) program, 28 receive supplemental feeding assistance and 9 households have children under scholarship programs. It is a condition of the programs to receive the benefits in the same location of one's residence, i.e. benefits given by LGU Manila cannot be transferred to the relocation site as the new site is not within the jurisdiction of Manila LGU.
- Potential loss of access to basic services and other government services.* Resettled families suffer from temporary loss of access to basic services during certain transition

² Second floor in this case is usually a very small space enough for some members of the household to crawl in to sleep.

periods or when receiving or hosting LGUs are still mobilizing resources for them. If not properly coordinated with resettlement agencies and the sending LGU, resettled families could suddenly find themselves without access to schools, health facilities, day care centers, welfare programs, and other services such public safety and policing, fire protection, garbage disposal facility and livelihood support.

Table 29. Summary of Project Impact

Category / Affected	Impact
165 ISFs within the project footprint, including women headed households	<p>Loss of houses and dwelling units</p> <p>Potential loss of livelihood</p> <p>Potential loss of employment, income from employment and in vending and tending stores /shops and other income generating activities.</p> <p>Temporary loss of access to basic services and other government services due to hosting LGU's absorptive capacity during the transition</p>
<p>Some families benefiting from welfare programs</p> <ul style="list-style-type: none"> • 58 families benefiting from health insurance • 52 families benefiting from CCT/4Ps • 28 families benefitting from supplemental feeding • 9 scholars 	<p>Potential loss of benefits and access to government welfare programs as it may not be immediately absorbed by receiving LGU. Some of these benefits include conditional cash transfer (4Ps), health care services, annual educational assistance, supplemental feeding, and senior citizens assistance.</p> <p>Potential impact on school age children adjusting from school setting from previous to present environment</p>

E. LEGAL FRAMEWORK

39. Sub-project activities in Vitas PS do not involve acquisition of private land or necessitate expropriation. The project-affected people are known in the Philippines as informal settler families, who under the rubric of OP 4.12 would be considered as squatters encroaching on a public right-of-way. The RPF provides a detailed comparative analysis of Philippine laws and regulations with respect to World Bank policy on involuntary resettlement. In brief, the resettlement of informal settlers is set out in law (R.A. 7279 and RA 10752) which states that eligible homeless and poor informal settlers in urban areas are entitled to resettlement if they are affected by development projects.

40. Table below provides an analysis of gaps between national laws and OP 4.12 as they apply to Vitas PAPs and proposed measures to fill the gaps. However, where gaps or differences

are found between Philippine laws and regulations and the requirements of OP 4.12, the higher standard will prevail.

41. This RAP is governed by the provisions of the Resettlement Policy Framework of this Project and part of the covenants under the Loan Agreement. All the terms of conditions and agreements under this document supersede local or national policies of the Philippine government.

Table 30. Analysis of Gaps between Philippine Laws and OP 4.12.

KEY ISSUES	PHILIPPINE POLICY	WORLD BANK POLICY	MEASURES TO FILL GAPS
Persons Considered as Project-Affected Persons (PAPs)	PAPs consist of all members of a household who will be adversely affected by the project because their real property shall be acquired for government infrastructure projects	Persons/People impacted by Involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.	Everyone who occupies or occupied land or structure and those that conduct livelihood activities within the technical footprint shall be identified and properly documented including their condition in life, and their personal circumstances. The RPF provides specific guidance in the identification of PAPs and the corresponding measures to ensure they are supported towards a sustainable living condition.

KEY ISSUES	PHILIPPINE POLICY	WORLD BANK POLICY	MEASURES TO FILL GAPS
Loss of Income or Sources of Livelihood	<p>Major government policies (e.g. RA 7279, RA 10752) are silent regarding loss of income directly resulting from land acquisition.</p> <p>However, some agency-specific policies like the DPWH LARRIP Policy 2007 and DO 327 s. 2003 cover income loss:</p> <p>LARRIP on Income Loss. "For loss of business/ income, the PAF will be entitled to an income rehabilitation assistance not to exceed P 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"</p> <p>DO 327 s. 2003 provides transitional allowance for severely affected shop owners for their computed income loss during demolition and reconstruction of their shops</p>	Displace persons should be assisted to improve their efforts to improve their livelihoods and living standards or at least to restore them	The project should compensate for lost income and provide rehabilitation measures to improve livelihoods and living conditions of PAPs or at least restore them to pre-project level.

KEY ISSUES	PHILIPPINE POLICY	WORLD BANK POLICY	MEASURES TO FILL GAPS
Loss of structures and assets	PAPs affected are provided with relocation assistance (house and lot in a government relocation sites). Cash relocation assistance is also provided if there is no available resettlement site for the PAPs. Amount of cash assistance is equivalent to the cost of house and lot in a government resettlement project.	Under OP 4.12 para 16: (i) compensation at full replacement cost for loss of structures/assets other than land; (ii) resettlement assistance; and (iii) other assistance, as may be necessary to fulfill OP 4.12 objectives.	PAPs will be allocated subsidized house and lot at relocation site, will be provided with transition allowance for food, medical expenses and other moving costs in the relocation area. Moving assistance – trucks for personal belongings; vans for women and children.
Treatment of Informal Settlers	R.A. 7279 states that eligible homeless and poor informal settlers in urban areas are entitled to resettlement if they are affected by development projects. However, R.A. 7279 limits this to residential informal settlers and is silent on informal structures on public or private land used for commercial purposes. Government also exclude from the eligibility list people who were previously resettled.	Sections 15-16 stipulate that informal settlers should be provided resettlement assistance	The project will replace lost structures and other assets of informal settlers and provide them with resettlement assistance.

F. PROJECT ELIGIBILITY AND ENTITLEMENT

42. All the 165 PAPs that are found within the project technical footprint are eligible for project assistance and compensation. The PAPs were informed that resettlement after the date of project identification by the World Bank has to be compliant with OP 4.12 – Involuntary Resettlement. The same has been publicly disclosed to project stakeholders

and to the general public through public consultations. As planned and agreed with the PAPs themselves, all 165 project-affected households will avail of either (a) the BV8/AGOM People's Plan or (b) the resettlement assistance program of the PRRC/NHA. A cut-off date was set by the government before the proposed project became active in the area. An examination of these two plans or programs revealed the following common entitlement elements:

- a. Ownership of house and lot in off-city peri-urban locations.
- b. Upfront subsidy (from 85,000-133,000).
- c. Transitional allowances and related support measures which are needed to assist PAPs with movement to the resettlement location and rental expenses as needed while resettlement accommodations are under construction.
- d. Trucking/transport assistance.
- e. Investments in human development, such as skills training for family members which are needed to improved employability and income.

43. Table 31 summarizes the entitlements for the 165 PAPs.

Table 31. Summary of Project Entitlement

<i>PAP Category</i>	<i>Impact</i>	<i>Entitlement</i>
ISF structure owner (125 PAPs per November 2015 survey)	Loss of dwelling units, potential loss of work and income from employment and other income generating activities	Inclusion in social (amortized) rehousing schemes; or provision of subsidized housing rental unit for those unable to afford a mortgage. Transition allowance for moving costs to resettlement site. Moving assistance – trucks for personal belongings; vans for women and children. Free access to skills training and related livelihood restoration programs for male and female family members.
Renter of ISFs structure owners (20 PAPs per November 2015 survey)	Loss of dwelling units, potential loss of work and income from employment and other income generating activities	Inclusion in social (amortized) rehousing schemes; or provision of subsidized housing rental unit for those unable to afford a mortgage. Transition allowance for food, medical expenses and other moving costs in the relocation area. Moving assistance – trucks for personal belongings; vans for women and children. Free access to skills training and related livelihood restoration programs for male and female family members.
Sharer/Rent-Free Households (20 households per November 2015 survey)	Loss of dwelling units, potential loss of work and income from employment and other income generating activities	Inclusion in social (amortized) rehousing schemes; or provision of subsidized housing rental unit for those unable to afford a mortgage. Transition allowance for food, medical expenses and other moving costs in the relocation area.

		<p>Moving assistance – trucks for personal belongings; vans for women and children</p> <p>Free access to skills training and related livelihood restoration programs for male and female family members.</p>
Vulnerable PAPS	<p>Loss of social support networks</p> <p>Adverse effect to vulnerable PAPS (children, pregnant women, persons with disabilities (PWD) and seniors with illnesses.</p>	<p>On top of the set of entitlements provided to structure owner, renter or sharer, welfare agency additional support will be provided to ensure that vulnerable people are assisted as needed in resettlement transition. E.g. Vans provided for women and children; special assistance for pregnant women, PWDs, etc.</p>
Female-headed households (30 Households per November 2015 survey)	<p>Resettlement may cause additional burden for female household heads, especially that will lose jobs and income source and with less social support.</p>	<p>On top of the set of entitlements provided to structure owner, renter or sharer, welfare agencies will assist with any additional measures needed to ensure a smooth transition in resettlement for female household heads and children.</p>
PAPs returnees from previous resettlement site	<p>Disqualification per one time housing benefit policy of the government</p>	<p>Under the terms of the RPF and this RAP, PAPs who have previously been resettled but have returned to places of pre-resettlement origin or in any informal settlements are not to be excluded if they have returned because of difficulty to financially sustain themselves at the previous resettlement site due to loss of employment and income generating activities.</p> <p>The PAPs in these circumstances will be screened thoroughly, and if found eligible, will be provided with</p>

		the same set of assistance as enumerated above.
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G. RELOCATION AND LIVELIHOOD ACTION PLAN

44. As previously mentioned, the resettlement of the 165 PAPs covered by this RAP is a sub-set of the relocation process and activities for some 400 ISFs in the waterways near the Vitas Pumping station being carried out under the government's Oplan Likas Program.
45. The Vitas RAP has two resettlement program approaches as a result of options that the community members have selected. These are the following: (a) Self-Resettlement Approach of AGOM called the Peoples' Plan covering 88 households, and (b) Resettlement Program Approach of the PRRC-NHA covering 77 households. Succeeding sections provides more details about these two approaches. Figure 2 shows the location of the two resettlement sites. (AGOM relocation site is in Muzon San Jose Del Monte while the NHA Relocation site is in Pandi Bulacan.) Both resettlement sites went through the process of environmental assessment and were consequently given environmental clearance certificate by the Department of Environment and Natural Resources. The major impact on host communities is on delivery of basic services like health, social welfare, and peace and order. It is expected that both resettlement programs will exact a certain toll on the resources of host local government units. DPWH is aware of this and is coordinating closely with NHA/SHFC, Manila City Government, Pandi Municipal Government and concerned barangay government, the City Government of San Jose del Monte and the LGU of Barangay Muzon to ensure adequate resources for needed services for both resettled and host communities.

Figure 2. Map showing AGOM People's Plan Resettlement Project in Muzon San Jose Del Monte and NHA-Pandi Bulacan Resettlement Project



Self- Resettlement Approach (People's Plan) by AGOM

46. PRRC-NHA began the relocation process for Vitas as early as 2012. In 2015, PRRC-NHA conducted the first consultation process with the presentation to the 400 plus ISFs of Vitas resettlement options that they can choose from. Options presented include an off-city relocation site in Trece Martirez, Cavite, an off-city relocation site in Pandi, Bulacan, and an in-city relocation in a 5-story walk-up building in Tondo, Manila. The in-city resettlement was not chosen by the PAPs for various reasons. Half of them were AGOM members and were already resolved in their people's plan approach. The remaining ISFs who were not AGOM members opted to resettle in Pandi, Bulacan as they were not confident of the peace and order situation in the in-city relocation in Tondo Manila.
47. In one of the consultations, AGOM presented a formal proposal to PRRC for the People's Plan approach for its members in Vitas (including the 88 PAPs). AGOM is a national federation of peoples' organizations with membership from the urban poor communities mostly in Metro-Manila whose members are also affected by Oplan Likas. AGOM's people's plan is being supported by SHARE Foundation, a partner NGO providing networking and technical assistance in community development and the Social Housing Finance Corporation, a government housing agency.
48. Through SHARE Foundation, AGOM and Benjamin Village 8 (BV8), another people's organization, agreed to contract a loan from the Social Housing Finance Corporation for the purchase of 7.3 hectares of land, site development, and housing construction. The People's Plan include the following:
 - a. 1,508 units in 7.3 hectare property subdivided into a house and lot package

- b. 6 meters main road and 3 meters secondary road.
- c. Electrical connection will be ready prior to transfer and occupancy.
- d. Water will be supplied by the San Jose City water district with elevated tanks and with provision for individual connection when fully operational.
- e. Lot size cut is at 40sqm each with 32sqm housing unit with loft and is constructed in cluster of 8-16 row houses per cluster.
- f. Individual housing unit has toilet and bath and a kitchen area with sink outside the housing unit.
- g. The house and lot package is at (Php 390,000.) payable in 30 years with fixed interest rate a 4.5% per annum. The monthly amortization will be increasing at 10% per annum and on the 11th year; the monthly amortization will be fixed until final payment.

Figure 3. AGOM /BV8 Housing Project is Muzon, San Jose Del Monte City



49. The relocation site is within a developed community of several villages/subdivisions developed by private sectors providing supply of affordable housing for low income earners. Social services infrastructure such as day care centers have been negotiated by AGOM with the barangay government of Muzon, San Jose Del Monte. The LGU will construct a day care

center with personnel to manage the services. In the transition period during at the relocation site, AGOM and the LGU will conduct medical mission and job fairs for the resettled families. Likewise AGOM committed to make representation with national government agencies for the host LGU to be provided with additional funds to augment city budget for social services programs.

50. Access to municipal health services, schools elementary and high school is in the barangay center accessible by a 5-minute tricycle ride. The contractor's office and materials depot will be converted and retrofitted into offices of the Homeowners Association and the multi – purpose cooperative. An open space of more than 2,000 square meters is allotted for playground and space for AGOM/BV8's livelihood training center.

Host LGU of AGOM's Resettlement Site

51. Barangay Muzon, San Jose del Monte City, Bulacan, is one of the 59 Barangays of San Jose del Monte and is approximately 30 kilometers from Vitas Tondo Manila City and 15 kilometers from Quezon City Hall. It is the most populated Barangay in the city with a total of 81,947 (PSA 2010) citizens or approximately 18% of the city's total population during the census year. Population increase in Barangay Muzon has been due to the influx of many private subdivisions for low income earners and the development of resettlement sites. Barangay Muzon, San Jose Del Monte hosts 3 government resettlement sites developed over the last 15 years. The City of San Jose Del Monte is also host to two more large government resettlement sites. The total population of San Jose Del Monte is over 500,000 in 2015.
52. Barangay Muzon can be accessed from Manila through Marilao North Luzon Expressway Exit and through the route via Diliman/Commonwealth Quezon City. Public transportation (bus, commuter vans, jeepneys) are available on a 24/7 schedule. Travel time from Manila to Muzon is approximately 2 hours. A rail transit system (MRT 7) which will have a station in Muzon is now under construction and is expected to be completed in 2 years' time. When operational, it will substantially reduce travel time from Muzon to Manila. Barangay Muzon has a bus terminal, public market, public elementary and high schools, church, health centers located within 3-3.5 kilometers from the project site.
53. The City's economy is characterized by the presence of numerous and contiguous commercial establishments located in the intersection between the Sta. Maria- Tungkong Mangga Provincial Road (Bocaue Provincial Road) and the San Jose del Monte- Marilao Road. Found within this area is the South Triangle Wet and Dry Market, the Philippine Business Bank, RCBC, Country Bank, Planbank, a number of pawnshops and lending investors, other business and light industrial establishments including bakeries and pharmacies. Eight financial institutions are present in Muzon.

54. Barangay Muzon has few light industries. Major industries in the area include marble production, feed mills, manufacturing, construction, and food processing. The major economic activities of Muzon are in agri-business manufacturing, and wholesale and retail trading. Commercial developments are scattered all over the various areas in Muzon as well as in other barangays of the city.
55. San Jose del Monte's increased population over the last 15 years paved the way for its cityhood status. Internal Revenue Allotment has been adjusted at a higher level.

AGOM's Livelihood Action Plan at the Resettlement Site

56. With potential income losses due to their being away from sources of income and livelihood, AGOM prepared the following livelihood action plan:
- a. Organize a cooperative among its members to put up a community store and transport services that will supply the basic needs of relocated families.
 - b. The cooperative will source out home-based trades that can be deployed to women and other household members such as sub-contracting work from factories around the resettlement site
 - c. The cooperative will also act as the manpower referral center to business, construction companies and in other trades around the community and nearby towns where skilled workers are required in cooperation with the LGUs employment program. SHARE Foundation will assist AGOM to do skills inventory and job matching for members.
 - d. The cooperative intends to put up organic garden, meat processing and other products for the members to earn from.
 - e. The cooperative intends to provide families with small capital for the buying and selling of recycled material out of garbage.
 - f. Mobilize a one million peso initial capital build-up for the proposed livelihood programs from the contractor –developer.
 - g. Mobilize government and private sector groups to work with them to prepare proposals for funding based on the members livelihood projects.
 - h. The cooperative will provide credit facility for its member intending to do entrepreneurships.

PRRC/NHA Resettlement Program Approach

57. Of the 165 PAPs, the 77 ISFs who are not AGOM members will be relocated under the resettlement program approach of PRRC/NHA. Discussions at a public consultation conducted by PRRC in November 2015 (which the MMFMP Project Team attended) indicated that their relocation site would be in Pandi Bulacan, an off- city resettlement site. This site is an extension of the previously developed relocation site that has more than 1000 of families relocated from various locations in Metro Manila also under Oplan Likas.

NHA Relocation Site at Pandi Bulacan

58. NHA developed the Padre Pio Resettlement Project in Barangay Cacarong Bata in Pandi, Bulacan as a resettlement site for Vitas ISFs including the remaining 77 PAPs who are non-AGOM members. The ISFs from Vitas have been informed by the NHA that the site will also accommodate other ISFs from Manila LGU as per agreement with Pandi LGU. The land was acquired through a contracting party engaged by the NHA to purchase and develop land for government resettlement projects. Before construction began, the site was issued an Environmental Clearance Certificate (ECC) by the Department of Environment and Natural Resources certifying the site as safe for hazards such as landslides or flooding.
59. The relocation site has land area of 26 hectares. When completed, expected in early 2018, it will have total 2,700 housing units. Housing unit has 22 sqm. Loft type expandable to 32 sqm. The average lot size is 40 sqm. Site development include concrete road network with sidewalk and concrete curb and gutter with reinforced concrete pipe as drainage.
60. Each housing unit has individual permanent water service connection to be supplied by the local water district. Manila Electric Company will provide the power services in the completed housing units.

Figure 4. NHA Relocation Site at Pandi Bulacan



The Municipality of Pandi, Bulacan

61. Pandi municipality is 41 kilometers north east of Manila, it has a total land area of over 3,000 hectares and has 22 Barangays. In 2015, PSA recorded a total of 89, 075 population. Major commerce and industries are farming, poultry, piggery, metal craft, furniture and garments, and linen embroidery. Local major products produced are rice and processed food. Minor products as sources of livelihood include salted eggs, small-scale fishpond for Tilapia, orchids and ornamental plants.

62. Commercial and rural banks abound the municipality. Lending and credit facilities, telecommunication companies, private and public hospitals have serviced the requirements of the municipality.
63. Pandi LGU agreed with the NHA to develop seven housing and resettlement projects that will host for over 15,000 Oplan Likas ISFs. With the housing of ISFs in Pandi Bulacan fast-tracked due to Oplan Likas, basic services and utilities such as water, light and social services were not installed in time for the transfer of families prompting the Pandi Bulacan LGU to pass a municipal resolution imposing a moratorium for the relocation of ISFs from Metro Manila in early 2016. As of February 2017, partial lifting of the moratorium has been granted to Manila ISFs only. Other cities are still on moratorium status. The City Government of Manila and NHA agreed to provide augmentation funds for the host LGU for them to begin construction of social services infrastructure while start-up funds for livelihood programs have been provided by the Department of Labor and Employment together with job creation through job fairs. Site specific proposals of livelihood assistance to Pandi Resettlement sites have been submitted to the Project Coordination Committee Livelihood Implementing Cluster of the Php1.8 billion supplemental resettlement fund.

Livelihood Plan for the Pandi Resettlement Project

64. Under the 2017 General Appropriations Act, the national government allocated the Pandi resettlement project a total of 30 million pesos for the following: (a) construction of social services infrastructure such health and day care centers, (b) additional classrooms, (c) livelihood multi- purpose centers, (d) water services, and (e) financial assistance to Pandi LGU and capacitating them to better manage the municipality in a manner that is inclusive of the new relocated families. Other forms of assistance include Department of Trade and Industries' (DTI) provision of livelihood training for families and individuals that have entrepreneurial capacities, Department of Labor and Employment's (DOLE) program that help workers from the resettlement site in job placement particularly the women work force, and Local Water Utilities Administration's (LWUA) assistance to expedite the sourcing, development and distribution of water in the resettlement sites.

H. ANALYSIS ON THE LIVELIHOOD RESTORATION PLAN AND MEASURES TO MITIGATE THE GAPS UNDER THE PROJECT

65. All proposed livelihood interventions by AGOM and NHA indicated strategies and directions they will pursue in assisting the PAPs. The Pandi Bulacan Resettlement Project where the 77 non-AGOM ISFs will resettle is one of the 18 sites that were allotted funding under the Php1.8 billion supplemental resettlement budget for livelihood assistance and improvement of social services such as schools, health centers and day care services. Key agencies involved include the following with their corresponding tasks:

- a. DOLE: job creation programs, engagement of the local employment offices of the LGUs to do job fairs and fund livelihood activities of proponent relocated families.
- b. DSWD: provide sustainable livelihood program through cash for building livelihood assets and in the initial funds to assist PAPs comply with documentary requirements for employment.
- c. DTI: provide livelihood seeding funds for identified PAPs that has business skills and experiences.
- d. NHA: construction of social infrastructure facilities particularly the livelihood training center, transport terminals for use of the PAPs in transport cooperatives.
- e. DILG: address the lack of resources by the host LGUs by providing them financial assistance to augment their existing local funds and to provide them with capacity building funds to manage the resettlement sites.

66. For the AGOM site, the budget for social services and livelihood plans have been negotiated with the LGU for inclusion in 2018 budget. However, there is a need to assist AGOM/BV8 in fleshing out their livelihood programs. In the approved budget for 2017, the PCUP is tasked to provide the social preparation for the relocated families that will avail of the livelihood funds. Specific tasks of the PCUP include the conduct of surveys from among the lowest 30% income bracket in the resettlement site and identify the potential individuals and or groups that will need the intervention. DPWH is facilitating discussions with PCUP so that AGOM and SHARE Foundation gets support from PCUP in preparing concrete livelihood programs prior to the ISFs' transfer to the relocation site.
67. To ensure that livelihood restoration plans are fully in place, DPWH will continue to forge agreements with concerned agencies and LGUs to ensure that both the 88 AGOM members and the 77 non-AGOM members get the necessary support livelihood restoration especially from the supplemental resettlement budget.
68. Table 32 below discusses the identified gaps and the measures to mitigate them and the agencies that will be assisting the Project implement the livelihood action plan.

Table 32. Livelihood Gaps and Measures to Mitigate under the Project

	Identified GAP	Mitigation Measures and Specific Activities	Responsible Institutions
1	Lack of information on what manpower skills will be required by the market/business community	Conduct of market assessment to identify skills and products that are in demand in Metro Manila and peri- urban centers particularly those that are in the vicinity of Muzon, San Jose Del Monte and in Pandi, Bulacan resettlement sites.	DPWH PMO, NHA, PCUP, SHARE, AGOM/BV8
2	No specific data about who among the PAPs including	Profiling skills and inventory of all interested PAPs for employment and or	DPWH PMO, NHA, PCUP,

	<p>their HH members will need assistance for employment and or for livelihood projects for individuals, guilds or cooperatives for income generating activities.</p>	<p>livelihood projects through small business ventures. Profile them to identify their age, educational attainment, skills they already have, their interests and preferences, mobility for employment and livelihood activities appropriate to their skills.</p> <p>Target to profile all the 165 PAPs.</p> <p>As most private companies only hire those with TESDA's advanced skills certificate, the Project will collaborate with TESDA to provide PAPs with advance skills training that match the market demand and the PAPs' experience and preferences. The Project will help them obtain needed skills for employment for National Certification. Certified graduates of TESDA will then be matched to formal employers through recruitment agencies that major private companies use to recruit their laborers. Target at 230 beneficiaries (2 per household of the 165 PAPs). Recruitment agencies will be bound by a performance-based contract to ensure that at least 75% of the trainees are employed beyond 6 months after placement.</p> <p>The Project will assist these workers to comply with documentary requirements for formal employment, such as IDs, security clearance from barangays, police, National Bureau of Investigation, health and sanitary inspector, purchasing uniforms, clearances, and bridging the gap until their first payment of salary is received.</p> <p>Target at least 230 PAPs</p>	<p>SHARE, AGOM/BV8</p>
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		<p>Secure information from the local employment offices of the LGUs to introduce livelihood opportunities for the relocates which include among other income sources such labor subcontracting for private manufacturers nearby the relocation sites.</p> <p>Target of 2 sub-contractor per relocation site</p> <p>Formation of cooperatives/community enterprises guilds to run community service facilities (e.g. - market, transport, water purification, waste recycling, skilled workers pool for sub-contracting work from developers and construction companies). Technical assistance to build capacities community enterprises on organization management, FM, contract management, leadership, among others. Establish 10 guilds and 2 cooperatives for both sites.</p> <p>Harness existing partnership with agencies that provides technical assistance to strengthen people's skills, market linkages, cooperative/enterprise management, and stable access to key inputs such as credit, power and water.</p> <p>Target 2 company partners</p>	
4	No clear mechanisms to formalize partnership with business and industries for job placement, monitor after training and job placement including follow up support after employment	Establish institutional placement services with formal employers through institutional partnership with reputable recruitment agencies and/or using a conduit CSO's NGOs that has strong linkages with private sector.	DPWH PMO, NHA, PCUP, SHARE, AGOM/BV8

		<p>Conduct of post-placement counselling to support the trainees to adjust in new environment.</p> <p>Have a performance-based contract with placement agencies that mandate them to ensure that 75% of the trainees remain employed 6 months after placement.</p> <p>Conduct of tracer studies at regular intervals to track the employment status and salary trajectory of the trainees.</p> <p>Target 1 annual survey</p> <p>Enlist at least partner NGOs /CSOs for both sites</p>	
5	Lack of community facilities for livelihood activities	<p>Key infrastructure investments to ensure stable supply of power and water; access to credit; and initial seed capital</p> <p>Target to put up one livelihood center in each site and PhP5 million seed capital for livelihood sub-contracting work for each site</p>	DPWH PMO, NHA, PCUP, SHARE, AGOM/BV8

I. VALUATION OF ASSETS AND COMPENSATION FOR LOSSES

69. LGU experts (City Engineering Office) have calculated the average value for the replacement cost of housing structures at Vitas at an average cost of PhP 3,000 / m². The valuation is based on the type of structures and computed per square meter at current price of standard cost for similar-type house construction.

70. In Vitas, all structures owned by PAPs are made of light (in most cases, scrap) materials. The cost is estimated at PhP 3,000 per square meter. Based on an average floor space of 10.26 m², the compensation value is estimated to be on the order of PhP 30,000-40,000 per structure, depending on floor space and construction materials. Data on the type of structure of the PAPs is available in the census validation results of November 2015.

J. CONSULTATION AND COMMUNITY PARTICIPATION

71. In coordination with SHFC, PRRC, NHA, AGOM, and the LGU, the DPWH PMO has conducted consultations with the affected community prior to project appraisal. In compliance with the requirements of OP 4.12 and part of the development of Safeguards documents

including this RAP, DPWH and MMDA conducted public consultations where the following documents were shared and discussed: (a) project background (including objectives, components, benefits, etc.); (b) ESIA; (c) ESMF; (4) RPF; and (5) the three PY1 safeguards documents, including this RAP. Project briefs and flyers highlighting the key sections of the safeguards documents written in Filipino were provided to the five communities prior to the consultation. English versions of the documents were also provided to the five barangays to ensure that interested individuals could easily have access to the full versions of the documents.

72. The draft ESIA, covering the rehabilitation and modernization of the first five pumping stations and drainage areas, and the Executive Summary of the ESIA, ESMF, and RPF were disclosed on February 8, 2016. Consultations on the ESMF, RPF and other safeguards instruments were conducted on August 17-18, 2015, November 9, 2015, and February 24, 2016.
73. Additional consultation was carried out on September 9, 2016 to discuss the project, the ESMF and the results of the ESIA. The copies of these documents were made available at the DPWH-Unified Project Management Office (UPMO), DPWH-Environmental and Social Safeguards Division (ESSD), DPWH-Unified Project Management Office (UPMO), and at the MMDA-Planning Office. The consultation meeting was attended by representatives from the local government units, Social Housing Finance Corporation, Pasig River Rehabilitation Commission, and Presidential Commission for Urban Poor, MMDA, and district engineering offices of DPWH. A total of 85 participants attended the public consultation. Key issues that were raised during the consultation meeting are about the participatory and programmatic approach that will be applied in the planning of the subprojects under the project. In relation with the RPF, the representatives from the housing sector requested DPWH to provide them the list and profile of the informal settler families to enable them to validate whether some of these families are already part of the Oplan Likas program. Overall, the participants fully support the project because of the benefits that flood control and solid waste management will bring to Metro Manila.
74. Specifically for Vitas, DPWH and World Bank agreed on a two-stage consultation. The first one was held September 23, 2016, with the general discussion of the project and its impacts. Stakeholders that participated included the City of Manila through the Urban Settlements Office, Barangays 150 and 93, NHA, PCUP, SHFC, and AGOM and Share Foundation, which are local NGOs and community-based organizations in the area, as well as PAPs. The Second Stage consultation took place on October 10, 2016 (Annex D) to further discuss the details of the RPF and this RAP. Prior to these public consultations, all the safeguards instruments including a Project Information Booklet in Tagalog containing the pertinent details of the project and executive summary of the RAP and ESIA were widely distributed in advance to the stakeholders and PAPs. The consultations were generally well attended, with more than 100 participants at the Vitas consultations. The participants were

generally supportive of the project as measures to reduced flooding in the communities are deemed very important. In addition, to measures that reduces flooding; participants often mentioned the need to reduce solid waste in the waterways. This RAP was revised based on the feedbacks generated from the consultations.

75. Following the MMFMP RPF, consultation will be conducted throughout project implementation. The PMO will designate a community contact individual who will ensure regular interaction with the PAPs to ensure timely and effective provision of information as resettlement activities are implemented and to facilitate solution of issues or management of grievances.

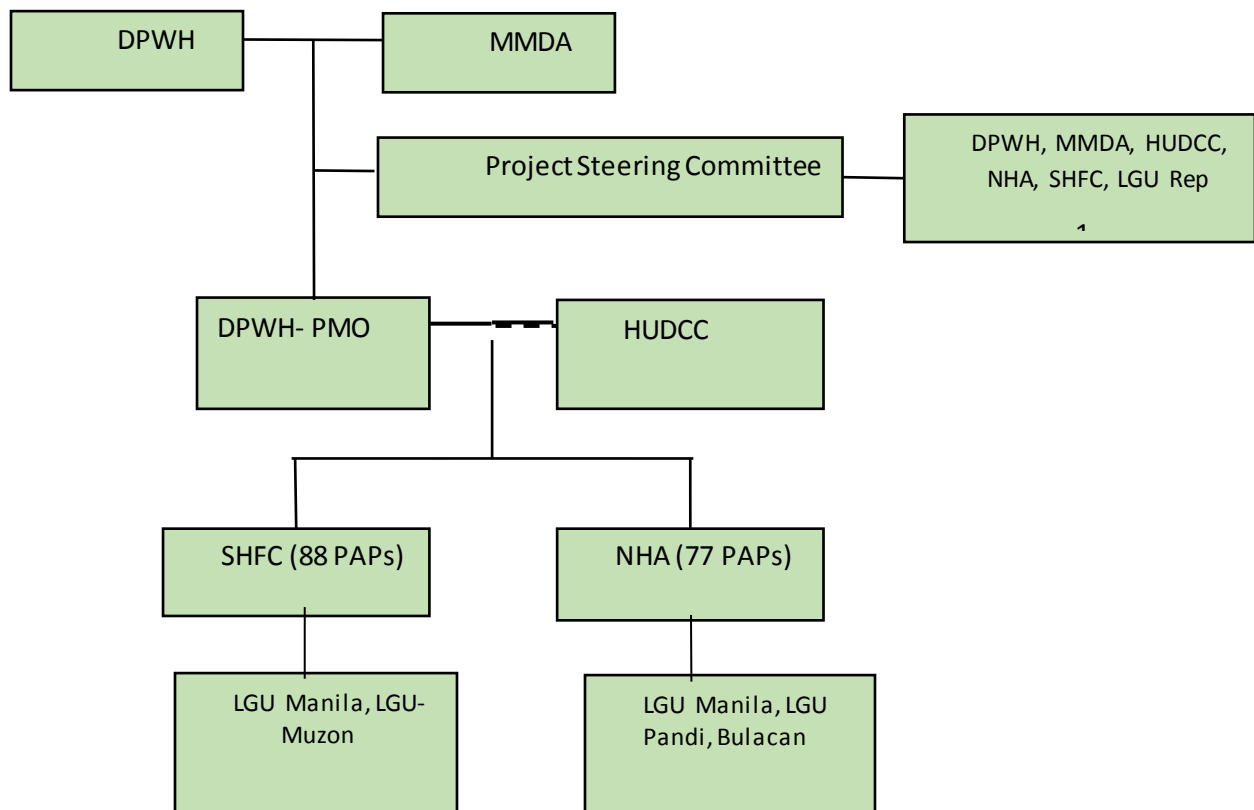
K. INSTITUTIONAL FRAMEWORK AND ORGANIZATIONAL RESPONSIBILITY

76. DPWH is responsible for implementing its sub-projects in accordance with the Resettlement Policy Framework (RPF), the Environmental Safeguards Management Framework (ESMF), and the Vitas RAP. The PMO, supported by the Environment and Social Safeguards Division (ESSD) in DPWH is composed of a team leader, resettlement specialist, social development specialist, livelihood specialist, a supervising engineer, procurement specialist, financial management specialist, and monitoring and evaluation specialist.
77. Once MMFMP is effective, the DPWH PMO will engage experienced professionals to monitor and support implementation by the partner agencies and organizations to ensure consistency in resettlement implementation across sub-projects, provide guidance on inter-LGU arrangements where PAPs may move from one LGU's jurisdiction to another, and support capacity enhancement and specific training needs. Specifically for this RAP, the DPWH PMO is responsible for:
- a. Updating of this RAP.
 - b. Coordination with SHFC, SHARE Foundation and AGOM, NHA, PRRC and concerned LGUs for monitoring the resettlement of the 165 PAPs and ensuring that their resettlement comply with the provisions of this RAP, the RPF and OP 4.12.
 - c. Assisting SHFC/SHARE/AGOM and NHA/PRRC in establishing grievance redress mechanisms to receive and facilitate tracking and resolution of affected peoples' concerns, complaints, and grievances.
 - d. Establishing a Public Complaints Unit at the DPWH PMO which includes a grievance committee or panel composed of respected independent individuals to assist with grievance redress in difficult instances.
 - e. Preparation of quarterly resettlement monitoring reports to be submitted to DPWH management and the World Bank.
 - f. Establishing and maintaining a standardized resettlement monitoring and evaluation (M&E) system under the project.
 - g. Contracting services of external monitoring agents for independent monitoring and evaluation of RAPs.

- h. Ensuring that contracts for contractors and sub-contractors stipulate preclusion of access to project sites before the PMO has issued clearance. (i.e. resettlement has progressed to a point at which PAPs have vacated the site as per provisions of the RAP.)
78. The Social Housing and Finance Corporation is lead agency to work with AGOM/BV8 self - resettlement approach in the case of 88 PAPs who are beneficiaries of AGOM's People's Plan resettlement project in Muzon San Jose Del Monte City.
79. The PRRC- NHA in the case of remaining 77 PAPs will be responsible for implementing the relocation plan in Padre Pio Pandi Resettlement Project.
80. Specifically the SHFC and the NHA will:
- a. Assist the Manila LGU in setting up and capacitating its Housing and Resettlement Team to handle the day-to-day operation and implementation of housing and resettlement activities
 - b. Ensure that the relocation site for the 165 PAPs are compliant with the MMFMP RPF and this RAP.
 - c. Engage with NGOs / CSOs or community groups to be involved in resettlement undertaking social preparation, facilitating understanding the project entitlements as appropriate, and arranging for capacity-building of community associations in coordination with the PMO.
 - d. Work with government agencies implementing livelihood programs under the 1.8 billion supplemental resettlement funds.
 - e. Engage service providers (CSOs and other support or resource agencies) to plan and implement livelihood support activities for PAPs resettled in AGOM- BV8 Muzon and Pandi Resettlement Sites.
 - f. Designate project personnel that will work with sending and receiving LGUs to ensure that the Vitas RAP is properly implemented.
81. Composition and key Functions of Sending and Receiving LGU-Housing and Resettlement Team (HRT). The sending LGU (Manila) and the receiving LGUs (San Jose del Monte and Pandi) will be required to establish a multi- disciplinary Housing and Resettlement Team (HRT) to oversee and support the day-to-day implementation of resettlement activities. The HRT will be composed of staff drawn from relevant LGU offices (Urban Poor Affairs Office/Urban Settlements Office, City Social Welfare and Development, City Planning Office, and City Engineering Office, and if need be will be supported by LGU personnel from Budget Office, City Planning and Development Office, and City Environment and Natural Resources Office). Specifically the LGU HRTs with the assistance of SHFC and NHA will be:
- a. Organizing and conducting consultations, arrangements for community participation, and public disclosure.
 - b. Assignment of a Community Contact person and inform PAPs and affected communities of their schedule of availability, their location / meeting place when in the affected area, and their contact information, such as cellular telephone number.

- c. Providing RAP-level grievance management for sub-projects in coordination with the PMO.
 - d. Using criteria established by the PMO and with assistance from the SHFC and NHA, monitor and track RAP implementation progress and flag key issues which may affect timely completion.
 - e. Preparing and providing monthly RAP monitoring reports to the PMO.
82. The DPWH PMO will work closely with the Housing and Urban Development Coordinating Committee (HUDCC) to ensure coordinated action between the two shelter agencies and that the RAP is implemented in accordance with the MMFMP RPF. Figure 5 below is the organizational structure for the Vitas RAP.

Figure 5. PMO with SHFC, NHA and LGUs



L. GRIEVANCE PROCEDURES

83. As part of its Citizens' Charter, DPWH has a functioning feedback handling system composed of two components: (a) Feedback Handling, a system that receives, sorts and resolves feedbacks on DPWH projects and, (b) Civil society organization (CSO) accreditation to serve as partners and/or observers in all stages of project development cycle (identification, preparation, budgeting, procurement, implementation, operations, and post evaluation) and in other areas of mutual interest. The Feedback Handling Component is

managed by the Stakeholders Relations Service (SRS) unit headed by a division head and staffed by six action officers manning the system during office hours. As it is a 24-hour service, one action officer is designated each night. The SRS has two hotlines, a text messaging system (2920), an email account and social media accounts (Facebook and Twitter). It also accommodates walk-in complainants in its office. Feedbacks/complaints are farmed out by Action Officers to concerned units/divisions in the agency and actions are monitored by platform officers (one officer per platform, i.e. email, Facebook, etc.). Serious complaints (i.e. allegation of fraud and corruption) are usually forwarded to high ranking officials (undersecretary level). Service standards and responsible staff are also shown in SRS Chart below in Figure 6.

Figure 6. DPWH SRS Feedback Handling Chart.

STAKEHOLDERS AFFAIRS DIVISION - STAKEHOLDERS RELATIONS SERVICE (SAD - SRS) FEEDBACK MANAGEMENT CENTER: HANDLING OF FEEDBACKS						
Schedule of Availability of Service: -Mondays to Fridays, 8:00 am to 5:00 pm (without noon break) for walk-in and phone-in transactions; - 24 / 7 for feedbacks coursed through 165-02 call center, e-mail, SMS (Text2920) and social media (Facebook / Twitter) Who May Avail of the Service: General Public What are the Requirements: Contact details, mailing address and/or supporting documents, if needed Duration: 5 minutes to 15 days, depending on the urgency and action required for the feedback						
How to Avail of the Service:						
Step	Applicant/Client	Service Provider	Duration of Activity	Person in Charge	Fees	Form
1	Course feedback/ inquiries / request or commendation through any of the following modes: a. Visit Stakeholders Affairs Division - Stakeholders Relations Service, Head Office to address the feedback personally or leave your comments using the Customers' Feedback Form located at the Front Desk of all DPWH Offices. b. Send an email to dpwh_feedback@yahoo.com c. 165-02 Call Center Hotline or SRS Hotline numbers 02-3043370/ 02-3369196; d. Post at DPWH official social media accounts: Department of Public Works and Highways, Philippines Facebook Page and @DPWHph on Twitter. e. Text DPWH (space) message at 2920	Stakeholders Affairs Division (SAD) will gather feedback and contact details of customer and create new transaction on the database. Provide reply to simple feedbacks. For complex queries or concerns, customer's feedback will be properly referred to appropriate DPWH office for proper response and action, if necessary.	*Walk-in - 10 minutes Email - 1 day Phone-in - 5 minutes Social Media - 1 day TEXT 2920 - 1 day 1 day	Action Officer of the Day	P 2.50 for 160-character message sent to 2920	Customers Feedback Form, Walk-in Form
2	Wait for action within 1 -15 working days for complex transactions subject to the request for extension of time w/c the concerned DPWH office may seek action	Preparation and signing of Request for Action (RFA) Memorandum and endorsement to concerned DPWH offices Evaluation of feedback, investigation, preparation of reply and transmittal to Stakeholders Relations Service Relaying feedback to Customer	1 hour 1-15 days for those requiring further 1 day for urgent matters 1 hour	Concerned Regional / Service / Bureau Director Action Officer	none	none
END OF TRANSACTION						

84. To improve the current system, DPWH will establish a Public Complaints Unit within the PMO to address and resolve any project-related grievances from project-affected people or other stakeholders and members of the public. It will be managed with the support of the social and environmental team in the PMO. The project will also engage the services of non-project related advisers to serve on a panel to help resolve difficult grievances. The panel members will be recognized by the public for their impartiality, community service, and good judgement. This group could include individuals from the Presidential Commission for

the Urban Poor, retired jurists, clerics or religious officials, or people representing or doing community service in support of the urban poor. As a matter of policy, the project will not prevent any party from seeking legal remedies from any government judicial body.

85. The MMFMP GRM will be implemented based on the following principles:

- a. Simplicity: procedures in filing complaints are understandable to users and easy to recall.
- b. Accessibility: filing complaints is easy through means that are commonly used by stakeholders, especially by the project-affected people.
- c. Transparency: information about the system is made widely available to all stakeholders and the general public.
- d. Timeliness: grievances are attended to and resolved in a timely manner.
- e. Fairness: feedback or complaints are validated thoroughly and subjects of complaints are given due process and opportunities for appeal.
- f. Confidentiality: the identity of complainants remains confidential.

86. To achieve these principles, the GRS will be set up with the following features:

- a. Multiple Uptake Points: In addition to access through the Community Contact, complainants will be provided with multiple channels to submit their complaints. These include: postal mail, electronic messages, telephone, SMS, personal delivery/walk-in. A project GRS hotline will be established to be managed by the GRS Focal Person at the PMO.
- b. Timely resolution at the lowest possible level: The project will strive to attend to complaints in a timely manner. To do this, it will designate a Community Contact at the sub-project level. In addressing and resolving complaints, the project will build on existing mechanisms in the community (community leaders, barangay officials, barangay justice system, etc.). It is only when the complaint is not resolved at this level that the complaint goes to the PMO GRS for resolution.
- c. System for receiving, sorting, verifying, and tracking: A simple system will be developed to facilitate effective management of complaints to guide the PMO, particularly the Public Complaints Unit, on the steps and arrangements from receiving, sorting, verifying, acting and tracking complaints. These will be detailed out in the operational manual. Complaints will be categorized and actions on the complaints will be implemented and documented. The project will maintain a database documenting the salient details of complaints, including the dates they were received and when and what actions were taken. These documents will be available to the external monitoring team and the World Bank. The project will monitor complaints and coordinate with the concerned LGUs and relevant government agencies as needed to resolve them adequately and expeditiously. DPWH will keep the World Bank Task Team informed about any significant complaints and the steps taken to resolve them.

- d. Disclosure and ease of access: The salient features of the GRS will be publically disclosed so that people are aware of where and how complaints will be managed. The Community Contact person assigned to the sub-project will further ensure that people in the sub-project's area of influence are aware of grievance management arrangements. Ideally complaints should be written, but if received verbally, the Community Contact person will ensure written documentation is made and that the complaint is dated and recorded.

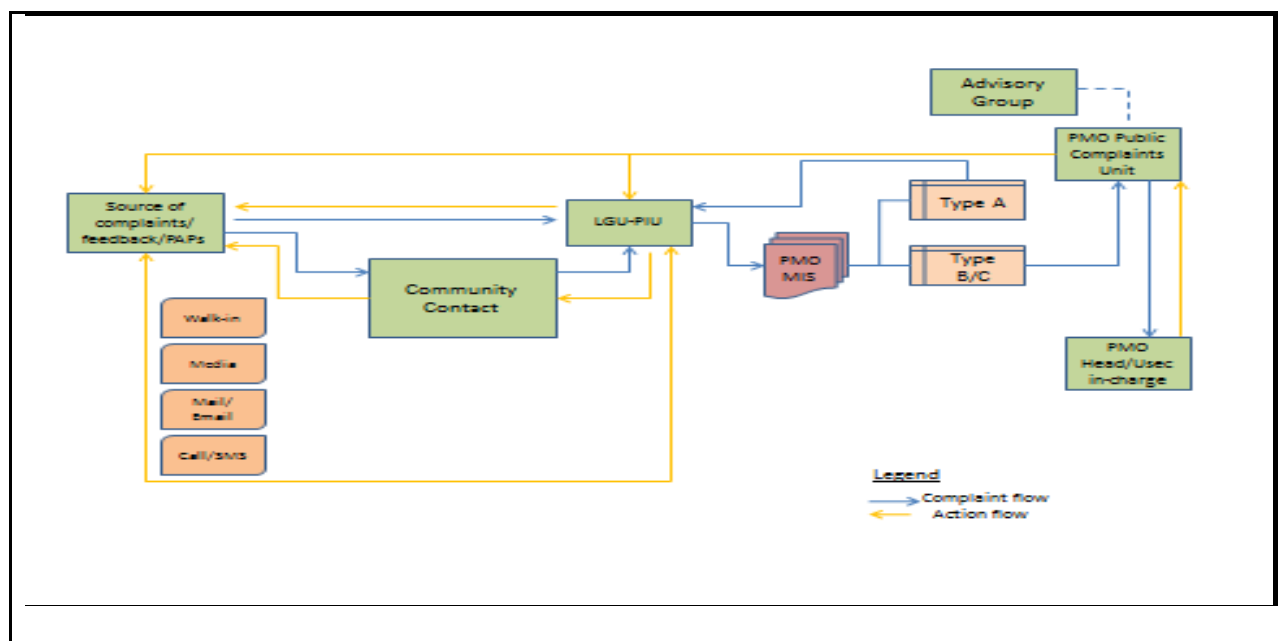
87. The following are the types of grievances that the Project foresees and the responsible individuals/units for management.

Table 33. Responsibility Matrix for Grievance Management

Types of Grievance	Description	Resolved at Level of	Possible Range of Actions	Responsible
Type A: Queries, Comments, Suggestions	Inquiries, comments or suggestions on RAP implementation	Uptake Points (Community Contact or Project Staff)	Immediate feedback to provide clarification, provision of IEC materials, referral to appropriate individuals or bodies	Community Contact, Project Staff of SHFC/SHARE/ AGOM and NHA, Barangay LGU concerned
Type B: Performance of Obligation	Complaints about non-performance of obligations or non-compliance to agreements such as those contained in the operations manuals, memorandum of agreements/ understanding (MOA/U), sub-project agreements, RAP, etc.	LGU-HRT, if not resolved, elevated to PMO Public Complaints Unit	Emphasize strict adherence to agreements and resettlement standards Corrective measures agreed with partner agencies/ organizations	LGU-HRT, PMO Public Complaints Unit

Type C: Misconduct of Project Staff and Project Partners/ contractors Violation of Law	Any form of misconduct of program staff and program partners Allegations about corruption, misuse of funds, falsification of public documents	PMO Head; Undersecretary in-charge if subject of complaint is the PMO head	Create Fact- Finding Committee to validate the complaint, Filing of appropriate charges if there is falsification of public documents, Recommend conduct of Special Audit	PMO Head ; Undersecretar y in-charge
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Figure 7. Grievance Flow Chart



M. IMPLEMENTATION SCHEDULE

88. Table 34 presents the planned activities under this RAP.

Table 34. Implementation Schedule

Action	Q3 20 17	Q4 20 17	Q1 20 18	Q2 20 18	Q3 20 18	Q4 20 18	Q1 20 19	Q2 20 19
Hire resettlement specialists	xxx							
Establish LGU HRTs	xxx							
Establish/strengthen GRM; establish and capacitate Public Complaints Unit	xxx	xxx						
Appoint / deploy Community Contact person	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
Update Census Survey	xxx							
Completion of housing units with individual connection for light and water			xxx					
Completion of basic social Infrastructure (schools, day care center, community police post, and livelihood training center)			xxx					
Pre-relocation support: 1. Documentation of lot allocation and moving assistance 2. Transition Allowance voucher issuance Preparation entry pass to the relocation site				xxx				
Relocation: 1. Trucks as moving assistance for households assets 2. Moving out AUVs for women and children, elderly and the PWDs 3. Cash disbursement for those availing of cash relocation assistance instead of H&L. 4. Food packs for 5 days, 5. Emergency medicines for common sickness(colds, fever and cough) 6. Letter of endorsement from the School Principal of the sending LGU to the receiving LGU for the				xxx	xxx			

school admission of all school age children relocated in the project.								
Moving notice and entry pass to the relocation site.								
Develop detailed employment and livelihood programs <ul style="list-style-type: none"> • Labor market assessment • PAPs profiling and skills inventory • Establish arrangements to facilitate job placements 			xxx	xxx				
Employment and livelihood plan implementation					xxx	xxx	xxx	xxx
Monitoring & Evaluation (internal)		xxx	xxx	xxx	xxx	xxx	xxx	xxx
Monitoring & Evaluation (external)				xxx		xxx		xxx

N. MONITORING AND EVALUATION

89. In this RAP, the underlying objective of monitoring and evaluation is to determine resettlement outcomes especially those related to livelihood and income restoration.

90. The LGU-HRT will monitor and document progress to key implementation milestones in monthly reports, facilitated by the RAP's Community Contact person assigned to the sub-project. Issues and grievances must be documented and tracked to their resolution. PAPs will be informed of monitoring activities and encouraged to participate and facilitate in RAP monitoring.

91. SHFC and LGU-HRT will work within a standardized monitoring framework in which LGU-HRT will provide primary field-level information to the wider system. PMO will maintain a data base needed to document and track resettlement implementation needed for reporting at the project level. The PMO monitoring units will track substantive and budgetary aspects of the delivery of entitlements, grievances and significant implementation issues, progress with physical relocation, progress and issues with rehousing development schemes, grievance management and other salient features of the resettlement process.

92. Specific monitoring parameters include: routine provision of information on mobilization and progress for sub-project-linked community groups, consultations and community planning activities, progress with site development and housing development, and delivery of government-sponsored or other programs given as entitlements, such as those for skills training or other social or economic development activities. Monitoring data will be gender-

differentiated where relevant. Attention will be given to the status of disabled people and vulnerable households.

93. The community contact will liaise with LGUs, CSOs, PCUP, and other institutions or organizations involved in social mobilization and development of in-city housing and maintain a monitoring database and provide feedback needed for change management and adaptive implementation.
94. An External Monitoring Agent (EMA)—provided by a professional agency or a technically qualified CSO to be engaged by the MMFMP— will use monthly reports and field visits to prepare semi-annual monitoring reports to the PMO and to the World Bank. Monitoring parameters will cover key stages in resettlement, including timely provision of entitlements, rental subsidies and transitional support measures, provision of skills training, identification of and measures taken to assist vulnerable PAPs, progress to completion of resettlement housing, etc. as per the entitlement matrix and implementation schedule. The EMA will also provide a final RAP completion and closure report for each sub-project highlighting its analyses on whether the desired resettlement outcomes per this RAP and the RPF have been met.

O. BUDGET

95. Table 35 provides the budget for Vitas RAP implementation. Footnotes in this page explain the assumptions and computation of the budget items. The biggest expense will be on the housing cost which amounts to USD1.9 million. Under the MMFMP arrangement, this cost will be paid from the GoP counterpart. The social services infrastructure and livelihood project is an allocation from the 1.8 Billion mitigation funds for the 18 resettlement sites. The project administration budget will cover expense for hiring of project implementation personnel. The Monitoring and evaluation budget is for Vitas project only. The budgetary requirements for the rest of the projects under the MMFMP will be included in the project specific RAP. Note that the PAPs, all of them ISFs, will be provided with a package that is more than ten-folds the cost of their existing structure. The package includes a subsidized house and lot package amounting to P519,060.00 (40 sqm lot and 22 sqm house, water and light connection, septic tank and community facilities), P5,000 moving assistance, P18,000 transition allowance, and P2,500 food allowance.

Table 35. Budget

Particulars	PAPs/Item	Unit Cost In Philippine Peso	Total Cost In Philippine Peso	Equivalent In US Dollars @ P46.00 to USD1.00
Housing Unit Price	165	519,060.00	85,644,900.00	1,861,845.65
Transport/Shifting To Resettlement Site	165	5,000.00	825,000.00	17,934.78
Transition Allowance	165	18,000.00	2,970,000.00	64,565.22
Food Assistance - (P500.00 Per Person Per Day for 5 Days)	165	2,500.00	412,500.00	8,967.39
Livelihood Projects For Two (2) Resettlement Sites Of At Least 165 Individuals, 10 Guilds And 6 Various Types Of Cooperatives	2	10,000,000.00	20,000,000.00	434,782.61
Skills Training Enhancements For (165 x 2 PAP's) For Entrepreneurs	230	5,000.00	1,150,000.00	25,000.00
Construction Of Social Services And Livelihood Infrastructure	1	30,000,000.00	30,000,000.00	652,173.91
Census Survey Updating	1	300,000.00	300,000.00	6,521.74
Internal Monitoring	1	1,000,000.00	1,000,000.00	21,739.13
External Monitoring And Evaluation	1	2,000,000.00	2,000,000.00	43,478.26
Total			144,302,400.00	3,137,008.70
Project Administration (10%)			14,430,240.00	627,401.74
Sub-Total			158,732,640.00	3,764,410.43
Contingency (10%)			15,873,264.00	941,102.61
Grand Total			174,605,904.00	4,705,513.04

ANNEX A: DEFINITION OF THE “PROJECT FOOTPRINT” FOR PY1 SITES

The Metro Manila Flood Management Project, in particular Component 1 is anchored upon the rehabilitation of existing pump stations or construction of new ones to enable effective and efficient drainage of flood waters and thereby address urban flooding (this is more extensively described in the Project Appraisal Document).

Typically, excess rainwater will runoff from roofs, roads, and other surfaces before entering drainage pipes. Runoff inside drainage pipes eventually discharge into the **waterways** such as creeks, esteros, or tributary rivers before finally discharging into **external water bodies** such as Manila Bay or main rivers like Pasig River.

Without pumping, runoff discharge from catchments by gravity as dictated by slope of the terrain and the elevation of external water bodies. Flooding occurs when water cannot be discharged fast enough (i.e. higher runoff generation due to urbanization of the catchment; due to intense rainfall; elevated levels of the external water body; or a combination of these and other factors). Pump stations address flooding by discharging rainwater of **a served waterway** faster than what gravity would allow.

The directly flooded area can be further analyzed hydraulically to determine the critical segments of pipes and/or open waterways to ensure the optimum drainage of the area in cases of high rainfall such as typhoon.

This critical portion of the directly flooded area is delimited as the “project footprint.” The project footprint is further composed of sub-areas as below. For purposes determining the project’s area of influence, the OPA that runs along open channels will be the target area for environmental and social impact assessment. Other components will also survey drainage areas to determine whether additional areas should be included for the assessments. Dredging requirements, if any, will be assessed by the end of October 2015.

1. Pump station area
2. Waterway maintenance access points.
3. Optimum pumping area (OPA)

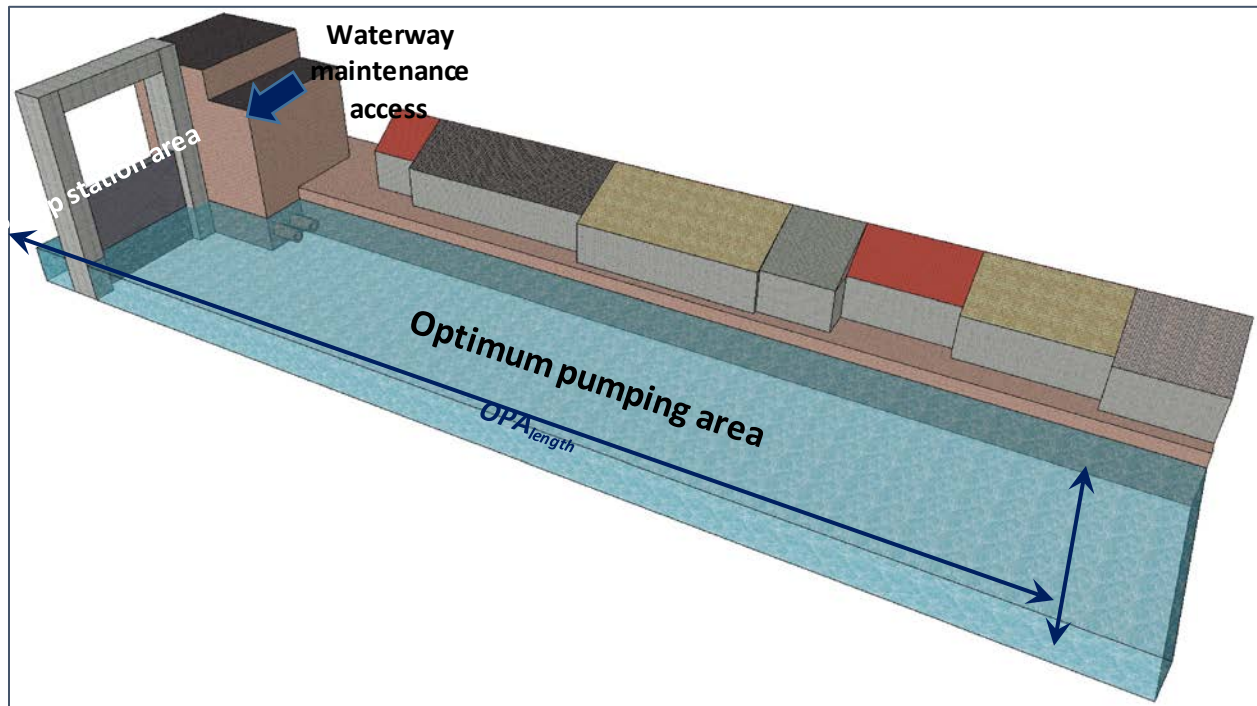


Figure 1: Project Footprint

The **pump station area** is the boundary of the physical structures of the facility which should have sufficient space of the electro-mechanical equipment, floodgates, trash collection and management system, and other ancillary functions. Based on the survey of existing pumping stations, this area is already well established, fenced-off, and have no resettlement issues.

The **waterway maintenance access** includes access roads and staging areas for mobilizing equipment in or over the waterway. Access requirements will vary depending on the characteristics of the waterway including maintenance strategy. In some cases where the catchment is served entirely by a covered drainage system (ex. Balut PS), there is no open waterway to be maintained. Instead, maintenance can be jetting and vacuuming of drainage pipes which can be carried-out from street-side manholes. For open waterways different maintenance strategies will be assessed, with a main focus on floating maintenance equipment. As part of project preparation a specialist will come to Manila early November to advice on the most appropriate equipment.

The **optimum pumping area (OPA)** is defined as the area corresponding to the volume of water stored in the waterway such that the pump station can operate at maximum capacity unimpeded to lower water level from just below street level (revetment elevation) until the stopping elevation (dictated by pump suction elevation) within the **time of concentration (T_c)**. T_c is the time required for runoff to travel from the hydraulically farthest point of the catchment to reach the outlet (i.e. pump station). OPA is given by:

$$OPA = \frac{\alpha C \times \gamma T_c}{\beta D_{op}}$$

Where:

C = maximum pump capacity, α = pump efficiency factor

T_c = Time of concentration, where:

$$T_c = 0.0078 \left(\frac{L^{0.77}}{S^{0.385}} \right), \text{ Kirpich equation; or}$$

design T_c , if available

γ = peak flow factor

L = length from farthest part of the basin

S = channel slope

D_{op} = operating depth, β = factor of safety

For the purpose of planning, OPA is converted to the more tangible parameter, the corresponding length of OPA or OPA_{length} . This is derived by dividing OPA by the waterway's operating flood depth (i.e. elevation of street level minus suction stopping elevation).

The OPA (i.e. waterway along OPA_{length}) must be cleared of obstructions like sediments, solid waste, or informal structures to ensure unobstructed flow to the pump station and avoid pump problems such as vortices, uneven approach flow, uneven velocity profile in the pump, pre-rotation, vibrations, cavitation and increased energy consumption—among others. Note that optimum maintenance is most critical in, but is not limited to, the OPA.

OPA_{length} is computed for identified priority pump stations as shown below. Unless stated otherwise, data are provided by MMDA.

Table 1: OPA_{length} Calculation

Pump Station	Maximum Capacity (cms)	T_c^3 (minutes)	T_c (sec)	Optimum pumping volume (m^3) ⁴	Depth operating ⁵ (m)	W_{ave} (m)	OPA_{length} (~m)
Paco	7.6	67	4,020	27,460	1.89	20	450
Vitas	32.0	45	2,700	77,760	2.16	43	500
Balut	2.0	45	2,700	4,860	2.34	NA	-- ⁶
Tripa	58.0	101	6,060	178,898	5.40	50	420
Labasan	9.0	45	2,700	21,870	2.25	30	-- ⁷

³ Design T_c provided from design specifications by MMDA

⁴ Adjusted for pump efficiency and total additional catchment storage

⁵ Adjusted with factor of safety $\beta = 0.9$

⁶ No open waterways, entire catchment served by covered drainages system

⁷ Existing storm attenuation basin is 6.4 ha. OPA do not extend further into upstream waterway

Mapping of OPA_{length}:



Figure 2: OPA length (~500m) for Vitas PS

ANNEX B: CENSUS LIST (SEE SEPARATE EXCEL FILES)

ANNEX C: BASELINE SURVEY QUESTIONNAIRE

<i>Structure Number</i> _____	
<div>HOUSING CENSUS AND INVENTORY OF FIXED ASSETS</div> <div>“METRO MANILA FLOOD MANAGEMENT PROJECT PHASE 1”</div>	Good morning/afternoon. I am _____ part of a team working for MMDA which is gathering information needed for planning for a proposed flood management project. For this purpose, we need your assistance in providing information about you and your household. Your truthful responses and cooperation will allow the project to obtain valuable information that will guide the study team to formulate project strategies. Do you have any question? Can we start?
	<div>1 ASSURANCE OF CONFIDENTIALITY</div> <p>All responses to the questionnaires will be treated with high degree of confidentiality.</p>

2 IDENTIFICATION AND OTHER INFORMATION**3****SITIO** _____**4****5 BARANGAY** _____**6****CITY** _____**LENGTH OF STAY AT CURRENT RESIDENCE:****LOCATION OF PREVIOUS RESIDENCE:****7 CALL RECORD****8 DATE** | **9****10 TIME STARTED** | **11****12 TIME FINISHED** | **13****14 REMARKS** | **15****16 RESPONDENT****17** Name of Respondent _____

If not the Household Head, relationship with Household Head _____

18 CERTIFICATION

I hereby certify that all data entered hereto are true and correct to the best of my knowledge

Signature over Printed Name of Interviewee – Date

I hereby certify that the data set forth were obtained/reviewed by me personally in accordance with the instructions given

Signature over Printed name of Field interviewer – Date

Signature of Reviewer/Supervisor - Date

SECTION I. HOUSEHOLD CENSUS

A. Demographic Information

Household members	Relationship to HH head A1	Civil Status A2	Age A3	Gender A4	Educational Attainment A5	Employment Status A6	Work Location A7	Religious Affiliation A8	Ethnicity A9	Health Status A10	Disability A11	Membership in Social Organization A12
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												

Codes for A1	Codes for A2	Codes for A5	Codes for A6	Codes for A9
1-Head	1-Single	1- Not of school age/No schooling	1-Working at least 40 hrs/wk	1-Tagalog
2-Wife/Spouse	2-Married	2- Elem Undergraduate	2-Working less than 40 hrs/wk	2-Bisaya
3-Son/Daughter	3-Widowed	3- Elem Graduate	3-Unemployed	3-Kapangpangan

4-Son-in-Law/ Daughter in Law	4-Divorced/ Separated	4- Hi-School Undergraduate	4- Too young/old to work	4-Ilocano
5-Grandson/ Granddaughter	5-Common Law/Live-in	5- Hi School Graduate		5-Ilonggo
6-Father/ Mother	6-Others (specify)	6- College Undergrad		6-Others
7-Other Relatives	Codes for A3	7- College Graduate	Codes for A7	Codes for A10 (two-week recall, can be multiple)
8-Non- relative	00- less than 1 year	8- Post Graduate	1-Within the Brgy.	1-Skin Ailment
	98 – unknown/cannot remember	9- Vocational /TVET	2-Outside Brgy. but within City	2-Stomach/Diarrhoea
		10- Others (Specify)	3-Outside Citybut within Province	3-Fever
			4- Outside Region, within Philippines	4-Others
			5- Overseas	
	Codes for A4		Codes for A8	Codes for A11
	1 Male		1- Catholic	Disability includes: Mobility impairment; Hearing impairment ;Visual impairment; Brain disability (disability in the brain due to brain injury
	2 Female		2-Christian (i.e. Protestant, Bom Again Christians)	Cognitive disability (impairment present in people who are suffering from difficulty in learning to read and accurate comprehension, this include speech disorder.
			3-Iglesia Ni Cristo	1-Disabled unable to work
			4-Islam	2-Disabled but employable
			5-Others (specify)	

B. Household Expenditure

	Unit of Measure (Php) [place in appropriate column]			
Expenditure	Daily	Weekly	Monthly	Yearly
B1. Rent				
B2. Electricity				
B3. Water				

B4. Transportation				
B5. Food				
B6. Clothing				
B7. Medicine				
B8. Education (school daily allowance)				
B9. Other:				
B10. Totals				

C. Occupation, Employment and Income Sources

Household Members (From Table A)	Primary Occupation C1	Income (Monthly) C2	Secondary Occupation C3	Income (Monthly) C4	Remittances and other sources (Monthly) C5	Income (Monthly) C6
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
Codes for C1 and C3				Codes for C5		

1- unskilled/semi-skilled (laborer, helper, street sweepers, janitorial work, pedicab driver, messengers, mason) 2- Skilled worker (driver, carpenter, welders, beautician, electrician, mechanics, plumbers), 3- Government employee 4- Office worker/ Company employee 5- Vendor/street hawker 6- Shopkeeper/shop-owner 7- Unemployed 8- Others	1-Government subsidy/pension 2-Remittance from relatives 3-Business income 4-Income from gambling 5-Rental income
--	---

D. List of assets that your household owns

D. How many of each of the following items does the family own?			
D1. Radio		D7. Tricycle	
D2. TV		D8. Washing Machine	
D3. Refrigerator		D9. Gas Stove/Range	
D4. Sala Set		D10. Telephone/Mobile	
D5. Dining Set		D11. Computer	
D6. Car/Jeep		D12. Others: _____	

D13. Do you have any debt now? [1-Yes, 2-No] _____

D14. How much? _____

D15. Source? _____

E. Access to Services

Access to Services	Answers and/or Observations
E1. Electricity Who supply your electricity	___ (1) Gen set private ___ (5) Other source/s ___ (2) Gen set from developer ___ (6) None ___ (3) Power Utility/Grid ___ (4) Jumper from neighbor
E2. Health service/s Where do you go for your health services needs	___ (1) Barangay/village health center with medical staff and supplies ___ (2) Barangay/village health center without medical staff and supplies ___ (3) Nearby Barangay/town health center/hospital ___ (4) Others _____ ___ (5) none within thirty minutes of travel
E3. Water	___ (1) piped water (Manila Water/Maynilad) ___ (2) buying from resellers/private sources ___ (3) other sources _____
E4. Waste disposal/ management E4a. Where do you dispose your solid waste E4b. Do you have septic tank	___ (1) Provided by LGU ___ (3) Private collection service ___ (2) Provided by Barangay ___ (4) None

E4c. Where do you dispose of your liquid wastes(from laundry, kitchen and bathing)	____ (1) Yes ____ (2) No ____ (3) Don't know ____ (1) Septic tank ____ (4) River ____ (2) Drainage canal ____ (5) Don't know ____ (3) Estero
E5. Basic Education What educational facilities do you have in your community? (multiple answers accepted)	____ (1) Kinder/Elementary school in the barangay or nearby ____ (2) High school in the barangay or nearby ____ (3) Kinder/Elementary school inaccessible / very far (estimated kilometers) ____ ____ (4) High school inaccessible / very far (estimated kilometers) ____
E6. Public Transportation	F6a. Availability [1-Yes, 2-No]
E6.1. To school/s	
E6.2 To market	
E6.3 To work / employment	
E6.4 To health center	
E6.5 To hospital	
E6.6 To bank	
E7. Do you have access to the following government programs?	[1-Yes, 2-No]
E7.1 Scholarship	
E7.2 4Ps/CCT	
E7.3 PhilHealth	
E7.4 Supplemental feeding	
E7.5 Subsidized rice	
E7.6 Housing program (specify)	
E7.7 Others (specify)	

F. INVENTORY OF FIXED ASSETS
<div style="text-align: center;">STRUCTURE</div> <div style="text-align: center; margin-top: 20px;"> ____ (1) Owner ____ (2) Renter </div> <div style="text-align: center; margin-top: 20px;"> If you're not the Owner, name of Owner _____ </div>

No	Type of Structure	Number of floors	Description of Construction Materials	Material	Total area of the structure, in m ²
1.	Main House		F1A.Roof [1- Strong materials (galvanized iron, aluminum, tile, concrete, brick, stone, asbestos), 2- Light materials (cogon, nipa, anahaw), 3- Salvaged/makeshift materials, 4- Mixed but predominantly strong materials, 5- Mixed but predominantly light materials, 6- Mixed but predominantly salvaged materials]		
			F1B.Walls [1- Wood construction, 2- Hollow brick construction, 3- Makeshift/salvaged/improvised, 4- Half concrete/brick/stone and half wood]		
			F1C.Floors [1-wood, 2-cement with tiles, 3-cement with wood, 4-cement only 5-dearth-flooring]		
			F1D.Columns [1- Wood construction, 2- Hollow brick construction, 3- Makeshift/salvaged/improvised, 4- Half concrete/brick/stone and half wood]		
2.	Second Structure (if any)		F2A.Roof [1- Strong materials (galvanized iron, aluminum, tile, concrete, brick, stone, asbestos), 2- Light materials (cogon, nipa, anahaw), 3- Salvaged/makeshift materials, 4- Mixed but predominantly strong materials, 5- Mixed but predominantly light materials, 6- Mixed but predominantly salvaged materials]		
			F2B.Walls [1- Wood construction, 2- Hollow brick construction, 3- Makeshift/salvaged/improvised, 4- Half concrete/brick/stone and half wood]		
			F2C.Floors [1-wood, 2-cement with tiles, 3-cement with wood, 4-dearth-flooring]		
			F2D.Columns [1- Wood construction, 2- Hollow brick construction, 3- Makeshift/salvaged/improvised, 4- Half concrete/brick/stone and half wood]		

G. OTHER STRUCTURES		
No	TYPE OF STRUCTURES	UNIT
G1	Water Well	<input type="checkbox"/> Yes <input type="checkbox"/> No
G2	Electric Connection (Metered)	<input type="checkbox"/> Yes <input type="checkbox"/> No

G3	Water Connection (Metered)	<input type="checkbox"/> Yes <input type="checkbox"/> No
G4	Pump Well	<input type="checkbox"/> Yes <input type="checkbox"/> No
G5	Wood//Wire Fence	L <input type="text"/> x H <input type="text"/> = <input type="text"/>
G6	Concrete Fence	L <input type="text"/> x H <input type="text"/> = <input type="text"/>
G7	Others	

END OF INTERVIEW
THANK YOU VERY MUCH!

ATTACH PICTURE OF AFFECTED ASSET WITH OWNER

ANNEX D: MINUTES OF CONSULTATIONS – OCTOBER 2016

Metro Manila Flood Management Project
Minutes of Public Consultation
For the VITAS PUMPING STATION, TONDO, MANILA
October 10, 2016 9:00 – 11:00AM
Barangay Hall, Barangay 150, Raxabago St., Tondo, Manila



MEETING HIGHLIGHTS:

1. The meeting started with an Opening Prayer led by Ms. Lorna Cruz, resident of Barangay 150.
2. Chairman Eduardo de Guzman of Barangay 150 gave the Welcome Remarks and encouraged the residents to listen to the presentation of DPWH and to actively participate in the discussion. He also welcomed the residents from Barangays 93 and 147.
3. Engr. John Labilles, DPWH, presented the components of the proposed Metro Manila Flood Management Project. He asked if the participants were able to read the project information booklet and also asked who among the residents were present during the previous consultation meeting held last September 23, 2016 at Barangay 93. New attendees from Barangay 150 and 147 were acknowledged. Engr. Labilles gave the background and objectives of the proposed flood control project. He outlined the four major components, i.e. Component 1 – construction and rehabilitation of pumping stations; Component 2 – Clearing of waterways; Component 3 – Resettlement of ISFs on waterways; and Component 4 – Project management and coordination. He said that Vitas pumping station will be rehabilitated as one of the subprojects under Component 1. Activities will include dredging of the waterways and the clearing of structures of informal settler families (ISFs).
4. Engr. Cherry Rivera presented the results of the environmental and social impact assessment that was conducted for the Vitas pumping station. She outlined the major impacts and mitigation measures that were identified in the study that includes: (i) generation of dredged materials, sampling/testing

of the dredged materials and its appropriate disposal; (ii) odor from dredging activities; (iii) noise from operation of pumps and motors; (iv) accumulation of solid waste at the pumping station; (v) movement of large vehicles along the narrow road leading to the pumping station at Barangay 147 which may affect residents living along the road in terms of safety, dust, and noise; (vi) resettlement of ISFs who are living under the Raxabago bridge. She asked the participants about the concerns that they are currently experiencing with regards to the operation of the existing pumping station and with the implementation of the proposed project. The participants mentioned the following:

- a. Resettlement of ISFs – The residents said that they are willing to be relocated and requested information of the schedule of project implementation and relocation.
 - b. Odor – The participants always experience odor from the river but they said that they are used to the bad odor from the river. The dredging of the river and resuspension of sediments and emission of odor will not be problem to them.
 - c. Noise – When asked if noise is a concern, they said that they do not experience excessive noise coming from the pumping station. This is also not a problem to the residents. Engr. Rivera said that based on the noise sampling conducted in the vicinity of the pumping station and inside the pumping station, the workers are more exposed to high levels of noise and would need appropriate ear muffers for protection.
5. Mr. Ershad Ibba, DPWH-Environmental and Social Safeguards Division, explained the resettlement policy framework and the resettlement action plan for the project-affected ISFs. He explained that based on the resettlement framework, the project would avoid resettlement as much as possible. If resettlement cannot be avoided, appropriate plans and budget will be prepared and allocated for the families to be resettled. For project-affected persons (PAPs) who own houses, the proposed options will be housing or cash compensation. For those who will chose the housing option, assistance that will provided by the project will be in the form of: (i) rental subsidy; (ii) transition allowance; (iii) transportation assistance during resettlement; and (iv) livelihood training and financial assistance. For PAPs who are renting, the project assistance will be in the form of: (i) housing; (ii) rental for temporary housing; (iii) transition allowance; (iv) transportation assistance; and (v) livelihood training and financial assistance. There will also be additional assistance for those who are pregnant, senior citizens, children, and disabled. For those who have been previously given housing assistance, the Government through NHA, SHFC, and DILG will evaluate if the PAP is qualified to receive assistance from the project.
 6. The participants were also informed about the environment and social safeguards documents that were provided to them two weeks ago. The participants showed their project information booklets. They were informed on the contact persons and number of DPWH-PMO if there are any further questions about the project.

7. Open Forum and Discussion



- a. **Resettlement of all the ISFs at same time before project implementation.** Chairman Eduardo de Guzman said that a total of 85 families in his barangay are affected by Oplan Likas. However, when the Pasig River Rehabilitation Commission (PRRC) conducted the census, only 48 families were included in the list submitted by them to DILG for the Php18,000 financial assistance. There are 34 families who were not included. This would mean that they will not be included in those that will be resettled.⁸ Chairman de Guzman said that it is necessary for the project to first implement the resettlement of all the ISFs (including the 34 families) before it begins with the dredging and clearing of waterways. He suggested that it will be much better if all the 85 ISFs will be resettled at the same time. He also said that they have submitted a letter request to DILG and these ISFs were included in the DILG list for inclusion and approval by the implementing agency.
- b. **PRRC and DILG census of ISFs.** Jennifer Cabuhat, AGOM Secretary, said that in the master list of DILG, there are more than 200 ISFs from Barangays 150 and 93 that will be resettled under Oplan Likas. There are ISFs from Barangay 93 who opted to avail of the NHA assistance. In Barangay 150, all the 85 ISFs remained but 34 ISFs were not included in the PRRC census but are in the DILG listing. According to her, when PRRC conducted the census, some of the ISFs were at work while others were rebuilding their houses damaged by floods. She asked DPWH to coordinate with the NHA regarding this matter so that all the 85 ISFs can be relocated at

⁸ Note that all 165 PAPs of the MMFMP as identified in the census list are entitled relocation assistance per provision of UDHA and OP 4.12. The attendees of the project consultation as reflected in this annex (Annex D) includes households that are outside the technical footprint, but have been identified by the PRRC and DILG for relocation under the regular waterways clearing program.

the same time. All of the households already have census stabs from DILG. In addition, the 34 ISFs are all members of the People's Organization AGOM with their housing project in BV8 Muzon, San Jose del Monte, Bulacan under the People's Plan.

Mr. Ershad Ibba said that DPWH will evaluate this further and suggested the cross-matching of the list from DILG and PRRC and the validation census that was conducted by the MMDA in November 2015.

Jett Villegas explained that there is a need to submit a final list of 34 un-censused families as validated and certified by the PRRC, DILG and make these documentation available to DPWH and SHFC. This document will also indicate that concurrence of the agencies for the inclusion of the 34 families earlier requested from the DILG.

- c. **Willingness of the ISFs to be relocated.** Jett Villegas asked the participants to raise their hands if they approve of the relocation in Muzon, San Jose del Monte, Bulacan as proposed by AGOM under the People's Plan. The affected ISFs raised their hands and said that they are willing to be relocated to the BV8 housing project as proposed by the AGOM.
- d. **Financial assistance.** There were 48 ISFs that were approved to receive financial assistance of Php18,000. DSWD evaluated the ISFs to check if they are qualified to receive the financial assistance. However, for the 34 ISFs that are not in the PRRC list, they are not sure if the ISFs are also qualified to get the Php18,000.

Mr. Ibba explained that they need to submit the certification also that the 34 ISFs will need to receive the financial assistance. DPWH will coordinate and submit this to DSWD.

- e. **Six ISFs in Barangay 147 not included in the master list.** ISFs from Barangay 147 who are living along the road going to the pumping station and on the banks of the river are not included in the PRRC and DILG census. The ISFs from Barangay 147 said that they are hoping to be included in the ISFs to be resettled in Muzon, Bulacan.

Jennifer Cabuhat, AGOM, said that the People's Plan was prepared almost four years ago. Those that were not involved in the preparation of the People's Plan are new settlers and are not members of the People's Plan.

Engr. Lydia Aguilar said that they have a meeting with the housing agencies on the following day and they will take up the issues raised in today's meeting about resettlement.

- f. **Relocation site and schedule of relocation.** An ISF from Barangay 147 asked where the relocation site will be. She also asked when they will be resettled because their children are still studying in a nearby school. School year will end next summer.

Chairman de Guzman said that the relocation site will be in BV8 in Muzon, San Jose del Monte, Bulacan. The ISFs from Barangay 150 said that they are hoping to be resettled this December already so that they will be able to spend Christmas in their new house. Some residents said

that they already saw the site in photos while others have visited the place. They like the place and are excited to be relocated soon. Those from Barangay 147 asked that they be also included in the site visit to the site and Barangay Chairman de Guzman said he will appeal in their behalf to appropriate agencies.

DPWH thanked the barangay chairman and participants for their comments and participation to the public consultation meeting.



PAPs attending the 2nd consultation on the proposed project. DPWH representatives, headed by Engr. Lydia Aguilar, Engr. John Labilles, and Mr. Ershad Ibba presented the ESMF and the Vitas RAP. Community queried about the start of the project and the relocation schedule. PAPs expressed willingness to transfer as per government program, however, requested that they move out from their present location all together at the same time with other PAPS that were not listed in the PRRC masterlist of ISFs but were listed under DILG's OPLAN LIKAS. The Barangay leadership and the PO-AGOM want a resolution of the inclusion soonest possible time.


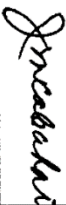



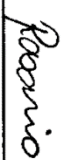

Attendance List

METRO MANILA FLOOD MANAGEMENT PROJECT, PHASE 1

Barangay 150, Tondo Manila



October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
1. JOSE EDUARDO DE GUZMAN	BRGY 150-2-13	Chairman	093359466108	
2. JOSE JEFFREY M. CABUNHAT	2011 Raxabago St. Tado Mla.	Secretary		
3. MARY GRACE SAMSON				
4. JOYNE E. ESTRELLA				
5. ALVARO R. LIRAO	ERG 150			
6. JOSE JOSEMAN B. MAGUIB				
7. ROSARIO C. CRUG	BRGY -150-2-13		09335946885	
8. MICHAEL R. CIBRAO	BRGY -150-2-13			

**PUBLIC CONSULTATION FOR THE
METRO MANILA FLOOD MANAGEMENT PROJECT, PHASE 1**
Barangay 150, Tondo Manila
October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
9. Rodrigo E. Pariz	2071 RAXABAGO TDO. MLK		09461115232	
10. Tevesa Fortuno	2071 RAXABAGO TDO MLK			Fortuno
11. Regina I. Reyes	2071 RAXABAGO ST TDO MLK			Regina I. Reyes
12. Romeo G. Fortuno	2071 RAXABAGO			Romeo
13. Pauli Ra Zar	2071 RAXABAGO			Pauli Ra Zar
14. Silvestra Amara	2071 RAXABAGO		09461115232	Amara
15. Lilia B. Colina	2071 RAXABAGO			Colina
16. JUDIOR P. LUC	2071 RAXABAGO TDO MLK		09334919977	

**PUBLIC CONSULTATION FOR THE
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Barangay 150, Tondo Manila
October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
17. Mr. Luna Montenegro	2071 Raxa Bago St			Mr. Luna
18. Consuelo B. Domason	2071 Raxa Bago St			C.B.
19. David B. Domason	2071 Raxa Bago St			D.B.
20. TERESITA FORCINO	2071 RAXA BAGO			TERESITA
21. Mary Jane O. Estrella	2071 RAXA BAGO			MJE
22. WOLANDER C. Quilit	2071 Raxa Bago			W.C. Quilit
23. Jose A. Tigre	2071 RAXA BAGO			J. Tigre
24. Manny C. De Guzman	" "			M. De Guzman

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Barangay 150, Tondo Manila
October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
25. <i>Lynedra</i>	2071 Raxabago			<i>Lynedra</i>
26. <i>Eden A Briel</i>	2071 Raxabago st			<i>E. Briel</i>
27. <i>Ramil G Fortuna</i>	2071 RAXABAGO ST			<i>RAMIL</i>
28. <i>Jennifer L. Mengano</i>	2071 Raxabago st.		09222583203	<i>JL Mengano</i>
29. <i>Jennifer F Garguao</i>	2071 Raxabago st			<i>Jennifer</i>
30. <i>Joyson Lumumba</i>	2071 Raxabago st.			<i>JLumumba</i>
31. <i>Jocelyn Perez</i>	" "			<i>J Perez</i>
32. <i>Wilmo R Villanueva</i>	2071 Raxabago st			<i>Wilmo</i>



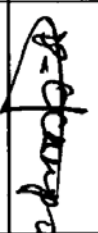
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ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
33. Jassier Quile	2071 RA 111850			Jassier
34. Vanessa Cruz				Vanessa
35. judita Cruz				J. Cruz
36. Lorna Cruz	2071 RA 111850		0917 444 534	Lorna Cruz
37. Mary Grace Lumsden				
38. Jaime Stetia				
39. Rose Ann Villanueva	" " "			R. Villanueva
40. Mary Rose A. Fortuno	" " "			M. Fortuno

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October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
41. CHRISTOPHER CUMANDA	685 VMA FOLKS ST CAG. 100. M.A.	Chief KAKKAD	09208246457	
42. Gonzalo Reyes	C-2 Capalong 1111 Brgy. 150	Driver	09090500656	
43. Arington M. Cabuhat	3071 PAXA BAGO ST. TOLD M.A.	Member		A. Cabuhat
44. Rosalyn M. Cabuhat	" Same "	Member		R. Cabuhat
45. RODRIL B. DANIIN	" " "	MEMBER	09327028343	R. B. Daniin
46. FRANCIS CORAIL	" " "	MEMBER		F. Corail
47. DAVID BOCANGO	2071, BONA BAGO	KAKKAD	09404757819	
48. Jose Maric M. Javier	2094 BATA EXT.	TRSD		J. M. Javier

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ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
49. ALLEN VILLANUEVA ESCOBAR	BRGY 150 Z-13	TANOD		[Signature]
50. Agnes Rosario Boes	BRGY 150 Z-13			[Signature]
51. Allo Demomano Francisco	BRGY 150 Z-13,			[Signature]
52. EDUARDO TRONCADO	BARANG-150	TANOD		[Signature]
53. Angelic Lumawan	BRGY 150 Z-13	TANOD		A. Lumawan
54. Sheryl P. Subaco	BRGY 150 Z-13			Shubaco
55. Rosa D. Tiuada	150 - B			R. Tiuada
56. PEMIDIOS OLUMAWAN				Lumawan

**PUBLIC CONSULTATION FOR THE
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Barangay 150, Tondo Manila
October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
57. Richard C - Cruz	9071 RAMABAGO TND MIA 150 - 2 - 13			R. Cruz
58. Analysis R. Liberao	Reg. 150-2-13			Analysis
59. Josephine Sumaras	" " "			Sumaras
60. Rosemarie Santos	" " "			Santos
61. ISABEL C. BERNARDO	2115 RAMABAGO BATO	KAGAWALAD		Isabel
62. Mary Grace DS Manat	2071 Ramabago St			Manat
63. Minerva DS. Manat	2071 Ramabago St			Manat
64. JOVITA B. Delos Santos	2071 Ramabago St			Delos Santos

**PUBLIC CONSULTATION FOR THE
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ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
65. Francis Coral Francisco	Brgy. 150-Z-13			<i>Francis</i>
66. JOHN PAUL SORIANO	Brgy 147-13	KAGAWAD	09176096977	<i>John Paul</i>
67. JOHN LABLITES	PPWA UPND - FMC	PM I	09252999444	<i>John</i>
68. ERSHAD S. IBBA	DRAHT - ESSD, Planning Service	Sociologist II	09146813437	<i>Ershad</i>
69. FLODY T. ISMUEL	Brgy. 147.		09082496949	<i>Ismael</i>
70. RONNIE J. PERIMERO	Brgy. 147		0909-8095247	<i>Ronnie</i>
71. Rhodeline Fernandez	Brgy 147		09383475401	<i>Rhodeline</i>
72. Mary Jane Ferrando	Brgy 147		09329280146	

**PUBLIC CONSULTATION FOR THE
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ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
73. Jovelyn Samson	Bayan 147	147	Jovelyn	
74. LINIE LARUM	147 H. Lopez Rd Makuhay			
75. Elizabeth Sulest	147		Shirley Francis	
76. Adela Pascua	147 H. Lopez Road		09334517149	Adela Pascua
77. Lea Santos	" " "			Lea
78. Emma B. Peralta	147 H. Lopez Tondo N.		none	Emma B. Peralta
79. Esie Gao-ang Calar	2071 Karabago St. Tondo N. 147			Esie Gao-ang
80. CHRISTOPHER DALMIRA	2071 Karabago St. Tondo N. 147			C. de Zura



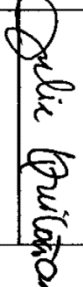
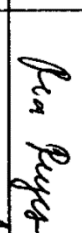




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ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
81. <i>Julif Maratig</i>	<i>2071 Karpaka St</i>			<i>[Signature]</i>
82. <i>Jec Jaring</i>	<i>DPS</i>		<i>09369840379</i>	<i>[Signature]</i>
83. <i>JAYSON UMAY</i>	<i>DPS - MALIBU</i>	<i>SNAPP</i>	<i>527-5027</i>	<i>[Signature]</i>
84. <i>BERNARD S. MENDOZA</i>	<i>DPS - MLI</i>	<i>STAFF</i>		<i>[Signature]</i>
85. <i>Era A. Abon</i>	<i>93 Bgy</i>			<i>[Signature]</i>
86. <i>Roberto L. Scullia Jr.</i>	<i>2071 Karpaka St</i>			<i>[Signature]</i>
87. <i>Edgar T. Quinto</i>				<i>[Signature]</i>
88. <i>LIRIANO DE GUZMAN</i>	<i>670 H. LOPEZ TAMP</i>		<i>09085088864</i>	<i>[Signature]</i>

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Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
89. JAY-VIN E. GAUVANI	BRGY 147, 560 H. Lopez		09354530223	
90. JOSEPH T. AQUINO	BRGY 147, 560 H. Lopez			
91. JULIE QUILTERA	BRGY 93-P		09072141281	
92. Bea Ruyra	BRGY 93		09283027807	
93. MICHAEL T. PACANZA	BRGY 147		09327215474	
94. JENNIFER TUGED	BRGY 147		09436061429	
95. FREDERICK G. MORGA	BRGY 147		09327215474	
96. FELPE G. MORGA	BRGY 147		093519779834	

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Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
97. Mara Benesa	147 510 H. Lopez Tondo Manila		09423495530	<i>Mara Benesa</i>
98. Julia Tequila	560 H. Lopez Tondo		09327215474	<i>Julia Tequila</i>
99. Josephine B. Delos Santos	2071 Rara Bagast			<i>J. Delos Santos</i>
100. NICORAC	560 H. Lopez Tondo Manila		35319521	<i>Nicorac</i>
101. Indelyn Oporda	510 H. Lopez Tondo Manila		09120574080	<i>Oporda</i>
102. Luvyvininda Puyos	510 H. Lopez Tondo Manila			<i>Luvy</i>
103. Nenita Balanza	510 H. Lopez Tondo Manila			<i>Nenita Balanza</i>
104. Shoney Gawan	507 H. Lopez Tondo Manila		090847160267	<i>Gawan</i>

**PUBLIC CONSULTATION FOR THE
METRO MANILA FLOOD MANAGEMENT PROJECT, PHASE 1**
Barangay 150, Tondo Manila
October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
105. Raymond Tolosa	Cub M. Lopez		09777426244	R Tolosa
106. Jonathan Santos	C-2 Road Capulong St. Tondo MIA			J. Santos
107. Rabelyn Aguilar	C-2 Road Capulong St. Tondo MIA		09104544074	R. Aguilar
108. Marlene Andrich	2071 Riverbay			Marlene Andrich
109. Jayson Tigue	" " "			Jayson Tigue
110. Edlenea Tigue	" " "			Edlenea Tigue
111. Jesselton A. Martinez	C-2 Capulong		09099769035	J. Martinez
112. Syrry H. Torreon	Blvd. H. Lopez Tondo MIA		0919254768	Syrry Torreon

**PUBLIC CONSULTATION FOR THE
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October 10, 2016, Monday, 8:30-10:30 AM

ATTENDANCE SHEET

	Name	Address/Office	Position	Contact Number/ E-mail Address	Signature
113.	Margie C Villanueva	Gr Cagulangan			M Villanueva
114.	Lydia C. Aguilar	DPWH-VERRE-FERRER	Engineer II	304-3813	Dr
115.					
116.					
117.					
118.					
119.					
120.					

ANNEXE: STRUCTURAL MAP AND PHOTOS WITHIN PROJECT FOOTPRINT

Raxabago bridge



Houses along Estero de Vitas near Raxabago bridge



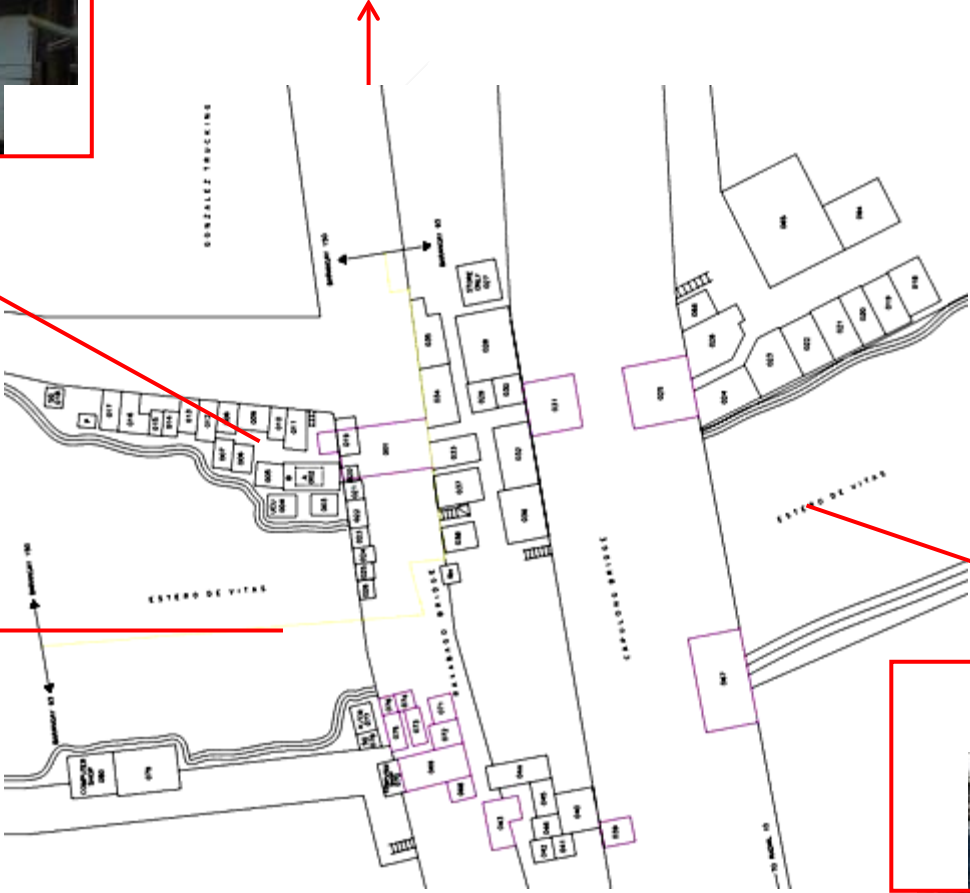
View of Estero de Vitas from Raxabago bridge



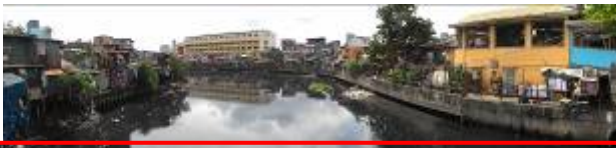
LEGEND:

- RESIDENTIAL STRUCTURE
- UNDER THE BRIDGE STRUCTURE
- SERIES STRUCTURE
- K/CR KITCHEN/COMFORT ROOM
- P PLATFORM
- RH REST HOUSE
- SO SLEEPING QUARTER
- UCU UNDER CONSTRUCTION UNOCCUPIED
- ESTERO

Map: PRRC–Census Team



View of Estero de Vitas from Capulong bridge



VITAS PUMPING STATION: TONDO, MANILA
STRUCTURAL MAP OF ISF HOUSEHOLDS

Typical exterior of house under bridge



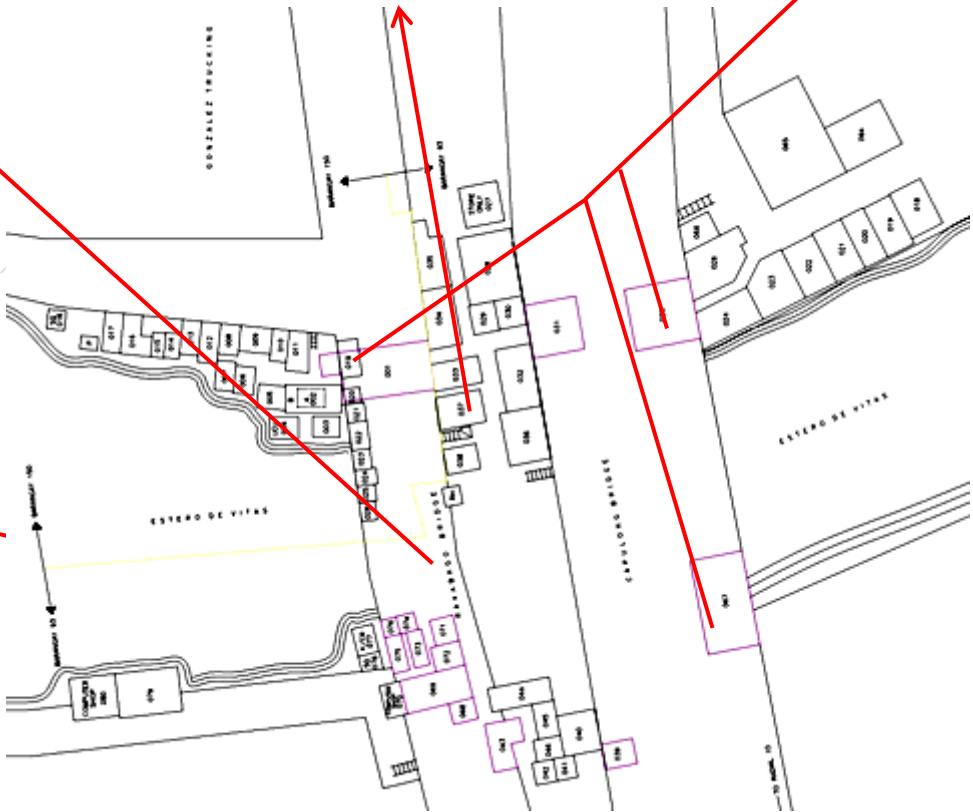
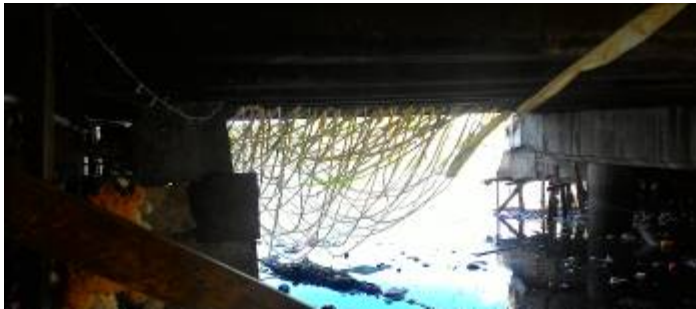
Protruding roof of houses from under Raxabago bridge



View from house under Raxabago bridge
(man scavenging trash on a makeshift boat)



Below Raxabago bridge (sausage skins hung to dry)



Settlements under Raxabago and Capulon

Interior of houses



ANNEX F. BV8/AGOM PEOPLE'S PLAN (SEPARATE PDF FILE)
