

Environmental Monitoring Report

Annual Report
January – December 2016

Indonesia: Neighborhood Upgrading and Shelter Project – Phase 2

Prepared by the Directorate General of Human Settlements, Ministry of Public Works and Housing
for the Ministry of Finance of the Republic of Indonesia and the Asian Development Bank.

NOTES

- (i) The fiscal year (FY) of the Government of Indonesia and its agencies ends on 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2011 ends on 31 December 2011.
- (ii) In this report, "\$" refers to US dollars.

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**KEMENTERIAN PEKERJAAN UMUM DAN PERUMAHAN RAKYAT
DIREKTORAT JENDERAL CIPTA KARYA
DIREKTORAT PENGEMBANGAN KAWASAN PERMUKIMAN**

Annual Environmental Monitoring Report

**Project Number ADB LOAN 3122-INO
REPORTING PERIOD : JANUARY - DECEMBER 2016**

INDONESIA : NEIGHBORHOOD UPGRADING AND SHELTER PROJECT PHASE 2 Financed by the Asian Development Bank



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Prepared by:
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PART I. INTRODUCTION

1.1 Project Information

1. Approved on 31 March 2014, NUSP2 is aimed to upgrade basic public infrastructure in slums, and contribute to meeting Millennium Development Goals (MDGs) targets for achieving significant improvement in the lives of slum dwellers (MDG target 7D) and halving the proportion of urban households without sustainable access to safe drinking water and basic sanitation (MDG target 7C).¹ The Project contributes to the implementation of Cities without Slums Program launched by the Government to address issues of the rapid urbanization.² The project covers 20 cities and improve basic infrastructure and living conditions in selected slums.

2. The project costs \$102.0 million. ADB will provide \$74.4 million from its ordinary capital resources (OCR). The Directorate General of Human Settlements (DGHS) under the Ministry of Public Works and People Housing utilizes the loan proceeds to finance (i) consulting services for project management/implementation support (ii) services related to the provision of training for community advisors, community members, local government staff and other related entities, and (iii) construction of basic urban infrastructure at slums in 20 selected cities/districts. The remainder of project costs, which is estimated at \$27.6 million, are financed from the budgetary resources of the Ministry of Public Works, the district/city governments and beneficiaries (community members). The Government covers financing charges during implementation, estimated at \$4.0 million, from its own financial resources. All applicable taxes and duties are financed from Government counterpart contributions. The Government will finance \$21.6 million equivalent (21.2% of the project cost), which consists of \$6.4 million (6.3% of the project cost) will come from the central government and \$15.2 million (14.9% of the project cost) from local governments. Project beneficiaries will provide the balance of \$6.0 million equivalent (5.9% of the project cost) as counterpart contributions to community investment and financing of houses under the new site development outputs.

3. NUSP phase 2 assists 20 cities to develop and implement inclusive pro-poor city development plans. The project improves living conditions in slum areas through (i) providing resources to local governments and communities for upgrading basic infrastructure in slum areas, (ii) strengthening planning and management capacities of local administrations for inclusive pro-poor urban planning, (iii) establishing sustainable mechanisms to engage communities in urban development planning processes, and (iv) launching public private partnerships (PPPs) to establish affordable housing areas for poor families.

4. The project has three (3) outputs to be achieved:
- (i) Output 1: institutional capacities for managing pro-poor urban development strengthened
 - (ii) Output 2: infrastructure in slum neighborhoods upgraded; and
 - (iii) Output 3: new settlements for poor families established.

1.2. Project Progress & Constuction Activity

A. Progress

5. In the end of Desember 2016, NUSP Phase 2 has elapsed time for 32 of 50 months while the disbursement has reached USD 28.384,73 (38,15%) out of total amount. The progress remains behind the project elapsed time. Loan disbursement per category as Desember 2016 as show on table :

¹ The 2015 MDG target for the proportion of the urban population living in slums is 6%; in 2011, 12.6% of the urban population lived in slums. The 2015 MDG target for the proportion of households with sustainable access to an improved water source is 75.5%; in 2011, 40.5% of urban households had access to an improved water source, 72.5% had access to basic sanitation. The proportion of households with access to safe water and basic sanitation in slum areas is assumed to be much lower.

² The Cities without Slums Program is incorporated in the National Long-Term Development Plan, 2005–2025. It aims to reduce slum areas in cities by 2025 by promoting concerted initiatives by the central and local governments, private sector, and civil society.

Table 1. Disbursement per Category in NUSP-2 (as of Desember 2016)

CATEGORY	LOAN CEILING (USD)	DISBURSEMENT (per Fiscal Year)				LOAN BALANCE (USD)
		2015		2016		
		IDR	USD	IDR	USD	
01. Civil Works	65,000,000	35,380,408,000	2,554,291.33	335,164,025,889	25,280,255.07	34,482,330.36
02. Trainings and Workshop	1,900,000	1,149,748,519	84,088.01	5,501,892,601	412,530.36	1,239,833.41
03. Consulting Services	7,500,000	14,216,797,391	1,035,610.99	35,748,311,375	2,691,946.27	2,367,303.55
TOTAL	74,400,000	50,746,953,910	3,673,990.33	376,414,229,865	28,384,731.70	38,089,467.32

6. Civil works packages (category 1) consists of 3 types of activities: 1). Community based infrastructure; 2). Complex works (skala kawasan); 3). New Site Development. Community based infrastructure packages are implemented by BKM, while complex works and NSD packages are implemented by contractors.

B. Construction Activity

7. There are 9 types of infrastructures built under NUSP-2 i.e. (1) road and bridge (including street light), (2) Communal Wastewater Treatment Plant (IPAL), (3) Water Supply Facilities (reservoir, water pump, piping plant, shallow borehole well), (4) Drainage, (5) Sanitation Facilities (public toilet and washing, septic tank, grey wastewater drainage), (6), Solid Waste Disposal Facilities (Solid waste transport Vehicle, Trash Bin, collection site of solid waste, trash bank), and (7) Firefighters.

8. In the period of January to December 2016, NUSP Phase 2 has built Community Scale Infrastructures in covering 209 neighborhoods and 33 Package of Complex Works in 20 cities/districts, while NSD is currently only the stage of land preparation and preparation of masterplan.

9. **Neighborhood Construction Activity.** Up to Desember 2016, all infrastructure packages implemented by community (BKM) have been completed 100% and a handover was made to the Satker and then handed over to the user group to be maintained. Here are the results of development by type of infrastructure:

Table 2. Built Infrastructure in Neighborhoods

NO	Infrastructure	Type of Infrastructure	Volume	Unit	Beneficiaries (households)
1	Roads, Bridges, and Pathways	Neighborhood Road	233	Km	104,871
		Street Lights	942	Unit	14,129
2	Sanitation	Drainages	204	Km	91,887
		Public toilets	46	Unit	1,385
		Communal Septic Tanks (IPAL)	44	Unit	4,395
		Solid waste facilities	2,155	Unit	64,641
3	Water Supply Facilities	Wells	46	Unit	6,925
		Public Hydrants	97	Unit	14,582
		Water pipe systems	9	Unit	1,332
TOTAL Beneficiaries					304,147

10. **Complex Works Construction Activity.** 33 complex works packages implemented by contractor have been completed 100% and Has been handed over to the local government to maintain. Here are the results of development by type of infrastructure:

Table 3. Built infrastructure in complex works

No.	Type Of Infrastructure	Volume
1.	Asphalt Road, Concrete Road	20.704 m
2.	Retaining Walls	1.940 m
3.	Bridge	3 unit
4.	Drainage	26.504 m
5.	Pump & Pump House	2 unit
6.	Solid waste	1 unit
7.	Street light	51 unit

11. Prior to approval on NUAP and CAP documents, initial screening on activities whether the activities include in the negative list or not, including land requirements for infrastructure development. All 209 NUAPs documents in NUSP-2 have been assessed and none of them identified as negative activities as described in the followings:

- (i) Avoid following sensitive areas:
 - national park, forest park, wildlife reserve, protected flora area, conservation forest, and watershed protection forest.
 - national cultural preserve, traditional/religious buildings.
 - marine reserves, coastline and dune systems, and mangrove and wetland areas.
- (ii) Prohibit the following procurement:
 - procurement of any products containing asbestos.
 - procurement of pesticides or herbicides.
- (iii) Prohibit the following activities:
 - mining or excavation of live coral.
 - construction of a road leading to protected forests.
 - production, processing, handling, storage or sale of tobacco or products containing tobacco.
 - water resources developments on rivers which flow into or out of other countries
 - alterations to river courses.
 - land reclamation larger than 50 ha.
 - new irrigation larger than 50 ha.
 - construction of water retaining or storage structures of capacity greater than 10,000 cubic meters.

In addition, for water supply and sanitation interventions shall be met:

- (i) Potable water supply from proposed sites must be free from any contamination and certified safe by the district health officer through the conduct of water sample analysis; and
- (ii) Leaching fields from latrines has to be located at least ten meters from any water supply system.

1.3. Project Organization and Environmental Management Team

A. Project Organization

12. Project organization involves government from central to local institutions. The Steering Committee for the Development of Housing and Settlement Areas (the steering committee) acts as the project oversight body. The steering committee was established through the State Minister of National Development Planning/Head of BAPPENAS's decree No. 81/M.PPN/HK/08/2011. The Deputy Minister for Infrastructure and Facilities, BAPPENAS leads the steering committee with the Secretary of the State Ministry of People's Housing (MPH) as the Secretary of the committee. The Directorate General of Human Settlements (DGHS) of the Ministry of Public Works (MPW) is the executing agency for the Project. DGHS also act as the key project implementing agency. Each participating local government will establish a local coordination office (LCO) to coordinate city and district implementation activity for the project. Each participating neighborhood establishes a BKM/CIO. The project also recruit city coordinators and community advisors (contracted under the regional project management consultants) to provide technical assistance to city administrations and communities to implement the project. To implement and manage the project, DGHS is assisted by 4

teams of consultants, i.e. the national project management consultant team at the central level, and three regional project management teams i.e. the RPMCs: (i) West Region, which will cover cities in Sumatra island, (ii) Central Region, which will cover cities in Java and Kalimantan islands, and (iii) East Regions, which will cover cities in Sulawesi, Nusa Tenggara and Maluku. Project organization is still as structured in the Project Administration Manual (PAM) (Figure 1).

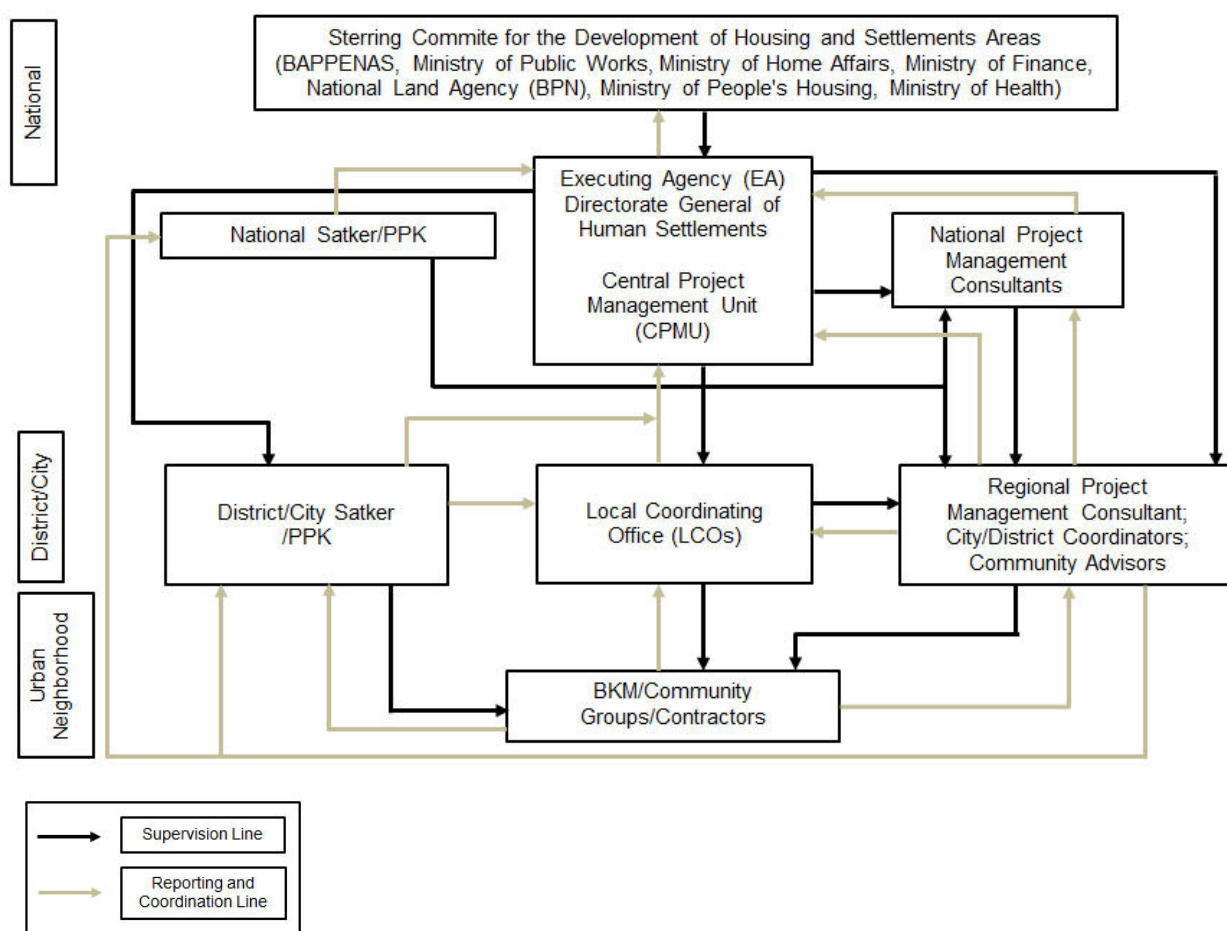


Figure 1. Project Organization

B. Environmental Management Team

13. Environment management team consists of actors at central government, district/city government, community, consultant and contractor level. The relationship between actors in the team can be seen in Figure 2.

14. PMU and Central Satker are responsible for: 1). Overall coordination, supervision, and monitoring, prepare quarter progress reports including environmental; 2). Preparation and submission of consolidated quarterly progress reports and evaluation reports; 3). Prepare guidelines for the environmental due diligence and monitoring of environmental management plan. While the LCO and District/City Satker are responsible for: 1). Provide overall coordination, supervision, monitoring and approval of village proposals including environmental checklists; 2). Prepare quarter progress reports including environmental; 3). Provide technical support to community advisors and BKMs/CIOs; 4). Carry out environmental due diligence and Monitor the implementation of the environmental management plan.

15. National Safeguard Specialist (NMC) will be tasked to assist with the dismissal of PMU and Central Satker tasks, and to conduct among others: 1). Coordinate to various parties involved at the central level; 2). Reviewing the screening environmental checklist, UKL-UPL, SPPL and other related documents; 3). Review the monitoring and evaluation guidelines developed under the national program and work with evaluation specialists to ensure appropriate and adequate environmental

indicators will be included in the Monitoring and Evaluation (M&E) Framework; 4). Work with the regional environmental specialists (RMC) to ensure that adequate environmental indicators will be developed in the detailed monitoring plans and overall project evaluation indicators to ensure that adequate data will be collected; 5). Review the existing relevant implementation guidelines to identify any areas that need improvement for better environmental management and develop specific recommendations; 6). Work with the regional safeguards specialists to develop appropriate training programs and materials; and 7). Review environmental monitoring reports and prepare a consolidated reports to be included in the project quarterly progress reports.

16. Regional Safeguard Specialist (RMC) will be tasked to assist with the dismissal of LCO and City Satker tasks, and to conduct among others; 1). Reviewing the screening environmental checklist, UKL-UPL, SPPL and other related documents; 2). Assist Satker & LCO to prepare Environmental Management Effort (*Upaya Pengelolaan Lingkungan* [UKL]) and Environmental Monitoring Effort (*Upaya Pemantauan Lingkungan* [UPL]), in cases where IEE is required and assist LCOs in obtaining approval on the UKL/UPLs by the district government in charge of environment; 3). Work with the city coordinator and community advisors to adjust any environmental assessment questions to reflect location specific environmental conditions and develop a standardized detailed monitoring schedules and inspection formats; 4). Work with the national safeguards specialists to develop environmental safeguards and awareness building activities; 5). Provide training to community advisors on the environmental screening (the use of checklist system); 6). Provide technical inputs to city coordinator, others specialist and community advisors in the environmental assessment and technical proposal formulation processes to ensure that adequate environmental considerations and site specific mitigation measures in the design of interventions and operation and maintenance; 7). Supervising the screening process of the environmental checklist, monitoring the physical implementation in the field to ensure safeguard management in accordance with the provisions and the EMP; 8). Prepare environmental monitoring reports.

17. BKM and contractors as implementors of infrastructure development are required to enforce provisions on environmental safeguard management as defined in guidelines, impact identification and mitigation and other safeguard documents. Regular supervision of safeguard implementation at community level will be done by community advisor, while safeguard implementation for complex work package is done by city coordinator and supervisory consultant (recruited by city satker with funding source from local government). Safeguard specialists conduct comprehensive oversight based on reports from the city coordinator and conduct quotation tests for locations requiring closer assistance.

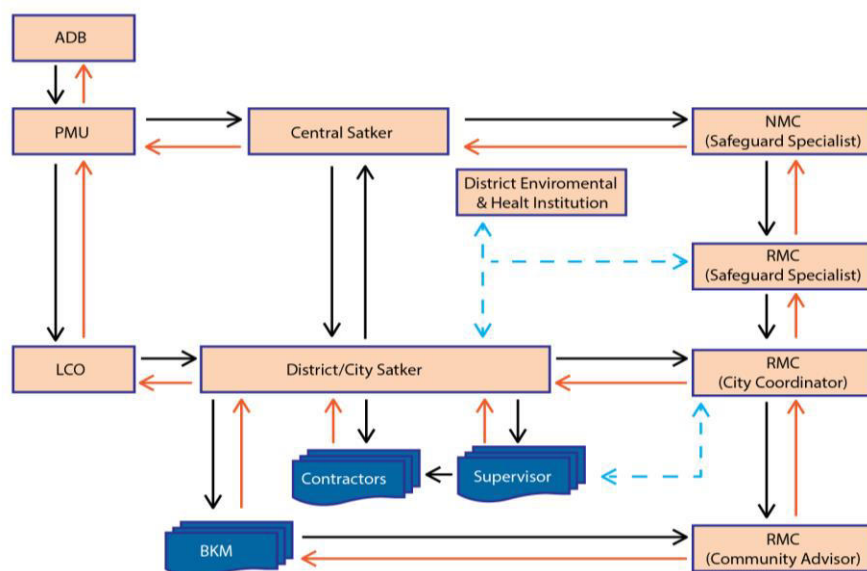


Figure 2. Environmental Management Team

PART II. ENVIRONMENT MONITORING

18. Overall, it is expected that the infrastructure upgrading activities will create positive impacts on the environment and improve the livelihoods at slum communities. The environmental impacts associated with the upgrading activities are temporary and related to the implementation of the actual civil works. Some of the environmental and social impacts that need to be anticipated, and their fulfillment status are shown in the table below:

Table 4. Environmental and social impacts

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
Location and Design				
All Interventions				
Environmental sensitive areas <ul style="list-style-type: none"> No subprojects are located within or adjacent to the sensitive areas as described in the environmental criteria for sub-project selection described in this document. 	<ul style="list-style-type: none"> Environmental screening criteria included in the environmental assessment and review framework will eliminate any neighborhood infrastructure located in environmentally sensitive areas. 	Community advisors, BKM/CIO	Environmental assessment checklists	<ul style="list-style-type: none"> - Screening that has been done is in accordance with the provisions - No screening results affecting sensitive and forbidden areas
Road and Bridges				
Soil erosion <ul style="list-style-type: none"> Rehabilitation could cause soil erosion 	<ul style="list-style-type: none"> All road cuttings and embankment fills will incorporate soil and slope stabilization measures, vegetation on the shoulders and adequate drainage provisions; construction and major earthworks during the rainy season will be avoided. 	Community advisors, BKM	Approved design of road works in vulnerable areas	Design has been verified and Ensured All road and bridge construction sites in a safe location from erosion. Implementation of infrastructure carried out during the dry season
Construction Materials <ul style="list-style-type: none"> Excavation cause erosion and siltation in streams mined for gravel; damage aquatic ecosystems 	<ul style="list-style-type: none"> Construction materials will be procured from local shops Permission from the district government (environment) is required to excavate sand from 	Community advisors, BKM, city/district government (environment)	Approved drawings and budget	It has been set in the guidelines to prioritize local materials and purchased to suppliers who have a business license.

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
	streams.			
Drainage/Flood Control				
Construction Materials Excavation cause erosion and siltation in streams mined for gravel; damage aquatic ecosystems	<ul style="list-style-type: none"> Construction materials will be procured from local shops Permission from the district government (environment) is required to excavate sand from streams. 	Community advisors,	Approved drawings and budget	- It has been set in the guidelines to prioritize local materials and purchased to suppliers who have a business license.
Water Supply and Sanitation				
Water source quality <ul style="list-style-type: none"> Contamination of drinking water sources due to inadequate or inappropriate location 	<ul style="list-style-type: none"> Screen area for flood free Conduct aquifer quality sampling prior to commencement of drilling For a deep well, obtain permit from district government (environment) prior to commencement of drilling Locate sanitation facilities with adequate distance (at least 10 m.) to wells 	CIO, Community advisors, city/district government (health), city/district government (environment)	Approved drawings, Environmental screening checklist, Permit from district government	- There are no deep wells implemented by NUSP. The need for deep wells will be the responsibility of local government. All sanitation facility building sites to be within 10 meters of the well have been applied
New Site Development (Housing sites)				
Construction Materials Excavation cause erosion and siltation in streams mined for gravel; damage aquatic ecosystems	<ul style="list-style-type: none"> Construction materials will be procured from local shops Permission from the district government (environment) is required to excavate sand from streams. 	Contractors, city/district government (environment)	Approved drawings and budget	- It has been set in the guidelines to prioritize local materials and purchased to suppliers who have a business license.
Street Lighting				
Improper installment of electricity poles may create danger to residents	<ul style="list-style-type: none"> Consult the national electricity company (PLN) during the design and installment of 	CIO, community advisors, city/district government	Approved drawings and budget	Coordination with PLN has been carried out prior to commencement of activities.

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
	the system Request frequent control by the PLN on the lighting system			
During Construction (all interventions)				
Dust and noise • Temporary dust and noise hazards	<ul style="list-style-type: none"> regularly water down road surfaces and provide covers to trucks and on loose materials, reinstate vegetative cover on all bare surfaces upon completion, maintain construction equipment in good condition, and limit night time work. 	BKM/CIO, Community advisors, city/district consultants	Quarterly project progress reports by CPMU, Reports of ADB review missions	Infrastructure development activities are classified as simple jobs, so they do not exceed the threshold of air quality and noise
Soil and Land				
• Damage to agricultural land, river banks, public spaces, and other nearby areas by disposal of excavated spoil, liquid and solid wastes.	<ul style="list-style-type: none"> compacting and protecting exposed soil, replanting areas where the vegetation has been damaged, disposal of excess earthfill material in designated areas, appropriately collecting and disposing of solid and liquid wastes. 	BKM/CIO, Community advisors, city/district consultants	Quarterly project progress reports by CPMU, Reports of ADB review missions	It is ensured that all development activities do not damage agricultural land, crops, and no excessive material accumulation and no impact on solid and liquid waste.
Surface and groundwater				
• Water contamination due to excavation, disposal of wastes	<ul style="list-style-type: none"> obtaining approval from responsible authority for removal of any sand, gravel, and rock materials from river beds; disposal of solid and liquid wastes; provision of proper sanitation in work camps, 	BKM/CIO, Community advisors, city/district consultants	Quarterly project progress reports by CPMU, Reports of ADB review missions	No waste material is discharged into water bodies, if there is certainly permission from the authorities - Ensure proper functioning of solid and liquid waste, so that no waste is not wasted

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
	ensuring that no untreated effluents reach surface or groundwater.			
Health and safety				
<ul style="list-style-type: none"> • Safety hazard to workers, locals and traffic 	<ul style="list-style-type: none"> • install barrier fencing around construction site, • control access of unauthorized persons to site, and • provide first aid and safety training to workers and drivers. 	BKM/CIO, Community advisors, city/district consultants	Quarterly project progress reports by CPMU, Reports of ADB review missions	<ul style="list-style-type: none"> - Ensure there is a hint or ban to enter the project area if not concerned - Ensuring workers' safety protection
During Operation				
Road				
Air quality and noise <ul style="list-style-type: none"> • Increase dust, emission, and noise due to increased volume of traffic as a result of improved road condition 	<ul style="list-style-type: none"> • No specific measures are proposed because the increase in emission, dust, and noise is not expected to be significant. 	N/A	N/A	N/A
Water Supply				
<ul style="list-style-type: none"> • Drinking Water contamination • Contamination of drinking water due to inadequate maintenance and 	<ul style="list-style-type: none"> • Conduct inspection and water quality monitoring • Inspect periodically to assure drainage conditions around water point do not cause sanitary problem 	BKM/CIOs, Department of Health	Monitoring reports	- Periodic inspection and monitoring of water quality, as well as ensuring no sanitation issues
Potential depletion of ground water resources	<ul style="list-style-type: none"> • Locate new wells at least 100 meter from existing wells. • Limit the extraction capacity. 	BKM/CIOs, Community advisors, LCO	Monitoring reports Project environmental monitoring system (to be developed, part of the project information management system)	Has been verified and there is no adjacent well
The increase in water supply use will	Improve the sanitation/drainage network to	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project	Always monitor drainage channels and

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
increase waste water discharge.	accommodate an increased water discharge (in most cities in Indonesia, the drains are also used to collect waste water from houses).		environmental. monitoring system)	ensure proper functioning
Sanitation Facilities				
Ground water infiltration	Toilets are to be connected to septic tanks or sewerage system in areas where groundwater table is considered deep (more than 8 meters).	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project environmental. monitoring system)	The toilet channel is connected to the septic tank and ensures the depth of the channel is met
Risk of flooding during rainy season	Site drainage included as part of the design to capture and drain any overtopping during rainy season.	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project environmental. monitoring system)	A design calculation is performed to ensure that the drainage channel is functional and can accommodate the water according to the discharge
Odor nuisance to houses (due to improper maintenance)	Training for facility operators; user fees are to be collected to pay for the operation and maintenance.	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project environmental. monitoring system)	KPP training has been carried out and motivated communities and local governments to provide costs for operations and maintenance
Drainage/Flood Control				
Potential for increase in flooding areas adjacent to project neighborhoods due to additional run off	Integrated planning to ensure that the capacity of the bigger drainage system (primary network) is sufficient.	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project environmental. monitoring system)	Planning has taken into consideration the alignment so that the drainage network system can work optimally
Disposal of garbage to drains may cause flooding, mosquito breeding, and damage health.	CIOs are to ensure the regular clean-up of drains. Operation and maintenance will be included in the community action plan.	BKM/CIOs, Community advisors, LCO	Monitoring reports (Project environmental. monitoring system)	Perform maintenance and maintenance periodically by involving the local community
Solid Waste Management				
Additional local	Additional budget	City	Monitoring	The city / regency

Anticipated Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Status
solid waste collection within the project neighborhoods will require the cleanliness agency (<i>Dinas Kebersihan</i>) to dispose additional solid waste, which may put further pressure to the agency throughout the city.	and staff to be provided by the city/district to anticipate the workload increase.	administration, LCO	reports (Project environmental monitoring system)	government provides funding at least 10% to support the implementation of activities
Odor from solid waste temporary disposal site	Frequent collection by the <i>dinas kebersihan</i> . Designs are to include measures to control odor and vermin. Ensure that drains are available for leachate catchment.	BKM/CIOs, City administration, LCO	Monitoring reports (Project environmental monitoring system)	Coordinate with the cleanliness agency to ensure that odors are always in control due to waste disposal
Continued poor solid waste management may block drainage channels, road and pathway and creating health hazard	Enforcement of operation and maintenance arrangements that have been agreed in the community action plan. Organize weekly or monthly activities (<i>kerja bakti/gotong royong</i>) to clean up drainage channels.	BKM/CIOs, City administration, LCO	Monitoring reports (Project environmental monitoring system)	
New Site Development				
Within the site locations, anticipated impacts will be similar to impacts under each infrastructure component (roads, solid waste etc.)	The detailed potential impacts and mitigation measures of NSD will be prepared in the initial environmental examination (IEE). IEE will be part of the NSD proposal.	LCO, city administration, NSD contractors	NSD proposal, project monitoring system	The IEE and the NSD proposal have been finalized.

19. The physical environmental monitoring is carried out intensively by Community Advisors, City Coordinators and LCO / Satker together with monitoring of infrastructure development. Safeguard Specialist is also involved in monitoring at several locations with them. Infrastructure Development undertaken does not result in significant impacts and can still be mitigated by mitigation measures. Both BKM and Contractor have implemented efforts to mitigate the impact of social and environmental

management, among others, in the form of safe material placement, provision of safety signs, maintaining cleanliness at the end of each working day, etc.

20. The loss of the average crop is a relatively small number of trees, because the infrastructure built is simple work. Generally occurs in road widening, the impacted tree is still young with small diameter size. To replace the affected vegetation / tree is replanted at the agreed place. No productive agricultural land is affected.

21. Increased levels of dust, noise and vibration occurs during the implementation of Road Improvement, Bridge and Drainage. The resulting impact is temporary with a small volume. Mitigation measures carried out in the form of regular watering of roads, activities not conducted during public breaks, Installation of road markings and temporary shifting roads, especially for the construction of bridges. Temporary water transfer / temporary shelter.

22. Decrease of groundwater quality caused by leakage / blockage of sewer from Sanitation Infrastructure such as; Toilets, latrines, septic tank, household sewage channels do not occur. Because the built facilities have been in accordance with the established technical standards. However, it is still necessary to do mitigation such as; The location of the septic tank is placed at least 10 m from the water source and located at the lower ground elevation of the settlement, the piling of the pipe so as not to break easily and undergoing periodic groundwater quality testing.

23. Odor Pollution from waste containers at collection sites and garbage scattered at the time of transportation. The impact will last longer if the waste is not sorted first. In addition, containers and fleets of garbage transport in the form of Motor garbage / wagon garbage given cover.

PART III. ENVIRONMENTAL MANAGEMENT

24. The Environmental Protection and Management Law categorizes activities/projects into three types: (i) projects requiring an EIA report (*Analisis Mengenai Dampak Lingkungan*, AMDAL); (ii) projects requiring Environmental Management Effort (*Upaya Pengelolaan Lingkungan*, UKL) and Environmental Monitoring Effort (*Upaya Pemantauan Lingkungan*, UPL); and (iii) projects that do not require AMDAL or UKL/UPL. The Law retains the requirements that any parties whose activities are likely to have a significant impact on the environment, should prepare and submit an environmental impact assessment (EIA) to the relevant authority for approval or recommendation. Article 23 of the Law sets out the criteria for any activity that requires an *Analisis Mengenai Dampak Lingkungan*, AMDAL/(the equivalent of ADB's EIA). If an activity does not qualify for the criteria set out in article 23, the initiating party will be required to prepare an environmental management efforts (*Upaya Pengelolaan Lingkungan*, UKL) and Environmental Monitoring Effort (*Upaya Pemantauan Lingkungan*, UPL) – similar to the ADB's IEE. If its activity/project does not require either the AMDAL or the UKL/UPL, the initiating party should prepare and submit a statement of readiness to manage and monitor the environment (*Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan*, SPPL).

25. NUSP-2 activities that have been implemented are in a safe location, not in a protected area so there is no specific management action to be performed. Besides, it has also followed environmental regulations, however, for the activities of FY 2016 not all community infrastructure have implemented the applicable environmental regulations as above mentioned. This is due to the low understanding of BKM in safeguard management.

26. Monitoring the physical environment is expected to involve the District Health Office. However, this activity has not been realized because of the busyness that can not be abandoned. It is hoped that further physical environmental monitoring can be involved.

PART IV. KEY ENVIRONMENTAL ISSUES & ACTIONS

27. Based on compliance monitoring, the key environmental issues shall be addressed for the further actions as follows:

- a. Environmental Management Plan (EMP) need to be improved to ensure effective monitoring
- b. Need to strengthen the substance of social and environmental impact management to CA, BKM and Government Staff.
- c. Need to strengthen coordination with environmental and health agencies to engage in monitoring.

28. In order to minimize issues that emerged in the implementation of FY 2016, the following Table describes environmental monitoring schedule for safeguard in 2017.

Table 5. Monitoring Schedule For Safeguard 2017

No	Activity	Year 2017											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.	Strengthening of safeguard substance at LCO levels												
2	Strengthening of safeguard substance at RMC and CC levels												
3	Strengthening of safeguard substance at BKM levels												
4	Preparation of NUAP, RKM, DED and RAB												
5	Initial screening of social and environmental safeguards												
6	Strengthening of safeguard substance at Government Staff												
7	Preparation of UKL-UPL/ SPPL												
8	Civil Work Implementation												
9	Safeguard and Infrastructure Monitoring												
10	Safeguard Evaluation												
11	Preparation of safeguard report :												
	1. Quarterly Report												
	2. Annual Report												

DOCUMENTATION

	
<p>Prohibition passes by</p>	<p>Reminded to use safety equipment</p>
	
<p>Pemberitahuan untuk melintas dengan hati-hati</p>	<p>Pemberitahuan untuk melintas dengan hati-hati</p>
	
<p>Notice to pass carefully</p>	<p>Notice to pass carefully</p>