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NEP: Kathmandu Valley Water Supply Improvement Project – Additional Financing – Repair and Maintenance of Leakage/Breakage in existing network during commissioning and testing of Integrated network to reduce NRW (Lot No. 1, 2 and 3)

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CURRENCY EQUIVALENTS

(as of 27 December 2018) Currency unit = Nepalese rupee (NRs) \$1.00 = NRs112.088 NRe1.00 = \$0.0089

ABBREVIATIONS

ADB	-	Asian Development Bank
BDS	-	Bulk Distribution System
DMA	-	District Metering Area
DNI	-	Distribution Network Improvement
DOR	-	Department of Roads
KUKL	-	Kathmandu Upatyaka Khanepani Limited
KVWSIP	-	Kathmandu Valley Water Supply Improvement Project
MWS	-	Ministry of Water Supply
MWSP	-	Melamchi Water Supply Project
PID	-	Project Implementation Directorate
SPS	-	Safeguard Policy Statement, 2009
SRT	-	Service Reservoir Tank

WEIGHTS AND MEASURES

- km kilometer
- m meter
- ft² square foot
- km² square kilometer

NOTES

In this report, "\$" refers to United States Dollars.

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I. INTRODUCTION

A. Background

1. Kathmandu Upatyaka Khanepani Limited (KUKL) is responsible for water supply mainly in 5 municipalities namely Kathmandu Metropolitan City, Lalitpur Metropolitan City, Bhaktapur, Madhaypur and Kirtipur Municipalities and other 18 adjoining Municipalities of Kathmandu Valley. The present population within the KUKL service area is 2.8 million, and the estimated average demand of drinking water is about 415 million liters a day (MLD), whereas the production is about 150 MLD in rainy season and 90 MLD in dry season in a day. The water supply system in Kathmandu Valley is fed by 35 surface sources and 96 deep tube wells. Water is treated in 21 Water treatment plants situated in different locations of the Valley. Treated water reaches to about 2.8 million populations through approximately 1650 km pipelines, 207,000 private and 1,196 public taps. The principal activities of KUKL are the following:

- Production and distribution of water to people of Kathmandu Valley such as tube well development, water treatment plant improvement, transmission main improvement, distribution system improvement, bulk distribution system (BDS) and distribution network improvement (DNI) works;
- (ii) Customer meter reading;
- (iii) Repair and maintain Leaks in production and distribution lines including tap connection;
- (iv) Distribution of water through Tankers;
- (v) Bill collection of water and sewerage charges;
- (vi) Laboratory tests; and
- (vii) Repair and maintenance of Machines, tools and equipment used for production and distribution of water through electromechanical branch.

B. Existing Conditions of Water Supply Infrastructure

2. The Kathmandu Valley water distribution network system is a very complex and ad-hoc water network system developed more than 100 years ago. The present population of the valley's water supply service area is estimated at 2.7 million, with a water demand of 195 MLD. The total water production in the wet and dry seasons is about 140 and 100 MLD, respectively. The resultant water supply is constrained and intermittent. People in most of the areas hardly get 1 hour's supply every fourth day. At present, the water supply system has 35 surface sources and more than 96 tube wells located in different parts of the Valley. Deep tube wells are the main means of extracting groundwater for use in the water supply system. Out of 96 existing deep tube wells, only 75 are in operation at present. The sources feed into 21 water treatment plants with a combined treatment capacity of 85 MLD and 42 service reservoirs with a combined storage capacity of approximately 40,800 m³. Water is distributed to about 2 million consumers through about 1,650 km of pipelines, 207,000 private connections, and 1,196 public stand posts. The system is being managed by 9 branch offices of KUKL, with 5 of them for the Kathmandu Metropolitan City area and adjoining municipalities, 1 for Lalitpur and adjoining municipalities, 1 for Bhaktapur and adjoining municipalities, 1 for Kirtipur and adjoining municipalities, and 1 for Madhyapur Thimi and adjoining municipalities.

3. The ground water is depleting due to over-extraction, and surface water catchments are becoming degraded. There are many problems in the distribution system besides deficiency in water. These include aging pipes, high percentage of leakage and wastage, illegal and spaghetti

connections, unscientifically laid pipelines, supply contamination, and many others. Rapid and largely unplanned urban growth, high population density, lack of sustainable water sources, and inadequate past investments in water supply infrastructure have resulted in abysmally poor availability and quality of drinking water.

4. The demand of drinking water in the Valley is increasing with the increase in population, while the existing water supply is not sufficient in terms of both quantity and quality. Water supply is intermittent from one to six hours in every three days in wet season up to every ten days during dry season. Hence, reasons for water shortages are mainly less production of water, growing demand due to the fast-growing population, rising use of water due to rise in the living standards of the people, increasing commercial and industrial activities including tourism, wastage and high leakage of water in the system etc. KUKL is facing a problem of non-equitable distribution from existing available sources due to its unplanned distribution network. Physical loss in network is also very high due to the age of the network.

C. Project Rationale

5. The Kathmandu Valley Water Supply Improvement Project (KVWSIP) known as Melamchi Subproject-II is Government of Nepal's "National Pride ". It is under implementation of Government of Nepal with the financial assistance of ADB. The executing agency for the project is Ministry of Water Supply and Sanitation (MWSS) and the implementing agency is KUKL. The project is ongoing since 2001 to fulfill water supply needs of citizens of Kathmandu Valley. The project is mainly working on establishing several layers of distribution network such as Bulk Distribution System (BDS), Distribution Network Improvement (DNI), District Metering Area (DMA) and Service Reservoir Tank (SRT) and completing previously ongoing projects. Until now, most of the efforts have been directed towards capital expenditure in some key hydraulic infrastructures, namely:

- (i) The Melamchi Water Supply Project, an inter-basin water transfer to reduce and eventually solve the water scarcity in the Valley;
- A new primary network for water supply, called Bulk Distribution System (BDS), consisting of a large-scale looped network with large-diameter pipes (>300 mm); and
- (iii) Modernization and improvement of existing distribution networks and connections (called distribution network improvement or DNI).

6. New water reservoirs across the city. ADB approved the Kathmandu Valley Water Supply Improvement Project (KVWSIP) on 16 September 2011 and the project became effective on 7 February 2012. The \$130 million project complements past and on-going efforts to improve access, efficiency, and reliability of water supply services to the residents of the Kathmandu Valley. The objective is to improve water availability in 80% of the operator's service area. The project complements other on-going ADB financed projects focusing on source augmentation and transmission as well as wastewater collection and treatment. While the on-going Melamchi Water Supply Project (MWSP – Loan 1820) is investing largely in source augmentation and construction of the Melamchi tunnel with expected completion by mid-2019, and the on-going Kathmandu Valley Wastewater Management Project (KVWMP – Loan 3000) focuses on wastewater management, the KVWSIP (Loan 2776) focuses on distribution of water from the treatment plant to consumers, and improvement of efficiency and service delivery.

7. The purpose of the proposed additional funding is to improve the water supply system service delivery and, to ensure compliance with KUKL's operating license. The additional

financing is required to (i) increase the coverage and benefits to the people and the related projects, (ii) further strengthen the governance and performance of the Kathmandu Valley water sector institutions, and (iii) to meet the financing gap of the original project.

8. The additional financing will (i) increase the number of beneficiaries with access to potable water and improved services in the Kathmandu Valley's service area through bulk distribution systems (BDS) and distribution network improvements (DNI); (ii) replace more of the existing, dilapidated network, with estimated average physical losses of more than 40%; (iii) double the current capacity of the Sundarijal water treatment plant to 170 million liters per day (MLD), the volume to be transported from the Melamchi River; (iv) plan and prepare the future investments required to meet 2025 demand; and (v) strengthen the Kathmandu Valley water sector institutions.

9. The sub project will increase the number of beneficiaries with access to potable water and improved services in the Kathmandu Valley's service area through replacement of the existing, dilapidated network, with estimated average physical losses of more than 45%. The impact will be sustainable water supply services for residents of Kathmandu Valley. The outcome will be improved access, efficiency, and reliability of water supply services to residents of Kathmandu Valley, including poor women and men.

10. After the completion of construction of the Melamchi Tunnel, KUKL is ready to receive water from Melamchi River, which is to be supplied to the people of Kathmandu valley from new distribution networks in most of the areas and existing networks are also to be used in the remaining areas to enhance the water supply coverage. Some fund from the additional financing (KVWSIP-AF) from the Asian Development Bank (ADB) is proposed to be used to repair and maintain the leakages/breakages in existing networks during commissioning and testing of MWSP to reduce NRW.

D. Scope of this report

11. Land acquisition activities are not associated with repair and maintenance of leakages/breakages in existing KUKL networks during commissioning and testing of integrated networks to reduce NRW. The physical works in this subproject will involve the repair of leakages and breakages in the existing pipeline network which are laid along the public land and RoW in Kathmandu Metropolitan city ward numbers 1, 2, 3, 4, 5, 6, 7, 8, 9,10, 11,12,13,14, 16, 17,18,19, 20, 21, 22 (40% Tripureswor branch and 60% Chhetrapati branch), 23, 24, 25, 26,27, 28, 29, 30, 31, 32; and ward numbers 1 to 27 of Lalitpur Municipality. No adverse impacts are anticipated on livelihood and income generating activities of the people living in the proposed areas. After repairing leakages and breakages in the existing distribution networks, during commissioning and testing of integrated networks while supplying water from MWSP will reduce NRW and will enhance water supply services in Kathmandu and Lalitpur Municipalities.

II. SUBPROJECT DESCRIPTION

A. Proposed Components

12. This project covers the repair and maintenance of estimated 2862 leakages in Lot-1, 2452 leakages in Lot-2 and 1276 leakages in Lot-3 in the existing distribution networks in one year. The areas covered by this project during the commissioning and testing of water from MWSP are Mahankal Chaur, Tripureshwor, Baneshwor, Maharajganj, Kamaladi, Chhetrapati, and Lalitpur Branch Offices. The number of leakages is estimated based on the data received from the concerned branch offices for the last three years. The key activities of the project can be summarized as follows:

- (i) Leak Detection;
- (ii) Repair of valves (gland packing, nuts and spindles);
- (iii) Replacement of valves;
- (iv) Repair of leakages in pipe joint;
- (v) Repair of leakages in pipe crack/hole;
- (vi) Repair of leakages from house connections;
- (vii) Earthwork in filling of excavated point with required compaction; and
- (viii) Reinstatement of gravel road/ black topped road.

13. The main objective of this package is to repair or maintain the damaged or leaked pipe or pipe fittings. The contractor will repair the leaks within 24 hours of notification of the problems or complaints in coordination with KUKL/ Branch Office staffs.

B. Salient features of the Subproject

14. The major work in this project will be replacing the faulty valves and replacement of damaged pipes, fittings and accessories. Thus, different types of pipes like DI, GI, and HDPE pipes and fittings will be used. If needed for construction of the valve chambers, concrete and reinforcement will also be used. In order to reinstate the existing infrastructure, asphalt concrete, stones, bricks, and reinforced concrete will be used wherever required. Sand and earth from other sources also will be used for packing and cushioning of pipes and valves in some of the locations. The detailed description is available in the technical specification section of the bid and contract documents. The civil works will involve small areas (not more than 10,000 ft²) and repairs to existing infrastructure to improve current conditions. Table 1 provides salient features of the subproject.

Project Location	KUKL Branches and Service area/ward no.	Description	Details
Project	Mahankalchaur (4,5,6,7 and	Repair of Sluice Valves	3-16 inch
area of Lot.1	8) Baneswor (9,10,29,30,31	Replacement of Sluice Valves	Replacement of SV, Rubber Washer and Nut Bolt
	and 32)	Repair of Joints and Interconnection	Cutting and Installation of Socket, Union and Nipple

 Table 1: Salient Features of proposed rehabilitation works

Project Location	KUKL Branches and Service area/ward no.	Description	Details
	Tripureswor Branch (11,12,13,14,20,21,22 (40%) and 23)	Repair of Pipe Cracks with replacement of pipe Service Pipe Main Connection Leakage	Cutting and Installation of Mechanical Coupling Plugging Old and making new hole
Project area of Lot. 2	Maharajgunj (1,2,3,16,26,27 and 28) Chhetrapati (17,18,19,22 (60%),24 and 25) Kamaladi Branch	Repair of Sluice Valves Replacement of Sluice Valves Repair of Joints and Interconnection Repair of Pipe Cracks with replacement of pipe Service Pipe Main Connection Leakage	3-16 inch Replacement of SV, Rubber Washer and Nut Bolt Cutting and Installation of Socket, Union and Nipple Cutting and Installation of Mechanical Coupling Plugging Old and making new hole
Project area of Lot. 3	Lalitpur Branch ward no 1 to 27 (Lalitpur Municipality)	Repair of Sluice Valves Replacement of Sluice Valves Repair of Joints and Interconnection Repair of Pipe Cracks with replacement of pipe Service Pipe Main Connection Leakage	3-16 inch Replacement of SV, Rubber Washer and Nut Bolt Cutting and Installation of Socket, Union and Nipple Cutting and Installation of Mechanical Coupling Plugging Old and making new hole

C. Socioeconomic Profile

15. **Description of project area.** The project area covers Kathmandu Valley (Kathmandu, Lalitpur and Bhaktapur districts). The Valley is the country's economic and political capital. It now comprises 21 municipalities across 570 square kilometers and contributes about one-fourth of the national gross domestic product. The average population growth-rate in the Valley from 2001 to 2011 was 5.3%, which is more than three times the national rate of 1.4%. The 2011 population of Kathmandu Valley was approximately 2.5 million with an additional floating population of 1 million and is likely to grow at current rates to over 4 million by 2025.

16. **Demographic composition.** There are 436,344 households in Kathmandu district where the population of male and female population are 913,001 and 831,239 and total population is 1,744,240 and average households' size 4.00 (census, 2011). The total population of service area is 1,003,285 in which male population is 533,127 and female population 470,158 and 354,764 households (census, 2011).

17. **Social classification**. The caste composition of project beneficiaries is heterogenous. Newar community comprises the prominent inhabitants of Kathmandu valley. In terms of

caste/ethnic composition of project beneficiaries, 23.51% are Brahmin, 21.96% are Newar, 19.93% are Chhetri, 8.15% are Tamang and 4.01% are Magar. The percentage of Hindu followers is 91% and others are about 9%. In the Kathmandu Valley, Newar are considered an advanced indigenous people group. This group comprises about 41% of the valley population.

18. **Age**. The economically active age group between 15 and 59 years constitutes about 73.25% of the affected population. The other main age group 5 to 14 years is about 23% and 60 years over groups constitute about 4.75% of the affected population. There are no significant differences in the percentage of age distribution in package area.

19. **Health**. The availability of health services in Kathmandu valley is satisfactory. The government and private sector are operating health services in this service area. Altogether 24 government health centers, 555 private sector hospitals and 285 private clinics are operating in the area. In the service area, 99% population has toilet facility whereas 1% practices open defecation. Gastric diseases, asthma, fever and jaundice are common among the people living in service area.

20. **Education**. The Kathmandu Valley has long been considered the center for higher education in Nepal. The literacy rate of Kathmandu district is 95.2%. The number of educational institutions in Kathmandu Valley is 826 schools and 186 college and university level institutions, whereas in the project area, there are 45 schools and 21 colleges. (District Profile, Kathmandu district, 2011).

21. **Employment**. The economy of the Kathmandu Valley is based on trade, commerce, and manufacturing industries like carpets and garments. Other economic sectors are agriculture, education, transport, hotels, and restaurants. Tourism is also a key component of the valley's economy. However, in the rural areas, the economy is still based on agriculture. The National Living Standard Survey 2010-2011 indicates that about 55.7% of the economically active population of 10 years of age and above in urban Kathmandu Valley is employed in the agriculture and non-agriculture sector, of which only 17% depends on farm activities. It means that about 83% of this group of population depends on non-farm activities such as manufacturing (24.0%), trade (42.6%), service sectors (28.6%), and other works (4.8%).

22. **Economically active population**. About 68.72`% of the total population in the valley aged 16 and above are economically active (Census 2011). Majority of the population of the Kathmandu Valley are engaged in agriculture and forestry (36%). The other major industries are manufacturing (17%), commerce (16%), construction (4%), and transportation/communication (3%).

23. **Slums and squatter settlements.** The rapid population growth has created a number of slums and squatter settlements in the Kathmandu Valley. The numbers of slums and squatters are comparatively low in KUKL service area. 100% population will be benefitted by project including poor. KUKL has been supplying water to slum people through community tap/plastic tanks. Distribution is universal in project area.

24. **Poverty.** The National Living Standard Survey 2010/11 indicates that about 25.16 % of the population of Nepal lives below the poverty line. According to the NLSS Survey 2011, an individual is considered poor if his/her per capita total annual consumptions is below NPR. 19,261. It has also categorized the food items and non-food items and the expenses required to be above the poverty line. Accordingly, the income required for providing adequate calories (2,220 kilocalorie) for an average Nepali to be active is NPR 1192. For non-food items, the average

income required is NPR. 7,332. Nepal Living Standard Survey conducted by CBS in 1995/96, 2003/04 and 2010/11 revealed that between the three surveys there has been substantial decrease in poverty in Nepal. The survey shows that poverty decreased faster in the urban areas from 1995/96 to 2003/04. However, urban poverty has increased from 9.6 % to 15.5 % from 2003/04 to 2010/11, whereas there was substantial decline in poverty in rural areas.

Branch	Service Area		Census Data 2011			
	Municipality	Ward No.	Household	Population	Male	Female
Mahankalchour	Kathmandu	4	12030	47362	23788	23574
		5	4774	18320	9337	8983
		6	15434	60344	30472	29872
		7	13559	51581	26561	25020
		8	2773	10738	5519	5219
Baneswor		9	10417	40371	21277	19094
		10	10571	39820	21110	18710
		29	9298	33316	18125	15191
		30	6876	25694	13560	12134
		31	17772	66121	35187	30934
		32	20792	76299	40530	35769
Tripureswor		11	4416	17765	9589	8176
		12	3173	13262	6812	6450
		13	10207	40456	21854	18602
		14	15472	58495	30942	27553
		20	2844	10968	5915	5053
		21	3389	13727	7353	6374
		22	1992	5500	3100	2400
		23	1991	8357	4418	3939
Maharajgunj		3	9145	34866	17691	17175
		16	22715	84441	44030	40411
		26	12252	45052	23939	21113
		27	1914	8563	4420	4143
Maharajgung		1	1917	8008	4194	3814
(Former		2	3599	13448	6802	6646
		28	4112	16211	9259	6952

 Table 2: Distribution of households and beneficiary population in the service area

Branch	Service	Service Area		Census Data 2011		
	Municipality	Ward No.	Household	Population	Male	Female
Chhetrapati		17	6394	25926	13694	12232
		18	2746	10746	5736	5010
		19	2632	10711	5822	4889
		22	1992	3687	2010	1677
		24	1735	7619	3996	3623
		25	3258	13203	6978	6225
Lalitpur	Lalitpur	1	2221	8434	4665	3769
		2	4839	19061	10369	8692
		3	3528	14082	7315	6767
		4	3913	15367	7580	7787
		5	1516	6404	3152	3252
		6	1563	6780	3474	3306
		7	1839	7849	4075	3774
		8	2816	11400	5958	5442
		9	3484	13908	7385	6523
		10	1729	6554	3508	3046
		11	2460	10109	5403	4706
		12	2352	10349	5301	5048
		13	3772	14867	7400	7467
		14	5438	21232	10518	10714
		15	3480	13858	6999	6859
		16	2058	10139	5007	5132
		17	2678	10644	5551	5093
		18	2007	8146	4112	4034
		19	1774	7385	3779	3606
		20	3121	12380	6342	6038
		21	1056	4927	2452	2475
		22	1304	5966	2981	2985
		23	1854	7002	3645	3357
		24	1324	5676	2790	2886
		25	2996	11575	5823	5752

Branch	Service Area		Census Data 2011			
	Municipality	Ward No.	Household	Population	Male	Female
		26	1377	5813	2834	2979
		27	1020	4279	2128	2151
Total			309710	1204350	629700	574650

III. LAND AVAILABILITY AND RESETTLEMENT IMPACTS

25. The sub-project components to repair leakages and breakages in existing KUKL water supply system are proposed within ROW of road of GoN land. No private land is required for implementing the project. The impacts are not anticipated in structure, relocation, livelihood and income of the people. If unforeseen impacts are observed during project implementation, it could be addressed with entitlement provisions made in project entitlement matrix.

Project Location	KUKL Branches and Service area/ward no.	Description	Details	Involuntary Resettlement Impacts
Project area of Lot.1	Mahankalchaur (4,5,6,7 and 8) Baneswor (9,10,29,30,31 and 32) Tripureswor Branch (11,12,13,14,20,21,22 (40%) and 23)	Repair of Sluice Valves Replacement of Sluice Valves Repair of Joints and Interconnection Repair of Pipe Cracks with replacement of pipe Service Pipe Main Connection Leakage	3-16 inch Replacement of SV, Rubber Washer and Nut Bolt Cutting and Installation of Socket, Union and Nipple Cutting and Installation of Mechanical Coupling Plugging Old and making new hole	No involuntary resettlement impacts anticipated as all facilities are proposed within GoN road RoW, which is vacant and unused.
Project area of Lot. 2	Maharajgunj (1,2,3,16,26,27 and 28)	Repair of Sluice Valves	3-16 inch Replacement of SV, Rubber	No involuntary resettlement impacts anticipated as all facilities are

Table 3: Proposed Suk	oproject Components,	Land Availability	and Resettlement Impacts

Project	KUKL Branches and Service area/ward			Involuntary Resettlement
Location	no.	Description	Details	Impacts
	Chhetrapati (17,18,19,22 (60%),24 and 25) Kamaladi Branch	Replacement of Sluice Valves Repair of Joints and Interconnection Repair of Pipe Cracks with replacement of pipe Service Pipe	Washer and Nut Bolt Cutting and Installation of Socket, Union and Nipple Cutting and Installation of Mechanical Coupling Plugging Old and	proposed within GoN road RoW, which is vacant and unused.
		Main Connection Leakage	making new hole	
Project area of Lot. 3	Lalitpur Branch ward no 1 to 27 (Lalitpur Municipality)	Repair of Sluice Valves Replacement of Sluice Valves Repair of Joints and Interconnection Repair of Pipe Cracks with replacement of pipe Service Pipe Main Connection Leakage	3-16 inch Replacement of SV, Rubber Washer and Nut Bolt Cutting and Installation of Socket, Union and Nipple Cutting and Installation of Mechanical Coupling Plugging Old and making new hole	No involuntary resettlement impacts anticipated as all facilities are proposed within GoN road RoW, which is vacant and unused.

IV. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

A. Public Consultation

26. While preparing this Due Diligence Report (DDR) by KUKL, consultation with the local people and key stakeholders of the project's area was carried out, in line with the requirements pertaining to environment and social considerations of ADB. Tools used for consultation were stakeholder meetings and focus group discussions. Four formal stakeholder consultations were held with 55 persons (Kathmandu Metropolitan City staff, Lalitpur Sub-metropolitan City, ward chair members and local residents including men and women). Discussions were held to understand the stakeholders' key concerns and issues related to the project. These consultations provided inputs for identification of the felt needs of the communities, and the relevant stakeholders. At project sites, people have been informed about the possibility of disruption during repair works and are aware that repair of leakages and breakages of the existing pipeline network is a regular ongoing process of KUKL. The leakages were reported to KUKL in the past either by the local people or even by Department of Roads, through formal letters requesting repair.

B. Information Disclosure

27. To provide for more transparency in planning and for further active involvement of beneficiaries and other stakeholders, project information will be disseminated to the public in the affected areas including the KUKL branch offices, contractor site office and municipal offices. A copy of this DDR will be disclosed on the ADB and project related websites.

			No of Participants		
SN	Location	Participants	(Male/Female)	Topics Discussed	Issues Raised
1	KMPC Ward No 3	Ward Chair, members and Locals	12 (9/3)	Repair and maintenance of leaks of old pipes after arrival of Melamchi at Kathmandu Valley, Social and environmental safeguards, Support from local people by informing incidences of leaks etc.	Delay in repair, Existing poor condition of supply, Lack of prompt response from KUKL to address the problem etc.
2	KMPC Ward No 9	Ward Chair, members and Locals	14 (9/5)	Repair and maintenance of leaks in old pipes during/after commencement of Melamchi Water Supply in Kathmandu Valley,	Delay in repair, Existing poor condition of water supply system, Lack of prompt response

Table 4: Summary of Topics Discussed and Issues Raised in Public Consultations

			No of		
SN	Location	Participants	(Male/Female)	Topics Discussed	Issues Raised
				Social and environmental safeguards, Support from local people by informing incidences of leaks etc.	from KUKL to address the problem etc.
3	KMPC Ward No 32	Ward Chair, members and Locals	13 (9/4)	Repair and maintenance of leaks in old pipes during/after commencement of Melamchi Water Supply in Kathmandu Valley, Social and environmental safeguards, Support from local people by informing incidences of leaks etc.	Delay in repair, Existing poor condition of water supply system, Lack of prompt response from KUKL to address the problem etc.
4	LSMPC Ward No1	Ward Chair, members and Locals	16 (13/3)	Repair and maintenance of leaks in old pipes during/after commencement of Melamchi Water Supply in Kathmandu Valley, Social and environmental safeguards, Support from local people by informing incidences of leaks etc.	Delay in repair, Existing poor condition of water supply system, Lack of prompt response from KUKL to address the problem etc.

C. Continued Consultation and Participation

28. The KUKL has appointed a Team Leader and two Design and Supervision Consultants with financial assistance from ADB. Furthermore, KUKL has finalized the Organization Chart with Social Experts also in the Main Office. KUKL in consultation with the people in the affected areas will continue to sort out any inconveniences during construction period of the project and also will

ensure that the communities are made fully aware of project activities during all stages of construction.

V. CONCLUSION

29. The repair of leakages and breakages in existing KUKL water supply system will enhance its operating systems. The leakages/breakages are proposed to be repaired within the existing KUKL pipeline network systems for which no additional space or land is required. No impacts to livelihoods and incomes of the people are anticipated. If there are any unforeseen impacts during project implementation, they need to be addressed at replacement cost in accordance with ADB SPS 2009.

Resettlement Screening Checklist

A. Project Data

Subproject Title: Maintenance of Leakage/Breakage in Existing Network during Commissioning and Testing of Integrated Network to Reduce NRW

B. Screening Questions for Resettlement Categorization

Probable social impacts	Yes	No	Remarks
Will the project include any physical construction work?	\checkmark		
Does the project include upgrading /rehabilitation or new construction?	\checkmark		Repair of leakages in KUKL existing pipe line networks
Are any project effect likely leads to loss of housing, other assets, resource use or incomes/livelihoods?		\checkmark	
Does land require for the project?		\checkmark	
Will there be loss of housing?		\checkmark	
Will there be loss of agricultural plots?		\checkmark	
Will there be losses of crops, trees, and fixed assets?		\checkmark	
Will there be loss of businesses or enterprises?		\checkmark	
Will there be loss of incomes?		\checkmark	
Will the vendors experience full closure?		\checkmark	
Will people lose access to facilities, services, or natural resources?		\checkmark	
Will any social or economic activities be affected by land use- related changes?		\checkmark	

C. Information on Affected Persons

Any estimate of the likely number of households that will be affected by the sub-project?

 $[\sqrt{]}$ No [] Yes If yes, approximately how many?

Are any of them tenants, bonded labor or vulnerable to poverty risks?

[\checkmark] No [] Yes If yes, please briefly describe their situation -

After reviewing the answer above, it is determined that the sub-project is

[] Categorized as A project, a full Resettlement Plan is required

[] Categorized as B project, a short Resettlement Plan is required

 $[\sqrt{\ }]$ Categorized as C project, no Resettlement Plan is required

Attendance sheet and minutes of meetings of Focus Group Discussions

1. Attendance sheet and minutes of meeting Held at Kathmandu Municipality Ward No. 9, Battisputali Ward Office.

Kathmandu Valley Water Supply Improvement Project- Additional Financing (KVWSIP-AF)

Repair & Maintenance of Leakage/breakage in existing networks during commissioning and testing of Integrated network to reduce NRW (Lot No. 1, 2, & 3)

Focus Group Discussion Repair & Maintenance of Leakage/breakage in existing networks: Lot. 1 to Lot. 3 Place of Discussion: KMC (Ward Ho. 9, BAHISPUTOLI, Ward office Settlement: Dute: Time 1115 2018

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HISAC THIR 2002102122 STR BIGHIST HEINSTRUMENT ASA. 3 BI ASI BIZTAZIAI KUKLEITI Repair and Maintenance of leakage and breakage in existing Network and mini अजिण्डातं. १ अस्य वजमां kvkl वार विद्वाइएको पाइपहर्छ महत्रे Leak त्रटको ठाउको जातकारी ज्यांद्र अविच्यमा इत समेन Leak मर्मतको वार्रमा ठातवरणीत्र प्रजाव स्रमेनको विस्तृत ह्लफल जत्रा। अजीण्डा में २ वर्तमान स्वानेपानी समस्याका वारेमा अल्द्रक्या जाइत्री। अर्जेण्डा त. ३ काढमाडों महातरारपालिका ड वडाका रवानेपानी मर्मतमा छत स्वस्ते समाजिकपन (Social and Resettlement) कावको वारेपा हत-A AL

English Translation of Meeting Minute

A focused Group Discussion was held at Kathmandu Metropolitan, ward no 9 office dated 2075/02/28 for repair and maintenance of leakage and breakage in existing network.

- Agenda 1: Information about leak in existing water supply pipeline laid by KUKL in ward no 9 and details discussion on potential Environmental impact
- Agenda 2: Discussion on current water supply problem
- Agenda 3: Discussion on potential impact on social and resettlement in ward no 9

2. Attendance sheet and minutes of meeting Held at Kathmandu Municipality Ward No. 32, Narephant Ward Office.

Kathmandu Valley Water Supply Improvement Project- Additional Financing (KVWSIP-AF)

Repair & Maintenance of Leakage/breakage in existing networks during commissioning and testing of Integrated network to reduce NRW (Lot No. 1, 2, & 3)

Focus Group Discussion

Repair & Maintenance of Leakage/breakage in existing networks: Lof-1 to Lot-3 Place of Discussion: KNIC, Word NO: 32 office Hore Dhan -Settlement:

Date: June 12, 2018 S.No. Name Sex Occupation Signeture AST CALIDO STATE Prain प्रकृष STR 1) UTRA COM ENTED htem as aqua Vare 21 0 951 4644 31 1 A MI 19-45 HISML S 211711 A MITTER MATTIN SIGNAT 11 . स्तुके कुमार दुग्राल स्ट्रेकिराम पुरुस्ती सुरुजेखें उपतिष्ठ \$) 7615 asthing owheel 6 प्रान्स डाइने दिया स्टेनेया उतिता दीवात क्लार SIGHAZIC 1 2115 YN2 -90.5121. オークシ STUDIA SIMA J. Q 9 1. Consultant TAHEA CUSALI 10 ptinto anil ú 11 1275 \$ 3 Bar 110 12 an of UNIC SAIR 1.5 AD बीता लामिहतहो (लामा PT-13 It supports

BT asi DINMALI KUKL BIRI Repair and Maintenance of Lealeage and breakage in existing Network an mini Focus group Discussion In First and Sing Retwork जार्र्जी। अनेण्डा में 9 सस वडामा KUKL बाट विद्याउरको पाइपह सहने Leak त्रटको ठाउको जातकाटी जराई अबिज्यमा कत स्वर्भन Leak मर्मतको खारेमा वतावरणीय प्रजाव रं त की विस्तृत हिलाफल जया । अजिण्डा ते २ वर्तमात्र स्वातिपात्ती समस्त्राका वारेमा अहर्मकृया जारियों। अर्जण्डा ते ३ काहमाडों महातजरपालिका ३२वडाका स्वातिपात्ती मर्मतमाहुतस्यम्ते समाजिक पद्वा(social and Resettlement) प्रजावका वारेमा हलाफल जायों।

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English Translation of Meeting Minute

A focused Group Discussion was held at Kathmandu Metropolitan, ward no 32 office dated 2075/02/28 for repair and maintenance of leakage and breakage in existing network.

- Agenda 1: Information about leak in existing water supply pipeline laid by KUKL in ward no 32 and details discussion on potential Environmental impact
- Agenda 2: Discussion on current water supply problem

Agenda 3: Discussion on potential impact on social and resettlement in ward no 32

3. Attendance sheet and minutes of meeting Held at Lalitpur Municipality Ward No. 1, Kupondole Ward Office

Kathmandu Valley Water Supply Improvement Project- Additional Financing (KVWSIP-AF)

Repair & Meintenance of Leakage/breakage in existing networks during commissioning and testing of Integrated network to reduce NRW (Lot No. 1, 2, & 3)

Focus Group Discussion

Repair & Mantenance of Laskage/breakage in westing networks: Lot 1 to Lot-1 Place of Discussion: Letlipur Materpeliter city, Ward Ho! 1 Settlement: Begmanfi Dhant, Califor, Kupondelle Date: June 13 2018

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मिति 2062102120 जोत लानितपुर महातजारपालिशका वः त. 9 को वडा कार्यलयमा KVKL द्वारा Repair and Maintenance of Leakage and breakage in existing Network BI MIPI Focus Group Discussion HI for STAUST HIPI BALL BALLI अजिण्डा मे. 9 भवत वडामा kuku बाट विद्याहण्का पह पहलु मस्त्रे Loak महका ढाडका माम्म गराई अषिष्यमा छनव्यमे दिवस मर्मतक बारेमा बतावरणीय सत्राव समेतको विस् अन्तर्भात स्वानेपानी समस्याके। कर्रम अन्त्रिया जर्रमा। अन्त्रिया जर्रमा। अन्त्रिया जर्रमा। अन्त्रिप्रांगे महानगरपालिका वडा ते व को स्वानेपानी मर्मतमा डेन स्पर्भ को पक्षा (Social and Resett 10 ment) प्रवाद por Ar

English Translation of Meeting Minute

A focused Group Discussion was held at Kathmandu Metropolitan, ward no 1 office dated 2075/02/28 for repair and maintenance of leakage and breakage in existing network.

Agenda 1: Information about leak in existing water supply pipeline laid by KUKL in ward no 1 and details discussion on potential Environmental impact

Agenda 2: Discussion on current water supply problem

Agenda 3: Discussion on potential impact on social and resettlement in ward no 1

4. Attendance sheet and minutes of meeting Held at Kathmandu Municipality Ward No. 3, Lainchour Ward Office

Kathmandu Valley Water Supply Improvement Project- Additional Financing (KVWSIP-AF)

Repair & Maintenance of Leakage/breakage in existing networks during commissioning and testing of Integrated network to reduce NRW (Lot No. 1, 2, & 3)

Focus Group Discussion

Repair & Maintenance of Leakage/breakage in existing networks: Lot-1 to Lot-3

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English Translation of Meeting Minute

A focused Group Discussion was held at Kathmandu Metropolitan, ward no 32 office dated 2075/02/28 for repair and maintenance of leakage and breakage in existing network.

- Agenda 1: Information about leak in existing water supply pipeline laid by KUKL in ward no 32 and details discussion on potential Environmental impact
- Agenda 2: Discussion on current water supply problem

Agenda 3: Discussion on potential impact on social and resettlement in ward no 32

Photographs of Focus Group Discussions Ward no 9, Battisputali, Kathmandu



Ward no 1, Kupondole, Lalitpur



Ward no 3, Lainchaur



Ward no 32, Koteshwor, Kathmandu





Leak in Kalopul to Siphal road



Leak in Kalopul to Siphal road



Leak in Tripureswor area



Leak in Mahankalchaur area



Leakage in join in Battisputali area



Valve leakage at Jorpati



Leak in Pharping-Sainbu area, Lalitpur



Leak in Jayabageswori area