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KATHMANDU PAANI

NEWS BULLETIN

GOVERNMENT OF NEPAL, KATHMANDU UPATYAKA KHANEPANI LIMITED, PROJECT IMPLEMENTATION DIRECTORATE, MELAMCHI WATER SUPPLY PROJECT SUB-PROJECT-02

Transformation of the Kathmandu Valley through improved water supply, sanitation and sewerage management

Message from KUKL-PID

Project Implementation Directorate of Kathmandu Upatyaka Khanepani Limited (KUKL-PID) is always enthusiastic and determined in its mission to relieve the residents of Kathmandu from a decade-long water crisis and wastewater management issues.

Currently, PID, as an implementing agency, has been executing two major projects, namely the Kathmandu Valley Water Supply Improvement Project (KVWSIP) and the Kathmandu Valley Wastewater Management Project (KVWMP) for equitable and sustainable water supply as well as wastewater management in the Kathmandu Valley. These projects are being financed by the Asian Development Bank (ADB) and the Government of Nepal (GoN).

Most of the pipe laying works and construction of Service Reservoir Tanks (SRTs) under KVWSIP under the first phase of ADB funding have been completed. The physical progress of these packages is 97.5%. The main works remaining in these DNI packages are commissioning, house connection and meter installation. Out of the total 84,125 households targeted in the first phase of ADB funding, meters is installed in 39,519 households by February 2024. Recently, out of a total of 32 District Metering Areas (DMAs), 14 DMAs were fully completed and handed over to Kathmandu Valley Water Supply Management Board (KVWSMB) and subsequently to KUKL.

Similarly, the major infrastructure works under KVWSIP financed by the Nepal Government are construction of 11 km Bulk Distribution System (BDS) pipeline from Sundarijal to Chabahil, construction of three SRTs and approximately 610 km of DNI. These infrastructure development works are progressing gradually. Likewise, the SCADA contract has taken a good pace in recent months. Valve installation and electrical installation in 14 Reservoirs Management Units (RMU) out of 15 is completed and calibration of most of the RMUs is done. We are hopeful that BDS will work automatically through SCADA system shortly. Smart meters installation, as a pilot initiative, has also started in Chamati area.

Meanwhile, under wastewater component, sewerage network expansion and rehabilitation work in Patan have been completed. The construction of 37 MLD Wastewater Treatment Plant (WWTP) located at Dhobighat is in final stage. Sewer pipe laying work at Gokarna is ongoing. Rebidding for the construction of TP02 (Sallaghari WWTP, Kodku WWTP and Dhobighat WWTP) totaling 68.7 MLD had been carried out. The bids received have been opened and their evaluation has been carried out. The award of the contract is expected shortly.

Finally, I would like to thank the public for their continuous support in making this project successful.

Er. Rajendra Sapkota
(Project Director)

In the presence of honorable minister of Water Supply Mahendra Ray Yadav, Secretary of Ministry of Water Supply, Suresh Acharya, Joint Secretary of Ministry Tiresh Prasad Khatri, Project Director of the PID, Er. Rajendra Sapkota handing over the ownership of DMAs to Kathmandu Valley Water Supply Management Board Executive Director Sanjeev Bickram Rana on the occasion of the 16th anniversary of KUKL.

Additional DMAs handed over to KUKL

PID recently handed over the ownership of additional ten DMAs to KVWSMB and subsequently to its operator KUKL. Out of a total 1,010 km of DNIs under ADB loan 2776, 278 km distribution network worth NPR 2.07 billion was handed over to KVWSMB. This is the second time DMAs were handed over to its owner.

The DMAs handover program was organized in Kathmandu amid 16th anniversary of KUKL on 13 February, 2024. During the program, honorable minister for Water Supply Mahindra Ray Yadav, secretary of Ministry of Water Supply (MoWS) Suresh Acharya, joint secretary of MoWS Tiresh Prasad Khatri, executive director of KVWSMB Sanjeev Bikram Rana, Chief Executive Officer of KUKL Gyanendra Bahadur Karki and Project Director of PID Rajendra Sapkota were present. Earlier, on 22 June 2023, PID had handed over the ownership of four DMAs with a total length of 71.72 km worth NPR 401.4 million. Before that, five BDS packages and ten SRTs worth NPR 9.6 billion were also handed over to KVWSMB on 31 January, 2023. All these water supply networks are in full operation by KUKL these days. PID has connected new meters in 23,000 households which are currently benefitted by regular water supply. According to PID, remaining 660 km of DNIs will also be handed over very soon.

Details of additional DMAs handed over to KUKL:

Package	DMAs	Water Supply from SRTs	Areas	Total length of DNI (km)
Package 1	DMA 2.3	New Mahankal SRT	Gaushala, Ratopul, Old Baneshwor, Setopul	12.03
Package 1	DMA 2.1	New Mahankal SRT	Naxal Bhatbhateni, Ratopul, Setopul	34.67
Package 2	DMA 3.4	New Mahankal SRT	Gairigaon, Sinamangal, Tinkune	17.27
Package 2	DMA 3.3	New Mahankal SRT	Bhimsengola, Shantinagar	28.22
Package 2	DMA 3.2	New Mahankal SRT	Old Baneshwor, New Baneshwor, Bhimsengola	32.17
Package 3	DMA 10.1	Balaju SRT	Chamati Town Planning	11.93
Package 3	DMA 9.2	Khumaltar SRT	Koteshwor, Tinkune	46.14
Package 4 (7A)	DMA 7.1	Balaju SRT	Sorakhutte, Khusibu Town Planning	29.74
Package 4 (7A)	DMA 1.5	Panipokhari SRT	Tripureshwor, Teku	22.50
Package 4 (7A)	DMA 8.2	Khumaltar SRT	Bhanimandal, Sanepa	37.43

Details of DMAs handed over to KUKL on 22 June 2023:

Package	DMAs	Water Supply from SRTs	Areas	Total length of DNI (km)
Package 1	DMA 2.4	Mahankal SRT	Gaushala-Ringroad, Pinglasthan	21.57 km
Package 2	DMA 3.5	Mahankal SRT	Tilganga, Sinamangal	17.04 km
Package 3	DMA 9.1	Khumaltar SRT	Narephante, Jadibuti	22.66 km
Package 4	DMA TU	Kirtipur SRT	Tribhuvan University area	10.45 km

Kathmandu Valley Water Supply Improvement Project (KVWSIP)

Progress review of construction of water supply infrastructure

The scope of Kathmandu Valley Water Supply Improvement Project (KVWSIP) is to develop a reliable, equitable and sustainable water supply system in the Kathmandu Valley. At present, physical works of four DNI Packages under ADB funding is completed. Around 350 km of DNIs have been handed over to KUKL via KVWSMB in different phases. Similarly, out of 1,010 km DNIs under ADB's first phase program, final commissioning work is ongoing with remaining 660 km of DNIs. This is stipulated to be handed over to its owner by the end of current fiscal year. Similarly, under government funding, a total of 11 km pipe laying of BDS 05 with 1,600 to 1,800 diameter pipes from Sundarijal to Chabahil is ongoing. The construction of Service Reservoir Tanks (SRTs) at Kirtipur (6,000 cum) and New Mahankal (8,500 cum) has been completed while excavation of foundation of reservoir, geotechnical exploration, demolition of control panel house and other preparatory works are ongoing in Old Balaju SRT (19,000 cum). The total physical progress of ADB packages is 97.50% and government packages until February 2024 is 78.84%.

Current status of the BDS packages under implementation by PID as of February 2024

BDS packages	Total Length (km)	Remarks
BDS-01	9.57	Handed over to KUKL
BDS-SRT-01	11.26	Handed over to KUKL
BDS-SRT-02	25.37	Handed over to KUKL
BDS-SRT-03	15.06	Handed over to KUKL
BDS-SRT-04	14.55	Handed over to KUKL
BDS-SRT-05	11	2.07 km completed

Progress of DNI Packages under Nepal government funding as of February 2024 (primary plus secondary and tertiary pipeline)

DNI packages	Target (total work in km)	Progress (completed work in km)	Pipelaying Progress (%)	Remarks
DNI pkg 5 (7B)	233.06	193.25	82.91	Construction Ongoing
DNI pkg 6 (7C)	283.29	241.70	85.32	Construction Ongoing
DNI pkg 7 (9A Mandikhatar)	129.50	109.91	84.98	Construction Ongoing
DNI 9A-1 Kapan	150.33	93.46	62.17	Construction Ongoing
Total	**796.18**	**638.38**	**78.84**	

Preparation for automation of BDS through SCADA system

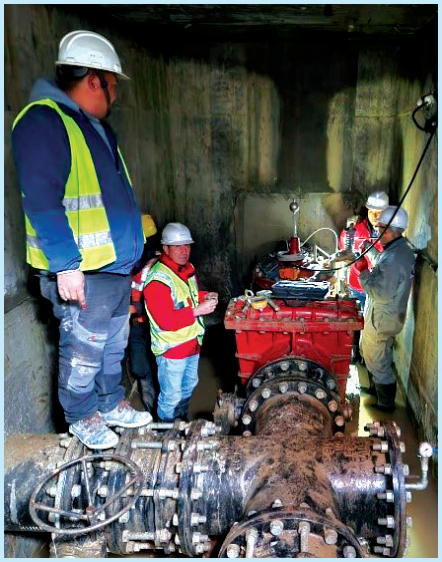
PID has categorized its water supply network into two sections. The first section covers the water supply network of BDS from Sundarijal to Service Reservoir Tanks (SRTs) located in various places inside the Kathmandu Valley. Similarly, the second section incorporates all Distribution Network Improvements (DNIs) inside the Kathmandu Valley.

PID is preparing for automation of Bulk Distribution System (BDS) with Supervisory Control And Data Acquisition (SCADA) system from April 2024. All the preparatory works for automation of BDS has been going on rapidly. Out of 15 Reservoir Management Units' (RMUs) calibration was performed in all RMUs except Arubari and Balaju which is scheduled to be performed soon.

After the automation of BDS with SCADA system the related SRTs can be monitored in real-time and the smallest of irregularities in day-to-day operations can be detected easily, which in turn will help in timely repair as well as changes in demand/ supply of water in each Service Reservoir Tanks (SRTs).

Through SCADA system, the data can be monitored and the system can be controlled from a Central Station located in Panipokhari. The automation of BDS will reduce operation cost and ensure equitable distribution among SRTs.

The installation of the SCADA system in DNIs has been carried out by constructing Outlet Management Unit (OMU) chambers in the entry points of DMAs. Out of 45 OMU chambers, 35 chambers are in the final phase of completion. Further in the SCADA system, for pressure monitoring on BDS and DNIs network system, Air Management Unit (AMU) implementation is ongoing. PID is targeting to complete all preparatory works to automate DNIs with SCADA system by July 2024.



SCADA calibration at Old Bansbari

With the completion of design and built, the project consists provision for operation and maintenance of the system by the contractor which will be of 33 months. With the completion of handover process of SCADA System, KUKL will be eventually responsible to handle entire water supply networks with SCADA. Therefore, the contract has provisioned different trainings related to SCADA System which will foster knowledge transfer to KUKL staffs.

Smart meter installation begins

PID has started installation of smart meters in households located in Chamati (DNI 10) and plans to install in Anamnagar area (DNI 2). PID is installing 1,000 smart meters in these two areas in pilot phase. These smart meters will enable PID to test the automation of the smart metering technology, thus providing accurate, real-time meter reading data on water usage, reducing water losses and improving billing accuracy.

Kathmandu Valley Wastewater Management Project (KVWMP)

Progress of construction of wastewater infrastructure

The mission of improving the water quality of urban rivers and their tributaries in the Kathmandu Valley through the Kathmandu Valley Wastewater Management Project is executing smoothly.

Currently, under the scope of KVWMP three kinds of activities are ongoing namely Interceptor sewers development, expansion of sewerage networks, and construction of Wastewater Treatment Plants (WWTP) and Decentralized WWTP (DEWATS). The construction of interceptor sewers along the banks of Manohara, Hanumante and Khasyasang Khusung are already completed. Likewise, under WWTP construction, Guheshwori WWTP is in full operation. Similarly, the construction of Dhobighat WWTP is nearing completion. Commissioning works of Dhobighat WWTP will also commence in few months. Meanwhile, DEWATS construction in Hanumanghat and Gokarna are halted due to some technical problems. Under sewerage network expansion and rehabilitation contracts, Patan Sewerage is in the final stage and Gokarna sewerage is under construction. In addition, the common facilities for TP02 and TP03 are also in the final stage.

Progress status of ongoing sewer networks under KVWMP as of February 2024

SN.	Contract Package	Target (km)	Progress (km)	Overall Progress	Remarks
1	SN03 (Patan Sewer)	2.8	2.37	72.39 %	ADB, GON and LMC funded
2	SN04 (Gokarna Sewer)	6.23	0.72	7.90 %	ADB funded

Progress status in WWTP construction as of February 2024

SN.	Contract Package	Total Capacity	Overall Progress
1	TP-03 (Dhobighat WWTP)	37 MLD	91.20 %
2	DEWATS (Gokarna and Hanumanghat)	4 MLD	6.22 %

Patan Sewerage expansion and rehabilitation contract in final stage

The sewer expansion and rehabilitation project in core areas of the Lalitpur Metropolitan City (LMC), which is included in SN03 package, is in the final stage of completion.

SN03 is a 2.8 km sewer rehabilitation works in the core city area of LMC including Patan Durbar Square, a UNESCO World Heritage Site. This contact was envisioned to drain out sewage and storm water from Lagankhel Bus Stand to Sankhamul via Patan Durbar Square. Till February 2024, 2.37 km of pipe laying in the SN03 alignment is already completed. At present, the pipe laying work is ongoing in Ikhalakhu area. Similarly, the construction of 73 manholes have been completed.

Along with sewer pipe laying, manhole and service manhole construction work, road reinstatement in most of the parts of the SN03 alignment is already completed. At present, side drains construction, manhole cover installation and road reinstatement works are expediting in some areas in Patan.

After the completion of sewer expansion and rehabilitation in core city area of Patan, locals have got rid of seasonal waterlogging triggered by poor drainage. The project was successful to come to the final stage due to coordination between PID and LMC.

Commissioning and testing for Dhobighat Wastewater Treatment Plant commences shortly

The commissioning and testing of the Dhobighat Wastewater Treatment Plant (TP03) with a capacity of 37 MLD at Dhobighat, Lalitpur is all set to begin from next month. Civil works are already completed while the equipment installation work is also in the final stage. So far, this is going to be the largest wastewater treatment facility constructed by PID.

During the commissioning period, no-load testing is done at first. The equipment and electrical installation are tested. After successful testing of machinery, commissioning of the facility begins by adding sewage into the various treatment units which is called load testing. The commissioning period of WWTP is four months. Therefore, if commissioning and testing is conducted smoothly within this period, the facility will be ready for full operation.

Dhobighat WWTP is a ADB funded wastewater project with a total cost of NPR 1.96 billion. The major components of this facility included primary and secondary treatment units with activated sludge process and 204 KW of power generation through sludge digestion. The overall progress of TP03 is 91.20% as of February 2024.

Guheshwori Wastewater Treatment Plant becoming study hub for students and researchers

The Guheshwori Wastewater Treatment Plant, one of the largest Municipal wastewater treatment plants in Nepal is becoming a study hub or a research center for school/college students and researchers. The prime objective of the plant is to make the upstream of holy Bagmati river pollution free by treating the sewage before discharging it into the river.

From mid-April 2023 to mid-March 2024, a total of 1,659 students and researchers including international students have visited the facility, studied its treatment process and gathered necessary data and information for their studies.

The Guheshwori WWTP started its work in 2001 in the first phase. Later in September 2020, PID executed its expansion and rehabilitation work in the second phase. Currently, this facility is in full operation and is treating 32.4 MLD wastewater. The plant was designed to utilize the wastewater as a source of clean water, energy and soil conditioner. So, from the beginning of its operation, many study visits were made by different academic institutions across the nation and beyond as well. Gradually, it is becoming study and learning center especially for the students of Engineering, Environment Science, Microbiology, Medicine etc.

Number of students/researchers (April 2023-Feb 2024)

Field/Faculty	No.
Engineering	941
Nursing	231
MBBS	159
Environment science	105
School/HSS	88
Microbiology	59
Biotechnology	29
Pharmacy	27
Foreign University Student	12
Sample for Research	6
Data for Research	2
Total	**1659**

Community Awareness and Safeguard Support Consultant (CASSC03)

A photo session of participants and the organizers at the end of inter-school drawing competition.

Students demonstrate their insight on importance of clean water through art

Considering school program as an effective means to spread information about water supply and wastewater project, Community Awareness and Safeguard Support Consultant (CASSC03) under KUKL-PID recently organized an inter-school drawing competition titled 'Clean water for safe life'.

The program was organized at Patandhoka-based Patan High School on 23 February, 2024 among the students of schools from Lalitpur Metropolitan City (LMC). During the program the students showcased their talent and skill of art on the given theme. Students from public schools participated enthusiastically and demonstrated their talent through art on the importance of clean and safe drinking water for healthy life. A total of 17 contestants from nine schools in LMC had participated in the competition.

Josef Kapali from Patandhoka-based Patan High School, bagged the first prize in the competition. Similarly, Sushil Gajmer from Bholdhoka-based Shree Shanti Bidhyashram bagged the second prize, and Sonisha Prajapati from Natole-based Balbinod Secondary School bagged the third prize. Avash Chandra Shrestha from Kupandol-based Pragati Shikshya Sadan received a consolation prize. Likewise, participating schools and students received letters of appreciation and gift hampers.

School awareness program is an important approach that CASSC03 has implemented to raise community awareness, mobilize communities and impart health and hygiene education in communities through school students. This is a kind of student to parents teaching and learning on water and sanitation issues.

Awardees of interschool drawing competition with Joseph Kapali, first prize winner in the center

First prize winning art

CASSC-03 prepared digital database of more than 57,000 KUKL customers

KUKL-PID is digitizing the database of KUKL customers within its service areas inside the Kathmandu Valley. The survey primary objective is to capture data of each household defined by a family group depending upon a single kitchen. It also updates the KYC of customers. In addition, survey includes customers' (households) socio-economic condition, uses of water, hygiene and sanitation related information. A total of 35 enumerators have been mobilized in different parts of the Kathmandu Valley to collect the information. Up to February 2024, CASSC03 prepared the database of 57,250 HHs in Koteshwor, Narephante, New Baneshwor, Old Baneshwor, Sinamangal, Subidhanagar, Ghattekulo, Bagbazar, Bhotebahal, Naxal, Khusibu and Chamati among others, in Kathmandu and Gwarko, Patan and Sanepa among others, in Lalitpur. CASSC03 is scheduled to prepare the database of around 100,000 HHs by December.

OUR REQUEST

PID apologizes for any inconvenience caused to the public during the implementation of the national pride project and appeals to everyone to support this project for the betterment of people residing in the Kathmandu Valley.

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