

Message from KUKL-PID

Project Implementation Directorate of Kathmandu Upatyaka Khanepani Limited (KUKL-PID) is always exuberant and determined in its mission to relieve the residents of Kathmandu from a decade-long water crisis and wastewater management issues. PID's relentless hard work has resulted in the completion of some packages that are going to augment water for the people of the Kathmandu Valley.



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 (KVVMP) 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 Reservoirs under KVWSIP under the first phase of ADB funding are completed and in the process of handover to the Kathmandu Valley Water Supply Management Board (KVWSMB) and subsequently to KUKL. At the same time, PID is also preparing to handover its Distribution Network Improvements (DNIs) to utility operator. Meanwhile, SCADA contract is progressing well.

Under wastewater component, PID already started operation of a modern, environment-friendly wastewater treatment plant in Guheshwori. Likewise, construction work of Dhobighat Wastewater Treatment Plant (TP-03) is completed and installation of equipment is ongoing. The commissioning of the treatment plant is expected to start from September 2023 onwards. The construction work of common structures for TP-02 and TP-03 is progressing well. At the same time, major construction work including road reinstatement in core areas of the Lalitpur Metropolitan City, especially Lagankhel, Thathi, Eti, Cobaha, Sainthu Ganesh area, Bhimsen Mandir area as well as Patan Durbar Square area, a UNESCO World Heritage site is completed.

The Second Kathmandu Valley Water Supply Improvement Project (SKVWSIP) is expected to start shortly after approval by the ADB Board of Directors. Under SKVWSIP, approximately 860 km of DNI will be laid in different parts of the Kathmandu Valley including Kirtipur, Bhaktapur, Madhyapur Thimi, Jorpati North and South and Pepsicola area which will benefit approximately 500,000 people additionally. Likewise, PID has prepared a Project Bank comprising of about 1,200 km of DNI outside the Ring Road within 2.5 km radius. The detailed design of the Project has been completed and can be implemented as soon as the additional fund is available.

At the end, we are very proud to say that the PID has always given high priority to public concern and believe that soon we will be able to supply clean and safe Melamchi water and improve wastewater services to the people of Kathmandu Valley.


Er. Rajendra Sapkota
(Project Director)



■ Senior officials from PID, KUKL and KVWSMB signing MoA in the presence of MoWS Joint-Secretary standing on the left-hand side during a handover ceremony on 30th January, 2023.

PID hands over its assets to KVWSMB/KUKL

PID handed over assets and associated facilities/documents of all the five Bulk Distribution System (BDS) worth NRs. 9.6 billion to KVWSMB/KUKL after completion and testing successfully.

A Memorandum of Agreement (MoA) was signed between PID, KVWSMB and KUKL in the presence of Tires Prasad Khatri, Joint Secretary of Ministry of Water Supply, who is coordinating whole the handover-takeover process. Rajendra Sapkota, Project Director of PID, on behalf of PID, Sanjeev Bickram Rana, executive director of KVWSMB and Gyanendra Bahadur Karki, deputy CEO of KUKL on behalf of the Operator, KUKL signed the MoA on 30th January, 2023 with effect from 1st February, 2023. After the handover of these facilities, KUKL is operating these systems.

As per the MoA, five BDS (BDS 0, BDS 1, BDS 2, BDS 3 and BDS 4) and 10 Service Reservoir Tanks (SRTs) were handed over to KVWSMB/KUKL. These BDS transport water from the Sundarjal Water Treatment Plant to SRTs located at different places of Kathmandu Valley (Aarubari, Mahakalchaur, Bansbari, Panipokhari, Balaju, Kirtipur, Khumaltar, Tigni and Katunje) with total storage capacity of 74,500 m³. The BDS consists of transverse, ring and radial mains to feed the said reservoirs. The diameter of Ductile Iron pipes used in these BDS ranges from 400 mm to 1,400 mm. The total length of BDS is 75.836 km. Two pickups were also handed over to KUKL, exclusively for the operation of BDS.

BDS	Total length (km)	Areas covered by these packages
BDS 0	9.579	<ul style="list-style-type: none"> Sundarjal to Mahankalchaur
BDS 1	11.269	<ul style="list-style-type: none"> Mahankalchaur to Bansbari Kalanki (Sita Petrol Pump) to Balkhu Ekantakuna to Talchhikhel Chowk
BDS 2	25.373	<ul style="list-style-type: none"> Narayangopal Chowk to Balaju Tank and Panipokhari Tank Kalanki (near Makalu) to Khasibazar to Balkhu Chowk Balkhu Chowk to Ekantakuna
BDS 3	15.062	<ul style="list-style-type: none"> Balaju Chowk to Kalanki (near Makalu) Balaju Chowk to Lainchaur to Tripureswor to Thapathali to Ekantakuna Gaushala Chowk to New Baneshwor Chowk
BDS 4	14.553	<ul style="list-style-type: none"> Sita Petrol Pump to Kirtipur SRT Gokarna to Tigni to Katunje SRT via Mulpani

Kathmandu Valley Water Supply Improvement Project (KVWSIP)

KVWSIP aims to develop a reliable, equitable and sustainable water supply system in Kathmandu Valley. Currently, the project is developing a brand-new network of water distribution system all-encompassing Bulk Distribution System (BDS) along with Service Reservoir Tanks (SRTs), Distribution Network Improvement (DNI) and District Metering Areas (DMAs) with automation via SCADA system for operation of network. KVWSIP is currently implementing various contracts under Loan 2776 and Loan 3255 which are almost completed. Overall aggregated physical progress of the packages under both loans is approximately 95%.

Progress of contract under L-2776 and L-3255

The major works under Loan 2776 are construction of BDS, improvement of DNI and exploring ground water in the valley. The total cost of the project was US \$ 130 million with ADB contribution of US \$ 80 million and was effective on 7th February, 2012.

The scope of work under this loan included laying of larger diameter pipelines as BDS to transport water from the Water Treatment Plant (WTP) to Reservoir Tanks located at various places in the Valley. This loan incorporated DNI package 1, 2 and 3 and BDS-SRT package 1, 2 and 3. BDS packages were completed and handed over to asset owner and subsequently to operator KVWSMB/KUKL. Around 800 km of distribution network was laid to serve a population of around one million in the Kathmandu Valley under first phase of the project. Most of the construction works are completed and the only remaining works are testing and commissioning which are ongoing at an accelerated pace with the arrival of Melamchi water. Subsequently, meter installation in some DMAs is completed. Currently, 1,610 households in the Anamnagar area, DMA 4.1, have been fully connected with new meters and are receiving water round the clock.

Similarly, the additional financing of the KVWSIP under Loan 3255 came into effect on 11th February, 2016 with the aim of improving additional BDS, SRTs and DNIs in the Kathmandu Valley not accommodated under the Loan-2776.

In addition, for automation of new water supply network operation, a separate package under Loan 3255 for management of water network in Kathmandu Valley using hydraulically controlled valves actuated with SCADA is under construction. The total progress of SCADA contract as of May 2023 is 45%. The major works under this loan are construction of 18 km BDS, three SRTs, approximately 200 km of DNI, a detailed survey and design of about 200 km of DNI and reinstatement of municipality roads (about 120 km). The total funding under this loan, including ADB portion, is US \$ 135 million.

Government funding in augmenting drinking water to Kathmandu residents

Besides ADB funding, the government of Nepal has also allocated funds to address the needs of some unattended areas within the Ring Road in the northern part of the valley. The total budget under

government funding is NRs. 130 million. The major infrastructure works under government funding incorporates construction of a second BDS pipeline from Sundarjal to Chabahil (BDS-05) with around 11 km length and 1,600-1,800 diameter pipes, construction of three SRTs (with 6,000 m³ capacity at Kirtipur, 8,500 m³ capacity at Mahankalchaur and 19,000 m³ capacity at Old Balaju Reservoir) and expansion of approximately 800 km of DNIs with 22 DMAs to provide house connections to 40,000 households. The DNIs will cover the remaining areas inside the Ring Road and some parts outside the Ring Road which were left out under the ADB financing due to a shortfall in the ongoing KVWSIP. At present, HDPE and DI pipe laying works are progressing in Kalanki, Swoyambhu, Kalimati, Baluwatar, Dhumburahi, Chandole, Handigaon among others inside the Ring Road and Samakhushi, Ranibari, Basundhara, Kumarigal and Chabahil areas outside the ring road.

Progress of DNI packages (primary plus secondary and tertiary pipeline under GoN funding)

DNI packages	Target (total work in km)	Progress (completed work in km)	Cumulative Progress (%)	Remarks
DNI pkg 5 (7B)	228.26	158.89	69.60	Construction Ongoing
DNI pkg 6 (7C)	283.29	220.52	77.84	Construction Ongoing
DNI pkg 7 (9A Mandikhatar)	129.50	103.57	79.98	Construction Ongoing
DNI 9A-1 Kapan	150.33	88.64	58.69	Construction Ongoing
Total	791.38	597.55	75.50	

New projects in the pipeline to provide additional water in valley

The Second Kathmandu Valley Water Supply Improvement Project (SKVWSIP) with ADB financing aims to fulfill the water supply needs of additional areas of the Kathmandu Valley. It mainly covers the areas of Bhaktapur, Kirtipur, Madhyapur Thimi, Jorpati North and South and Pepsicola area, which will benefit additional 500,000 people. All the preparatory works are completed. The new project will go ahead after the loan agreement is signed between GoN and ADB.

Under SKVWSIP, a total of 860 km of HDPE and DI pipes will be laid covering an area of 3,160 hectares. Similarly, the new project is planning to provide a total of 95,963 house connections.

PID has already prepared a detailed design for the project, which is likely to commence early next year.

Apart from SKVWSIP, PID, as part of Project Bank, has carried out engineering survey and detail design work of some 1,200 km of additional DNIs including SRT/OHT (as per need) outside Ring Road within 2.5 km radius (Nagarjun Municipality ward no. 1, 2, 4, part of ward no. 5 and ward no. 9 and 10; Khadka Gaun and Shyuchatar areas of Chandragiri Municipality, KMC ward no. 16 at Balaju, Balaju Industrial Areas, Balaju Bypass area and KMC ward no. 14 at Kalanki area, KMC ward no. 3 at Bansbari area and Part of Tokha Municipality ward no. 6, 7, 9, 10 and 11) benefitting more than 20,000 households.

These networks are of utmost need for the people of the Kathmandu Valley outside the Ring Road. Once the financing is arranged, the project can be started immediately.

DNI Commissioning ongoing in full swing

With the availability of Melamchi water, PID is commissioning its water supply network in full swing. Till May 2023, the commissioning of 281 km out of a total of 980 km secondary and tertiary pipelines is completed. Similarly, out of a total of 84,125 house connections under DNI package 1, 2, 3 and 4, commissioning is completed in 19,227 households located in Naxal, Durbarmarg, Kamal Pokhari, Hadigaun, Gaushala, Tilganga, Old Baneshwor, Koteswor, Maitighar, Sahidgate, Tripureshwor etc in Kathmandu and Lagankhel Army Barrack, Mahalaxmasthan, Gwarkho, Chysal etc in Lalitpur. Currently, a total of 170 MLD water is received from Melamchi where 70 MLD water is being used for flushing and testing, which is a part of commissioning. The total progress of commissioning till May 2023 is 29 %.

Kathmandu Valley Wastewater Management Project (KVVMP)

The Kathmandu Valley Wastewater Management Project was initiated in 2013 to improve water quality in urban rivers and tributaries and their ecosystems in the Kathmandu Valley by enhancing wastewater management capacity.

Under ADB funding, PID is assigned to construct and rehabilitate five Wastewater Treatment Plants (WWTP), two Decentralized Wastewater Treatment Plant (DEWATS) and rehabilitation and expansion of sewer network in core area of Patan, Lalitpur. Out of five WWTP, Guheshwori WWTP-country's modern WWTP with a capacity of treating 32.4 MLD wastewater is in operation. This is currently serving the population of around 300,000 residing in Chabahil, Boudhha, Jorpati and surrounding areas. Meanwhile, construction work of another WWTP at Dhobighat (TP-03) is completed and installation of equipments is ongoing. It is expected to come into operation from January 2024.

Common structures at TP-02 and TP-03

The construction works of some common structures used for both TP-02 and TP-03 were to be completed by the TP-02 contractor, however, it couldn't be completed due to termination of the TP-02 Contract and it was entrusted to the SN-03 Contractor through a variation. The physical work is progressing well. At present, 30% of works in W1/W2, 100% of pipe laying work, 75% of the manhole construction work and 75% of the B1 building work have been completed.

Sewer rehabilitation in core area of LMC including Patan Durbar Square, a UNESCO World Heritage Site progressing

The sewer expansion and rehabilitation in the core area of the Lalitpur Metropolitan City (LMC), SN-03 is speeding up. By the end of May, 2023 sewer pipe laying, manhole and service manhole construction, including road rehabilitation with brick pavement at Patan Durbar Square Yard, a UNESCO World Heritage Site is completed. Similarly, stone



■ PID completed brick pavement at Patan Durbar Square

Progress status in WWTP construction as of May 2023

SN.	Contract Package	Total Capacity	Overall Progress
1	TP-01 (Guheshwori)	32.4 MLD	Completed and in operation since 2020
2	TP-03 (Dhobighat WWTP)	37 MLD	84.50%
3	DEWATS (Gokarna and Hanumanghat)	4 MLD	4.12%

pavement from Bhimsen Temple to Cobaha area is also completed. Asphalt concreting in the road that stretches between Cobaha to Sainthu Ganesh (600 m), Lagankhel to Chakrabahi (475 m) and Thati to Eti (140 m) was completed for easy access to public during the Rato Machhindranath Chariot Festival, Lalitpur's longest chariot running festival that began in the last week of April this year.

SN-03 is a 2.8 km sewer rehabilitation work of KUKL-PID in collaboration with LMC to relieve Patan residents from years long water-logging and inundation problem especially at Patan Durbar Square,. The progress of the work in SN-03 is 70.50% by the end of May, 2023. This contract suffered significant delays in construction activities due to the unanticipated interruption from the local residents, stakeholders and delayed decisions from different authorities such as Nepal Electricity Authority, KUKL, Nepal Telecom on the shifting and management of utilities.

Baluwater Stormwater Management nearing completion

Construction work under Baluwater Stormwater Management (SW-01) under the sole financing of GoN is almost completed. Out of 1.23 km of sewer network construction, all pipe laying work has been completed including box culvert of 384 m and 23 manholes. At present, boundary wall construction and road reinstatement works are ongoing.

Progress status of Sewer Networks under KVVMP as of May 2023

SN.	Contract Package	Target (km)	Progress (km)	Overall Progress	Remarks
1	SW01 (Baluwater Stormwater pipeline)	1.23	1.23	80.50%	Under GoN financing
2	SN03 (Patan Sewer)	2.8	2.22	70.50%	Under ADB financing

Construction of DEWATS

Construction of DEWATS, (3MLD at Gokarna and 1 MLD at Hanumanghat, Bhaktapur) is in design phase. Currently, 28% of the Hanumanghat DEWATS and 19% of the Gokarna DEWATS designing is completed. The construction of some wastewater treatment facilities, in particular Moving Bed BioFilm Reactor (MBBR) and operation building is ongoing. The total progress till now is 4.12%.

Sewer Network development in Gokarna kicks off

A new contract was recently awarded for construction of Gokarna Sewer Network (SN-04). This is a 6.23 km sewer network expansion package in a densely populated area of Gokarneshwor Municipality, particularly, ward no. 4. This contract is to be completed within 18 months from the contract award date.

Recently, a consultation meeting was held under the chairmanship of the Mayor of Gokarneshwor Municipality which discussed on the model and design of sewer pipe laying of SN-04. The meeting also appointed an officer from municipality as a focal person for further coordination between municipality and PID. Based on the proposed sewer route, one main line runs through the newly constructed gravel road starting the Syalmati Khola bridge, following southern road of Naidol dense community and along right side of Bagmati river on the earthen road and passes through the public land to meet the existing sewers in front of Dese bridge.

The second main line will start from the Jorpati – Sundarijal road near Suryamati Bridge and just few meters before this bridge, it passes along the bank of Bagmati River to meet with other main line. These main lines meet at the connection manhole and enters to the Gokarna DEWATS. The contractors have been mobilized in the field for construction works.

Rebidding document of TP-02 finalized

The rebidding process for the remaining works of TP02 (Sallaghari WWTP, Kodku WWTP and Dhobighat WWTP) totaling 68.7 MLD, has been initiated. The re-bidding document has been finalized and is expected to publish IFB by June 2023. The contract was terminated last year due to low performance of the contractor. The overall contract progress of TP-02 package was 27.1 %.

Community Awareness and Mobilization Activities by CASSC-03

Community Awareness and Social Safeguard Consultants (CASSC-03), a separate entity under the Safeguard Unit in PID, aims to raise community awareness and social mobilization, implement the Gender Equality and Social Inclusion Action Plan and safeguard compliance in the project areas. Furthermore, CASSC-03 works on health, environmental and social safeguard issues to promote environment-friendly sustainable development. It is mainly applying two approaches to reach out to the public.

The first approach is community meetings with stakeholders such as women's group, mother's group, youth clubs and consultations that are generally conducted at the community level through elected bodies, particularly ward offices. These meetings are helpful in sorting out misunderstandings between the public and the project. The second approach is public education



School Awareness Program at Kirtipur-based Mangal Secondary School

Activities conducted by CASSC-03 this year (Jan-May, 2023)

SN.	CASSC-03 Activities	Total Number of programs	Total number of participants
1.	Community Meetings	59	754
2.	Community Awareness Programs	25	861
3.	School Awareness Programs	12	502
4.	Labour Orientation Programs	6	168
5.	Information Dissemination	13 areas	1,301 HHs

through school awareness programs and various educational activities in public school such as speech competition, arts competition and other programs. Considering students as agents of change, the school program aims to increase awareness among ninth and tenth-graders about the importance of health, hygiene and sanitation at school and at home.

Similarly, CASSC-03 has been deploying its social mobilizers to disseminate PID's information and notices to draw attention of the public for their supportive action during construction activities. In addition, CASSC-03 also conducts a labour orientation program and first aid training to ensure occupational health and safety compliance of workers at construction sites. Such activities build a harmonious relationship with all stakeholders for the success of the project.



■ CASSC-03 enumerator conducting customer survey in Koteshwor, Kathmandu

PID preparing a database of KUKL customer

PID is conducting a customer survey to digitize the data and information of KUKL customers in its completed packages. This is a door-to-door customer survey to produce a standardized and common consumer data by capturing the information especially pictures of various documents by using the mobile app called ODK Collect. This will ensure that the data is captured in a highly accurate and credible manner.

During the customer survey, data is securely captured and stored on servers controlled by KUKL, which is anticipated to merge or use the data with their billing system or future information technology platforms.

Currently, scores of enumerators have been deployed in various areas within the Kathmandu valley. Along with personal information, KUKL customers are requested to provide original documents such as citizenship

certificates, land ownership certificates, agreements reached during meter installation, water bills or KUKL customer numbers, which are captured electronically by enumerators to digitize them on KUKL server. In the first phase, more than 30,000 households will be surveyed. Till May 2023, enumerators have already collected information on more than 7,000 households in different areas of the Kathmandu Valley.

Apart from development of necessary infrastructure to adopt a brand-new network with the latest technology in the water supply system, KUKL/PID is also preparing a standardized database of KUKL customers within the Kathmandu Valley. The digitization of the documents will enable KUKL/PID to develop and roll out any new program and project in any part of Kathmandu Valley according to future needs.

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.

**Kathmandu Upatyaka Khanepani Limited (KUKL)
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