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SUB-PROJECT COMPLETION REPORT

"JHELUM TAWI FLOOD RECOVERY PROJECT"

FUNDED BY WORLD BANK

LOAN NUMBER: IDA 56950

COMPONENT–III

RESTORATION OF URBAN FLOOD MANAGEMENT INFRASTRUCTURE

Prepared By: LEA Associates South Asia Pvt. Ltd.
Technical Assistance & Quality Audit Consultants

VOLUME-II

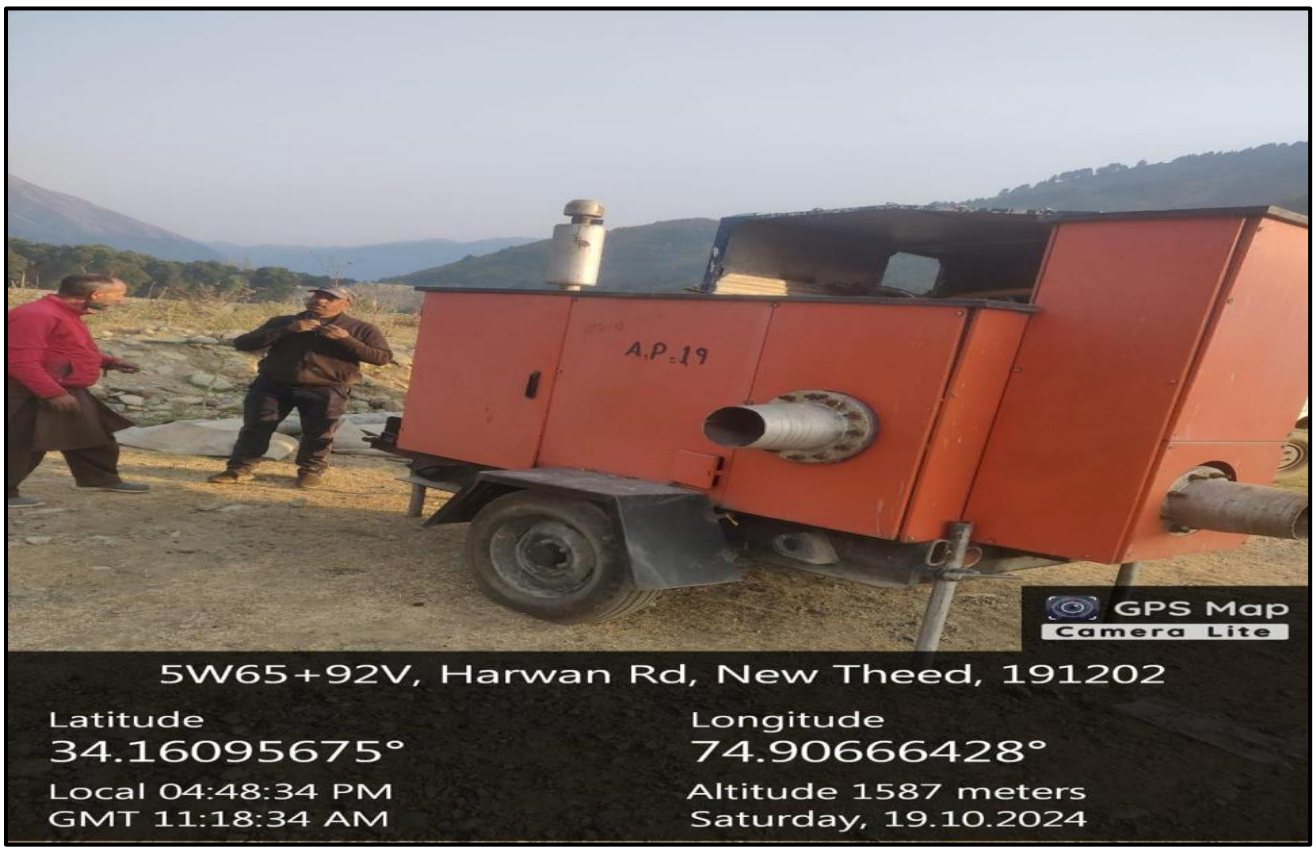
RESTORATION OF URBAN FLOOD MANAGEMENT INFRASTRUCTURE

UNDER COMPONENT- 3


GATE NO. 2
BLOCK 2
A.P-19
GPS Map
Camera Lite


GPS Map
Camera Lite
2QGG+JXV, Airport Rd, Peerbagh, Srinagar, 191132
Latitude 34.02682706° Longitude 74.77763067°
Local 01:16:05 PM
GMT 07:46:05 AM
Altitude 1595 meters
Date Tue, 23 Apr 2024


A.P-01
GPS Map Camera
Srinagar, ,
3RG8+WJV, Kothi Bagh, Srinagar, 190001
Lat 34.077138°
Long 74.816344°
03/08/23 03:09 PM GMT +05:30
Google


A.P.19
GPS Map
Camera Lite
5W65+92V, Harwan Rd, New Theed, 191202
Latitude
34.16095675°
Local 04:48:34 PM
GMT 11:18:34 AM
Longitude
74.90666428°
Altitude 1587 meters
Saturday, 19.10.2024


A.P-06
JHELUM & TAWI
FLOOD RECOVERY PROJECT
THE WORLD BANK
JTFRP
Portable Pumps
12.07.2024 12:16
34.025, 74.81977 (±4m)
Altitude: 1580m
2RG9+3W3, Lane 1, Gulshan Nagar, Sector B, Nowgam, Srinagar, 190015
SW


EMERGENCY DUTY
MECHANICAL CITY DRAINAGE DIVISION
ASHOK LEYLAND

CONTENTS

1. INTRODUCTION

1.1 Project Background

In September 2014, Jammu & Kashmir experienced torrential monsoon rains in the region causing major flooding & landslides. The continuous spell of rains from September 2-6, 2014 caused Jhelum and Chenab Rivers as well as many other streams/tributaries to flow above the danger mark. The Jhelum River also breached its banks flooding many low-lying areas in Kashmir, including the capital. In many districts, the rainfall exceeded the normal by over 600%. The Indian Meteorological Department (IMD) records precipitation above 244.4 mm as extremely heavy rainfall and J&K received 558 mm of rain in the June – September period as against the normal 477.4 mm. For example, the district of Qazigund recorded over 550 mm of rainfall in 6 days as against a historic normal of 6.2 mm over the same period.

Due to unprecedented heavy rainfall the catchment areas particularly the low lying areas were flooded for more than two weeks. Some areas in urban Srinagar stayed flooded for 28 days. Water levels were as high as 27 feet in many parts of Srinagar. The areas from the main tributaries of river Jhelum vis-à-vis Brengi nallah, Vishav nallah, Lider nallah and Sandran nallah started overflowing due to the heavy rainfall causing water levels in Jhelum to rise. Subsequently, the discharge of the river Suran was 200 thousand cusecs as against an average of 50 thousand cusecs. With the excessive discharge of water, the river Suran affected the basin areas and also took a different course at various locations causing damages to the surrounding villages in the catchment area. Water levels also increased in the rivers of ***Chenab and Tawi***, both of which were flowing above normal levels. Due to the rivers overflowing nearly 20 districts of the State were impacted.

A Joint team led by the Department of Economic Affairs (DEA), GoI, with representation from the World Bank visited J&K on October 21, 2014. Subsequently, GoI has sent a request to the World Bank on January 5, 2015 to field a joint Rapid Damage and needs Assessment (RDNA) Mission within the State. In response, a mission of the World Bank visited the State during February 1-6, 2015 in order to produce a rapid multi-sectoral assessment report of the damages and needs. The RDNA estimates the total damages and loss caused by floods at about INR 211.975 Million, most of it to housing, livelihoods; roads and bridges which combined represented more than 70% of the damages in terms of value. Public service infrastructure and equipment of hospitals and education centers were also severely damaged and are still not fully operational.

Based on the Rapid Damage Needs Assessment (RDNA): Results, restoration works underway and discussion with the GOJ&K, the project will focus on resorting critical infrastructure using international best practice on resilient infrastructure. Given the state's vulnerability to both floods and earthquakes, the infrastructure will be designed with upgraded resilient features and will include contingency planning for further disaster events. Therefore, the project aims at both restoring essential services disrupted by the floods and improving the design standard and practices in the state to increase resilience.

1.2 Project Development Objective

The Project Development Objective (PDO) is to support the recovery and increase disaster resilience in targeted areas of the state and increase the capacity of the state entities to respond promptly and effectively to an eligible crisis or emergency.

1.3 Project Components

The project is comprised of the following seven components:

1. Reconstruction and strengthening of critical infrastructure (US$ 50 million)
2. Reconstruction of Roads and Bridges (US$ 55 million)
3. Restoration of Urban Flood Management Infrastructure (US$ 40 million)
4. Restoration and strengthening of livelihoods (US$ 15 million)
5. Strengthening disaster risk management capacity (US$ 25 million)
6. Contingent Emergency Response (US$ 45 million)
7. Implementation Support (US$ 20 million).

Total Amount is **US$250 Million**.

Component 3 - Restoration of Urban Flood Management Infrastructure (US$ 40 million):-

The objective of this component was twofold:

i. To strengthen and reinforce existing weak and vulnerable flood control infrastructure, with a primary focus on the rehabilitation and renovation of stormwater pumping stations within the Srinagar municipal area. This included the replacement of power equipment, switchboards, and panel boards with installations at elevated locations to enhance functionality and resilience; and
ii. To assess urban flood management interventions in other project areas, aiming to identify and support measures for improved flood preparedness and response.

The primary objectives for procuring high- and low-capacity pumps for flood management were to enhance resilience, improve response times, and minimize flood damage. Here are the key objectives:

- Ensure timely and effective removal of stormwater and floodwater from vulnerable or waterlogged areas.
- Enable quick deployment during emergencies with mobile/auto prime pumps.
- Support disaster risk reduction strategies by reducing response time and manual efforts.
- Fill the gaps in areas lacking stormwater drains or with inadequate outfall capacity.
- Prevent prolonged road closures, property damage, or disruption to essential services.
- Use energy-efficient, durable, and low-maintenance pumps with automatic priming and remote monitoring.

Restoration of Urban Flood Management Infrastructure: Under Component 3

This project was undertaken to mitigate the recurring flood risks affecting vulnerable communities by procuring and deploying high-capacity and low-capacity pumps in key flood-prone areas. Additionally, Quick Response Vehicles have been acquired to ensure the rapid transportation of dewatering equipment, including mobile pumps and the accessories (suction pipes, delivery hoses, and fittings), to waterlogged or inundated locations, enabling immediate drainage operations. Funded by the World Bank, the intervention aimed to strengthen disaster resilience infrastructure through improved floodwater management capabilities. In several urban areas of Srinagar, space constraints have prevented the installation of permanent dewatering stations. As a result, flooding and waterlogging remain significant challenges, particularly during heavy rainfall and emergencies. To address this issue, Advanced mobile dewatering pumps and Quick response vehicles have been procured under JTFRP to provide a rapid and effective response in congested regions. These Mobile dewatering pumps can also act as an emergency tool in unprotected low-lying areas.

2. EXECUTIVE SUMMARY

2.1 Objective

- Procure and deploy high-capacity and low-capacity floodwater pumps.
- Procure the Emergency/Quick Response vehicles.
- Reduce the flood impact on highly vulnerable areas.
- Improve response time and capacity for municipal and disaster management authorities.

2.2 Background of Project

This project was undertaken to mitigate the recurring flood risks affecting vulnerable communities by procuring and deploying high-capacity and low-capacity pumps in key flood-prone areas. **Funded by the World Bank**, the intervention aimed to strengthen disaster resilience infrastructure through improved floodwater management capabilities. In several urban areas of Srinagar, space constraints have prevented the installation of permanent dewatering stations. As a result, flooding and waterlogging continue to be significant challenges, particularly during periods of heavy rainfall and emergencies. To address this issue, Advanced mobile dewatering pumps have been procured **under JTFRP** to provide a rapid and effective response in congested regions. These Mobile dewatering pumps can also act as an emergency tool in unprotected low-lying areas.

2.3 Project Detail

1. The pumps procured are horizontal, end-suction, and centrifugal types (Efficient for High flow rates) with an auto-prime arrangement.
2. They are capable of handling floating materials and soft solids, such as wooden pieces and muddy water.
3. These pumps are capable of starting without external priming and can operate with the least human intervention.
4. An inbuilt fuel tank has been provided with the pumping unit to be capable of storing fuel for min 24 hrs of continuous operation.
5. These pumps have non-overloading characteristics, and the prime mover, i.e., engine, does not get overloaded in the entire range of operation.
6. Complete unit including pump & engine duly coupled along with system, fuel tank, etc., are mounted on a four-wheeled Trolley/trailer duly covered with a suitable heavy-duty and aesthetically good-looking steel canopy having shutters on all sides having proper locking arrangement, for easy transportability and sound attenuated enclosure. The Trolley/trailer is equipped with Leaf Springs for Suspension, Support for Rear end, Towing Bar, Parking Brakes, etc. The Trolley/trailer has minimum ground clearance.
7. The engines in the pumping units are Vertical, in-line, air-cooled diesel engines capable of continuous operation and are equipped with a 12-volt self-starter and

alternator, control panel, wiring harness for panel, and fuel pipes. The engine system is designed to provide reliable and efficient performance under continuous operation.

8. Geo-tracker devices were installed in the pumps to enable remote location tracking and monitoring.
9. The procured high-capacity pumps have a maximum head of 18 meters and a flow rate of 7 and 5 cusecs, suitable for Dewatering purposes. While as the low-capacity pumps have a maximum head of 10 meters and a flow rate of 18 Liters per second.
10. The Quick Response Vehicles are equipped with EURO-IV/BS-IV compliant diesel engines, ensuring adherence to current emission and environmental standards. Each vehicle features a factory-fitted dual-cabin design accommodating the driver, an officer, and a crew of 3–4 personnel, providing comfort and safety during emergency deployments. The cargo compartment is purpose-built to carry suction and delivery water pipes, pump fittings, and other essential dewatering accessories. Additionally, the vehicles include a towing arrangement to facilitate the easy transport and positioning of mobile pump units or auxiliary trailers, thereby enhancing the overall mobility and operational flexibility of the flood response unit.

2.4 Contract Detail

S. No.	Identified Activity/Work	Consultant/ Contractor Name	Awarded Cost (INR Crores)	Revised Cost (INR Crores)	Completion Cost (INR Crores)	Start Date	Date of Completion	Remarks
1	Fabrication Work With Providing And Fitting Of Allied Accessories To Emergency/ Quick Response Vehicle Fabrication Includes Overhead, Through Shelf For Storing Of Pipes, Tool Storing Compartment, Chequered Covering Over The Flooring Of Load Body Etc.	M/s A.R Sons	0.46	-	0.46	27-Mar-19	27-Jun-19	Work Completed
2	Portable water testing equipment for analyzing the waste water parameters like BOD, COD, TSS, pH, TDS, Ammonical nitrate, Phosphate etc	M/s Orbit Technologies	0.29	-	0.29	7-May-19	7-Jul-19	Work Completed
3	Trailer mounted Diesel Engine driven pumping units (12 no's)	M/s Kirloskar Brothers	2.72	-	2.72	1-Sep-18	1-Apr-19	Work Completed
4	Procurement of spares for high capacity Diesel Engine driven autoprime mobile pumps.	M/s Avenue Enterprises	1.06	-	1.06	10-Mar-20	10-Jul-20	Goods Received by SMC

5	Procurement of additional accessories for high capacity Diesel Engine driven mobile autoprime pumps.	M/s Bonifide Engineers	0.34	-	0.34	27-Dec-19	27-Feb-20	Goods Received by SMC
6	Procurement of chassis for Emergency/Quick Response vehicles (8 no's).	M/s Amco Automobiles	0.85	-	0.85	10-Oct-18	10-Nov-18	Goods Received by SMC
7	Procurement of Low Capacity Diesel Engine driven mobile pumping units for SMC (30 no's)	M/s Kesar Intex	0.66	-	0.66	6-Jan-20	6-May-20	Goods Received by SMC
Project Implementation Unit (PIU)					**Srinagar Municipal Corporation**			
Project Management Unit (PMU)					**JHELUM TAWI FLOOD RECOVERY PROJECT (JTFRP)**			
Funding Agency					**World Bank**			
Total Contract Price					**6.38 Cr.**			

3. SUMMARY OF ACHIEVEMENT

Under the flood mitigation and urban resilience component, the procurement of High-capacity and Low-capacity Pumps, along with essential Accessories and Spare Parts, was successfully completed to enhance emergency response and drainage capabilities across flood-prone zones. Pumps were strategically deployed in vulnerable low-lying areas, critical infrastructure points, and urban locations lacking sufficient gravity-based drainage systems. The high-capacity pumps enabled rapid dewatering of major waterlogged zones, while the low-capacity units were effective in managing localized flooding. All procured pumps were supplied with standard accessories, spare parts, and operational manuals to ensure long-term functionality and ease of maintenance.

Positive feedback received from the Srinagar Municipal Corporation (Drainage Division) and field teams regarding pump efficiency, mobility, and deployment ease during rainfall events.

3.1 Deliverables

- Number of Pumps Procured:
  - High-Capacity: 12
  - Low-Capacity: 130
- Capacity Range:
  - High-capacity: 7 Cusecs (6 no) & 5 Cusecs (6 no.)
  - Low-capacity: 0.75 Cusecs each
- The above pumping units were supplied with
  - 250mm nominal diameter heavy duty, flanged, HDPE pipe of 60 m (3 Mtr length each).
  - 250 mm nominal diameter P.V.C. braded heavy duty suction pipe of 7 m length (03 lengths). The pipe is strong enough to withstand vacuum, high pressure, and chipping due to the load.
  - Heavy-duty strainer that can filter solids and other materials up to 10 mm dia.
  - BHP Diesel Engine mounted on a wheeled Trolley/trailer.
- Number of Quick Response Vehicles Procured: 8 no.
  - These vehicles are with EURO-IV/BS-IV compliant Diesel Engines with factory fitted Standard two Cabins for driver, Officer and 3-4 crew, suitable Cargo compartment for carrying the Suction & Delivery water pipes and other accessories & proper towing arrangement for the easy Mobility of the unit.

3.2 Performance Metrics

Timely Completion of Procurement Process: Procurement completed within the planned timeline as per the procurement schedule.

Quantity and Type of Equipment Procured: Number of high-capacity and low-capacity pumps, and quantity of accessories/spare parts procured against the approved Bill of Quantities (BoQ).

Impact on Flood Response Time: Reduction in response time to waterlogging or drainage emergencies after equipment deployment.

Feedback from End Users: Satisfaction level of field operators, municipal staff, and disaster management teams regarding usability, reliability, and maintenance.

3.3 Quality Assurance

- Identification of pump specifications and capacity based on field requirements.
- Identification of Quick Response Vehicles: Specifications and Capacity based on field Requirements
- Competitive National bidding process for procurement of High-Capacity Pumps.
- Delivery, testing, and commissioning of pumps.

4. LESSONS LEARNT

- Early engagement with technical teams ensures more accurate specifications.
- Investing in local staff training improves long-term sustainability.
- Local storage facilities need to be planned to ensure prompt mobilization during emergencies.
- The procurement of these high-capacity pumping units for urban flood management has yielded multifaceted benefits. On one hand, it has contributed to the capacity building of the Drainage sector, particularly in managing tendering processes and contract execution in alignment with national standards and the World Bank's procurement guidelines. On the other hand, it has helped modernize the sector's technical outlook by introducing state-of-the-art technologies and promoting adherence to CPCB-compliant environmental and quality standards.

5. CONCLUSION

5.1 Summary

As part of the flood risk mitigation and emergency response strengthening efforts, the project successfully undertook the procurement of high-capacity and low-capacity pumps, along with essential accessories and spare parts. This initiative aimed to enhance the capacity of local authorities to manage urban flooding, particularly in low-lying and waterlogging-prone areas lacking natural drainage gradients.

The pumps were handed over to the Srinagar Municipal Corporation (Drainage Division) and are now part of the city's emergency flood response mechanism. The timely procurement and deployment of this equipment have significantly improved the city's ability to respond to heavy rainfall events and minimize the impact of urban flooding on life and infrastructure.

Feedback from municipal engineers and field teams has been positive, particularly in terms of operational reliability, ease of transport, and effectiveness in floodwater evacuation. Overall, this intervention has strengthened urban resilience and enhanced disaster preparedness under the broader flood management strategy.

5.2 Impact

- These mobile units, with high discharge capacities ranging from 5 to 7 cusecs, have been procured under the **JTFRP**. They are the first of their kind introduced in the Storm water Drainage Sector of Kashmir, marking a significant advancement in the region's flood management and emergency response capabilities
- Significant reduction in water logging time during the monsoon/flood season.
- Strengthened the Mobile Dewatering capacity of Srinagar Municipal Corporation to approximately. 250 cusecs, which includes the state-of-the-art high capacity and high-tech Auto prime mobile dewatering pumps (12 No's) of ***72 cusecs*** to respond to urban flooding.
- Improved confidence and safety among residents in high-risk zones.
- These specifically designed dewatering pumps (dry prime centrifugal pumps), remove water quickly from flooded areas. Pumping water efficiently helps prevent further damage to buildings, infrastructure, and other materials.
- Quick water removal and drainage also reduce the risk of structural instability and minimize the chances of health hazards such as mildew, mosquitoes, and other pests. The pump efficiency of these diesel-driven pumps, often achieving 85% or higher at the Best Efficiency Point, ensures rapid and reliable water removal.
- By rapidly eliminating water from roads, public spaces, and critical facilities, these pumps contribute to the prompt restoration of normalcy in affected areas.
- Further, floodwater removal with dewatering pumps, especially those equipped with a double diaphragm pump, helps eliminate water contamination, providing easy access to people and animals and ensuring safety.
- In addition to their use in the drainage sector, the state-of-the-art, high-capacity AutoPrime mobile pumping units have also demonstrated significant impact across other hydraulic sectors, including Public Health Engineering (Jal Shakti), Irrigation, and Urban Environmental Engineering Department (UEED). Their versatility, rapid deployment capability, and high efficiency have enhanced operational effectiveness across these critical service domains.

Sustainability and Next Steps

The project has built a foundation for better flood management. To sustain the impact:

- A maintenance schedule should be established.
- Annual review of equipment performance needs to be planned.
- Future projects may consider the establishment of fixed pumping stations, subject to space availability, along with the integration of comprehensive flood early-warning systems.
- The existing **water conductor system** (suction and delivery) used with the **AutoPrime pumping units** is proposed to be **upgraded** by incorporating **toggle-type quick-release couplings and clamps**. This modification will enhance the system's efficiency by enabling **faster, smoother, and leak-free connections**, thereby improving operational speed and reliability during emergency deployments.

The project successfully met its objectives and contributed to improved urban flood resilience. The collaboration with the World Bank enabled transparent procurement and effective implementation, demonstrating a model for future disaster risk reduction investments.

Following prolonged and intense rainfall, Srinagar City and its surrounding areas experienced widespread waterlogging, which severely disrupted daily life, hindered traffic movement, and raised significant public safety concerns. In response to these emergencies, the Srinagar Municipal Corporation (SMC) periodically deployed multiple high-capacity mobile pumping units to mitigate the impact and restore normalcy. These mobile pumps have been procured under **the World Bank-funded Jhelum Tawi Flood Recovery Project (JTFRP).**

According to the Drainage Master Plan–2035, the drainage sector in Srinagar faces a substantial infrastructure deficit, with an estimated shortfall of approximately 2,500 kilometers of drainage network. As a result, vast areas remain either uncovered or inadequately serviced by the existing drainage system. In such scenarios, mobile pumping units have played a critical role in managing stormwater and preventing prolonged water accumulation in vulnerable localities.

Some of the main incidents during the waterlogging emergency and their corresponding response actions are outlined below:

1. Deployment of High-Capacity Auto-Prime Pumping Units at Lal Chowk on 1st August 2019–

On 1st August 2019, Srinagar City experienced intense rainfall, recording 26.4 mm of precipitation. This heavy downpour resulted in substantial waterlogging across the city, with the commercial center of Lal Chowk being particularly affected. Floodwaters reached knee-deep levels, largely due to the inadequate capacity of the existing dewatering infrastructure.

In response to this emergency, the Srinagar Municipal Corporation (SMC) promptly mobilized high-capacity Auto Prime pumping units. These units played a crucial role in efficiently draining the accumulated water, successfully dewatering the Lal Chowk area within a record time of just 1.5 hours. The quantum of stormwater drained by the said unit was approximately 20.40 lakh litres, underscoring its high operational efficiency and vital role in managing urban flooding. This performance highlights the effectiveness of the newly procured high-capacity mobile pumping units (5–7 cusecs) under the JTFRP.

The public widely appreciated the SMC's swift and effective intervention. The then-Hon'ble Mayor also formally commended the efforts, highlighting the critical role of responsive and well-equipped municipal services in managing urban flooding scenarios.

Deployment of High-Capacity Auto-Prime Pumping Units at Lal Chowk on 1st August 2019

The video is linked as https://tinyurl.com/ghanta-ghar

Heavy Rains Cause Water-Logging in Srinagar; Vehicles Wade Through Flooded Roads - August 1, 2019

2. Dewatering Operation at Bakshi Stadium During Hon'ble Prime Minister's Visit-

During the Hon'ble Prime Minister's visit to Kashmir, an official event held at Bakshi Stadium, Srinagar, was threatened by heavy precipitation, which resulted in the entire ground being submerged under knee-deep water. The Srinagar Municipal Corporation (SMC) promptly assured the administration of timely water clearance from the venue.

Utilizing high-capacity Auto Prime pumping units, the SMC successfully dewatered the stadium in a remarkably short time. This swift action ensured that the venue was fully prepared and the event proceeded smoothly, contributing to its overall success. The quantum of stormwater drained out by the said unit was 35.28 Lac liters/Day.

The video is linked as **https://tinyurl.com/bakshi-stadium**

3. Emergency Response to Cloudburst in Tailbal – 2022

In 2022, a cloudburst in the Tailbal area of Ganderbal District led to intense precipitation and severe stormwater accumulation. In response to the situation, the District Administration of Srinagar swiftly deployed a high-capacity Auto Prime pumping unit to the affected area.

The unit effectively cleared the heavy stormwater, mitigating the impact of the event in a timely and efficient manner. The prompt and coordinated response was widely appreciated and applauded by both the Srinagar and Ganderbal District Administrations, reflecting a strong inter-district collaboration during emergencies. The quantum of stormwater drained out by the said unit was 229.5 Lac litres. The video is linked as https://tinyurl.com/4h7vbzrd

Deployment of high-discharge/capacity, auto-prime diesel engine drive pumping units to the Tailbal area of Ganderbal District

4. Emergency Dewatering Operation at Humhama – June 2024

During the heavy precipitation in June 2024, the Humhama area along Airport Road in Srinagar City experienced severe waterlogging, primarily due to the absence of a dedicated dewatering station. In response, the Srinagar Municipal Corporation (SMC) swiftly deployed a high-capacity Auto Prime pumping unit to the affected location. The prompt intervention ensured the area was cleared of floodwater in the shortest possible time, effectively mitigating disruption and potential damage.

In June 2024, high-discharge/capacity auto-prime diesel engine-driven pumping units were deployed at a vulnerable water-logging site in the Humhama area (Airport Road) of Srinagar City.

5. Backup Support During Dewatering Station Failures-

During critical situations, such as the failure of dewatering machinery at non-upgraded dewatering stations—including those at Court Road, Noorbagh, and Patlipora—these high-capacity pumping units have played a vital role by serving as reliable backup

equipment. Their deployment has ensured uninterrupted dewatering operations and minimized the risk of urban flooding in vulnerable areas.

The video is linked as https://tinyurl.com/2b6x542j

6. Deployment of High-Capacity Pumping Units at Harwan Reservoir During Prolonged Dry Spell

Beyond storm water management, the high-capacity pumping units have also proven invaluable during prolonged dry spells. In response to the significant drawdown of water levels in local streams, the District Administration and Srinagar Municipal Corporation (SMC) utilized these units to lift drinking water from reservoirs and channel it into the streams that supply a major portion of the city. This timely intervention ensured continued access to potable water for residents during critical periods of water scarcity.

The said unit has been instrumental in lifting approximately 35.78 lakh litres of drinking water per day from the reservoir to the Water Supply Scheme (WSS), operating

continuously for over a year. Over a period of 8.5 months, it has lifted more than 90 crore litres of water, demonstrating its high capacity, reliability, and critical role in ensuring an uninterrupted water supply. This performance marks a significant milestone in the augmentation of water infrastructure **under the Jhelum and Tawi Flood Recovery Project (JTFRP).**

Deployment of high-discharge/capacity, auto-prime diesel engine drive pumping units to the drinking water reservoir at Harwan during the prolonged dry spell.

6. PHOTOGRAPHS

Emergency/Quick Response Vehicle

Low Capacity Diesel Engine Pumping Unit

Trailer Mounted Diesel Engine Pumping Unit

High Capacity Auto Prime Mobile Pump

END OF REPORT