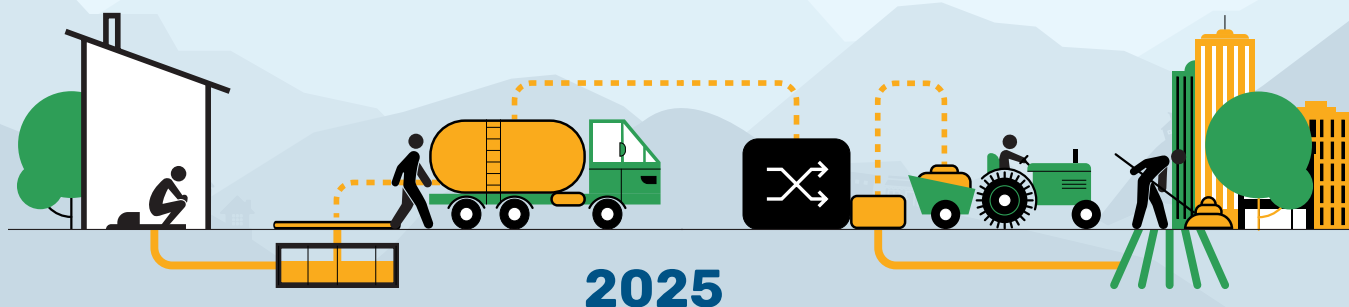


Report on **OPERATIONALISATION OF UTTARAKHAND STATE SEPTAGE MANAGEMENT PROTOCOL**





Report on

**OPERATIONALISATION OF
UTTARAKHAND STATE SEPTAGE
MANAGEMENT PROTOCOL**

2025

Title

Report on “Operationalisation of Uttarakhand State Septage Management Protocol”

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Disclaimer

This report has been prepared based on the proceedings of the district-level workshops on Operationalisation of the State Septage Management Protocol in Uttarakhand. The content reflects the discussions, tools, and draft Town Action Plans developed during the sessions, and does not represent final policy decisions of the Government of Uttarakhand. While due care has been taken to ensure accuracy, NIUA and UDD, Uttarakhand are not liable for any inadvertent errors or omissions. The report is intended for knowledge-sharing and capacity-building purposes only.

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Letter from the Urban Development Directorate, Uttarakhand for conducting workshops on 'Operationalisation of Faecal Sludge and Septage Management Protocol'

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सेवा में,

- | | |
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| 1. नगर आयुक्त,
समस्त नगर निगम,
उत्तराखण्ड। | 2. अधिशासी अधिकारी,
समस्त नगर पालिका परिषद / नगर पंचायत,
उत्तराखण्ड। |
|--|--|

विषय- FSSM 'प्रोटोकॉल फॉर सैटेज मैनेजमेन्ट' के अनुपालन व संचालन पर प्रशिक्षण कार्यशाला के संबंध में।

महोदय,

कृपया उपरोक्त विषयक अवगत करना है कि शहरी विकास निदेशालय (UDD) एवं नेशनल इंस्टीट्यूट ऑफ अर्बन अफेयर्स (NIUA) के मध्य FSSM, यूज्ड वॉटर एवं sanitation पर सहयोग हेतु MOU हस्ताक्षरित है। जिसके क्रम में राज्य के सभी शहरी स्थानीय निकायों (ULBs) में FSSM प्रोटोकॉल के संचालन पर "Operationalization of Faecal Sludge and Septage Management Protocol" विषयक कार्यशाला का आयोजन किया जाना प्रस्तावित है, इन कार्यशालाओं का उद्देश्य नगर निकाय अधिकारियों को FSSM प्रोटोकॉल के प्रभावी क्रियान्वयन हेतु जानकारी साझा किया जाना है।

2- उपरोक्त एक दिवसीय कार्यशाला का आयोजन जिला मुख्यालय के नगर निकाय में किया जाएगा, जिस हेतु ऑडियो-विजुअल सेटअप, बैठक व्यवस्था, सम्मेलन/मीटिंग हॉल और अन्य आवश्यकताएं जिला मुख्यालय के नगर निकाय द्वारा की जाएगी तथा प्रशिक्षण सामग्री, विशेषज्ञ प्रशिक्षक, और भोजन की व्यवस्था NIUA द्वारा की जाएगी। साथ ही अवगत कराना है कि उक्त कार्यशाला हेतु किसी भी प्रकार यात्रा भत्ता निदेशालय/NIUA द्वारा वहन नहीं किया जायेगा।

अतः उक्तानुसार पत्र इस आशय से प्रेषित है कि उक्त कार्यशाला में प्रतिभाग हेतु सहायक नगर आयुक्त/अधिशासी अधिकारी/अधिशासी अभियन्ता/सहायक अभियन्ता/अवर अभियन्ता स्तर के कम से कम 02 अधिकारियों को प्रतिभाग करने हेतु नामित करने का कष्ट करें।

संलग्नक उपरोक्तानुसार।

1- कार्यशाला एंजेन्डा।

2- कार्यशाला कार्यक्रम।

3- संपर्क व्यक्ति सूची।

भवदीय,

ललित नारायण मिश्र)
उपर निदेशक।

संख्या एवं दिनांक तदैव।

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LIST OF ABBREVIATIONS

ADB	: Asian Development Bank
AAE	: Additional Assistant Engineer
AE	: Assistant Engineer
AMRUT	: Atal Mission for Rejuvenation and Urban Transformation
DPR	: Detail Project Report
DRE	: Deep Row Entrenchment
EE	: Executive Engineer
EO	: Executive Officer
FSSM	: Faecal Sludge and Septage Management
FSTP	: Faecal Sludge Treatment Plant
GPS	: Global Positioning System
HRDA	: Haridwar-Roorkee Development Authority
IEC	: Information, Education and Communication
IOTA	: Internet of Things Application
JE	: Junior Engineer
KfW	: Kreditanstalt für Wiederaufbau (Credit Institute for Reconstruction)
MLD	: Million Litres per Day
NIUA	: National Institute of Urban Affairs
NMCG	: National Mission for Clean Ganga
PPE	: Personal Protective Equipment
SBM	: Swachh Bharat Mission
SCBP	: Sanitation Capacity Building Platform
SE	: Superintending Engineer
SFC	: State Finance Commission
SMC	: Sanitation Management Cell
SSMP	: State Septage Management Protocol
STP	: Sewage Treatment Plant
TAP	: Town Action Plan
UDD	: Urban Development Directorate
ULB	: Urban Local Body

EXECUTIVE SUMMARY

Urban sanitation is a pressing priority for the state of Uttarakhand, particularly given its hilly terrain, fragile ecology, and the scattered nature of its urban settlements. Recognising the challenges and opportunities in Faecal Sludge and Septage Management (FSSM), the Urban Development Directorate (UDD), Government of Uttarakhand, in collaboration with the National Institute of Urban Affairs (NIUA), initiated a comprehensive workshop series titled **“Operationalisation of the State Septage Management Protocol.”**

Conducted across all 13 districts between March and May 2025, these workshops aimed to build the capacity of Urban Local Bodies (ULBs) to implement the FSSM Protocol and relevant bye-laws. The series engaged over 160 officials from 102 ULBs, equipping them with practical tools such as the Desludging Fee Calculator, and supporting the drafting of localised Town Action Plans (TAPs) aligned with the state protocol. This report expands on the deliverables, andragogy and output from these workshops in terms of TAPs.

This initiative was formally requested by the Director, UDD, during a meeting held on 21st January 2025, underscoring the department’s strategic commitment to sustainable sanitation. NIUA’s long-standing technical partnership with the state ensured structured training, hands-on exercises, and strategic follow-up support, setting the stage for systemic sanitation reforms in the state.

The 74th Constitutional Amendment Act (1992) empowers Urban Local Bodies (ULBs) with the responsibility of managing urban services, including sanitation. In line with this, the National FSSM Policy (2017)¹ mandates that all ULBs manage septage generated within their jurisdictions. Uttarakhand has shown proactive intent in this direction by formulating its State Septage Management Protocol (2017)² with support from NIUA.

Out of 106 ULBs, 92 have notified FSSM by-laws, with dedicated Sanitation Management Cells (SMCs) established in approximately 92 cities as depicted in Figure 1. Despite this progress, ground-level implementation has remained incomplete, largely due to a lack of trained personnel, contextual understanding, and tools for operationalising these

frameworks. To bridge this gap, a district-wise training initiative was conceptualised to equip municipal officials with practical knowledge, planning skills, and regulatory clarity. The workshops, led by NIUA's Sanitation Capacity Building Platform (SCBP), covered technical, financial, and governance aspects of FSSM to build local capacity, and promote inclusive and sustainable sanitation practices.

2.1 Sanitation Scenario in Uttarakhand

Sanitation in Uttarakhand is shaped by its unique geography, which includes vast Himalayan terrains, scattered urban settlements, and ecologically sensitive zones. While these features present undeniable challenges, the state has taken significant strides in strengthening its urban sanitation infrastructure and governance.

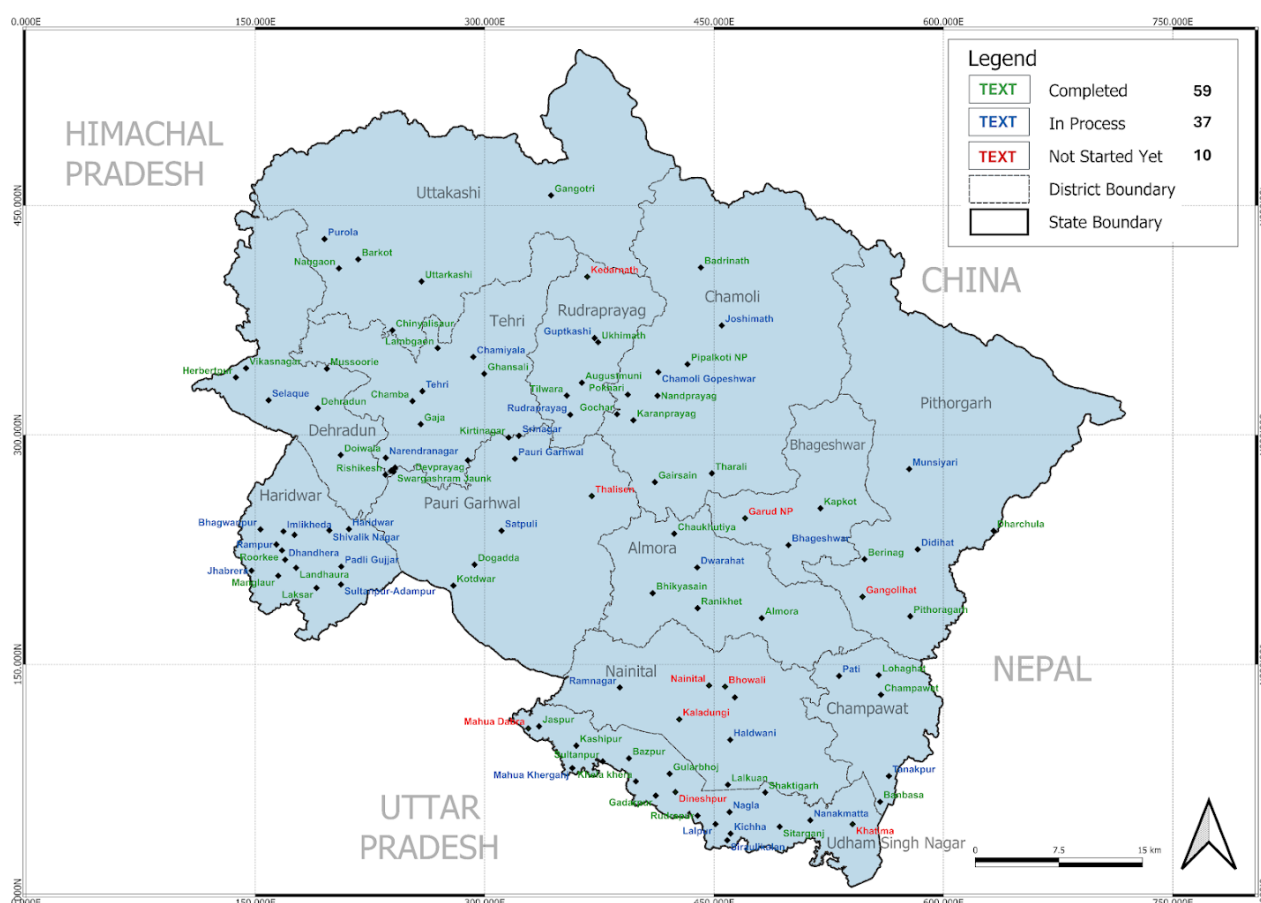


Figure 1: ULB wise status of FSSM bylaws in Uttarakhand

¹https://www.cseindia.org/static/mount/recommended_readings_mount/14-National-Policy-on-Faecal-Sludge-and-Septage-Management;2017.pdf

²https://scbp.niua.org/sites/all/themes/zap/knowledge/Advisory%20Document_1.pdf

A foundational pillar of Uttarakhand's sanitation landscape is the network of 69 operational Sewage Treatment Plants (STPs) and 1 Faecal Sludge Treatment Plant (FSTP) with a combined treatment capacity of approximately 428 million litres per day (MLD). The Government of Uttarakhand, with support from the National Mission for Clean Ganga (NMCG)³, is actively working to scale this infrastructure with an aim to nearly double the treatment capacity in the coming years. In cities where conventional sewerage systems are not feasible, particularly in hill regions Faecal Sludge and Septage Management (FSSM) is being prioritised.

Urban local bodies (ULBs) have begun embracing this shift, with over 90 ULBs having notified their FSSM bye-laws. Several cities are now equipped with treatment units such as co-treatment facilities integrated with STPs and FSTP. The first and largest standalone FSTP (125 KLD) of the state established in Rudrapur, serving multiple nearby ULBs through a cluster approach pioneers the transformation.

The Uttarakhand Jal Sansthan and Jal Nigam play key roles in executing and maintaining these treatment systems, supported by technical inputs and funding from central missions like NMCG, Swachh Bharat Mission (SBM) and Atal Mission for Rejuvenation and Urban Transformation (AMRUT). Additionally, the formation of SMCs across most ULBs indicates growing institutional attention towards structured sanitation service delivery.



Picture 1: Logos of Uttarakhand Peyjal Nigam & Jal Sansthan

At the regulatory and programmatic level, the state has issued the Uttarakhand Septage Management Protocol in 2017, setting clear service mandates and technical benchmarks for all ULBs. While full operationalisation is still underway, the state has laid down a strong institutional and infrastructural base to contribute towards inclusive, safe, and sustainable sanitation.

Above all, the workshops responded to a clear directive from the state to institutionalise capacity-building as a driver of implementation, ensuring that the intent behind the FSSM policy framework is echoed at a consistent and competent response at the ground level.

2.2 NIUA's Intervention in Uttarakhand

NIUA has been a long-standing technical and strategic partner to the Government of Uttarakhand in its journey towards achieving inclusive and resilient urban sanitation. Over the years, this collaboration has evolved into a robust ecosystem of policy formulation, advisory support, technical handholding, and capacity-building initiatives.

Working closely with the Urban Development Directorate (UDD), NIUA has played an instrumental role in shaping the state's sanitation roadmap—from drafting the Advisory on Uttarakhand Septage Management Protocol⁴ (2020) to facilitating the notification of FSSM bye-laws across more than 90 ULBs. This has been complemented by strategic state level advisory note and guidebooks^{5 6} on co-treatment pushing the need for biosolids management, and city-wide inclusive sanitation planning. Together, UDD and NIUA have aligned their efforts not just to build infrastructure but also to nurture the institutional systems that make sanitation services functional and sustainable.

NIUA's engagement in Uttarakhand is characterised by its responsiveness to the state's varied terrain and urban contexts, supporting large STP-based systems in the plains while promoting decentralised FSSM models in hilly areas. Technical support has been extended to major infrastructure projects funded by NMCG, AMRUT, and multilateral institutions, including the design of FSTP and co-treatment facilities in cities like Rudrapur, Haridwar, Rishikesh, and Srinagar.

Simultaneously, NIUA has led a wide spectrum of in-person trainings, technical workshops, exposure visits, and IEC initiatives, all aimed at embedding sanitation as a core municipal function. These engagements have not only enhanced technical competencies among municipal staff but have also encouraged cross-learning and peer-to-peer knowledge exchange, especially among officials from remote towns.

What sets this partnership apart is its holistic

³ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1896675>

⁴ https://scbp.niua.org/sites/all/themes/zap/knowledge/Co-treatment%20AdvisoryNote_UK.pdf

⁵ https://scbp.niua.org/sites/all/themes/zap/knowledge/Vol_1_Kargi_Technical_Report%20_For_web.pdf

⁶ https://scbp.niua.org/sites/all/themes/zap/knowledge/Vol_2_Planning_and_implementation_24-03-2021%20_for_Website.pdf

character. NIUA has supported Uttarakhand not just as an external technical agency but as an embedded collaborator, working alongside UDD, Jal Nigam, Jal Sansthan, and local governments to co-create and implement solutions. Whether it is through digital tools like the Desludging Fee Calculator⁷, knowledge assessments, or direct field engagements. NIUA's work has been oriented towards building systems that are locally owned, environmentally sound, and socially inclusive.

As the sanitation sector enters a new phase in the state—with increasing focus on service quality, climate resilience, and user equity—this collaboration between NIUA and UDD continues to stand as a cornerstone of innovation, policy coherence, and field-level transformation in Uttarakhand.

2.3 Need for the Workshop

The workshop series on “Operationalisation of the State Septage Management Protocol” was conceived not merely as a capacity-building exercise but as a strategic enabler of transformative change in urban sanitation across Uttarakhand. This need was formally recognised during a high-level meeting convened by the Director of the Urban Development Directorate on 21st January 2025, where a request was made to NIUA to lead this initiative across all districts.

The workshops were envisioned as a platform for continued interpretation of the protocol, facilitate hands-on exposure to tools such as the Desludging Fee Calculator, and encourage towns to develop customised short-term action plans that are both realistic and compliant with state guidelines. This became even more crucial with the induction of newly appointed officials.

The emphasis of this series was on equipping municipal officials with problem-solving frameworks, data-driven planning skills, and a deeper understanding of their roles in safeguarding public health and the environment. Rather than focusing on gaps or challenges alone, the workshops steered conversations towards opportunities, demonstrating how to improve desludging services, cost recovery models, and stakeholder coordination can lead to tangible improvements in sanitation outcomes.

2.3.1 Objective

The core objectives of the workshop series were as follows:

1. To enable ULBs across Uttarakhand to effectively operationalise the State Septage Management Protocol and their respective FSSM bye-laws.
2. To equip municipal officials with technical, regulatory, and planning competencies to manage faecal sludge and septage in a manner that is safe, transparent, and aligned with the state's broader sanitation goals.
3. To introduce practical tools such as the Desludging Fee Calculator to support evidence-based decision-making and user charge rationalisation.

2.3.2 Target Audience

The workshop series was primarily designed for key functionaries responsible for sanitation planning and service delivery within ULBs. The target audience for the workshop is mentioned in Figure 2:



Figure 2 : Target Audience for the workshop

⁷ <https://scbp.niua.org/desludging-fee-calculator>

ANDRAGOGY AND WORKSHOP DELIVERY APPROACH 3

3.1 Andragogical Principles:

The workshop was structured to promote interactive discussions, brainstorming sessions, problem-solving activities and contextual relevance, thereby enabling municipal functionaries to internalise both the “why” and the “how” of FSSM. This andragogical approach emphasised the use of real-life examples, analysis of local data, and the facilitation of group dynamics. This fostered effective communication among newly appointed Executive Officers (EOs) and municipal staff, encouraged peer learning and enabled participants to collaboratively solve calculations using real-time data from their respective ULBs. Overall, the workshop created an engaging learning environment that supported both knowledge acquisition and practical application.

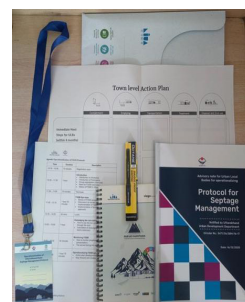
3.2 Workshop Methodology

The workshop followed an interactive and open-book format designed to maximise participant engagement and practical learning. This structured approach facilitated comprehensive understanding, encouraged peer-to-peer learning, and supported the development of actionable plans tailored to local contexts. The methodology comprised the following phases:

3.2.1 Training Aids and Materials

The following training aids and materials were utilised to enhance participant engagement and facilitate effective learning:

1. Presentations: Thematic infographics, data visualisations, and tables, etc., were developed to align with the Advisory State Septage Management Protocol, ensuring clarity and contextual relevance.
2. Calculation Worksheets: Step-by-step templates guided participants through the estimation of faecal sludge generation and desludging vehicles requirements for their respective ULBs.
3. Desludging Fee Calculator⁸: A user-friendly, web-based tool developed by NIUA was introduced to promote transparency and provide a scientific basis for calculating user fees associated with desludging services.
4. Teaching Aids: Flipcharts, markers and whiteboards were employed to support lectures and facilitate group discussions.
5. Individual Kits: Each participant received a folder containing a copy of the Advisory State Septage Management Protocol and, a notebook, a pen, the workshop agenda, a Town Action-Plan template, an identification card, and a lanyard.



Picture 2: Kits provided to the participants

Table 1: Workshop delivery: Tools and Techniques

Phase	Description
Icebreaker and Orientation	The opening session was aimed at setting the context and building rapport among the participants.
Technical Lectures	Presentations covered the fundamentals of FSSM, the sanitation value chain, and the relevant regulatory context.
Calculation Exercises	Participants estimated total faecal sludge generation in their respective ULBs, determined the required number of desludging vehicles, and showcased the use of Desludging Fee Calculator tool.
Group Work and Brainstorming	Teams examined stakeholder roles across the FSSM value chain and collaboratively developed ideas for implementing effective FSSM systems in ULBs.
Town Action Plan Drafting	In the final session, participants drafted both immediate and short-term operational roadmaps for their towns, covering the timeframes of four and twelve months.

⁸<https://scbp.niua.org/desludging-fee-calculator>

COURSE CONTENT AND LECTURES

4.1 Session 1 : Understanding FSSM

This session was designed to equip the participants with a comprehensive understanding of the fundamentals of FSSM, focusing on the value chain and lifecycle of waste. The session also clarified the roles and responsibilities of various stakeholders, including the roles of the participants themselves, across the entire value chain. To foster active engagement, the session incorporated interactive elements that encouraged dialogue between the trainer and the participants. Basic mathematical exercises and thought-provoking activities were integrated to broaden the participants' knowledge, perspectives and abilities in managing septage in their respective ULBs.

Additionally, the participants were also introduced to the official FSSM Protocol and Advisory documents, and were encouraged to refer to these resources throughout the workshop, ensuring that they learn to apply these protocols and advisories in their ongoing and future sanitation management efforts.



Agenda: Operationalization of FSSM Protocols

Time	Duration	Description
10.15 – 10.30	15 minutes	Registration open
10.30 – 11.30	1 hour	Introduction - Introduction to Workshop - Introduction of Participants - Group expectations (exercise) - Need for FSSM (exercise) - Status of FSSM in Uttarakhand (presentation)
11.30 – 11.45	15 minutes	Tea break
11.45 – 13.15	1 hour 30 minutes	FSSM Bye-laws - Basics of FSSM (presentation) - Discussion on issues and challenges in implementation of FSSM bye-laws - Implementation of bye-laws (step-by-step approach)
13.15 – 14.00	45 mins	Lunch
14.00 – 15.00	1 hour	Desludging fee calculation - How to use the tool (presentation/walk through the tool) - Calculation of desludging fees for respective towns (exercise)
15.00 – 15.30	30 minutes	Monitoring FSSM - How to monitor progress of FSSM (presentation) - Tea served during the session.
15.30 – 16.45	1 hour 15 minutes	Operationalizing FSSM bye-laws - Action plan development (exercise) - Way forward and closing remarks

Picture 3: Agenda of the workshop

4.1.1 Overview of FSSM

Faecal Sludge and Septage Management (FSSM) refers to the safe and systematic handling of human waste collected from on-site sanitation systems, such as septic tanks and pit latrines. Unlike centralised sewerage systems, which are often not viable for smaller urban areas, FSSM offers a decentralised and cost-effective solution tailored to the unique needs/ realities of ULBs in Uttarakhand and other hilly regions.

The primary objective of FSSM is to manage the entire lifecycle of faecal sludge— from containment to treatment and eventual reuse or safe disposal— in a manner that is both scientifically sound and administratively feasible.

4.1.2 The FSSM Service Value Chain

The FSSM service value chain comprises five key components:

1. Containment
 - Proper design, size, and maintenance of septic tanks.
 - Prevention of direct discharge into open drains or water bodies.
 - Estimation/survey methodology to assess the number of septic tanks in the city.
2. Emptying
 - Scheduled or on-demand desludging of septic tanks.
 - Use of mechanised vehicles (vacuum trucks, cesspool cleaners).
 - Exploring the right practices and equipment for desludging operators.
3. Transportation
 - Safe transportation of faecal sludge from containment to treatment facilities.
 - Ensuring no spillage or illegal dumping during transit.
 - Registration and licensing of the desludging operators.
 - Calculating the appropriate desludging fee for the users.
4. Treatment
 - Selection of relevant treatment options based on specific criteria (DRE, Co-treatment, FSTP).

- Processing sludge in treatment facilities.
- Reduction of pathogens, solids, and environmental load.

5. Reuse and Disposal

- Challenges and opportunities of reusing Bio solids
- Closure of the sanitation loop with environmental and economic benefits.

The workshop emphasised that effective FSSM is only possible when all five components function in an integrated and coordinated manner.

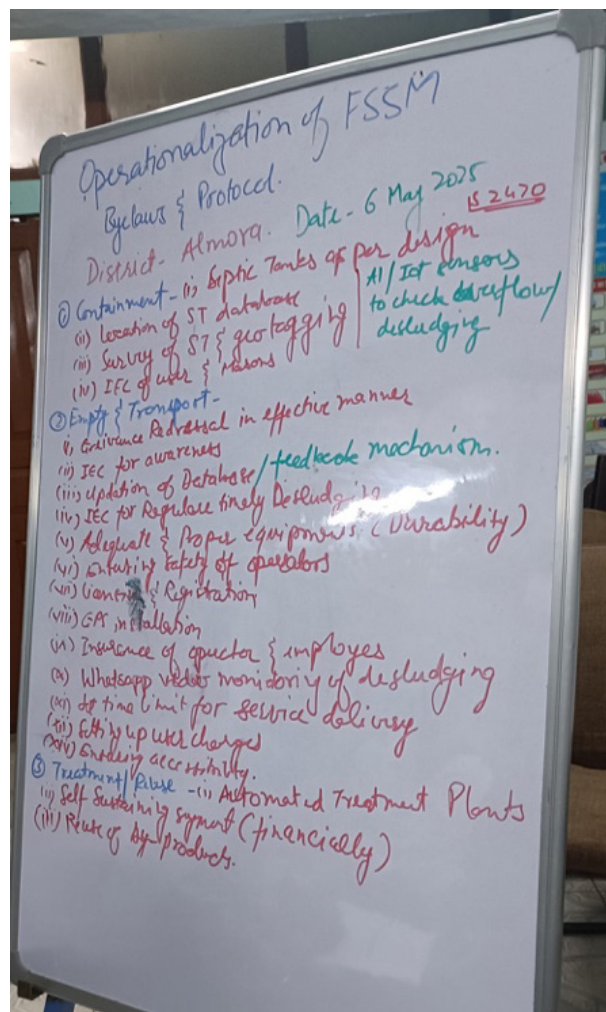
4.1.3 Technical Exercises: Estimations and Planning

Three core exercises were introduced to equip participants with practical planning tools:

1. Estimation of Faecal Sludge Generation: Participants were introduced to the formula-based estimation of faecal sludge volumes based on contextual data points such as population, average containment volume per household, and desludging frequency. This exercise enabled ULB officials to accurately estimate project treatment needs and resource requirements.
2. Estimation of Desludging Vehicle Requirements: Using parameters such as the average sludge volume per trip, desludging frequency, and operational days per year, participants calculated the number of desludging vehicles required to effectively service their towns. This exercise served as a precursor to the subsequent discussions on financial planning and procurement.
3. Group-Based FSSM Exercise: Following the preliminary lectures and technical demonstrations, participants were divided into 3–4 groups. Each group was tasked with identifying:
 - Ideal level of service across the value chain.
 - Possible activities and projects to achieve the standard level of service.

- Potential creative and context-specific solutions.

The objective of this activity was to stimulate critical thinking and promote collaborative problem-solving. Outcomes from this session contributed directly to the development of the draft FSSM action plans for each town, and are reflected in the individual town action plans submitted by participants.



Picture 4: Inputs gathered from participants through group exercise



Picture 5: Participants engrossed in group exercise

“Lack of desludging vehicles and inaccessible terrain are real issues in our area. But now we know how to calculate needs and present a proper plan to the department” – Junior Engineer, NPP Gauchar.

4.2 Session 2: Desludging Fee Calculator

4.2.1 About the tool:

To enhance desludging services in the State of Uttarakhand, NIUA has developed a standardised tool for calculating desludging fees, addressing the challenges of irregularities in demand-based pricing and escalating service costs. These challenges have hindered effective faecal sludge and septage management, leading to illegal dumping practices. This innovative tool leverages existing data on faecal sludge and septage management (FSSM) collected by ULBs. It adjusts desludging rates based on key factors such as hauling distance, terrain, and freight weight, ensuring a fair and transparent pricing structure. By standardising user charges, the tool aims to increase demand for municipal desludging services, making it more likely that residents will utilise municipal services and reduce the prevalence of illegal dumping. This tool is aimed to assist ULBs in formulating their septage bye-laws by providing a rationale for desludging practices. At the national level, where such regulations are still evolving, the tool can be integrated into municipal websites, offering residents clear and precise fee calculations. This approach promotes transparency, encourages responsible faecal sludge management, and fosters a cleaner and more sustainable environment.



Picture 6: Desludging Fee Calculator homepage

Session-deliverable: At the start of each session, every participating ULB was provided with a unique login ID and password, to access to the Desludging Fee Calculator through the SCBP homepage⁹. The session began with a structured discussion on the

regulatory mandate of ULBs, focusing on compliance with septage bylaws and key service deliverables outlined in the state's FSSM protocol. Given that ULBs are responsible for the safe emptying and transportation of faecal sludge/septage, participants were first asked to share the desludging fees currently levied under their respective bylaws. Following this, a group exercise was conducted to encourage and promote analytical thinking among participants. Participants were divided into 2 teams, each assuming the role of a cesspool operator, and tasked with identifying critical business factors influencing desludging operations and determining an appropriate per-trip cost. This exercise, structured as a time-bound challenge, encouraged teams to list key factors that the team thinks will affect the desludging costs. This interactive activity deepened participants' understanding of the operational and financial challenges faced by cesspool operators, enabling them to better assess the realities faced by desludging service providers.

Desludging Fees			
City Overview		Parameters	
ULB	Rudrapur		Tractor mounted
District	Udhamsingh Nagar	Fuel cost/trip	530
Septage Treatment Facility	Faecal Sludge Treatment Plant	PPE Kit cost/trip	16
Total trip made in a given year	624	Treatment cost/trip	300.00
Vehicle Type	Tractor mounted	ULB Registration cost/trip	4
Terrain Type	Type 1: Flat or Nearly Level Terrain	Service charges levied by the ULB/trip	300
Haulage Distance	0-10 km	Vehicle Insurance cost/trip	13
		Medical Insurance cost/trip	48
		Profit Margin cost/trip	500
Total Cost Including (18% GST)	3849	Maintenance cost/trip	227

Picture 7: Desludging Fee Calculator output page

Upon completing the exercise, all ULB representatives were guided through logging into the Desludging Fee Calculator via their smartphones. The factors identified during the exercise are systematically compared with the tool's parameters, reinforcing its reliability and practical relevance in determining desludging fees. A step-by-step walkthrough ensures that each participant correctly enters data and generates desludging fee estimates. The calculated fees are then directly compared with existing desludging charges, often prompting discussions on the need for evidence-based tariff revisions. Furthermore, all user-generated data is securely stored by NIUA for future assessments and strengthening FSSM practices at the state level. It is important to note that ULBs with lower desludging frequencies may face operational uncertainties, leading to service delivery gaps, and dependence on neighbouring ULBs for emptying services. Addressing these challenges is critical to ensuring equitable and sustainable desludging services across all urban areas.

⁹<https://scbp.niua.org/user/login>

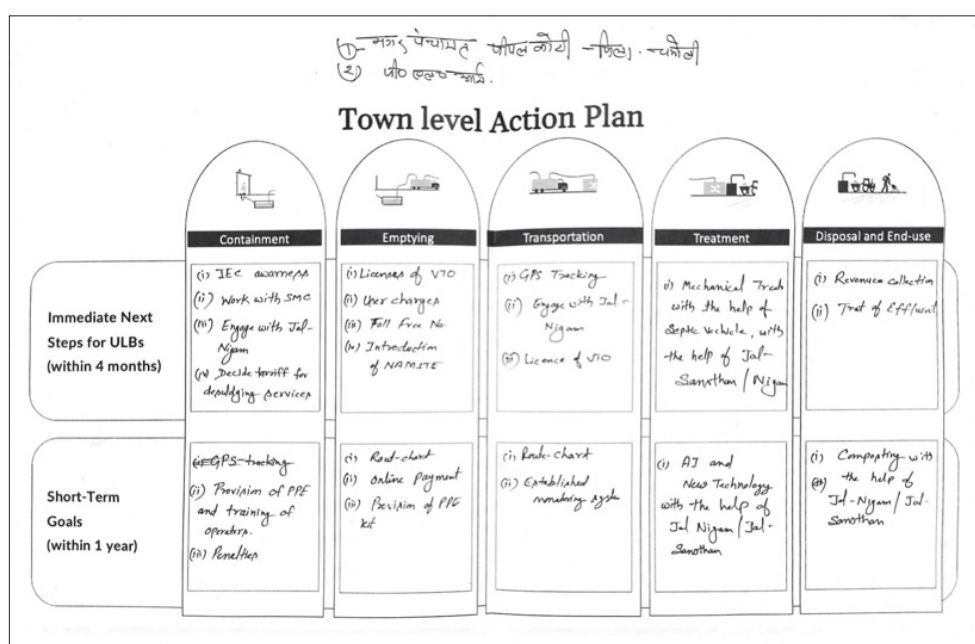
WORKSHOP OUTCOME

5

5.1 Analysis of Town Action Plan

As part of the FSSM workshop series conducted across all ULBs, town-level action plans were developed by municipal officials to identify and commit to key sanitation activities for the upcoming year. A detailed analysis of these plans provides valuable insights into how ULBs are aligning their priorities across the FSSM value chain -from containment to reuse/disposal.

To distil these findings, frequently occurring keywords across the action plans were compiled, with each keyword representing a specific category of action. These were then mapped to the five stages of the FSSM value chain: Containment, Emptying, Transportation, Treatment, and Reuse/Disposal. The Figure 3 captures the frequency of each keyword under the corresponding stage.



Picture 8: Example of a Town Action Plan prepared by participants



Figure 3: Keyword analysis of Town Action Plan

5.2 Key Observations

- **Strong Focus on Containment and Household-Level Interventions-** Most towns have prioritised activities that strengthen the very first stage of the FSSM chain – containment. There is a clear emphasis on conducting household surveys to map existing systems and upgrading containment units to comply with the standards. These foundational steps aim to ensure that inputs into the sanitation system are structurally well documented.
- **Strengthening Local Governance and Regulatory Mechanisms-** Several ULBs are revising their FSSM bye-laws and preparing detailed project reports (DPRs), especially for treatment infrastructure. This demonstrates an increasing effort to integrate FSSM principles within the legal and planning frameworks at the city level, marking progress towards long-term institutionalisation.
- **Elevated Attention to Desludging Safety and Formalisation-** Health, safety, and the formal registration of desludging workers have emerged as consistent priorities. ULBs have expressed that they are willing to provide personal protective equipment (PPE), conduct trainings, and organise health camps, indicating an important cultural shift toward recognising and protecting sanitation workers as essential service providers.
- **Technology as a Tool for Accountability and Efficiency-** A significant number of towns have expressed intent to deploy Global Positioning System (GPS) tracking for desludging vehicles and establish licensing or registration systems. This reflects a growing appreciation for tech-enabled transparency, ensuring both operational efficiency and environmental safeguards during the transportation of sludge.
- **Emerging but Limited Focus on Resource Recovery and Reuse-** While still developing, there is growing interest among several ULBs to explore safe disposal and reuse of treated sludge for applications such as agriculture, landscaping, or composting. References to site identification and market linkages, indicate early-stage thinking around circular economy sanitation models.
- **Need for Cross-Sector Coordination and Support-** Several plans highlight the need for improved coordination, both inter-departmental and with parastatal agencies, especially on treatment infrastructure. This suggests that while intent remains strong, effective implementation will require institutional support and clear delineation of roles.

OVERVIEW OF PARTICIPANTS

6

6.1 Profile of Participants

The training workshops on the Operationalisation of Septage Management Protocol witnessed active participation from a diverse range of municipal stakeholders across Uttarakhand. A total of 162 participants attended these workshops, representing a broad spectrum of designations and institutional roles involved in sanitation and urban infrastructure management within the state as shown in Figure 5. This diversity ensured that the workshops addressed the needs and perspectives of various key actors responsible for implementing septage management protocols.

6.2 Cohort of Participants

1. **State-wide Engagement:** The workshop series achieved state-level outreach, covering all 13 districts of Uttarakhand and securing representation from 102 out of 106 ULBs, promoting a uniform understanding of the septage management protocol and promoting consistency in implementation throughout the State (Figure 4).
2. **Strong Representation from Decision-Makers:** With 51 Executive Officers in attendance, the training reflected commendable involvement from municipal leadership, which is crucial for the effective adoption and enforcement of state sanitation frameworks. Additionally, the majority of these EOs were newly appointed, marking their first in-depth exposure to FSSM. This provided a valuable opportunity to guide and orient them at an early stage in their careers, fostering a strong foundation for future leadership in sanitation management.
3. **Strengthening the Capacities of Technical Officials:** The participation of 31 engineering professionals, including Superintending Engineers (SEs), Executive Engineers (EEs), Assistant Engineers (AEs), Additional Assistant Engineers (Add AEs), and Junior Engineers (JEs) – underscored the

technical focus of the training. Their involvement ensures that the capacity to implement the Septage Management Protocol is institutionally embedded, enhancing the technical robustness of urban sanitation initiatives.

4. **Ground-Level Linkages:** The inclusion of multiple Sanitary Inspectors and Environment Supervisors further ensured effective grassroots-level monitoring, community engagement, and the smooth execution of day-to-day sanitation operations. This further ensures that the protocol is not only understood at the policy and technical levels, but also effectively implemented at the ground-level.
5. **Multi-role Participation:** The diversity of participants, ranging from policy-level nodal agency representatives to field inspectors, highlights the integrated and holistic nature of the FSSM capacity building strategy. Such multi-level engagement is instrumental in fostering cross-departmental collaboration in sanitation management efforts across the state.

6.3 Attendance Summary

The attendance was systematically recorded through a signed sheet at the time of registration. The summary below highlights the scope of participation.

- **Total Participants: 162**
- **Districts Covered: 13**
- **ULBs Represented: 102**

This reflects the workshops achieved extensive geographical and institutional coverage, ensuring representation from 102 out of 106 ULBs in Uttarakhand. This comprehensive and multi-tiered participation engaged frontline staff to senior administrators, ensuring a holistic and system-wide sensitisation on FSSM protocol. The detailed attendance sheet is annexed as Annexure I.

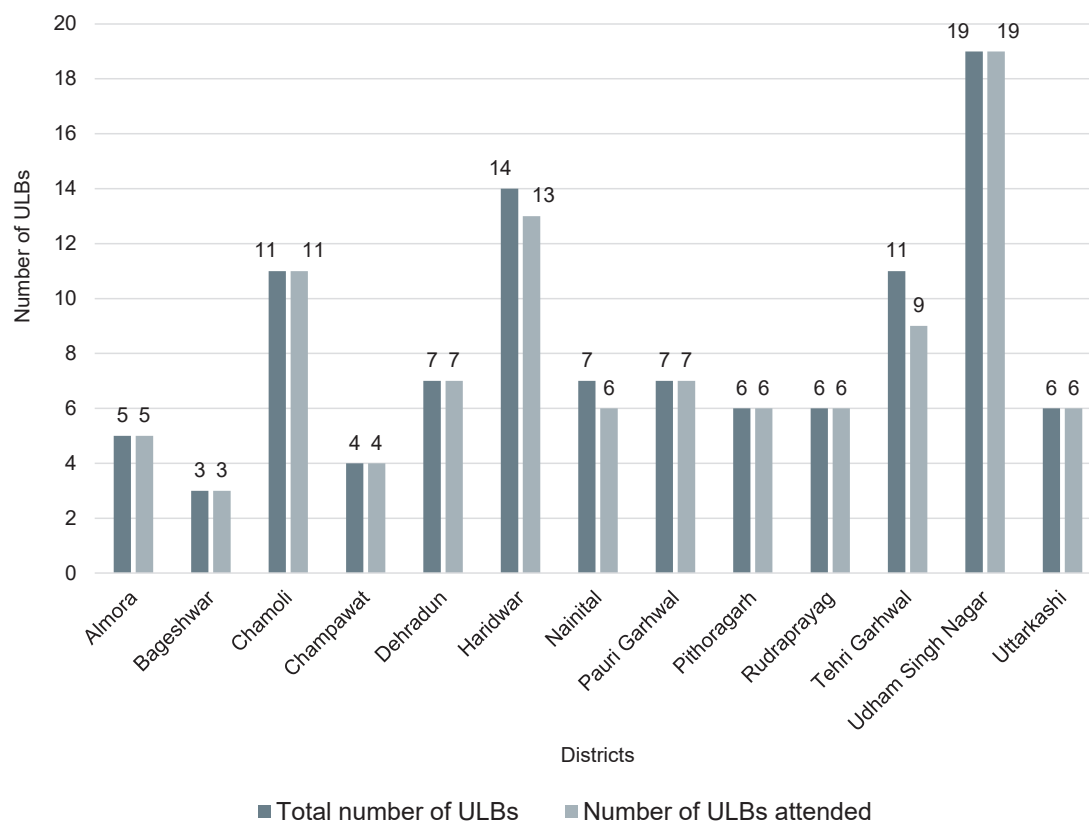


Figure 4: Number of ULBs attended

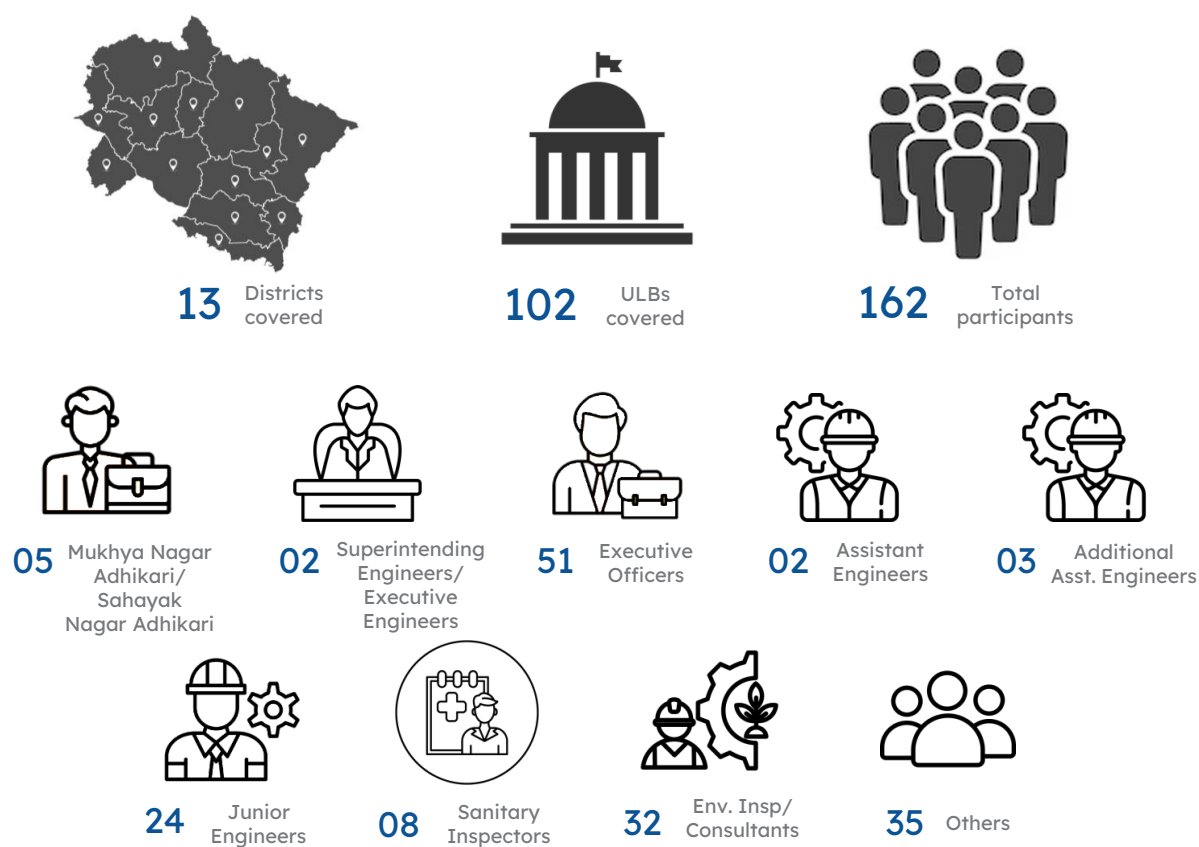


Figure 5: Bulletin for the Workshop

PARTICIPANT FEEDBACK AND REFLECTIONS

7.1 Overview of Feedback Collection

To assess the effectiveness of the workshop and inform future improvements, a structured feedback form was circulated among all participants at the end of each session. The feedback form captured both quantitative ratings and qualitative reflections on various aspects of the workshop.

The feedback form covered sections on:

- Relevance of content to participants' roles
- Clarity and quality of presentations
- Usefulness of calculation exercises and group activities
- Quality of training materials provided
- Effectiveness of facilitation and delivery methods
- Suggestions for improvement and requests for follow-up support

7.2 Review of feedback:

Based on the feedback received, 95% of participants rated the workshop content as highly relevant to their day-to-day responsibilities, with particular appreciation for the modules on faecal sludge estimation and desludging planning (Figure 6).

The group-based exercises were widely valued, and nearly 76% of participants reported that the training tools effectively enabled them to contextualise the learnings to their own ULB settings. Participants highlighted the interactive and hands-on approach adopted during the sessions. 91% of participants expressed confidence in the trainers' expertise and knowledge on the content and endorsed the teaching methodologies used. The provision of a comfortable learning environment encouraged participants to actively share their queries and concerns.

Several participants suggested follow-up sessions focused on IEC strategies, solid waste management, financing models, and cost calculations for FSSM implementation. Participants also suggested extending the workshop duration to include field visits to nearby FSTPs.

Challenges identified by ULBs while implementing FSSM included the unavailability of treatment plants within reasonable distances, high transportation costs, inadequate funding, land constraints, and a lack of household awareness of best sanitation practices.

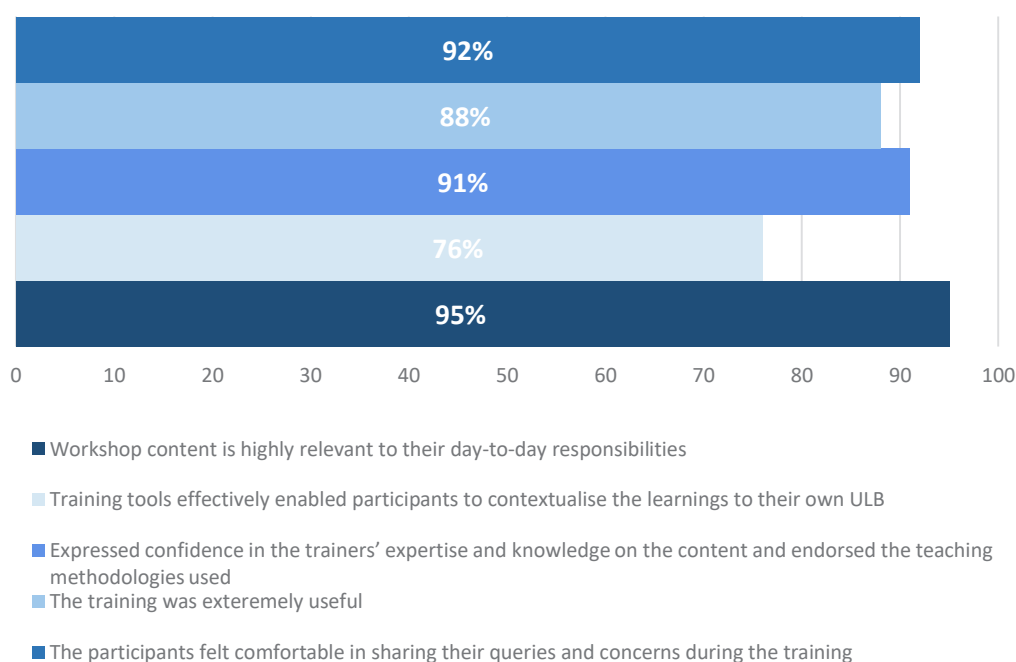


Figure 6: Participant Feedback

“Sanitation isn’t just about building infrastructure anymore – it’s about service delivery, safe disposal, and protecting our rivers. This training brought that perspective home” – Executive Officer, NP Champawat.

The successful completion of the FSSM workshop series across all 13 districts of Uttarakhand marks a significant milestone in the state’s sanitation journey. Notably, the submission of close to 100 Town Action Plans (TAPs) by ULBs has laid the foundation for a new phase of grounded, actionable, and locally driven sanitation planning.

Embedded within these action plans is a diverse set of proposed interventions, ranging from scheduled desludging and user charge reforms to targeted IEC initiatives and infrastructure augmentation. Collectively, these actions indicate a clear shift towards structured planning and localised decision-making within the sanitation sector. These submissions also present the Government of Uttarakhand with a valuable repository of implementable ideas that reflect both real-world constraints and aspirations of towns across the state. In essence, the TAPs have not only consolidated local intent but have also unlocked a new set of actionable opportunities for advancing FSSM across the state.

With continued technical expertise and strategic handholding from NIUA, these broad activities will be translated into multiple activities at the state and ULB levels. This process will involve the clear allocation of responsibilities across municipal staff, identification of funding channels like State Finance Commission(SFC) 15th Finance Commission, SBM, Asian Development Bank (ADB), NMCG, AMRUT, Kreditanstalt für Wiederaufbau (KfW) etc. and customised capacity-building support for each town, taking into account its local context, terrain, and institutional readiness. Stakeholder engagement will remain central to this approach, ensuring that service providers, community groups, and citizens are actively involved in the transformative process.

In parallel, NIUA will work closely with the UDD to establish a framework for periodic monitoring and follow-up on the implementation of these action plans. Through this, we aim to not only track progress but also create a feedback loop to inform policy refinement, identify emerging challenges, and celebrate local innovations.

As Uttarakhand enters this new phase, the focus will remain on strengthening municipal ownership, building resilient systems, and ensuring that the vision of safe, inclusive, and sustainable sanitation is translated into everyday urban realities. While the journey ahead is complex, with sustained commitment at every level, these goals are entirely within reach.

9.1 Digitised Town Action Plans (TAPs) submitted by the ULBs

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
UTTARKASHI					
1.	Naugaon				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level	1. Registration of all working desludging vehicles in the city 2. Training of desludging operators	1. Identify nearby treatment facilities. 2. GPS tracking of all registered desludging vehicles	1. Identify designated site for disposal	
2.	Gangotri NP				
	1. Monitoring of desludging 2. Seasonal maintenance 3. Updation of FSSM bye-laws	1. Construct pits and chamber at community level 2. Coordination with Jal Sansthan			
3.	Durola NPP				
	1. Survey of containment systems in the city 2. Operationalise septage management plan	1. Registration of all working desludging vehicles in the city	1. Identify designated site for disposal 2. GPS monitoring of all registered desludging vehicles	1. Coordination with Jal Sansthan 2. Site identification for STP development 3. Identify nearby treatment facilities	
4.	Chinyalisaur NPP				
	1. Survey of containment systems in the city 2. Updation of FSSM bye-laws for regular desludging	1. Training of desludging operators 2. Ensuring safety and health of desludging operators 3. Procure desludging vehicles as per city's needs	1. GPS monitoring of all registered desludging vehicles	1. Coordination with Jal Sansthan 2. Site identification for STP development. 3. Identify nearby treatment facilities	1. Identification of land for Deep Row Entrenchment 2. Temporary disposal of septage by composting

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
5.	Badkot NPP				
	1. Survey of containment systems in the city 2. Updation of FSSM bye-laws for regular desludging 3. Connecting commercial establishment and setting up stakeholder meetings	1. Survey of hotels in Yatra marg 2. IEC workshop of masons 3. IEC for behaviour change of users	1. Registration of all working desludging vehicles in the city. 2. Procurement of new desludging vehicles	1. Coordination with Jal Sansthan	
6.	Badahat NPP				
	1. IEC for behaviour change of users 2. Survey of containment systems in the city 3. Ensuring new septic tanks are designed upto IS Code	1. Registration of all working desludging vehicles in the city 2. Fixing user charges. Ensuring safety and health of desludging operators	1. Coordination with Jal Sansthan 2. Procurement of new desludging vehicles		
CHAMOLI					
7.	Gochar				
	1. Survey of containment systems in the city. 2. Updation of FSSM Bye-laws for regular desludging	1. IEC for users to promote regular desludging	1. Fixing the User charge 2. Procurement of new desludging vehicles 3. Ensuring safety and health of desludging operators 4. Training of desludging operators	1. Explore possibility to reuse the used water for plantations 2. Using the near by under construction FSTP by year end	1. Disposal of treated used water into the nearby forest in environmentally safe way
8.	Pokhari				
	1. Survey of containment systems in the city. 2. IEC for behaviour change of users 3. Ensuring new septic tanks are designed upto IS Code 4. Upgradation of existing septic tanks 5. Database updation 6. Regular SMC meetings	1. Registration of all working desludging vehicles in the city 2. Toll free number for residents to book desludging. 3. Ensuring safety and health of desludging operators	1. Fixing the user charge. 2. GPS monitoring of all registered desludging vehicles	1. Coordination with Jal Sansthan 2. Regular monitoring of sewage treatment	1. Explore ways of generating revenue

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
9.	Karnaprayag				
	1. Survey of containment systems in the city. 2. Operationalise septage management plan	1. Registration of all working desludging vehicles in the city 2. Toll free number for residents to book desludging. 3. Ensuring safety and health of desludging operators	1. GPS monitoring of all registered desludging vehicles	1. Coordination with Jal Sansthan	1. Treated water can be used for irrigation, parks etc
10.	Nandanagar				
	1. IEC for users for behaviour change 2. Develop Septage Management Plan 3. Survey of all containment systems in the city 4. Upgrade unsafe containment systems at household and community level	1. IEC for regular desludging 2. Ensure safety and health of desludging operators 3. Procurement of new vehicles and technology as per the city's needs 4. Registration of all desludging operators	1. Registration of all desludging operators 2. ESRU implementation 3. Grievance redressal mechanism 4. Apply a user fee 5. GPS monitoring of all desludging vehicles in the city	1. Preparation of DPR for STP development 2. Coordinate with Jal Nigam and UDD	1. Treated water can be used for irrigation, parks etc. 2. Waste to compost 3. Identify site for disposal
11.	Nandprayag				
	1. IEC for users for behaviour change 2. Develop Septage Management Plan 3. Survey of all containment systems in the city 4. Upgrade unsafe containment systems at household and community level	1. IEC for regular desludging 2. Ensure safety and health of desludging operators 3. Procurement of new vehicles and technology as per the city's needs 4. Registration of all desludging operators	1. Registration of all desludging operators 2. ESRU implementation 3. Grievance redressal mechanism 4. Apply a user fee 5. GPS monitoring of all desludging vehicles in the city	1. Preparation of DPR for STP development 2. Coordinate with Jal Nigam and UDD	1. Treated water can be used for irrigation, parks etc. 2. Waste to compost 3. Identify site for disposal
12.	Pipalkoti				
	1. IEC for users for behaviour change 2. Work with SMC 3. Apply tariff for desludging 4. Ensure safety and health of operators 5. Penalties	1. Registration of all desludging vehicles in the city 2. Apply user fee 3. Operationalise a toll free number 4. Ensure safety and health of desludging operators	1. GPS monitoring of all desludging vehicles in the city 2. Registration and monitoring of vehicles 3. Establish a route chart	1. Procurement of new vehicles with new technology as per the city's need with help of Jal Nigam and Jal Sansthan	1. Explore new ways of revenue generation 2. Waste to compost

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
13.	Badrinath				
	1. Survey of all containment systems in the city 2. IEC for users for behavioural change 3. Training of desludging operators	1. GPS monitoring of all desludging vehicles 2. Ensure safety and health of desludging operators 3. Prepare route chart	1. Apply user fee 2. Explore new ways of revenue generation	1. Coordinate with Jal Sansthan	1. Coordinate with Jal Sansthan
14.	Chamoli				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city	1. IEC for users for regular desludging 2. Mechanised desludging 3. Apply user fee 4. Operationalise a toll free number	1. GPS monitoring of all desludging vehicles in the city 2. Apply user fee 3. Registration of desludging vehicles 5. Mobilise SHGs	1. Development of STP	1. Treated water can be used for irrigation, parks, etc. 2. Waste to compost
15.	Tharali				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city 3. Regular SMC meetings 4. Upgradation of unsafe containment systems at a household and community level	1. Registration of all desludging vehicles and workers 2. Operationalise toll free number 3. Ensure safety and health of desludging operators	1. GPS monitoring of all desludging vehicles 2. Apply user fee and enable online payment	1. Procurement of new vehicles with new technology as per the city's need with help of Jal Nigam and Jal Sansthan	1. Treated water can be used for irrigation, parks, etc. 2. Waste to compost 3. Explore new ways to generate revenue
16.	Joshimath				
	1. Survey of all containment systems in the city	2. IEC for users for regular desludging	1. GPS monitoring of all desludging vehicles in the city 2. Registration of desludging vehicles	1. Site identification for STP development	1. Assess demand of end products and use
17.	Gairsen NP				
	1. Survey of containment systems in the city 2. Preparation of FSSM bye-laws 3. Establish SMC 4. Ensuring new septic tanks are designed upto IS codes 5. Database updation	1. Registration of all working desludging vehicles in the city. 2. IEC awareness for users 3. GPS monitoring of all registered desludging vehicles	1. Fixing the user charge	1. Coordination with Jal Sansthan 2. Site identification for STP development 3. Identify nearby treatment facilities	1. Establish monitoring system 2. Assess demand for treated end products for irrigation or parks

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
RUDRAPRAYAG					
18.	Augustmuni				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level 3. IEC for behaviour change of users 4. Implementation of FSSM bye-laws	1. Capacity building. 2. Registration of all working desludging vehicles in the city 3. Ensuring safety and health of desludging operators	1. GPS monitoring of all registered desludging vehicles 2. Exclusive use of vehicles for desludging 3. Incentivise procurement of desludging vehicles to increase revenue generation for ULB	1. Site identification for STP development	1. Disposal of treated used water into the nearby forest in environmentally safe way 2. Composting
19.	Rudraprayag				
	1. Survey of containment systems in the city 2. ODF monitoring 3. IEC for behaviour change of users 4. Upgradation of unsafe containment systems at household and community level	1. GPS monitoring of all working desludging vehicles in the city 2. Registration of all working desludging vehicles in the city	1. GPS monitoring of all registered desludging vehicles 2. Procurement of new desludging vehicles	1. Explore possibility to reuse the used water for plantations 2. Develop sewerage system 3. Site identification for STP development	1. Development of site 2. Improve connectivity
20.	Ukhimath				
	1. ODF monitoring 2. Upgradation of unsafe containment systems at household and community level	1. Ensuring safety and health of all desludging operators	1. Training of desludging operators 2. Procurement of new desludging vehicles		
21.	Tilwara				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Monitoring of desludging vehicles 4. ODF monitoring 5. Upgradation of unsafe containment systems at household and community level	1. GPS monitoring of all working desludging vehicles in the city 2. Ensuring safety and health of desludging operators	1. GPS monitoring of all working desludging vehicles in the city 2. Ensuring safety and health of desludging operators 3. Procurement of new desludging vehicles	1. Identification of land for Deep Row Entrenchment	

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
22.	Guptkashi				
	1. Survey of containment systems in the city 2. Estimate faecal sludge generation by seasonal turnout 3. Preparation of FSSM bye-laws	1. IEC for users to promote regular desludging 2. Ensuring safety and health of desludging operators	1. Registration of all working desludging vehicles in the city 2. Find budget source	1. Identification of land for Deep Row Entrenchment 2. Identify nearby treatment facilities	1. Treated water can be used for irrigation, parks, etc 2. Composting
23.	Kedarnath				
	1. Survey of containment systems in the city 2. Surveying tourist influx during peak months 3. Preparation of FSSM bye-laws 4. Upgradation of unsafe containment systems at household and community level	1. IEC for users to promote regular desludging 2. Ensuring safety and health of desludging operators 3. Collect sanitation tax	1. Registration of all desludging vehicles in the city 2. Procurement of new desludging vehicles 3. GPS monitoring of all desludging vehicles	1. Development of co-treatment at STP	
PAURI GARHWAL					
24.	Swargashram				
	1. Survey of containment systems in the city 2. Install 100% sewerage connectivity and IHHL	1. IEC for users to promote regular desludging	1. GPS monitoring of all registered desludging vehicles 2. Registration of all working desludging vehicles in the city	1. Regular monitoring and sewage treatment	1. Regular monitoring and meeting with STP officers 2. Ensure BOD standards of wastewater
25.	Kotdwar				
	1. Survey of containment systems in the city	1. Ensuring safety and health of all desludging operators	2. Procurement of new desludging vehicles	1. Identify designated site for disposal 2. Coordination with Jal Sansthan	
26.	Pauri				
	1. Survey of containment systems in the city 2. Procurement of new desludging vehicles	1. Registration of soakpits and recording frequency of emptying	1. Registration of all desludging vehicles in the city 2. Ensuring safety and health of desludging operators	1. Procure NOC from Jal Nigam for development of STP	1. Treated water can be used for irrigation, parks, etc 2. Waste to compost

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
27.	Dugadda				
	1. Survey of containment systems in the city 2. Operationalise septage management plan	1. Registration of all working desludging vehicles in the city 2. Ensure safety and health of desludging operators 3. Monitoring of desludging	1. GPS monitoring of all registered desludging vehicles 2. Repair roads for accessibility of vehicles	1. Site identification for STP development 2. Prepare DPR and estimates for co-treatment infrastructure	1. IEC for users for behaviour change 2. Treated water can be used for irrigation, parks etc
28.	Satpuli				
	1. Operationalise septage management plan 2. Survey of containment systems in the city	1. IEC for users to regular desludging 2. Ensure safety and health of desludging operators 3. Coordination with Jal Nigam	1. Fixing the user charge 2. Explore new ways to generate revenue	1. Training of desludging operators 2. Site identification for STP development	1. Treated water can be used for irrigation, parks etc. 2. Waste to compost
29.	Thalisain				
	1. Preparation of FSSM bye-laws 2. Set up ULB level SMC 3. IEC for users for behaviour change 4. Survey of containment systems in the city	1. IEC for users for regular desludging 2. Registration of soakpits 3. Ensure safety and health of desludging operators 4. Identification of land for Deep Row Entrenchment	1. GPS monitoring of all registered desludging vehicles 2. Registration of all working desludging vehicles in the city 3. Prepare a grievance redressal mechanism	1. Development of co-treatment at STP	
30.	Srinagar				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level	1. Ensuring safety and health of all desludging operators 2. IEC for users for regular desludging 3. Toll free number for residents to book desludging	1. GPS monitoring of all registered desludging vehicles in the city 2. Procurement of new desludging vehicles 3. Use vacuum truck equipment for safe and efficient sludge collection	1. Site identification for STP development 2. Prepare DPR and estimates for co-treatment infrastructure	1. Treated water can be used for irrigation, parks, etc. 2. Waste to energy 3. Waste to compost

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
NAINITAL					
31.	Bhowali				
	1. Survey of containment systems in the city 2. IEC for users for behaviour change	1. Registration of all working desludging vehicles 2. Ensure safety and health of desludging operators	1. Optimise location and scheduling of desludging	1. Optimise location and scheduling of desludging	1. Coordination with Jal Sansthan and Jal Nigam 2. Exploring proper disposal methods
32.	Bhimtal & Kaladhungi				
	1. IEC for behaviour change of users 2. Regular desludging	1. Registration of all working desludging vehicles 2. Ensure safety and health of desludging operators	1. Maintain proper O&M standards	1. Coordination with Jal Sansthan and Jal Nigam	1. Treated water can be used for irrigation, parks etc 2. IEC and forward linkages 3. Explore new ways for revenue generation
DEHRADUN					
33.	Doiwala				
	1. Set up SMC at ULB level 2. Get FSSM bye-laws notified 3. IEC for behaviour change of users 4. Survey of containment systems in the city	1. Registration of all working desludging vehicles 2. Ensure safety and health of desludging operators 3. Training of desludging operators 4. Toll free number for residents to book desludging	1. GPS monitoring of all registered desludging vehicles in the city	1. Site identification for STP development	1. Identify designated site for disposal. 2. Development of site
34.	Dehradun				
	1. Survey of containment systems in the city 2. Enhance and activate SMCs 3. Training of desludging operators 4. Quantification of faecal sludge for upgradation and enhancement of STP	1. Registration of all working desludging vehicles 2. Site identification for STP development	1. GPS monitoring of all registered desludging vehicles in the city	1. Coordination with Jal Sansthan and Jal Nigam 2. Expert consultation on better mechanism and control	

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
35.	Mussoorie				
	1. Survey of containment systems in the city 2. Enhance and activate SMCs 3. IEC for behaviour change in users	1. Registration of all working desludging vehicles 2. GPS monitoring of all registered desludging vehicles in the city 3. Ensure safety and health of desludging operators	1. Training of desludging operators 2. Issuing ID cards and registration of all desludging operators	1. Quantification of faecal sludge for upgradation and enhancement of STP	1. Ensuring proper treatment of sludge by STP and maintaining a log-book of every vehicle that empties at the location
36.	Herbertpur				
	1. Survey of containment sites in the city 2. Notification of FSSM bye-laws 3. ODF monitoring 4. IEC for behaviour change in users	1. Training of desludging operators 2. Ensuring safety and health of desludging operators 3. Procure desludging vehicles as per city's needs 4. GPS monitoring of all working desludging vehicles in the city	1. Registration of all working desludging vehicles in the city		
37.	Selaqui				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level 3. IEC for behaviour	1. GPS monitoring of all working desludging vehicles	1. Training of desludging operators 2. Ensure safety and health of desludging operators		
38.	Vikasnagar				
	1. Notification of FSSM 2. Bye-laws Survey of containment systems in the city 3. IEC for behaviour change in user		1. GPS monitoring of all working desludging vehicles	1. Quantification of faecal sludge for upgradation and enhancement of STP	1. Identification of land for disposal

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
TEHRI					
39.	Chamba				
	1. Survey of containment systems in the city 2. IEC for users for behaviour change		1. GPS monitoring of all working desludging vehicles in the city	1. Site identification for STP development	
40.	Devprayag				
	1. Upgradation of unsafe containment systems at household and community level 2. IEC for behaviour change of users 3. ODF monitoring 4. Operationalise septage management plan	1. Ensuring safety and health of desludging operators 2. Procure desludging vehicles as per the city's needs 3. IEC for users for regular desludging	1. GPS monitoring of all working desludging vehicles in the city	1. Site identification for STP development	1. Monitoring disposal 2. Waste to compost
41.	Chamiyala				
	1. IEC for behaviour change of users				
42.	Tehri				
	1. Survey of containment systems in the city 2. IEC for users for behaviour change 3. Operationalise septage management plan 4. Upgradation of unsafe containment systems at household and community level	1. Registration of all working desludging vehicles 2. Ensuring safety and health of desludging operators 3. Procure desludging vehicles as per the city's needs	1. GPS monitoring of all desludging vehicles in the city	1. Site identification for STP development 2. Prepare DPR and estimate for co-treatment infrastructure	1. Treated water can be used for irrigation, parks etc
43.	Tapovan				
	1. Upgradation of unsafe containment systems at household and community level	1. Repair roads for accessibility of vehicles 2. Ensuring safety and health of desludging operators. 3. Procurement of vehicles as per the city's needs	1. GPS monitoring of all desludging vehicles in the city 2. Registration of all working desludging vehicles 3. Monitoring for proper collection and disposal	1. Site identification for STP development 2. Prepare DPR and estimates for co-treatment infrastructure	1. Waste to compost 2. Waste to energy

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
44.	Kirtinagar				
	1. Upgradation of unsafe containment systems at household and community level	1. Ensuring safety and health of desludging operators 2. Procure desludging vehicles as per the city needs	1. GPS monitoring of all desludging vehicles in the city 2. Scheduled desludging	1. Site identification for STP development 2. Prepare DPR and estimates for co-treatment infrastructure	1. Waste to compost
45.	Narendra Nagar				
	1. Survey of containment systems in the city	1. Ensuring safety and health of desludging operators 2. Procure desludging vehicles as per the city needs	1. GPS monitoring of all desludging vehicles in the city	1. Site identification for STP development	1. Treated water can be used for irrigation, parks etc
46.	Lambgaon				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level	1. Repair roads for accessibility of vehicles 2. Ensuring safety and health of desludging operators. 3. Procurement of vehicles as per the city's needs	1. GPS monitoring of all desludging vehicles in the city 2. Monitoring proper collection and disposal	1. STP accessibility and transport	1. Waste to energy 2. Waste to compost
US NAGAR					
47.	Bajpur				
	1. Survey of containment systems in the city	1. IEC for users for regular desludging	1. GPS monitoring of all desludging vehicles	1. STP accessibility and transport	
48.	Gularbhoj				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level		1. GPS monitoring of all desludging vehicles in the city		

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
49.	Shaktigarh				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users	1. Schedule desludging	1. Procurement of new desludging vehicles	1. Collaborating with nearby ULB with FSTP for treatment	1. Treated water can be used for pisciculture
50.	Khatima				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level	1. IEC for users for regular desludging	1. GPS monitoring of all desludging vehicles in the city	1. Site identification of for STP development	
51.	Kashipur				
	1. IEC for behaviour change of users 2. Upgradation of unsafe containment systems at household and community level	1. Ensuring safety and health of desludging operators	1. Procurement of new desludging vehicles	1. Coordinate with Jal Sanstan and Jal Nigam for monitoring BOD/COD levels	1. Treated water can be used for irrigation, parks etc
52.	Kalaghoda				
	1. Survey of containment systems in the city 2. Upgradation of unsafe containment systems at household and community level	1. IEC for users for regular desludging	1. GPS monitoring of all desludging vehicles in the city	1. Collaborating with nearby ULB with FSTP for treatment	
53.	Jaspur				
	1. Maintenance of existing septic tanks and toilets 2. Upgradation of unsafe containment systems at household and community level	1. Training of desludging operators 2. Ensuring safety and health of desludging operators 3. Maintaining a database of workers 4. Procurement of new vehicles and technology as per the city's needs	1. GPS monitoring of all desludging vehicles in the city. 2. Procurement of vacuum mounted trucks	1. Maintenance and proper management of existing treatment plant	1. Collaborate with other organisations for disposal of end-product

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
54.	Mahuakhedavra				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Upgradation of unsafe containment systems at household and community level	1. Training of desludging operators 2. Mechanised desludging and ban on manual scavenging	1. GPS monitoring of all desludging vehicles in the city 2. Reduce transportation fee for user 3. Registration of all desludging vehicles	1. Scientific treatment of sludge and preventing open disposal 2. Site identification for FSTP	1. Treated water can be used for irrigation, parks etc and prevent open disposal of faecal sludge
55.	Kichha				
	1. Maintenance of existing septic tanks and toilets	1. Ensuring safety and health of desludging operators 2. Procurement of new vehicles and technology as per the city's needs	1. GPS monitoring of all desludging vehicles in the city. 2. Procurement of vacuum mounted trucks	1. Maintenance and proper management of existing treatment plant	1. Collaborate with other organisations for disposal of end-product
56.	Nagla				
	1. Survey of containment systems in the city	1. IEC for users for regular desludging 2. Mechanised desludging and ban on manual scavenging	1. Registration of all desludging vehicles 2. Reduce transportation fee for user with use of Evs 3. Involvement of SHGs and NGOs	1. Scientific treatment of sludge and preventing open disposal 2. Site identification for FSTP	1. Waste to compost 2. IEC will be conducted for awareness on desludging process and behaviour change
57.	Lalpur				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Upgradation of unsafe containment systems at household and community level	1. Training of desludging operators 2. IEC for users for regular desludging 3. Systematic and regular emptying of septic tanks	1. GPS monitoring of all desludging vehicles in the city 2. Mechanised desludging	1. Ensuring that treatment occurs according to septage management protocol, following primary, secondary and advanced treatment processes	1. Treated water can be used for irrigation, parks etc

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
58.	Sultanpur				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Upgradation of unsafe containment systems at household and community level	1. Ens uring safety and health of desludging operators 2. IEC for users for regular desludging		1. Collaborating with nearby ULB with FSTP for treatment	
59.	Nanakmatta				
	1. IEC for users for behaviour change 2. Upgradation of unsafe containment systems at household and community level	1. Ensuring safety and health of desludging operators 2. Maintaining a database of workers 3. Registration of all desludging vehicles	1. GPS monitoring of all desludging vehicles in the city	1. Site identification for STP development	
ALMORA					
60.	Bhikyasain				
	1. Survey of containment systems in the city 2. IEC for users for behaviour change	1. IEC for users for regular desludging 2. GPS monitoring of all working desludging vehicles in the city 3. Ensure regular SMC meetings	1. Grievance redressal mechanism 2. Registration of all desludging vehicles in the city	1. Preparation of DPR for STP with help of Jal Sansthan	
61.	Almora				
	1. Survey of containment systems in the city	1. IEC for users for regular desludging 2. Grievance redressal mechanism	1. GPS installation of all desludging vehicles in the city	1. Preparation of DPR for STP with help of Jal Sansthan	1. Treated water can be used for irrigation, parks etc
62.	Ranikhet				
	1. IEC for awareness on appropriate septic tank design as per IS code	1. Regular desludging	1. GPS monitoring of all desludging vehicles in the city	1. Preparation of DPR for STP with help of Jal Sansthan	

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
63.	Dwarahat				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city 3. Upgradation of unsafe containment systems at household and community level	1. IEC for operators and sanitation workers 2. Ensuring health and safety of sanitation workers (Insurance) 3. Create a database of all sanitation workers and keep it accessible	1. Registration of operator and workers 2. GPS monitoring of all desludging vehicles in the city 3. Procurement of new vehicles as per the city's needs	1. Site identification for STP development 2. Meeting with Jal Nigam	1. Bio-disposal of septage
64.	Chaukutiya				
	1. Survey of all containment systems in the city 2. Ensure that the design of housing includes septic tank design as per IS code before obtaining NOC 3. Upgradation of unsafe containment systems at household and community level	1. IEC for user for regular desludging 2. Operationalised a helpline for septic tank emptying	1. Registration of all desludging vehicles 2. Procurement of new vehicles as per the city's needs	1. Preparation of DPR for STP with help of Jal Nigam	1. Ensure 100% end-product use of waste
PITHORAGARH					
65.	Pithoragarh				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city	1. Procurement of new vehicles as per the city's needs 2. IEC for users for regular desludging 3. Set-up a control room for M&E 4. Registration of all desludging vehicles	1. Once vehicles are procured, engage local community to operate desludging vehicles 2. Grievance redressal mechanism	1. Proposal to expand sewerage line in the ULB 2. Proposal to increase STP capacity as per demand	1. IEC for use of waste for composting 2. Prepare DPR for co-treatment 3. Commercialisation of waste by-products
66.	Didihat				
	1. IEC for users for behaviour change 2. Proper design of septic tank	1. Training of desludging operators 2. IEC for users for regular desludging and local community engagement	1. Procurement of new desludging vehicles 2. GPS monitoring of all working desludging vehicles in the city 3. Applying user charge	1. Formation of SMC 2. Preparation of DPR for STP and Bye-laws for FSSM	1. Waste to energy

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
67.	Dharchula				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city 3. Fix user charge	1. Ensure health and safety of desludging operators 2. Update database of workers	1. Procurement of new vehicles as per city's needs 2. GPS monitoring of all desludging vehicles in the city	1. Update database	1. Use by-product for revenue generation
68.	Gangolihat				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city. 3. Proper design of septic tank	1. Registration of all desludging vehicles in the city 2. Apply user fee 3. Training of desludging operators	1. GPS monitoring of all desludging vehicles in the city 2. Apply user fee	1. Update database 2. Formation of SMC 3. Preparation of DPR for STP and bye-laws for FSSM	1. Waste to compost 2. Waste to energy
69.	Munsyari				
	1. Survey of all containment systems in the city 2. Proper design of septic tank 3. Upgradation of unsafe containment systems at household and community level 4. IEC for users for behavior change 5. Training of desludging operators	1. Ensuring health and safety of desludging 2. GPS monitoring of all working desludging vehicles 3. IEC for users for regular desludging	1. Apply user fee 2. Control room for M&E 3. Grievance redressal mechanism	1. Update database 2. Procurement of new vehicles as per the city's needs	1. Environment friendly disposal of waste
CHAMPAWAT					
70.	Champawat				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city 3. Upgradation of unsafe containment systems at household and community level 4. Construction of aspirational toilets 5. Identifying beneficiaries for IHHL	1. Establish a toll-free number and monitoring cell for desludging 2. Training of desludging operators 3. Procurement of new desludging vehicles as per the city's needs 4. Ensure health and safety of desludging operators 5. Revise septage management bye-laws	1. Collaborate with nearest ULB for treatment 2. Site identification for STP development 3. Preparation of DPR for STP and bye-laws for FSSM		

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
71.	Lohaghat				
	1. Survey of all containment systems in the city. 2. IEC for users for behaviour change. 3. Implementation of FSSM bye-laws	1. IEC for users on regular desludging 2. Ensure health and safety of desludging operators 3. Management of database 4. Procurement of high-suction vacuum vehicles 5. Training of desludging operators	1. GPS monitoring of all working desludging vehicles 2. Reduce user fee 3. Registration, monitoring and maintenance of desludging vehicles in the city	1. Collaborating with nearby ULB with FSTP for treatment	1. Explore ways of generating revenue through biogas or manure. 2. Use treated water for agricultural purpose
72.	Tanakpur				
	1. IEC for users for behaviour change 2. Survey of all containment systems in the city				
73.	Banbasa				
	1. IEC for users for behaviour change 2. Training of staff on SBM and regular meeting with supporting officials from Jal Nigam 3. Implementation of FSSM bye-laws	1. Prepare and maintain a database 2. Training of desludging operators 3. Grievance redressal mechanism 4. GPS monitoring of desludging vehicles 5. Internet of Things Application (IOTA) systems	1. Explore ways to generate revenue 2. Procurement of new vehicles as per the city's needs	1. Collaborating with nearby ULB with FSTP for treatment 2. DRE 3. Prepare DPR for cluster STP development	1. Explore ways of generating revenue through biogas or manure. 2. Use treated water for agricultural purpose
BAGESHWAR					
74.	Kapkot				
	1. Survey of all containment systems in the city	1. Registration of all desludging vehicles in the city 2. Ensuring health and safety of desludging operators	1. Procurement of new vehicles as per the city's needs	1. Site identification for STP development 2. DRE	1. Identification of land for disposal

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
75.	Bageshwar				
	2. Survey of all containment systems in the city	1. Registration of all desludging vehicles in the city 2. IEC for user for regular desludging 3. Training of desludging operators 4. Ensure health and safety of desludging operators	1. Registration and monitoring of all desludging vehicles	1. Site identification for STP development 2. DRE	
76.	Garud				
	1. Survey of all containment systems in the city	1. Ensure health and safety of desludging operators	1. Registration of all desludging vehicles in the city	1. DRE	1. Identification of land for disposal
HARIDWAR					
77.	Jhabrera NP				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Procure NOC 4. Regular SMC meetings 5. Implementation of FSSM bye-laws 6. Penalty 7. To monitor IEC activities and SMC meeting regurly	1. Procurement of new vehicles and technology as per the city's needs 2. Skilled workers 3. PPE kits 4. Insurance of vehicle and worker 5. Training of desludging operators 6. Health camps	1. GPS monitoring of all desludging vehicles in the city 2. New registration 3. Licence 4. To renew licence 5. Penalty 6. Service of vehicles		
78.	Ranipur NP				
	1. Survey of containment systems in the city 2. Updation of FSSM bye-laws for regular desludging 3. Regular SMC meetings 4. Procure NOC 5. New design of septic tank 6. IEC for behaviour change of users 7. Penalty	1. Procurement of new vehicles and technology as per the city's needs 2. Registration of workers and helpers 3. PPE kits 4. Insurance of vehicles and workers 5. Training of desludging operators 6. Health camps	1. Registration and licence of all desludging vehicles 2. GPS monitoring of all desludging vehicles in the city 3. GPS monitoring of vehicles to STP 4. Renewal of licence and penalties for defaulters		

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
79.	Haridwar MC				
	1. Survey to identify household on site sanitation system. 2. Prepare a database of septic tank and pits 3. Awareness campaigns on proper design and periodic desludging 4. Ensuring new septic tanks are upto IS Code. 5. Regulation and registration of new containmenet units with ULBs	1. IEC for users to regular desludging 2. Ensure safety and health of desludging operators 3. PPE kits 4. Training of desludging operators 5. Service of vehicles 6. GPS monitoring of all registered desludging vehicles	1. Map route for safe transportation from containment to treatment site 2. Establish intermediate holding points if needed 3. GPS monitoring of all desludging vehicles in the city 4. Ensuring safety and health of desludging operators	1. Assess the capacity of existing FSTP/ STP to receive septage 2. Identify need for new facility and co-treatment 3. Construct and upgrade FSTP/ STP 4. Ensure treatment output meets CPCB guidelines	1. Identify designated site for safe sludge disposal 2. Explore the market for composter or biofertilizer use. 3. Develop safe use disposal/ reuse 4. SOP's
80.	Manglaur NPP				
	1. Make sure that every household has its own toilet with septic tank and soak pit 2. Record location of old and new septic tanks (individual/ community) 3. Updating and awaring people about importance of sewage treatment	1. Registration of all working Desludging vehicles and worker in the city 2. Taking action against people not following rules	1. Site identification for STP development 2. Procurement of new desludging vehicles 3. GPS and Camera monitoring of all desludging vehicles in the city 4. Renewal of licenses	1. Making contact with treatment units seeking for land disposal 2. Making suitable changes to keep the system working	1. Assess demand for treated end products for irrigation or parks 2. Exploring users for end products
81.	Landhaura NP				
	1. Survey of containment systems in the city 2. IEC for behaviour change of users 3. Implementation of FSSM bye-laws 4. Upgradation of bye laws 5. Developing a MIS based database	1. Registration of all working desludging vehicles and workers in the city 2. Renewal of licenses	1. GPS monitoring of all desludging vehicles in the city	1. Identify nearby treatment facilities	1. Assess demand for treated end products within the ULB

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
82.	Imlikhera NP				
	1. Survey to identify household on site sanitation system. 2. IEC for behaviour change of users 3. Letter to Haridwar-Roorkee Development Authority (HRDA) 4. Regular SMC meetings 5. Updating information of newly constructed septic tanks	1. Registration of all working desludging vehicles and workers in the city 2. IEC for users for regular desludging 3. Prepare a grievance redressal mechanism	1. GPS monitoring of all desludging vehicles in the city 2. Developing MIS based database		1. Assess demand for treated end products for irrigation or parks. 2. Procure and use end product from treatment units as per demand
83.	Sultanpur -Adampur NP (EO)				
	1. Conduct awareness programmes, workshops and announce through various methods 2. Make bye laws 3. Licensing of septage transporters 4. Construct pits and septic tanks at community level 5. Will make bye-laws after that give the licence to company/workers who performed the work 6. Encourage people by organising campaigns, workshops etc	1. GPS monitoring of all desludging vehicles in the city and all having proper equipment 2. Make a collaboration between two departments 3. Use proper equipments to perform the activities	1. Renewal of licence and give opportunity to new applicants 2. GPS monitoring of all desludging vehicles in the city 3. Renewal of licence every year and earn revenue 4. Maintain MIS based database 5. Monitoring of activities	1. Site identification for STP development 2. Monitor the operator 3. Identify nearby treatment facilities	1. Use the treated end products for irrigation or parks within and outside the ULB 2. Sell the end product to farmer and a company which will increase the revenue
84.	Sultanpur - Adampur NP (Environment Supervisor)				
	1. IEC for users for behaviour change 2. Enforce SMC bye-laws 3. Conduct awareness programme and workshop, and announce through various methods 4. Regular SMC meetings 5. Ensuring new septic tanks are designed upto IS Code	1. Registration and licencing of all working desludging vehicles in the city 2. Fixing the user charge for every three years 3. Include employee sanitation kits and health insurance 4. Add tank cost for every three years to the house tax 5. Empty household Septic tank in three years	1. GPS monitoring of all desludging vehicles in the city 2. Use vacuum truck equipment for safe and efficient sludge collection 3. Identify nearby treatment facilities 4. Procurement of new desludging vehicles 5. Maintenance of vehicles 6. Insurance of vehicle and workers		

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
85.	Laksar NPP				
	1. Advertisement 2. Conduct awareness programme 3. Prepare DPR and estimates for co-treatment infrastructure planning	1. Design of treatment facilities 2. Establishing connections 3. Making routes accesible for vehicles 4. Registration of all working desludging vehicles	1. Avaibility of vehicle 2. Availability of fuel distance	1. Identify nearby treatment facilities. 2. Along with STP making efforts for the development of Co- Treatment	1. Protecting the environment is the main work
86.	Aman Kumar (SNA)				
	1. Enforce SMC bye laws 2. Survey of containment systems in the city 3. Procure NOC 4. Penalties	1. Skilled workers 2. PPE Kits 3. Registration in Namaste Scheme	1. Registration of all working desludging vehicles in the city 2. GPS monitoring of all desludging vehicles in the city		
87.	Roorkee NN				
	1. IEC for users for behaviour change 2. GIS based survey 3. Coordination with Jal Sansthan 4. Purchasing 5. Collect and compile data 6. Survey and register household 7. Issue notices per household surveyed	1. IEC for users to promote regular desludging 2. Identify nearby treatment facilities /Land to develop infrastructure for selected treatment facility 3. IEC activities 4. PPE kit 5. Registration of all working desludging vehicles in the city	1. Registration and licence of all desludging vehicles 2. GPS monitoring of all desludging vehicles in the city	1. Identify nearby treatment facilities / Land to create infrastructure for selected treatment facility 2. Treatment of ensuring co-treatment facilities	1. Testing of Biosolids 2. Monitoring of effluents 3. Spreading awareness about Biosolids
88.	Rahul (EO)				
	1. Conduct household surveys of all houses and construct toilets as per SBM in those houses where toilet is not available 2. Making bye-laws 3. IEC for users for behaviour change	1. Septage management bye laws 2. Proper quipments can enhance productivity	1. GPS monitoring of all desludging vehicles in the city	1. Using the nearest STP/ FSTP for treatment 2. Construction of STP	1. Use treated end products for irrigation or parks

S.No.	Containment	Emptying	Transportation	Treatment	Reuse/Disposal
89.	Dhandera NP				
	1. Conduct household surveys of all houses and construct toilets as per SBM in those houses where toilet is not available 2. Ensuring new septic tanks are designed upto IS Code---	1. Building bye- laws are the main compulsive tool for designing and modifying on-site sanitation systems for new construction 2. Availability of vehicles 3. Proper equipments can enhance productivity	1. GPS monitoring of all desludging vehicles in the city	1. Using the nearest STP/ FSTP for treatment 2. Construction of STP	1. Use treated end products for irrigation or parks
90.	Kaliyar NPP				
	1. GIS based survey 2. Register data available for FSSM data preparation	1. The collected FSS can be transported and emptied by equipments / vehicle as per requirement 2. The equipments / vehicle should be used for a minimum period of time	1. Must have a license/ Registration to transport FSS 2. Use of technology for time efficient transportation of FSS	1. Treating FSSM technically 2. Modern vehicle for treatment	

9.1 GLIMPSES



Picture 9 : Workshop for Udham Singh Nagar District; Venue: Nagar Nigam Sabhagar, Rudrapur; Date: 4th April 2025

Picture 10 : Workshop for Chamoli-Gopeshwar District; Venue: Nagar Palika Sabhagar, Chamoli-Gopeshwar; Date: 22nd April 2025

Picture 11 : Workshop for Pithoragarh District; Venue: Nagar Nigam Sabhagar, Pithoragarh; Date: 13th May 2025

Picture 12 : Workshop for District Nainital; Venue: Nagar Nigam Sabhagar, Haldwani; Date: 03rd April 2025

Picture 13 : Workshop for District Champawat; Venue: Nagar Palika Sabhagar, Champawat;



Picture 14 : Workshop for District Uttarkashi; Venue: Nagar Palika Sabhagar, Uttarkashi (Badkot); Date: 27th March 2025

Picture 15 : Workshop for District Almora; Venue: Nagar Palika Parishad Sabhagar, Almora; Date: 06th May 2025

Picture 16 : Workshop for District Bageshwar; Venue: Nagar Palika Sabhagar, Bageshwar; Date: 08th May 2025

Picture 17 : Workshop for District Haridwar; Venue: Hotel Lemon Tree, Haridwar; Date: 06th June 2025

9.2 Attendance sheet



Operationalization of Faecal Sludge and Septage Management Protocol

Venue: Chamoli (District Chamoli) (NP Chamoli Gopeshwar Meeting Hall)

Date: 22nd April 2025



S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2					
3	Kamlesh Joshi	NP Tharali	Junior assistant	9897792450	
4	NAVEEN CHANDRA	NP Tharali	Environment supervisor	7895436999	
5	Harshvardhan Singh	NP Tharali	Accountant	8979092629	Harsh.
6	H.S. Rautela	E.O. Joshi Math	E.O.	7456779971	
7	Nisha Kumar	J.E. Joshi Math	J.E.	9411330004	
8	Chhupendra Singh	Env NP Badrinath	Environment supervisor	7060192458	
9	Gurudeep Lak. Png	E.O. Pipalkoti	E.O.	9756824076	
10	Mohit Singh	E.S. Pipalkoti	E.S. Supervisor	8938871029	
11	Arun Kumar Sini	ENP Nirsini	E.O.	8810511584	
12	Narendra Singh Raut	NPP. Karnaprag	E.O.	7505891813	
13	SUNIL KUMAR SATE	Nagar Panchayat Sultangan	Environment Supervisor	8950556772	
14	Harish chandra	N.P.R. Karnaprag	J.E.	9690036021	

Picture 18: Attendance sheet- District Chamoli



Operationalization of Faecal Sludge and Septage Management Protocol

Venue: Board Room, Nagar Nigam Dehradun

Date: 22/03/2025



S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2	RACHNA PAVAL	UDD	EX. EN	9557729511	
3	अमितेश कुमार	न.प.प. सीतापुर	नगर अधिकारी	8537024083	
4	विवेक राणा	म.प.प. सीतापुर	नगर अधिकारी	9068071169	
5	राजेश शर्मा	न.प.प. सीतापुर	अवर अधिकारी	9639633081	
6	जितेंद्र शर्मा	न.प.प. सीतापुर	अवर अधिकारी	9720854171	
7	M. L. Shu.	N.P. Seelagu	E.O.	9705600635	
8	Ramach Singh Pandey	Nagar Nigam	AE	9412936621	
9	Rajesh Prasad	Nagar Nigam	CO	9758831724	
10	Bhramar Tomar	Nagar Panchayat	AAE	9927858999	
11	NAVNEET GOPTA	Nagar Palika	डी.पी.ओ.	9058484800	
12	Manoj Kohli	NPP Vikas Nagar	Tax Inspector	6398682012	
13	Paras Chatri	NPP Mussoorie	Consultant	8650037763	
14	Manish Chhatr	?	Consultant	7894326417	

Picture 19: Attendance sheet- District Dehradun

Operationalization of Faecal Sludge and Septage Management Protocol



Venue: Room No. 40, Mini Sahasgar, Nagar Nigam Haldwani, Distt. Nainital
Date: 03rd April '2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2					
3	GAURAV MEHRA	NAGAR PALIKA BHITAL/KALADHUNGI	JUNIOR ENGINEER	9759054227	Gaurav Mehra
4	Deep Chandra Tiwari	NAGAR PALIKA BHITAL	Clerk	8279337003	Deep Chandra Tiwari
5	INDRAKUMAR KAPIL	NAGAR PALIKA SENDER BHOWALI	SENIOR STATE OFFICER	8279927911	Indrakumar Kapil
6	SAURABH BISHT	NAGAR PALIKA BHOWALI	JUNIOR ENGINEER	8826494249	Saurabh Bisht
7	ANAND SINGH SAMRA	RAM NAGAR NAGAR PALIKA	SENIOR CLERK	9639584842	Anand Singh Samra
8	Deependra Kumar	NAGAR NIGAM Haldwani	Executive Officer	9411376334	Deependra Kumar
9	Pooja Arya	Nagar Nigam Haldwani	Tax & Revenue Inspector	9997638831	Pooja Arya
10	Suresh Adhikari	Nagar Nigam Haldwani	SDO	9412036008	Suresh Adhikari
11	RATUL KUMAR SINGH	NAGAR PANCHAYAT LAKHAN	EXECUTIVE OFFICER	8771336681	Ratul Kumar Singh
12	RAVINDRA SINGH NEGI	Nagar Palika Ramnagar	J.E.	7534801955	Ravindra Singh Negi
13	Taseer Ahmad	N.P. Ramnagar	Executive Officer	9927144401	Taseer Ahmad
14					

Picture 20: Attendance sheet-District Nainital

Operationalization of Faecal Sludge and Septage Management Protocol



Venue: Meeting Hall, Nagar Nigam Rudrapur, Distt. Udham Singh Nagar
Date: 04th April '2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1	Kamal Singh Mehta	Nagar Nigam Kathi	S.N.A	7055446682	Kamal Singh Mehta
2	Sumit Singh Mahar	N.P. Shaktigarh	E.O	7830475458	Sumit Singh Mahar
3	BALWANT SINGH RAU	N.P. Lalpur	E.O	8077910999	Balwant Singh Rau
4	PRİYANKA LAIKWAL	N.P. Nanakmatia	E.O.	7088002222	Prityanka Laikwal
5	Sumit Singh Rana	N.P. Nanakmatia	MTS	8218406473	Sumit Singh Rana
6	ARUN KUMAR SAINI	N.P. NANAKMATIA	RAE	8449137500	Arun Kumar Saini
7	Raj Kumar Bhandari	N.P. Gularbhoj	E.O	9897108634	Raj Kumar Bhandari
8	Subhash Kumar	N.P.P. Bagpur	J.E.	9837522621	Subhash Kumar
9	Nishath Rana	N.P.P. Jaspur	J.E	7895503854	Nishath Rana
10	SALMAN	NN. KASHIPUR.	J.E.	7247893834	Salman
11	Saundhar Kumar	N. P. P. Satepur	S.I	7906670626	Saundhar Kumar
12	Mohit Chandra	N.P.P. Sitarganj	Clerk	7900654849	Mohit Chandra
13	AJAY BANSAL	NN RUDRAPUR.	OMM AMURTO	9568165991	Ajay Bansal
14	Manoj Das	N.P.P. Bagpur	Executive offi.	8077274030	Manoj Das

Venue: Meeting Hall Nagar Nigam Rudrapur District, Udham Singh Nagar.
Date: 4th April 2025.

S. No.	Name	Organization	Designation	Mob. No.	Signature
15	Geeta Chaudhary	N.P. Sultanpur	E.O.	91055 86515	[Signature]
16	Satish Kumar	NPP Mahendragiri	EO	70556 60927	[Signature]
17	Deepak Kumar Sharma	N.P. Dinanagar	E.O.	7302346333	[Signature]
18	GURMEET SINGH	NPP KICHHA	EO	9568021005	[Signature]
19	Shahid Ali	NPP JASPUR	EO	9897025964	[Signature]
20	Vijayant Kumar	N.P.P. Kichha	S.I.	9756028296	[Signature]
21	Ajay Kumar	N.P. Mahendragiri	A.A.E.	9759352005	[Signature]
22	Aditya Joshi	N.P. Mahendragiri	EO	9084666737	[Signature]
23	Somjeet Mehta	N.P. Godanpur	E.O.	8077480361	[Signature]
24	Deepak Shukla	N.P. Kichha	EO	7017975410	[Signature]
25	Sohan Lal	N.P.P. Godanpur	J.E.	6398088023	[Signature]
26	Deepak Sati	NPP Nagla	E.S. (Env. Superv.)	9811660570	[Signature]
27	Ritik Sharma	NPP Kichha	J.E.	9897537213	[Signature]
28	Pooja Khatun	N.P. Mahendragiri	E.O.	8864877135	[Signature]

Venue: Nagar Nigam, Rudrapur, Mini Hall
Date: 4-Apr-2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
29	Rahul Khatun	Nagar Palika Sirsi	A. A. E	9897499450	[Signature]
30	Rupendra K. Lavi	Nagar Panchayat Lalpur	AAE	9758430470	[Signature]
31	Rishi Nuliyal	NMR	SNA	9389811804	[Signature]
32	Harshdeep Singh Choudhary	Nagar Nigam Rudrapur	Health Officer	9317467374	[Signature]
33	Kuldeep Kumar	Rudrapur	Sanitary Inspector	7300843575	[Signature]
34	Gautam Singh	NMR	Sanitary Supervisor	9389811821	[Signature]
35					
36					
37					
38					
39					
40					
41					
42					

Picture 21 Attendance sheet- District Udham Singh Nagar

Operationalization of Faecal Sludge and Septage Management Protocol



Venue: Meeting Hall, Nagar Palika Nigam, Pithoragarh
Date: 13th May 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1	Kaushal Upreti	Zila Ingiya Bandha			
2	Kaushal Upreti	Arniya Nigam	D.M.	955777155	
3	KAMAL JOSHI	11	Structural Engg	7060843479	
4	Vinash Kumar	N N P	Supervisor (Cum)	9897135845	
5	Arjun Kumar	N N P	in (S.W.)	9492760066	
6	Rohitash Kumar	"	"	9994410332	
7	Manoj Kumar	"	"	9690792513	
8	Ashwinder Yadav	ATILSH	JRM Expert	929785329	
9	Chandel Singh	NPP Dharwad	Junior Assistant	9460903551	
10	राजेश (Rajesh)	N N P	SNA	7409739149	
11	राजेश कुमार	N P Sauri	E.O.	7830093828	
12	निगमि वरदा	N.P.P. Gangolihat	E.O.	6395764496	
13	Surya Prakash	N.P.P. Dharwad	E.O.	8126408042	
14	Bhupathi Prasad Pandey	E.O. Nagar Palika Pithoragarh	E.O.	8979788840	

Picture 22: Attendance sheet- District Pithoragarh

Operationalization of Faecal Sludge and Septage Management Protocol



Venue: Uttarakashi
Date: 27/03/25

S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2					
3	Sandeep Bhandari	Nagar Palika Gangolihat	Junior Assistant	7805032761	
4	Jayant Kumar	Nagar Palika Gangolihat	Executive Officer	9690584856	
5	Rajesh Negi	Nagar Palika Gangolihat	Executive Supervisor	8218925622	
6	Shivani Rawat	N.P. Nangraon	Executive Officer	9760907395	
7	Kusum Rana	NPP-Bardhat	C.S.I.	9460218436	
8	Susant BISHI	NPP-BARDHAT	Junior Engineer	8979529327	
9	Kamal Singh	NPP Chingolihat	S.I.	9410721703	
10	Shelvi Bhandari	NPP Chingolihat	Junior Engineer	9897667875	
11	Bandop Dey	NPP Purala	E.O.	6398450255	
12	AJAY SEMWAL	NPP Purala	Environmental Engg	812626036	
13	Prashant Bhandari	NPP Purala	Junior Engg.	8090977799	
14	Umesh Chandra Sengupta	Nagar Palika Gangolihat	EO	9780065422	

Picture 23: Attendance sheet- District Uttarakashi

Venue: NEW TEHRİ

Date: 25/03/2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2	Santosh Kumar	NPP TEHRİ	EO	9634903929	[Signature]
3	Ajay Singh	N.P. Gaja	Clark	7505454142	[Signature]
4	Rohit Kumar	N.P. Gaja	EO	8630840744	[Signature]
5	Shalini Negi	N.P. Kirtinagar	E.O.	8956832612	[Signature]
6	Aman Joshi	N.P. Tehri	D.M.M. Anna	9634237827	[Signature]
7	Anjali	N.P. Tapovan	EO Tapovan	9650950538	[Signature]
8	Prashant Kumar	NPP Chamba	EO Chamba	8650841131	[Signature]
9	Rahul Singh	NPP Dehradun	EO Dehradun	7455059907	[Signature]
10	Ravindra Singh Pannu	NPP Chamba	S.J.	9410704435	[Signature]
11	Pawan Sen	NPP Chamba	Supervisor	8575721604	[Signature]
12	Ankur K. Mangain	N.P. Chamoli	E.O.	9522911563	[Signature]
13	Atishya TE (Assistant)	RTI to Chamba	E.O.	9411155348	[Signature]
14	Deepak Tyagi	NPP Nainital	J.E.	7895142525	[Signature]

Venue: NEW TEHRİ

Date: 25 Mar 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
15	Vijay Kumar	Nagar Palika Pauris, Nainital	Pranay Kumar	7536870260	[Signature]
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

Picture 24: Attendancesheet: District New Tehri

Operationalization of Faecal Sludge and Septage Management Protocol

Venue: Chairman's office, Nagar Palika Champawat
Date: 15th May 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1	Amit Kumar	Uttarakhand Jal Sansthan, Champawat	AE	7534008427	
2	Laxman Singh Bhatnagar	JE N.P. Champawat	JE	98970 326761	
3	ASHISH KUMAR DHIMAN	JE N.P. Champawat	JE	9557922966	
4	Yogesh Belwal	Nagar Palika, Champawat	Environment-Super	98708 26626	
5	Parmod Sonsh	Uttarakhand Jal Sansthan, Champawat	DMM	9756638706	
6	MAHESH CHAUHAN	N.P. CPT	CITY MANAGER	79 06023790	
7	Saurabh Negi	NPP CPT	E.O.	930024 8049	
8	Sachin Kunwar	NPP CPT	Kanishk Sengupta	9634044188	
9	Kuldeep	HPS NPP CPT	Site incharge	7408657840	
10	Chandra Shekhar Pradhi	NPP Lohaghat	SWM extension (SOM)	7017764790	
11					
12					
13					
14					

Operationalization of Faecal Sludge and Septage Management Protocol

Venue: Nagar Palika Panchsheel, Bageshwar
Date: 08th May 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1	रवि कुमार	N.P. Bageshwar	Incharge S-1	7639826501	
2	दमन सिंह गडिया	N.P. Bageshwar	पर्यावरण प्रविधिक	7902148476	
3	चन्द्रकांत झा	N.P. Bageshwar	I.E.	9395031001	
4	Pranav Kumar	N.P. Bageshwar	E.O.	9412911800	
5	Rahul Pratap Chaturvedi	N.P. Bageshwar	JE	9634884483	
6	MOHD YAMEN	E.O. BGS	E.O.	6398105760	
7	Sunny Sharma	Nagar Palika, Bageshwar	A/c	912537502	
8					
9					
10					
11					
12					
13					
14					

Picture 25: Attendance sheet-District Bageshwar

Venue: Rudraprayag
Date: 24th April 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2					
3	Darshan Singh	N.P. UKhimath	Deo (J.A)	8755556624	Darshan
4	Nikhil Devshali	N.P. Kedarnath	Tax Collector	9834371173	Nikhil
5	Sunil Singh Rana	EO, NPP, RDP	EO	9474220174	Sunil
6	Shikha Singh	N.P.P. Rudrapur	SI	9410522763	Shikha
7	MUKESH	RUDRAPUR	T.C.	9368994482	Mukesh
8	Manish	EO Tiliwara	EO	7453007798	Manish
9	Nikita Bhatt	NA Agastya	EO	7055590813	Nikita
10	Vivek Bhat	N.P. Agastya	EO	8918032851	Vivek
11	Qianat	N.P. Hlwara	E.S	7830370802	Qianat
12					
13					
14					

Picture 26: Attendance sheet-District Rudraprayag

Operationalisation of Faecal Sludge and Septage Management Protocol

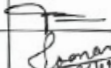
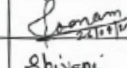
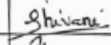
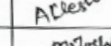
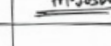
Venue: Almora, Nagar Nigam Meeting Hall
Date: 6th May 2025

S No.	Name	Organisation	Designation	Email ID	Mobile No.	Signature
1	Mritika Takuli	Nagar Nigam Almora	Junior Engineer	mritikatuli3671@gmail.com	9761049980	Mritika
2	Deepa Pawar	NPP, Ramkhat Chilgaon	Executive Officer	deepapawar16@gmail.com	8859789652	Deepa
3	Ajay Kumar	"	Supervisor	ajay48610@gmail.com	8938004065	Ajay Kumar
4	Mahendra Kumar	N.P. Bhikiyasin	Junior ASST	combhikiyasin	8393951529	Mahendra
5	Manish Kumar Chaudhary	N.P. Dwarhati	M.T.S.	compd@rediffmail.com	7060288583	Manish
6	Sabish Chaudhary	N.P. D.S/V	M.T.S	com.N.P.B.S/V	8987019896	Sabish
7	Pankaj Jishi	N.P. Chaukhaty	Environment Supervisor	com.pchko@gmail.com	789053550	Pankaj
8	SUBHASH CHAUDHARY	N.P. Chaukhaty	EO	"	7983595163	SUBHASH
9	Tejendra Singh Bhandari	N.P. Almora	EO	"	8177231511	Tejendra
10	Kajal Paloo	Nagar Nigam	C.C	com.nagapaloo	7465036208	Kajal
11	Harsh Kishor Kapil	Nagar Nigam	UDC	HarshKapil206@gmail.com	6396608364	Harsh

Picture 27: Attendance sheet-District Almora

Venue: Pauri Garhwal

Date: 26th April

S. No.	Name	Organization	Designation	Mob. No.	Signature
1					
2	ALEKH SHRIYAL	Nagar panchayat Swargarshan	Sanitary Inspector	7819839087	
3	ROHITASH SINGH	NP Jank	Computer operator	789508032	
4	Miss Poonam	NP Satpuli	E.O	9758937230	
5	Shivani Salari	NPP Dugadda	E.O	9383194322	
6	Datta Pratab	NP Thediain	E.O	7819910929	
7	Hemant Kumar	NPP Pauri	Sanitary Inspector	9897746677	
8	Deepa Rawat	Nagar Palika Pauri	E.O	9997973819	
9	Kramur Singh	Nagar Nigam Kotdwara	A.A-E	9410104343 7017539537	
10	Aklesh Awasthi	Nagar Nigam Srinagar	T.I	8439019540	
11	MUKESH JOSHI	M	T.I.	8936921150	
12					
13					
14					

Picture 28- Attendance sheet- District Pauri Garhwal

Venue: Hotel Lemon Tree, Haridwar (Distt Haridwar)

Date: 10th June 2025

S. No.	Name	Organization	Designation	Mob. No.	Signature
1	Subhash Chandra	N.P. Manglone	J.E.	3675517210	
2	Ravi Pandey	UDD	S.E	9837256961	
3	Adarsh Kumar	N.P. Landhaura	S.I.	9997500127	
4	Priyanka Dhyani	N.P. Sulepur, Dehra Dun	E.O	8126514564	
5	Rugina Siddiqui	NP. Ramnagar	Env. Supervisor (SBM)	9997231393	
6	Surender Singh	N.P. Bhagwanpur	E.O	9690161608	
7	Shrikant Saini	N.P. Bhagwanpur	Environment Supervisor (SBM)	7037960737	
8	Shubham Kumar	N.P. Sultanpur, Dehra Dun	E. Supervisor (SBM)	9719914648	
9	MANGU CHANDAN	N.P. Indikhera	E.O	9897212608	
10	Ashu Ka Verma	"	ST	741113611	
11	Anupam Kaur	Nagar Nigam, Dehra Dun	S.N.A	8755002411	
12	Blawna	"	Com-op/keeper	9045733118	
13	Subhash Chandra	NPP Manglone	J.E	9675517268	
14	Meeta Kaur	H.P. Lalpur	E.O	9760018644	

Operationalization of Faecal Sludge and Septage Management Protocol



Venue: Hotel Lemon Tree, Haridwar (Dist. Haridwar)

Date: 18th June 2015

S. No.	Name	Organization	Designation	Mob. No.	Signature
15	TARIQ KHAN	N.P. PMANGLOUR	TAX INSPECTOR	8923444222	[Signature]
16	SHAGGANT	N.N. Richikesh	SNA	9927926085	[Signature]
17	SHAGGANT	NNH	CSI	9117247828	[Signature]
18	SHAGGANT	SHAGGANT	E.O	9410356188	[Signature]
19	Abdul Rehman	N.P. Lakhse	clerk	9456563223	[Signature]
20	Ajay Narayan Bhat	N.P. Lakhse	clerk	9557278995	[Signature]
21	Harsh Vardha Singh	N.P. Lakhse	E.O	8959779326	[Signature]
22	S. C. Negi	MNA Rishikesh	MNA	9410771059	[Signature]
23	S. C. Negi	N.P. Lakhse	clerk	9199730222	[Signature]
24	RAJAT	N.P. Lakhse	E.S.	9557784512	[Signature]
25	Kuldeep Singh Chauhan	N.P. Lakhse	E.O	8057875751	[Signature]
26	Rohit Kumar	N.P. Lakhse	E.O	9897199295	[Signature]
27	Rohit Kumar	N.P. Lakhse	E.O	9701041901	[Signature]
28	Vishendra Ranga	N.P. Lakhse	E.O	9761856429	[Signature]

Picture 29: Attendance sheet- District Haridwar

Notes

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Notes

[illegible]

Notes

[illegible]



National Institute of Urban Affairs

National Institute of Urban Affairs

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