Mobile Septage Treatment Unit (MTU)
Designed and Developed by WASH Institute

What is MTU?
- Treatment system mounted on a small/medium truck
- Designed to treat contents of septic tank at the household/site itself
- Separates solids and liquids, liquid gets treated on the spot, thickened sludge carried for secondary treatment
- Operational capacity is 6000 liters/hour

PROCESS
- Solid and Liquid Separation
- Sludge (Solid) Thickening through Centrifuge
- Liquid treatment – Membrane Filtration
- The thickened solid is taken for secondary treatment
- The treated effluent is safe for disposal on sight itself can be used for secondary purposes such as gardening etc.
**Major Advantages**
Addresses several barriers to achieving safely managed septic waste

- **Highly Mobile as treatment system is mounted on wheels**
- **Low Operational Cost**
- **Treated effluents meet the national and international norms. Can be used for secondary purposes such as gardening etc.**
- **Helps to keep environment clean by elimination of indiscriminate disposal and dumping of septage**
- **Reduces costs by avoiding transport of the liquid portion (which usually comprises of 95-99% of septage)**
- **Higher flow rate of MTU helps to empty & treat more number of septic tanks in a day**
- **As most of the small towns do not have treatment facilities such as FSTPs/STPs, MTU can be a very apt option for emptying & treating of septage**

**MTU has been tested and validated by National & International Institutions**

**Duke**
**Validated by Duke University, US in 2017:** This validation was used to improve and finalize the MTU design. The MTU has been functional since this validation was completed.

**RTI International**
**Validated by RTI International, US in 2018:** This validation was part of a larger set of field tests on all BMGF supported technologies. This was a rigorous 200 hour test which validated the technical performance and operating costs of the MTU.

**BITS Pilani, Goa in 2020:** Field testing of MTU for more than 180 hours took place as part of this validation prior to commercialization of MTU. The test methodology and results were independently reviewed by eminent academics from IIT Madras and NIT Suratkal. The MTU was driven to Goa in order to test its treatment efficiency at different geographical locations (60 septic tanks, Treated 4,53,701 lts).

**Total No. of Septic Tanks Treated Thus Far**
As a part of performance evaluation validation, till date, MTU has emptied 724 septic tanks and treated over 38.7 lakh litres of septage in different geographies of India.

**MTU in Action During Emergency**
In 2018, during Kerala floods, WASH Institute in close partnership with UNICEF deployed four MTUs in four severely flood affected districts (Alappuzha, Pathanamthitta, Thrissur and Ernakulam).

The MTUs treated a total of 9,18,222 litre of septage from the septic tanks in 156 locations across 60 camps. MTU services during Kerala floods were highly appreciated by the Govt. of Kerala, Hon'ble Finance Minister, Kerala Govt & District Collector, Thrissur district who visited the MTU operations.

**Accreditations Received**


In 2019, MoHUA also included MTU as one of the options to empty and treat septage through an Advisory (Titled as 'Sewer, Faecal Septage & Drain Cleaning Equipment, Manufactured in India')

*Letter issued by Secretary, MoHUA New Delhi on July 12, 2019 to Chief Secretaries of all states regarding steps that needs to be taken on urgent basis to stop manual desilting of septic tanks.*

*MTU Identified under SBM Kosh as one of the Technologies for septic tank cleaning equipment by Department of Drinking Water and Sanitation, Ministry of Jal Shakti.*

*In the Annexure to the above letter, MTU has been mentioned in Page No. 7 as one of the eligible products/ processes examined through the technology challenge available through Emergency Response Sanitation Unit (ERSU) with MoHUA.*

*Kerala Pollution Control Board Certificates issued to MTU.*
Awards and Recognitions

In November 2018, MTU was accorded a National Level Award by Ministry of Housing and Urban Affairs (MoHUA), Government of India on “Technology Challenge for identifying and promoting solutions for cleaning and maintenance of septic tanks which eliminated the need for human entry” category.

In January 2020, WASH Institute received the 5th Edition of India Industry Water Conclave and 7th Edition of FICCI Water Awards under the category “Water Initiative by NGO”. The award was presented by the Hon’ble Minister of Jal Shakti, Shri Gajendra Singh Shekhawat for WASH Institute’s innovative onsite septic tank treatment technology, MTU.

MTU at Various Events and Platforms

The MTU has been displayed and demonstrated on various platforms and has received awards and appreciation.

Shri Arumugam Kalimuthu, Executive Director of WASH Institute demonstrating MTU to Shri Barga Shankar Mishra, Secretary, MoHUA & Shri Shiv Das Meena, Additional Secretary, MoHUA at National Level Workshop on FSDM in Odisha on 27th Oct, 2018.

MTU demonstration to Shri Hardeep Singh Puri, Hon’ble Minister, MoHUA during a National Workshop on Sanitation at Vigyan Bhawan, Delhi on August 2019.

MTU being demonstrated before Shri K.T. Rama Rao, Hon’ble Minister for Municipal Administration & Urban Development, Govt. of Telangana at INK WASH event organized by ASCI in Hyderabad in January 2020.

MTU being displayed & demonstrated before Shri Rattan Lal Kataria, Hon’ble Minister of State, MoS & Shri Anur Banuka, Additional Secretary, DDWS at a National Planning Workshop on ODF Plus & Water Conservation hosted in October, 2019, organized by DDWS, MoS at ICAR Campus, Delhi.

MTU being demonstrated to Joint Secretary, SBM and CPNEED team at MoHUA, Nirman Bhawan, New Delhi in October, 2019.