Operationalizing FSM Regulations at City Level: A Case study of Warangal City

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Administrative Staff College of India

GREATER WARANGAL MUNICIPAL CORPORATION
Warangal city - Overview

• Population: 0.8 million; Area: 472 sq.km
• Second largest city in the state of Telangana
• Slum pop – 30% (180)
• Historical and cultural city - potential for tourism
• City has many lakes/water bodies (sources of drinking water)
• Priority city for growth
Sanitation Situation - Warangal

- Water availability < 100 lpcd
- City has no sewerage system; dependence on onsite options.
- HH having access to onsite toilets: 77%
  - Toilets connected to septic tanks: 59%
  - Pit latrines: 18%
- HH with OD and Insanitary Toilets: 23%
Prevalence of Insanitary toilets
High incidence of open defecation
Sanitation Challenges: Warangal

Lack of design norms leading to slippage

Toilet builders (masons) are not trained in construction of safe toilets
Sanitation Challenges : Warangal
Sanitation Challenges: Warangal

Unregulated / unsafe septage handling

No periodic desludging
Non usage of Personal Protective Equipment
No record keeping /MIS
Unsafe transportation and disposal practices
Unsafe disposal practices
Septage disposal locations
Contamination of storm water drain
And water bodies
Contamination of water bodies
Sanitation Challenges : Warangal

• Cumbersome processes to access sanitation subsidy

• Lack of information to citizens
REGULATING FECAL SLUDGE AND SEPTAGE MANAGEMENT
FSM Regulation and Septage Management Guidelines

GWMC passed the resolution on FSM on 25th March 2016.
Warangal is the first city to introduce FSM regulation.

Components of Regulations

- Design and Construction of Septic Tanks
- Conversion of Insanitary Latrines into Sanitary Latrines
- Pumping and Desludging
- Septage Transportation
- Septage Treatment, Disposal and Reuse
- Information, Education and Communication (IEC)
- Training Programs
- Record keeping and MIS
- Help Line for Septage Management
Operationalising FSM Regulations
Design And Construction Of Safe Toilets

- Press note released for empanelment of Masons (Toilet Builders)
- Trained the Masons and empaneled them.
- Empaneled masons being deputed for construction of IHHLs.

Notification for Empanelment of Toilet Builders In newspapers & GWMC website
Operationalising the FSM Regulations
Design And Construction Of Safe Toilets – Toilet Builder Program
Operationalising the FSM Regulations
Design And Construction Of Safe Toilets—Toilet Builder Program

Distribution of Certificates to Toilet Builders
Toilet construction by trained masons
Survey of HH to assess toilet typology

- 100% Demand Assessment survey in November 2016 to assess the current status of toilet coverage and toilet typology.
Conversion of Insanitary Latrines into Sanitary Latrines

Established a dedicated sanitation help line (S-Line):

- trained staff to support citizens on all aspects of septage management
- including septic tank designs,
- approval process,
- methods of construction,
- contact details of masons and desludging operators etc.
Process reengineering of the building approval system to incorporate toilet design and discharge of waste water according to building approval requirements.
Operationalising the FSM Regulations
Pumping and Desludging – empanelment and training of desluding operators

Empaneled Feacal sludge operators and two rounds of training (operators & staff) have been conducted by ASCI on use of Personal Protective Equipment
License issued to FSM operator
Operationalising the FSM Regulations
Information, Education and Communication
**Operationalizing FSM**

- A letter from commissioner to Superintendent of Police for seizing of vehicles by non-empaneled operators /vehicles from Commissioner is being issued.

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**GREATER WARANGAL MUNICIPAL CORPORATION**

To,  
The Commissioner of Police,  
Warangal Commissionerate,  
Warangal.

From,  
The Commissioner,  
Greater Warangal Municipal Corporation,  
Warangal.


Ref: License for Collection, Transportation, and Disposal of Septage; Orders issued on 27-10-2016

Dear Sir,

The Greater Warangal Municipal Corporation (GWMC) is mandated with the function of “Public Health, Sanitation, Conservancy, and Social Waste Management” in accordance with the Constitutional Amendment Act, 1994. The Municipal Corporation Act has provided comprehensive powers to the Council and Commissioner for effective collection, transportation, treatment and disposal of sewage / septage within municipal jurisdiction.

To promote comprehensive and integrated approach to septage management collection, storage, desludging, transportation, treatment, disposal and reuse in
Transportation

PPE using by Septage workers while desludging

GPS enabled FSM truck (Vehicle) and carrying sanitation messages
Operationalising FSM Regulations
GPS Module in FSM trucks
Purpose: Licensed FSM operators are required to report information as per the FSM Regulations.

Users: Desludging Operators

Functionality: This app captures information on septage collection on a real time basis and helps in effective implementation of the regulations.

Send auto alert to citizen and operators regarding next desludging cycle.
## Operationalising the FSM Regulations

FSM Tracker

### FSM Tracker

<table>
<thead>
<tr>
<th>Truck id / మార్గందించినుడు</th>
<th>1001</th>
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**Type of Establishment** / చారిత్రకుడు

**Select / పిలుస్తున్నది**

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## FSM Truck Details

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<th>Truckld</th>
<th>Truck DriverName</th>
<th>Operator Id</th>
<th>Operator Name</th>
<th>Aadhar Number</th>
<th>Email</th>
<th>Mobile no</th>
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<td>Narasimha Rao</td>
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<td>9059910298</td>
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<td>06/01/2017</td>
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<td>Srinivas</td>
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<td></td>
<td>9966451421</td>
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<tr>
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<td>1008</td>
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<td>Naimnagar</td>
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Treatment Plant - Locations

GREATER WARANGAL MUNICIPAL CORPORATION
IDENTIFIED CENTRAL POINTS IN EACH ZONE FOR FAECAL SLUDGE TREATMENT PLANT

LEGEND
- GWMC boundary
- Ward boundary
- Ward numbers
- Identified location for FSTP
Proposed site for FSM Treatment plant
Fecal Sludge Management–Technology Options

FSTP – (Anaerobic treatment system)

Capacity – 10 kl/day pilot plant (scaled to 40-60 kl/day)
Land – 2 acres – 5 acres
Capex – 75-80 lakhs
Opex - Rs 9 lakhs/annum; 8 % escalation every year.

PPP Structure
- **Option 1**
  - VGF – 50 %
  - Private sector investment – 50 % + 10 year full O & M
  - Bid parameter – Annual payments by GWMC
- **Option 2**
  - Capex and opex – private sector
  - Annuity payment – GWMC
  - Period 10 years
Fecal Sludge Management—Technology Options

Co-Treatment Option – Biomethanation

• Co-Treatment through bio methanation – Bio degradable MSW and Septage
  • Capacity – 100 TPD
  • Land – 5 acres
  • PPP structure
    • DFBOT Model
    • Capex – 100 % operator
    • Opex – 100 % operator
    • Bid period – 10 years
    • Bid parameter – revenue share to GWMC
Sanitation Helpline (S-Line)
Launched in May 2016, it is integrated into GHMC systems

- New toilet construction
- Desludging and Complaints
- Technical Assistance
Sanitation Helpline (S-Line)

Process Flow

1. New construction
   - Beneficiary Name
   - Address & contact
   - Bank details

2. Check Eligibility
   - Eligible
   - Generate application
   - Verification
     - Approve
     - Reject
   - Upload in cgg website
   - VO & Comm
     - Approve
     - Reject
   - Geotag
     - Approve/Reject
   - Send msg

3. In-Eligible
   - Previously applied
   - Sikh land
   - Any other

4. Close

5. Complaints/Suggestions
   - Beneficiary Name
   - Address & contact
   - Type:
     - Verification
     - Geotag
     - Bill pending
     - Incorrect A/C
   - Register
     - With Aadhar / H. No
   - Identify & Solve

6. Technical assistance
   - Beneficiary Name
   - Address & contact
   - Type:
     - Mason
     - Contractors
     - Any other
   - Register & Identify
   - Inform to the caller

Project Implementation Unit (PIU) meets every week

Chair: Additional Commissioner, GWMC
Recommendations

• Evidence based advocacy in support of regulations

• Stakeholder consultations and alignment with the programme.

• Training of stakeholders

• Land for FSTP needs to be identified early in the project.

• Monitoring and periodic review

• ICT tools to track progress

• PPP models work in FSM
Takeaway

• Regulation is pre-requisite for comprehensive city wide sanitation improvement

• Warangal has initiated systems and processes for successfully operationizing FSM regulations.

• Systems, processes and tools are replicable

• Warangal experience can be scaled up