

# Non-Sewer Sanitation & FSSM in Urban Areas of Andhra Pradesh and Telangana



**Sanitation Resource Park at Warangal**

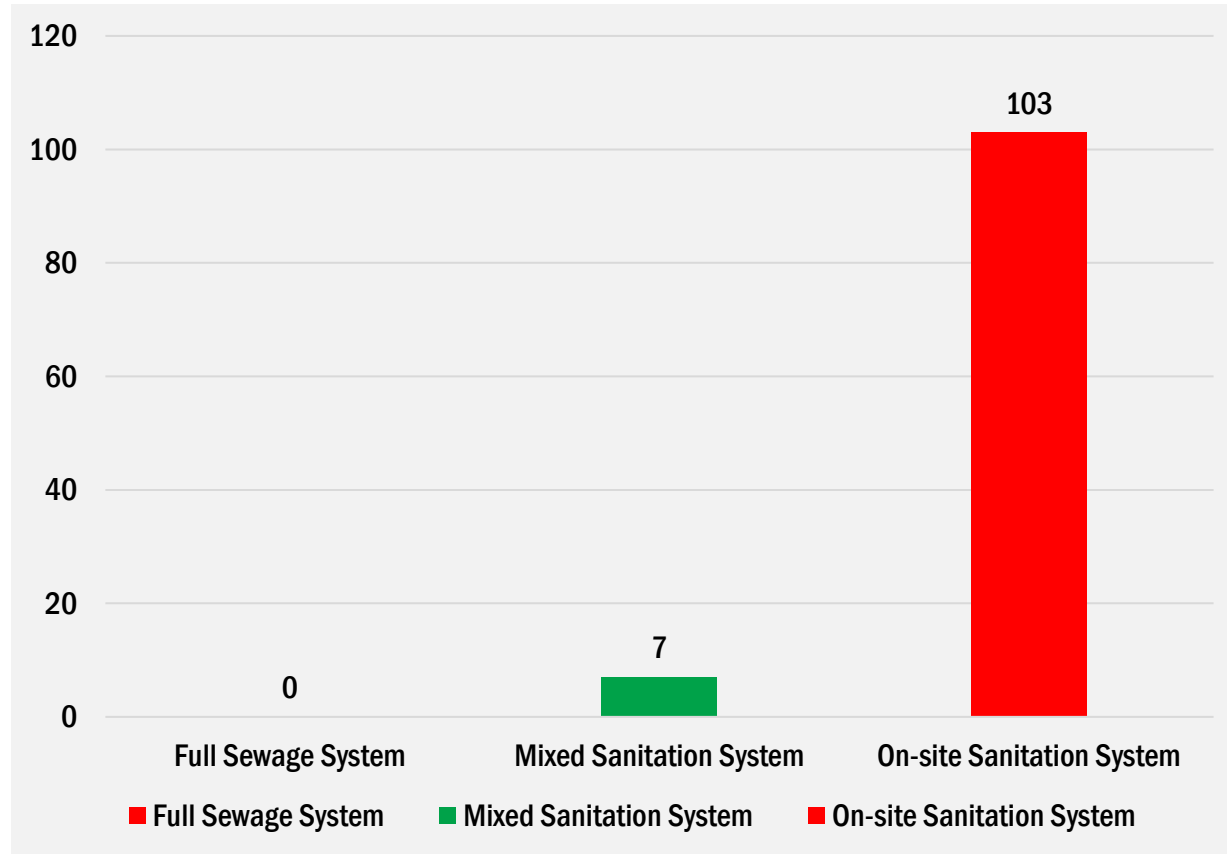


**Knowledge Partner: Administrative Staff College of India**

# Andhra Pradesh- Urban Sanitation

- ❖ Projected Population (2019): 1.49 Cr
- ❖ No. of ULBs: 110 (10 added recently)
  - Municipal Corporations: 16
  - Municipalities: 69
  - Nagar Panchayats: 25
- ❖ **> 72% of household toilets are connected to on-site sanitation systems (septic tanks/pit latrines)**

# Sanitation Systems In Urban AP



Only **seven** cities have partial underground sewerage systems.

In 103 towns, households use on-site containment systems (septic tanks/pits)

#FlushKeBaad



**>60% of the  
toilets in towns  
of Telangana  
are connected  
to onsite  
systems esp -  
septic tanks**

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# Approach for Safely Management Sanitation in A.P and Telangana

1. Recognising onsite sanitation system as a solution
2. Strengthening containment system as per IS standards
3. Safe desludging and transportation /worker safety and well-being
4. Better O & M of septic tanks – promoting regular desludging
5. Safe processing, recycling and disposal – greater attention to pathogen removal
  - Combined treatment at STP /SWM (major cities /Amrut Towns)
  - Stand-alone FSTPs
  - Good asset management /PPP models
6. Grey water management
7. Robust organisation for sanitation

# Approach for Safely Management Sanitation in A.P and Telangana

Gender intentional planning  
Positively impacting vulnerable population  
Behaviour change communication



# POLICY ON FAECAL SLUDGE & SEPTAGE MANAGEMENT



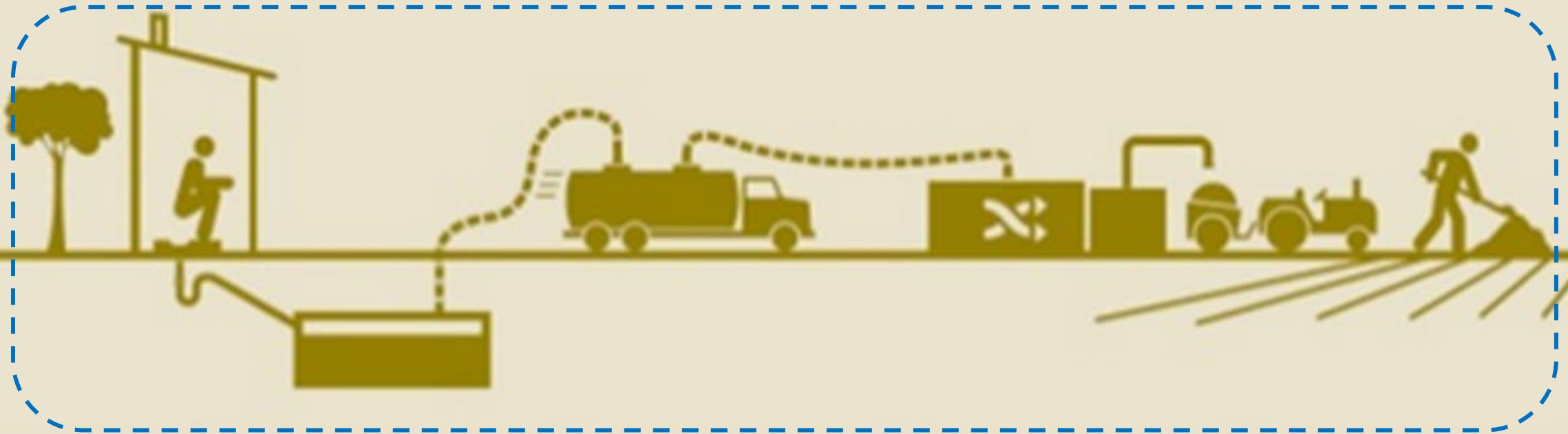
Government of Telangana  
September 2018

## G.O MS 176: FSSM Policy

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# “ODF++ : Towards Safe Sanitation”



Containment

Emptying

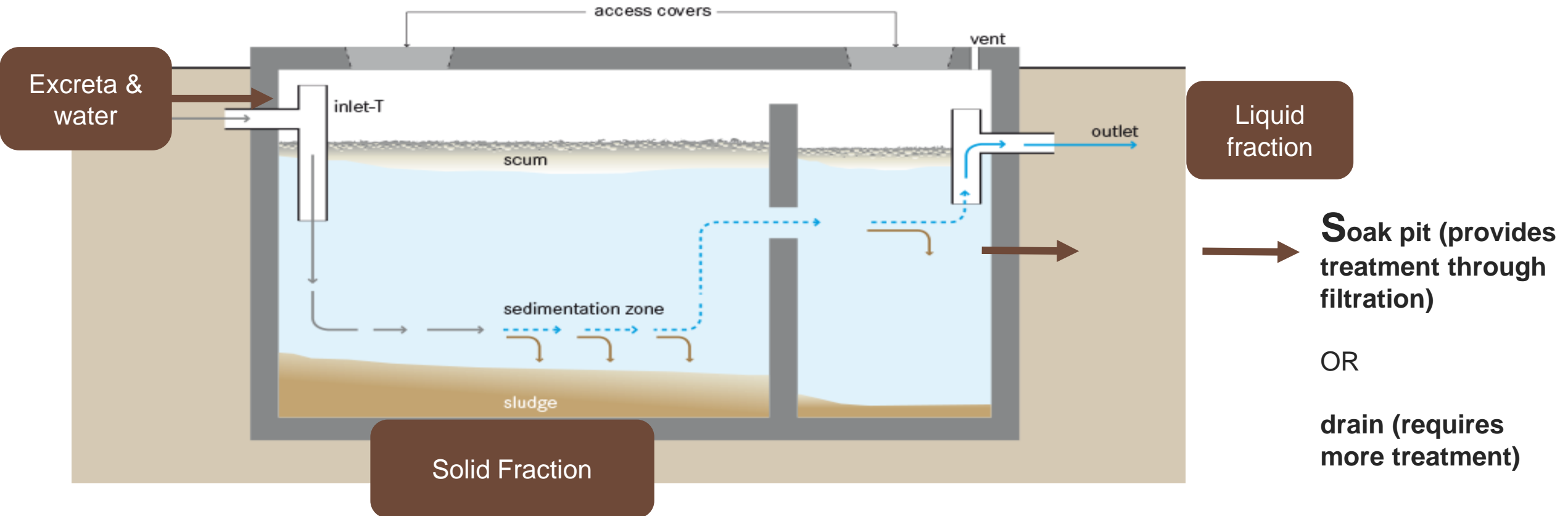
Transport

Treatment

Disposal or  
Reuse



# Septic tanks



- most frequent onsite treatment unit worldwide
- Consists of 2 to 3 compartments

# Improving Toilet Containment Systems

Building toilets as per IS standards and integrated with ICT based building approval system.

SIDDIPET Special Municipality

Mr. TPBO2 SIDDIPET [TPBO]

File No. : 3056/W15/2018/2518 (10/11/2018) Flow Version: 7 Proposal Status : In Process 2.SRILENYALAPU NITHIN KUMAR

Document : Pending\Drawing Failed In Rules\Site Visit : Pending

Proposal Risk Category : Low

Application Form Document **Site Inspection** Drawing Fees Add Condition Letters & Plan

Inspection Checklist Joint Checklist Inspection Photograph

Plan a Visit Save Save & Submit Inspection Report

Site Inspection Checklist

\*Inspection on 12/11/2018

All fields in checklist are mandatory.


#	Description	As On Plan	As On Site	Observation	Remark
1	Whether approach road existing at site		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
2	Whether approach road connected with an existing public road		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
3	Nature of approach road		Select	✓ Approval	✓
4	Width of approach road in Mt.		0	Approval	✓
5	Services over approach road			✓ Approval	✓
6	Whether approach road side drain exists		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
7	Whether the Site is vacant		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
8	Does plot boundaries tallies with the site?		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
9	Whether the site is affected by/ in the vicinity of			✓ Approval	✓
10	Distance from water body?		Select	✓ Approval	✓
11	Whether high tension line passing over the site		<input type="radio"/> Yes <input type="radio"/> No	Approval	✓
12	Site Surrounded by (physical features)				
13	EAST			Approval	✓
14	SOUTH			Approval	✓
15	WEST			Approval	✓
16	NORTH			Approval	✓
17	Site terrain		Select	✓ Approval	✓
18	Site enclosed with		Select	✓ Approval	✓


# Licensing and Record Keeping


VoLTE 40% 2:15 p.m.

## FSM TRACKER

Truck Id / ట్రక్ ఐడి : AP28U2420

 New Request / కొత్త అభ్యర్థన

 Reports / నివేదికలు

 Sign Out / సైన్ ఔట్

Sanitation Value Chain

CONTAINMENT > EMPTYING > TRANSPORT > TREATMENT > REUSE/DISPOSAL

VoLTE 40% 2:15 p.m.

## FSM TRACKER

Truck Id ( Last 4 digits of Truck No ) / ట్రక్ ఐడి ( ట్రక్ సంఖ్య యొక్క చివరి 4 అంకెలు )

Truck Id / ట్రక్ ఐడి

Sign In / సైన్ ఇన్

Sanitation Value Chain

CONTAINMENT > EMPTYING > TRANSPORT > TREATMENT > REUSE/DISPOSAL

VoLTE 40% 2:15 p.m.

## FSM TRACKER

Truck Id / ట్రక్ ఐడి : AP28U2420

Search icon

Type of Establishment / స్థాపనల రకం

Select / ఎంచుకోండి

Name / పేరు

Name / పేరు

Email / ఇమెయిల్

Email / ఇమెయిల్

Mobile No / మొబైల్ సంఖ్య

Mobile No / మొబైల్ సంఖ్య

House Number / ఇంట్లో నెంబర్

# Training on SOP and PPE



Ministry of Housing and Urban Affairs  
Government of India



## Standard Operating Procedure (SOP) for Cleaning of Sewers and Septic Tanks



Central Public Health and Environmental Engineering Organization (CPHEEO)

Ministry of Housing and Urban Affairs  
Government of India

www.amrut.gov.in  
November 2018

## STANDARD OPERATING PROCEDURE FOR MECHANISED DESLUDGING OF SEPTIC TANK & LEACH PITS



# వ్యక్తిగత భద్రతా పనిముట్లను వాడాలి.

**పి చిదమైత వ్యర్థాల వలన కంటికి దెబ్బం కలుగకుండా సుదూరంగా ఉండటానికి వాడాలి.**

**పని చేయే ప్రదేశంలో తల దెబ్బకపోకుండా హెల్మెట్ ధారణం చేయాలి.**

**చేయి వాచిత బలగీత వాయువులను ముందే గట్టె బొంబు మార్చి రు వాడాలి.**

**శ్రీధ్ర బలమర్చిల వారల ఎడమకండా బాకే ఫోన్స్ వాడాలి.**

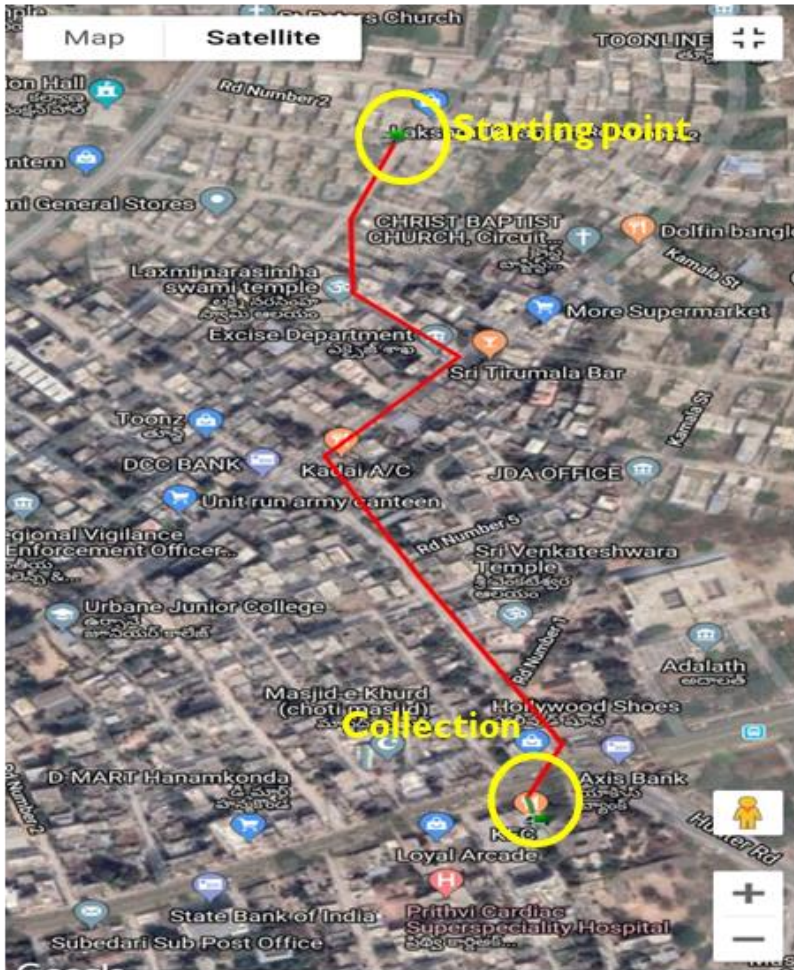
**శరీరం ముఖాన్ని ఘాతానికి బలం చేయాలి.**

**ఖాద్దతంగా బలంకి బలమర్చు వాడాలి.**

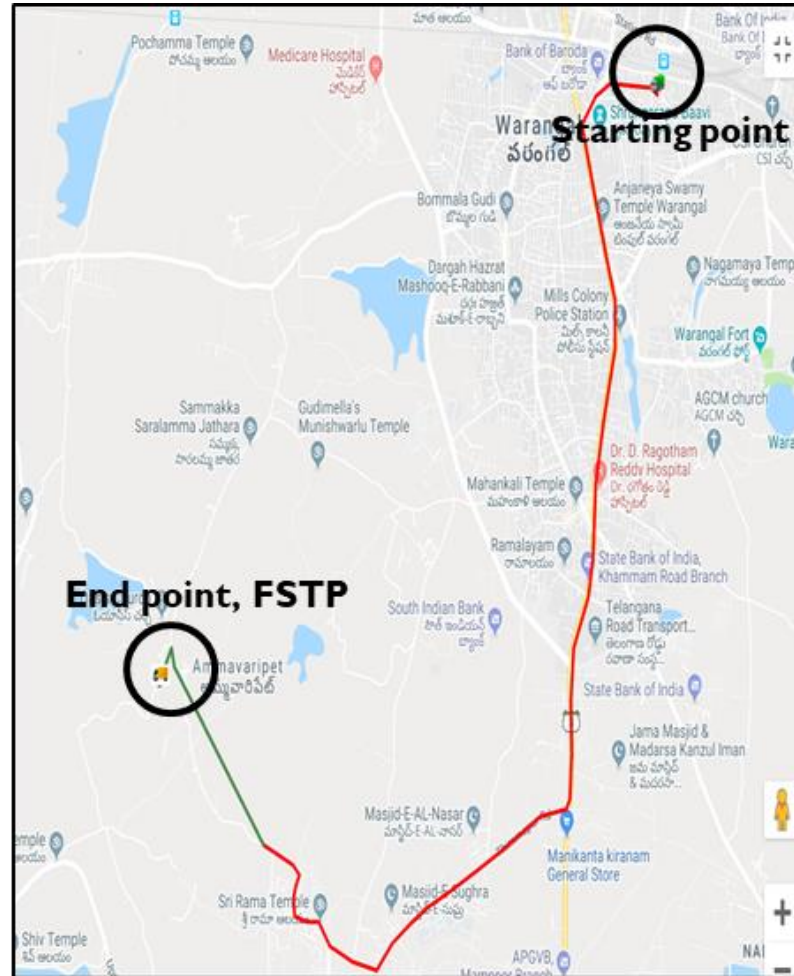
**వ్యక్తిగత భద్రత పాటేసే వ్యక్తిత్ పాటు వ్యవస్థ భాగుంటుంది.**

**ఎమ్. ఎస్. యార్క్ 2013 ప్రకారము ఎవరూ మల వ్యర్థాలను చేతితో తాకరారు**

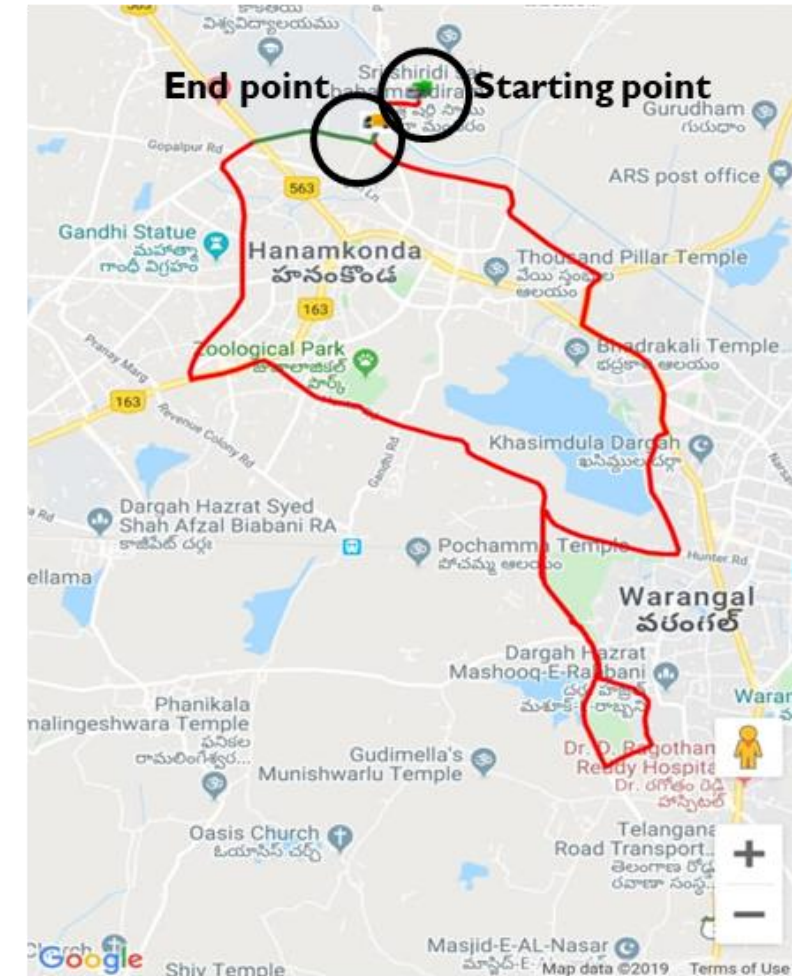
# GPS fixed on trucks to monitor movement



Vehicle being tracked from its source



Case 1: Vehicle brought to FSTP for decanting load



Case 2: Deviations tracked

# Behavior Change Communication Programs for Resident Welfare Associations

**మన కాలనీ స్వచ్ఛత మన కుటుంబ ఆరోగ్యానికే పునాది !**



మల వ్యర్థాల సరైన నిర్వహణతో, మన కుటుంబ సభ్యుల ఆరోగ్యాన్ని కాపాడుకుందాం, మన కాలనీ ని పరిశుభ్రంగా ఉంచుదాం

**asci**

**ఈ సమావేశం యొక్క ముఖ్య ఉద్దేశం**

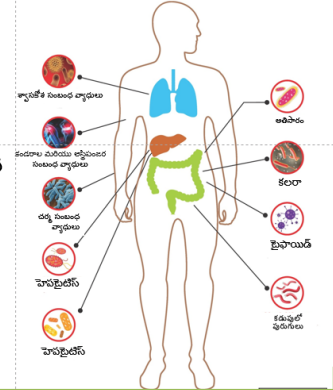
మీకు తెలుసా ? మల వ్యర్థాల నిర్వహణను మనము మరియు మన కాలనీ వాసులందరూ అనుసరించకపోతే మన కుటుంబానికి ఎలాంటి హాని కలుగుతుంది ?

మల వ్యర్థాల వల్ల కలిగే హాని నుండి మీతో పాటు మీ కుటుంబాన్ని రక్షించు కోవడానికి ఎలాంటి చర్యలు చేపట్టాలి ?

1


**మలశుద్ధి చేయకపోవడం వలన వచ్చే ఆరోగ్య సమస్యలు**

శుద్ధి చేయని మల వ్యర్థాన్ని ఎక్కడ పడతే అక్కడ పడేయడం వల్ల అత్యంత ప్రమాదకరమైన E.COLI బాక్టీరియా రూపంలో అతిసారం, కలరా, చర్మ సంబంధ సమస్యలు, కడుపులో నుళి పురుగులు మరియు ఇతర ఆరోగ్య సమస్యల రూపంలో మన పిల్లలు మరియు కుటుంబ సభ్యులకు వచ్చే అవకాశం ఉన్నది



10

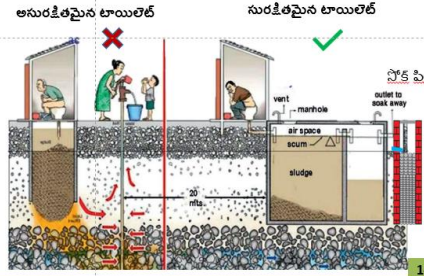
**నగర పౌరులుగా, మన కాలనీ వాసులుగా మన చర్యలు**



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**చర్య - 2**

మరుగుదొడ్ల నుండి వచ్చే మలవ్యర్థాలను మురుగు కాలువలోకి వదలకుండా ఎల్లప్పుడూ సోక్ పిట్ గల సెప్టిక్ ట్యాంక్ కి అనుసంధానించండి.



వివరాలకు, సలహాలు మరియు ఫిర్యాదుల కొరకు సంప్రదించండి  
1800 425 1980

14

మనము మరియు నగర ప్రజల తోడ్పాటు, సహకారంతో మన వరంగల్ ను పరిశుభ్రమైన నగరంగా తీర్చిదిద్దుకుందాం. మీ సహకారంతోనే నగరాన్ని పరిశుభ్రంగా ఉంచుకోగలం, కావున మీరు సిటి సానిటీషన్ ఛాంపియన్ అవ్వాలని కోరుకుంటున్నాము ?



మీ పేరును GWMC నందు నమోదు చేసుకోగలరు  
1800 425 1980

11



ಭೂಮಿ ಲೋಪಲ ದಾಗುಂಡಿ,  
ಬಯಟೆಕಿ ವచ్చಿ ರೋಗಾಲನು ವ್ಯಾಪಿಂಪವೆಸೆದಿ ಎವರು

ಪೆರು: ಮಲಾಸುರುಡು

ವಿರುನಾಮಾ : ಮರುಗುದ್ದೆ ಕ್ರಿಂಧ

ವೃತ್ತಿ : ಭೂಮಿ ಲೋಪಲ ದಾಗಿ ಒಂಟು ಪೆರುಗುತು ಒಂಡಟಂ, ಇಂಕಾ ಬಯಟೆಕಿ ವచ్చಿ  
ಗಾಲಿ, ನೀರು, ಆಹಾರಾನ್ನಿ ಕಲುಪಿತಂ ವೆಯ್ಯಡಂ ಮರಿಯು ರೋಗಾಲನು ವ್ಯಾಪಿಂಪವೆಯ್ಯಡಂ  
ಮಿ ಬಾಧ್ಯತ : ಕನಸಂ ಮುಡು ಸಂವತ್ಸರಾಲಕು ಒಕ್ಕುಸಾರಿ ಸೆಪ್ಪಿಕ್ ಟ್ಯಾಂಕ್ ನು ಖಾಲಿ ವೆಯುಂಡಿ

ಫೋನ್ ವೆಯ್ಯುಂಡಿ, ಮಲಾಸುರುಡು ಬಂಧಿಂಪಂಡಿ



1800 425 1980



ನಿಟಿನಿ  
ಮಲಾಸುರುಡಿ  
ನುಂಚಿ  
ರಕ್ಷಿಂಪಂಡಿ

ತಪ್ಪಕ್ ಕನುಕ್ಕೊಂಡಿ  
ಮಲಂ ಎಕ್ಕಡೆಕಿ  
ವೆಳ್ತುಂದನಿ ?



ಬಾಧ್ಯತಾ ರಹಿತంగా ಎಕ್ಕಡಂಪೆ ಅಕ್ಕಡ  
ಮಲಂ ಅಂಪೆ ಮಲಾಸುರುಡಿನಿ  
ವಡೆಸ್ತೆ ನೀರು ಕಲುಷಿತಂ ಅಪುತುಂಡಿ

ಟ್ಯಾಂಕ್ ಕ್ಲೆನರ್‌ತ್  
ಸ್ವಚ್ಛಂಗೆ ವೆಪ್ಪಂಡಿ  
ಮಲ ವಿನಿರ್ಲಕಾಲು ವೆಳ್ತಾಲ್ಪಿಂಡಿ  
ಷುಡ್ಡೆವೆಸೆ ಫೌಂಡ್‌ನು  
ಅಕ್ಕಡೆಕಿ ಇಕ್ಕಡೆಕಿ ಕಾದು

Knowledge partner: ASCI, Hyderabad

# Co-Treatment of Sludge at existing STP at Hyderabad

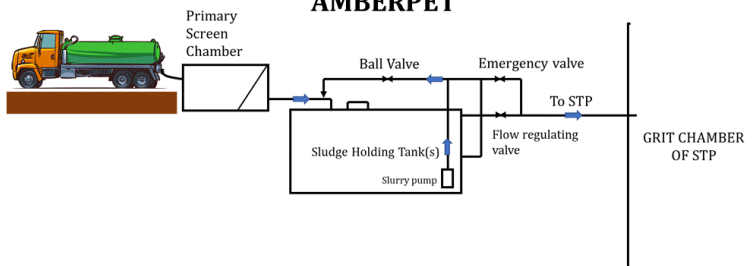


TOWARDS ODF++



## FAECAL SLUDGE AND SEPTAGE MANAGEMENT FACILITY

### AMBERPET





# Co-treatment of Septage- Tirupati and Anakapalle STPs

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Detailed technical studies have been conducted for the STPs at Tirupati and Anakapalli and necessary modifications to operationalise co-treatment in these STP has been implemented. Details are presented below:

## Tirupati

- Designed capacity of STP: 50 MLD
- Proposed co-treatment capacity: 100 KLD
- The input BOD of FS is in the range of 3,000 - 10,000 mg/L
- Output BOD of treated water is < 30 mg/L
- Capital Cost: INR 12 Lakhs



Co-treatment facility at Tirupati STP

## Anakapalle

- Designed capacity of STP: 15 MLD
- Proposed co-treatment capacity: 25 KLD
- The input BOD of FS is in the range of 3,000 - 10,000 mg/L
- Output BOD of treated water is < 30 mg/L
- Capital Cost: INR 12 Lakhs



Co-treatment facility at Anakapalle STP

# Stand-alone FSTPs

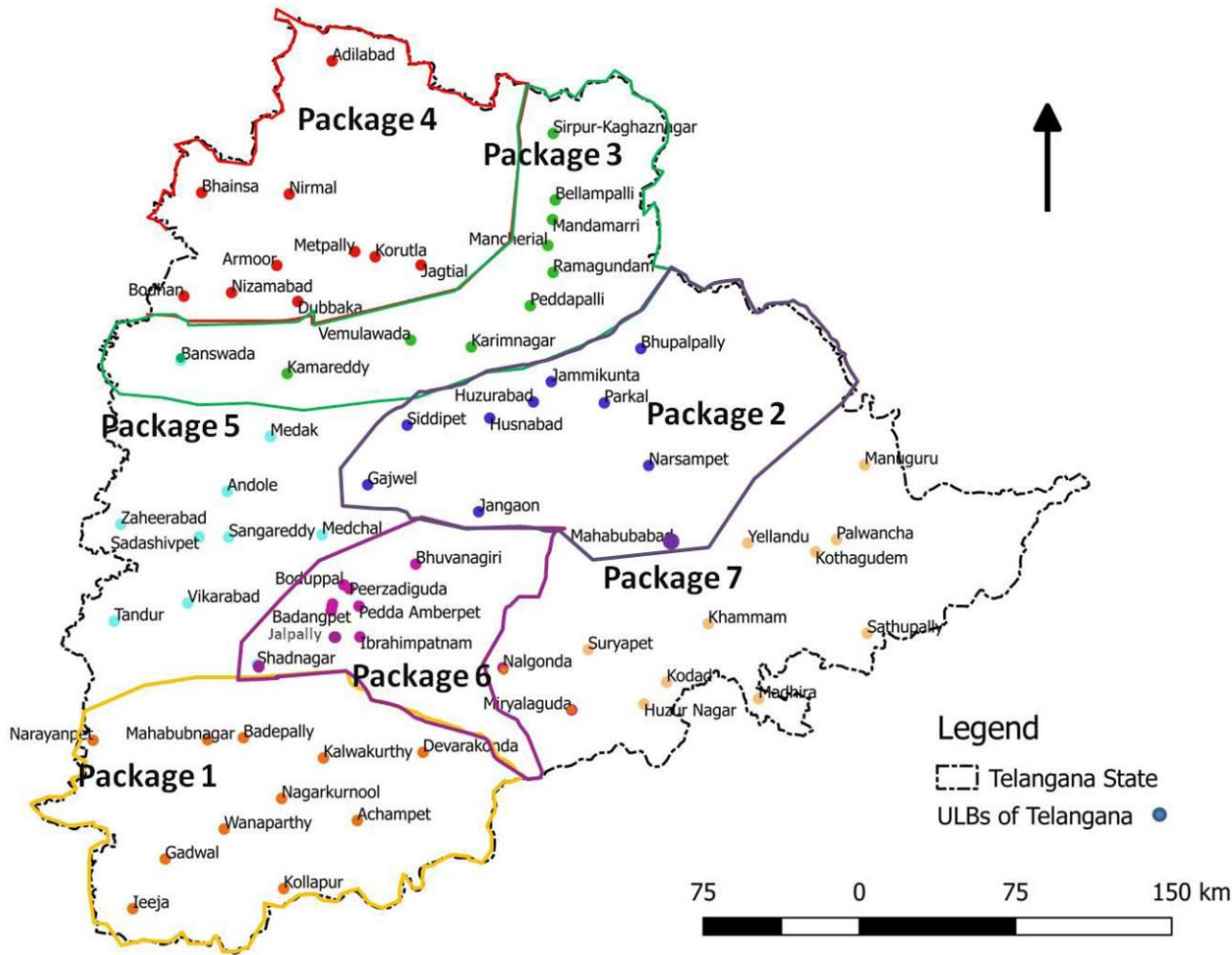
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## Sanitation Resource Park at Narsapur and Warangal





# Scaling up of FSTPs to 71 ULBs through Public Private Partnership model.



**RFP** with a technology neutral approach for setting up of FSTPs in urban Telangana

**Letter of Award** to selected concessioners

Signing of **concession agreement** between authority and concessionaire – **23.07.2019**

*71 ULBs were organized in 7 Clusters based on proximity amongst the ULBs.*

<b>Package Details</b>	<b>Names of ULBs Package-wise</b>
<b>Package 1</b> (11 towns)	Gadwal, Ieeja, Badepally, Mahaboobnagar, Narayanapet, Atchampet, Kalwakurthy, Kollapur, Nagarkurnool, Devarakonda, Wanaparthy
<b>Package 2</b> (10 towns)	Bhupalpally, Jangaon, Huzurabad, Jammikunta, Gajwel, Husnabad, Siddipet, Narasmpet, Parakala, Mahbubabad
<b>Package 3</b> (10 towns)	Kagaznagar, Kamareddy, Karimnagar, Bellampally, Mancherial, Mandamarri, Peddapalli, Ramagundam, Vemulavada, Banaswada
<b>Package 4</b> (10 towns)	Adilabad, Jagityal, Korutla, Metpalli, Bhainsa, Nirmal, Armur, Bodhan, Nizamabad, Dubbaka
<b>Package 5</b> (8 towns)	Medak, Medchal, Andol-Jogipet, Sadasivapet, Sangareddy, Zaheerabad, Tandur, Vikarabad
<b>Package 6</b> (10 towns)	Boduppall, Peerzadiguda, Badangpet, Ibrahimpatnam, Jillelguda, Meerpet, Pedda Amberpet, Bhongir, Shadnagar, Jalpally
<b>Package 7</b> (12 towns)	Khammam, Madhira, Sattupalli, Kothagudem, Manuguru, Palvancha, Yellandu, Huzurnagar, Kodada, Suryapet, Nalgonda, Miryalguda
<b>The FSTP capacities vary from 10 – 100 kld</b>	

# PPP – Hybrid Annuity Model for FSTP Development

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- **DBOT** model
- **Project duration:** 10 years
  - Construction period: 6 months ; O&M: 9.5 years
- **Regulatory Compliance:** PCB, NGT
- **50% of Capex** paid to the private operator during the construction phase the balance 50% capex is paid over 9.5 years of the O&M phase in **38 instalments along with O&M costs.**
- **Independent Engineer is being appointed by State**
- **7 pilots projects are under implementation prior to scaling up**

# Only 49 ULBs have allocated land and given written approval to CDMA

Package-1	Package-2	Package-3	Package-4	Package-5	Package-6	Package-7
Achampet	Jangaon	Karimnagar Corp.	Jagitial	Andole-Jogipet	Shadnagar	Khammam Corp.
Badepally	Narsampet	Ramagundam Corp.	Korutla	Medak	Bhongir	Kothagudem
Devarakonda	Parkal	Vemulawada	Metpally	Sadasivapet	Badangpet	Palwancha
Gadwal	Bhupalpally	Peddapalle	Adilabad	Sangareddy	Ibrahimpatnam	Yellandu
Ieeja	Jammikunta	Mancherial	✓ Nirmal	Zaheerabad	Pedda-Amberpet	Sathupalli
Kalwakurthy	Gajwel - Pragnapur	Bellampally	Bhainsa	✓ Medchal	Meerpet	Manuguru
Kollapur	Huzurabad	Khagaznagar	Dubbak	Tandur	✓ Boduppal	Madira
Mahaboobnagar	✓ Siddipet	Mandamarri	Armoor	Vikarabad	Peerzadiguda	Huzurnagar
✓ Nagarkurnool	Husnabad	✓ Kamareddy	Bodhan		Jalpally	Kodad
Narayanpet	Mahaboobabad	Banswada	Nizamabad Corp.		Jillelguda	Miryalguda
Wanaparthy						✓ Nalgonda
						Suryapet

47 Land Allotted  
 22 Land not earmarked/ allotted by ULB  
 2 NIMBY  
 ✓ Pilot Project

# ICT Based monitoring of facilities

**GREATER WARANGAL MUNICIPAL CORPORATION**

Home Logging In As:YADAIH.A [Log Out](#)

Toilets Location:

Location Visit:

**1.The entire toilet block is visibly clean:**

**Photo Upload1**

Image Not Available

No file chosen

**2.The toilet block smells fresh:**

**3.There is soap available at the handwash stations:**

**Photo Upload3**

Image Not Available

No file chosen

**4.All the fittings and fixtures are in working condition:**

**Photo Upload4**

Image Not Available

No file chosen

**5.Cleaning cycles are being followed:**

**Photo Upload5**


Image Not Available

No file chosen

**6.Customer feedback machine is in working condition:**

**7.Daily user register is being maintained:**

## Telangana FSM Development Tracker

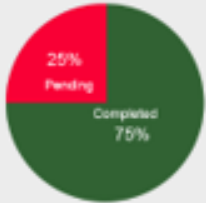




Select Projects

FSTP

Preparatory Stage	Construction Stage	Operational stage
<input type="button" value="GO"/>	<input type="button" value="GO"/>	<input type="button" value="GO"/>

Preparatory Stage	Construction Stage	Operational stage
		



# Telangana is the first state to issue a direction on exclusive toilets for women (SHE Toilets)



## Making biochar from human waste

THE HANS INDIA | © Dec 29, 2018, 12:41 AM IST

A A A



Pasupuleti Ratnamala holding the jar of biochar

Narsapuram municipality in West Godavari district holds the distinction of starting a Faecal Sludge Treatment Plant (FSTP) for the first time in the country to convert human excreta to biochar which could be used as manure in the fields.

