Town-Scale FSM:

Cases from Devanahalli and Leh

22nd October, 2018

Case Study : Devanahalli, KN

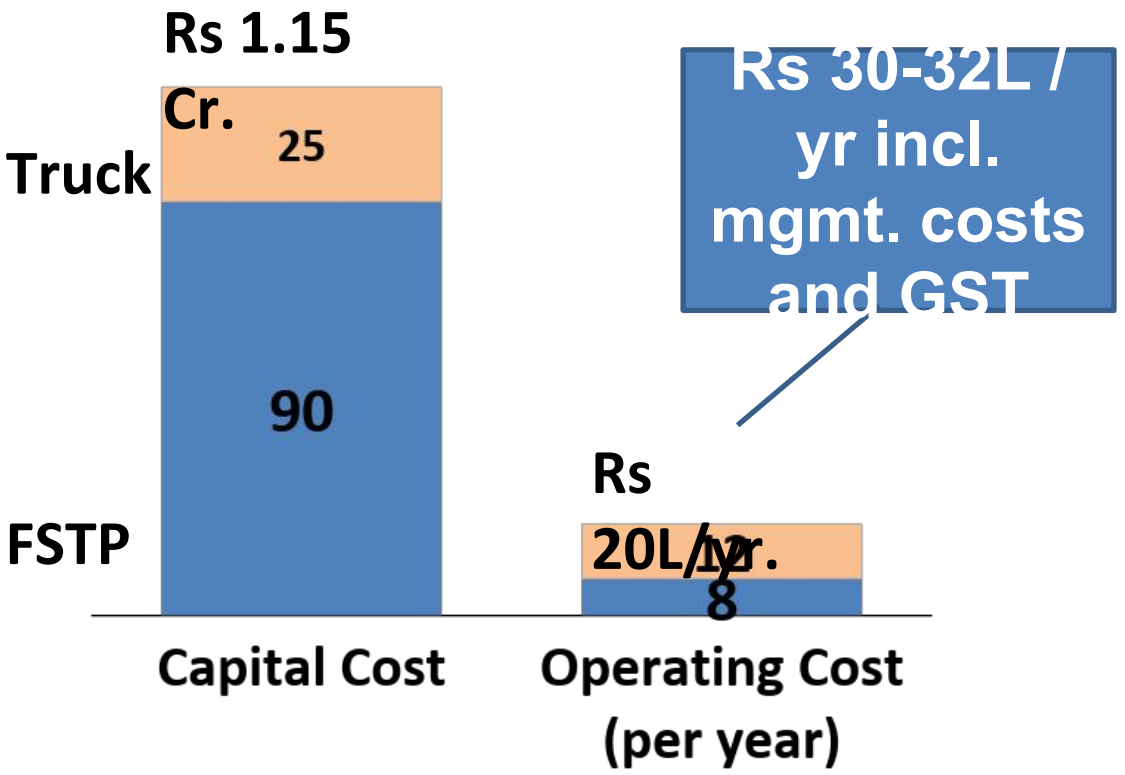
- Peri-urban town of 35,000 about 40km north of Bangalore
- Studies + mapping—estimate sludge qty./sanitation hotspots
- FSTP built in 2015 : 7-9KLD
- Biological treatment processes
- Odourless and clean—can be inside the city—critical
- Easy to maintain; low-electricity—affordable for Govt.

FSTP in Devanahalli

FSTP in Devanahalli

Case Study : Devanahalli, KN

- **Investment :**



- Capital Cost: Rs 350 /person
- Operating Cost: Rs 80 /person/year

- Municipal Committee adopted resolutions for licensing FSM operators
- TMC issued fixed-fee contract to private operator to run FSTP AND de-sludging Truck
- On-Demand Services: Users pay (Revenue to ULB)
- Sale of treated sludge to farmers (over 60 Tons sold)
- Volume of cleaning 2x compared to ULB operations

Case Study : Leh, J&K

- Altitude 12,000 feet; Temperature -30°C to 35°C
- Pop. 45,000 + 270,000 tourists + 80,000 seasonal workers
- Cleanest City in North India ; Declared ODF
- Tourism has become primary economic driver
  - Increasing pressure on resources and water supply
  - Evidence of ground water pollution from septic tanks
- Sewerage system for 40% of town being built
  - Operational in 2020-21—too little, too late
- April-2017: MCL and Hotel Owner Association invited CDD and BORDA to recommend quick solution

Leh : Key Questions

1. What kind of FSM services will suit Leh?

- Annual scheduled cleaning to protect ground water

2. Who will manage FSM Services (no technical skills at MCL)?

- PPP : Design-Build-Operate-Transfer (BOT) basis

3. How do we pay—no budgets allocated

- Investment by Private Operator
- Customers pay for services and *Pay for Results* Contract

FSTP in Leh

BORDA SOUTH ASIA

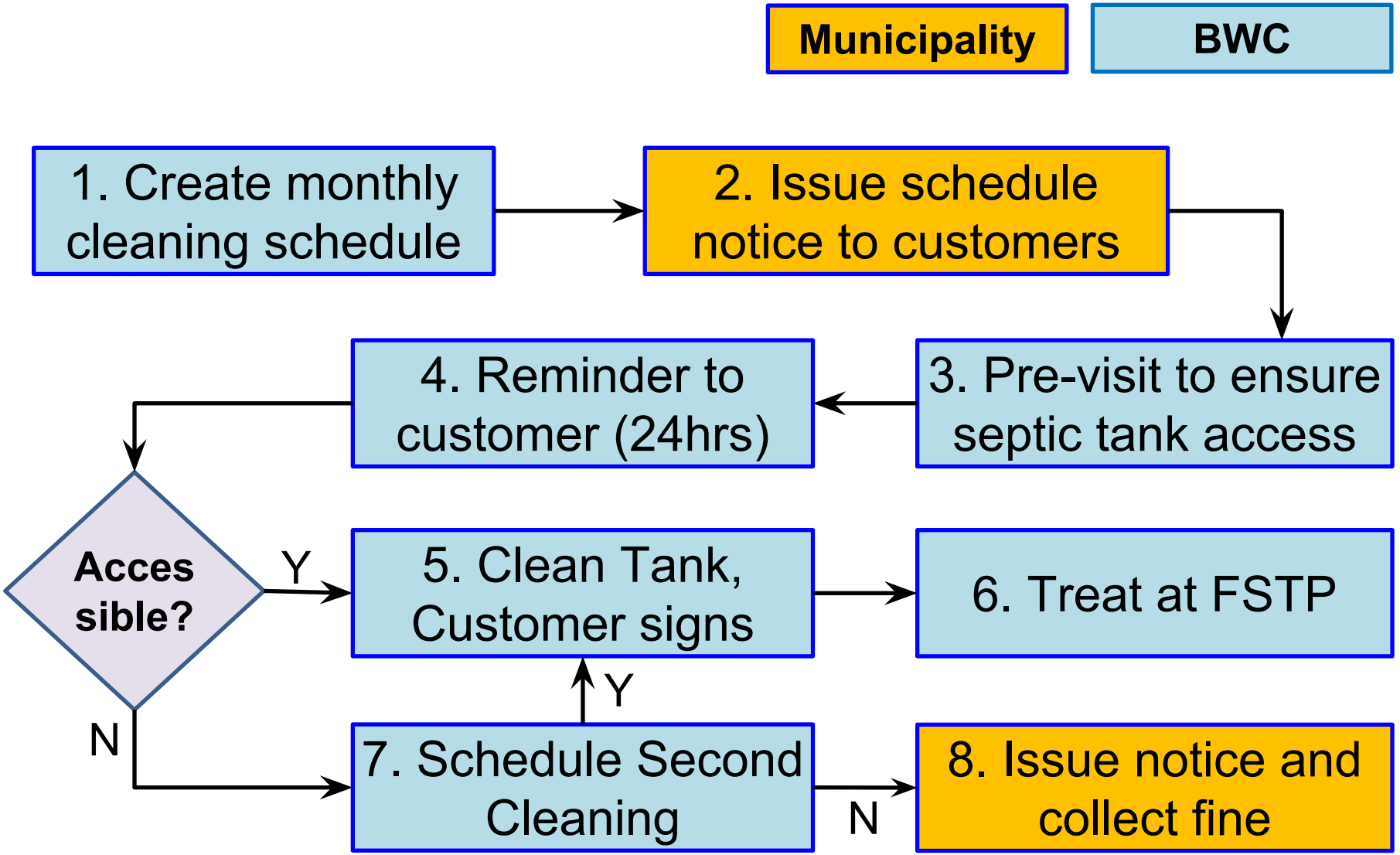
FSTP in Leh

FSTP in Leh

FSM Contract with Blue Water Co.

- Five year contract (cleaning and treatment)
- Design and build FSTP (land by LDA) within **3 months**
  - 12KLD: can be expanded as collection increases
  - Planted Drying Bed: Handles variations, easy O&M
- Municipality will collect user fees (BWC helps)
- 90% of fees paid to BWC **after** service is delivered
  - Detailed monthly MIS to MCL
- Other Private players welcome—must bring FS to FSTP + pay tipping fees

Service Delivery

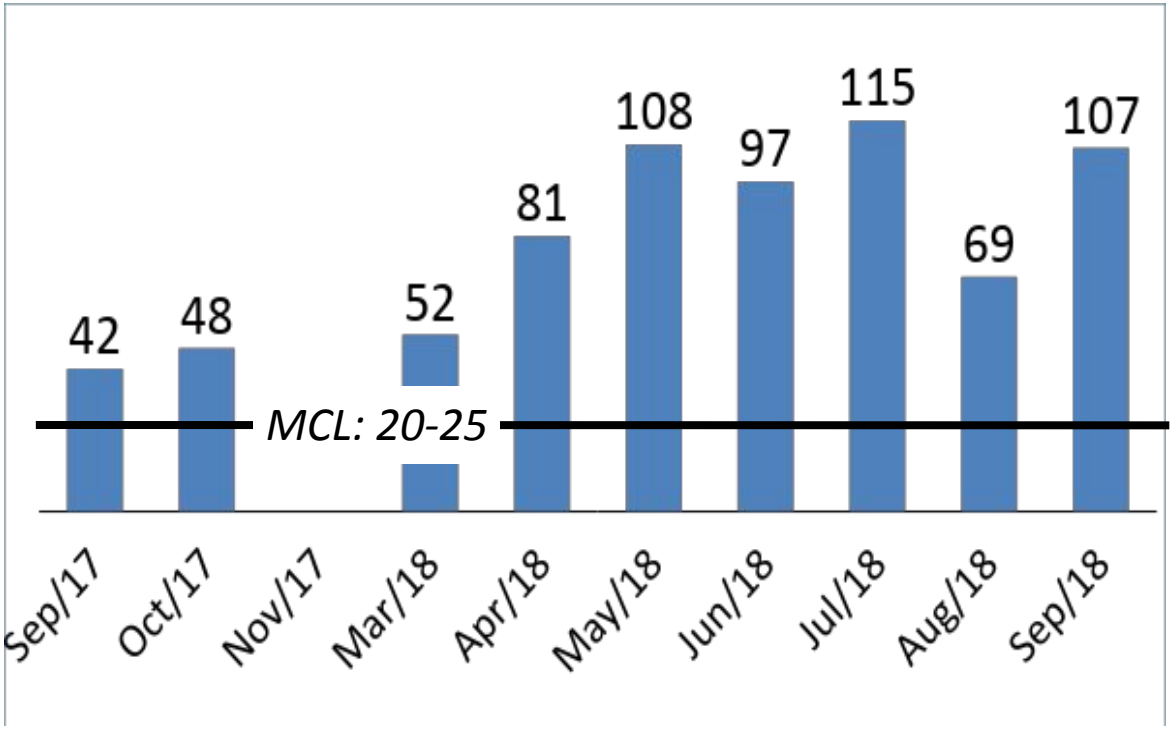


Performance

- **Innovation** to overcome challenges:
  - **Booster Pump** to increase distance from 20m to 150m
  - **Agitator fan** to loosen sludge

- **Cleanings:**

- **2.2Mn liters (Yr. 1)**
- CapEx: Rs 1.2 Cr.
- OpEx: Rs 2.2L p.m.



Key Lessons

- Quick Local Assessment and **Town Sanitation Strategy**
- **Integrated Model** (transport + FSTP) is most effective
- Contract and financial design based on local conditions
- Long-term **Pay-for-Performance** Contract drives performance
- Clean system will minimize citizen opposition, reduce OpEx
- **Keep Operating Cost low** and affordable for ULB