

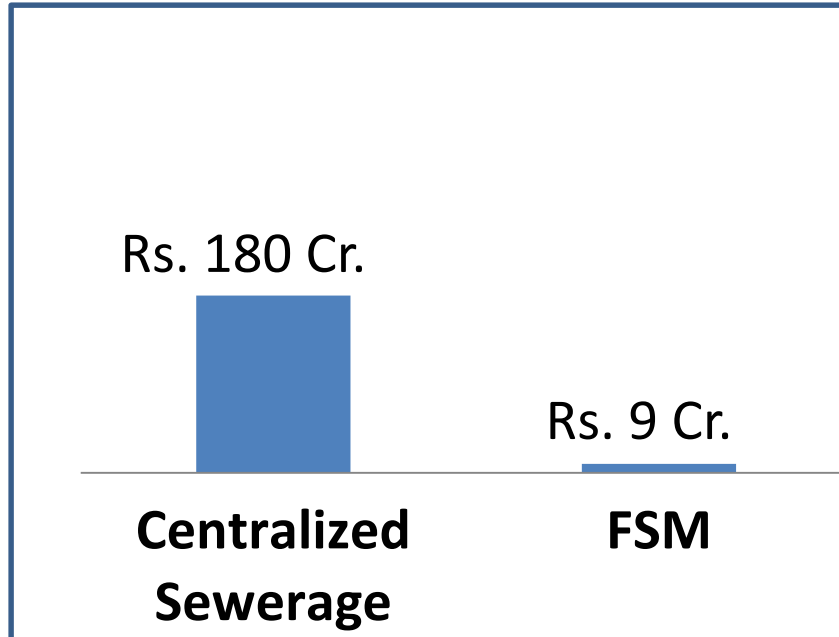


Financing and Contracts for FSSM: Models and Cases

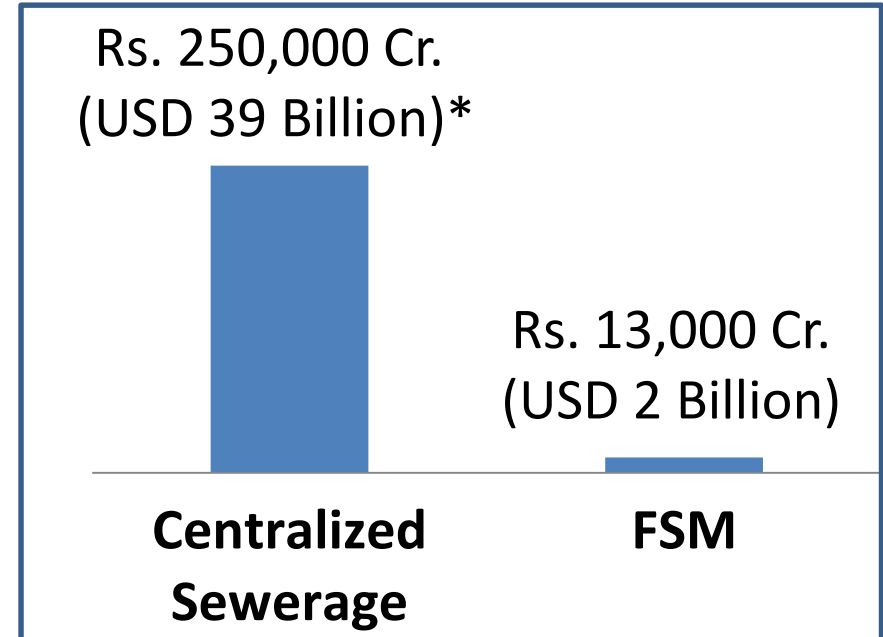
at the
**National Workshop on
Non-Networked Sanitation Systems in India**

28th February, 2019

For Town of Population 100,000



140 Million unsewered urban Indians



- FSM includes FSTP and Trucks only—not septic tanks
- Operating Costs NOT considered over 15-25 years lifecycle
- **FSM is a long-term, partial solution**

• **Assumptions:** CapEx per capita: Rs 18,000 for Centralized Sewerage and Rs 900 for FSM





FSTP in Devanahalli



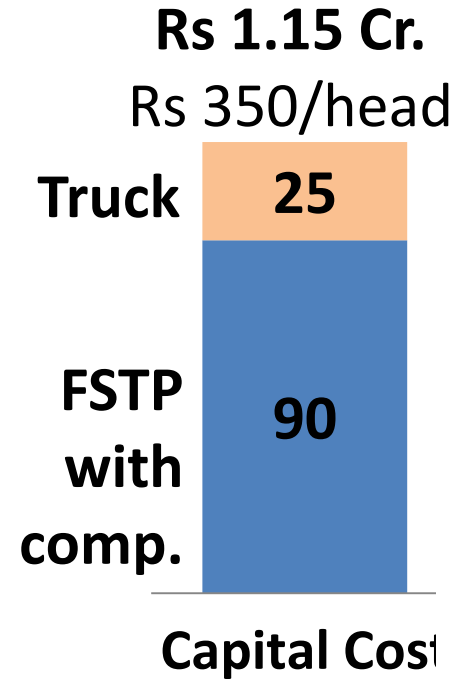


FSTP in Devanahalli



- Peri-urban town of 35,000 about 40km north of Bangalore
- FSTP built in 2015 : 7-9KLD
- Biological treatment processes—easy to maintain
- Odourless and clean—can be inside the city—important
- Easy to maintain + low-electricity—affordable for ULB

- **Investment :**
- Contract to single party for integrated operations
- On-Call service, planning scheduled in future
- O&M Cost paid by TMC; will add to Property Tax in future
- Fee Rs 1,200 / trip: Rs 1,000 to TMC, Rs 200 to Operator
- So TMC pays Fixed Fee (covers cost) + Incentive (profit)







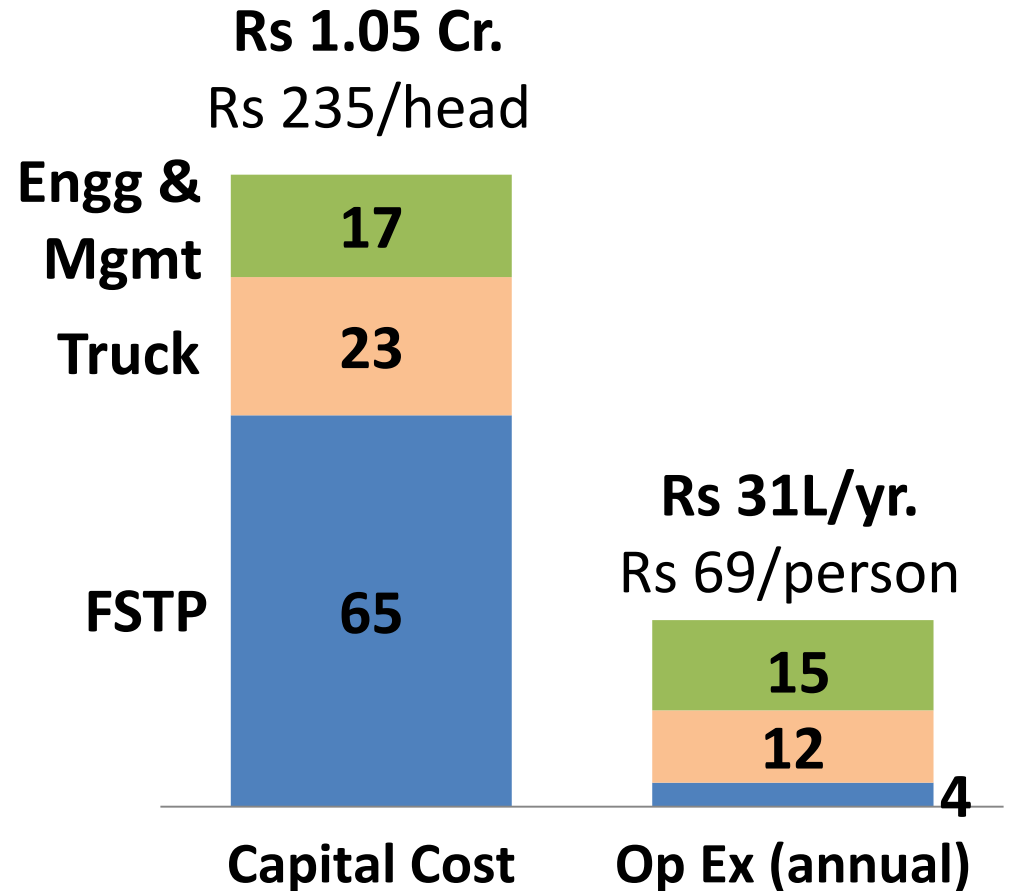


- Altitude 12,000 feet; Temperature -30°C to 35°C
- Pop. 45,000 + 320,000 tourists + 80,000 seasonal workers
- Tourism has become primary economic driver
 - Evidence of ground water pollution from septic tanks
- Sewerage system for 40% of town being built
 - Operational in 2020-21—too little, too late
- April-2017: MCL and Hotel Owner Association invited CDD and BORDA to recommend quick solution



- Turnkey Integrated FSM: Build+Finance+Operate+Transfer
- 5 (+2) year contract (scheduled desludging + treatment)
- Design and build FSTP (land by LDA) within **3 months**
 - 12KLD, **Planted Drying Bed** (easy O&M, flexible util.)
- Municipality collects user fees
 - Rs 3,500 per cleaning for commercial; **annual cleaning**
- 90% of fees paid to BWC **after** service is delivered
- Private players welcome—must bring FS to FSTP; tipping fee
- **Zero up-front cost or O&M cost to Govt; Profitable!!**

- **Investment :**
- BWC expected investment recovery in 4 years—unlikely; maybe 5-6yrs
- Structure possible due to hotel commitment for annual cleaning + ULB support

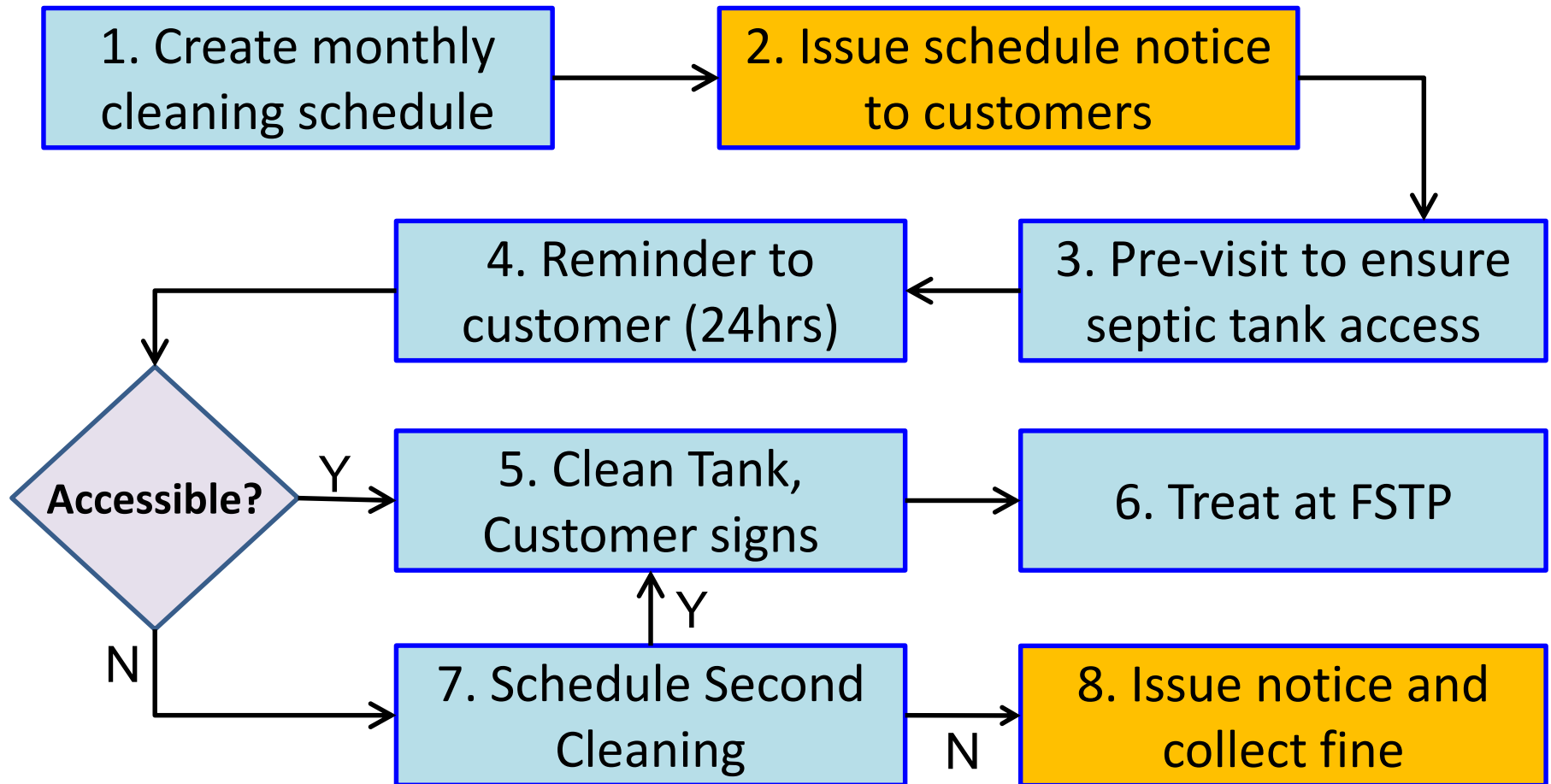




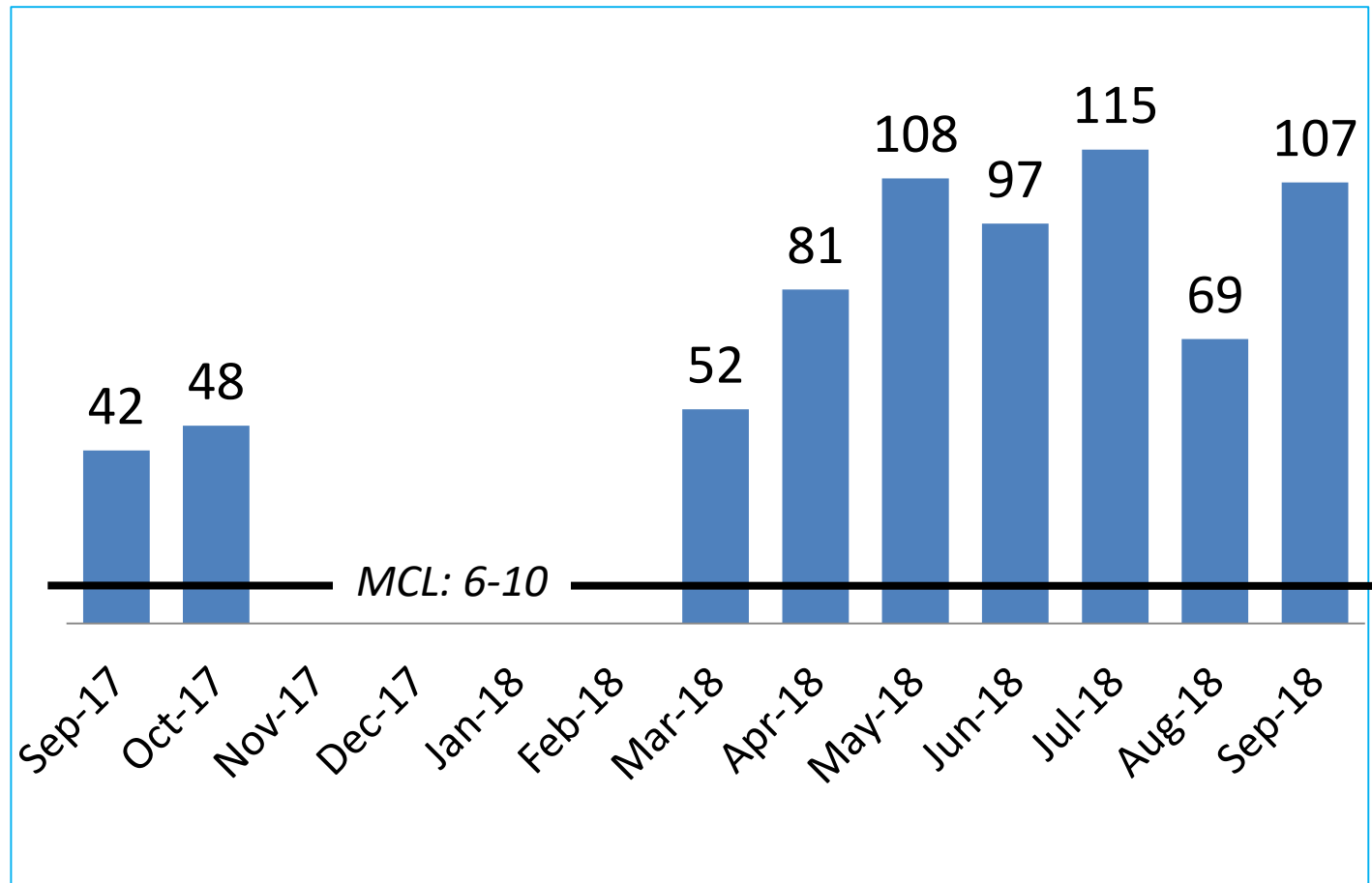
Responsibilities in Leh: MCL / BWC

Municipality

BWC



- Cleanings:**



- 2.2 Million liters in first year**

1. Type of FSM:

- Scheduled (useful if environmental hazard)
- On-Call

2. Scope of Work

- Integrated FSTP + De-sludging contract (single party)
- Separate contracts

3. Financing and Management Structure *(next slide)*

4. Local Revenue Sources:

- Add to Property Tax / Water bill etc (Scheduled)
- Charge Service Fees to User (On-Call)
- Other revenue (advertising, other sanitation services)

**De-Sludging
Trucks**

Operate Only
(Govt. buys)

Private Player Buys
and Operate

FSTP

Party 1 Builds.
Party 2
Operates

Pvt Player
Builds and
Operates

Private Player
Builds, Invests
and Operates

**Integrated
Trucks +
FSTP**

Govt. procures.
Private Party
executes/operates

Govt+Pvt Player Invest.
Private Player executes
and operates



Process

CapEx by Govt

CapEx by Pvt.

OpEx by Govt.

Contract Period



Pros / Cons of FSTP Options

**Separate
Build /
Operate
Contracts**

**Build +
Operate
Contract**

**PPP
(incl. HAM)**

1. Long-term sanitation roadmap for the town
2. ULB Manager responsible for 10 years—continuity
3. Partnership approach vs Contracting approach
4. Service provider also monitors/regularizes septic tanks/pits
5. Build for short-term (10 years), upgrade as needed
6. Operating Costs must be covered from local revenues
7. Cluster Approach / Multi-town Contracts will improve management, technology choice

SDG 3: Good Health and Well-Being:

- End preventable deaths
- End malaria and water-borne diseases
- Reduce illness and deaths from water and soil pollution



SDG 11: Sustainable Cities:

- Upgrade slums, provide basic services for all
- Reduce adverse environmental impact of cities



SDG 14: Life Below Water:

- Prevent marine pollution
- Protect marine life



SDG 6: Clean Water and Sanitation

- Equitable access to safe drinking
- Reduce people facing water scarcity
- Halve proportion of untreated wastewater and treat + re-use wastewater
- Protect and restore water ecosystems



SDG 7: Affordable, Clean Energy

- Increase renewable energy produced from waste



SDG 8: Decent Work

- Improve dignity of sani jobs
- Promote waste e-ship