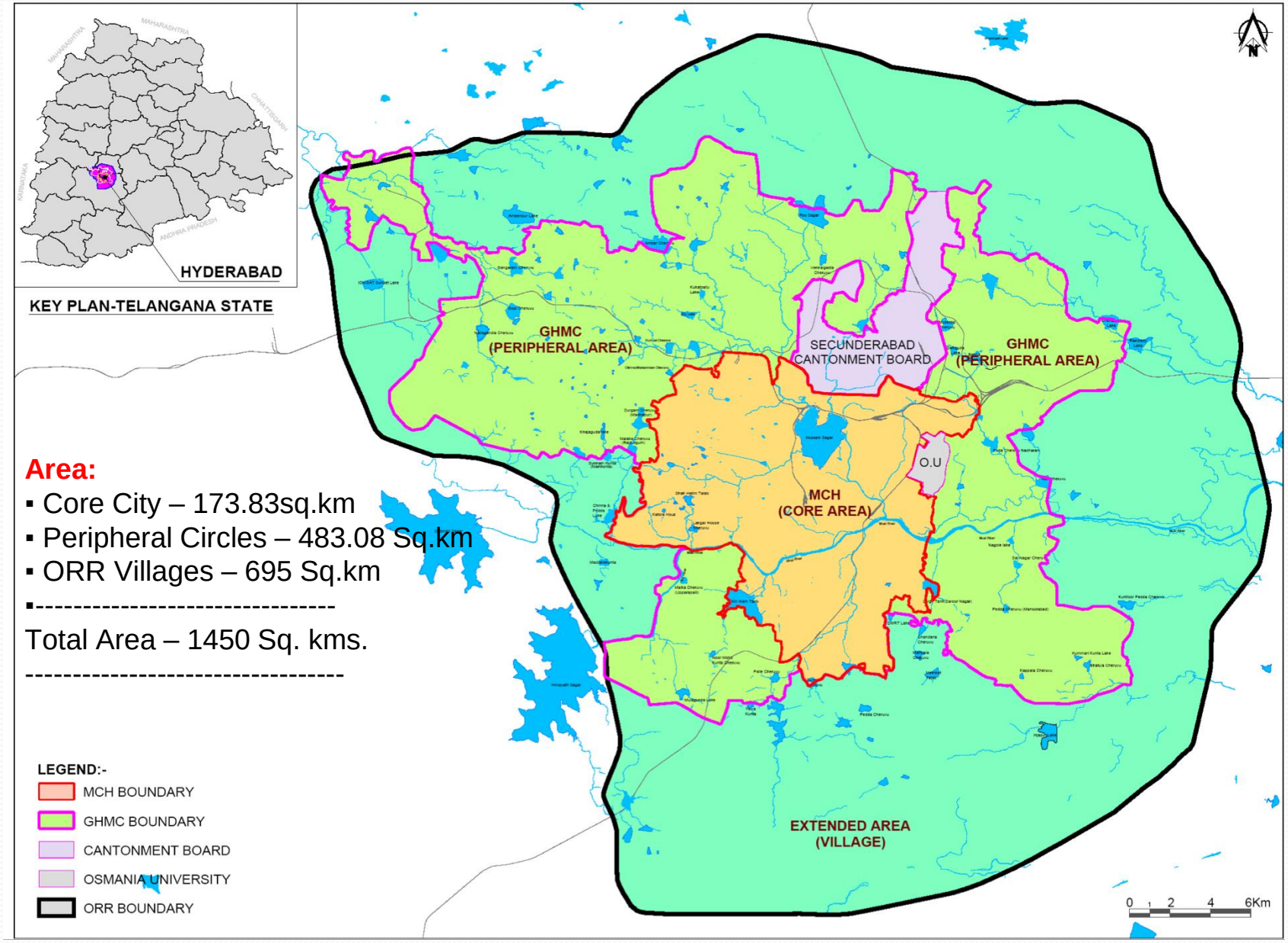
Hyderabad metropolitan Water supply & sewerage board

WELCOMES

Trainee IAS officers

JURISDICTION OF HMWSSB



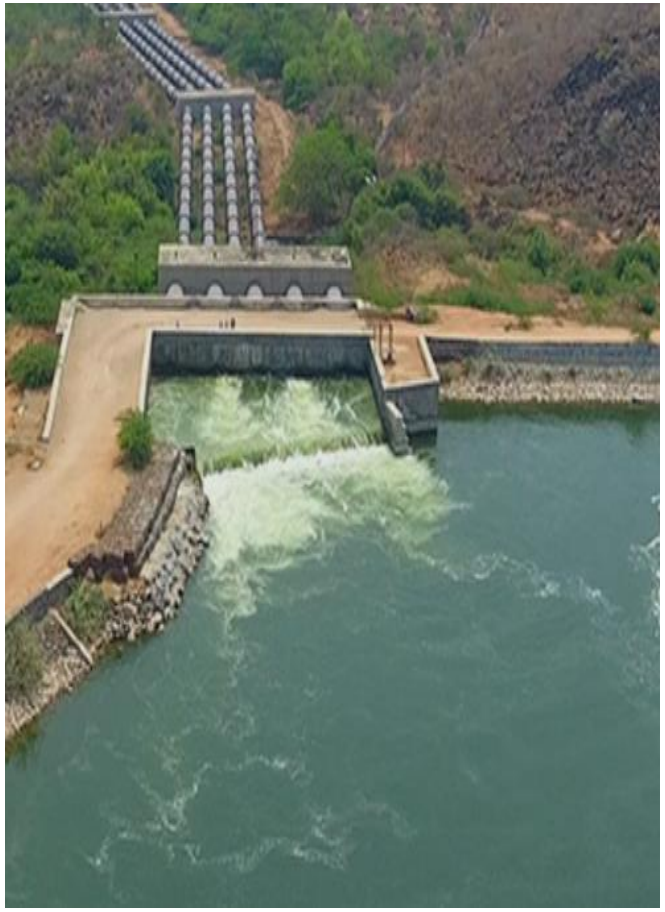
Area:

- Core City – 173.83sq.km
- Peripheral Circles – 483.08 Sq.km
- ORR Villages – 695 Sq.km

Total Area – 1450 Sq. kms.

HMWSSB Water Supply Infrastructure

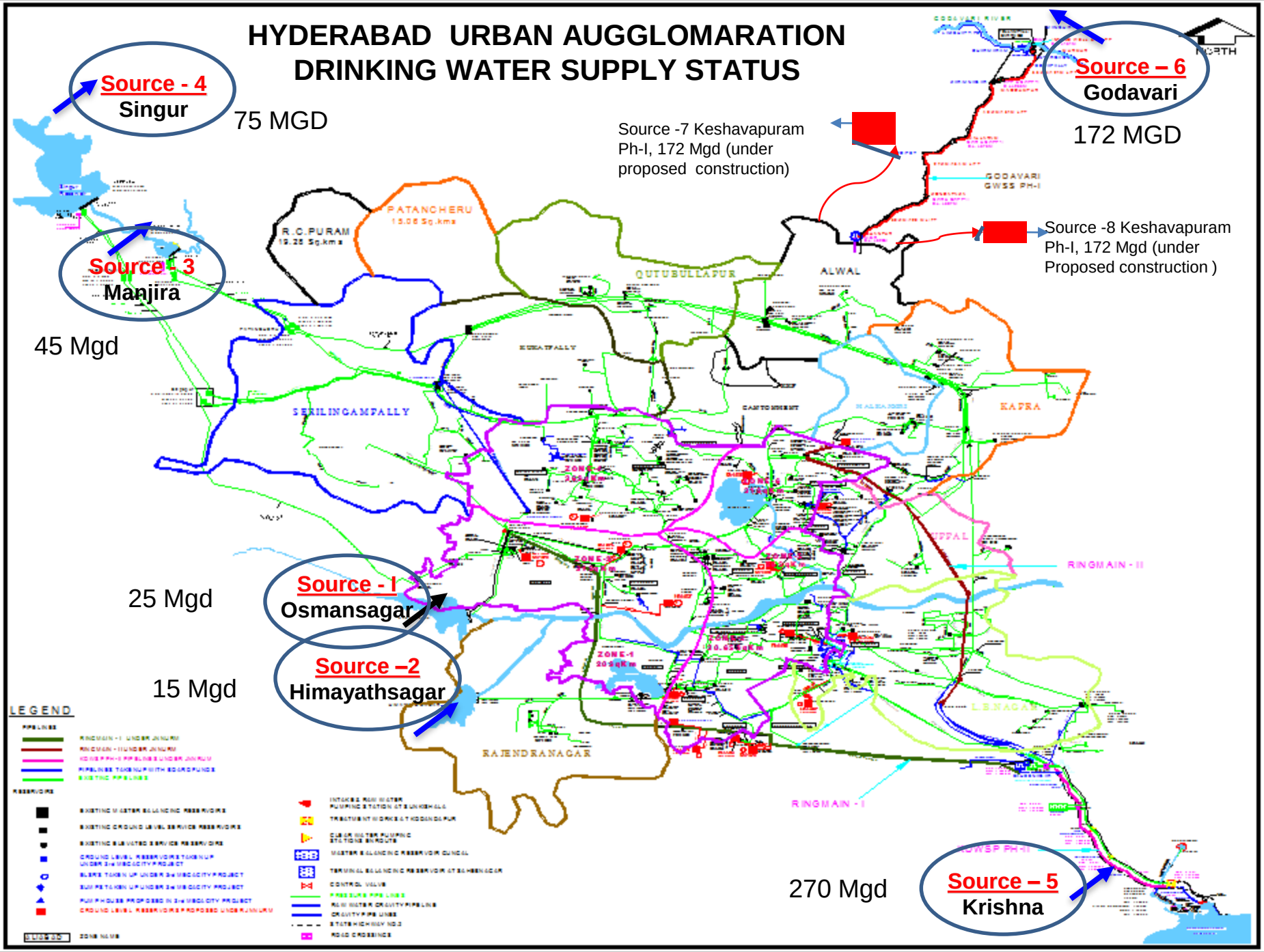
- Total Service Area : 1451.91 Sq.kms
- Core City area : 173.83 Sq.kms
- Peripheral Circles Area : 483.08 Sq.Kms
- ORR Villages Area : 795.00 Sq.Kms
- Length of Raw Water Mains : 144 Km
- Length of Treated Water Mains : 1200 Km
- Length of Distribution Network : 8051 Km
- Present Supply Quantity : 500 MGD
- No of Connections : 13.05 Lakhs
- Water is supplied from Krishna, Godavari & Manjeera Rivers (150 to 200 Kms)



Existing Reservoir Sources – Storages & Drawls

Name of Source		Reservoir Levels at FTL	Reservoir Capacity at FTL	Drawls (in Mgd)
	Osmansagar	1,790.00	3.90	12
	Himayatsagar	1,763.50	2.96	6
	Manjira	1,717.93	29.91	43
	Singoor	1,651.75	1.50	50
	Krishna Akkampally (Krishna Ph-I, II & III)	245.00	1.50	270
	Godavari Yellampally (Godavari Ph-I)	485.56	20.17	119
	Total			**500**

HYDERABAD URBAN AUGGLOMARATION
DRINKING WATER SUPPLY STATUS



HMWSSB Sewerage Infrastructure

- Sewerage Network jurisdiction: 656 Sq. Kms.
- No of Sewer manholes : 5,82,500 Nos
- No of Deeper Manholes : 19,545 Nos
- Length of Sewer Network : 10,057 Kms.
- Sewerage workers (In house & Outsourced): 1444 nos.
- Sewerage Treatment Plants : 25 nos. treating 772 MLD of sewage.

Operations & Maintenance of Sewerage System in Hyderabad

This presentation is on -

1. Technologies Adopted in sewerage management
2. Engaging Safai Karmacharis in Contractual operations of O&M System (Mini Sewer Jetting Vehicle Operations).
3. Safety Protocols – Breaking Habitual-Cultural Patterns of Safai Karmacharis
   a) Trainings
   b) Standard Operating Procedures (SOPs)
   c) Contractual Procedures
4. Monitoring of O&M operations
   a) Safety Protocol Teams (SPT)
   b) Annual Maintenance System (AMS)

Technologies - Adopted in Sewerage System

Age Old Practices

A typical sewerage maintenance day for any major city, by its water & sewer utility, like HMWSSB involves –

- Daily O&M operations/chokage at customer premises.
- Men typically used to get down into manholes risking their health and life.
- Chromo-flexible rods are long metal rods used to poke into choked sewers which are pushed to remove choking material/debris.
- Bucket cleaning for 400 mm dia & higher sized sewer mains.

Typical Operations in Sewerage Management

Manual Operation in Manholes

Intoduction of Big Sewer Jetting & Suction vehicles

When Big Sewer Jetting & Suction Vehicles introduced about 15 years ago

- *S*ewer chokages are removed by pressure jetting the water, along with help of labour.
- These jet machines are large and can cover about 500 to 600 meters per day, remove chokages in wider streets, thus allow free flow of sewage.
- These big vehicles cannot enter into narrow lanes where still manual cleaning of manholes was prevalent
- and when the burden of chokage is a heavy object, men get into manholes bearing all the stench, in smaller streets.

Typical Operations in Sewerage Management

Big Sewerage Cleaning Machines

Modern Practices – Technologies

- Introduction of Mini Sewer Jetting Vehicles
- BAN on Manual Operations & Worker Orientation
  - Circular
  - SOP's
  - Trainings
- Introduction of Robotic Sewer cleaning equipments
- Geographic Information System (GIS) capture of Sewer Infrastructure
- Safety Grills for manholes
- Digital - Monitoring of O&M operations.

Engaging Safai Karmacharis in Contractual operations of O&M System

Mini Sewer Jetting Vehicle Operations

Scheme of Mini Jet Machines – Phase I (2017)

1. 70 nos. of Mini Sewer Jetting Vehicles have been deployed initially in the core city of Hyderabad (167 sq kms).
2. The main objectives of the intervention were –
   - Elimination of manual operation in sewerage system.
   - Dignity of labour
   - Utilize services of Safai Karmacharis /Former Safai karmacharis by engaging Mini Sewer Jetting Vehicles through them.
   - Reduce sewerage problems, especially in small lanes & streets which are generally neglected due to difficulty in access.
   - Improved quality of life in Poor/Lower middle class/Middle class localities.
   - Proactive measure instead of Reactive measures.

Salient Features of Mini sewer Jetting vehicle

- Manufacturers:
  - Chassis – M/s. Tata Motors, Hyderabad.
  - Equipment M/s. Kam Avida Enviro Engineers, Pune.
- Approximate Cost of the vehicle – 26 lakhs.
- Volumetric capacity of water tank - 2000 liters
- Jetting Pump with flow rate of - 100 to 120 lpm
- Pressure - 140 to 150 Bar
- Make – Standard
- Jetting Hose - ¾” dia
- Jetting Hose Length - 60 Mtrs
- Jetting Nozzle - Standard make
- Gross Vehicle Weight (GVW) - Not below 4500 Kgs
- Payload - Not below 2335 Kgs.
- Wheel Base - 2670 mm
- Horsepower - 60 to 70 HP

Inauguration of Mini Sewer Jetting Vehicles by Hon'ble Minister for MAUD on 05-06-2017

Who are the vehicle owners and benefits available to them?

1. The owners of the vehicles are from SC/ST classes both male (25 nos.) and female (6 nos.) are successful bidders for 70 vehicles. 142 members have been given employment as Drivers and cleaners of the Vehicle, of which most were actually from manual scavenging background.
2. The SC/ST participants could avail **loan for 75% of investment under "Stand-up-India**" scheme, wherein SC/ST or women entrepreneurs can avail **bank loans between Rs. 10 lakh to Rs. 100 lakhs**.
3. The Vehicle owners being MSME from SC/ST classes are eligible to obtain support from Telangana Govt. under "**T-Pride – Promoting Entrepreneurship among SC/ST Scheme**", where in they can **claim subsidy (35% for men and 45% for women)** on cost of vehicle and **upto 9% subsidy on loan interest charges**. As per the said scheme, once the job is commenced vehicle owners can apply for the subsidy which may be granted by the Government in 3-4 months period. Interest subsidy will be sanctioned once in every 6 months.
4. *In view of the above benefits, these participants could competitively bid lower quotes and win the tenders.*

Contractual Procedures followed

1. The idea of deploying Mini Sewer Jetting Vehicles is the brain child of HMWSSB. With a motive of elimination of Manual sewer operations & rehabilitation of men from manual scavenging background, HMWSSB has collaborated with the DICCI (Dalit Industrial Chamber of Commerce & Industry).
2. The DICCI has approached govt. for extending certain relaxations in tender conditions, which were provided vide GO Ms. No. 59, 2018, such as – (a) Exemption from Submission of Solvency certificate & (b) Submission of Earnest Money Deposit, (c) 21% of works are earmarked exclusively for SC/ST entrepreneurs.
3. Backed by the employment guarantee provided by HMWSSB, the Safai karmachari's could obtain collateral free loan under Stand-up-India Scheme of GoI and Subsidies through T-Pride scheme of GoTS.
4. Due to the Principal & Interest subsidies obtained by the bidders from SC/ST background, they could competitiely bid for the vehicle hiring contract, apart from above earmarked reservation in contracts.

Income & Expenditure per vehicle per month (approx.)

Sl. #	Particulars	Details
	Income per vehicle (approx. fig.) – Hire Cost to HMWSSB	
	Charges per Rmt.	Rs.11.70
	Minimum expected Rmt. per day	500 Rmt.
	Expected Hire charges per month per vehicle (30 days x 500 Rmt. X Rs.11.70/Rmt).	Rs. 1,75,500.00
A.	**Expected monthly revenue to owner of vehicle (approx).**	**Rs. 1,75,500.00**
	Expenditure per vehicle (approx. fig.) – to be borne by Vehicle owner	
	Monthly Installments (Floating) -- (first installment is considered)	Rs. 51,869
	Driver salary (including ESI and EPF).	Rs. 16,500
	Cleaner Salary (including ESI and EPF).	Rs. 14,500
	Fuel Charges	Rs. 45,000
	Insurance charges	Rs. 2,600
	Carting of silt	Rs. 15,000
	Stand by staff to work on holidays	Rs. 10,000
	Average Over Draft Loan Interest (125,000*11/100*1/12*1/2).	Rs. 573
B.	**Total cash outflow per month**	**Rs. 1,56,042**
C.	**Monthly Net revenue to the owner of vehicle (A-B).**	**Rs. 19,458 ***

*****This net revenue tend to increase each month due to diminishing Monthly installment.

The SC/ST owners have applied under "T-Pride scheme" by Telangana govt., by which investment subsidy of 35%/45% (for men /women) and interest subsidy of 9% can be availed. Net revenue would increase once availed.

Calculation of tentative pay back period of cost of vehicle

Sl. #	Particulars	Amount (Rs.)
1	Cost of Vehicle Chassis	9,00,000
2	Cost of Machinery mounted on vehicle	17,00,000
3	Other Accessories and Registration	33,300
3	Total Cost of Vehicle (1+ 2+3)	**26,33,300**
4	(-) Financial Assistance under "Stand up India" scheme from SBI	19,75,000
5	Promoter Contribution (1 – 2)	6,58,300
6	Working capital loan (OD Facility).	1,25,000
7	a. EMI per vehicle for Term loan - principal component (Fixed).	32,920
	b. Monthly interest charges ranging from	18,104 – 300
	c. Total Monthly installments ranging from -	51,869 – 33,020
8	Total Interest charges over the period of 5 years	6,45,163
9	Total cash outflow over the period of 5 years (3 + 8) = (26,33,300 + 6,45,163)	32,78,463
10	Net Income to the vehicle owner (from previous table) before loan installment payment = (19,458+51,869)	71,327
11	Normal Payback period (9 /10) = (32,78,463/ 71,327).	46 months i.e. 3 years, 10 months.

Disbursal of Investment subsidy by Hon'ble Minister for MAUD, to Sri Narra Ravi Kumar, MD of DICCI & his team, for beneficiaries of T-Pride scheme

Few differences between Big machines and Mini machines

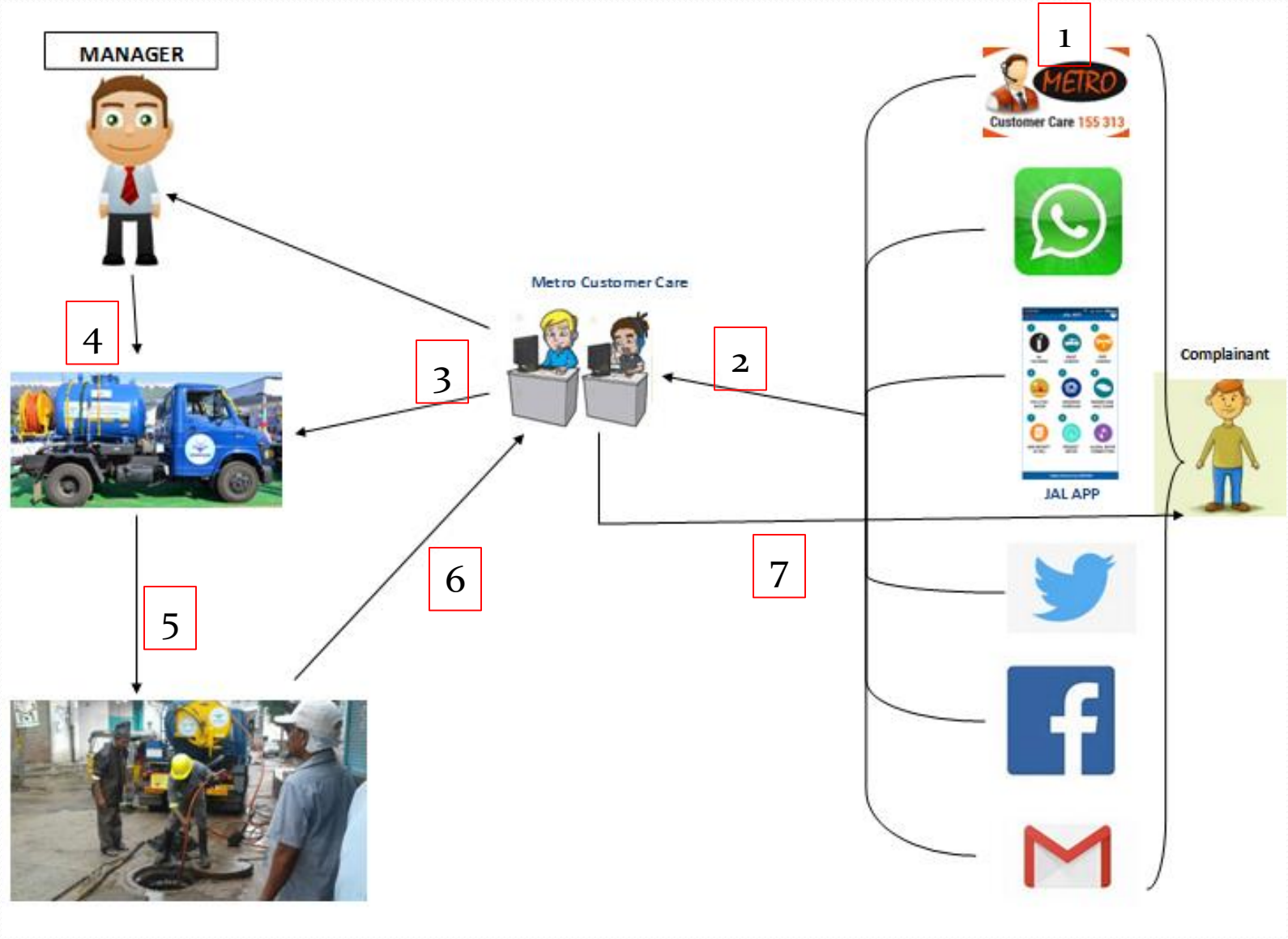
Airtech Machines

- Technology – Suction cum jetting
- Tank capacity – 6 KL (3KL clean water +3Kl sludge tank)
- Jetting pump – 260lpm
- Pressure – 210 bar
- Suction/ Vacuum pump – 600 cm3/hr
- Jetting hose length – 120 meters

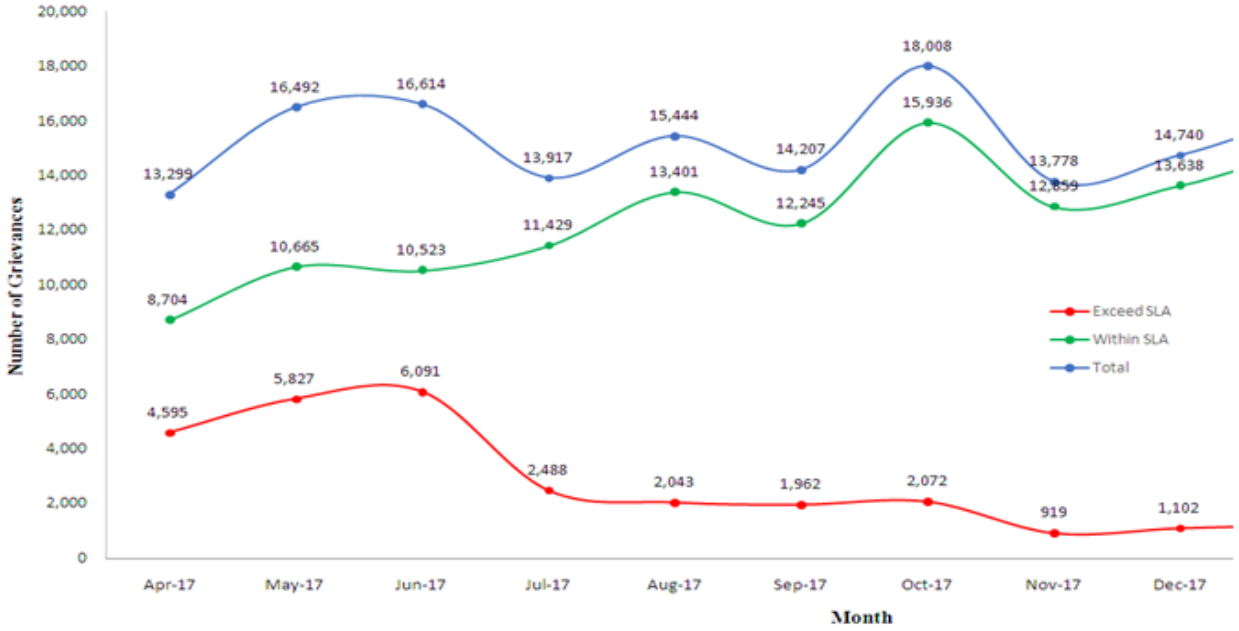
Mini-Airtech Machine

- Technology- Jetting machine
- Tank capacity – 2KL
- Jetting pump – 100-120 lpm
- Pressure – 150 bar
- Suction/ Vacuum pump – None
- Jetting hose length – 60 meters

Grievance redressal mechanism through Mini Sewer Jetting vehicles



Impact of Implementation of Mini Sewer Jetting Vehicles



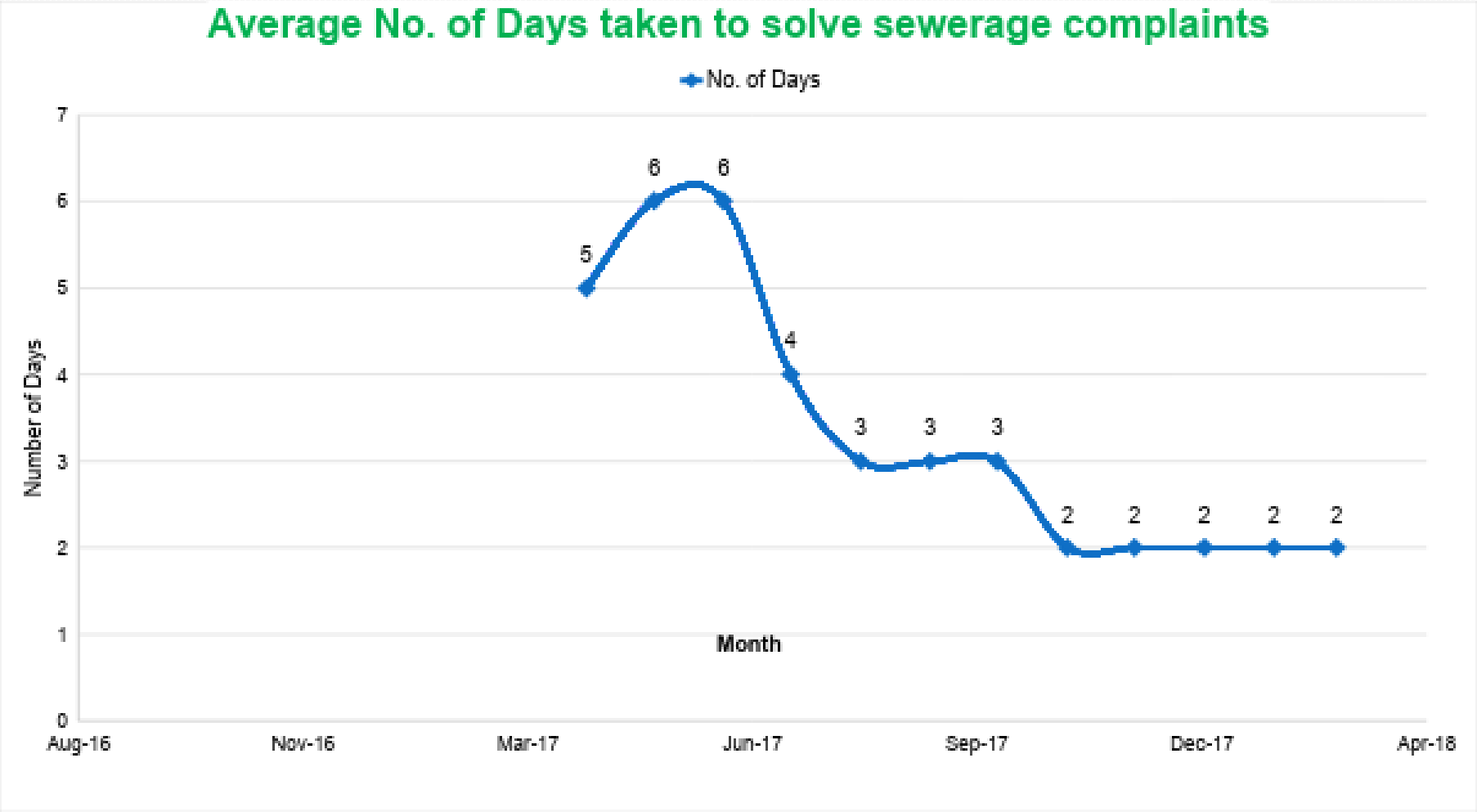
Reduced Gap between Total complaints & Solved within SLA

The introduction of mini sewer cleaning machines from 05-06-2017, had significant impact on the Service Level Agreement (SLA) period of Sewerage grievances from 62% to nearly 90%.

From above chart it is clearly evident that until June 2017 the gap between the *Total line (Blue)* and *Solved within SLA line (Green)* is wide and within six months from June 2017 it has narrowed showing the apparent benefits derived after introduction of Mini Sewer Jetting Vehicles, i.e. **ability to solve sewerage complaints within SLA period has increased**.

Current SLA is maintained at 85%

`



Inference:

Mini sewer Jetting Vehicles are deployed from 05-06-2017, it is observed that average no. of days taken to solve sewerage complaints has decreased from 6 days to 3 days within 2 months & to 2 days within 6 months from deployment. This is being maintained till date

Scheme of Mini Jet Machines Phase II

- After the success in implementation of Mini Sewer Jetting Vehicles in Phase-I in the core city, the service has been extended further to the peripheral circles of the city in Phase-II.

- **64 nos. of new mini jetting vehicles** have been deployed in year 2019-20.

- As part of the tender process, 21% reservation has been implemented for engaging Mini Sewer Jetting Vehicle agencies belonging to SC/ST community, in compliance with GO Ms. No. 59, dt: 21-05-2018.

Note: ***At present there are about 73 suction cum jetting machines and 138 mini jetting machines working on hire basis.***

- A video on Deployment of Mini Sewer Jetting Vehicles

Safety Protocols –

Breaking Habitual-Cultural Patterns of Safai Karmacharis

Prohibition of manpower entry in Sewer Manholes

- A Circular has been issued on 08-03-2016, issuing instructions that no person shall be engaged in hazardous cleaning & cumpulsory usage of safety gear by Safai Karmacharis.

  Cir. No. HMWSSB/B4/D4/2015-16, dt. 08-03-2016

- A Circular has been issued on 17-08-2016, after fatal death of private labourers while attending the sewerage related work. Wherein hazardous cleaning by ***manpower entering into sewer manholes has been prohibited***.

  Cir. No. HMWSSB/B4/2015-16/5344. Dt. 17-08-2016

- A Circular has been issued on 13-02-2017 to incorporate necessary ***clause in tender documents towards safety and precautionary measures*** while cleaning sewer mains/manholes/laying of sewer works.

  Cir. No. MD/HMWSSB/2017/998 Dt. 13-02-2017

Standard Operating Procedures

Standard Operating Procedure manual has been brought in through **Administrative Staff College of India**.

A Gist is as under:

Step 1: Identify manhole to be cleaned

Step 2:
Removal of Silt (manual)

Step 3: Entering manhole in presence of field officer under **inevitable** situations.

Step 4: Usage of sucking & jetting vehicle (Mechanical).

Step 5: Manual sludge removal from deeper manholes

Safety Equipment provided to Sewerage Manpower

The following are given as safety equipment

Prerequisites – Personal Safety Kit

Prerequisites – Personal Safety Kit

Prerequisites – Gang Kit

Trainings to Sewerage Workmen

- **Indoor First Aid training** with duration of 3 days has been given to sewerage staff at Metro Staff Training College.
- **Outdoor :** Familiarization programme of sewerage net work in twin cities are being conducted to all the sewerage staff in batch consisting of 20 member in each batch.
- A training programme was also imparted by the **National Academy of Construction** to the Sewerage staff which includes the safety measures to be taken while attending the sewerage complaints, display of safety equipments and its using during February and March 2016.
- The HMWSSB has prepared **(SOPs)** for all the activities involved in operation and maintenance of water supply & Sewerage.

- Trainings, workshops conducted for the Board's sewerage employees, contractor's labour on safe sewer standard operating procedures.

Safety Awareness Fortnight/Week – 2021 & 2022

Conducting Safety Awareness week to orient HMWSSB workers on safety practices and distribution of safety gear.

Public awareness campaigns

HMWSSB has conducted various awareness programmes like public rallies, bike rallies etc. to sensitize on the hazards of engaging men for manual sewer operations.

Safety Awareness Programme on Sewerage Operations

Campaign Material

Banner

English Placard Design 2

English Placard Design 1

English Placard Design 3

English Placard Design 4

Daily safety pledge

Other activities undertaken, through NGOs:

- Engaged a partnership with Ramon Magsaysay Award Winner, Sri Bezawada Wilson of Safai Karmachari Andolan.
- Conducted awareness workshops with workers, staff and residential welfare associations to eliminate manual scavenging.

Welfare Measures to Sewerage Staff

Facilities being given to the sewerage staff

- The Sewerage workers are provided with safety tools, gum boots, clothing etc., and in addition to the above the following items are presently supplied.
- a. Ground nut Oil — 800 grams per month
- b. Lifeboy Soaps — 2 No's per month
- c. Dognry Cloths — 3 Meters
- d. Rain Coats. — 1 No per year
- e. Bathing & Toilet facilities at Section Office
- f. First Aid Box for emergency purpose.
- g. (9) meters of Uniform Cloth once in (2) years.
- h. Sweaters and Monkey Caps to field Staff.
- i. Hazardous allowance is enhanced from Rs.750/- to Rs.1000/- P.M. with effect from 01-09-2020.
- j. Three pair Uniform once in three years.
- k. Washing allowance has been enhanced from Rs.150/- to Rs. 200/- PM
- l. Bata Shoes Every year.

Health & Life Insurance coverage

1. HMWSSB has covered sewerage employees through **Life insurance policy of 10.00 lakhs, for death caused while working in sewerage activities.** This is in addition to Group Accident Policy of **Rs. 2 lakhs** covering all the employees of the Board.
2. HMWSSB providing **Health Insurance cards** of **Rs. 3 lakhs** per annum to Board employees and 5 no. of family members.
3. Outsourcing employees working in sewerage are covered under Employee State Insurance & Provident Fund facilities.
4. For private employees working on septic tank vehicles, which are recently licensed, Health Insurance cards of **Rs. 1 lakh** per annum is being planned for future implemenation.

Sewer Crocs

Robotic Sewer Cleaning & Monitoring

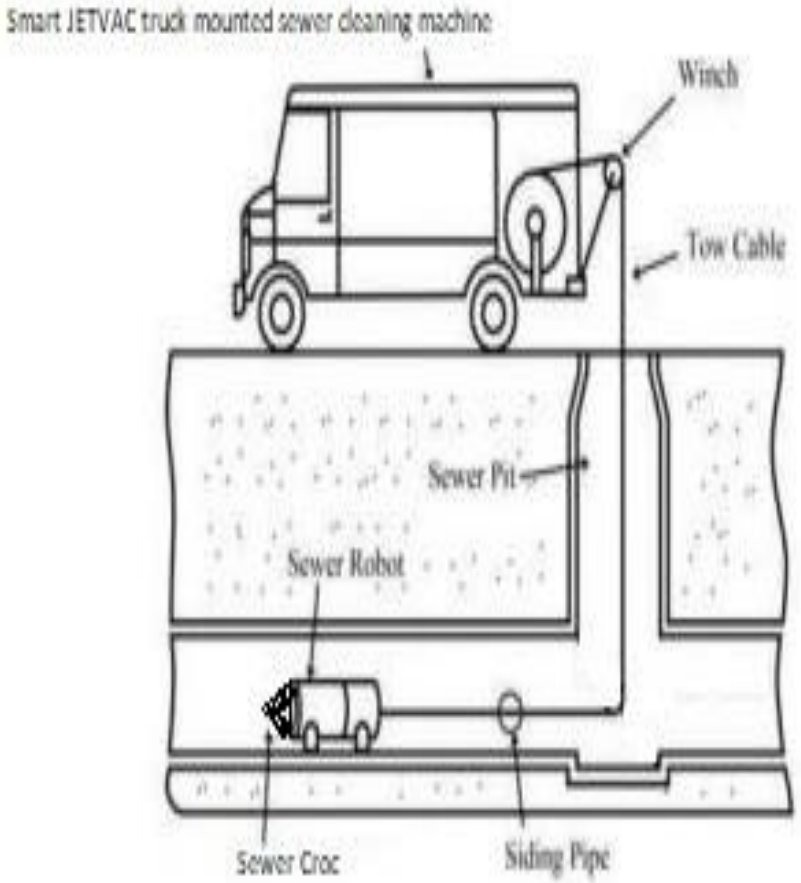
Hydraulically propelled Sewer Desilting Machine – SEWER CROC

- Sewer Croc consist of cutting system developed to disintegrate and flush out the blockages in the sewer line along with robotic driven camera system to identify chokages and to assess sewer condition.
- Depending on the size of the sewer line and depth of sedimentation, the sewer croc is designed to suit different sizes of sewer pipeline.
- This is designed to make use of water jet from jetting machine to spin the turbine at a very high speed and cut the roots and other blockages and sediments.
- The pipeline cleaning is done by cutting and disintegrating the roots ,sediments and biomass etc and to push the sediments to the entry manhole.

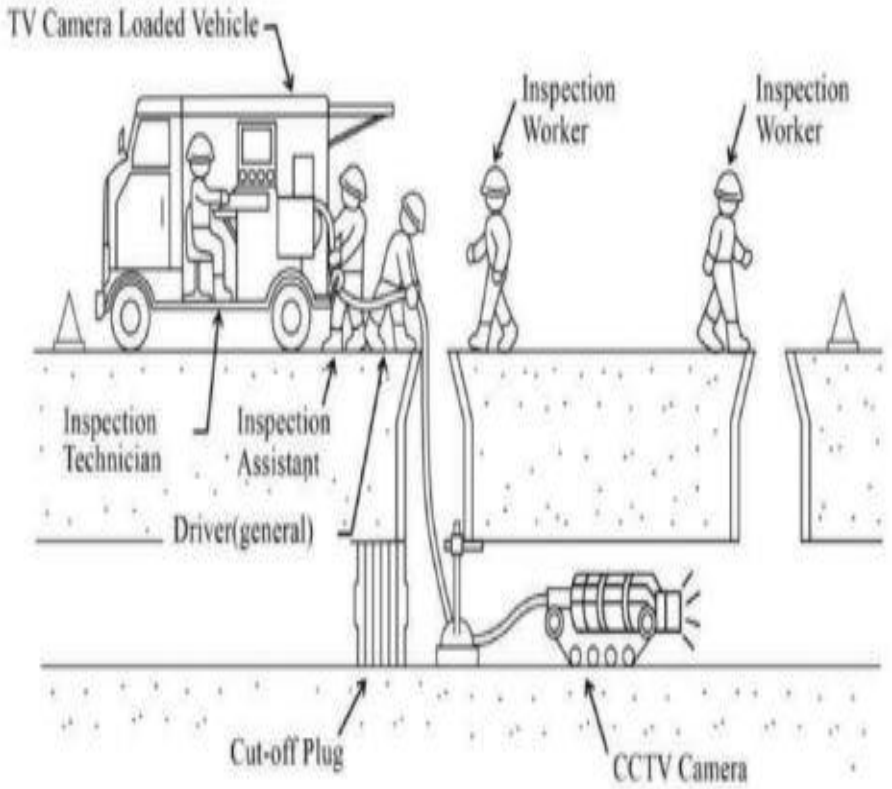
SEWER INSPECTION CAMERA

- Vehicle mounted, a very high resolution camera, reel and monitor system that can capture 360 degrees video footage inside the sewer pipeline to detect, check and validate the cleaning of the sewer pipe and its condition.
- LED lighting system for lighting up the pipelines inside to have a better visibility. Waterproofing conforming to 40 m of static head.

Pictorial representation of the sewer croc arrangement



Pictorial representation of the inspection camera arrangement



Deployment of Sewer Croc for Declogging

Sewer Croc was first taken up on the 7th May,2021 in Fathenagar section of Division 6, HMWSSSB. The main sewer line stretches of sizes 300mm and above are identified for desilting & sucessfully completed. Since then, the equipment is being utilized at various locations of HMWSSB.

SCHEDULE OF WORK

Sl.No.	Location		Stretch name	Length of Stretch in m.	Diameter of sewer in mm.	Remarks
	Starting point	Ending point				
1	Jaya Bharathi School,BK Guda	SRT-1,near Bus Stand	A to B	980	300	Completed
2	Holy Cross School Kaman, Renuka Nagar	K L N Yadav Park	C TO D	1127	450	Completed
3	K L N Yadav Park	Czech Colony, Street No.2	D TO E	1080	450	Completed
4	Iyengar bakery, Aditya Nagar	Lucky biryani house	F TO G	911	300	Completed
5	Holy Cross School, Renuka Nagar	LODHA, DNM Colony	I TO J	1040	300	Completed
				5138		

Operation of Sewer Croc

Demo Video 1

Field Video 2

Demo of Conditional Assessment using Inspection Camera after usage of Sewer Croc

Awards received by HMWSSB on Mini Sewer Jetting Vehicles implementation

HUDCO Award Outstanding contribution in Urban Infrastructure 25.04.2018

Telangana state excellence award 21.05.2018

1st in AMRUT awards for elimination of manual sewer cleaning 19.11.2018

GIS Mapping –
Geographic Information System

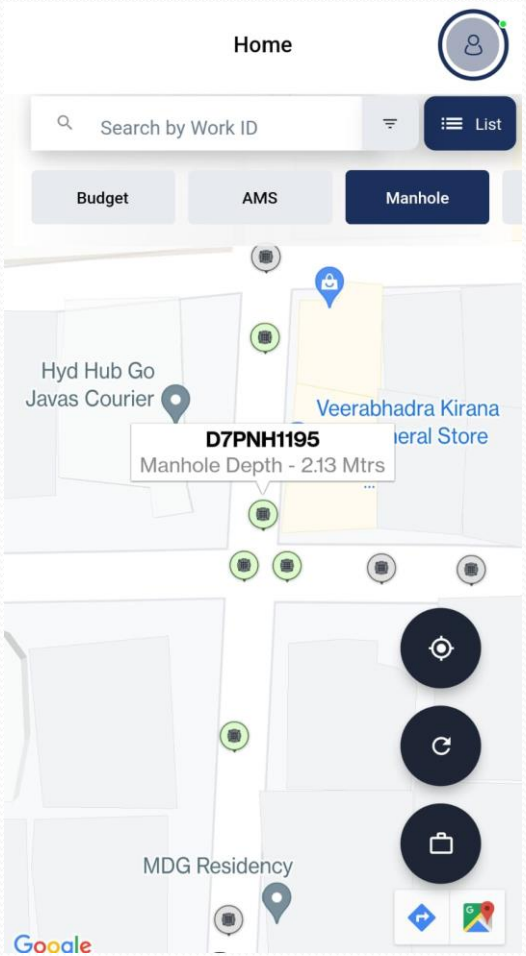
GIS in HMWSSB

HMWSSB has taken up project of capturing its Water & Sewerge network details on spatial platform. This enables HMWSSB to build additional utilities such as water office (digital twin). It is currently aiding the field engineers & staff in better decision making through identification of underground infrastructure over mobile applications. It is useful in –

1) Project planning and design, monitoring, advocacy and accountability.
2) Use of the tab (Handheld device) as a data-gathering tool
3) Highly informative monitoring data can be made available to anyone with an internet connection
4) Data will be shown on a satellite or map image with automatic colour-coding of point locations.
5) Map functionality on Water themes
6) Compliant management
7) Inventory management
8) History management

- Sewer network captured in GIS – 3657 Kms.
- No. of manholes geotagged – 2,56,145
- Deep manholes geotagged – 19,545

Sewer Network spatial view with manhole points & network



GIS data on mobile app for navigating to specific manholes

LoRa WAN–
Long Range Wide Area Network

Long Range Wide Area Network (LoRaWAN)

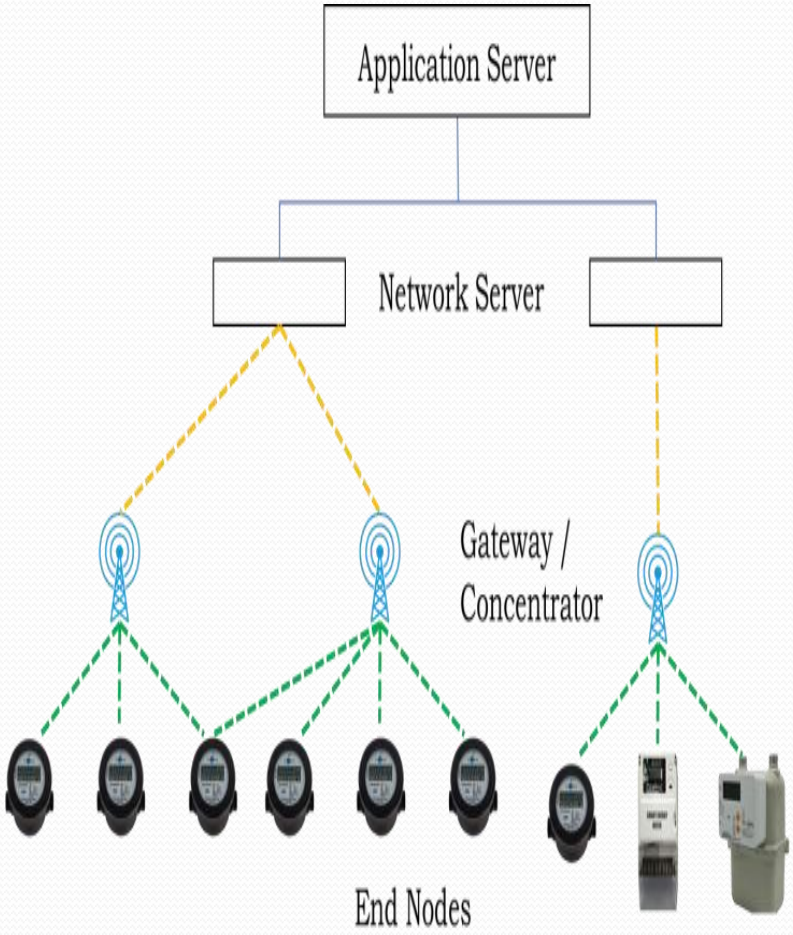
Objective:

- *LoRaWAN is unique in the Low Power Wide Area Network (LPWAN) wireless communication technology space in that it has multiple deployment and business models to solve the myriad needs of IoT use cases and applications globally.*

- With Lora WAN Private Networks, you can have "Your LPWAN Network Your Way" – whenever and wherever you want it

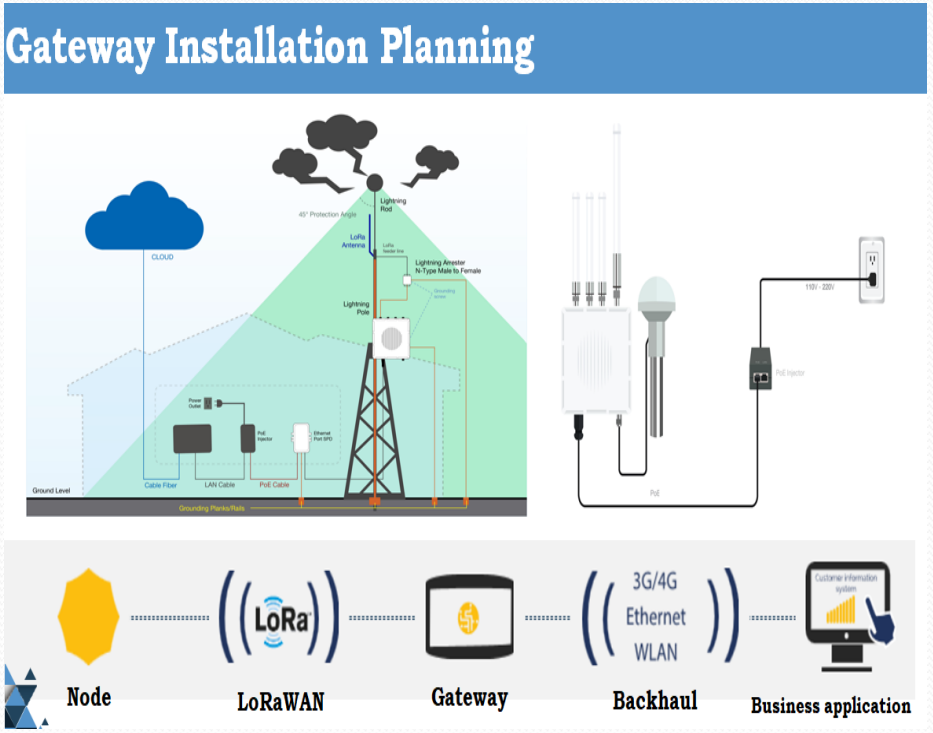
- **HMWSSB proposed Private LORA WAN deployment**. For which it is proposed to install 120 gateways along with the LNS solution to cater GHMC area initially.

- HMWSSB is establishing Private LORA for use of various IOT enabled devices to transfer data from Field to the Server seamlessly. HMWSSB has various offices in Hyderabad area where in space will be provided for establishment of Gateways to connect these IOT sensors deployed by the department for various purposes like water level, assets tracking; smart meters, vehicle tracking and other IOT based sensors.



Lora network establishment

- In first phase, 60 gateways have been procured and installed
- In second phase, another 60 gateways have been procured and establishment of communication of infra likely to be completed by Feb 2023.
- In third phase, Gateways will be extended to HMWSSB service area prioritizing Non Domestic CANs



Glimpse of Installations

LoRa-WAN Network use cases in HMWSSB

Meters:

- Smart meters with LORA enabled will communicate daily reading to gateway and Central server there by enabling seamless billing and transparent data to consumers.

- **Current Status:** 7000 + meter installed in around city which will be integrated to gateway for getting meter reading. Once coverage established for entire city this will be enabled.
- It is observed that about 25% Revenue has increased at some places with AMR meters
- NRW has been addressed apparently

Reservoir Level Monitoring:

- A pressure based level sensors will be installed with the LORAWAN as communication unit for communicating reservoir level to the local staff and command control centre for monitoring reservoir level on hourly basis.

- **Current Status:** 340 reservoirs connected with the sensor and connected to LORA where ever possible gateway .

Valve operations:

Monitoring of Valve operations of Line men there by monitoring supply timing at distributions level with the Lora enabled switch retrofitted with the Valve rod which is used for opening of valve by the linemen.

Current Status: Pilot study for this completed at Sanath nagar and large scale deployment need to be verified.

Pumps monitoring:

Online monitoring of PF factor and Pumps running hours, unit consumption using LORAWAN for efficient energy management.

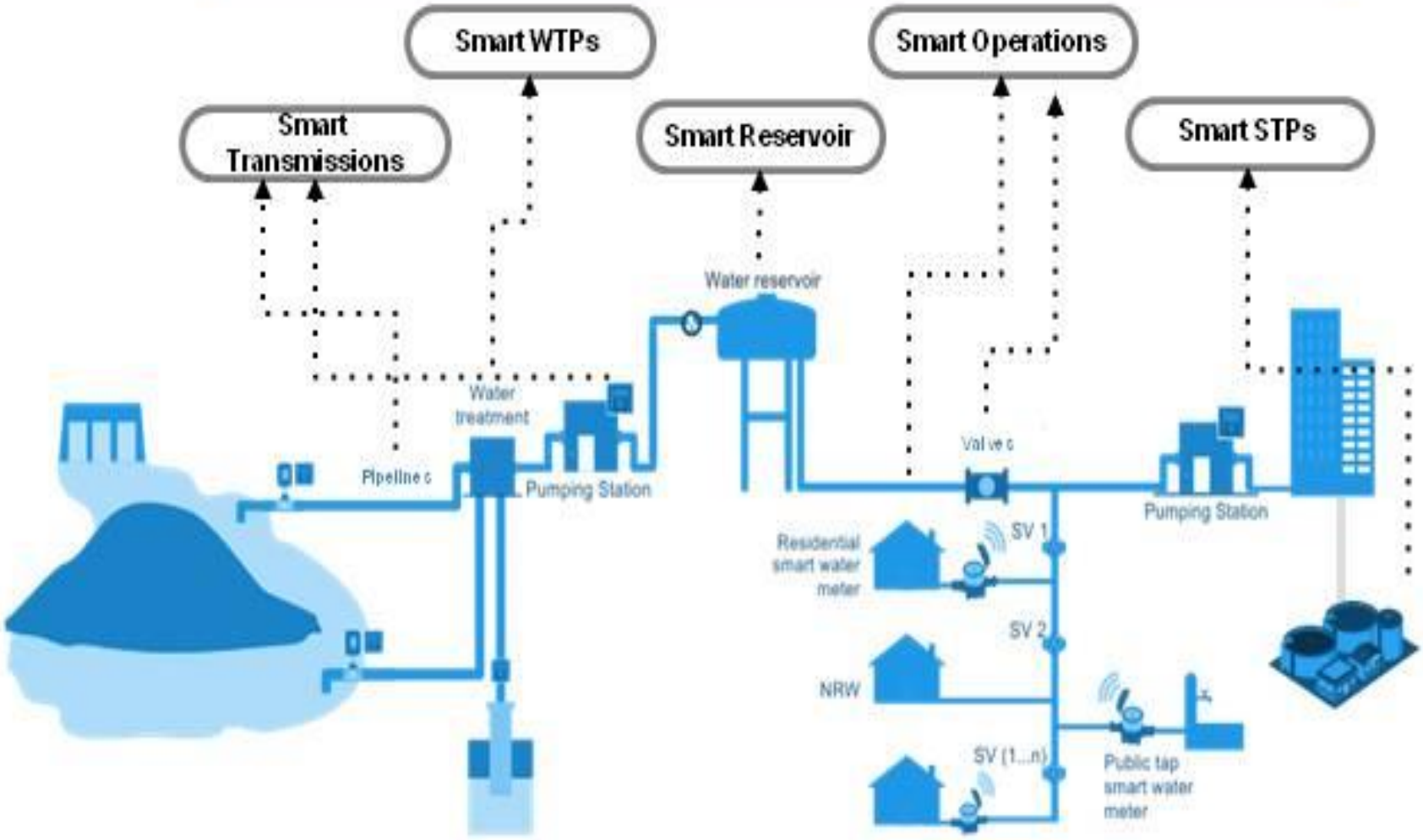
Current Status: Pilot completed in Gachibowli.

Sewerage Manholes Monitoring:

Lora based sensors will be installed at deep manholes identify overflow condition and alert concerned field officer on removal of manhole cover.

Current Status: Pilot study was completed at Gachibowli.

Hyderabad Smart Water Network



Tentative savings with LORAWAN

S.NO	ITEM	Saving on communication per Annum (Rs)	Present /Future
1	AMR Meters	72,00,000	Present
2	Reservoir level sensors	3,60,000	Present
3	Other Sensors	12,00,000	Future

Monitoring of O&M Operations

(SPT & AMS)

SAFETY PROTOCOL TEAM

Work Site Safety Is Public Safety

Monitoring Team

EXPLORE

SAFETY PROTOCOL TEAM

SAFETY PROTOCOL TEAM
SPT
WORK SITE SAFETY IS PUBLIC SAFETY
HMWSSB

Worksite Safety is Public Safety

OBJECTIVES OF SPT

1. Monitoring of Safety code of works.
2. Ensuring missing safety features/elements are set right by monitoring teams(SPT).
3. Penalization & Collection from work Bills.
4. Developing Safety Index for each agency over time.
5. All works are QR coded Safety Adherence (Audit) based work payments.
6. IT platform for all works from start to closure of the works.

SPT AT A GLANCE

- Central Safety Protocol Cell (CSPC) is headed by Chief Vigilance Officer (CVO) of Additional SP cadre.
- All operations are IT based / on Google maps.
- Safety protocol Team (SPT) consists of 6 vehicles, each with 1 National Academy of Construction (NAC) engineer 1 Police staff Reserve safety equipment.
- All Works of Contract Agencies are QR coded displaying QR codes at work sites.
- Penalties on violations collected from work bills.
- SPTs shall ensure -
  - Presence of caution boards at water logging areas and fixing of safety grills for deep manholes.
  - Providing safety equipment such as barricades, manhole covers at missing places.
  - Reviewing safety index of each agency
  - Levying Penalties to non compliant agencies
  - Better adherence to safety protocols over a period of time

Entire Program expenditure is from CSR funds of HMWSSB Contractors

SPT SETUP

SPT Team comprises

- **SPT vehicle**
- **Engineer (NAC)-1**
- **Home guard-1**
- **Driver-1**

Tab with

- **Mobile application**
- **Navigation map**
- **Checklist of Safety Equipment**

Equipment includes

- **Barricades**
- **Caution boards**
- **Blinkers**
- **Manhole covers**
- **Safety cones**

SPT Work Flow

1. Contractor registration

2. Geotagging the worksite & work ID generation

3.Safety arrangements and caution boards at worksites with QR

4. Inspection By SPT teams

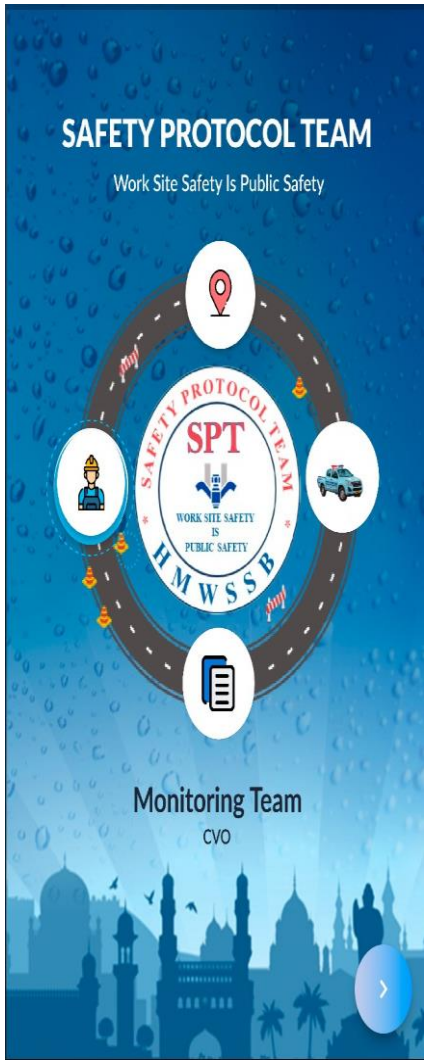
5. Provide safety equipment at missing places & inform manager/agency.

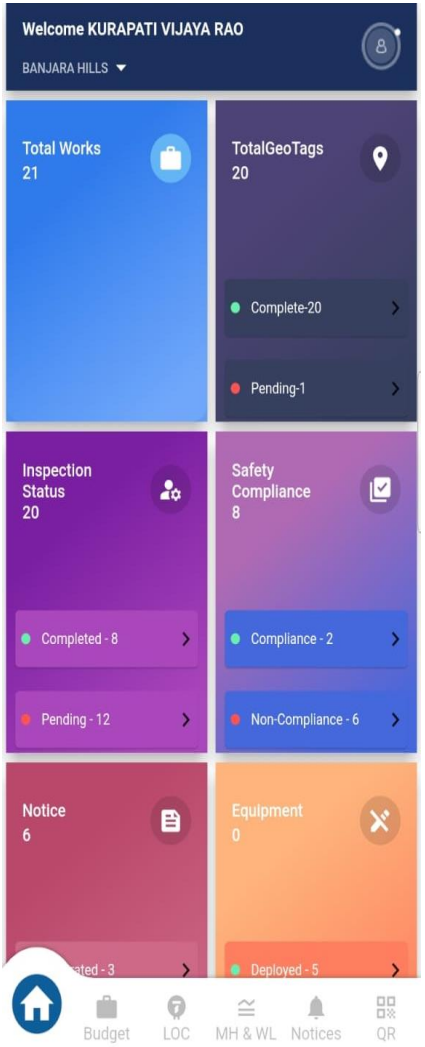
6. Notices against Non compliant agencies by DyGm /GM

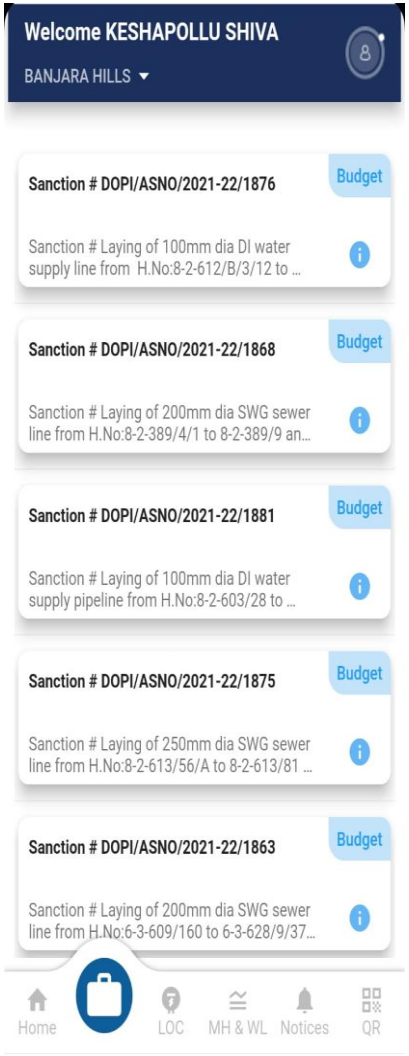
7. GM verifies and levies penalty

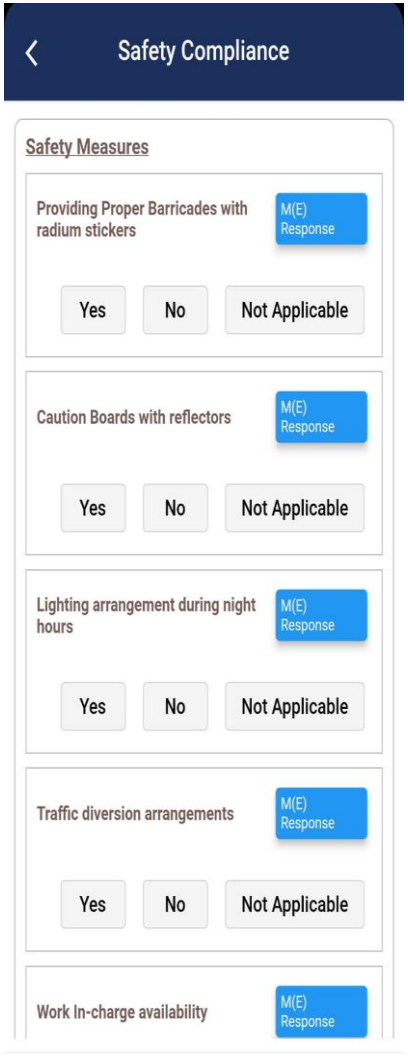
8. Penalty funds will be used for SPT improvement

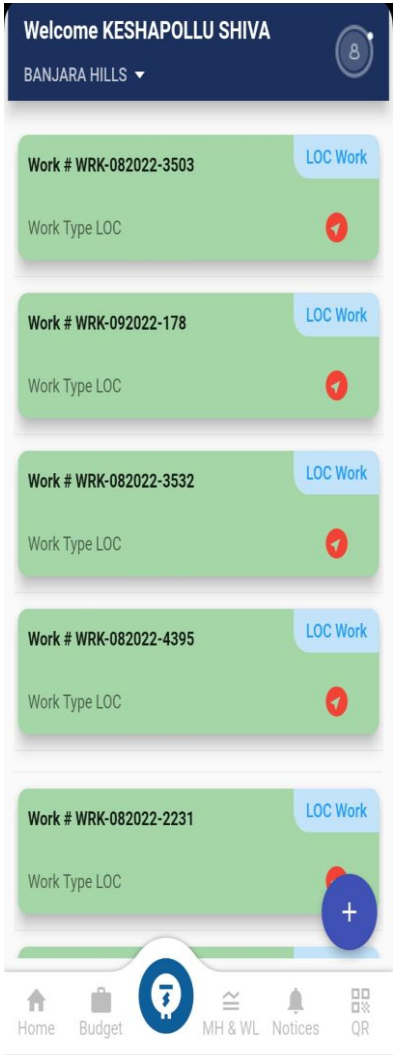
9. Blacklist after 3 notices served

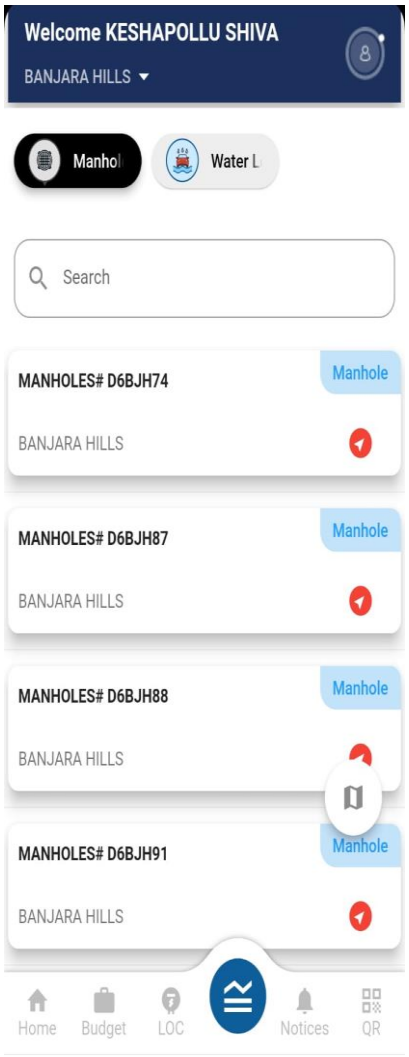

SAFETY PROTOCOL TEAM
Work Site Safety Is Public Safety
SPT
SAFETY PROTOCOL TEAM
WORK SITE SAFETY IS PUBLIC SAFETY
HMWSSB
Monitoring Team
CVO

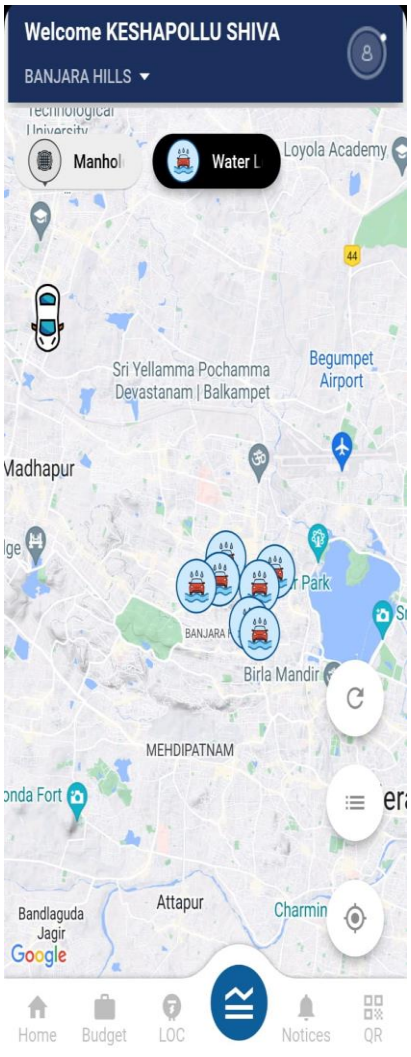

Welcome KURAPATI VIJAYA RAO
BANJARA HILLS
Total Works
21
TotalGeoTags
20
Complete-20
Pending-1
Inspection Status
20
Completed - 8
Pending - 12
Safety Compliance
8
Compliance - 2
Non-Compliance - 6
Notice
6
Equipment
0
Deployed - 5
Budget
LOC
MH & WL
Notices
QR

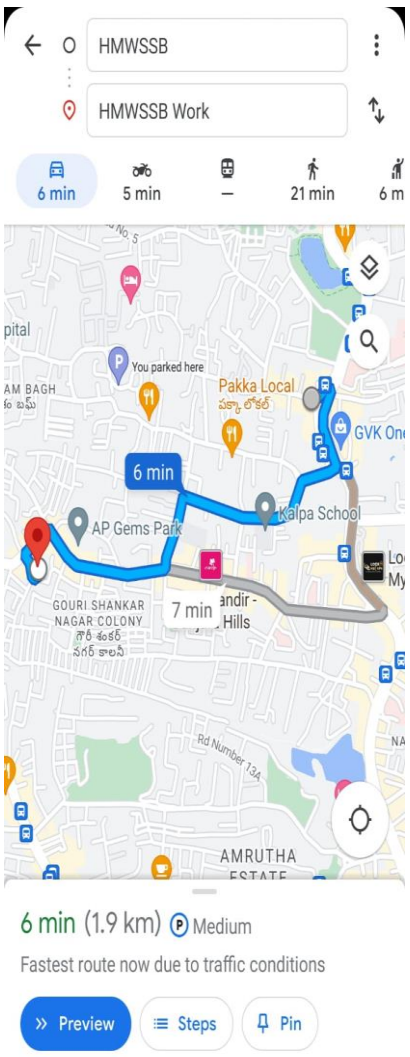

Welcome KESHAPOLLU SHIVA
BANJARA HILLS
Sanction # DOPI/ASNO/2021-22/1876
Budget
Sanction # Laying of 100mm dia DI water supply line from H.No:8-2-612/B/3/12 to ...
Sanction # DOPI/ASNO/2021-22/1868
Budget
Sanction # Laying of 200mm dia SWG sewer line from H.No:8-2-389/4/1 to 8-2-389/9 an...
Sanction # DOPI/ASNO/2021-22/1881
Budget
Sanction # Laying of 100mm dia DI water supply pipeline from H.No:8-2-603/28 to ...
Sanction # DOPI/ASNO/2021-22/1875
Budget
Sanction # Laying of 250mm dia SWG sewer line from H.No:8-2-613/56/A to 8-2-613/81 ...
Sanction # DOPI/ASNO/2021-22/1863
Budget
Sanction # Laying of 200mm dia SWG sewer line from H.No:6-3-609/160 to 6-3-628/9/37...
Home
LOC
MH & WL
Notices
QR

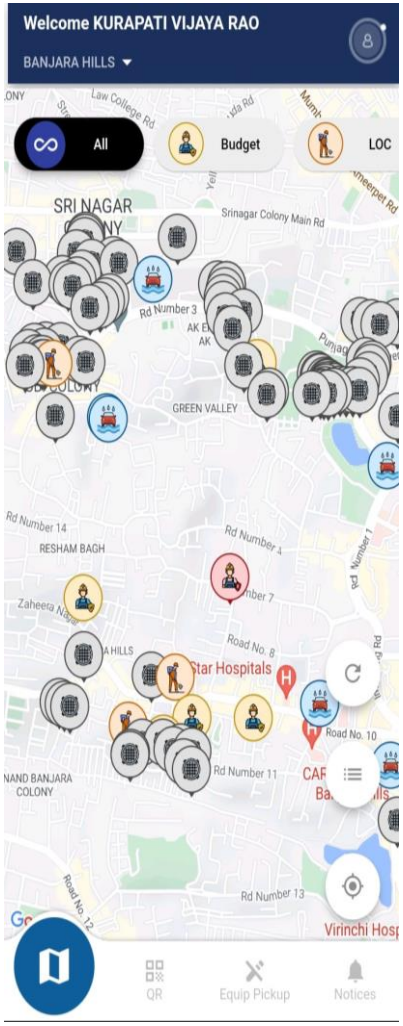

Safety Compliance
Safety Measures
Providing Proper Barricades with radium stickers
M(E) Response
Yes
No
Not Applicable
Caution Boards with reflectors
M(E) Response
Yes
No
Not Applicable
Lighting arrangement during night hours
M(E) Response
Yes
No
Not Applicable
Traffic diversion arrangements
M(E) Response
Yes
No
Not Applicable
Work In-charge availability
M(E) Response

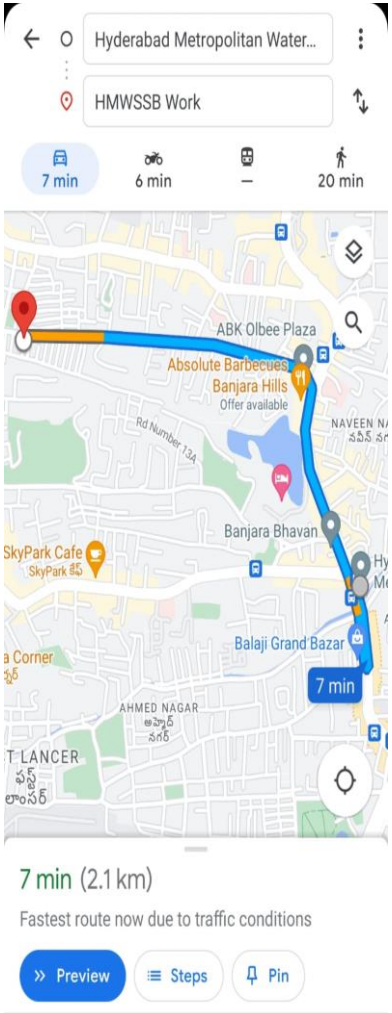

Welcome KESHAPOLLU SHIVA
BANJARA HILLS
Work # WRK-082022-3503
LOC Work
Work Type LOC
Work # WRK-092022-178
LOC Work
Work Type LOC
Work # WRK-082022-3532
LOC Work
Work Type LOC
Work # WRK-082022-4395
LOC Work
Work Type LOC
Work # WRK-082022-2231
LOC Work
Work Type LOC
Home
Budget
MH & WL
Notices
QR

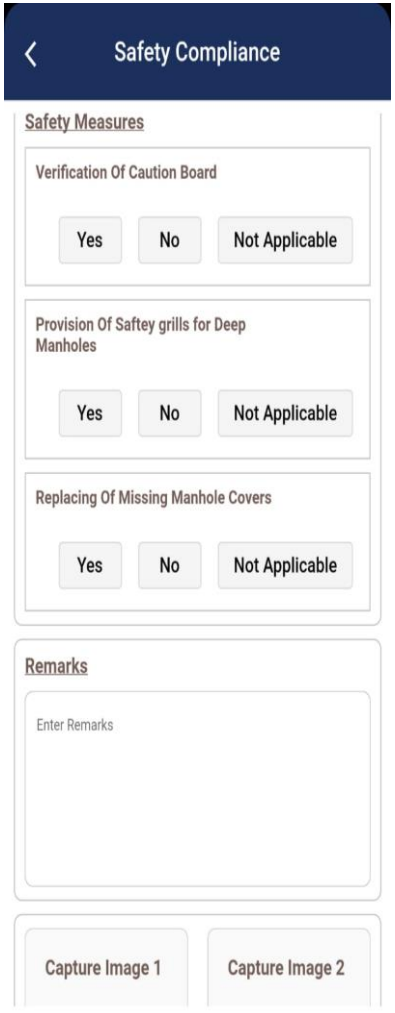

Welcome KESHAPOLLU SHIVA
BANJARA HILLS
Manhol
Water L
Search
MANHOLES# D6BJH74
Manhole
BANJARA HILLS
MANHOLES# D6BJH87
Manhole
BANJARA HILLS
MANHOLES# D6BJH88
Manhole
BANJARA HILLS
MANHOLES# D6BJH91
Manhole
BANJARA HILLS
Home
Budget
LOC
Notices
QR

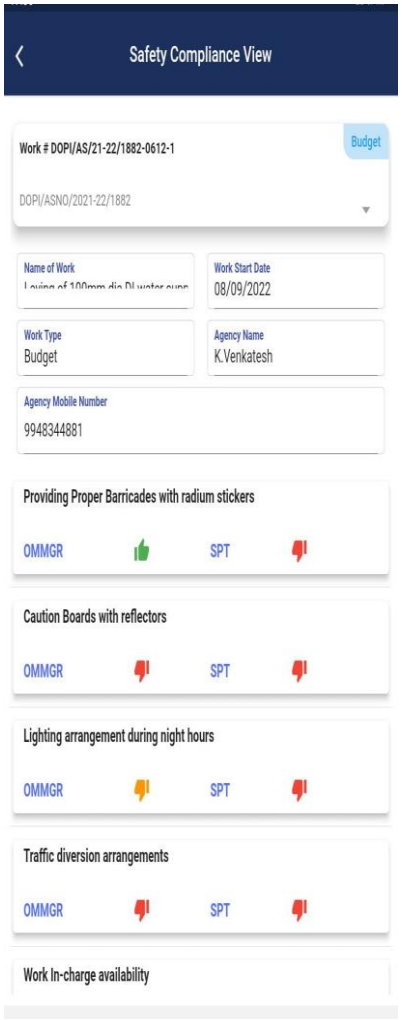

Welcome KESHAPOLLU SHIVA
BANJARA HILLS
Manhol
Water L
Loyola Academy
Sri Yellamma Pochamma Devastanam | Balkampet
Begumpet Airport
Madhapur
Park
Birla Mandir
MEHDIPATNAM
Attapur
Charmin
Bandlaguda Jagir
Google
Home
Budget
LOC
Notices
QR


HMWSSB
HMWSSB Work
6 min
5 min
21 min
You parked here
Pakka Local
6 min
AP Gems Park
Kalpa School
7 min
GOURI SHANKAR NAGAR COLONY
AMRUTHA
6 min (1.9 km) Medium
Fastest route now due to traffic conditions
Preview
Steps
Pin


Welcome KURAPATI VIJAYA RAO
BANJARA HILLS
All
Budget
LOC
SRI NAGAR
Srinagar Colony Main Rd
GREEN VALLEY
RESHAM BAGH
Road No. 8
Star Hospitals
Road No. 10
Rd Number 11
Rd Number 13
Virinchi Hosp
QR
Equip Pickup
Notices


Hyderabad Metropolitan Water...
HMWSSB Work
7 min
6 min
20 min
ABK Olbee Plaza
Absolute Barbecues
Banjara Hills
Offer available
Rd Number 12A
Banjara Bhavan
SkyPark Cafe
Balaji Grand Bazar
7 min
AHMED NAGAR
7 min (2.1 km)
Fastest route now due to traffic conditions
Preview
Steps
Pin


Safety Compliance
Safety Measures
Verification Of Caution Board
Yes
No
Not Applicable
Provision Of Saftey grills for Deep Manholes
Yes
No
Not Applicable
Replacing Of Missing Manhole Covers
Yes
No
Not Applicable
Remarks
Enter Remarks
Capture Image 1
Capture Image 2


Safety Compliance View
Work # DOPI/AS/21-22/1882-0612-1
Budget
DOPI/ASNO/2021-22/1882
Name of Work
Work Start Date
08/09/2022
Work Type
Budget
Agency Name
K.Venkatesh
Agency Mobile Number
9948344881
Providing Proper Barricades with radium stickers
OMMGR
SPT
Caution Boards with reflectors
OMMGR
SPT
Lighting arrangement during night hours
OMMGR
SPT
Traffic diversion arrangements
OMMGR
SPT
Work In-charge availability

Annual Maintenance System
in O&M

Annual Maintenance System (AMS)

Purpose :

HMWSSB engaged certain Agencies under various O&M Division to carry out water supply, sewerage & Electrical and Mechanical related works with annual maintenance contract. These works will be monitored using centralised monitoring system .For which an IT application is developed.

Benefits

- Safety Protocol implementation
- Manual entries are not allowed and same is monitored
- Photographs of actual works are uploaded on regular basis
- Quick Complaint disposals
- Centralized monitoring systems
- Accounting and regulation of works

Annual Maintenance System (AMS)

1. All small & daily arising O&M works are automatically taken care by an agency. Such O&M works are divided into (a) Water Supply Works, (b) Sewerage works & (c) Electrical Works.

2. 214 agencies are engaged after due tender process, for 198 sections of HMWSSB, and kept at the disposal of field engineers for attending routine O&M works -

   a. 14 Electrical Works AMS Contracts

   b. 156 Sewerage Works AMS Contracts &

   c. 163 Water Supply Works AMS contracts.

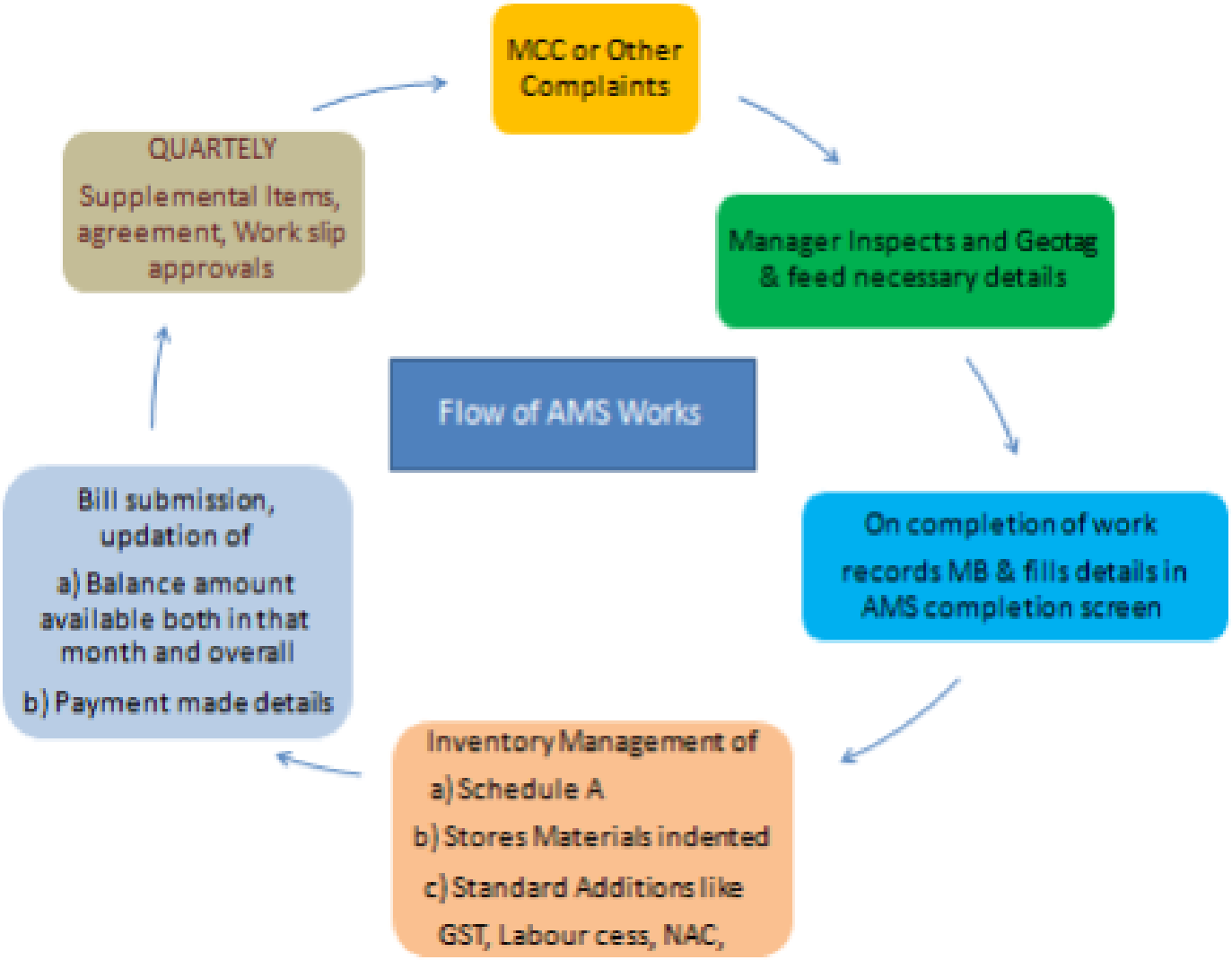
3. This ensures trained/skilled/semi-skilled labour/agencies are available to take up O&M operations in scientific manner, ensuring safety at work site for labour & public as well.

4. Public complaints/SPT team complaints on SOP violations and safety violations are recorded and agencies are penalized.

IT Tools Used

- Mobile App provided to field officials to capture work-start images and completed images.
- Tracking of all works carried out under AMS contractors with GPS details
- Online processing work bills for agencies.

AMS PROCESS FLOW



Current Status:

Phase 1 of the application is rolled out. Under phase 2 payment proces and GIS integration are proposed

I am a soldier of Swacch Telangana

At your service!!

Thank You