



Improving Safety of Sanitation Workers in Wai Municipal Council

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CWAS CENTER
FOR WATER AND
SANITATION

CRDF CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY



Context Setting

In 2018, Wai was chosen as one of the eight cities across the globe for the City Wide Inclusive Sanitation Program (CWIS) funded by Bill & Melinda Gates Foundation (BMGF). The municipal council of Wai (WMC) with support from Center of Water and Sanitation (CWAS), CRDF, CEPT University (CEPT) is aiming to implement the CWIS goals and principles in Wai.

Under the CWIS framework, one of the aspects is Safety. As a part of our work on safety and inclusivity, a study on understanding the sanitation workers was conducted. The study focused on use of Personal Protective Equipment (PPE).

The findings of this study were used to draft recommendations for WMC. The recommendations were implemented by WMC, resulting in an overall improvement in the working conditions of all sanitation workers in Wai. The report showcases how sanitation worker safety has been institutionalized in Wai.



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Executive Summary

- The sanitation workers provide important sanitation services. This is often at the cost of their safety, health and working conditions.
- This study focuses on the need to improve working condition of sanitation workers especially in times of pandemic such as COVID-19.
- This study was conducted by CWAS with support from the Wai Municipal Council (WMC). It documents how the conditions of sanitation workers operating across the FSSM chain in Wai was improved.
- The study provides an understanding of **who the sanitation workers are, their working conditions, usage pattern of PPE etc**
- **Based on an assessment of sanitation workers' working conditions**, CWAS team supported Wai Municipal Council to implement some measures, including PPE related clauses in contracts related to replacement and monitoring of PPEs. Training workshop -health check-up on PPE usage were conducted which led to improvement in the working condition of the sanitation workers.

The study was divided into three phases

1

Findings from assessment

- Understanding the sanitation worker ecosystem. The aim was to understand who are the sanitation workers and what is their PPE usage pattern
- The assessment also included review of various official guidelines for PPE usage and comparing them to the situation on ground in Wai.
- Identifying gaps in usage of PPEs

2

Recommendations

- Based on the findings from the assessment phase recommendations were suggested to WMC.
- Brainstorming sessions were conducted with WMC to arrive at priority interest areas.
- Based on the recommendations and suggestions from WMC key areas of interest were identified that formed a basis for implementation

3

Implementation

- Activities were implemented in support with WMC.
- The implementation of the activities lead to improvement in the overall working conditions of the san workers

The study began with an assessment phase focusing on sanitation worker ecosystem and usage of PPE

Profiling of sanitation workers

Understand the number of san workers, activities they are involved in, type of employment, benefits they receive etc

Assessment of contracts

A detailed assessment of all contracts of sanitation department with a focus on PPE.

Review of Guidelines for PPE

A detailed assessment of guidelines on sanitation and SWM with a focus on PPE conducted.

Engagement with all san workers on use of PPE

Qualitative discussion with all sanitation workers conducted to assess types of PPE provided, issues faced in using them, existing replacement and monitoring regime

Qualitative discussion with PPE wholesalers

Qualitative discussion with PPE wholesalers was conducted to assess user friendly gears, compare costs, vendor availability. .

Existing monitoring & replacement regime

Assessment conducted to study the systems in place and identify the areas which require support

Based on the findings from the assessment recommendations were developed and some key activities were implemented by WMC with support from CWAS (1/2)

Findings

Recommendations

Implementation

- | Findings | Recommendations | Implementation |
|--|--|--|
| <p>1
Contracts do not include PPE related clauses</p> | <ul style="list-style-type: none">• Drafting of PPE clauses based on research of similar contracts• Inclusion of PPE clauses for all contracts of san dept | <ul style="list-style-type: none">• PPE clauses drafted and included in all contracts of Sanitation Dept. |
| <p>2
Work specific, user friendly PPE with adequate replacement not provided</p> | <ul style="list-style-type: none">• Assessment of guidelines to recommend work specific gears• Market assessment through qualitative discussions with PPE wholesalers for availability and pricing of PPE• Revised purchase tender for PPE to be drafted | <ul style="list-style-type: none">• Based on market assessment PPE procured and distributed• List of PPE required with replacement cycle according to type of work prepared and shared with WMC |

Based on the findings from the assessment recommendations were developed and some key activities were implemented by WMC with support from CWAS (1/2)

Findings

Recommendations

Implementation

3

Systematic monitoring of PPE usage is absent

- Involve WMC staff for monitoring
- Design monitoring and replacement regime

- New monitoring register prepared
- Sanitation supervisors are using the new monitoring register
- SaniTab being used to regularly monitor usage of PPE for all san workers

4

Trainings and awareness for usage of PPE is low

- Training program to orient san workers for safety at work place
- Resource materials for PPE
- Regularize Health camps
- Involve other stakeholders

- Training workshop conducted
- PPE distributed to all sanitation workers
- Health camp and counselling sessions conducted
- Resource materials designed and used



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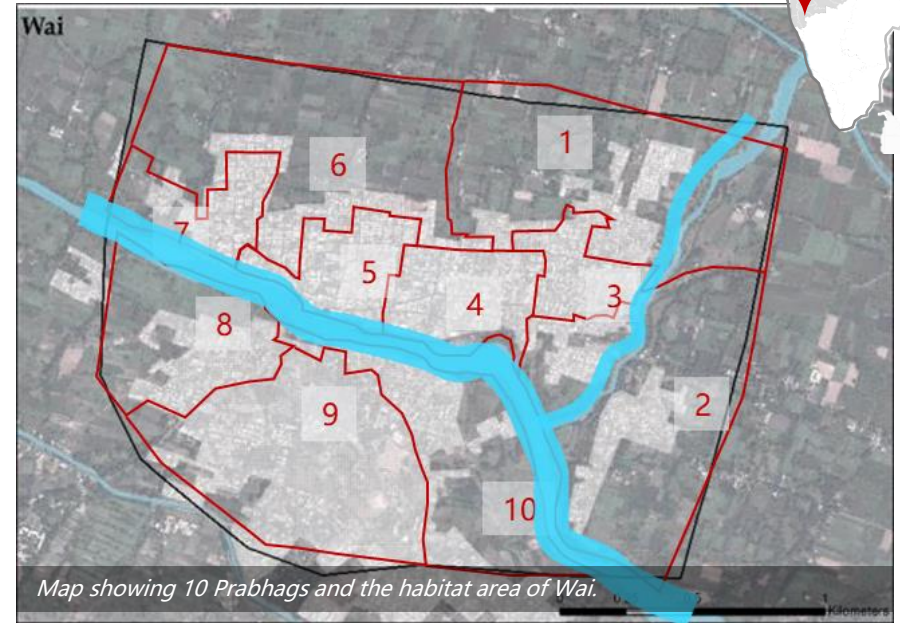
CRYSTAL
MEN | WOMEN | CHILDREN

Background of Wai

- Wai is a small town in the Satara district of Maharashtra
- The town is known in Maharashtra for its **Ghats** on the **banks of River Krishna** and around **250 temples**.
- It is a **holy pilgrimage town**.

Table 1: Demographic details of Wai

C Class Municipal Council	
District	Satara
Location	95km south of Pune; 35km from Satara
Area	3.54 sqkm
Population (2019)	43000
Households	8991
Literacy Rate	81%
Slum population	6%
Toilet Coverage	85%



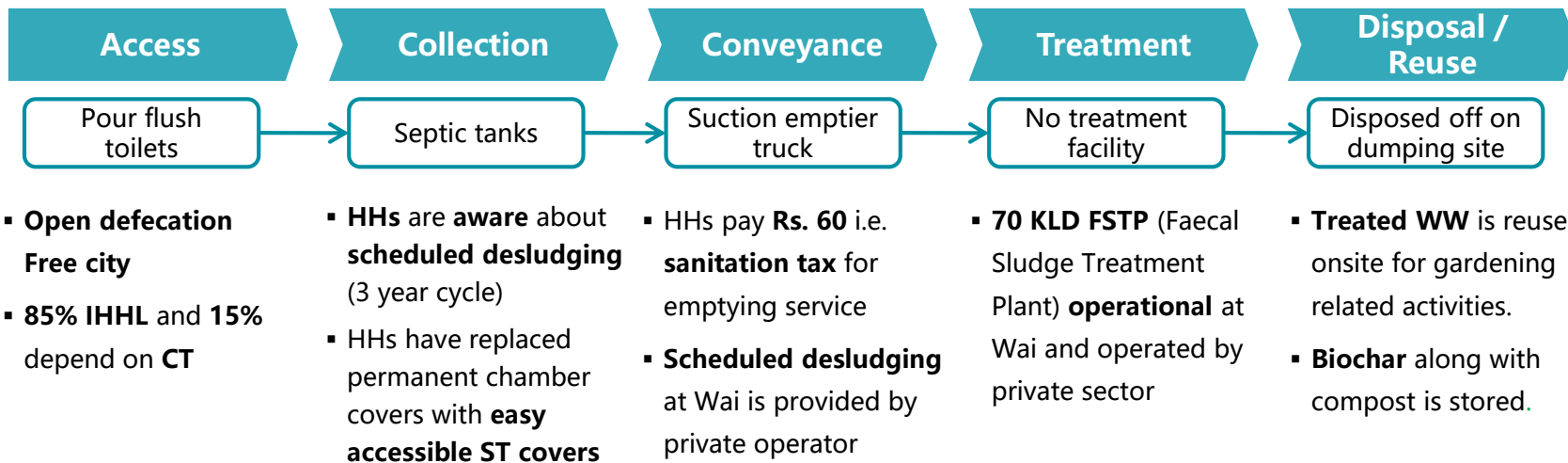
Map showing 10 Prabhags and the habitat area of Wai.



Figure 1: Aerial view of Wai

Existing situation across sanitation value chain for Wai

After implementation of FSSM



Within the Wai municipal council, the sanitation department is responsible for sanitation workers

Wai Municipal Council

Chief Officer

Sanitation Department

Water supply & sanitation Engineer

Role: Implementation and management of water supply schemes and partially FSSM. Support for data management, MIS for FSSM, contracts-tender management. Representing WMC at various official platforms

Sanitation Inspector (SI)

Role: Implementation of sanitation schemes, MIS handling, contracts and tender management, allotment of work to sanitation supervisors and monitoring of their work, management of contractors under the sanitation dept.

Oversite

Sanitation Supervisors

Role: Mainly assignment and allotment work to all sanitation workers under WMC own staff as well as those of the private labour contractor/supplier, maintaining record of the work done through field visits and daily reporting to SI. Maintain the record of work undertaken by the sanitary workers.

Sanitation Workers

Role: San workers under WMC staff conduct cleaning of drains, emptying CT/PT septic tanks, picking dead animals, road sweeping, grass and tree cutting.

Private Operators

Private Desludging Operators

FSTP Operators

CT/PT Operators

Labour Contractors

Employ

Role: Private operators and labour supplier obtain agreements/contracts for specific works and WMC monitors the work. The employer is responsible for the sanitation workers working for them in terms of paying salaries, providing PPE and supervising their tasks and mitigation of issues.

Sanitation Workers

Role: Employed by the private sector, these sanitation workers report to the supervisors of the private operators/contractor and carry out assigned work such as emptying of septic tanks, O&M of FSTP and community toilets, SWM and working at the crematorium

There are 4 different models of employment for sanitation workers with Wai municipal council mainly playing the role of monitoring

Employer

Wai Municipal Council

- Managed completely by the government with no outsourcing
- The san workers are on pay rolls of WMC under Class 3

Labour Supplier

- Contractors only for labor supply; employ san workers via informal contracts
- **Dudhane Labor Supplier**- For activities for SWM, road-drain cleaning

Private Operators

- Operations run directly by private operators for profit; informal agreements with sanitation workers
- **Nirmal Bharat**- For O&M all CTs/PTs
- **Seva Foundation**- For O&M of 1PT

PPP/Service Contracts

- Multi year service contracts.
- **Sumeet Facilities**- For desludging of septic tanks
- **TIDE Technocrats**- For O&M of FSTP

Type of work

- CP/PT septic tank desludging
- Road sweeping, drain cleaning, grass and tree maintenance along roads

- Door to door collection of waste and transportation to SWM site.
- Road, sweeping, drain cleaning, drivers for SWM vehicles

- Operation and maintenance of all community toilet (CT), WMC schools and 1 public toilet (PT)

- Desludging of septic tanks for all properties within the WMC boundary
- Operations and maintenance of FSTP

Sanitation workers in Wai are involved in 12 different activities for FSSM, SWM and other cleaning related works

FSSM	Solid Waste Management (SWM)	Road and Drains Maintenance	Gardening and others
CT/PT cleaning Private operator	Door to door collection of waste Private labour contractor	Drain cleaning WMC staff and private labour contractor	Grass and tree branches cutting along roads WMC staff
Desludging of septic tanks Private contractor	Conveyance to SWM site Private labour contractor	Road sweeping WMC staff and private labour contractor	Picking up dead animals WMC staff
O&M of FSTP Private operator	Sorting waste at SWM site Private labour contractor		Garden maintenance Private labour contractor
			Work at crematorium Private labour contractor



Three sanitary supervisors of WMC monitor 79 sanitation workers staff

Employer	Type of Work	Number of workers	Age and Gender	Area of work
1 Wai Municipal Council San worker staff	<ul style="list-style-type: none"> Road Sweeping Drain cleaning Grass cutting Picking up the dead animals Tree branch cutting 	San worker: 37	Female: 4 Male: 33 < 30 years : 1 workers 30-50 years: 30 workers >50 years : 6 workers	12-14 WMC san workers staff under each WMC supervisor. Each supervisor allotted 3-4 Prabhags
San workers of Private Labour Contractor	<ul style="list-style-type: none"> SWM (D2D collection & conveyance) 	San worker: 10	Male : 10 30-50 years: 30 workers	1 Private san worker allotted to each prabhag. Each WMC supervisor allotted 3-4 prabhags.
	<ul style="list-style-type: none"> Road sweeping and drain cleaning 	San worker: 29	Male : 29 < 30 years : 14 workers 30-50 years: 11 workers >50 years : 4 workers	10 Private san workers allotted to each san supervisor.
	<ul style="list-style-type: none"> Garden maintenance 	San worker: 3	Male : 3 30-50 years: 3 workers	2 Private san workers for crematorium and 1 for CO's house
		Total san workers: 79 WMC San Supervisor: 3		

The sanitation workers of Health Department of WMC comprise of workers who are on pay- roll records of WMC and workers on contract basis through labour contracts for SWM, drain cleaning, road sweeping. These 79 san workers are managed and supervised daily by three WMC supervisors, with supervisor to worker ratio being 1:26. The average age group of workers is between 30-50 years with low representation of women san workers.

Private operators and contractors have an average supervisor to workers ratio of 1:5 while that of WMC is 1:26

Employer	Type of Work	Number of workers	Age and Gender	Area of work
2 Sumeet Facilities <i>(Desludging)</i>	Supervisor: Informing HHs a day before; Monitoring desludging activity; filling monitoring form; maintaining daily record.	Supervisor: 1	Male: 1 Age: 30 Years	Within Wai city boundary limits
	Schedule desludging of septic tanks	Helpers: 4	Male: 4 Age: 30-45 Years	
3 Tide Technocrats <i>(FSTP)</i>	Monitoring operations, testing samples, coordinating with associated teams	1 Senior site In-charge 1 Site In-charge	Male: 1 Age: < 30 Years Female: 1 Age: < 30 Years	FSTP Site
	Maintaining the site, plantation	2 Helpers	Male : 2 Age: < 30 Years	
	Operating machinery	2 Operators	Male : 2 Age: < 30 Years	
4 Nirmal Bharat <i>(CTs)</i>	Monitoring operations, attendance and repair works. Reporting to senior staff	1 Supervisor	Male: 1 Age: < 30 Years	All CT/PT within Wai city boundary limits
		8 Helpers	Male: 1 Age: 30-35 Years	

Along with WMC san workers that are workers employed by service contractors. There a total of 102 sanitation workers and supervisor staff in Wai, out of which 60% are workers from the private sector. Representation of women is low even within the private sector. Most workers are in the age range of 30-50 years.

The sanitation workers staff of WMC get comparatively more benefits compared to those employed by private labour supplier

	WMC sanitation worker staff	Private contract labour
Government Scheme and provisions	<p>The 37 san workers on pay rolls of WMC are Class 4 employees as designated by Govt of Maharashtra and hence are eligible to avail benefit from 'Anukampa', which incase of fatal accident/ death while in service, the workers' heir/successor can continue her/his service and receive similar benefits.</p> <p>All san workers are eligible for 'Varsa Hakk' meaning in case of retirement his/her family member can get the job. All the 4 women san workers have been recruited under 'Varsa Hakk'</p>	<p>Not eligible for the scheme</p> <p>Not eligible for the scheme</p>
Membership to san workers' society association	Membership to Sanitation worker's society association, Rs 500 is deducted from worker's salary annually, workers are eligible for availing loan.	No Membership
Insurance	Insurance provided (personal/family)	No insurance
Provident Fund	Provident fund (PF) is deducted from their salaries	PF deducted
PPE and Uniform	PPE provision annually and uniform along with uniform washing funds	PPE and uniforms not provided
Medical Check ups	Provision of medical checks twice in a year.	No medical check conducted

As per discussion with sanitation workers, although there are many provisions in law, there is a lacuna in implementation of the provisions. The presence of many benefits could be one of the reason for WMC and other ULBs to outsource work by engaging contract employees.



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Most of the contracts of private operators have no clauses for PPE provision and its monitoring and replacement

- There are three contracts related to FSSM which have been given to private operators and labour suppliers from WMC.
- An assessment of the contracts was conducted w.r.t provisions for PPE and its usage for the sanitation workers.
- The aim was to assess scope for improvement in these contracts which could be suggested to WMC

	Clauses on PPE provision	Monitoring Usage and Replacement
Labour Supply Contract by Dudhane Labour Supplier, Wai	No mention of PPE in the contract. Private labor contractor has not provided any PPE to their san workers.	No monitoring since no PPE provided
Maintenance of Community Toilets by Nirmal Bharat	No mention of PPE in the contract. However, some PPE have been provided by the contractor.	The supervisor does not monitor PPE usage and either maintains any record related to PPE
Scheduled Desludging by Sumeet Facilities	<ol style="list-style-type: none"> 1. Cleaner & helper must wear safety equipment at all times while dealing with faecal matter. 2. All employees responsible for maintaining their own PPE in good condition. 	The supervisor only visually monitors PPE but does not document or report back to the team.

Apart from scheduled desludging, both contracts do not have any clauses for PPE provision, who will provide them, types of PPE to be provided was per activity etc.

Monitoring of usage of PPE is not followed systematically by all contractors

Guidelines suggest PPE to be provided to all sanitation workers along with replacement but exact technical specifications are not mentioned

- A detailed assessment of guidelines on sanitation and SWM with a focus on PPE conducted.
- The findings of the assessment is utilized for preparation of the revised tender WMC for purchasing of PPE and PPE related resource materials
- The PPE gears that were distributed for the workshop for sanitation workers at Wai were given based on the list arrived after reviewing the guidelines



Refer Annexure for detailed assessment

Based on the assessment of the guidelines list of PPE which are prescribed according to activity was prepared

- After assessing the guidelines, a list of PPE according to the activity the sanitation worker is involved in was prepared, this was to get an understanding on the type of PPE that would be required for all sanitation workers in Wai
- This assessment also helped in procuring PPE for the sanitation workers as well as suggesting to WMC that all contracts need to mention this list of PPE to be provided mandatorily to all workers. For WMC staff future procurement of PPE could be based on this list

List of PPE as prescribed by various guidelines

1	CT/PT Cleaners	Face Mask	Rubber Gloves	Apron/ Uniform	Gumboots			
2	Solid Waste Handlers (SWM)	Face Mask	1.Gloves (for collection from residential areas) 2. Heavy Duty Gloves (for collection from hospitals, industries and commercial areas)	Uniform	Shoes			
3	Road Sweepers/ Drain Cleaners	Face Mask	Gloves	Uniform	Safety Shoes/Gumboots	Reflective Jackets		
4	Desludgers and Sewer Cleaners	1.Facemask 2.Breathmask	Rubber Gloves	Uniform	Gumboots (steel toe)	Safety Helmet	Safety Goggles	
5	FSTP Operators <i>(Acc to PPE Guidelines prescribed by TIDE Technocrats)</i>	1.Facemask 2.Half-face or full-face air purifier respirator with cartridge	2(a). Heat Resistant Hand Gloves (Leather) 2(b). Neoprene Rubber Hand Gloves 2(c). Nitrile Rubber Hand Gloves 2(d). Disposable Gloves	Uniform	1.Safety Shoes 2.Gumboots (steel toe)	1.Safety helmet 2. Face Shield with helmet	Safety Goggles	Ear plugs

This list of PPE acc to activity was prepared based on the guidelines prescribed by MoHUA, CPHEEO and TIDE Technocrats (FSTP operator in Wai)



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Qualitative discussions with all sanitation workers was held to understand the usage patterns

- Qualitative discussions were conducted with all sanitation workers to understand their views on the PPE that have been provided to them and how they use it and what challenges they face while using the PPE
- The findings from discussions were documented and used for drafting the PPE procurement tender, contracts for the labor supplier etc. and also for purchasing the PPEs that were to be distributed during the training workshop for sanitation workers in November 2019.

	WMC	NIRMAL BHARAT	SUMEET FACILITIES	PRIVATE CONTRACTOR	TIDE TECHNOCRATS
PPEs provided	<ul style="list-style-type: none"> • Helmet • Mask • Gloves • Gumboots • Uniform • Jacket • Raincoat 	<ul style="list-style-type: none"> • Mask • Gloves • Jacket • Gumboots 	<ul style="list-style-type: none"> • Helmet • Mask • Gloves • Gumboots • Uniform • Raincoat 	<ul style="list-style-type: none"> • Mask • Gloves • Raincoat <p><i>One of these are randomly given to workers</i></p>	<ul style="list-style-type: none"> • Helmet • Safety Glasses • Face shields • Masks • Safety Shoes • Gloves • Ear plugs • Half face air purifying respirator with a cartridge • Raincoat
PPEs not provided	<ul style="list-style-type: none"> • Safety Shoes 	<ul style="list-style-type: none"> • Apron • Safety glasses • Uniform 	<ul style="list-style-type: none"> • Apron • Safety glasses 	<ul style="list-style-type: none"> • Mask • Gloves • Raincoat • Safety Shoes 	<ul style="list-style-type: none"> • Apron
Replacement	<ul style="list-style-type: none"> • Yearly 	<ul style="list-style-type: none"> • Yearly 	<ul style="list-style-type: none"> • Replaced when damaged (2-3 months: masks and gloves) 	<ul style="list-style-type: none"> • Not fixed 	<ul style="list-style-type: none"> • Replaced when damaged
	Most workers do not feel the need hence do not use PPE	Some PPE is provided but workers don't use. Instead of jackets workers suggested uniforms should be given	Workers do not use PPE unless pressurized by supervisor.	PPE not provided despite multiple requests from workers.	Workers receive and use proper PPE and monitored by their site in-charge.

It was observed that most of the times the workers were not using required gears. In order to understand the reason more detailed discussions were conducted to understand the reasons for the same

Reasons for low usage of PPE were lack of replacements, activity specific PPE not provided and lack of comfort while using PPE

After assessing what type of PPE were provided to sanitation workers by all the employers it was found that most of them did receive some of the PPEs. The set they received was not complete. Another issue was that the PPE were not replaced when replacement was due.

- Majority of workers were not been provided all the necessary equipment and often not appropriate to their job profile.
- In case of damage to PPE, there was no proper replacement.
- It was observed that workers were not using the PPE correctly
- Workers also expressed that there was discomfort in using some items of the PPE provided to them.



Gear Wise Challenges in Usage



Helmet: Heavy and not comfortable while working. Scarf and caps are preferred over helmets. Does not fit properly.



Mask: causes difficulty in breathing. Get damaged easily and straps hurt ears. Lacks replacement.



Gloves: Not comfortable while working. Get damaged quickly and causes itching, sweating leading to bad odour.



Jacket: No need in day duty. Due to net gets damaged quickly and non washable. Perception issues.



Gumboots: Very heavy to walk with and fit issue. Causes shoe bite. Workers demand walking shoes.



Raincoat: Not provided to all workers. Poor quality as develop holes while working in bushes. Prefer single piece raincoat.



Uniform: Incorrect sizes are provided. Private contractors have not given uniforms. Need two pairs for regular use.

Complaints raised by sanitation workers are not properly recorded. The decision to redress the complaint depends solely on the supervisor

As per discussion with sanitation workers, most of them make a verbal report to their supervisors. Often these complaints were not redressed. Some workers purchase their own gears for their safety or use alternative options such as caps, scarfs and handkerchiefs etc. Such observations from sanitation workers were incorporated in the new PPE replacement register wherein complaint redressal was incorporated for WMC workers. For the other private workers, the revised contracts included a clauses on PPE usage as well as monitoring and replacement.

	WMC	NIRMAL BHARAT- CT/PT operator	SUMEET FACILITIES Private Desludger	LABOUR CONTRACTOR	TIDE TECHNOCRATS FSTP Operator
Complaint Redressal	Workers raise complaints verbally to the sanitation supervisor assigned to them. But all complaints not redressed, they are at sole discretion of the supervisor	Complaints are not raised since usage is very low.	Verbal complaints are raise, only masks or gloves are provided by the supervisor, although the time when they receive is not fixed	Most of the PPE are neither provided not replaced so workers do not raise complaints	Equipment is replaced whenever damaged and request for the same is placed. Although working without PPE is not allowed at site and site-in-charge monitors this.
Monitoring	Daily visual monitoring of workers happens but it is not recorded, and neither action are taken if workers are found not using PPEs.	No monitoring or maintaining record of gear usage. As workers are constantly on the move to clean CTs across the city	No monitoring by supervisor.	No monitoring or maintaining record.WMC sanitary supervisors monitor only their daily activities but not PPE usage	PPE usage is monitored by the site in-charge, who maintains a daily register of the usage..

There is lack of accountability towards the sanitation workers for PPE provision as well as for complaint redressal. FSTP operators (TIDE Technocrats) are in exception here, who have proper systems in place and the supervisor not allowing workers without PPE.

Workers face certain health issues due to improper use of PPE

Other aspect on PPE usage was that of the training on proper use of PPE and also the health issues related to improper use of PPE. Based on discussions with the workers, it was assessed that most of the sanitation workers have not received any formal training on use and maintenance of PPE. Although workers raised certain health issues they face due to non-use of PPE, a strong sense of understanding was missing as to why it is important to use PPE. Lack of awareness as well as behavioral issues were observed among workers that influenced the PPE usage. Some workers suggested that there is a need for training with proper monitoring mechanism. Usage could be made compulsory.

Trainings on PPE

WMC

Very few workers responded that they have received training for use of PPE. Some mentioned that they had received trainings but did not recollect when.

NIRMAL BHARAT CT/PT operator

No training on PPE received

SUMEET FACILITIES Private Desludger

Workers received training once. Trainings are not mandatory for new workers and are conducted on an adhoc basis

LABOUR CONTRACTOR

No training on PPE received

TIDE TECHNOCRATS FSTP Operator

Health officer conducts trainings every 3-4 months

Health issues mentioned by workers due to not wearing PPE

Safety glasses: eye irritation, infections

Mask: Fumes and odours cause headache, dizziness, vomiting, trouble breathing, asthma, cough, Insect bites and general irritation from flies

Gloves: Itching, rashes, boils, etc. due to skin coming in contact with unsafe items.

Helmet: Eye infection from getting hit by branch

Orientation and trainings for supervisors is also required to effectively monitor PPE usage

Discussions were also conducted with the six supervisors who manage and monitor the sanitation workers on field. These sanitation supervisors report on a regular basis to their senior staff for their respective organizations. They play an important role in the PPE provision as well as monitoring since the workers approach them for request for replacement or other complaints and concerns they would have.

Supervisors of WMC and private contractors

WMC Council Sanitation Supervisors



Umesh Kamble
Till 8th class



Rahul Gade
Till 5th class



Ravindra K
Graduate

NIRMAL BHARAT- CT/PT operator



Santosh Kumar
Till 5th class

SUMEET FACILITIES Private Deslugger



Santosh Bhise
Higher Secondary

TIDE TECHNOCRATS FSTP Operator



Snehal Bhosale
Graduate

Name and education

Trainings on PPE

Suggestions from supervisors on improving monitoring

No training on PPE received

Training on PPE received

- PPEs should be provided on regular basis.
- PPE usage should be compulsory
- If worker not using PPE even after warnings notice/penalty should be given.
- PPEs should be of good quality.
- To change the behavioral issue regular training should be given.
- Health check up should be done at least once a year.
- Monitoring should be done regularly

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Based on qualitative discussion of PPE vendors in Pune there is availability of work specific PPE (1/3)





- Since the closest market for procuring PPE from Wai is Pune, a market survey based on telephonic discussion with few PPE wholesale vendors in Pune was conducted. The discussion was aimed to understand availability, varieties, types and price ranges for PPE required for san workers in Wai
- Findings from qualitative discussions with PPE vendors was also used to purchase PPE for sanitation workshop and preparation of proposed revision of PPE purchase tender for WMC

	PPE	Activity	Variety available	Price range	Factors affecting price
	Safety Helmet (unisex)	Road sweeping/drain cleaning/ desludging/FSTP	3 varieties available	Rs 70 to Rs 300	Thickness of PVC, belt (adjustable or neck based)
	Nose Mask with valve	For all san workers	5 varieties available	Rs 15 to Rs 100	Valve quality, ppm, fabric
	Dotted rubber hand gloves (Reusable)	Road sweeping/SWM	3 varieties available	Rs 80 to Rs 180	Material and make (brand)
	Rubber Hand gloves (Reusable)	CT/PT Cleaning, Desludging	7 varieties available	Rs 60 to Rs 400	Thickness, size sizes from 10" to 22" available

The PPE available in the local market in Pune are available in a wide variety and price ranges. ISI markings, also technical specifications are not available and are neither demanded by customers. Purchasing is mainly based on the need and budget of the customers.

Based on qualitative discussion of PPE vendors in Pune there is availability of work specific PPE (2/3)





- For shoes and helmets the sizes and fittings cater mainly to male sanitation workers and there is unavailability for sizes, designs suited for women sanitation workers.

	PPE	Activity	Variety available	Price range	Factors affecting price
	Safety Goggles	Desludgers and FSTP workers	6 varieties available	Rs 60 to Rs 150	Material, quality of glass/polycarbonate sheet, design
	Reflective Jacket	Road sweeping/drain cleaning/ desludging/FSTP	4 varieties available	Rs 60 to Rs 140	Fabric and size of Reflective band (1" & 2")
	Gumboots half length (steel toe)	For all drain and CT/PT cleaners and desludgers	4 varieties available	Rs 120 to Rs 550	Length, material and sole
	Safety shoes (steel toe)	For SWM, road sweeping and FSTP workers	4 varieties available in leather 4 varieties available in rexine	Rs 600 to Rs 1800 Rs 200 to Rs 400	Material and sole

The local PPE market in Pune generally has vendors who mainly sell PPE of some established brands such as 3M, Karam, Venus, Mallcom, Midas and also local and generic brand PPE which are relatively lesser in price based on the material being used.

Based on qualitative discussion of PPE vendors in Pune there is availability of work specific PPE (3/3)

- Some specialized PPE are required only for those working with chemicals, machinery or in places of high temperature or presence of gases etc.
- In case of Wai, the FSTP is based on the pyrolysis technology wherein the temperatures of certain machines is high, also some workers have to work with chemicals also for which some special PPE gears are required.

	PPE	Activity	Variety available	Price range	Factors affecting price
	Face shield attachable to helmet	Only for FSTP operators	6 varieties available	Rs 60 to Rs 400	Material and design
	Half face air purifier respirator with cartridge	Only for FSTP operators	3 varieties available	Rs 60 to Rs 400	Quality of cartridge, brands
	Nitrile and Neoprene Gloves	For FSTP operators who and work with chemicals.	2 varieties available	Rs 80	Material
	Heat Resistant	For FSTP operators who have to operate machines of high temperature	3 varieties available	Rs 70 to Rs 350	Material (leather), stitching

Key findings from assessment phase were identified which were from which key action areas and interventions were recommended

1 Contracts do not include PPE related clauses

There is scope for including specific PPE related clauses for workers employed by the private sector. The contracts of the two private employers who employ the highest numbers of workers do not have any clauses for PPE provision as well as for usage.

2 Work specific PPE with adequate replacement not provided

Workers who are provided PPE are not according to the activity they perform. Guidelines from govt specify the types of PPE that need to be used according to activity and also such activity specific gears are available in the local markets in Pune. Also for workers who have been provided PPE a replacement regime is absent

3 Systematic monitoring of PPE usage is absent

Monitoring of PPE usage by WMC and by supervisors of private employers (apart from FSTP Operator-TIDE Technocrats) is not practiced. This has lead to very low usage among workers who have been provided few PPE e.g. Private desludger-Sumeet Facilities. For WMC supervisors monitoring PPE usage is not part of their current roles and responsibility.

4 Trainings and awareness for usage of PPE is low

Awareness among workers on health impacts of not using PPE is low, some of them do not feel the need to use PPE. Trainings on correct use and maintenance of the PPE has also not been conducted for most workers



Discussion with sanitation workers by WMC and CWAS team



Contents

1

Executive Summary

2

Assessment

- Profiling of sanitation workers
- Assessment of contracts and guidelines
- Qualitative discussion with PPE wholesalers

3

Implementation based on recommendations

4

Annexures

Based on the findings from the assessment, CWAS with support from WMC evaluated, and prioritised high impact, actionable solutions which were implemented

Ensuring adequate availability of appropriate PPE

- 1 PPE clauses drafted and included in all contracts of Sanitation Dept.
- 2 Revision of PPE procurement tender notice and work order for WMC

Improving monitoring and replacement

- 3 Sanitation supervisors given responsibility to monitor PPE usage and use the monitoring register designed by CWAS
- 4 SaniTab app used by CWAS with support from WMC to monitor PPE usage and document the data generated
- 5 Improvements made in the replacement regime as per requirement from guidelines and suggestions from sanitation workers

Generating awareness about PPE

- 6 Based on assessment of guidelines PPE procured and distributed to all sanitation workers
- 7 Training and orientation workshop on safety at workplace conducted for all sanitation workers
- 8 Health camp and counselling sessions organized for all sanitation workers
- 9 Resource materials designed and used for sanitation workers on PPE usage and maintenance

1 Inclusion of PPE clauses for all contracts of sanitation department (1/2)

Based on the assessment of the contracts of the sanitation department, it was found that most contracts did not have any mandatory provisions for providing PPE to the sanitation workers especially those employed by the private labour contractor. CWAS team referred contracts of other ULBs and other organizations and drafted the clauses.

Process of implementation

- All contracts managed by the sanitation department were assessed with respect to clauses for safety of sanitation workers
- Research conducted on PPE clauses in contracts of other municipal councils in the State
- Brainstorming sessions with WMC officials conducted after which clauses were drafted.
- The new clauses focused on
 - Adequate quantity which are provided with respect to the kind of work
 - Ensuring PPE usage with penalty for non-compliance
 - Monitoring and reporting mechanism for PPE usage / provision / replacement
- The clauses drafted were then fine tuned after discussion with the Chief Officer and were then included for the labour contract of SWM, drain cleaning and road sweeping



Brainstorming session with WMC to discuss the clauses drafted

Inclusion of PPE clauses for all contracts of sanitation department (2/2)

WMC contract with PPE clauses included for labour supplier for which tender has been released

वाई नगरपरिषद वार्ड
(जि.सातारा)

दिनांक- / /२०२०

प्रति,
भा.मुख्याधिकारी सा.
वाई नगरपरिषद, वार्ड

यांचे
टेडर फॉर्म भरणाऱ्याचे नाव
व

कामाचे क्रमांक :- २

कामाचे नाव :- **वाई नगरपरिषद वार्ड नगरपरिषदेचे दिनांक प्रमाणे मी/आमी/आमची संस्था नगर तयार आहे. सदरचे कामासाठी मी नगरपरिषद कार्यादेश देईल त्या दिना देणेची जबाबदारी माझे/आमचे माताच्या/साहित्याच्या/कामाच्या साठी**

अ.क्र.	कामाचा/माताचा/सा
१	वाई नगरपरिषदेकडे साहित्यासह मजूर पुरव

अटी व शर्ती :-

- १) वर नमूद केलेल्या कामासाठी
- २) दिलेले दर एका वर्षासाठी सर्व करासहीत देणेचे आहेत
- ३) कार्यादेशात देण्यात येणारे मु
- ४) कोणत्याही स्थितीत कार्यादेश

मला मान्य आहे
२१)सदर कामी मखेदार याना स्पष्ट निर्देश देण्यात येतो की दि १ जुलै २०१७ नंतर जी एस टी ची अंमलबजावणी सुरु झालेली आहे त्यानुसार या कंत्राटदार जी एस टी अधिनियमानुसार कराची आकारणी होणार आहे त्यामुळे निविदासादर करताना दि १ जुलै २०१७ नंतर लागू जी एसटी च्या दराच्या बोजाचा विचार करूनच मखेदार यानी निविदा सादर करावयाच्या आहेत .

३०) घनकचरा संकलन, वाहतूक व त्यावर प्रक्रिया करणाऱ्या प्रत्येक कामगाराने सुरक्षा साधनांचा वापर न करता कच-यास स्पर्श करू नये.सगळ्या कामगारांना (विशेषतः महिलांना) कामावर असताना प्रत्येक वेळी खालील ISI चिन्हान्वित सुरक्षा उपकरणे दिले पाहिजेत व त्याचा वापर केला गेला पाहिजे

- नाक आणि चेहेऱ्यावर बसणारा धूळप्रतिबंधित मास्क
- रचछट हातमोजे (नियामी क्षेत्रातील घनकचरा हाताळणाऱ्या कामगारांना) हेथी ड्युटी हातमोजे (व्यावसायिक, औद्योगिक, रुग्णालयातील घनकचरा हाताळणाऱ्या कामगारांना)
- कामाकरिता वापरण्याचे कपडे/गणवेश
- कामाकरिता वापरण्याचे बूट/गमबूट (गमबूट नाली साफ करणाऱ्या कामगारांकरिता)
- हेल्मेट
- रेनकोट

३१)कंत्राटदाराने त्यांच्याकामकाजासाठी महिला कामगार/बचत गट तसेच जनजागृतीसाठी महिला बचत गटाचा समावेश करण्यासाठी प्रयत्नशील असावे.

३२)कंत्राटदाराने दिलेल्या सर्व सुरक्षा साधनांची, त्याच्या वापराची तसेच ते नियमितपणे क्विचा कामगारांनी विनंती केल्यात घडलेले पाहिजेत त्याची नोंदवही ठेवणे आवश्यक आहे. तसेच नगरपरिषदेकडे विल देण्याच्या वेळी नोंदवही व उपकरणे बदल केल्याचा अहवाल सदर करणे आवश्यक असेल.

३३)कंत्राटदाराने कामगारांचे सुरक्षा साधनांच्या वापरवर प्रशिक्षण व आरोग्य तपासणी नियमितपणे करावी

३४)सुरक्षा नियमांचे पालन होत नसेल तर कंत्राटदाराला वार्ड नगरपरिषदेकडून ताकीद दिली जाईल. एका तिमाहीत जर दोनदा क्विचा अधिक वेळा ताकीद मिळाली तर वार्ड नगरपरिषदेकडून —रू रकमेचा दंड आकारण्यात येईल व ती रक्कम विलानून वजा केली जाईल.

३५) सदरचे मजूर पुरवठा करणे शासनमान्यता रजिस्ट्रेशन असावे.

चरील सर्व अटी/शर्ती मला मान्य असून त्या नुसार वर नमूद केलेल्या दराप्रमाणे मी वार्ड नगरपरिषदेकडून आरोग्य विभागास स्वच्छतेच्या कामासाठी लागणारे विविध साहित्याचा पुरवठा करणेस तयार आहे. तरी माझ्या वरील दराप्रकाचा विचार व्हावा. ही विनंती.

English translation of the clauses

No worker will come in physical contact with the solid waste, during collection, conveyance or otherwise.

Each worker who is involved in the collection, conveyance, treatment of the solid waste is required to be given and wearing following ISI marked safety equipment's / PPEs at all times while at work:

- Dust/Nose mask that fits over nose and mouth;
- Clean hand gloves: - Gloves(for workers involved in collection and transportation o domestic waste from residential areas) and Heavy DuGloves (for workers involved in collection and transportation of domestic waste from commercial areas, hospitals and institutions)
- Uniform
- Safety Shoes/Gumboots (Gumboots - For workers who shall be cleaning open drains)
- Helmet
- Rain coat

The contractor shall provide gender sensitive personal protective equipment (PPE) to all women workers of the team (eg: right size safety shoes, ladies raincoats etc)

The contractor shall consider engaging women workers/SHGs for their operations as well as local SHG groups for sensitization and awareness activities.

The contractor also needs to provide workers access to clean water, soap, disposable paper towels, and a first aid kit in the work station /office/vehicle.

Register should be maintained by the contractor of all the provided PPEs along with monitoring for usage and replacement of the PPE.The contractor is required to produce such records before WMC as and when demanded by them.

The PPE should be replaced on a regular basis or if any request is received from the workers, a register should be maintained to record requests for replacements.

The contractor shall submit a report on monitoring of usage and replacement of the PPE along with the bill.

In case of non-compliance with safety regulations, the Contractor will be given a warning by the WMC. If two or more such warnings are received within a quarter, then a penalty shall be levied by WMC and this would be deducted from the bill.

Revised tender notice and work order for PPE procurement for WMC sanitation workers as per guidelines to be used in future (1/2)

One of the findings from the assessment and qualitative discussion with sanitation workers and WMC officials was that work specific, user friendly PPE with adequate replacement are not provided. Previously WMC used to procure a same set of PPE for all sanitation workers , these PPE were not procured with respect to the work done by the workers and

Process of implementation

- List of mandatory PPE according to activity was prepared. This was prepared based on the assessment of guidelines related to PPE and from the qualitative discussions with the sanitation workers and the PPE vendors.
- Existing PPE tender notice and work orders for PPE procurement were assessed
- Revised tender notice and work order for PPE procurement were drafted and shared with WMC.
- The revised tender notice and work order shall be used for future procurement of PPE for all sanitation workers of WMC



Revised tender notice and work order for PPE procurement for WMC sanitation workers as per guidelines to be used in future (2/2)

WMC tender form prepared for procurement of PPE

WAI MUNICIPAL COUNCIL, WAI (District- Satara)	Terms and conditions:-	18. These PPEs should be supplied within 8 days from receipt of this order. Failure to do so within the supply period will result in a penalty of Rs. 100 per day and deducted from the bill.																																																																																																									
<p style="text-align: right;">Date: / /20</p> <p style="text-align: center;">Tender Form</p> <p>To, Chief Officer Wai municipal council, Wai</p> <p>Bidder name:- _____ Address:- _____</p> <p>Work no:- ____ Work name:- Supply of personnel protection equipment (PPE) (ISI mark) to the Sanitation department of Wai municipal council.</p> <p>As per the Wai municipal council's tender notice published on _____ in the _____ newspaper, I/we/our shop/our institute is ready to provide all types of personnel protection equipment to the sanitation department, Wai municipal council. For the concerned work mentioned rates in the tender form by me/us in the year 20____ will be obligatory to me/us/our shop/our institute from the date of work order issued to the one year and the responsibility to supply the material to the council will be mine/ours/our shop/our institute. In this regards my/our/our shop/our institute rates in the rate table for the below mentioned work will remain as mentioned thereafter.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Sr. no.</th> <th>Name of PPE</th> <th>Specifications</th> <th>Quantity</th> <th>Make/Brand</th> <th>Rate per item</th> <th>Total cost of gear</th> </tr> </thead> <tbody> <tr><td>1</td><td>Nose Mask with valve (Washable)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td>Rubber Gloves (Orange)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>Dotted rubber-cloth hand gloves</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td>Safety Helmet</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>Safety Goggles</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>Apron</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>Safety shoes</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td>Gumboot (Steel toe)</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	Sr. no.	Name of PPE	Specifications	Quantity	Make/Brand	Rate per item	Total cost of gear	1	Nose Mask with valve (Washable)						2	Rubber Gloves (Orange)						3	Dotted rubber-cloth hand gloves						4	Safety Helmet						5	Safety Goggles						6	Apron						7	Safety shoes						8	Gumboot (Steel toe)						<ol style="list-style-type: none"> 1. No advance amount will be sanctioned for this work. 2. I/we/our shop/our institute will be bound to complete the work of providing PPEs to the sanitation department, Wai municipal council within the time given in the work order. 3. In any case, I/we/our shop/our institute agree that the term will not be extended beyond what is mentioned in the work order. 4. If the work is not done in time, the deposit will be confiscated and penal action will be taken. This is acceptable to me/us/our shop/our institute. 5. I/we/our shop/our institute will be responsible for complying with the terms and conditions of the e-tender form, agreement and work order 6. I/we/our shop/our institute will be obliged to pay government taxes for this work. 7. I/we/our shop/our institute agree that the deposit I paid will not be refunded until the work is completed. 8. In case of any accident or mishap, I/we/our shop/our institute will be fully responsible for providing PPEs to the sanitation department, Wai municipal council. 9. I/we/our shop/our institute agree that the provision of PPEs to the sanitation department, Wai municipal council is to be made under the supervision of mukadams and helpers. 10. I/we/our shop/our institute agree that taxes will be deducted from this work bill as per the rules. 11. If there is any dispute between me/us/our shop/our institute and the Wai municipal council, I/we/our shop/our institute agree that it is necessary to file a case in the Wai court as Wai municipal council is within the boundaries/jurisdiction of the Wai court. 12. As per the provision of Section 34 of the Mumbai Stamp Act, 1958 dated 20/07/2009, in case of any doubt in future regarding stamp duty, the entire responsibility will be on me/us/our shop/our institute. 13. If this contract is to be terminated, it will be mandatory for me/us/our shop/our institute to give a preliminary notice to the Wai municipal council one month in advance. Failure to do so will result in recovery of the cost incurred by the municipal council. 14. It will be mandatory for me/us/our shop/our institute to supply materials/PPEs of Indian Standard (ISI Mark) companies only as per the work order issued. 15. I/we/our shop/our institute will be obliged to provide PPEs to all male and female workers of the sanitation department, Wai municipal council. 16. The rates I/we/our shop/our institute have mentioned in the tender will not exceed the market price. If the rate goes above the market price, I/we/our shop/our institute will be fully responsible for compensating it. 17. The Wai Municipal Council reserves the right to approve or reject the tender without giving any reason. 	<p>Tender form receipt no:- _____ Date:- / /20 Earnest money receipt no:- _____ Date:- / /20</p> <p style="text-align: right;">Signature of the Bidder</p> <p>Place:- _____ Date:- / /20</p> <p style="text-align: right;">Chief Officer Wai Municipal Council, Wai</p> <p style="text-align: center;"><i>Annexure 1: List of mandatory PPE as per activity according to National guidelines*</i></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Sl. No.</th> <th>Activity</th> <th>Mandatory PPE</th> <th>Other PPE</th> <th>Other PPE</th> <th>Other PPE</th> <th>Other PPE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CT/PT Cleaners</td> <td>Face Mask</td> <td>Rubber Gloves</td> <td>Apron/Uniform</td> <td>Gumboots</td> <td></td> </tr> <tr> <td>2</td> <td>Solid Waste Handlers (SWH)</td> <td>Face Mask</td> <td>1. 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Face Shield with helmet Safety Goggles Ear plugs</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 5px;">*Source: (Advisory on Community and Public Toilets, 2018, MoHA, Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, CPHEEO, MoHA), SBM Municipal Solid Waste Management Manual, 2016, CPHEEO, technical collaboration with GIZ)</p>	Sl. No.	Activity	Mandatory PPE	Other PPE	Other PPE	Other PPE	Other PPE	1	CT/PT Cleaners	Face Mask	Rubber Gloves	Apron/Uniform	Gumboots		2	Solid Waste Handlers (SWH)	Face Mask	1. Gloves (for collection from residential areas) 2. Heavy Duty Gloves (for collection from hospitals, industries and commercial areas)	Uniform	Safety shoes		3	Road Sweepers/ Drain Cleaners	Face Mask	Gloves	Uniform	Safety shoes/Gumboots	Reflective jackets	4	Desludgers and Sewer Cleaners	1. Facemask 2. 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The revised PPE procurement tender notice and work order have been prepared and shared with WMC. These documents would be used for future procurements of PPE for sanitation workers who are employed with WMC. The quantities of PPE in this tender will also consider the replacement cycles wherein some gears like masks and gloves will be procured more in number.

PPE monitoring included as one of the responsibility to be performed by sanitation supervisors of WMC

Based on the assessment and qualitative discussions with the sanitation workers it was found that systematic monitoring of PPE usage was absent. The three sanitation supervisors used an attendance register which has few notes on the activities each worker assigned to them conducted. The old register was replaced with an improved version.

Process of implementation

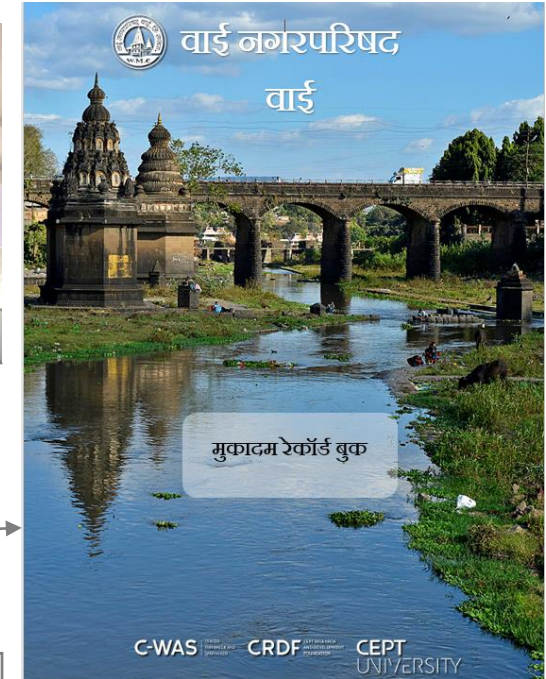
- Additions and improvement were made in the data recording formats which was being used by the sanitation supervisors.
- A section added on monitoring usage of PPE by san workers in a new monitoring register
- This monitoring report is submitted to SI for checking
- The new monitoring Register was given to all the 3 San supervisors
- The register was used for March and suggestions received for improvement of the format – e.g. printing of names of workers, add column for signature of worker, bigger size of book, space for SI's signature etc. were incorporated



Sanitation supervisors using the new register

New monitoring register for sanitation supervisors in which PPE monitoring as been included

New register monitoring includes daily monitoring of the employer name, tasks, attendance and PPE worn

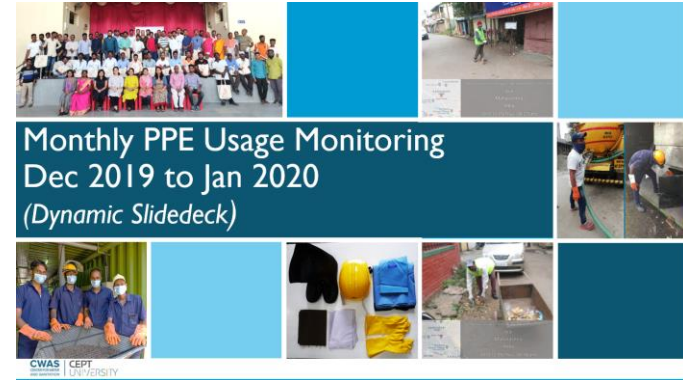


Sr no.	Name	organisation	Details of the task undertaken	Attendance	Usage of PPEs					
					Helmet	Mask	Jacket	Handgloves	Gumboots/boots	Uniform

SaniTab app used by CWAS team with support from WMC to monitor PPE usage and document the data generated

Apart from the WMC sanitation workers, CWAS team has been supporting WMC to monitor usage of PPE by using the SaniTab app. The analysis and findings from monthly SaniTab survey is documented in form of a slide deck and shared with WMC

1. SaniTab based regular monitoring of usage of PPE of sanitation workers initiated from December 2019.
2. The SaniTab survey captures data on:
 1. Employment type of worker,
 2. type of gears available
 3. Gears used at time of survey
 4. Issue with gear or replacement
3. The survey is conducted every month to monitor PPE usage
4. The data analysis and findings compiled in form of a **Monitoring slidedeck** which is dynamic in nature with monthly data updates. This slidedeck would be shared with WMC for discussions on further improving the PPE usage amongst sanitation workers



PPE Usage Survey Results (December 2019 – January 2020)

Gears distributed to ~ 84
No. of workers surveyed~ 82*

NOSE MASK



- 22 no. of workers not using mask uses handkerchief/cloth as it is more comfortable or the mask is torn
- 23 of workers not using mask informed dust mask is torn/straps are torn apart
- Other reasons for not using mask: Discomfort in breathing, Straps and nose rim hurts, Causes missing on glasses

* 2 workers were absent

Gears distributed to ~ 51
No. of workers surveyed~ 49

DOTTED RUBBER AND CLOTH HAND GLOVES



- Most of the workers not using gloves informed that they find it uncomfortable
- 3 workers used other gloves/woolen as it was cold
- 3 workers informed that their gloves were torn

* 2 workers were absent

Gears distributed to ~ 27
No. of workers surveyed~ 27

RUBBER GLOVES



- 8 of 11 workers not using gloves found it loose and uncomfortable
- Only 1 worker informed that the glove is torn and needed replacement

Gears distributed to ~ 75
No. of workers surveyed~ 73

SAFETY SHOES



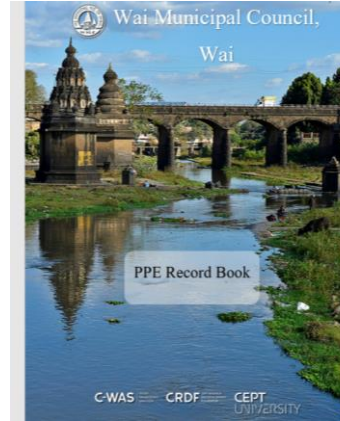
- Most of the workers (28 out of 42) were found to use slippers/sport shoes as they found safety shoes heavy and hurted their legs.

PPE Monitoring slide deck prepared for reporting the SaniTab monthly PPE usage survey data

A replacement regime of PPE set in place for WMC sanitation workers

WMC did not have a replacement regime in place. Distribution of PPE was a one time activity post which workers did not get any replacements in case of damage/wear and tear of the PPE. CWAS supported WMC in preparing a distribution and replacement regime.

1. Based on discussions with WMC officials a replacement regime format was prepared. Based on which a new PPE record book was prepared.
2. The PPE record book would have names of the sanitation supervisors along with name of workers under him. Along with list of PPE mentioned across all workers.
3. It would be the responsibility of the sanitation supervisors to distribute as well as replace the PPE if request is received. The worker will have to submit the old damaged PPE to avail replacement.
4. The sanitation inspector would inspect the data entered by all the three sanitation supervisors on a regular basis.



Name of the worker: _____								
Helmet	Safety goggle	Nose Mask	Hand Gloves	Jacket	Safety Shoes	Gum-boots	Remark	Sign
Date	Date	Date	Date	Date	Date	Date	PPE set given	Sign
			Date				Hand gloves are torn.	Sign

Sample of formats prepared for capturing replacement and distribution of PPE in the PPE record book

PPE distributed to all sanitation workers during the training workshop conducted by WMC in November 2019

It was found, during the qualitative discussions with the sanitation workers that some of them did not have any PPE, especially those employed by the private labour contractor, some had behavioral issues and did not use the PPE. Keeping these mind, PPE were purchased and distributed to all sanitation during the workshop conducted in November 2019.

1. Based on the qualitative discussions and survey of PPE vendors in Pune, PPE gears were procured and distributed to all san workers during the training workshop
2. The PPE were distributed according to the type of work and as per the guideline assessment that was conducted
3. The PPE were distributed during the training workshop
4. Demonstration was also given as to how to use the PPE by experts from Kam Avida,Pune
5. A record was also kept on the PPE distributed to each worker and was shared with WMC



PPE distribution to all sanitation workers along with demonstration on use of the PPE

Training and orientation workshop on safety at workplace conducted for all sanitation workers

A need was felt from the discussion with sanitation workers that most of them had not received any formal training on the use and importance of PPE for which a workshop on sensitizing and training sanitation workers was organized.

1. The workshop and health camp was organized by WMC with support from CWAS in Nov 2019.
2. WMC hosted the event and private contractors and elected representatives were also invited for the workshop.
3. The objective of conducting the workshop was orient the sanitation workers towards importance of using personal protective equipments (PPE).
4. The workshop also aimed at acknowledging the sanitation workers and attempting to provide dignity to their work. The workshop also provided a platform for WMC to felicitate and appreciate the sanitation workers.
5. A workshop report was also prepared and shared with WMC.



Felicitation of sanitation workers and Interactive sessions conducted by sector experts



Health camp and counselling session organized as part of the workshop for all sanitation workers

A health camp was also organized during the training workshop for the sanitation workers. Discussions are ongoing with WMC to formalize the health camps such that they are conducted on a regular basis.

1. The health camp was conducted by Dr Gojira Jagtap who practices in Wai and has an experience of consulting the sanitation workers.
2. The health check-up included height, weight, blood pressure, ENT check up and blood sugar level (random). Medical prescriptions were given to workers who had ailments.
3. A counselling session was also taken by Dr Gojira with a focus on addiction and importance of having a healthy lifestyle.
4. Discussions have been initiated to formalize regular health checkups for all sanitation workers by WMC



Health camp and counselling session conducted by Dr Gojira

Resource materials designed and used for sanitation workers on PPE usage and maintenance

Resource materials have been designed which depict why it is necessary to use PPE, how to use them and how to maintain them. These resources are mainly in form of flyers and posters which were used extensively during the training workshop. Discussions are ongoing with WMC to place these resource materials permanently for which places have been identified.

1. Flyers and Posters on PPE prepared focus on:

1. Types of PPE to be worn according to activity
2. Health implications on not using PPE
3. Storage, maintenance and monitoring
4. Step to enforce a good PPE culture

2. All the posters and flyers are pictorial in nature and in local language which are easy to understand.

For resource materials on sanitation workers, click [here](#)



Flyers and poster designed for showing importance of using PPE



WMC succeeded in institutionalizing the interventions with support from CWAS and aim to keep the momentum going

Interventions implemented by WMC

Ensuring adequate availability of appropriate PPE

- 1 PPE clauses drafted and included in all contracts of Sanitation Dept.
- 2 Revision of PPE procurement tender notice and work order for WMC

Improving monitoring and replacement

- 3 Sanitation supervisors given responsibility to monitor PPE usage and use the monitoring register designed by CWAS
- 4 SaniTab app used by CWAS with support from WMC to monitor PPE usage and document the data generated
- 5 Improvements made in the replacement regime as per requirement from guidelines and suggestions from sanitation workers

Generating awareness about PPE

- 6 Based on assessment of guidelines PPE procured and distributed to all sanitation workers
- 7 Training and orientation workshop on safety at workplace conducted for all sanitation workers
- 8 Health camp and counselling sessions organized for all sanitation workers
- 9 Resource materials designed and used for sanitation workers on PPE usage and maintenance

- WMC was able to implement the interventions because there was a sense of acknowledgement that safety of sanitation workers is important and secondly there is scope for improvement in making their working conditions better.
- The approach that was taken by WMC along with CWAS was to make the interventions sustainable by integrating them in the existing systems.eg : the task of monitoring PPE usage was added to the responsibility of WMC supervisors who were already recording attendance and work done.
- Since 60% of the sanitation workers in Wai are employed by the private sector it was also important to institutionalize safety of such workers which was done through including PPE specific clauses in all contracts of sanitation dept.

Way ahead

WMC aims to keep further improve by planning and implementing more. Some action points identified for future are:

- Training the WMC and private supervisors on monitoring of PPE usage and using the SaniTab app.
- Regularizing and formalizing health camps and training sessions.
- Using the findings from the monthly Sanitab survey conducted by CWAS team and come up with solutions for the same.
- Communications campaigns for sanitation workers which highlight the aspect bringing in dignity to their work

Some key learnings have been derived based on the study and interventions that WMC was able to implement to improve safety and working conditions for sanitation workers

With WMC being successful in implementing the interventions suggested by CWAS, the council staff now acknowledge the fact that safety of sanitation workers is important and an initiation of a shift in the mindset of decision makers towards sanitation workers has happened during the course of this study. Some key findings have been derived that could be applied for other cities who want to improve safety of sanitation workers.

1

Data on sanitation workers ecosystem

- Collect real time data on sanitation workers, service providers, PPE provision, replacement etc. to enable preventive maintenance, efficient and effective response

2

Adopt a holistic approach to improve

- Holistic approach including technology, governance, and behavior change, as the problem is multi dimensional along with effective participation from other stakeholders.

3

Provide PPE adequately and monitor diligently

- Provide PPE to all with special focus on those employed through private sector. Monitoring and replacement regime to be set up, contracts with the private sector need to address these.

4

Acknowledge their work

- Change attitude towards sanitation workers, consider them as assets, acknowledge their work and bring in dignity



Contents

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Assessment

- Profiling of sanitation workers
- Assessment of contracts and guidelines
- Qualitative discussion with PPE wholesalers

3

Implementation based on recommendations

4

Annexures

Annexure: Assessment of Various Guidelines for PPE

1 Advisory on Community and Public Toilets, 2018, MoHUA (technical collaboration with GIZ)

Section No.	Aspect	Highlights
4.1.2	Equipments and Consumables (O&M)	<ul style="list-style-type: none"> Cleaning of toilet requires various equipment and supplies typically including safety gear for the cleaner (rubber gloves, face mask, boots and uniform/apron), consumables (such as detergent and disinfectants) and other miscellaneous items for convenience. Operation staff should have an inventory and stocking system.
3.4.8	Storeroom	<ul style="list-style-type: none"> A small room for storing cleaning materials/equipments is essential in all toilet complexes and is very crucial in case of PTs (size of the room can vary).

List of Consumables and Equipments

Cleaning equipments	Consumables	Other equipments	Cleaner safety gear
<ul style="list-style-type: none"> Brush for cleaning toilet seats / bowls Plastic scrubber / brush for cleaning wash basins Brush / scouring paper for cleaning tiles Brooms for wet areas Brooms for dry areas Cloths / mops for cleaning floor Floor wipers Plastic scrubber / sponge / cloths for scrubbing plumbing fixtures and other general purposes Bucket for mixing floor cleaning agent with water Mug for pouring floor cleaning agent mix Sponges / soft cloth for cleaning mirrors Dust collecting pan Dust bins 	<ul style="list-style-type: none"> Sanitary ware cleaning agent Tiles cleaning agent Floor cleaning agent Plumbing fixtures cleaning agent Glass and mirror cleaning liquid Soap / non-abrasive cleaning liquid Disposable garbage bags Hand washing soap Naphthalene balls 	<ul style="list-style-type: none"> Sign boards / Warning Signs Trolley / tray for carrying cleaning equipment Room fresher (optional) Plumber's snake Plunger Ladder 	<ul style="list-style-type: none"> Rubber Gloves Face mask Boots Uniform / Apron

Provision of PPEs is an "essential parameter" (and not mandatory) as per the SBM checklist for Swachh Survekshan 2020.



Annexure: Assessment of Various Guidelines for PPE

1

Advisory on Community and Public Toilets, 2018, MoHUA (technical collaboration with GIZ)

Section No.	Aspect	Highlights
4.1.2	Cleaning cycle	<ul style="list-style-type: none"> As much as the footfall demands or minimum 3 times a day. Should be managed by the operator. Some cleaning activities are required periodically once a week or fortnightly, e.g. fittings, wares and surfaces.
4.2 (C)	Frequency of replacement of PPEs	<ul style="list-style-type: none"> All cleaning gloves, aprons, masks, gum boots, uniforms, etc. the items should be replaced at least once in 6 months.

List of Consumables and Equipments

Cleaning equipments	Consumables	Other equipments	Cleaner safety gear
<ul style="list-style-type: none"> Brush for cleaning toilet seats / bowls Plastic scrubber / brush for cleaning wash basins Brush / scouring paper for cleaning tiles Brooms for wet areas Brooms for dry areas Cloths / mops for cleaning floor Floor wipers Plastic scrubber / sponge / cloths for scrubbing plumbing fixtures and other general purposes Bucket for mixing floor cleaning agent with water Mug for pouring floor cleaning agent mix Sponges / soft cloth for cleaning mirrors Dust collecting pan Dust bins 	<ul style="list-style-type: none"> Sanitary ware cleaning agent Tiles cleaning agent Floor cleaning agent Plumbing fixtures cleaning agent Glass and mirror cleaning liquid Soap / non-abrasive cleaning liquid Disposable garbage bags Hand washing soap Naphthalene balls 	<ul style="list-style-type: none"> Sign boards / Warning Signs Trolley / tray for carrying cleaning equipment Room freshener (optional) Plumber's snake Plunger Ladder 	<ul style="list-style-type: none"> Rubber Gloves Face mask Boots Uniform / Apron



Annexure: Assessment of Various Guidelines for PPE

1 Advisory on Community and Public Toilets, 2018, MoHUA (technical collaboration with GIZ)

Section No.	Aspect	Highlights
5.5	Occupational Health and Safety (Management and Sustainability)	<ul style="list-style-type: none"> One of the critical management related issues to be addressed is health and safety of the operator's staff. This subject can be addressed through carefully drafted contracts mandating operator to provide minimum standards of working environment for their employees as per labour laws, at the toilet premises. Areas that should be covered include working hours, minimum wages, medical & health insurance, uniforms, use of PPEs, cleaning equipment, storage space, etc. while operating and maintaining the toilet. Importantly, operator must not violate the stipulations outlined in Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, among other water and wastewater legal provisions. Occupational health and safety is also one of the subjects the ULB is obligated to indirectly monitor.

Key Recommendations

- ULB should clearly provide clauses related to **provision, monitoring, maintenance and replacement** of PPEs within the contract.
- ULB should monitor its usage (indirectly) under the occupational health and safety subject.
- Contractor/operator must provide and keep a record of all the necessary PPEs to the CT/PT cleaners.
- PPEs should be replaced **once in 6 months**

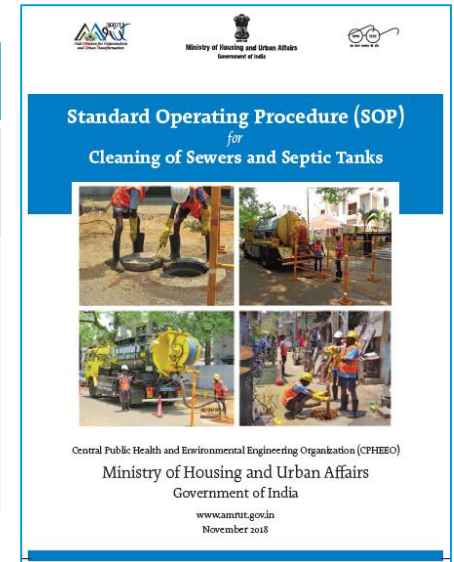


Annexure: Assessment of Various Guidelines for PPE

2 Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, (CPHEEO, MoHUA)

- The SOP discusses on the precautionary steps to be followed while cleaning of sewers and desludging of septic tanks.
- **Objective:** The main objective of this SOP is to **eliminate hazardous cleaning** or at least to **avoid the accidents** due to improper practice of cleaning of sewers/emptying of septic tanks, thereby, preventing human casualties.
- Further, the SOP intends to **prevent the risk of acquiring diseases** to the concerned person **because of following the unhygienic & unscientific working procedures.**

Section No.	Aspect	Highlights
6.1	Septic Tank Emptying Frequency	<ul style="list-style-type: none">• "it is ideal to clean the septic tanks once in one year or two years based on its design criteria. But in no case the cleaning frequency shall exceed two years."
10	PPEs for Desludging staff	<ul style="list-style-type: none">• All the protective gears and safety devices shall be checked once in every six months and repaired/replaced as necessary.• Proper inventory of all the protective and safety gears to be maintained.• 2 sets of working clothes should be provided to the workers, dedicated to desludging process.



Annexure: Assessment of Various Guidelines for PPE

2 Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, (CPHEEO, MoHUA)

Section No.	Aspect	Highlights
Table 1	List of PPEs for workers involved in sewer cleaning or septic tank emptying	<ul style="list-style-type: none"> Table 1 are the protective gears and safety devices, but not limited to, as prescribed by Prohibition of Employment as Manual Scavengers and their Rehabilitation Rules, 2013 to prevent any hazardous entry of humans into the sewers.
14.1 (vii)	Training of Workers	<ul style="list-style-type: none"> Training programs on the technique, equipment operation and emergency procedures shall be conducted for the workers once in every two years.

Table 1

S. No.	Protective gears and safety devices	S. No.	Protective gears and safety devices
1.	Air compressor for blower	2.	Airline breathing apparatus
3.	Airline respirator with manually operated air blower	4.	Air purifier gas mask/chin corthege
5.	Artificial respiration/reticulate	6.	Barrier caution tape
7.	Barrier cream	8.	Barrier cone
9.	Blower	10.	Breath mask
11.	Breathing apparatus	12.	Caution board
13.	Chlorine mask	14.	Emergency medical oxygen resuscitator kit
15.	First aid box	16.	Face mask
17.	Gas monitor (4 gases)	18.	Guide pipe set
19.	Full body wader suit	20.	Fishing wader suit attached with boots
21.	Hand gloves	22.	Head lamps
23.	Helmet	24.	Helmet demolishing
25.	Lead acetate paper	26.	Life guard pad
27.	Modular airlines supply trolley system	28.	Normal face mask
29.	Nylon rope ladder – 5 m	30.	Nylon safety belt
31.	Pocket book	32.	Port oxy
33.	Raincoat	34.	Reflecting jacket
35.	Safety belt	36.	Safety body clothing
37.	Safety body harness	38.	Safety goggles
39.	Safety gumboots	40.	Safety helmets
41.	Safety showers	42.	Safety torch
43.	Safety tripod set	44.	Search light

***No particular list of PPEs is mentioned in this SOP dedicated to desludging workers only.**

Annexure: Assessment of Various Guidelines for PPE

2

Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, (CPHEEO, MoHUA)

Section No.	Aspect	Highlights
14.1	Roles and Responsibilities of ULB	<ul style="list-style-type: none">• ULBs must conduct survey to identify manual scavengers/ sanitation workers to form a mechanism to rehabilitate or integrate them to the system formally;• All the workers involved in cleaning shall be familiarized with the operating procedures of cleaning equipment and emergency procedures;• Training programs shall be conducted once in every two years;• Sufficient copies of the operating procedures of the cleaning machines/ equipment shall be maintained in local language and the copies shall be provided to the field staffs;• Ensure with records, that all cleaning staff undergoes regular medical checkups and administered vaccinations.• Ensure the staffs assigned for cleaning sewers/septic tanks has a life insurance policy for at least Rs. 10 lakhs, for which the premium shall be paid by the employer;

Annexure: Assessment of Various Guidelines for PPE

2 Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, (CPHEEO, MoHUA)

Section No.	Aspect	Highlights
14.1	Roles and Responsibilities of Registered Agencies/ Contractors/ Employers	<ul style="list-style-type: none">• Shall provide adequate safety gears and cleaning devices as prescribed in the SOP and the Rules;• Responsible for paying premium for life insurance of the staffs assigned with him/her for cleaning of sewers/septic tanks;• Ensure that all cleaning staffs undergoes regular medical checkups and administered vaccinations as deemed appropriate; and• Ensure that all cleaning staffs are adequately trained and familiarized with the operating procedures of cleaning equipment and emergency procedures.
	Roles and Responsibilities of Employees	<ul style="list-style-type: none">• Employees must familiarize them with the SOP and follow the procedures to ensure the personal safety and the safety of others.• In case of any doubts in the operating procedures of cleaning equipment and emergency procedures or inadequate training, the employee shall report the same to the concerned authorities.• Employees should, despite their discomfort, use all the necessary safety gears and cleaning devices when employed in cleaning sewers/septic tanks.

Annexure: Assessment of Various Guidelines for PPE

2

Standard Operating Procedures (SOP) For Cleaning of Sewers and Septic Tanks, 2018, (CPHEEO, MoHUA)

Key Recommendations

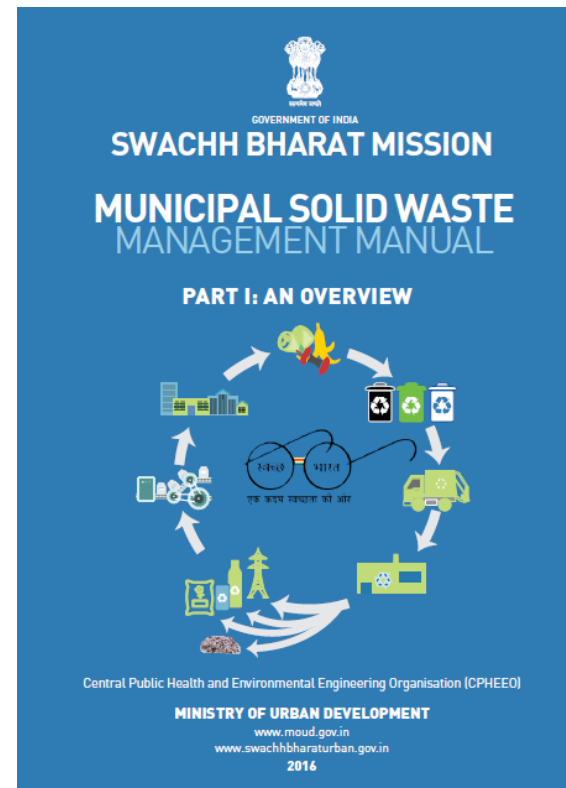
- ULB should ensure **training** of their workers involved in septic tanks desludging activities at least **once in 2 years**.
- This training should include:
 - Technique, equipment operation and emergency procedures for desludging
 - Correct usage and maintenance of PPEs
 - Awareness regarding possible health hazards if workers come in direct contact with faecal matter.
 - Preventive actions for the same (vaccinations, first aid etc.)
 - Health insurance
- In case of Schedule Desludging in Wai, there is already **an app based monitoring system** established;
- **Contract has clear mention of clauses for providing, maintaining and monitoring PPEs;** and on-ground monitoring is at **multiple levels**.
- **Thus, the current practice is beyond what has been prescribed in the SOPs.**



Annexure: Assessment of Various Guidelines for PPE

3 SBM Municipal Solid Waste Management Manual, 2016 (CPHEEO, technical collaboration with GIZ)

Secti on No.	Heading	Highlights
1.4.5.5	Training and Capacity Building	<ul style="list-style-type: none"> Provision of hygienic and safe working conditions for workers and encouraging the use of personal protective equipment (PPE) should be a part creating positive impact on the well-being of all workers (specifically the women).
2.3.3.1	Location and Organisation of Primary Collection	<ul style="list-style-type: none"> The waste collectors should be well equipped with PPE and should also be provided with a whistle to announce their arrival for waste collection.
2.3.5	Duties and responsibilities of local authorities (Monitoring collection)	<ul style="list-style-type: none"> Ensure that the operator of a facility provides PPE including uniform, fluorescent jacket, hand gloves, raincoats, appropriate foot wear and masks to all workers handling solid waste and the same are used by the workforce;
2.3.7	Role of Informal Sector in Primary Waste Collection	<ul style="list-style-type: none"> The aim should be to raise the status from waste pickers to waste collectors and provide them with working tools and PPE like gloves, shoes, full sleeves coat, etc. Local NGOs, CBOs, SHGs and private sector can play a crucial role in integrating informal sector.



Annexure: Assessment of Various Guidelines for PPE

3

SBM Municipal Solid Waste Management Manual, 2016 (CPHEEO, technical collaboration with GIZ)

SOURCE	PRIMARY COLLECTION SERVICES	TRANSPORTATION	PPE FOR WASTE HANDLER	SOURCE	PRIMARY COLLECTION SERVICES	TRANSPORTATION	PPE FOR WASTE HANDLER	SOURCE	PRIMARY COLLECTION SERVICES	TRANSPORTATION	PPE FOR WASTE HANDLER
Societies/ Apartment Complexes	<ul style="list-style-type: none"> Door-to-door collection services with a minimum of 2 bins for collection of wet waste and dry waste (10–15 l) A pair of community bins of <ul style="list-style-type: none"> 60 litres (20 to 30 kg) or 120 litres capacity (40 to 60 kg) or 240 litres capacity (80 to 120 kg) or 1.1 cu. m capacity (300 to 450kg) depending on number of houses to be served (i.e. 12, 24, 48, 200 units). The specifications should be as per Central Institute of Plastics Engineering and Technology (CIPET) specification Contract for door-to-door collection with private sector, CBOs, NGOs, RWAs, or SHGs 	Containerised light weight handcarts Tricycles for both men and women Pickup vans Motorised waste collection vehicle Any suitable combination of the above	Gloves Shoes Clothes that cover whole body	Inaccessible Residential Areas	<ul style="list-style-type: none"> 2 community bins or containers of 60–120 l capacity for 20–40 dwelling units 2 domestic bins for storage of waste at source—5, 10, 15, 20 l (for 2–8 kg waste) capacity, as per CIPET specification 	<ul style="list-style-type: none"> Containerised light weight hand carts Tricycle for both men and women Waste collected from the area should be transferred to a light commercial vehicle (LCV) outside the slum area. 	Gloves Shoes Clothes that cover whole body	Markets/ Bulk Waste Generators	<ul style="list-style-type: none"> Doorstep collection services for recyclable material or dedicated waste streams on full cost recovery basis Markets: 1.1–4.0m³ covered bins for storage of waste as per the quantity of waste generated in the market Large commercial complexes: 3.0–7.0m³ containers 	<ul style="list-style-type: none"> Motorised waste collection vehicle with container lifting device Compactors compatible with containers Non-compacto trucks 	Heavy duty gloves Shoes Clothes that cover whole body Face mask

Different types of PPEs are recommended for different types of waste handlers (depending on the source of waste generation) as shown in the table above.

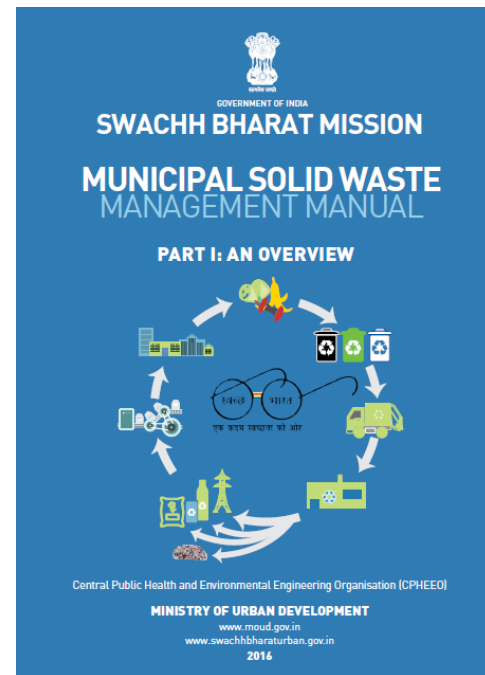
Table 2.2: Elements of Primary Waste Collection System, SBM MSWM Manual Part II, 2016 (CPHEEO)

Annexure: Assessment of Various Guidelines for PPE

3

SBM Municipal Solid Waste Management Manual, 2016 (CPHEEO, technical collaboration with GIZ)

Section No.	Heading	Highlights
4.5.4.1 1.3	Person related safety measure at Landfill site (Treatment)	<p>The workers have to be equipped with the following PPEs:</p> <ul style="list-style-type: none"> • Safety boots (always to be used while working outside the buildings); • Reflective vests (always to be used while working outside the buildings); • Safety helmets (to be used in case of risk of head injuries, e.g., during construction, loading or unloading activities, while operating machinery, etc.); • Gloves (in case of risk of hand injuries, e.g., during loading or unloading, or maintenance activities); • Ear protectors (to be used while working in noisy areas); and • Disposable dust mask (to be used in case of exposure to dust). <p>The landfill management has to strictly enforce the use of PPEs.</p>
5.4.7	Contract Monitoring Activities or clauses (Environmental Compliance)	<ul style="list-style-type: none"> • Primary responsibility of the contractor to carry out regular environmental, social, health, and safety audits and first aid trainings, and ensure use of PPEs. ULB to monitor this.



Annexure: Assessment of Various Guidelines for PPE

SBM Municipal Solid Waste Management Manual, 2016 (CPHEEO, technical collaboration with GIZ)

3

Key Recommendations



- ULB or contractor should ensure proper **training** of their workers involved in MSWM activities on usage of PPEs.
- The ULB itself should provide door-to-door collection and transportation of wastes **in a few wards** in the city to maintain **in-house capacity** for providing crucial services **in times of crisis** (e.g., dispute in contract provisions, etc.). ULB must provide necessary PPEs to these workers.
- The contract for MSW collection/transportation/treatment must have a clear clause on provision, replacement and monitoring of PPEs.
- The contractor should carry out regular environmental, social, health, and safety audits and first aid trainings, and ensure use of PPEs. **ULB to monitor this.**
- **O&M records should be maintained for all equipment.**
 - An analysis of this information will indicate critical issues of frequent breakdowns and components undergoing regular wear and tear.
 - Supervisors could use this information to identify **incorrect operating practices.**
 - This analysis could also identify **equipment which is ill-suited** to perform the requisite tasks and which **needs replacement.**

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About us

The Center for Water and Sanitation (C-WAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.



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