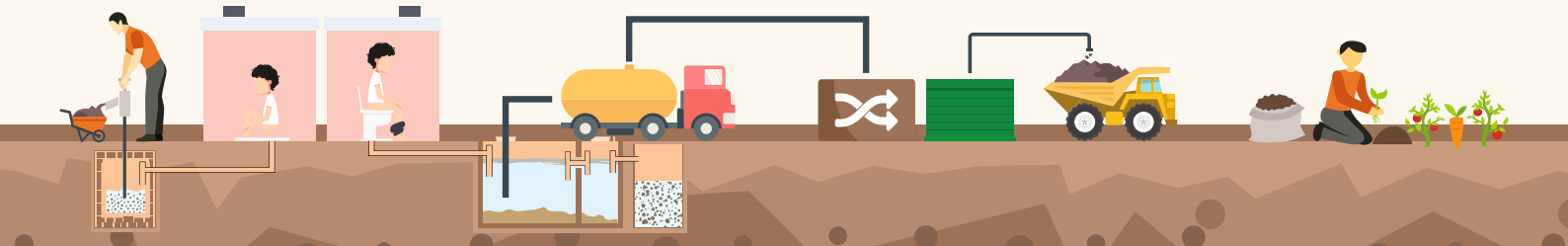
FSM
Faecal Sludge Management
TOOLBOX

ATHENA
INFONOMICS

FSM Pro Assessment
QUESTIONNAIRE



April 2019

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Module Description

FSMPro Assessment is a powerful geo-spatial data collection, assessment and visualization tool that assists users to estimate the sample size, collect geo-tagged data (using hand-held devices or mobile phones), assign and manage the data collection tasks, track survey progress and visualize the outcomes of the assessment geo-spatially.

FSMPro Assessment also generates an FSM Index score for the city, along with a detailed report supported by geo-spatial maps on the current state of infrastructure. The assessment output generated through this version is a potent starting point for planning.

Questionnaire for Enabler Ecosystem Assessment

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/ disposal	Evidence / scoring
Enabling: What are current policies, planning issues and budgetary arrangements?	**Policy**	**Policy:** Is provision of FSM services enabled by an appropriate, acknowledged and available policy document (national/local or both)?	**E1**	**E1**	**E1**	**E1**	**E1**	1: policy is appropriate, approved (or in draft form), acknowledged and available
								0.5: policy is appropriate, approved (or in draft form), but not clearly acknowledged/ available
								0: policy is not available, or inappropriate to the context
		Institutional roles: Are the institutional roles and responsibilities for FSM service delivery clearly defined and operationalized?	**E2**	**E2**	**E2**	**E2**	**E2**	1: roles defined and operationalized
								0.5: roles clearly defined but not operationalized, or not-defined by work in practice

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
								0: roles not defined/not operationalized
		Legislation/ regulation: Are there national and/or local legal and regulatory mechanisms (i.e. bylaws and means of enforcement) for FSM?	**E3**	**E3**	**E3**	**E3**	**E3**	1: legal and regulatory mechanisms for FSM exist and are operational
								0.5: legal and regulatory mechanisms for FSM exist but are not operational
								0: no legal and regulatory mechanisms for FSM exist
	Planning	**Targets:** Are there service targets for (each part of) the FSM service chain in the city development plan, or a national development plan that is being adopted at the city level?	**E4**	**E4**	**E4**	**E4**	**E4**	1: targets are clearly included
								0.5: service levels are included, but no targets stated
								0: no reference to service levels or targets
		Investment: Is FSM incorporated into an approved and used investment plan (as part of sanitation) - including ensuring adequate human	**E5**	**E5**	**E5**	**E5**	**E5**	1: investment plan for FSM exists, based on identified needs and addressing human resource and technical assistance needs

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
		resources and Technical Assistance? (Ideally a medium term plan, but if not, at least an annual plan)						0.5: investment plan for FSM exists, but does not address human resource or technical assistance needs
								0: no investment plan for FSM
	Budget	**Fund flows:** Does the government have a process for coordinating FSM investments (domestic or donor, e.g. national grants, state budgets, donor loans and grants etc.)?	**E6**	**E6**	**E6**	**E6**	**E6**	1: coordination of investments is defined and operationalized
								0.5: coordination of investments is defined, but not operationalized
								0: no coordination of investments defined
Developing: What is the level of expenditure, degree of equity and level of output?	**Expenditure**	**Adequacy & structure:** Are the annual public financial commitments for FSM sufficient to meet the service levels and needs for capital and operational expenditure in the coming 5 years?	**D1**	**D1**	**D1**	**D1**	**D1**	1: annual public financial commitments are sufficient to meet >75% of requirements (estimated need if no targets set)
								0.5: annual public financial commitments are sufficient to meet >50% of requirements (estimated need if no targets set)

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
								0: annual public financial commitments insufficient to meet 50% of requirements (estimated need if no targets set)
	Equity	**Choice:** Is there a range of affordable, appropriate, safe and adaptable technologies for FSM services available to meet the needs of the urban poor?	**D2**	**D2**	**D2**	**D2**	**D2**	1: range of technical options exist (i.e. are "offered" formally) and are used by the urban poor
								0.5: range of options exist, but are not accessed by the urban poor, or just not used
								0: options are not present
		Reducing inequity: Are there specific and adequate funds, plans and measures to ensure FSM serves all users, and specifically the urban poor?	**D3**	**D3**	**D3**	**D3**	**D3**	1: funds, plans and measures are codified and in use
								0.5: funds, plans and measures are codified but not in use
								0: no funds, plans and measures codified

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
	Outputs	**Quantity/ capacity:** Is the capacity of each part of the FSM value chain growing at the pace required to ensure access to FSM meets the needs/demands and targets that protects public and environmental health?	**D4**	**D4**	**D4**	**D4**	**D4**	1: capacity growing at a pace to meet >75% of the needs/demands and targets to protect health
								0.5: capacity growing at a pace to achieve >50% of needs/demands and targets to protect health
								0: capacity insufficient to meet 50% of the needs/demands and targets to protect health
		Quality: Is the quality of FSM sufficient to ensure functioning facilities and services that protect against risk through the service chain?	**D5**	**D5**	**D5**	**D5**	**D5**	1: >75% of services are of an adequate public health standard, at the respective stage in the service chain
								0.5: >50% of services of an adequate public health standard, at the respective stage in the service chain service chain
								0: less than 50% of services are of an adequate PUBLIC health

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
								standard, at the respective stage in the service chain
Sustaining: What is the status of operation and maintenance (O&M), what provisions are made for service expansion and what are current service outcomes?	**O&M**	**Cost recovery:** Are O&M costs known and fully met by either cost recovery through user fees and/or local revenue or transfers?	**S1**	**S1**	**S1**	**S1**	**S1**	1: O&M costs known and >75% met (through appropriate mechanisms)
								0.5: O&M costs known and >50% met
								0: O&M costs not known and/or <50% met
		Standards: Are there norms and standards for each part of the FSM value chain that are systematically monitored under a regime of sanctions (penalties)?	**S2**	**S2**	**S2**	**S2**	**S2**	1: norms and standards exist, are monitored and sanctions applied
								0.5: norms and standards exist and are monitored, but no sanctions applied
								0: norms and standards (if they exist) are not monitored
	Expansion	**Demand:** Has government (national or city authority) developed any policies and procedures, or planned and undertaken programs, to stimulate demand of FSM services and	**S3**	**S3**	**S3**	**S3**	**S3**	1: demand generation policies, procedures or programs are being implemented, with resulting demand for services growing and being responded to

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
		behaviors by households and responses by service providers?						0.5: demand generation policies, procedures or programs are being implemented (or partially implemented), but resulting demand is not fully addressed
								0: demand generation policies, procedures or programs are not being implemented
		Sector development: Does the government have ongoing programs and measures to strengthen the role of service providers (private or public) in the provision of FSM services, in urban or peri-urban areas?	**S4**	**S4**	**S4**	**S4**	**S4**	1: programs and measures to strengthen service provision have been/are being implemented; service providers are organized, their actions are coordinated and the FSM services they provide are expanding.

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
								0.5: programs and measures to strengthen service providers have been implemented or partially implemented; the majority of service providers remain largely disorganized and the FSM services they provide are not expanding at an appropriate rate.
								0: programs and measures to strengthen the service providers do not exist (or exist on paper only and have not been implemented); the service providers remain disorganized and the FSM services they provide are not expanding.
	Service outcomes	**Quantity:** Percentage of total faecal sludge generated by the city that is managed	**S5**	**S5**	**S5**	**S5**	**S5**	1: >75% of faecal sludge generated is managed effectively, at that stage of

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
		effectively, within each part of the service chain.						the service chain
								0.5: >50% of faecal sludge generated is managed effectively, at that stage of the service chain
								0: <50% of faecal sludge generated is managed effectively, at that stage of the service chain
		Equity: To what extent do the city's FSM systems ensure adequate services for low-income communities?	**S6**	**S6**	**S6**	**S6**	**S6**	1: Hygienic FSM systems and services are affordable and readily available in low-income communities
								0.5: Hygienic FSM systems and services are available on a partial/ piecemeal basis in low-income communities (or in some)
								0: Hygienic FSM systems and services are not available to any significant extent in low-

Sub-question	Category	Question	Containment	Emptying	Conveyance	Treatment	End-use/disposal	Evidence / scoring
								income communities
		Max scores*	**Sum 1**	**Sum 2**	**Sum 3**	**Sum 4**	**Sum 5**	

Questionnaire for FSM Pro Infrastructure Adequacy Assessment

City Basic Information (CBI)			
S#	**Questions**	**Hints**	**Data Collection Protocol**
1	Name of the person entering the data		
2	Name of the organization		
3	Name of the urban area		
4	Province or state		
5	Country		
6	Total number of zones in the city		You can also find this data on the city website.
7	Total wards in the city		1. Kindly refer to the city specific Census (Population and Housing) document. 2. You can also find this data on the city website.
8.A	Total population of the city		1. Kindly refer to the city specific Census (Population and Housing) document. 2. You can also find this data on the city website.

City Basic Information (CBI)			
S#	**Questions**	**Hints**	**Data Collection Protocol**
8.B	Total floating population of the city		1. Kindly refer to the city specific floating population Census document. 2. You may also get this data from the city planner or the city engineer.
9	Ratio of women to men in the city		Kindly refer to the city specific demographic Census document.
10	Total number of households in the city		1. Kindly refer to the city Census document to identify the average household size in the city. 2. Divide the total population by the average household size to identify the total number of households in the city.
11	What is the total number of community toilet seats available in the city?	Community toilets here means a shared facility provided by and for a group of residents or an entire settlement. Community toilet blocks are used primarily in low-income and/or informal settlements and/or slums, where space and/or land is a constraint in providing a household toilet. These are for a fixed user group.	Kindly refer to the city website or the city documents (particularly the conservancy and sanitation department documents) for identifying the total number of community toilets in the city. If the data is not available on the secondary documents, then kindly ask the city municipal officials.
11.A	Total number of male community toilet seats available in the city	Community toilets here means a shared facility provided by and for a group of residents or an entire settlement. Community toilet blocks are used primarily in low-income and/or informal settlements and/or slums, where space and/or land is a constraint in providing a household toilet. These are for a fixed user group.	1. Kindly ask the city urban planner or the sanitation officials to identify the total number of male community toilet seats available in the city. If the data is not abailable, then kindly ask local NGOs who work towards provision of community toilets. 2. Alternatively, while doing primary surveys for community toilets, kindly ask the chairperson of the community based organization or the person responsible for maintaining the toilet to

City Basic Information (CBI)			
S#	**Questions**	**Hints**	**Data Collection Protocol**
			establish the number of community toilet seats available for men in the facility or observe the number of seats available in the toilet facility for men.
11.B	Total number of female community toilet seats available in the city		Kindly ask the city urban planner or the sanitation officials to identify the total number of female community toilet seats available in the city. If data is not available with the city, then kindly ask local NGOs who work towards the provision of community toilets.
12	Number of commercial buildings	Commercial buildings refers to offices, shopping complexes, theatres, hotels, restaurants, convention centers etc.	1. Kindly refer to the city website or documents (particularly tax/trade license documents) to obtain the number of total commercial holdings in the city. 2. If data not provided in the city website or documents, then kindly ask the city engineer or planner.
13	Number of institutional buildings	Institutional buildings refers to *schools, universities, prisons, government buildings, religious buildings such as temples/mosques/churches/etc.*	1. Kindly refer to the city or city development authority website or documents to obtain the number of total institutional buildings in the city. 2. If data is not provided on the city website or documents, then kindly ask the city engineer or planner.
14	Number of industrial buildings	Industrial buildings refers to *manufacturing units, factories, etc.*	1. Kindly refer to the urban local body or city development authority website to obtain the number of total industrial buildings in the city. 2. If data is not provided on the city website or documents, then kindly ask the city engineer or planner.

City Basic Information (CBI)			
S#	**Questions**	**Hints**	**Data Collection Protocol**
15	Number of public spaces in the city	A public space is a place that is generally open and accessible to people. Roads (including the pavement), public squares, parks, beaches, railway stations, PUBLIC transit areas, markets, bus stations, etc. are typically considered as public space.	1. Kindly refer to the urban local body or city development authority website or documents to obtain the number of total public places in the city. 2. If data not provided in the city website or documents, then kindly ask the city engineer or planner.

Table 3.2 – HOUSEHOLD (HH)

S#	Questions	Hints	Data Collection Protocol
GENERAL SECTION			
1	Introduction section - notes to read		1. Kindly conduct primary surveys as per the sample size suggested. 2. To select the households to be surveyed, kindly make sure that all household types of all economic profiles (low income, medium income and high income households) are selected. Kindly refer to the Census classification on economic profiling as a reference. 3. The households should be selected such that they are spatially distributed across the catchment area. 4. Ensure a gender balance when selecting respondents. 5. Areas such as the low lying areas which are prone to flooding should also be surveyed.

S#	Questions	Hints	Data Collection Protocol
			6. Kindly note down whether the respondent is the tenant or the owner of the household. Preferably interviews should be done with the owner of the house, to have a better understanding of the infrastructure present. 7. Kindly note down the GPS coordinates of the household. 8. Also triangulate the answer given by the respondent by observing what kind of containment unit the toilet is connected to.
2	Name of the family head		
3	Phone number of the family head		
4	Address of the household (flat name, flat number, door number, street name, location name, city name, pin code, ward number, zone number)		
4.a	What is the building type? • Single family house • Apartment house • Multi-family house in a single plot • Large building divided into many separate tenements offering basic accommodation • Hut • Others, please specify	This is an observation question	
4.b	What is the size (carpet area) of the respondent's household?		Politely ask the respondent. If the household is unwilling to respond, observe the size of the household and provide an approximate response.

S#	Questions	Hints	Data Collection Protocol
5	What is the level of education completed by the chief wage earner of the household? • Illiterate – not able to read and write in any language • Literate but no formal schooling • School up to 4 years • School- 5 to 9 years • Higher Secondary or Senior Secondary School • Some college (including a diploma) but not graduate • Graduate/post graduate: general • Graduate/post graduate: professional		
6	Is this your own house? • Yes • No		
7	Which of these items do you own at home? • Electricity connection (metered) • Ceiling fan • LPG stove • Bicycle • Two wheeler / motorcycle / scooter • Color TV • Refrigerator • Washing machine • Personal computer / laptop • Car/jeep/van/tractor, any four wheeler • Air conditioner	Please observe and also ask response from the respondent	

S#	Questions	Hints	Data Collection Protocol
	• Landline • Mobile • Internet connection • Radio • Livestock		
8	What is the type of the house • Made of bricks, stones, cement and steel • Made of mud, hay, bamboo, twigs or leaves • A mix of both	This is an observation question	
9	Considering all sources of income, what would be the annual income for your household?	This is an optional question	
10	What is your main source of drinking water? • Household tap attached to piped water supply • Government/Community hand pump • Private hand pump • Well/pond/river • Tanker • Bore well • Others (specify)		
11	Is this source of water inside or outside the household premises? • Water source is within the household • Water source is outside the household		
HOUSEHOLD			
12	Do you have a toilet in your house?		
13	If no, do you have access to community toilet?		

S#	Questions	Hints	Data Collection Protocol
14	At what distance is the community toilet located?		
15	How much time does it take to reach the community toilet?		
16	What is the total population of your household?		
16.a	How many members are male? (including children)		
16.b	How many members are female? (including children)		
17	Do all members of your household make use of the HH/community toilet?		
18.a	How many male members access them?		
18.b	How many female members access them?		
19	What is the average waiting time at the community toilets?		
20	GPS location of the household?		
	Proceed only if Q12 = Yes; else END		
CONTAINMENT SYSTEM – SAFE SANITATION SYSTEMS			
21	Identify the type of onsite sanitation system in your property 1. No onsite container, toilet discharges directly to destination given in Tech B 2. Septic tank 3. Fully lined tank (sealed) 4. Lined tank with impermeable walls and open bottom 5. Lined pit with semi-permeable walls and open bottom 6. Unlined pit 7. Pit (all types), never emptied but abandoned when full and covered with soil		There are several ways in which the response to this question could be elicited from the respondent • Request the respondent to recall the containment type by looking at the reference images provided in the mobile app. • Request the respondent to contact any other knowledgeable respondent of the house. • If none of them are aware, attempt looking at the containment system and guess the type of the system. Here is a link to different containment system types.

S#	Questions	Hints	Data Collection Protocol
	8. Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil		
	9. Toilet failed, damaged, collapsed or flooded		
	10. Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
	11. Open defecation		
22	Identify the type of technology to which the on-site sanitation system is connected in your property		
	1. To centralized combined sewer		
	2. To centralized foul/separate sewer		
	3. To decentralized combined sewer		
	4. To decentralized foul/separate sewer		
	5. To soak pit		
	6. To open drain or storm sewer		
	7. To water body		
	8. To open ground		
	9. To 'don't know where'		
	10. No outlet or overflow		
	If Q21 = 1 or 11 ; do not proceed; else proceed		
23	What is the depth at which groundwater is available in your property? • <5m • 5 - 10m • >10m		
24	When was the on-site sanitation system constructed?		

S#	Questions	Hints	Data Collection Protocol
25	Have you desludged your on-site sanitation system before?		
26	What is your desludging frequency of on-site sanitation system?		
27	Is your OSS located <10m from groundwater sources?		
28	Is your sanitation facility located uphill of groundwater source?		
29	What percentage of your monthly water consumption is from groundwater source? • Greater than 25% • Between 1% and 25% • 0%.		
30	What is the water (groundwater) production technology used in your property? • Protected boreholes, protected dug wells or protected spring where adequate sanitary measures are in place. • No groundwater sources used. • Unprotected boreholes, dug wells or springs.		
CONTAINMENT SYSTEM - ACCESS BY ROAD			
31	Can this property be accessed by road of width greater than 3m?		While conducting the primary survey, note down the width of the access road to the toilet.
CONTAINMENT SYSTEM - ACCESS FROM ROAD			

S#	Questions	Hints	Data Collection Protocol
32	At what distance can this property be accessed from the road by a mechanized tank? • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		While conducting the primary survey for the afore-mentioned questions, note down the distance of the toilet from the nearest access road which can accommodate a desludging vehicle.
CONTAINMENT SYSTEM - ACCESS TO THE ON-SITE SANITATION SYSTEM			
33	Can the on-site sanitation system be easily accessed upon reaching the premises? • Can be easily accessible upon reaching the premises (the chambers of the on-site sanitation system have manholes covered with slabs and can be moved easily). • Can be accessed with minimal effort upon reaching the premises (the chambers of the on-site sanitation system have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the on-site sanitation system). • Can be accessed with a lot of effort upon reaching the premises (the on-site sanitation system is buried underground/placed right below the toilet/buried under soil in the parking or play area).		While conducting the primary survey for the afore-mentioned questions, kindly observe whether the toilet can be easily accessed as per the given options.
EMPTYING & TRANSPORTATION – DESLUDING OPERATOR			

S#	Questions	Hints	Data Collection Protocol
34	How do you reach out to desludging operators for conducting desludging operations? • Call center/government office • Users are aware of the regular spot where desludging operators stand. Users visit the site and request for desludging operators to conduct service informally • Directly contact the operator • Do not know, request the neighbor • Others (Please specify)		
35	What is the average response time to conduct desludging service from the time of placing request for service		

Table 3.3 – COMMUNITY TOILETS (CT)

S#	Questions	Hints	Data Collection Protocol
MAPPING COMMUNITY TOILETS			
1	GPS location of operational community toilets?		
1.B	Ward number and zone number of the respondent		
2	How many toilet seats are available for men in the facility?		Kindly ask the chairperson of the community based organization or the person responsible for maintaining the toilet to know the number of

S#	Questions	Hints	Data Collection Protocol
			community toilet seats available for men in the facility or observe the number of seats available in the toilet facility for men.
3	How many toilet seats are available for women in the facility?		Kindly ask the chairperson of the community based organization or the person responsible for maintaining the toilet to know the number of community toilet seats available for women in the facility or observe the number of seats available in the toilet facility for women.
4	How many households are dependent on this community toilet?		Kindly ask the chairperson of the community based organization or the person responsible for maintaining the toilet to know the number of households dependent on the community toilet.
5	What is the average waiting time to access the toilet seat?		Kindly ask the chairperson of the community based organization or the person responsible for maintaining the toilet to know the average waiting time to access the toilet during peak hours.
CONTAINMENT SYSTEM – SAFE SANITATION SYSTEMS			
6	Identify the type of onsite sanitation system in the community toilet? 1. No onsite container, toilet discharges directly to destination given in Tech B 2. Septic tank 3. Fully lined tank (sealed) 4. Lined tank with impermeable walls and open bottom 5. Lined pit with semi-permeable walls and open bottom 6. Unlined pit 7. Pit (all types), never emptied but abandoned when full and covered with soil 8. Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil		

S#	Questions	Hints	Data Collection Protocol
	9. Toilet failed, damaged, collapsed or flooded		
	10. Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
	11. Open defecation		
7	Identify the type of technology to which the on-site sanitation system is connected in your property		
	1. To centralized combined sewer		
	2. To centralized foul/separate sewer		
	3. To decentralized combined sewer		
	4. To decentralized foul/separate sewer		
	5. To soak pit		
	6. To open drain or storm sewer		
	7. To water body		
	8. To open ground		
	9. To 'don't know where'		
	10. No outlet or overflow		
8	What is the depth at which groundwater is available in this neighborhood? • <5m • 5 - 10m • >10m		
9	When was the on-site sanitation system constructed?		
10	Has the on-site sanitation system been desludged before?		
11	What is the desludging frequency of on-site sanitation system?		
12	Is the on-site sanitation system located <10m from groundwater sources?		
13	Is the sanitation facility located uphill of groundwater source?		

S#	Questions	Hints	Data Collection Protocol
14	What percentage of the monthly water consumption is from groundwater source? • Greater than 25% • Between 1% and 25% • 0%		
15	What is the water (groundwater) production technology used in the community toilet? • Protected boreholes, protected dug wells or protected spring where adequate sanitary measures are in place. • Unprotected boreholes, dug wells or springs. • No groundwater sources used.		
CONTAINMENT SYSTEM – ACCESS BY ROAD			
16	Can this community toilet be accessed by road of width greater than 3m?		
CONTAINMENT SYSTEM – ACCESS FROM ROAD			
17	At what distance can this community toilet be accessed from the road by a mechanized tank? • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
CONTAINMENT SYSTEM – ACCESS TO THE OSS			
18	Can the On-site Sanitation System (OSS) be easily accessed upon reaching the premises? • Can be easily accessed (with no effort) upon reaching the premises (the chambers of the OSS have manholes covered with slabs and can be moved easily)		

S#	Questions	Hints	Data Collection Protocol
	• Can be accessed with minimal effort upon reaching the premises (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premises (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
EMPTYING & TRANSPORTATION – DESLUDGING OPERATOR			
19	How do you reach out to desludging operators for conducting desludging operations? • Call center/government office • Users are aware of the regular spot where desludging operators stand. Users visit the site and request for desludging operators to conduct service informally • Directly contact the operator • Do not know, request the neighbor • Others (Please specify)		
20	What is the average response time to conduct desludging service from the time of placing request for desludging services?		

Table 3.4 – COMMERCIAL INSTITUTIONAL AND INDUSTRIAL BUILDINGS (CII)

S#	Questions	Hints	Data Collection Protocol
COMMERCIAL INSTITUTIONAL AND INDUSTRIAL BUILDINGS			1. A primary survey should be conducted for the non-residential buildings as per the sample size suggested. 2. The buildings should be selected such that they are spatially distributed across the catchment area. 3. Kindly note down the GPS coordinates of the building. 4. Also triangulate the answer given by the respondent by observing the toilet facility.
1	What is the type of building? 1. Commercial - *office, shopping complex, theatres, hotels, restaurants, marriage halls etc.* 2. Institutional - schools, *universities, prisons, government buildings, religious buildings such as temples/mosques/churches/etc.* 3. Industrial - manufacturing *units, factories, etc.*		
1.B	Ward number and zone number of the commercial, institutional and industrial building?		
1.C	Is this your own property?		
1.D	What is the approximate size (carpet area) of your property?		Politely ask the respondent. If the respondent is unwilling to respond, observe the size of the property and provide an approximate response.
1.E	On average, how many people visit this building in a day?		
2	Does the commercial / institutional / industrial building have access to toilet facility within the premises in operational condition?		

S#	Questions	Hints	Data Collection Protocol
2.A	How many people access the toilet facility exclusively for defecation purposes in a day?		
If Q1 = 2 or 3 and Q2 = no; then do not proceed; else proceed			
3	If no, does the commercial building have access to a community toilet facility?		
If Q3 = no; then do not proceed; else proceed			
4	What is the average distance travelled by any individual working in this building to reach the toilet?		Kindly approach the operator of the facility or a few of the employees working in the facility.
5	What is the average waiting time to access the toilets?		Kindly approach the operator. Also you can triangulate this information by observing people using the toilet.
6	What is the GPS location of the building		
If Q2 = yes; then proceed; else exit			
CONTAINMENT SYSTEM – SAFE SANITATION SYSTEMS			
7	Identify the type of onsite sanitation system in your property 1. No onsite container, toilet discharges directly to destination given in Tech B 2. Septic tank 3. Fully lined tank (sealed) 4. Lined tank with impermeable walls and open bottom 5. Lined pit with semi-permeable walls and open bottom 6. Unlined pit 7. Pit (all types), never emptied but abandoned when full and covered with soil 8. Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil 9. Toilet failed, damaged, collapsed or flooded		There are several ways in which the response to this question could be elicited from the respondent: • Request the respondent to recall the containment type by looking at the reference images provided in the mobile app. • Request the respondent to contact any other knowledgeable respondent of the house. • If none of them are aware, attempt looking at the containment system and guess the type of system based on the images provided.

S#	Questions	Hints	Data Collection Protocol
	10. Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
	11. Open defecation		
8	Identify the type of technology to which the on-site sanitation system is connected in your property		
	1. To centralized combined sewer		
	2. To centralized foul/separate sewer		
	3. To decentralized combined sewer		
	4. To decentralized foul/separate sewer		
	5. To soak pit		
	6. To open drain or storm sewer		
	7. To water body		
	8. To open ground		
	9. To 'don't know where'		
	10. No outlet or overflow		
	If Q7 = 1 or 11 ; do not proceed; else proceed		
9	What is the depth at which groundwater is available in your property? • <5m • 5 - 10m • >10m		1. Kindly refer to the documents published by the water supply and sewerage department in the city or by talking to the chief engineer of the department. 2. You can also obtain this information from the city documents or website or by talking to the city engineer. 3. You may also find this information while speaking to a few locals from the neighborhood and by asking them "how deep do they have to drill to get water while installing a borehole?"
10	When was the on-site sanitation system constructed?		
11	Have you desludged your on-site sanitation system before?		

S#	Questions	Hints	Data Collection Protocol
12	How frequently do you desludge your on-site sanitation system?		
13	Is your on-site sanitation system located <10m from groundwater sources?		
14	Is your sanitation facility located uphill of groundwater source?		
15	What percentage of your monthly water consumption is from groundwater source? • Greater than 25% • Between 1% and 25% • 0%		
16	What is the water (groundwater) production technology used in your property? • Protected boreholes, protected dug wells or protected spring where adequate sanitary measures are in place. • Unprotected boreholes, dug wells or springs. • No groundwater sources used.		
CONTAINMENT SYSTEM - ACCESS BY ROAD			
17	Can this property be accessed by road of width greater than 3m?		1. Note down the width of the access road to the non-residential building.
CONTAINMENT SYSTEM - ACCESS FROM ROAD			
18	At what distance can this property be accessed from the road by a mechanized tank? • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		1. Note down the distance of the property from the nearest access road which can accommodate desludging vehicles.

S#	Questions	Hints	Data Collection Protocol
CONTAINMENT SYSTEM – ACCESS TO THE OSS			
19	Can the On-site Sanitation System (OSS) be easily accessed upon reaching the premises? • Can be easily accessed (without effort) upon reaching the premises (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premises (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premises (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		Kindly observe whether the toilet can be easily accessed as per the given options.
EMPTYING & TRANSPORTATION – DESLUDGING OPERATOR			
20	How do you reach out to desludging operators for conducting desludging operations? • Call center/government office • Users are aware of the regular spot where desludging operators stand. • Users visit the site and request for desludging operators to conduct service informally • Directly contact the operator • Do not know, request the neighbor • Others (Please specify)		
21	What is the average response time to conduct desludging service from the time of placing request for service		

Table 3.5 – PUBLIC PLACES (PP)

S#	Questions	Hints	Data Collection Protocol
PUBLIC PLACES			1. A primary survey should be conducted in public places as per the sample size suggested. 2. The public places should be selected such that they are spatially distributed across the catchment area and is representative of key public areas 3. Kindly note down the GPS coordinates of the public places. 4. Also triangulate the answer given by the respondent by observing the toilet facility
1	Mention the type of public area (railway stations, public transit areas, markets, bus stations, others please specify)		
2	What is the average floating population in this location?		Kindly refer to the city specific floating population Census document.
3	Mark the GPS location of the central point of this public area?		
3.A.1	Ward number and zone number of the public place		
3.A	What percentage of the floating population are male?		1. Kindly refer to the city specific floating population Census document. 2. You may also get this data from the city planner or the city engineer.
3.B	What percentage of the floating population are female?		
4	How many public toilet facilities are available in this location?		Kindly ask the city engineer or city urban planner establish the number of public toilets in the location.
	Note: Now you will have to navigate to each of the toilet locations and collect the relevant information. Let's begin! Toilet X		
5	What is the GPS location of the toilet facility?		

S#	Questions	Hints	Data Collection Protocol
6	On an average, how many people access this toilet facility in a day?		1. Kindly check the record book maintained at the public toilet or ask the public toilet operator establish the number of people accessing the toilet facility. 2. Alternatively you can ask how much is the daily revenue of public toilet and divide it by the per time usage fee for the toilet. Even though you will get a rough estimate of the number of people using the toilet using this approach, it may not be accurate as often people using the toilet may not pay the fee and also user fee for urinals and the water closet will be different.
6.B	On an average, how many people access this toilet facility exclusively for defecation purposes in a day?		Kindly ask the public toilet operator. You can also triangulate this information by observing people using the public toilet.
7	What is the average waiting time to access the toilet seat in this facility?		Kindly ask the public toilet operator. You can also triangulate this information by observing the number of seats in the public toilet.
8	What is the number of toilet seats available for men in this facility?		Kindly ask the public toilet operator. You can also triangulate this information by observing the number of seats in the public toilet.
9	What is the number of toilet seats available for women in this facility?		1. Kindly check the record book maintained at the public toilet or ask the public toilet operator establish the number of people accessing the toilet facility. 2. Alternatively you can ask how much is the daily revenue of public toilet and divide it by the per time usage fee for the toilet. Even though you will get a rough estimate of the number of people using the toilet using this approach, it may not be accurate as often people using the toilet may not pay the fee

S#	Questions	Hints	Data Collection Protocol
			and also user fee for urinals and the water closet will be different.
CONTAINMENT SYSTEM – SAFE SANITATION SYSTEMS			
10	Identify the type of onsite sanitation system in your property:		
	1. No onsite container, toilet discharges directly to destination given in Tech B		
	2. Septic tank		
	3. Fully lined tank (sealed)		
	4. Lined tank with impermeable walls and open bottom		
	5. Lined pit with semi-permeable walls and open bottom		
	6. Unlined pit		
	7. Pit (all types), never emptied but abandoned when full and covered with soil		
	8. Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil		
	9. Toilet failed, damaged, collapsed or flooded		
	10. Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
	11. Open defecation		
11	Identify the type of technology to which the OSS is connected in your property		
	1. To centralized combined sewer		
	2. To centralized foul/separate sewer		
	3. To decentralized combined sewer		
	4. To decentralized foul/separate sewer		
	5. To soak pit		
	6. To open drain or storm sewer		
	7. To water body		

S#	Questions	Hints	Data Collection Protocol
	8. To open ground		
	9. Don't know where		
	10. No outlet or overflow		
	If Q10 = 1 or 11; do not proceed; else proceed		
12	What is the depth at which groundwater is available in this neighborhood? • <5m • 5 - 10m • >10m		1. Kindly refer to the documents of the water supply and sewerage department in the city or by talking to the chief engineer of the department. 2. You may also find this information while speaking to the residents from the neighborhood and by asking them "how deep did they have to drill to get water while installing a borehole?"
13	When was the on-site sanitation system constructed?		
14	Has the on-site sanitation system been desludged before?		
15	What is the desludging frequency of on-site sanitation system?		
16	Is the on-site sanitation system located <10m from groundwater sources?		
17	Is the sanitation facility located uphill of groundwater source?		
18	What percentage of your monthly water consumption is from groundwater source? • Greater than 25% • Between 1% and 25% • 0%		
19	What is the water (groundwater) production technology used in your property? • Protected boreholes, protected dug wells or protected spring where adequate sanitary measures are in place • Unprotected boreholes, dug wells or springs		

S#	Questions	Hints	Data Collection Protocol
	• No groundwater sources used		
CONTAINMENT SYSTEM - ACCESS BY ROAD			
20	Can this public toilet be accessed by road of width greater than 3m?		1. While conducting the primary survey, also note down the width of the access road to the public toilet. 2. Kindly refer to secondary documents by local or international organizations particularly focusing on city master plan or the city road network to determine the road width in the city and to identify the width of the access road leading up to this particular public toilet.
CONTAINMENT SYSTEM - ACCESS FROM ROAD			
21	At what distance can this public toilet be accessed from the road by a mechanized tank? • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessed by truck and can be desludged by manual methods only		While conducting the primary survey for the afore-mentioned questions, also note down the distance of the toilets from the nearest access road which can accommodate a desludging vehicle.
CONTAINMENT SYSTEM - ACCESS TO THE OSS			
22	Can the On-site Sanitation System (OSS) be easily accessed upon reaching the premises? • Can be easily accessed upon reaching the premises (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premises (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access		While conducting the primary survey, kindly observe whether the toilet can be easily accessed as per the given options.

S#	Questions	Hints	Data Collection Protocol
	it/breaking open an identified spot near the OSS) • Can be accessed but with a lot of effort upon reaching the premises (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
EMPTYING & TRANSPORTATION – DESLUDING OPERATOR			
23	How do you reach out to desludging operators for conducting desludging operations? • Call center/government office • Users are aware of the regular spot where desludging operators stand. Users visit the site and request for desludging operators to conduct service informally • Directly contact the operator • Do not know, request the neighbor • Others (Please specify)		
24	What is the average response time to conduct desludging service from the time of placing request for service?		If the public toilet is owned by the urban local body, kindly ask the city engineer or the sanitation officer for information on this question or else if the public toilet operation and maintenance is outsourced to a private party, kindly ask the private party or the operator to understand how long does it take for them to avail desludging services from the time of placing the request.

Table 3.6 - DESLUDING OPERATOR (DO)

S#	Questions	Hints	Data Collection Protocol
1	Name of the desludging operator		
2	Name of the company		
3	Experience operating in the city - choose (restricted to a particular geography/sound knowledge about the city)	Number of years' experience	
4	What is the predominant rock type in the unsaturated zone of your city? • Fine sand, silt and clay • Weathered basement • Medium sand • Coarse sand and gravels • Sandstones/limestones fractured rock		Kindly refer to the documents of geological survey department.
HOUSEHOLD			
5	What percentage households have a toilet within their premises?		
6	What percentage households are dependent on community toilet?		
7	What percentage households defecate in the open?		
8	What onsite sanitation technologies are predominantly present in the households across the city? • Septic tank • Fully lined tank (sealed) • Lined tank with impermeable walls and open bottom • Lined pit with semi-permeable walls and open bottom • Unlined pit • Pit (all types), never emptied but abandoned when full and covered with soil • Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil • Toilet failed, damaged, collapsed or flooded • Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		

S#	Questions	Hints	Data Collection Protocol
9	Identify the type of technology to which the on-site sanitation system is connected to in the households? • To centralized combined sewer • To centralized foul/separate sewer • To decentralized combined sewer • To decentralized foul/separate sewer • To soak pit • To open drain or storm sewer • To water body • To open ground • To 'don't know where' • No outlet or overflow		
10	Identify the average desludging frequency of households across each on-site sanitation system typology (note: if any particular on-site sanitation system typology is not desludged regularly, please provide the value as 0)		
11	What percentage of households can be accessed by road of width greater than 3m?		
12	Identify the distance at which the households can be accessed from the road by a mechanized tank (identify percentage values for each of the options given below) • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
13	What percentage of the On-site Sanitation System (OSS) can be easily accessed within the premises? • Can be easily accessible upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS)		

S#	Questions	Hints	Data Collection Protocol
	• Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
	MAPPING COMMUNITY TOILETS		
14	What onsite sanitation technologies are predominantly present in the community toilets across the city? • Septic tank • Fully lined tank (sealed) • Lined tank with impermeable walls and open bottom • Lined pit with semi-permeable walls and open bottom • Unlined pit • Pit (all types), never emptied but abandoned when full and covered with soil • Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil • Toilet failed, damaged, collapsed or flooded • Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
15	Identify the type of technology to which the on-site sanitation system is connected to in the community toilets • To centralized combined sewer • To centralized foul/separate sewer • To decentralized combined sewer • To decentralized foul/separate sewer • To soak pit • To open drain or storm sewer • To water body • To open ground • To 'don't know where' • No outlet or overflow		

S#	Questions	Hints	Data Collection Protocol
16	What is the average desludging frequency of community toilets by on-site sanitation system typology?		
17	What percentage of community toilets can be accessed by road of width greater than 3m?		
18	Identify the distance at which the community toilets can be accessed from the road by a mechanized tank? (Identify percentage values for each of the options given below) • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
19	What percentage of the On-site Sanitation System (OSS) can be easily accessed within the premises of community toilets? • Can be easily accessible upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
COMMERCIAL, INSTITUTIONAL AND INDUSTRIAL BUILDINGS			
19.B	What percentage of the commercial building have access to toilet facility within the premises in operational condition?		
19.C	What percentage of the commercial building have access to community toilet facility outside the premises?		
19.D	What percentage of institutional/industrial building have access to toilet facility within the premises in operational condition?		

S#	Questions	Hints	Data Collection Protocol
20	What onsite sanitation technologies are predominantly present in the commercial/institutional and industrial buildings across the city? • Septic tank • Fully lined tank (sealed) • Lined tank with impermeable walls and open bottom • Lined pit with semi-permeable walls and open bottom • Unlined pit • Pit (all types), never emptied but abandoned when full and covered with soil • Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil • Toilet failed, damaged, collapsed or flooded • Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
21	The next screen should have the following options right below every option that was previously selected with the following question Identify the type of technology to which the on-site sanitation system is connected to in the commercial/institutional and industrial buildings • To centralized combined sewer • To centralized foul/separate sewer • To decentralized combined sewer • To decentralized foul/separate sewer • To soak pit • To open drain or storm sewer • To water body • To open ground • To 'don't know where' • No outlet or overflow		
22	Is the desludging frequency fundamentally different between commercial/industrial/institutional buildings?		

S#	Questions	Hints	Data Collection Protocol
23	What is the average desludging frequency of commercial/institutional and industrial buildings by on-site sanitation system typology?		
24	What is the average desludging frequency of commercial buildings by on-site sanitation system typology?		
25	What is the average desludging frequency of institutional buildings by on-site sanitation system typology?		
26	What is the average desludging frequency of industrial buildings by on-site sanitation system typology?		
27	What percentage of commercial properties can be accessed by road of width greater than 3m?		
28	What percentage of institutional properties can be accessed by road of width greater than 3m?		
29	What percentage of industrial properties can be accessed by road of width greater than 3m?		
30	Identify the distance at which the commercial buildings can be accessed from the road by a mechanized tank (Identify percentage values for each of the options given below) • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
31	Identify the distance at which the institutional buildings can be accessed from the road by a mechanized tank? (Identify percentage values for each of the options given below) • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
32	Identify the distance at which the industrial buildings can be accessed from the road by a mechanized tank? (Identify percentage values for each of the options given below)		

S#	Questions	Hints	Data Collection Protocol
	• Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessible from road and can be desludged by manual methods only		
33	What percentage of the On-site Sanitation System (OSS) can be easily accessed within the premises of commercial buildings? • Can be easily accessible upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
34	What percentage of the On-site Sanitation System (OSS) can be easily accessed within the premises of institutional buildings? • Can be easily accessible upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
35	What percentage of the On-site Sanitation System (OSS) can be easily accessed within the premises of industrial buildings?		

S#	Questions	Hints	Data Collection Protocol
	• Can be easily accessible upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
PUBLIC PLACES			
36	What onsite sanitation technologies are predominantly present in the public toilets across the city? • Septic tank • Fully lined tank (sealed) • Lined tank with impermeable walls and open bottom • Lined pit with semi-permeable walls and open bottom • Unlined pit • Pit (all types), never emptied but abandoned when full and covered with soil • Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil • Toilet failed, damaged, collapsed or flooded • Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded		
37	The next screen should have the following options right below every option that was previously selected with the following question Identify the type of technology to which the on-site sanitation system is connected to in the public toilet • To centralized combined sewer • To centralized foul/separate sewer • To decentralized combined sewer		

S#	Questions	Hints	Data Collection Protocol
	• To decentralized foul/separate sewer • To soak pit • To open drain or storm sewer • To water body • To open ground • To 'don't know where' • No outlet or overflow		
38	What is the average desludging frequency of public toilets by on-site sanitation system typology?		
39	What percentage of public toilets can be accessed by road of width greater than 3m?		
40	Identify the distance at which the public toilets can be accessed from the road by a mechanized tank (identify percentage values for each of the options given below) • Within 100 feet • Within 200 feet • Within 300 feet • Cannot be accessed from the road and can be desludged by manual methods only		
40. B	What percentage of the On-site Sanitation Systems (OSS) can be easily accessed within the premises of community toilets? • Can be easily accessed upon reaching the premise (the chambers of the OSS have manholes covered with slabs and can be moved easily) • Can be accessed with minimal effort upon reaching the premise (the chambers of the OSS have manholes covered with concrete slabs and this needs to be broken in the corners in order to access it/breaking open an identified spot near the OSS) • Can be accessed with a lot of effort upon reaching the premise (the OSS is buried underground/placed right below the toilet/buried under soil in the parking or play area)		
41	Identify proportion of the contents of each type of onsite container which is faecal sludge? • Septic tanks		

S#	Questions	Hints	Data Collection Protocol
	• Fully lined tanks (sealed) • Lined tanks with impermeable walls and open bottom; and all types of pits		
42	What percentage of the total faecal sludge that is emptied reaches the treatment plant?		
43. A	Are there sufficient desludging vehicles in the city to address all the needs of buildings with pits?		
43. B	Are there sufficient desludging vehicles in the city to address all the needs of buildings with septic tanks?		
43. C	Are there sufficient desludging vehicles in the city to address all the needs of buildings with other kinds of on-site sanitation systems?		
43. D	If the answer to Q43.c is no, name the kinds of on-site sanitation system		
43.E	Are there sufficient desludging vehicles in the city to address all the needs of buildings with poor road access?		
43.F	Do you have sufficient desludging vehicles and equipment with you to address all types of onsite sanitation systems (pits/septic tanks/on-site sanitation system with poor road access/manual desludging /etc.)?		
44	Identify each vehicle in the city by technology category (manual/mechanical), technology type, vehicle volume, vehicle dimensions and average number of trips per day taken by the vehicle #(Common reference as vehicle registration number/number plate)		
45	Have you serviced your vehicles at least once in the last year?		
46	What is the average time to access vehicle maintenance provider? (in hours)		
47	Do you use safety gears during operation?		
48	What percentage users reach out to desludging operators through the following options? • Call center/government office • Users are aware of the regular spot where desludging operators stand. Users visit the site and request for desludging operators to conduct service informally		

S#	Questions	Hints	Data Collection Protocol
	• Directly contact the operator • Do not know, request the neighbor • Others (Please specify)		
49	What is the average response time to conduct desludging service from the time of placing request for service?		

Table 3.7 GOVERNMENT – ONLINE (GO)

S#	Questions	Hints	Data Collection Protocol
1	What is the predominant rock type in the unsaturated zone of your city? • Fine sand, silt and clay • Weathered basement • Medium sand • Coarse sand and gravels • Sandstones/limestones fractured rock		1. Kindly refer to the documents of the geological survey department. 2. If secondary data is not available, you will need to conduct a soil profile test to identify the soil type at the site.
EMPTYING & TRANSPORTATION – GOVERNMENT (applicable only for sewered systems)			
1	Of the total wastewater that is generated in the city, identify the total percentage of wastewater reaching the treatment plant?	Answers to be provided in a special table format as shown in table 1a	1. Usually 80% of the water used per capita is the volume of wastewater generated per person. 2. Kindly approach the chief engineer (either of the city or the engineering company if the construction was outsourced) or the treatment plant operator to identify the total percentage of wastewater that reaches the treatment plant.
2	Identify the total percentage of open drain or storm sewer reaching the treatment plant?		Kindly approach the chief engineer (either of the city or the engineering company if the construction was outsourced) or the treatment plant operator to identify the total percentage

			of wastewater that reaches the treatment plant.
TREATMENT			
3	Does the urban area have a treatment plant nearby (within 15 km from the city center) for disposal of faecal sludge?		
3.B	How many such treatment units are available in close proximity to the city?		
If Q.3.B > 1 then repeat the following questions for every additional treatment unit			
4	What is the treatment efficiency of the treatment unit (including wastewater and faecal sludge treatment plant)?		1. Determine how much faecal sludge and wastewater is disposed of at the treatment plant per day. This can be done by looking at the disposal log book maintained at the treatment plant or determined from the number of vehicles disposing at the treatment plant and their volume. 2. From this total volume, how much volume is treated efficiently for which the effluent meets the regional discharge standards should be determined. 3. For the effluent quality, laboratory analysis should be conducted for the parameters as suggested by the effluent discharge regulations.
5	Identify the total percentage of faecal sludge that is treated.		1. Determine the total amount of faecal sludge generated in the city, either by population method or by the volume of onsite sanitation systems present in the city method. Refer Link for support on this (Link) 2. Determine how much faecal sludge is disposed of and treated at the treatment plant per day. This can be done by looking at the disposal log book maintained at the treatment plant or determined from the number of vehicles disposing at the treatment plant and their volume.

			3. From the above two figures you can determine the total volume of faecal sludge that is treated.
6	Identify the total percentage of wastewater that is treated.		1. Usually 80% of the water used per capita is the volume of wastewater generated per person. 2. Kindly approach the chief engineer (either of the city or the engineering company if the construction was outsourced) or the treatment plant operator to identify the total percentage of wastewater that reaches the treatment plant and is treated.
7	Identify the total percentage of open drain or storm sewer that is treated.		Kindly approach the chief engineer (either of the city or the engineering company if the construction was outsourced) or the treatment plant operator to identify the total percentage of storm water that reaches the treatment plant and is treated.
8	What percentage of the treated wastewater is reused?		Kindly approach the city chief engineer to identify the percentage of treated wastewater reused. If the treatment plant is constructed and operated by any private organization, then kindly approach the engineer from the private company to identify the percentage of wastewater reused.
9	What percentage of the treated faecal sludge is reused?		Kindly approach the city chief engineer to identify the percentage of treated faecal sludge reused. If the treatment plant is constructed and operated by any private organization, then kindly approach the engineer from the private company to identify the percentage of faecal sludge reused.

Table 1A. Special Data Input format

Instructions: Fill the following table by inserting values in each block. This template is applicable for the following questions - Q.25, Q.38, Q.39, Q.40, Q.41.

For e.g., block 1 will contain the percentage of toilet systems in the city that are characterized by the absence of an onsite container and discharge directly to a centralized combined sewer. (26%)

	1. To centralized combined sewer.	2. To centralized foul/ separate sewer.	3. To decentralized combined sewer.	4. To decentralized foul/separate sewer.	5. To soak pit.	6. To open drain or storm sewer	7. To water body.	8. To open ground.	9. To 'don't know where'.	10. No outlet or overflow.
1. No onsite container, toilet discharges directly										NOT APPLICABLE
2. Septic tank										
3. Fully lined tank (sealed)										
4. Lined tank with impermeable walls and open bottom										
5. Lined pit with semi-permeable walls and open bottom	NOT APPLICABLE									
6. Unlined pit										
7. Pit (all types), never emptied but abandoned when full and covered with soil										
8. Pit (all types), never emptied but abandoned when full and NOT adequately covered with soil										

	1. To centralized combined sewer.	2. To centralized foul/ separate sewer.	3. To decentralized combined sewer.	4. To decentralized foul/separate sewer.	5. To soak pit.	6. To open drain or storm sewer	7. To water body.	8. To open ground.	9. To 'don't know where'.	10. No outlet or overflow.
9. Toilet failed, damaged, collapsed or flooded										
10. Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded										
11. Open defecation	NOT APPLICABLE									NOT APPLICABLE