**Faecal Sludge Management Plan**

**Objective**: This document lists out the roles and activities required for preparing a Faecal Sludge Management Plan. Figure 1, shows the steps involved in preparing an FSM Plan.

**Target Users:** This document is forProject Management Unit (PMU) and City/ State government (Stakeholder). The Project Management Unit can be any institute, agency or organization which will be responsible for providing and Implementing Faecal Sludge Management (FSM) Solutions for a city/ State. The PMU can have technical expertise within their organization structure or they can hire external consultants to perform the technical activities for the FSTP project. In this document it is assumed that the PMU has the technical expertise and capacity to implement an FSM Plan and FSTP Project.



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| **Activities under FSM** | | |
| **No** | **Activities** | **Roles** |
| **1** | **Need for FSM** | The Project Management Unit (PMU) will approach the City/state government and introduce the concept of FSM to them and present to them their plans for the city. |
| **2** | **Orientation Meeting with the client/ULB** | THE PMU will undertake a site visit to the city to understand the existing infrastructure in relation to faecal sludge management components and determine the research methodologies to be adopted. |
| **3** | **Reconnaissance Visit** | THE PMU will undertake a site visit to the city to understand the existing infrastructure in relation to faecal sludge management components  The PMU will obtain all secondary data (Existing CSPs, DPRs, maps, land, and budgets) about the city selected. |
| **4** | **Workshop to present to the ULB/Client** | Based on the data obtained the PMU will formulate or come up with a Solutions or strategies regarding FSM solutions in the selected city. |
| **5** | **Prepare FSM concept** | In this step the PMU will detail out the FSM concept which will involve concepts for:   * Technology * Collection * Business Model * Facilities and resources available |
| **6** | **Data Collection** | The PMU will collect necessary data from the city to check and see if they can validate the hypothesis proposed for the city.  This involves   * Conduct Baseline Survey-HH survey, cesspool operator survey, farmer, mason and ULB survey * FS Quantity determined * FS Quality through sample collection * Site conditions * Hydrogeological and climate data * Finances of ULB |
| **7** | **Analyse data** | Based on the data obtained and analyzed the proposed FSTP solutions will be evaluated and validated for the city. If on analysis, it is found that the hypothesis/ solution is not viable then the PMU will start again from Step 5 and redevelop a new hypothesis which will be more suitable for the City/ State. |
| **8** | **Finalize FSM Plan** | The PMU will Prepare the FSM Plan for the city and submit it to the ULB for review  The FSM Plan will consist of five components   * FSTP Treatment Technology and DPR preparation[[1]](#footnote-1) * FSTP Operation & Truck Operations * Policy Framework * Business Model * Capacity Building & IEC Campaigns |

**Faecal Sludge Treatment Plant**

**Planning, Design, Implementation & O&M**

**Objective**: This section lists out the roles and activities required for Faecal Sludge Planning, Design, Implementation and Operation & Maintenance (O&M). Figure 1, shows the steps involved in implementing an FSTP.

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Figure 1: Flow Chart for FSTP Project



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| **Activities for FSM Planning, Design, Implementation & O&M** | | |
| **No** | **Activities** | **Roles** |
| **Stage 1: Planning** | | |
| **1** | **FSM Introduction and Plan** | The Project Management Unit (PMU) will approach the City/state government and introduce the concept of FSM to them and present to them their plans for the city. |
| **2** | **First Visit/ Reconnaissance Visit** | THE PMU will undertake a site visit to the city to understand the existing infrastructure in relation to faecal sludge management components and determine the research methodologies to be adopted. |
| **3** | **Initial Data Collection** | The PMU will obtain all secondary data (Existing CSPs, DPRs, maps, land, and budgets) about the city selected. |
| **4** | **Develop Strategy/Solutions** | Based on the data obtained the PMU will formulate or come up with a Solutions or strategies regarding FSM solutions in the selected city. |
| **5** | **Develop Research Methodology** | In this step the PMU will detail out the approach and methodologies adopted to come up with the FSM solution. |
| **6** | **Data Collection** | The PMU will collect necessary data from the city to check and see if they can validate the hypothesis proposed for the city. |
| **7** | **Validate Solutions** | Based on the data obtained and analyzed the proposed FSTP solutions will be evaluated and validated for the city. If on analysis, it is found that the hypothesis/ solution is not viable then the PMU will start again from Step 5 and redevelop a new hypothesis which will be more suitable for the City/ State. |
| **8** | **Detail out Final Solution** | The PMU will Prepare the Situation Analysis Report for the city and submit it to the ULB for review |
| **9** | **Stakeholder consultation meeting for finalizing FSM options** | The PMU will arrange for a consultation meeting with the City/ State officials to go over the optimum final FSM option for a city. |
| **10** | **Prepare Final Technical Concept** | The PMU after obtaining feedback from the city/state will prepare the Final Technical Concept. |
| **Stage 2: Design** | | |
| **1** | **Site identification** | The PMU will identify a site for the FSTP in coordination with the City/ State. |
| **2** | **Site Assessment & Selection** | The PMU will conduct a site assessment and select the site for the FSTP implementation. |
| **3** | **DPR Preparation** | The PMU will prepare a Detailed Project Report (DPR) for the FSTP. The steps are listed below. |
| **a)** | **Land Survey** | The PMU with assistance from the City/ State government will oversee the land survey which will involve activities such as external marking by government surveyor, determine Solid waste management on site, ground levels, and disposal and reuse points. |
| **b)** | **Soil Investigation** | The PMU will hire a consultant to do the soil testing to check for the Safe Bearing Capacity of the soil and groundwater tttable.  The City/State will assist when required. |
| **c)** | **Prepare Reference Drawings** | The PMU will prepare the reference drawings for the FSTP designed. |
| **d)** | **Layout Plan** | The PMU will prepare the layout plan for location of modules on site, road layout, storm water mgmt., cesspool vehicles movement |
| **e)** | **Markings and Cross checking on field** | The PMU will do the markings (boundaries) and cross check the design of the FSTP on the field and accordingly make changes in the reference drawings |
| **f)** | **Structural Input** | The PMU will hire an external Structural Engineer to help with the structural aspects of the construction. |
| **g)** | **Construction Drawings** | The PMU will prepare the construction drawings based on final reference drawings and structural input received. |
| **h)** | **Prepare Estimations** | The PMU will prepare the cost estimates for all the modules and materials involved |
| **i)** | **Review feedback** | The PMU will review internally and submit processes, drawings and design for external review |
| **Stage 3: Implementation** | | |
| **1** | **Call for tender** | The PMU will call for tenders by advertising etc. |
| **2** | **Pre Bid Meeting** | The PMU should conduct a pre-bid meeting to meet with all the contractors and orient them and explain to them the treatment modules and steps of construction. |
| **3** | **Tender out Project** | The PMU will tender out the project. |
| **4** | **Selecting Contractor** | The PMU will select the Contractor after evaluating the techno commercial and financial tenders. |
| **5** | **Contract Agreement** | The PMU will sign an agreement with the contactor selected. |
| **6** | **Implementation and Commissioning** | The PMU will supervise the construction and test all the modules to see if they function as per the desired objective. |
| **Stage 4: Operation & Maintenance** | | |
| **1** | **Prepare O&M Manual** | The PMU will prepare the O&M Manual for the modules in FSTP. |
| **2** | **Training of operators** | The City/State should arrange to train operators to ensure the modules are correctly operated and maintained |
| **3** | **Regular Monitoring** | The concerned officials/engineers of the City/ State should supervise the monitoring and operation of the plant and all input and output parameters should be checked regularly. |
| **4** | **Create Database for Monitoring and Evaluation** | The City/ State should create a database for input and output parameters as well as expense and revenue incurred for FSTP operation. |

1. The detailed activities required for DPR preparation are explained in the section below. [↑](#footnote-ref-1)