# City Sanitation Plan for Amalapuram


Produced by:

Consortium for DEWATS Dissemination Society

Produced for:

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giz

Amalapuram Municipality

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# Amalapuram City Sanitation Plan

**Prepared by:**

Consortium for DEWATS Dissemination Society

This report has been prepared within the context of GIZ's CSP template. Herein, the project team have assessed all the sectors (i.e. Access to Toilets, Wastewater management, Solid Waste Management, Water Supply, Storm Water Drain Management and Receiving water bodies management) based on a review of the existing situation in the sector and evaluating demand for each sector. The demands have been understood based on discussion with city level stakeholders and through assessment of the secondary data resources made available to the project team. The final section of the report aims to identify the way forward in terms of action points and an investment plan for the same.

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# Section I – Introduction and Context

# 1. Introduction and Context

## 1.1 The NUSP and CSP initiative

The National Urban Sanitation Policy launched during 2008 envisages *"All Indian cities and towns become totally sanitized, healthy and livable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation facilities for the urban poor and women."*

The overall goal of this national policy is to transform Urban India into community-driven, totally sanitized, healthy and livable cities and towns. Specific goals include:

- Awareness Generation and Behavior Change,
- Open Defecation Free Cities,
- Integrated Town-Wide Sanitation,
- Sanitary and Safe Disposal, and
- Proper Operation & Maintenance of all Sanitary Installations.

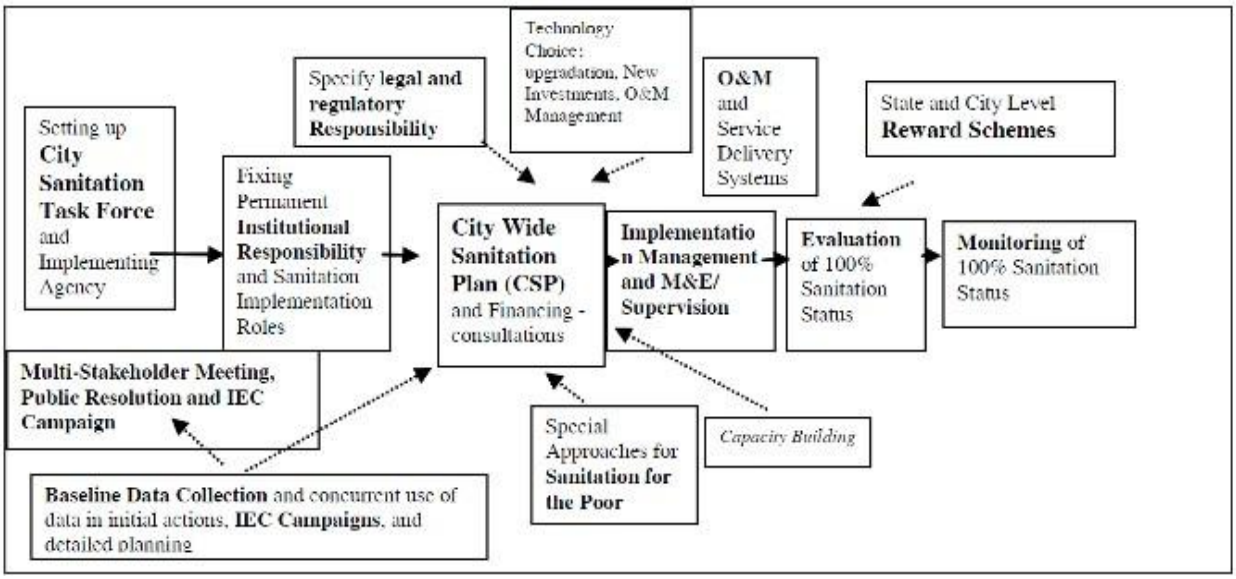
Believing that without a City Sanitation Plan, a comprehensive planning cannot be achieved to attain the objectives of Swachh Bharat Mission, Amalapuram Municipality is developing a City Sanitation Plan for Amalapuram Town that identifies the issues related to governance, technical, financial, capacity enhancement, awareness raising and pro-poor interventions and proposes short, medium and long term measures to achieve the goals of National Urban Sanitation Policy (NUSP) to create community driven, totally sanitized, healthy and livable cities and towns.

The CSP's main purpose is to support urban local bodies and NGOs, CBOs, citizens and private sector agencies to take concrete steps to achieve 100% sanitation in their respective cities that includes Water Supply, Waste Water and Sewerage, Storm Water, Sanitation, and Solid Waste Management. The mentioned sectors are considered under CSP as these are directly and indirectly linked to the other sectors that ultimately affect the hygiene of the city. Thus considering the influence of all these sectors on the city sanitation, the Amalapuram Municipality in consultation and considering the recommendations from citizen groups, elected representatives, government departments and City Sanitation Task Force is developing the CSP. The main aim of the CSTF is to achieve 100% sanitation in the city by involving the suggestions from public, private institutions, NGOs and Aided Organizations in coordination with Town Planning Wing. [1]

Considering the local situations and its need, the Amalapuram Municipality has followed the procedure that is depicted in the below figure while planning, implementing and evaluating a CSP.

[1] Amlapuram Municipality (2016)

*Figure 1: Generic elements of planning, implementation and M&E of city sanitation*




*Source: MoUD (2008): Natiional Urban Sanitation Policy*

The City Sanitation Plan (CSP) is aimed at developing and maintaining a clean, safe and pleasant physical environment in Amalapuram Town to promote social, economic and physical well-being of all sections of the population. It encompasses plan of action for achieving 100% sanitation in the town of Amalapuram through demand generation and awareness campaign, sustainable technology selection, construction and maintenance of sanitary infrastructure, provision of services, O&M issues, institutional roles and responsibilities, public education, community and individual action, regulation and legislation.

To tackle the above challenges and to accord thrust to sanitation as a priority area, the Government of India (GoI) launched the National Urban Sanitation Policy (NUSP) in 2008. The NUSP articulates the resolve of GoI to achieve United Nations Millennium Development Goals specifically, MDG 7 pertaining to secure ecological sustainability and MDGs 4, 5 and 6, pertaining to health and hygienic conditions of the poor and women. In particular, the NUSP

- Envisions that all Indian cities and towns should become totally sanitized, healthy and livable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation facilities for urban poor and women.
- It identifies
    - poor awareness,
    - social and occupational aspects of sanitation,
    - fragmented institutional roles and responsibilities,
    - lack of integrated town-wide sanitation approaches,
    - limited technology choices,
    - reaching the un-served and poor and
    - lack of demand responsiveness

  as the key policy issues to be tackled and aims to transform urban India into community-driven, totally sanitized, healthy and livable cities/towns through achieving:

The principal components of town-wide approach include:

- Collection and sanitary disposal of wastes, including solid wastes, liquid wastes, excreta, industrial wastes, clinical and other hazardous wastes;
- Storm water drainage;
- Cleansing of thoroughfares, markets and other public spaces;
- Environmental sanitation education;
- Inspection and enforcement of sanitary regulations;
- Monitoring the observance of environmental standards.[2]

## 1.2 City Sanitation Plan as a Tool

The City Sanitation Plan is a main planning tool at local level to provide a strategic framework for achieving the goals of the National Urban Sanitation Policy and to formulate a town-wise sanitation vision. The CSP is comprehensive document, which details out the short, medium and long term vision for issues related to Governance, Technical, Financial, Capacity Building, Awareness and Pro poor interventions to ensure 100% access to safe sanitation.

The CSP will need to be prepared keeping in view what the town can afford and finance. It will be better as far as possible to improve the effectiveness of existing facilities before embarking on expensive new investments. Further, thinking about the whole town, and not just some portions or just some facilities, will be necessary to achieve the goals in a comprehensive and systematic manner.

The City Sanitation Plans (CSP) must be prepared and presented by the Implementing Agency/ ULB and presented to the Task Force for approval. While the exact contents of the CSP may vary depending on the local situation, the following aspects are to be covered:

- Plan for Development of Institutions / Organizations responsible for sanitation, and their roles and responsibilities;
- Plan for ensuring 100% Sanitation Access to different socio-economic groups, and related O&M systems (including improving existing systems, supplementary facilities, O&M Management contracts using PPP and community management, etc.);
- Costs and tariffs for service provision;
- The issue of collection of dues needs to be emphasized as a means of ensuring accountability as well as financial sustainability
- Investments and O&M systems for new development areas / market and public places, and residential and other habitations
- Plan for safe collection, conveyance and treatment of sanitary wastes
- Plan for M&E of implementation, and of achieving and sustaining 100%
- Sanitation (including use of community monitoring, etc.)
- Issues such as diminishing water resources, impact of climate change, use of low energy intensive onsite/decentralized wastewater treatment technologies, distributed utilities etc.
- Manpower issues such as adequate remuneration, hazardous nature of work, employment on transparent terms and conditions, use of modern and safe technology, provision of adequate safety equipment such as gloves, boots ,masks, regular health checkups, medical and accident insurance cover etc.
- Plans for other aspects significant locally Overview of CSP Strategy

[2] Amalapuram Municipality (2016)

## 1.3 Understanding the Assignment

The assignment on **'Supporting in City Sanitation Plan Finalization'** is part of a larger support project (SNUSP -II) to the **Ministry of Urban Development (MoUD)** by the **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH** for implementation of the National Government's sanitation policy guidelines for improving the sanitation situation. The SNUSP-II project aims to achieve this by building on lessons of providing City Sanitation Plan (CSP) support to 6 cities and collaborating with 2 states while preparing their State Sanitation Strategies.

As part of the second phase of the SNUSP, master trainers from the nominated 34 small and medium towns (which include 10 towns each in Telangana and Andhra Pradesh) for up scaling the achievements of concrete results on the ground in the sanitation sector. The trainings focus on 'Preparation of City Sanitation Plans' and capacitate state level government functionaries to be the driving up scaling agent in the sanitation sector.

As a follow up to the trainings, the towns are preparing their CSPs and related cost estimates. The objective of the assignment is to handhold and support 3 Urban Local Bodies (ULBs) out of 10 selected ULBs in Telangana and 3 ULBs out of 10 selected ULBs in Andhra Pradesh (overall 6 towns) to shortlist projects, prepare the investment plan and finalize the CSP in close collaboration with the ULB officials and the City Sanitation Task Force (CSTF) following the process and format developed by GIZ. The overall goal is to not just guide but work towards implementing and replicating the CSPs within the respective states, making the Sanitation Plans so prepared both implementable and sustainable.

As such, CDD Society has been commissioned to undertake this support towards finalization of the City Sanitation Plans for the following towns:

- Telengana
    - Khammam
    - Karimnagar
    - Sircilla
- Andhra Pradesh
    - Nandyal
    - Narsaraopet
    - **Amalapuram**

## 1.4 Steps towards preparation of CSP

According to the National Urban Sanitation Policy, the preparatory actions that has been carried out in order to achieve 100% sanitation are:

1. ***Formation of City Sanitation Task Force***

The first step in making the cities 100% sanitized is to elevate the consciousness about sanitation in the mind of municipal agencies, government agencies and most importantly, amongst the people of the city. A multi-stakeholder City Sanitation Task Force has been formed, comprised by representatives from agencies directly responsible for sanitation (divisions and departments of the ULB, PHED, etc.), agencies indirectly involved, and practitioners, representatives of the different stakeholders sectors, NGOs and sanitary workers.

2. ***Baseline Data Collection and Creating Database***

In parallel with the preparatory steps, the ULB / Implementing Agency have collated the information on sanitation that exists with the ULB itself and other agencies in the city. This has included demographic, institutional, technical, social and financial information.

3. ***Awareness Generation and Launch of 100% Sanitation Campaign***

After a reasonable amount of data has been collated from secondary and primary sources, and the Task Force is in place, the first task will be of launching a citywide 100% Sanitation Campaign.

4. ***Specifying Legal and Regulatory Institutional Responsibilities***

Even though many of the municipal laws refer to sanitation responsibilities of households and ULB, etc. these are not clearly laid out or comprehensive. The Implementing Agency will examine the law and rules in this regard and make recommendations for the Task Force to make the rules explicit regarding total sanitation services.

5. ***Planning and Financing***

The task of planning and finding sources of funding will be under the oversight of the Task Force but carried out by the Implementing Agency. The Agency has developed plans for the city for different aspects including institutional, social, technical, financial, etc with the help of different departments involved in city sanitation.

6. ***Technical Options***

Technology choice poses a major problem in Indian cities not only because of lack of information on what exists at present, but also because of the constraints of land, tenure, and low budgetary priority accorded to sanitation historically. Considering the current practices and obstacles that are stopping for the development of sanitation sector in the city, certain technologies that suit best for the city has been recommended.

7. ***Reaching the Un-served Population and the Urban Poor***

Experiences from many Indian cities show that a differentiated approach is necessary to extend good quality sanitation services to the poor – the group that suffers the most in terms of adverse impacts on health and lost earnings.

### *8. Operation & Maintenance and Service Delivery Systems*

Institutional systems for O&M are at the heart of any successful set of systems and procedures to achieve and sustain 100% sanitation.

### *9. Capacity Building & Training*

The role of capacity building and training is crucial in achieving and sustaining 100 % sanitation.

### *10. Implementation Plan and Monitoring and Evaluation*

While the Implementation Agency will be responsible for overall implementation, it is useful to think about plan implementation and delivery mechanisms for each of the components of the Plan. The City Sanitation Task Force and the Implementing Agency need to think about Monitoring & Evaluation of the implementation as an integral part of the City Sanitation Plan.[3]

[3] Amalapuram Municipality (2016)

## 1.5 Approach for the Assignment

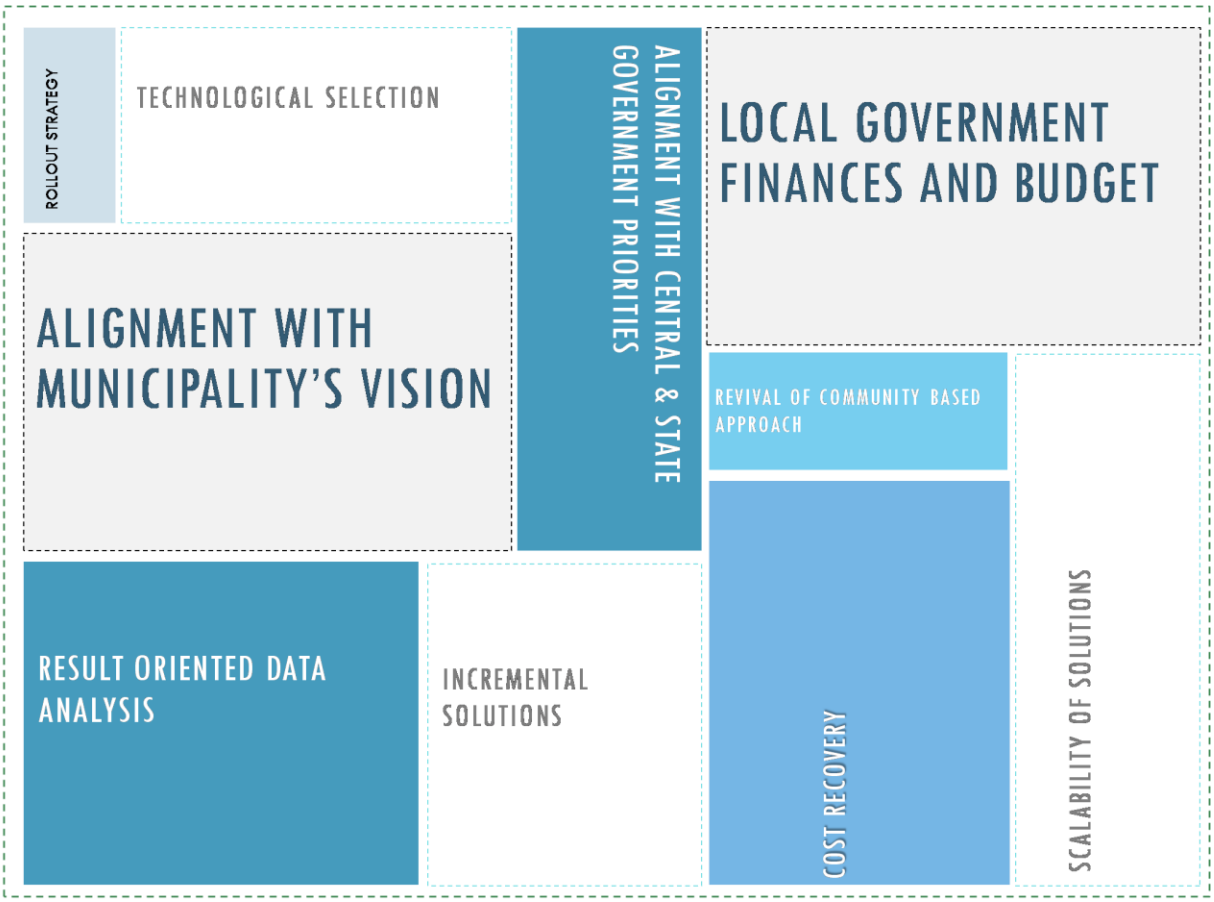



*Figure 2: Principles for an Implementable Sanitation Action Plan*

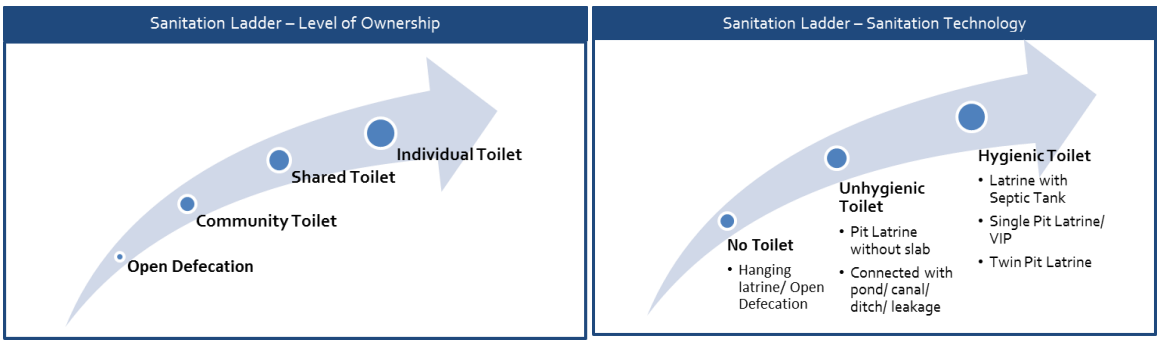
The experiences from the first generation of urban sanitation reforms are that solutions fail repeatedly because they are generalized rather than being demand-responsive and site specific. Backed by our field level experiences and stakeholder consultations, we reflected on **'What makes an Action Plan Implementable?'** Our understanding is that the major tenets of successfully demonstrating sustainable sanitation solutions depend on the following principles:

1. **Alignment with Municipality's Vision:** It is essential to view the sanitation plan as a strategic planning exercise that is conducted by providing guidance but in complete collaboration with the municipality. At the end of the day, no plan however rigorous could be executed through to its rightful conclusion without the collaborative support of the municipality, also keeping in view their tacit experience in the town. As such, it becomes essential to take the municipality into confidence and seek their inputs and understanding on the sanitation reform priorities.
2. **Local Government Finances and Budget:** The solutions to be proposed across all segments of the sanitation value chain have to be sensitive to the municipal finance situation of the town to have any realistic prospect of moving into the implementation phase. Additionally, it will be essential to explore funding possibilities from donor agencies in the form of grants and loans. Additionally, the solutions proposed within the CSP must take into account the sustainability in

terms of whether the municipal government is able to meet recurring expenses to operate and maintain a sanitation system.

3. **Alignment with Central and State Government priorities:** The Central Government has reinstated its commitment to sanitation in 2014 with the launch of the Swachh Bharat Mission (SBM) and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), another scheme to improve the urban sector of the country. It is essential that proposals suggested within a CSP are in alignment with such Governmental programs, to draw strategic leverage and receive any possible financial support. It is important for the local government to be sensitive to any available grant (due to their generally pure financial situation) for infrastructure creation from programmatic support received from State or Central Governments. Also, sanitation is a state subject and so the state can make changes in devolution of institutional responsibilities and financial devolution as well. Moreover, it is only through effective governance by the local government, that the policy guidelines of AMRUT and SBM can be implemented.
4. **Result Oriented Data Collection:** It has become clear that data collection only to back a cookie cutter solution will not help with creating an implementable CSP. Rather data collection methods should be driven with the specific purpose of solving the issue and serving a solution.
5. **Scalability of solutions:** The scale at which a solution (for e.g. a wastewater treatment or a faecal sludge treatment unit) is provided will have a major bearing on the level of financial investment required in a town. Based on the drainage and topographic profile of the town, centralized systems have to be complemented with decentralized approaches to solve the sanitation issues. There generally is a lot of resistance amongst city engineers to go for decentralized options with community involvement, which points out the need of education and capacity building. If the sanitation issues in the city are dealt properly, the natural water bodies can also be revived. Scalability can also be seen as the 'level of decentralization' at which solutions can be provided. The idea that drives this concept is that treatment of wastewater/ faecal sludge should be as close to the source as possible, rather than adopting large scale investments for conveyance. This could be relaxed in cases governed by topographic criteria of the natural setting.
6. **Incremental Solutions:** The project team will adopt an approach of incremental improvement (in terms of interventions and investments) over a period of time to address the entire sanitation value chain. For example, incremental improvements could be envisaged in terms of the level of access to a toilet. The proposed interventions will aim at elevating community from practicing open defecation to having access to a shared/ community toilet, gradually moving towards each resident having access to an "individual toilet".

*Figure 3: Incremental Approach*



Another type of incremental improvement here is in terms of moving up the ladder in the quality of sanitation technologies (from pit to twin pit to septic tank). Though the function of each sanitation system is confinement of the human excreta, the physiographic setting, and socio-economic contexts will have a bearing on the selection of these technologies.

The project focuses on progressing along the sanitation ladder in a phased manner, with the primary motive to ensure that the entire population has access to a hygienic toilet. The progression must also take into consideration the institutional capacities to operate and maintain the systems, financial capacities to sustain the interventions and behavioural changes for engagement of community in the movement of sanitation improvement.

7. **Technology selection:** The technology solutions/ systems to be selected to address the complete chain of wastewater/ faecal sludge management issues must be sensitive to local situations in terms of:
    - The socio economic profile of the cluster
    - Environmental implications
    - Cultural acceptability
    - Cost considerations[4]
    - Operations and maintenance (O&M) requirements
    - Land availability
    - Treatment efficiency
    - Energy requirements
    - Health impact
    - Reuse opportunity
    - Adequacy of water
    - Ground water table
    - Type and permeability of soil
    - Climatic conditions
    - Compliance with discharge standards
8. **Cost Recovery:** An implementable solution should have a cost recovery model to make its implementation sustainable. This would mean that the cost incurred by the municipal government for all the infrastructure to facilitate the sanitation solutions (say the 'purchase of vacuum trucks', 'training of service delivery related to faecal sludge collection' and 'installation of the treatment plant by government') should be recovered. This could be through an effective user charge (collected from the households) collection strategy, through sale of treated wastewater/ faecal sludge etc.
9. **Revival of Community Based Approaches:** Instead of only providing the sanitation "hardware", sanitation implementation need to take a holistic approach. This means there has to be a focus on improving hygiene behaviour, and communities need to understand the O&M aspects, at least of their onsite systems to the extent necessary. The Community Based Sanitation approach also focuses on critical stress areas populated by the poorer income segments and densely populated areas, so as to closely reflect preferences of target communities.

[4] This is limited to understanding derived from consultations and not a detailed review of the municipal budget

10. **Rollout Strategy:** It is important that the roll out of the implementation of a CSP has to be done strategically focused on addressing high priority issues in the immediate term and big ticket projects in the long term. The solutions must be phased in alignment with the principle of 'incrementalism', so that the solutions are first implemented to the highest concern population segments, and the improvements are sustained (technically, environmentally and socio-economically) over a period of time to address the entire sanitation value chain.

## 1.6 Project Activities

The following activities have been completed for Amalapuram.

a. The **inception report** for all the towns have been submitted on 8th September 2016. The inception report covers the scope of work for CDD Society under the project. It also highlights the approach and methodology for the preparation of a City Sanitation Action Plan (CSAP). It covers the core areas to be covered under each sector in the preparation of the CSAP, along with the cross-cutting themes, such as municipal finance, institutional framework and governance, capacity enhancement and health and hygiene. The inception report also states the work plan and the timelines for the deliverables and site visits under the project. Three visits to each town were also planned under the scope of the project.
b. The **first visit** of the team from CDD Society to Amalapuram was on the 1st of November 2016. The visit included meetings with the CSTF, municipal officials, and included visits to selected areas within the town which are significant from the prospect of water supply and sanitation sectors. Collection of important secondary data from the municipal departments and other offices related to water supply and sanitation were also covered during this period.
c. There also has been the **submission of Action Plan** to the municipal corporation and to the AP government. The action plan document and presentation was submitted on the 11th of November 2016. The action plan included the key issues for each sector under the CSAP, the resultant goals, and their action plan for implementation. For each of the suggested initiatives, there was a section on the cost estimates planned for the town.

This chapter gives an overall idea of the CSTF. It will include members of the CSTF and responsibilities of the CSTF. The CSTF should have representation of organisations / experts on women & urban poor issues. The chapter will also comprise information related to the Sanitation implementation agency, nodal officer appointed for the CSTF / CSP, roles and responsibilities of various CSTF members.

# 2. City Sanitation Task Force (CSTF)

This chapter gives an overall idea of the CSTF. It will include members of the CSTF and responsibilities of the CSTF. The CSTF should have representation of organizations / experts on women & urban poor issues. The chapter will also comprise information related to the Sanitation implementation agency, nodal officer appointed for the CSTF / CSP, roles and responsibilities of various CSTF members.

## 2.1 Responsibilities of the CSTF

The City Sanitation Task Force is responsible for:

- Launching the City 100% Sanitation Campaign,
- Generating awareness amongst the city's citizens and stakeholders,
- Approving materials and progress reports provided by the implementing agency, other public agencies, as well as NGOs and private parties contracted by the Implementing Agency, for different aspects of implementation,
- Approving the CSP for the city prepared,
- Undertaking field visits from time to time to supervise progress,
- Issue briefings to the press/media and state government about progress,
- Providing overall guidance to the Implementation Agency, and
- Recommend to the ULB fixing of responsibilities for city-wide sanitation on a permanent basis.

The CSTF shall also responsible to monitor and guide the planning process and implementation at the initial stages of the project and shall conduct meetings and field visits at a later stage on an as-needed basis to ensure quality implementation of the project.

The CSTF shall responsibly recommend and assign below listed aspects to the ULB for the citywide sanitation.

- The ULB shall have final overall responsibility for citywide sanitation, including devolving power, functions, functionaries and funds to them,
- Planning and financing including State Government and Government of India schemes,
- Asset creation including improvement and augmentation,
- Operations and Management (O&M) arrangements for all networks, on-site, individual, community and public sanitation facilities and systems (including transportation up to final treatment and disposal of wastes),
- Fixing tariffs and revenue collections in order to make O&M sustainable,
- Improving access and instituting special O&M arrangements for the urban poor and un-served populations in slum areas and in mixed areas,
- Adopting Service delivery standards (e.g. by urban development departments),
- Adoption of regulatory roles including environmental standards (e.g. state pollution control boards), health outcomes (e.g. health departments),
- Measures in case specific stakeholders do not discharge their responsibilities properly,
- Training and capacity building of implementing agency and related personnel, and
- Monitoring of 100% sanitation involving multiple stakeholders.[5]

[5] Amalapuram Municipality (2016)

## 2.2 Members of CSTF

The constitution of Town Sanitation Task Force is mandatory. As per the NUSP guidelines, considering that CSTF shall comprise of representative/agencies from some of the elected members of ULB, social volunteers, institutions involved in law, health, water supply, sanitation, town planning, slum development, eminent persons and practitioners in civil affairs, health, urban poverty, NGOs working on environmental components and representatives of unions of Safai Karmachari's etc, As per the National Urban Sanitation policy 2008 proposed with following members and the matter was placed in council meeting for approval. The council has unanimously approved the resolution vide CR No. 596, Dt. 27.07.2015.[6]

*Table 1: Members of City Sanitation Task Force, Amalapuram Municipality*

| Sl.No | Name | Designation |
|---|---|---|
| 1 | Sri Yalla Malleswara Rao | Chairperson ( Head of the CSTF) |
| 2 | Sri Ch.Srinivas | Commissioner ( Convener) |
| 3 | Smt. P.Mary Jasmin | TLF president ( Member) |
| 4 | Sri T.Prakash | Sanitary Inspector ( Member) |
| 5 | Sri Gsvvssnv Prasad | Dy. E.E ., Municipality ( Member) |
| 6 | Sri A.Bapayya Naidu | Educational Institutions (Member) |
| 7 | Sri P.Johnpaul | N.G.Os Walkers club (Member) |
| 8 | Dr.D.Ramachandra Rao | Medical practitioner ( Member) |
| 9 | Sri Nimmakayala Raja Rao | Social Worker(Member) |
| 10 | Sri T.Gopi | PHW president(Member) |
| 11 | Sri Achanta Venkateswara Rao | Print Media (Andhra Jyothi) |
| 12 | Sri Korlapati Pradeep | Electronic Media (Member) |
| 13 | Sri Pindi Saibabu | Lecturer (colleges)(Member) |
| 14 | Sri Allada Srinivas | Resident Welfare Association (Member) |
| 15 | Sri Siragam Venkatarao | Sanitary Contractor (Member) |
| 16 | Sri T.Narasimha Murthy | Street Vender Association (Member) |
| 17 | Sri Kala Venkata Rao | Advocate (Member) |
| 18 | Smt. Lakkimsetti Suryakumari | Business Women (Member) |
| 19 | Sri Papaganti Koteswara Rao | Safai Karmachari Union (Member) |

*Source: Amalapuram Municipality (2016)*

## 2.3 Activities of the CSTF

According to the Monitoring Sheet for participating towns, there has been two meetings of the CSTF. The main areas of discussion has been on door to door garbage collection, provision of bins, and storm water drainage, thus emphasizing the focus on solid waste management for the towns. [7]

[6] Amalapuram Municipality (2016)
[7] Monitoring Sheet, Amalapuram Municipality (2016)

# 3. Town Profile

*Figure 4: Amalapuram Town Profile*

| Characteristics | Details |
|---|---|
| Area (sq. km.) | 7.02 |
| Population | 53231 (2011 Census) |
| Population Density(persons/ sq. km) | 7583 |
| No. of Households | 14639 (2011 Census) |
| No. of Slum Settlements/ colonies | 33 notified slums |
| No. of Slum households | 3825 |
| Number of Revenue wards | 12 |
| Number of Election wards | 30 |

## 3.1 Location and Physical Aspects

Amalapuram is one of the major cities in the Indian State of Andhra Pradesh. It is located on the banks of the Godavari River, in East Godavari District of the State. It is located at 16°35'N and 82°01'E. The average elevation of the town is 4m above sea level[8].

Amalapuram is a town, municipality and Revenue Division in East Godavari District in the State of Andhra Pradesh, India. It is 60 km from Greater Rajahmundry city. It is at the head of the Konaseema delta, the triangle formed by the Waters of the Godavari River. The delta's black cotton soil is very fertile and crops including coconut and paddy are grown in it. Kakinada and Rajahmundry are towns close to Amalapuram. It is third biggest in East Godavari after Rajahmundry and Kakinada cities. Amalapuram has temples of Lord Venkateswara, Subrahmanyeswara Swamy, Chandramouliswara Swamy, and Chenna Malleswara Swamy.

Amalapuram Town is under jurisdiction of Amalapuram Municipal Council (AMC) which are governed by elected members. The population of AMC is 53,231[9]. Mr. Sreenivas is currently the Municipal Commissioner of AMC. Amalapuram town is spread over 7.02 Sq.km and is divided in to 30 election wards. The total number of revenue wards is 9.

Amalapuram is well connected with other parts of the country by road. National Highway-5 passes through both cities, and has excellent road connectivity to all important places like Vijayawada, Visakhapatnam, Hyderabad, Chennai, Bhubaneswar etc. It is the main transportation hub for both the Godavari Districts. Amalapuram is also connected with Vijayawada, Visakhapatnam, Hyderabad, Chennai and Bhubaneswar which are further connected to various other places in India.

## 3.2 Climate and Rainfall

The weather is hot and humid with a tropical climate. The climate is reasonably cold in winters and hot during summers. In Amalapuram the winds are mostly dry, warm and generally light throughout the year. The predominant wind direction in the city and surrounding areas is mostly in North West. The temperature reaches to a maximum for 51°C in the summer season, while during winter, the temperature reaches to a minimum of 18.5°C. There is also the incidence of tropical cyclones originating in the Bay of Bengal, and also affected by typhoons, originating in the South China Sea. These cyclones are essential for the maturing of paddy, and are required for the moistening of the soil for the cultivation of Rabi crops.

[8] Source: CIST Infrastructure (n.k.), Detailed Project Report on Comprehensive Water Suppluy Improvement Scheme to Amalapuram Municipality

[9] Source: Census of India (2011), New Delhi

## 3.3 Population and Growth Patterns

Amalapuram has a population of 53,231[10]. The total population constitute 26,485 males and 26,746 females – a sex ratio of 1010 females per 1000 males, higher than the national average of 940 per 1000. The average literacy rate stands at 76% (Male: 79%, Female: 73%) with 39,908 literates, significantly higher than the national average of 73.00%.

The Population of Amalapuram is not spread uniformly. The present area under the Amalapuram is about 7.02 sq.km. The population density of Amalapuram is about 7583 persons per sq.km. Amalapuram Town was divided into 30 election wards and 12 revenue wards. The detailed ward wise population is as follows.

*Table 2: Population Details, Amalapuram Municipality*

| Ward. No. | Area (Ha) | No. of HHs | Population | | | Density (persons / Ha) |
|---|---|---|---|---|---|---|
| | | | Total | Male | Female | |
| 1 | 55.62 | 421 | 1945 | 1005 | 940 | 34.97 |
| 2 | 26.00 | 448 | 1782 | 929 | 853 | 68.54 |
| 3 | 8.70 | 494 | 1636 | 832 | 804 | 188.05 |
| 4 | 6.07 | 452 | 1747 | 788 | 959 | 287.81 |
| 5 | 20.20 | 438 | 1665 | 839 | 826 | 82.43 |
| 6 | 21.65 | 466 | 1916 | 901 | 1015 | 88.50 |
| 7 | 10.92 | 438 | 1618 | 764 | 854 | 148.17 |
| 8 | 7.28 | 424 | 2025 | 1014 | 1011 | 278.16 |
| 9 | 43.30 | 508 | 1858 | 892 | 966 | 42.91 |
| 10 | 36.01 | 537 | 1802 | 872 | 930 | 50.04 |
| 11 | 21.85 | 551 | 1513 | 757 | 756 | 69.24 |
| 12 | 10.92 | 421 | 1268 | 654 | 614 | 116.12 |
| 13 | 8.70 | 508 | 1713 | 869 | 844 | 196.90 |
| 14 | 33.99 | 537 | 1828 | 948 | 880 | 53.78 |
| 15 | 21.65 | 445 | 1656 | 799 | 857 | 76.49 |
| 16 | 14.44 | 494 | 2055 | 1065 | 990 | 142.31 |
| 17 | 12.94 | 466 | 1707 | 837 | 870 | 131.92 |
| 18 | 26.00 | 480 | 1832 | 920 | 912 | 70.46 |
| 19 | 23.87 | 332 | 1693 | 882 | 811 | 70.93 |
| 20 | 46.94 | 445 | 1940 | 981 | 959 | 41.33 |

[10] Census of India (2011), New Delhi

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | 17.40 | 479 | 1728 | 846 | 882 | 99.31 |
| 22 | 10.12 | 445 | 1785 | 924 | 861 | 176.38 |
| 23 | 10.82 | 456 | 1815 | 928 | 887 | 167.74 |
| 24 | 15.56 | 546 | 1350 | 695 | 655 | 86.76 |
| 25 | 14.36 | 442 | 1278 | 607 | 671 | 89.00 |
| 26 | 8.70 | 490 | 1680 | 825 | 855 | 193.10 |
| 27 | 16.25 | 446 | 1562 | 771 | 791 | 96.12 |
| 28 | 57.46 | 459 | 2375 | 1178 | 1197 | 41.33 |
| 29 | 43.30 | 521 | 2483 | 1196 | 1287 | 57.34 |
| 30 | 50.58 | 534 | 1976 | 967 | 1009 | 39.07 |
| **Total** | **701.60** | **14120** | **53231** | **26485** | **26746** | **75.87** |

*Source: Amalapuram Municipality (2016)*

The population of Amalapuram town has increased over the years. There has been a higher level of increase from 1991 population to 2001 population. However, the rate of population growth is much lower between 2001 and 2011. The existing and projected populations for Amalapuram are as follows:

*Table 3: Census and Projected Population for Amalapuram*

| Year | 1991 | 2001 | 2011 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|---|
| Population | 46,029 | 51,444 | 53,231 | 55,656 | 58,843 | 62,213 | 65,776 |

*Source: GoI (1991, 2001 and 2011): Census of India*

The growth rate of population is calculated from the change in population between 1991 and 2001 and between 2001 and 2011.

*Table 4: Growth Rates of Population in Amalapuram*

| Year | Total Population | Annual Growth Rate (%) |
|---|---|---|
| 1991 | 46,029 | - |
| 2001 | 51,444 | 1.12 |
| 2011 | 53,231 | 0.34 |

The growth rate is calculated through the following formula (assuming a geometric growth rate):

**Annual % Growth Rate =** 100*[(end population/ start population) ^ (1/no. of years) - 1]

**Annual % Growth Rate =** 100*[(53,231/51,444) ^ (1/10) - 1] = 0.34%

The higher rate of growth is taken for further projection as actual figures of population tend to be higher than the projected figures and it makes more strategic sense to estimate waste generation on the higher side rather than lower.

The population is projected for the years 2015, 2020, 2025 and 2030. The geometric progression (GP) method of population projection is adopted for calculating the future population. The formula for the calculation of the projected population in GP is as follows:

$$\text{Projected Population} = \text{Population of the earlier year} * \left[1 + \left(\frac{\text{Rate of growth}}{100}\right)\right]^{\text{Number of years}}$$

## 3.4 Urban Poor - Slum Profile of the Town

As per the Slum survey, there are 33 notified slums in Amalapuram with a total population of 15,298. The slum pockets are scattered in different localities of the City mainly in the Outskirt portion of the city.

The details of the slums in Amalapuram are as follows:

*Table 5: Details of Slums, Amalapuram Municipality*

| Sl. No. | Slum Name | Ward No. | Category | Area (Ha) | No. of HHs | Population | | | Density (persons / Ha) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | Male | Female | |
| 1 | Chintagunata Cheruvu | 1 | Notified | 3.74 | 40 | 129 | 76 | 53 | 34.49 |
| 2 | Metla Colony | 1 | Notified | 4.26 | 181 | 665 | 352 | 313 | 156.10 |
| 3 | Padminipeta | 1 | Notified | 5.60 | 23 | 94 | 55 | 39 | 16.79 |
| 4 | Suryanarayanapuram | 5 | Notified | 2.86 | 126 | 428 | 233 | 195 | 149.65 |
| 5 | Stambalamerka | 9 | Notified | 2.11 | 79 | 246 | 135 | 111 | 116.59 |
| 6 | Sayammapeta | 9 | Notified | 2.62 | 62 | 201 | 119 | 82 | 76.72 |
| 7 | Janikipeta & Jambavanpeta | 9 | Notified | 2.62 | 82 | 362 | 214 | 148 | 138.17 |
| 8 | Gandhinagar | 9&10 | Notified | 1.45 | 165 | 555 | 327 | 228 | 382.76 |
| 9 | Gangiredla Gudem | 10 | Notified | 1.77 | 82 | 414 | 244 | 170 | 233.90 |
| 10 | Subbanna Colony | 11 | Notified | 2.50 | 49 | 138 | 81 | 57 | 55.20 |
| 11 | Ramakrishna Veedhi (Gollagudem Area) | 13 | Notified | 4.00 | 52 | 295 | 154 | 141 | 73.75 |
| 12 | Dr.K.Subba Rao Hospital to Rangapuram Road | 13&14 | Notified | 12.00 | 142 | 675 | 398 | 277 | 56.25 |
| 13 | Maddalapeta | 14 | Notified | 3.55 | 247 | 801 | 413 | 388 | 225.63 |
| 14 | Surya Nagar | 14,15,16& 17 | Notified | 20.00 | 287 | 1311 | 673 | 638 | 65.55 |
| 15 | Vaddigudem and Menduvaripeta | 17 | Notified | 2.54 | 96 | 325 | 192 | 133 | 127.95 |
| 16 | Srirama Nagar Harijanawada | 18 | Notified | 4.00 | 98 | 378 | 203 | 175 | 94.50 |
| 17 | Bandivaripeta | 19 | Notified | 4.60 | 45 | 181 | 107 | 74 | 39.35 |
| 18 | Venkatakrishnapuram | 20 | Notified | 1.37 | 48 | 191 | 112 | 79 | 139.42 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 19 | Chakali Cheruvu | 22 | Notified | 3.50 | 106 | 353 | 188 | 165 | 100.86 |
| 20 | Sri Dasanjeneya Temple Veedhi | 23 | Notified | 2.07 | 100 | 309 | 162 | 147 | 149.28 |
| 21 | Narayanapeta & Prabhakara Nagar | 25 | Notified | 6.19 | 285 | 1149 | 578 | 571 | 185.62 |
| 22 | Upparla colony | 25 | Notified | 1.17 | 70 | 420 | 248 | 172 | 358.97 |
| 23 | Market Area | 26 | Notified | 3.23 | 186 | 848 | 440 | 408 | 262.54 |
| 24 | EWS Colony | 27 | Notified | 7.99 | 310 | 1197 | 606 | 591 | 149.81 |
| 25 | Kalavantula Colony | 27 | Notified | 1.84 | 88 | 324 | 161 | 163 | 176.09 |
| 26 | Sitapathiraopeta | 28 | Notified | 4.63 | 96 | 384 | 227 | 157 | 82.94 |
| 27 | Sawmill Workers Colony | 28 | Notified | 0.35 | 41 | 164 | 97 | 67 | 468.57 |
| 28 | Duddivari Agraharam S.C.Colony | 28 | Notified | 3.50 | 48 | 183 | 108 | 75 | 52.29 |
| 29 | Vanacherlavari Street | 29 | Notified | 1.06 | 190 | 757 | 410 | 347 | 714.15 |
| 30 | Savaram Harijanawada | 29 | Notified | 3.20 | 102 | 405 | 209 | 196 | 126.56 |
| 31 | Chakalipeta (Near Black Bridge) | 30 | Notified | 11.00 | 73 | 325 | 172 | 153 | 29.55 |
| 32 | Bandivaripeta | 30 | Notified | 9.00 | 98 | 425 | 231 | 194 | 47.22 |
| 33 | Ravulacheruvu | 30 | Notified | 12.00 | 128 | 666 | 343 | 323 | 55.50 |
| | **Total** | | | **152.32** | **3825** | **15298** | **8268** | **7030** | **100.43** |

*Source: Amalapuram Municipality (2016)*

## 3.5 Economic Base of Town

Amalapuram is one of the important commercial centres in East Godavari District, and is surrounded by number of villages whose main activity is agriculture. The major crops cultivated here is Paddy, coconut and sugarcane, brinjal, ladies finger, chillies, cucumber, tomatoes, sweet gourd, Indian broad bean. Various types of leafy vegetables are also grown here. The soil of mixed varieties makes it suitable to grow many types of crops. Bananas are extensively grown in and around Amalapuram though its productivity has gradually declined. Agricultural produce is one of the major contributing factors to the economy in Amalapuram.

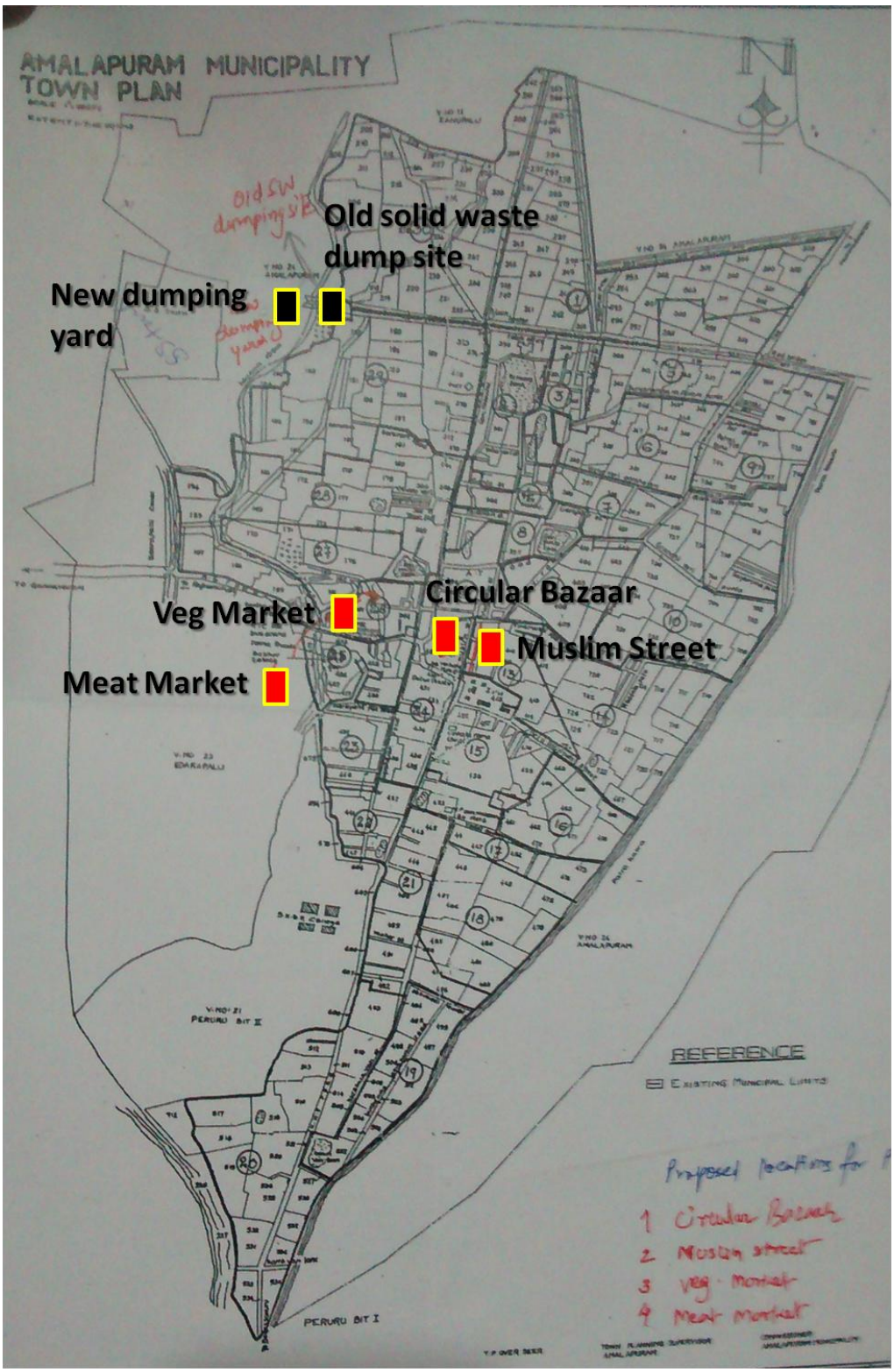



*Figure 5: Town Map of Amalapuram*

## Section II – Technical Sectors

This study report shall be based on the following objectives:

Envisage providing the Municipality with a report on better improvements under water supply utility in a phased manner aiming to meet the demands of population for intermediate and ultimate in affordable rates including barrier free to the Amalapuram residents. This would entail:

1. To assesses the identification of deficiencies in the existing system with the enabled measures to improve the level of service.
2. To suggest the institutional mechanisms for improving operation and maintenance.
3. To suggest improved measures for training and capacity building.

To suggest the ULB to equip with the necessary skills and arrangements for achieve 24x7 systems.

# 4. Water supply

## 4.1 Baseline Status

***Water Reservoir Details (Source of Water)***

- The source of water for Amalapuram is Benda Canal from Godavari barrage running at 0.50 km distance from the town.
- There are 2 Summer Storage Tanks for drawing water during closure period of canal. The old S. S. Tank Capacity is 85 million liters, the New S. S. Tank has a capacity of 340 million liters. Hence the combined Capacity of S. S. Tanks is 429 million liters.

***Details of WTP***

- Amalapuram is being served by 2 Filtration plants of combined capacity of 3.75 MLD. These are raw gravity filters. The treated water collected in clear water sumps is pumped to service Reservoirs through clear water pumping mains.
- The town has 3 Nos Elevated Level Service Reservoirs of combined Capacity of 2275 KL located in various localities of town, for distribution.

***Distribution Network Details***

- The network for pipeline distribution in the town is given in the table below.

*Table 6: Details of Water Supply Zones- Amalapuram*

| No. | Reservoir Type | Capacity | Wards Served | HH | Connections | Water Quality | Per capita Supply | Frequency of Water Supply | Hours of Supply | Pressure Adequate/ In adequate |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 to 30 Wards | Elevated | 5.46 ML | 30 | 14120 | 7422 | 100 | 102.57 lpcd | 2 hours per day | 2.00 hours | Adequate |

*Source: Amalapuram Municipality (2016)*

***Details of HSCs (Coverage of Water Supply Connections)***

- 50.1% of the Households have Water Connections[11]. The remaining households have access to public stand posts.

***Per Capita Supply of Water***

- Daily 5.46 million liters of protected drinking water is being supplied in the town at 102.57 LPCD.[12]

[11] The percentage is calculates as a percentage of the total population as given by the 2011 Census.
[12] The per capita water supplied has been calculated by dividing the total water supplied (5.46 million litres) by the total population as per the 2011 Census.

***Extent of Metering of Water Connections***

- There are 247 metered connections in the town, which leads to 3.3% of the total number of connections.
- Taps and water charges collected from domestic service connections is about Rs. 80/- per month. For commercial connections, water charges are Rs.12.50 per 1000 litres.

***Extent of Non-Revenue Water (NRW)***

- The extent of non-revenue water is 35%. This includes free authorised water for which payment is not collected (such as water supplied through PSPs), as well as water lost in transmission and distribution.
- The cost recovery in NRW has been as follows:

*Table 7: Cost Recovery in Non-Revenue Water*

| Cost Recovery | Unit | 2014 | 2013 | 2012 | 2011 | 2010 |
|---|---|---|---|---|---|---|
| **Operating Expenses** | Rs. lakhs | 124.15 | 110.20 | 100.45 | 95.90 | 92.32 |
| **Operating Revenue** | Rs. lakhs | 64.52 | 54.53 | 51.47 | 48.50 | 43.50 |
| **Cost recovery** | **%** | **51.96%** | **50.00%** | **52.00%** | **50.57%** | **47.12%** |

*Source: Amalapuram Municipality (2016)*

***Quality of Water Supplied***

- The water supplied is of good quality.

***Cost Recovery in Water Supply Services***

- The cost recovery for water supply is 74%.
- The total amount of water supply collections has been as follows:

*Table 8: Demand Collection Balance- Water Supply (Rs. in lakhs)*

| Water Supply | 2014 | 2013 | 2012 | 2011 | 2010 |
|---|---|---|---|---|---|
| **No of Assessments** | 6928 | 6732 | 6456 | 6147 | 5993 |
| **Arrears** | 5.92 | 7.23 | 8.83 | 9.67 | 15.76 |
| **Current** | 67.94 | 58.92 | 57.03 | 53.47 | 46.87 |
| **Total** | 73.86 | 66.15 | 65.86 | 63.14 | 62.63 |
| **Arrears** | 3.32 | 5.70 | 7.16 | 8.60 | 12.53 |
| **Current** | 64.52 | 54.53 | 51.47 | 45.71 | 40.43 |
| **Total** | 67.84 | 60.23 | 58.63 | 60.10 | 52.96 |
| **Arrears** | 2.60 | 1.53 | 1.67 | 1.07 | 3.23 |
| **Current** | 3.42 | 4.39 | 5.56 | 7.76 | 6.44 |
| **Total** | 6.02 | 5.92 | 7.23 | 8.83 | 9.67 |

*Source: Amalapuram Municipality (2016)*

- The expenditure incurred for provision of water supply services are as follows:

*Table 9: Expenditure in provision of Water Supply services*

| Sl. No. | Component | Cost |
|---|---|---|
| 1 | Regular staff salary | 27.00 Lakhs |
| 2 | Out sourcing staff salary | 33.45 Lakhs |
| 3 | Power charges | 36.00 Lakhs |
| 4 | Chemicals | 15.20 Lakhs |
| 5 | Other maintenance and repairs | 12.50 Lakhs |
| | **Total** | **124.15 Lakhs** |

*Source: Amalapuram Municipality (2016)*

***Efficiency in Collection of Water Supply Related Charges***

- The efficiency in collection of water supply related charges is 80%.

***Projects identified or underway***

- The Detailed Project Report on Comprehensive Water Supply Improvement Scheme is being processed separately for prospective and ultimate population for the years 2032 and 2047 respectively.
- The project cost is Rs.100.00 Crores.

## 4.2 Gaps and Issues

- Additionally, the extent of metering of water connections is only 3.3%. As such, most of the water tariff collected would be through flat tariffs and not volumetric, thus reducing the potential for cost recovery for the municipal body:
    - Rs. 80 per month (Flat Rate for General households and BPL).
    - Rs. 8 per kilolitre (Volumetric rate for commercial establishments).
- The capacity of SS tanks, treatment plants and storage facilities are not sufficient for present demands.
- The existing distribution is very old in the town area and need remodeling. The distribution is not upto the satisfaction of the citizen of Amalapuram.
- Only 51% of the households have water supply connections. While the remaining half of the population get access to water supply through public stand posts (PSPs).
- DPR has been prepared for extending the water supply connections but network extension to the existing one is still not proposed.
- Part of the universal coverage achievement will also require building more distribution lines, i.e. 80.4 kms of water supply distribution lines.
- A major share of the distribution network was laid over 30 years before, with issues such as leakages observed frequently.
- Though the Service Level Benchmarks state a cost recovery in water supply services of 74%, this percentage needs to be revisited in the light of the following indicators.
- The coverage of water supply connections is only 51.00%. As such, the water supply charges are recovered only from half of the population.

- The extent of NRW is 35%; this includes free authorized water for which payment is not collected (such as water supplied through PSPs) as well as water lost in transmission and distribution.
- As such the prevailing indicator of collection efficiency, i.e. 74.00% is only meant for water supply connections to 51% of the households which basically means much more potential to recover costs.
- Two queries emerge for this issue:
    - Considering the need to charge volumetric as opposed to a flat tariff?
    - What is the right cost (cost per kilo liter) for the water supplied to the municipality?

# 5. Access to Toilets

## 5.1 Baseline Status

***Status of Toilets***

- There are 13657 pour flush type toilets in Amalapuram, which is 93.29% of all households.[13]
- There are no community or public toilets in the town.

***Coverage of Toilets***

- The coverage of toilets in Amalapuram is as follows:

*Table 10: Coverage of Toilets, Amalapuram Municipality*

| Ward | Total HHs | Urban Poor HHs | No.of HHs | | |
|---|---|---|---|---|---|
| | | | Individual Toilets | Community Toilets | Open defecation |
| 1 to 30 Wards | 14120 | 3825 | 13657 | --- | 100 |

*Source: Amalapuram Municipality (2016)*

- There is open defecation in certain slums in Amalapuram Municipality, which are now being covered with individual household toilets under Swachh Bharat Mission**.** The Census states that 8% of the population was undergoing open defecation in 2011[14]. However, these households will be covered by the Swachh Bharat Mission.

***Projects identified or underway***

- Amalapuram has proposed to construct two community toilets, one at Circular Bazaar and another at Kacheri Chavidi, with an approved cost of Rs. 6.50 lakhs.
- This Municipality has been proposed to construct sanitary toilets for those who are not having toilets and for which according to the survey for identification of houses of not having individual toilets under Swacch Bharat – Swatchh Andhra programme SLIP Targets for the sector.

[13] The percentage is calculated as a part of the total households as per 2011 Census population.
[14] Source: MoUD (2011), Census of India

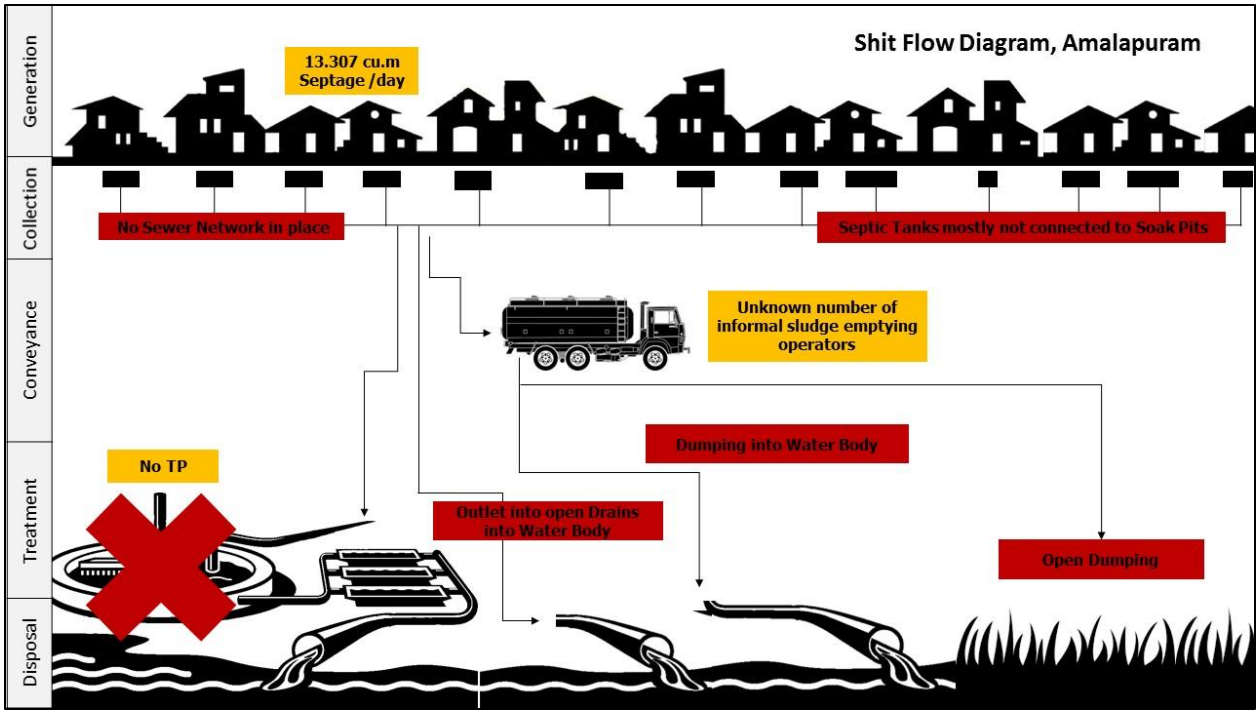



*Figure 6: Shit Flow Diagram, Amalapuram*

## 5.2 Gaps and Issues

- Rs. 6.5 lakh is the cost estimate that has been provisioned for the construction of these two community toilet blocks (funds allocated from Swacch Andhra); Rs. 3.25 lakh dedicated for each 5 seater block (meant for 100 users) at the rate of Rs. 65,000 for each seat; However Municpality has revised the estimate to be Rs. 4.25 lakh for each block; Approved for construction.
- Two Community Toilets have been planned in the town, one at Circular Bazaar area and another one at Village Chaawdi are which have been stalled due to various issues.
- The revenue office have objected the construction of one of these toilets on the land at Village Chawdi area.
- One neighbouring resident have also flagged a concern for the construction of another toilet as it would hamper the local neighbourhood environment. The argument of the plea is that over time lack of maintenance of this facility would create issues for people residing in the neighbourhood.
- The ensuing court case has thus stalled the construction activities.

# 6. Waste Water Management

## 6.1 Sewerage Management

### 6.1.1 Baseline Status

***Coverage of Latrines (Individual or Community)***

- There are 13657 pour flush type toilets in Amalapuram, which is 93.29% of all households[15].
- There are no community or public toilets in the town

***Coverage of Sewerage Network Services***

- There are no piped sewers in Amalapuram.

***Sewerage Treatment Plant***

- There are no sewerage treatment plants in Amalapuram.

### 6.1.2 Gaps and Issues

- There are no provisions for sewerage network services for Amalapuram. All toilets are connected to various septage mechanisms.

## 6.2 Septage management

### 6.2.1 Baseline Status

***Septage Management Practices in the Town***

*Table 11: Septage Management Practices, Amalapuram*

| Ward | No.of House holds | Waste Water disposal arrangement for toilets (No.) | | | | | | | No.of Insanitary latrines |
|---|---|---|---|---|---|---|---|---|---|
| | | Sewerage System | Septic tank | | Soak Pit | Pit Latrines | Open Drains | Others | |
| | | | Connected to soak pit | Connected to open drain | | | | | |
| 1 to 30 | 14120 | Nil | 13657 | Nil | 13657 | Nil | Nil | Nil | Nil |

*Source: Amalapuram Municipality (2016)*

- Approximately 4.37 cu.m[16] of septage is generated by population of 53.231 on a daily basis in Amalapuram.
- All toilets are connected to soak pits, according to the data provided by the municipality. However, field visits to the town suggest that the connection to soakpits is not there for a lot of toilets, and all the wastewater from the toilets flows from the toilets to the open drains.

[15] The percentage is calculated as a part of the total households as per 2011 Census population.
[16] Assuming sludge accumulation rate of 30 liter per capita per year for septic tank.

- There are no formal faecal sludge emptiers owned by the municipality. Septic tanks are emptied by 10 informal faecal sludge emptiers.

*Table 12: Sludge Generation Method for calculation Trips*

| 2. Sludge Generation Method for calculating Trips | Number | |
|---|---|---|
| Sludge Accumulation Rate for Septic Tanks (litres per capita per year) | 67.00 | CPHEEO manual |
| Total septage generated after 3 years in each HHs (if cleaning cycle is 3 years) (litres) | 10699431.00 | Population*sludge accumulation rate* 3 years |
| Total septage generated per HHs in a year (litres) | 3566477.00 | Population*sludge accumulation rate* 1 years |
| Total septage generated per HHs in a day (litres) | 9771.17 (9.77 Cu.m) | |
| No. of working days | 365.00 | |
| Truck capacity | 4000.00 | |
| No. of trips by each cess-pool in a day (no.) | 2.44 | No. of HH * 2( since 2 trips are required to clean one septic tank |
| Note: Sludge Accumulation rate for Pits | 97 liters for 2 years | |
| | 67 liters for 3 years | |

*Table 13: Cost of Septage Management*

| Cost of Septage Management (from Case Study Citings) | Case Studies for FSTP Demonstrations | Cost (in INR) (Cr) | Cost per Cu m (in INR) (Cr) |
|---|---|---|---|
| Plant Capacity (In cu m) | | | |
| 6.5 | Devanahalli, Karnataka | 0.67 | 0.103 |
| 22 | Tiruchirapalli, Tamil Nadu | 2.3 | 0.105 |
| Calculating tentative FSTP treatment plant cost for Nandyal based on above case studies | | | |
| 9.77 | Amalapuram, Andhra Pradesh | 0.977116986 | |

## 6.2.2 Gaps and Issues

- There is no formal fecal sludge emptying service provided by the municipality.
- The septic tanks and pits in the town are serviced by informal fecal sludge emptying operators (there are ten operators as per discussion with the municipal staff), regarding whom there is no proper database with the municipality.

- The sludge emptied from the septic tanks of households are dumped in open fields and open environment. There is no regulation or awareness against such practices.
- The duration of cleaning varies based on the size of the tank and pit, for which there is no existing database.
- As the septic tanks are not connected to a soak pit, the tanks outflow conveniently empties into an adjacent drain, thus not requiring the households to desludge regularly.
- As per discussions with the municipality, all septic tanks have no connection with soak pits. The outflow of the septic tank opens into the open or into storm water drains. These septic tanks do not qualify the definition of a hygienic toilet as set by the World Health Organization.

# 7. Solid Waste Management

## 7.1 Baseline Status

***Total Waste Generated***

- The total waste generated by Amalapuram is 37 MTD.
- The major sources of solid waste generation in the town are domestic waste, commercial establishments, markets, hotels and restaurants, etc.

***Qty. of Waste Collected (MT/day)***

- 17 MTD of waste is collected every day in Amalapuram, by door to door collection.

***Per Capita Waste Generation***

- The per capita waste generation has been calculated in the following manner:

*Table 14: Calculation of per capita waste generated, Amalapuram*

| No. | Parameter | Calculation | Remarks |
|---|---|---|---|
| 1 | Current Population of City | Assume 1 lac | **53231** |
| 2 | Total Waste Generated | Assume 25 TPD | **35.00 MT** |
| 3 | Hence, per capita waste generation | 300 gm | **700 gm** |

*Source: Amalapuram Municipality (2016)*

***Coverage of door to door collection***

- The coverage of door to door collection is 50%, and has been implemented in only some of the wards.

***Households covered by door to door collection***

*Table 15: Door to door collection details, Amalapuram*

| Ward No.& Name | No.of HHs | Total waste generated (MT/ day) | If Household Door to Door Collection system is available | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | No.of HHs Covered | Qty.of waste Collected (Mt/ day) | Source Segregation (Yes/ No) | Waste collection frequency | Waste Collection Charges (Rs./ Month) | Existing Man Power (Nos.) | Equip-ment |
| **1 to 30** | **14120** | **37.00** | **10590** | **17.00** | **No** | **Daily** | **Nil** | **71 Nos** | **9 Tractors & Push Carts** |

- There are no other methods of waste collection other that door to door collection.
- A majority of the households use garbage bins for the disposal of the domestic waste.
- In some of the slum areas the domestic waste is being dumped on the streets, open spaces, and vacant places thereby creating unhygienic conditions in the neighbourhood.

***Source Segregation***

- There is no segregation of waste at the household level.

***Waste Collection Frequency***

- Waste is collected daily in Amalapuram.

***Transport and Disposal of Waste***

- There are no community bins. Waste is collected from households and dumped into the dumpsite.

***Existing Staff (contract/full time) who are deployed for SWM***

- There are 70 public health workers and 1 sanitary inspector in the municipality.
- Public health workers are understaffed by 55 workers, and the position of the Sanitary Supervisor is vacant.

***Existing Infrastructure Deployed***

- There are 9 tractors and push carts that are used to convey waste to the solid waste dumpsite.

***Details on SWM Dump Site***

- The dumpsite is located adjacent to the canal stream, coming from the Amalapuram canal, in an unsupervised manner, which has adverse implications on the environment.

***Composting /other Practices for Resource Recovery of Biodegradable Waste***

- There is a plan for bio composting by the municipality to process organic, biodegradable waste coming to the dumpsite.[17]

[17] M/s Sai Geetika Agri Biotech Pvt. Ltd. (2016), Letter to the Municipal Commissioner, Amalapuram Municipality- (19.05.2016)

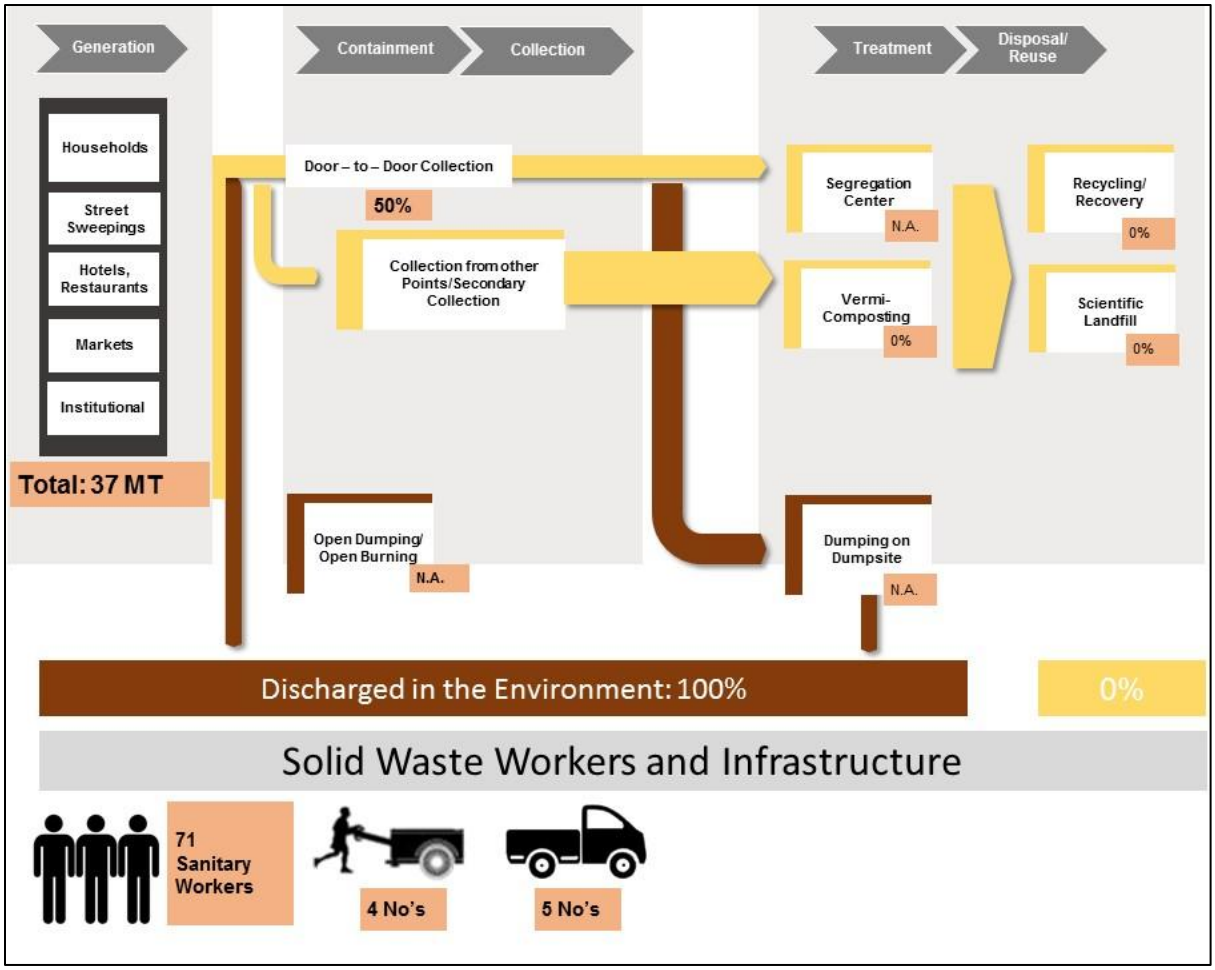



*Figure 7 Solid Waste Management Mass Balance Diagram*

## 7.2 Gaps and Issues

- Demarcation and micro pocketing exercise (i.e. implementation of G.O. Ms. No. 279) for clear demarcation of residential, commercial and main road sweeping pockets (for carrying out the sanitation and solid waste management activities) not completed yet.
- The solid waste collection and conveyance process is an issue presently as all the waste (biodegradable and non-biodegradable) is dumped without segregation at the dump site.
- In this regard also, there are not enough workers in the public health wing of the municipality. As such, micro pocketing and contracting private service providers with the collection and conveyance work packages is essential.
- Leachate from the dumpsite permeates below ground and has severe adverse effects on the environment.
- It is essential to seek an environmental audit and reclaim the land of this facility to avoid the associated environmental hazards; Identifying criteria1 for the SWM facility would need to satisfy the following criteria:
    - Immediate habitation: preferably a 200 m margin

- Water bodies: preferably a 200 m margin
- Wetland: No land fill permitted
- Flood prone areas: No landfill permitted
- Airport: 20 km buffer margin
- Heritage site: 10 km buffer margin
- Groundwater table: 3 m

***Final Round of Discussions with Town***

- The micro pocketing exercise for implementation of GO 279 has been completed and estimates have been sanctioned for floating tenders to outsource the SWM services for collection and conveyance of solid waste in Amalapuram
- The existing solid waste disposal facility is at an environmentally sensitive site and another area has of 4 acres have been earmarked for dumping solid waste. However, this earmarked plot is also within few meters away from a canal. This land is provided by the Revenue department.
- At the new plot, the ground water table is high. As such, this would require leveling to raise the distance between the ground level and the water table.
- The approach road for the existing facility is also not in a physically good condition
- Presently, segregation is undertaken in a single ward, but the collection personnel mix the waste in the later segments of the collection chain.
- The solid waste needs to be segregated at source followed by conveyance of plastics and recyclables to the existing Site (i.e. Dry Resource Collection Centre), followed by conveyance of wet waste to new earmarked site.

# 8. Storm Water Management

## 8.1 Baseline Status

- In Amalapuram, the total length of roads is 113.50 kms and hence the stormwater drain requirement is around 227 kms as against the existing drain length is 76.40 kms leaving a gap of 130.06 kms working out 42.46% in terms of percentage but factually the requirement is much more due to the need of 4.50 kms of Drains are dilapidated due to poor maintenance which are remodeling and reconstruction explained earlier. The details of the stormwater drainage are as follows:

*Table 16: Stormwater Drainage Details, Amalapuram*

| Zone/ catchment | Length Of Roads (KM) | Constructed Drains | | | | Natural Drains | | |
|---|---|---|---|---|---|---|---|---|
| | | Length (KM) | Type of (Surface, Covered, etc.,) | Functional Status | Disposal Arrange-ment | Length (KM) | Functional Status | Disposal Arrange-ment |
| 1 to 30 wards | 113.17 | 68.35 | Surface | Good | -- | 60.55 | Good | -- |

*Source: Amalapuram Municipality (2016)*

- Some areas in Amalapuram also experience waterlogging and flooding during periods of heavy rainfall and tropical cyclones.

*Table 17: Waterlogging/ Flooding in Amalapuram*

| Zone | Location/Wards | Frequency (No.per year) | Reasons |
|---|---|---|---|
| 1,28 and 29 wards | Housing Board Colony (1st ward) | 3 Times | Low leveling areas |
| | Karmikanagar (28th Ward) | | |
| | Diguva Savaram (29th Ward) | | |

*Source: Amalapuram Municipality (2016)*

- Desilting of drains is regularly done within the municipality.
- Operations and Maintenance (O&M) of stormwater drains are covered under the O&M component in solid waste management.
- A Detailed Project Report (DPR) for Comprehensive Storm Water Drainage System was prepared for Rs. 99.46 lakhs. The DPR has been submitted to the Government of Andhra Pradesh for approval and sanction.
- The proposed project is incompliance to the policy of Government of India, Government of Andhra Pradesh and District Development Authority whose policy is to upgrade the civic amenities, improve the Health and Hygienic of the public and thus associating with the Government policy on Urban Poverty Alleviation and Swatcha Bharath theme announced and advocated by Hon'ble Prime Minister of India.

## 8.2 Gaps and Issues

- Open drains are not lined at all places.

- Drains are poorly maintained. Dumping of Solid Waste in drains and chocking/blockages is prevalent.
- There is improper provision for water flow and there is stagnation of water at many places.
- There is need for an integrated drainage plan for the study to be planned in coordination with institutional arrangements for systematic cleaning and involvement /awareness programs among communities to prevent solid waste dumping and upkeep through community level ownership and maintenance.
- Majority of storm water drains width is nearly 0.5m.
- Apart from storm water, the drains carry the grey water (like kitchen, bath room and washing waste), leading to the unsanitary conditions.
- The Storm water drainage uncovered in most of the commercial areas across the town, which is leading to dumping of all kinds of waste.
- Many places along with nallas, septage water gets directly connected with storm water drains.

# Section III – Cross-cutting Aspects

# 9. Institutional and Governance

## 9.1 Baseline Status

***Urban Framework in the State (Including Legal framework)***

A number of institutions are involved in the governance of the town and surrounding villages. Some of them are established through Acts of Legislation and others are part of states governance framework. The institutions established by law are given below.

*Table 18: Legislative Basis of Governing Institutions, Amalapuram*

| Names of institutions | Corresponding acts |
|---|---|
| Municipal Council, Amalapuram | Andhra Pradesh Municipalities Act, 1965 |
| Andhra Pradesh Pollution Control Board | Water (Protection and Control of Pollution) Act, 1974 |
| Village Panchayats | Andhra Pradesh Gram Panchayats Act, 1964 |

*Source: Amalapuram Municipality (2016)*

***Institutional Arrangements under Amalapuram Municipality***

*Table 19: Institutional arrangements, Amalapuram Municipality*

| Urban Services | Institutions in charge of planning | Institutions in charge of implementation | Institutions in Charge of O & M | Institutions in charge of collecting user charges |
|---|---|---|---|---|
| **Water Supply** | Deputy Executive Engineer | Asst. Engineer / Draughtsman/ Work Inspector | Electrician/ Fitter/Turn cock/ Helper/ workers | Revenue Officer/ R.I.,/ Bill Collectors |
| **Sewerage** | -do- | -do- | -- | -- |
| **Septage Management** | -do- | -do- | -- | -- |
| **Storm Water Drainage** | Deputy Executive Engineer | Asst. Engineer / Draughtsman/ Work Inspector | -- | -- |
| **SWM** | Sanitary Supervisor/ Sanitary Inspector | Sanitary Maistries | Public Health Workers | Sanitary Inspector/ Sanitary Maistries |
| **Public Toilets** | Deputy Executive Engineer | Asst. Engineer / Draughtsman/ Work Inspector | Sanitary Inspector/ Sanitary Maistries | --- |

*Source: Amalapuram Municipality (2016)*

***Organisation and Responsibilities of Municipality***

Amalapuram Municipality, like other urban local bodies in Andhra Pradesh, is primarily responsible for providing basic infrastructure services and other civic services within its jurisdiction. The municipality is responsible for the following functions:

- Construction and maintenance of roads, drains, causeways and culverts.

- Construction and maintenance of storm water and sullage water drains.
- Supply of protected water.
- Cleaning of streets, drains, removal of rubbish and scavenging.
- Lighting of public streets.
- Maintenance of burial grounds.
- Maintenance of hospitals and dispensaries for the treatment of the poor.
- Maintenance of elementary schools.
- Registration of births and deaths.
- Vaccination.
- Provision of slaughter houses and markets.
- Maintenance of parks and play grounds.

In addition, the municipality implements a number of plan and non-plan schemes, funds for which are received from state and central governments. They include:

- 13th Finance Commission Grant
- MPLADS Funds
- SCSP & TSP Sub Plan grant
- Andhra Pradesh Urban Services for the Poor (APUSP)
- Non Plan Grant - SFC
- Andhra Pradesh Urban Reforms and Municipal Services Project (APURMSP)
- Individual House Hold Toilets(IHHT's)
- Construction of School Buildings & Office building
- Plan Grant – SFC  Maintenance of Municipal Internal Roads

The functional domain of the Amalapuram Municipality, as with other urban local bodies in the state, was expanded in 1994, when the Andhra Pradesh Municipalities Act was amended incorporating the functions included in the 12th Schedule of the 74th Constitution Amendment Act. In Andhra Pradesh, the Municipalities Act provides for a majority of the functions listed in the 12th Schedule of the Constitution. They include:

- Urban Planning including Town Planning,
- Regulation of land use and construction of buildings,
- Roads and bridges,
- Water supply for domestic, industrial and commercial purposes,
- Public health, sanitation, conservancy and solid waste management,
- Slum improvement and upgrade,
- Provision of urban amenities and facilities such as parks, gardens, play grounds,
- Burials and burial ground; cremations, cremation grounds and electric crematoriums,
- Cattle ponds; prevention of cruelty to animals,
- Vital statistics including registration of births and death,
- Public amenities including street lighting, parking lots, bus stops and public conveniences, and
- Regulation of slaughter houses and tanneries.

In 2004, the Government of Andhra Pradesh after a review of functions of urban local bodies, transferred five more functions to the urban local bodies through government orders. They are:

- Planning for economic and social development,
- Urban forestry, protection of the environment and promotion of ecological aspects,
- Urban Poverty alleviation,
- Safeguarding the interest of weaker sections including the handicapped and mentally challenged, and
- Promotion of cultural and aesthetic aspects.

The Government decided that the remaining function i.e. Fire Services, should continue to remain with the state government and will be transferred after a review later. Though the five functions were transferred, they have no statutory basis as they were transferred through government orders.

***Organization Structure***

The organizational structure of Amalapuram Municipality consists of an elected body – the Municipal Council - and an executive body. The elected body is headed by a Chairperson and has 30 councilors each representing a ward - one of the 30 wards into which the town is divided. The Chairperson is elected directly by all the elected ward councilors of the town. Based on the 74th Constitution Amendment Act, 1992, the constitution and composition of the urban local bodies in the state was changed. All the mandatory provisions like reservations to SCs and STs, fixed tenure to the local body, constitution of State Election Commission with responsibility to hold elections to the local bodies in the state, etc., have been incorporated in the Act. After 1995, elections to the urban local bodies were conducted thrice based on these amended provisions.

The civic administration is headed by Municipal Commissioner belonging to the cadre of state municipal commissioners. The Commissioner is assisted by officials in the areas of public health, engineering, town planning, health, poverty, Revenue, Account etc. Technical officials head each of these areas and in administration, the Manager assists the Commissioner.

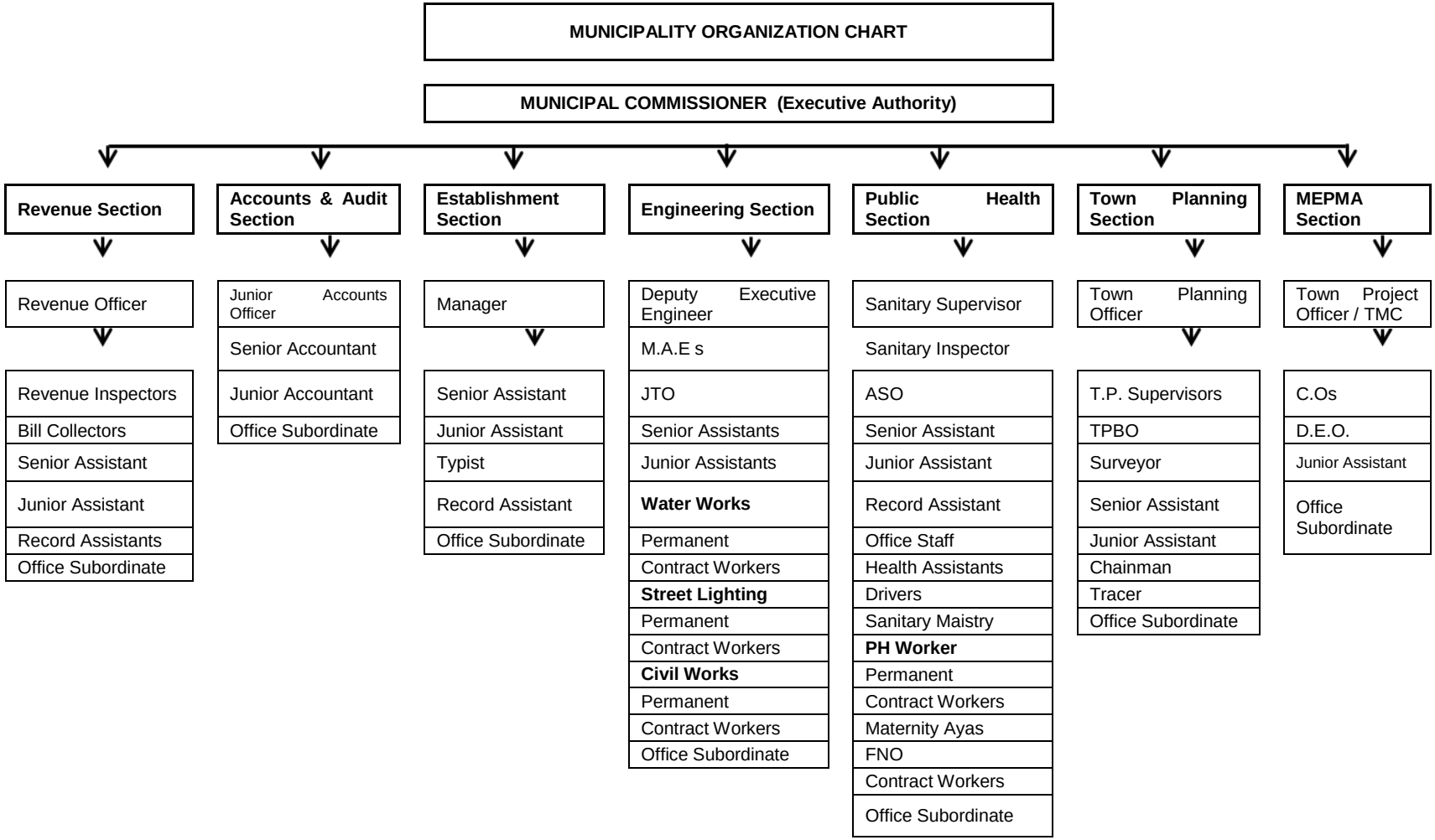
A summary of positions in various departments and the organ gram of Amalapuram Municipality is given below.

*Table 20: Sanctioned, filled and vacant posts – department wise, Amalapuram Municipality*

| Section wise Departments | Sanctioned | Working | Vacant |
|---|---|---|---|
| General Administration | 46 | 28 | 18 |
| Engineering | 32 | 18 | 14 |
| Revenue | 7 | 7 | 0 |
| Accounts | 5 | 2 | 3 |
| Town Planning | 12 | 6 | 6 |
| Public Health | 149 | 79 | 70 |
| **Total:** | **251** | **140** | **111** |

*Source: Amalapuram Municipality (2016)*

*Figure 8: Organizational Chart, Amalpuram Municipality*




*Source: Amalapuram Municipality (2016)*

The vacancy in the municipality departments are as follows:

*Table 21: Statement Showing the Vacancy Position Of Amalapuram Municipality*

| Category of posts | Total No. of Sanctioned posts (Old & New) | Working Strength | No. of post Vacant |
|---|---|---|---|
| Administration Wing | 48 | 28 | 20 |
| Engineering Wing | 30 | 18 | 12 |
| Sanitation Wing | 149 | 79 | 70 |
| Town Planning Wing | 5 | 2 | 3 |
| Accounts Wing | 7 | 7 | 0 |
| **Total** | **251** | **140** | **111** |

*Source: Amalapuram Municipality (2016)*

A number of institutions – State government agencies and parastatals are associated with the governance of the town. They include:

**State Departments**

- Municipal Administration and Urban Development Department
- Commissionerate of Municipal Administration
- Directorate of Town and Country Planning (DTCP)
- Public Health Engineering Department (PHED)
- Medical and Health Department
- Revenue Department
- Andhra Pradesh Urban Services for the Poor
- Social Welfare Department
- R&B Department
- Home Department

**Parastatals**

- AP State Highways Authority
- AP State Road Transport Corporation (APSRTC)
- AP Transmission Corporation ( AP Transco)
- AP Housing Board (APHB)
- AP Pollution Control Board (APPCB)
- Andhra Pradesh Industrial Infrastructure Development Corporation (APIIC)

***Role of parastatals and state departments***

The functions and role of some of these institutions are discussed below.

**The Municipal Administration and Urban Development Department (MAUD)**

The MAUD Department is responsible for policy formulation, preparation of municipal laws, monitoring and evaluation of programmes, supervision of municipal administration, coordination with related state government departments, liaison with the central government and external funding agencies, etc. It controls, supervises and guides the line departments like Directorate of Municipal Administration, Department of Town and Country Planning, and Public Health Engineering Department.

**The Directorate of Municipal Administration (CD&MA)**

The CD&MA is the executive arm of MAUD and is responsible for the implementation of laws, policies and programmes relating to the urban sector. It is responsible for administrative and financial management of municipalities, implementation of development programmes like IDSMT, SJSRY, UIDSSMT, IHSDP, ILCS, etc. The CD&MA acts as a conduit between the municipalities and the government and provide guidance, help and assistance to all local bodies. To assist the Commissioner and Director of Municipal Administration, there are four regional offices, which are considered to be field offices of the Directorate of Municipal Administration. The Regional Directors are responsible broadly for the implementation of municipal laws and schemes, and monitoring and review of projects. They periodically to review and provide necessary guidance to local bodies and liaise with other related departments like Town and Country Planning, Public Health Engineering and the District Collectors for proper functioning of municipalities in their jurisdiction. The Amalapuram Municipality comes under Ananthapur Region.

**Directorate of Town and Country Planning (DTCP)**

The DTCP is responsible for the planning orderly growth of cities and towns, preparation of Master Plans, their review and revision, preparation of regional development plans, etc. To assist the Directorate four regional offices are established and the Amalapuram Municipality comes under the jurisdiction of Rajahmundry regional office.

**Public Health and Municipal Engineering Department (PHED)**

The PHED provides technical support to local bodies in the execution of major public health engineering works like water supply schemes, drainage and sewerage works, major roads, etc. Apart from directly executing the major works, the Department also provides technical guidance to the municipalities in the preparation and execution of similar schemes. This Department accords the technical scrutiny and sanction of the public health engineering works. The PHED is organized into five Circle Offices for administrative convenience and Amalapuram Municipality comes under Rajahmundry Circle.

**Roads and Buildings Department (R&B)**

R&B Department is responsible for development and maintenance of road network in the state. They maintain all state roads that pass through AMALAPURAM Municipality.

**Andhra Pradesh Urban Finance and Infrastructure Development Corporation (APUFIDC)**

The APUFIDC extends technical assistance to the local bodies in the preparation and implementation of development schemes. It acts as a conduit between the ULBs, the Government of India and financing agencies like HUDCO. The Corporation, on behalf of the municipalities borrows loans from HUDCO and other financial institutions and acts as a financial intermediary.

**Andhra Pradesh Pollution Control Board (APPCB)**

The APPCB is responsible for controlling of water and air pollution caused by various sources across the state including AMALAPURAM.

**Andhra Pradesh Housing Corporation (APHC)**

The APHC is responsible for formation of layouts, land development, preparation and implementation of housing schemes particularly for the weaker sections, etc. Implementation of the prestigious Rajiv Gruha Kalpa is their responsibility.

***Other state agencies***

At the district and local levels also there are several agencies with which the AMALAPURAM Municipality liaises in the management of the civic affairs. Most important of them being the administrative offices of the state government departments like Director of School Education, Director of Medical and Health, Tahsildar, Director, Treasuries, etc.

**The District Collector**

At the district level the District Collectors have supervisory powers over the municipalities. They facilitate coordination and convergence between different agencies involved in the management of the town – particularly implementation of welfare programmes.

## 9.2 Gaps and Issues

- About half of the sanctioned positions in the Sanitation wing are vacant (70 out of 149 positions).
- 44% of the total number of positions are vacant in the overall municipal structure (111 out of 251).

# 10. Municipal Finance

## 10.1 Baseline Status

***Revenue Income***

The following statement provides a snapshot of the revenue income of AMALAPURAM Municipality during the last three years.

*Table 22: Revenue Income of Amalapuram Municipality*

| Income & Expenditure | 2012-13 | 2013-14 | 2014-15 |
|---|---|---|---|
| OWN INCOME – TAXES | | | |
| Property Tax & Vacant land Tax | 269.16 | 293.21 | 290.90 |
| **Total Taxes** | **269.16** | **293.21** | **290.90** |
| OWN INCOME – NON TAX | | | |
| D & O Trades, Market Fees, Encroachment Fees | 18.47 | 18.68 | 24.59 |
| Betterment Charges and Building Perm Fees | 15.03 | 26.52 | 20.41 |
| Miscellaneous receipts | 4.75 | 7.98 | 11.99 |
| Water Supply and other Charges | 60.45 | 60.15 | 62.49 |
| **Total Non-Taxes** | **98.370** | **113.33** | **119.48** |
| ASSIGNED REVENUES | | | |
| Entertainment Tax | 58.00 | 31.00 | 31.99 |
| Surcharge on Stamp duty | 192.00 | 161.00 | 88.10 |
| Assigned Revenue Total | 250.49 | 192.00 | 120.09 |
| **Total Revenue income** | **618.35** | **598.54** | **530.47** |
| **Other Non Plan and Plan Grants** | **132.77** | **241.72** | **221.95** |
| **Total Revenue Income (Including Grants)** | **751.17** | **840.26** | **752.42** |

*Source: Amalapuram Municipality (2016)*

***Revenue Expenditure***

The following statement provides the details of revenue expenditure.

*Table 23 Revenue Expenditure of Amalapuram Municipality*

| Component | 2012-13 | 2013-14 | 2014-15 |
|---|---|---|---|
| Salaries including pensions | 390.42 | 422.42 | 460.72 |
| Electricity Expenses(Water supply, street lighting) | 40.54 | 49.02 | 62.58 |
| Operations and Maintenance | 309.64 | 313.68 | 273.10 |
| Other expenditure | 155.03 | 14.50 | 66.46 |
| **Revenue Expenditure** | **895.63** | **799.32** | **862.86** |

*Source: Amalapuram Municipality (2016)*

## 10.2 Gaps and Issues

Amalapuram registers a revenue deficit in all the three years- -3.14% in 2012-13, -1.11% in 2013-14, and -32.63% in 2014-15.

# 11. Capacity Enhancement

## 11.1 Baseline Status

The number of permanent staff and contractual staff in Amalapuram Municipality are as follows.

*Table 24: Capacity in Amalapuram Municipality*

| Institution/ Department | Tasks to be performed | Permanent Staff | Contractual Staff |
|---|---|---|---|
| Engineering | Water Supply | 18 | 47 |
| | Street Lighting | | |
| | Civic Amenities | | |
| Public Health | Sanitation | 76 | 81 |
| MEPMA | DWCUA Groups, Bank linkages | - | 3 |

*Source: Amalapuram Municipality (2016)*

## 11.2 Gaps and Issues

- There is a general lack of monitoring and evaluation within the Municipality that leads to the limited quality of data provided. There is a lack of consistency within the data regarding the Service Level Benchmarks. Especially regarding basic information about the Municipality like Number of Households or dealing with Solid Waste there is a lack of consistency within the data.
- Out of 251 sanctioned posts, 111 are vacant. That shows that the municipality has a lack of employees to fulfill the tasks given.

# Section IV – Key Issues, Action Plan & Investment Plan

## 12. City-Wide Key Issues

Of all the issues identified in the town, following key issues with respect to sanitation have been identified for Amalapuram town.

| | |
|---|---|
| **Key Issue 1** | Solid waste dumping site is located on the banks of the canal stream that has adverse environmental implications. |
| **Rationale for this key issue** | 1. Solid waste dump site is located adjacent to the canal stream (coming from Amalapuram canal).<br>2. Over time, the leachate from the waste would permeate below ground and have severe adverse effects on the environment.<br>3. The earlier submitted CSP status report has also flagged the lack of a compost year in the municipality due to objections on dumping at the existing solid waste dump site.<br>4. It is essential to seek an environmental audit and reclaim the land of this facility to avoid the associated environmental hazards; Identifying criteria[18] for the SWM facility would need to satisfy the following criteria:<br>a. Immediate habitation: preferably a 200 m margin<br>b. Water bodies: preferably a 200 m margin<br>c. Wetland: No land fill permitted<br>d. Flood prone areas: No landfill permitted<br>e. Airport: 20 km buffer margin<br>f. Heritage site: 10 km buffer margin<br>g. Groundwater table: 3 m |

| | |
|---|---|
| **Key Issue 2** | Though individual toilet construction activities are progressing to their completion, the access of the lower income settlements to public toilets (at Circular Bazaaar and Village Chawdi) is a matter of contention in the town as two project sites have been stalled thus preventing access to two major community settlements. Members of this community resorting to other means to satisfy their sanitation needs remain an issue. |
| **Rationale for this key issue** | 1. Rs. 6.5 lakh is the cost estimate that has been provisioned for the construction of these two public toilet blocks (funds allocated from Swacch Andhra); Rs. 3.25 lakh dedicated for each 5 seater block (meant for 100 users) at the rate of Rs. 65,000 for each seat; However Municipality has revised the estimate to be Rs. 4.25 lakh for each block; Approved for construction.<br>2. Two Community Toilets have been planned in the town, one at Circular Bazaar area and another one at Village Chaawdi are which have been stalled due to various issues<br>3. The revenue office have objected the construction of one of these toilets on the land at Village Chawdi area. |

[18] The site selection criterion for the SWM facility is prepared based on experiences of CDD Society from other projects on fecal sludge management. This criteria is defined by agencies such as the World Bank and Asian Development Bank to administer environmental clearance for selection of FSTP sites.

| | |
|---|---|
| | 4. One neighboring resident have also flagged a concern for the construction of another toilet as it would hamper the local neighborhood environment. The argument of the plea is that over time lack of maintenance of this facility would create issues for people residing in the neighborhood.<br>5. The ensuing court case has thus stalled the construction activities. |

| | |
|---|---|
| **Key Issue 3** | The coverage of individual water supply connections to households is low. |
| **Rationale for this key issue** | 1. Only 51% of the households have water supply connections. While the remaining half of the population get access to water supply through public stand posts (PSPs).<br>2. DRP has been prepared for extending the water supply connections but network extension to the existing one is still not proposed.<br>3. Part of the universal coverage achievement will also require building more distribution lines, i.e. 80.4 kms of water supply distribution lines.<br>4. A major share of the distribution network was laid over 30 years before, with issues such as leakages observed frequently. |

| | |
|---|---|
| **Key Issue 4** | No systematic or organized method to collect, convey and treat fecal sludge (Fecal Sludge Management) collected from the pits and septic tanks of the town. |
| **Rationale for this key issue** | 1. There is no formal fecal sludge emptying service provided by the municipality.<br>2. The septic tanks and pits in the town are serviced by informal fecal sludge emptying operators (there are ten operators as per discussion with the municipal staff), regarding whom there is no proper database with the municipality.<br>3. The sludge emptied from the septic tanks of households are dumped in open fields and open environment. There is no regulation or awareness against such practices.<br>4. The duration of cleaning varies based on the size of the tank and pit, for which there is no existing database.<br>5. As the septic tanks are not connected to a soak pit, the tanks outflow conveniently empties into an adjacent drain, thus not requiring the households to desludge regularly. |

| | |
|---|---|
| **Key Issue 5** | The confinement of excreta in majority of containment units is inadequate, and this could pose as a major environmental concern. |
| **Rationale for this key issue** | • As per discussions with the municipality, all septic tanks have no connection with soak pits. The outflow of the septic tank opens into the open or into storm water drains. These septic tanks do not qualify the definition of a hygienic toilet as set by the World Health Organization. |

| | |
|---|---|
| **Key Issue 6** | An important issue with the municipality is the limited quality of data (due to lack of monitoring and evaluation). Across all the basic needs services – covered within the SNUSP program – there is lack of consistency in the data availability for the service level benchmarks of Water Supply, Access to Toilets, Solid Waste Management, Wastewater management and Storm water drainage. Presently, the arrangement is to have specific ad-hoc arrangements to furnish data, whenever there is a documentation required (of service levels) for a municipal program like AMRUT, SBM and other independent grant projects (from the state government or non-governmental sources). Hence, the prevailing situation is that we have multiple values for the same indicator (for e.g. one report states 112 lpcd, while another states 99 lpcd). |
| **Rationale for this key issue** | • A Performance Assessment framework needs to be introduced by 2018 to unify all service level benchmarks of the town under one window to avoid any contradiction of data and lack of comparability. This includes unifying information from all sources like:<br>  • SLB[19]/SLIP[20]<br>  • Swachh Sarvekshan<br>  • PAS[21]<br>  • Logistical Data concerning implementing GO 279<br>  • SBM[22]<br>• Focus on the organizing a citywide database (by end of 2017) of wastewater disposal process – as an aftermath of the ODF declaration - at the household level (i.e. type of containment: Septic Tank, Pits, Twin Pits). This can be in alignment with the sanitation census forms last organized in 2011. A listing of insanitary latrines must be inventoried and geo-tagged by 2018. |

[19] SLB – Service Level Benchmarks
[20] SLIP – Service Level Improvement Plan
[21] PAS – Performance Assessment Systems template for service level benchmarking
[22] SBM – Swachh Bharat Mission

## 13. Goals corresponding to City Wide Key-Issues

To gradually and effectively improve the sanitation situation in Amalapuram, following goals with respect to key issues have been arrived after consultation with the CSTF.

| No. | Key Issue | Goal |
|---|---|---|
| 1 | Solid waste dumping site is located on the banks of the canal stream that has adverse environmental implications. | 1. In order to tackle solid waste management as well as faecal sludge management problems, a pilot project for co-composting needs to be identified (post a technical feasibility assessment).<br>Note: A relevant case study for such an implementation would be the co-composting plant in Kushtia (built in 2012 and functioning correctly now) with the following specification:<br>▪ *Compost plant Capacity = 4 tons/ day*<br>▪ *Faecal sludge drying bed (with a coco peat filter) to treat = 6 cubic meter/day*<br>▪ *Land Area: 668 sq.m (dedicated by the Kushtia Municipality)*<br>2. The operation and maintenance of the plant is minimal compared to a regular electro mechanical septage treatment plant and moreover the biodegradable solid waste may also be organized for treatment (at appropriate economies of scale). |
| 2 | Though individual toilet construction activities are progressing to their completion, the access of the lower income settlements to public toilets (at Circular Bazaaar and Village Chawdi) is a matter of contention in the town as two project sites have been stalled thus preventing access to two major community settlements. Members of this community resorting to other means to satisfy their sanitation needs remain an issue. | ▪ Concluding the construction and commencement of service from public toilets by early half of 2017. |
| 3 | The coverage of individual water supply connections to households is low. | ▪ Increasing the access of households to individual water supply connections over three years:<br>– 75% by 2017,<br>– 85% by 2018 and<br>– 100% by 2019. |

| | | |
|---|---|---|
| 4 | No systematic or organized method to collect, convey and treat fecal sludge (Fecal sludge management) collected from the pits and septic tanks of the town. | ▪ Streamline the operations for collection and conveyance process of fecal sludge and its emptying in a regulated manner by 2017 in alignment with Goal 2 (construction of co-composting plant) |
| 5 | The confinement of excreta in majority of containment units is inadequate, and this could pose as a major environmental concern. | ▪ Retrofit/convert all unhygienic toilets to hygienic toilets (i.e. that facilitate confinement of excreta appropriately) by 2019. This would involve primarily fixing leakages from pits and septic tanks into the open environment. |
| 6 | An important issue with the municipality is the limited quality of data (due to lack of monitoring and evaluation). Across all the basic needs services – covered within the SNUSP program – there is lack of consistency in the data availability for the service level benchmarks of Water Supply, Access to Toilets, Solid Waste Management, Wastewater management and Storm water drainage. Presently, the arrangement is to have specific ad-hoc arrangements to furnish data, whenever there is a documentation required (of service levels) for a municipal program like AMRUT, SBM and other independent grant projects (from the state government or non-governmental sources). Hence, the prevailing situation is that we have multiple values for the same indicator (for e.g. one report states 112 lpcd, while another states 99 lpcd). | • A Performance Assessment framework needs to be introduced by 2018 to unify all service level benchmarks of the town under one window to avoid any contradiction of data and lack of comparability. This includes unifying information from all sources like:<br>  • SLB[23]/SLIP[24]<br>  • Swachh Sarvekshan<br>  • PAS[25]<br>  • Logistical Data concerning implementing GO 279<br>  • SBM[26]<br>• Focus on the organizing a citywide database (by end of 2017) of wastewater disposal process – as an aftermath of the ODF declaration - at the household level (i.e. type of containment: Septic Tank, Pits, Twin Pits). This can be in alignment with the sanitation census forms last organized in 2011. A listing of insanitary latrines must be inventoried and geo-tagged by 2018 |

[23] SLB – Service Level Benchmarks
[24] SLIP – Service Level Improvement Plan
[25] PAS – Performance Assessment Systems template for service level benchmarking
[26] SBM – Swachh Bharat Mission

## 14. Action Plan

| No. | Key Issue | Goal | Actions | | | Agency responsible for action (ULB, PHED, etc.) |
|---|---|---|---|---|---|---|
| | | | Short term (within 2 year) | Midterm (3-5 years) | Long term (5-10 years) | |
| 1 | Solid waste dumping site is located on the banks of the canal stream that has adverse environmental implications. | 1. In order to tackle solid waste management as well as faecal sludge management problems, a pilot project for co-composting needs to be identified (post a technical feasibility assessment). Note: A relevant case study for such an implementation would be the co-composting plant in Kushtia (built in 2012 and functioning correctly now) with the following specification:<br>▪ *Compost plant Capacity = 4 tons/ day*<br>▪ *Faecal sludge drying bed (with a coco peat filter) to treat =* | a. Scientifically reclaiming the existing solid waste dumping site which is currently posing threat to the natural environment.<br>b. Identification of alternate site for initiating the construction of a co-composting facility<br>c. In terms of staffing, a supervisor and a team of on-site | | | **Health department of ULB** |

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| | | *6 cubic meter/day*<br>▪ *Land Area: 668 sq.m (dedicated by the Kushtia Municipality)*<br>2. The operation and maintenance of the plant is minimal compared to a regular electro mechanical septage treatment plant and moreover the biodegradable solid waste may also be organized for treatment (at appropriate economies of scale). | sanitary workers will have to be deployed based on the plant requirements.<br>d. Getting necessary clearances from various departments of Govt.<br>e. Preparation of DPR for the co-composting waste treatment facility.<br>f. Tendering and selection of EPC (Engineering, Procurement and Construction) contractor for execution of construction of solid waste treatment plant. (To be tendered by MC).<br>g. Commence construction and commissioning of the co-composting solid waste treatment plant.<br>h. Training workshop on solid waste treatment plant Operation | | | |

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| | | | and Maintenance activities for municipal staff.<br>i. Floating tender documents for procurement. | | | |
| 2 | Though individual toilet construction activities are progressing to their completion, the access of the lower income settlements to public toilets (at Circular Bazaaar and Village Chawdi) is a matter of contention in the town as two project sites have been stalled thus preventing access to two major community settlements. | ▪ Concluding the construction and commencement of service from public toilets by early half of 2017 | a. Providing a feasibility plan with the operation and maintenance strategy to the high court to suffice as documentation to move ahead with construction.<br>b. It would be ideal that the operation and maintenance be outsourced for which a private party such as Sulabh be identified.<br>c. A monitoring plan should also be incorporated for timely review of maintenance of facility by the municipal sanitary inspectors. | | | **Engineering department of ULB** |

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| | Members of this community resorting to other means to satisfy their sanitation needs remain an issue. | | | | | |
| 3 | The coverage of individual water supply connections to households is low. | ▪ Increasing the access of households to individual water supply connections over three years:<br>– 75% by 2017,<br>– 85% by 2018 and<br>– 100% by 2019. | a. Implementing water supply connections to 85% of total households have HSCs[1] by 2017 (from present figure of 51%) of the total households (DPR already ready) | a. Implementing water supply connections to another 15% (targeting 100% of households have HSCs[1] by 2018) of the total households (through AMRUT funding)<br>b. Implementing construction of distribution network starting 2017, to | a. Providing water supply connections to all additional households that are added to the city, due to extension of urban limits | **Engineering department of ULB** |

[1] HSC – House Service Connections

| | | | | | | |
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| | | | | convey water to unserved households | | |
| 4 | No systematic or organized method to collect, convey and treat fecal sludge (Fecal sludge management ) collected from the pits and septic tanks of the town. | Streamline the operations for collection and conveyance process of fecal sludge and its emptying in a regulated manner by 2017 in alignment with Goal 2 (construction of co-composting plant) | a. Organizing a registry/association of informal/service providers (for better regulation) by early 2017,<br>b. Building an inventory of existing containment systems and their sizes (by mid-2017),<br>c. Workshop on desludging and transportation of faecal sludge | a. Workshop on desludging and transportation of faecal sludge<br>b. Establishing management systems and standard operating procedures at Municipality level | | **Engineering department of ULB** |
| 5 | The confinement of excreta in majority of containment units is inadequate, and this could pose as a major environmental concern | Retrofit/convert all unhygienic toilets to hygienic toilets (i.e. that facilitate confinement of excreta appropriately) by 2019. This would involve primarily fixing leakages from pits and septic tanks into the open environment. | a. Citywide survey (during the first half of 2017) of containment units to assess the type and number of containment units (single pits, twin pits, septic tanks); flag the number of unhygienic containment units, which have an outflow leaking to | | | **Engineering department of ULB** |

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| | | | the open environment or to storm water drains<br>b. Exploration of possible funding opportunities to undertake retrofitting/conversion of unhygienic to hygienic toilets.<br>c. Tendering and selection of a MDS[27] for detailed cost estimates and drawings for each of the toilet designs proposed.<br>d. Construction of toilets based on the Detailed Project Report (DPR) submitted by MDS Consultant | | | |
| 6 | An important issue with the municipality is the limited quality of data (due to | 1. A Performance Assessment framework needs to be introduced by 2018 to unify all service level benchmarks of the town under one window to avoid any contradiction of data and lack of comparability. This includes unifying information from all sources like:<br>• SLB[28]/SLIP[29] | a. Anchor all data management activities of the town (SLB/SLIP/CSP/PAS/SBM) with one post (preferably the environmental engineer/executive engineer serving as data manager from | a. Continuous updation and revisiting of citywide sanitation, solid waste, water supply data once in 4 months<br>b. A yearly | | **Engineering Department and Health Department of ULB** |

[27] MDS – Management, Design and Supervision
[28] SLB – Service Level Benchmarks
[29] SLIP – Service Level Improvement Plan

| | | | | | | |
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| | lack of monitoring and evaluation). Across all the basic needs services – covered within the SNUSP program – there is lack of consistency in the data availability for the service level benchmarks of Water Supply, Access to Toilets, Solid Waste Management, Wastewater management and Storm | • Swachh Sarvekshan<br>• PAS[30]<br>• Logistical Data concerning implementing GO 279<br>• SBM[31]<br>2. Focus on the organizing a citywide database (by end of 2017) of wastewater disposal process – as an aftermath of the ODF declaration - at the household level (i.e. type of containment: Septic Tank, Pits, Twin Pits). This can be in alignment with the sanitation census forms last organized in 2011. A listing of insanitary latrines must be inventoried and geo-tagged by 2018 | the public health section)<br>b. Organize a database management workshop for the executive wing of the municipality<br>c. Streamline all data sources to one source point within the municipality, which needs to be updated timely. | workshop to present the latest best practices to improve database management practices in the town. | | |

[30] PAS – Performance Assessment Systems template for service level benchmarking
[31] SBM – Swachh Bharat Mission

| | | | | | | |
|---|---|---|---|---|---|---|
| | water drainage. Presently, the arrangement is to have specific ad-hoc arrangements to furnish data, whenever there is a documentation required (of service levels) for a municipal program like AMRUT, SBM and other independent grant projects (from the state government or non-governmental sources). Hence, the | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | prevailing situation is that we have multiple values for the same indicator (for e.g. one report states 112 lpcd, while another states 99 lpcd). | | | | | |

## 15. Meeting at Amalapuram

*Table 25: Members of the Meeting*

| Name | Designation | Number |
|---|---|---|
| B. Satyanarayana | Sanitary Mistri (SM) | +91 7794054888 |
| R. Sreenivas Rao | SM | +91 9692339287 |
| Ch. Sreenivas Rao | SM | +91 9866317847 |
| Prasad | D. E. | +91 7893992444 |
| J. D. Ananda Kumar | TPS | +91 7893990444 |
| R. Naga Malleswara Rao | TPBO | +91 7893982888 |
| Sreenivas Garu | Municipal Commissioner | +91 7893992444 |
| Ravaram Subbarao | Tech person (outsourced) | +91 8885773336 |

**Priority in action**:

i. SWM management and land availability for dumpsite
ii. FSM
iii. Stormwater management ad sullage treatment

**Water Supply- Discussion Points**

1. There are 7422 household water supply connections, which account for 51% of the households.
2. Water is supplied twice a day, which ranges from 86- 90 lpcd
3. It is planned that the amount of water supplied is to be increased to a total of 10 MLD from 5.56 MLD, for which the funding will be 80% from the Central Government, 10% from the ULB, and 10% from the State Government. The timeline for the augmentation is 2 years, with the right availability of funds.
4. Check: DPR for WS and the metering potential
5. Groundwater table is 6-7 metres
6. Proposed water treatment plants with a combined capacity of 7 MLD have been proposed keeping in mind the future demand of the town

**Solid Waste Management- Discussion Points**

1. Micropocketing completing and estimate sanctioned (ask Commissioner)- not a key issue
2. Solid waste site is at an environmentally sensitive site. Another area has been earmarked of around 2-3 acres. The approach road is not in good condition, and needs to be improved. (no DPR available). The only land available has been provided by the Revenue Department. Cost of 1 acre land is roughly 1 crore (no land is available)
3. Composting cannot be proposed at the new SWM site demarcated as the land ground level is an issue.
4. Levelling of the road is required.
5. Solution: Solid waste needs to be segregated at source. The plastic waste needs to be dumped at site 1 and wet waste at site 2 (where composting needs to be done). Levelling and vermicomposting facilities needs to be built.
6. Segregation drive was attempted in one ward, but the collection personnel mixed the waste at the later stages of the SWM value chain. As such, the dumping happens in a combined fashion.

7. The total amount of solid waste generated is 30 MT. Market waste comprise 5 MT, while the rest are from households.
8. Collection of solid waste is through sweepers, hired by an ad-hoc agency. There are 52 permanent staff for SWM in the town, and 72 contract workers. There are no sanitary supervisors in the town.
9. Vehicles:
    a. 9 tractors (2-3 tonnes)
    b. No trucks
    c. 9 push carts ( only 5 are operational)
    d. No autos
10. A 2 member team has been dissipated for a survey 2 canals to identify the points where solid waste enters the streams. This study has been done to prepare a reply for the Human Rights Commission and not for fundraising.
    a. Kaushiki drain is adjacent to the new SWM dumpsite, which might be prone to pollution.

**Access to Toilets- Discussion points**

1. There are three public toilets that have been planned for the town, in 3 specific areas:
    a. High School Centre to Muslim Bazaar- 7000-10000 population
    b. Circular Bazar area- it is a commercial area, with 5000-7000 floating population
    c. Vegetable/ meat market area- 7000 floating population
2. Funding structure for toilets
    a. For public toilets, half of the funding is from the municipality, and the rest from Swachh Andhra Corporation
    b. For community toilets, full funding is received from the Swachh Andhra Corporation.

**Wastewater management- Discussion points**

1. 30% of households directly discharge the wastewater into drains

**Septage management- Discussion points**

1. 70% of households have STP and leach pits.
2. Private operators are operational in the town. The average capacity of the trucks is 3000 litres. There are no trucks that are owned by the Municipality.
3. Every week, 3 truckloads of sludge is being emptied (9000 litres).
4. Currently, the sludge is being dumped at a burial ground, next to the solid waste dumping site, and is usually dumped at night.
5. Cost of desludging- Rs 1500 for small trucks of 3000 litres; Rs. 2500-3000 for large trucks of 6000 litres capacity.
6. Rs 5 lakh can be allocated for pre-condition assessment/pre-feasibility studies for FSTP construction in the town.

**Stormwater drains**

1. All the canals in the town are usually used for irrigation and drinking purposes, and are derived from canals to natural drains.

2. The natural drains are used only for recharge
3. In summer, water dries up in the Amalpuram canal.

One DPR for wastewater and stormwater drainage. One DPR for sullage and drainage treatment. The 2 DPRs have been submitted to Central Government seeking assistance under some open provision, and not for a specific scheme

No DPR for sewage

## Training needs

1. Engineering: Estimation skills is lacking; training required on construction activities, such as roads and drains.
2. Awareness required against littering and in segregation of waste.

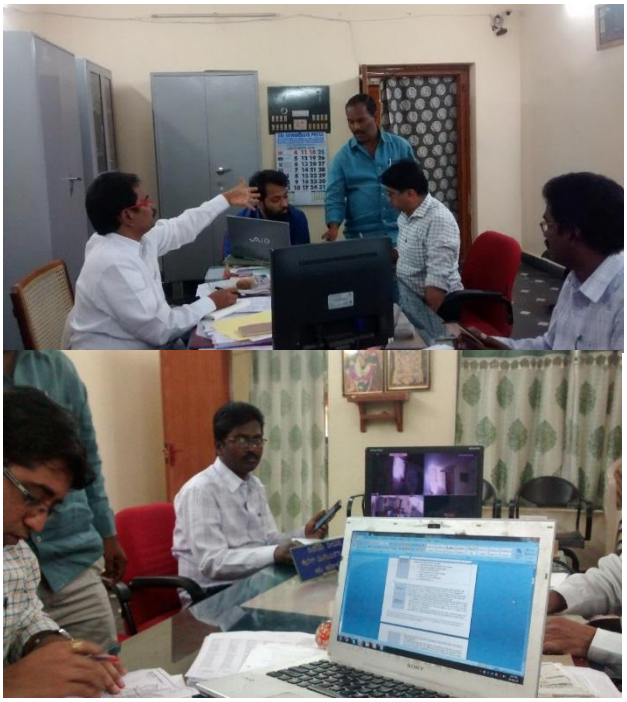

*Figure 9: Meeting with CSP Team in Amalapuram, December 2016*

## 16. Cost Estimates and Investment Plan for CSP

| Intervention Areas | Phase wise investment | | | Total |
|---|---|---|---|---|
| | Short-term (2 Years) | Mid-term (5 Years) | Long-Term (10 Years) | |
| **Access to Toilets** | | | | |
| 1. Public toilet augmentation | • 3 public toilets have been planned for three areas in the town<br>• Cost for each toilet block: Rs. 4.25 lakh for each block approved for construction<br>• Funding share will be 50% from the ULB and 50% from the Swachh Andhra Corporation | | | Rs. 12.75 Lakh |
| **Sewage (Wastewater and Greywater)** | | | | |
| 2. Septage treatment plant | • Rs. 5 lakh can be allocated by the ULB for pre-feasibility assessment towards estimating capacity for FSTP and for site level feasibility<br>• However no plan envisaged presently for septage treatment<br>• The ULB also has no other source for funding a septage treatment plant | | | Rs. 5 lakh for prefeasibility study only |
| 3. Technical | • This would | | | |

| | | | | |
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| assessment32 of containment units | require a survey of all households within the town, which would entail the cost of human resource as survey personnel | | | |
| **Storm water drain management** | | | | |
| 4. Construction of storm water drain network | • A DPR was submitted to the Government of Andhra Pradesh for approval and sanction. | | | Rs. 99.46 Lakhs |
| **Water Supply** | | | | |
| 5. New House Service Connections | | | | A detailed Project Report for comprehensive water supply has already submitted to Government with Project cost of Rs.100.00 Crores |
| 6. Augmentation of supply | • Water supply to be augmented to 10 MLD from 5.6 MLD, with 80% funding from Central Government, 10% each from the ULB and State Government | | | |
| 7. Water Treatment Plant | • Rs. 4.5 crores have been proposed for the construction of 2 WTPs with a combined capacity of 7 MLD | | | |
| **Solid Waste Management** | | | | |
| 8. Outsourcing work packages to private providers | • M/s Sai Geetika Agri Biotech Pvt. | | | |

[32] Desludging pattern and sizes

| | | | | |
|---|---|---|---|---|
| | Ltd. Has signed an MoU to prepare compost from the biodegradeable waste on their own cost. | | | |
| 9. Extension of SWM dumpsite | • 2 acres of land has been earmarked close to the existing dumpsite. The cost of the new site would be Rs. 2 crores.<br>• Levelling of the approach road to the dumpsite area is required for proper access. | | | |

# 17. Annexure

*Table 26 Municipality Employees*

| Sl.No. | Name (Smt./Sri) | Designation |
|---|---|---|
| 1 | Sri Ch.Srinivs | Commissioner |
| 2 | Sri DVSSK Deekshitulu | Manager |
| 3 | Mamidala Mahalakshmi | Junior Accounts Officer |
| 4 | T.Chittibabu | Senior Accountant |
| 5 | Sri KVVSN Naga Bhushanam | Senior Assistant., |
| 6 | Sri G.Srihari | Senior Assistant |
| 7 | Sri M.Praveen | Senior Assistant |
| 8 | K.Vijaya Kumar | Senior Assistant |
| 9 | V.Rajeev | Junior Assistant |
| 10 | Vemala Bhaskara Rao | Junior Assistant |
| 11 | K.Phani Prasanna Vadan | Junior Assistant |
| 12 | P.Dasaradhudu | Junior Assistant |
| 13 | Kum.K.Indira Swathi | Junior Assistant |
| 14 | Smt.G.Surya Sunitha | Junior Assistant |
| 15 | Smt.P.Sailaja | Junior Assistant |
| 16 | K.Ravishankar | Junior Assistant |
| 17 | K.Sarvani Devi | Junior Assistant |
| 18 | V.Satyanarayana | Record Assistant |
| 19 | Kum.S.Srinivasamma | Record Assistant |
| 20 | Sri A.V.S.N.Murty | Record Assistant |
| 21 | Sri Appari Venkateswararao | Record Assistant |
| 22 | Sri Mendu Mahalakshmi | Attender |
| 23 | Sri K.Srinivasa Rao | Attender |
| 24 | Sri G.Bhimarao | Attender |
| 25 | Sri U.Venkataramana | Attender |
| 26 | Sri R.V.V.Siva Prasad | Attender |
| 27 | Smt. M.Sitaratnam | Attender |
| 28 | Sri P.Balaji | Attender |
| 29 | Saidula Satyavathi | Office Sweeper |
| 30 | M.Rajasri | Water. Women |
| 31 | Sri N.J.Ratnakumar | T.P.O., |
| 32 | Sri R.Nagamalleswara Rao | TPBO |
| 33 | Smt.K.Rajya Lakshmi | T.P.S. |
| 34 | Sri S.Venu | TP Tracer |
| 35 | Sri Yedla Nagaraju | TP Chainman |

| | | |
|---|---|---|
| 36 | Sri M.Srinivasa Rao | TP Chainman |
| 37 | GSVVSSNV Prasad | Dy,Exe, Engineer |
| 38 | Sri Amgoth Ravi | Asst,. Engineer |
| 39 | M.Krishna Rao | Asst,. Engineer |
| 40 | Sri D.Surya Bhaskara Rao | Technical Maistry |
| 41 | Sri M.Satya Mohana Rao | Tap Inspector |
| 42 | Sri N. Ravi shanumukeswara Rao | Electrician |
| 43 | Sri P.V.B.Trinadh | Electrician |
| 44 | Sri P.S.Prakasha Rao | Turn cock |
| 45 | Sri A.Mallikarjuna Rao | Helper |
| 46 | Sri Chikele S.Vara Prasad | Watchman |
| 47 | Sri K.Venkateswara Rao | Watchman |
| 48 | Sri Issukapalli Ramanna | Watchman |
| 49 | Sri P.Srirama Murthy | Lighter |
| 50 | Sri M.Papa Rao(PHC) | Gang Mazdoor |
| 51 | Sri S.Rama Rao | Gang Mazdoor |
| 52 | Sri P.Ramesh | Gang Mazdoor |
| 53 | Ganja Srinivasa Rao | Park Gardners |
| 54 | Sri S.Surya Bhaskara Rao | Park Gardners |
| 55 | Sri T.Prakash | Sanitary Inspector |
| 56 | Sri Ch.Srinivasa Rao | Sanitary Maistry |
| 57 | Sri R.Hareram, | Sanitary Maistry |
| 58 | Sri Bommi Kumar | Sanitary Maistry |
| 59 | Sri R.Srinivasa Rao | Sanitary Maistry |
| 60 | Sri B.Satyanarayana | Sanitary Maistry |
| 61 | Sri Md. Ishaq | Sanitary Maistry |
| 62 | Smt.V.Sitaratnam | Ayah |
| 63 | Sri G.Amarnath | Revenue Officer |
| 64 | Sri Janga Nagaraju | Bill Collector |
| 65 | Sri VVVSNSR Murthy, | Bill Collector |
| 66 | Sri A.S.R.Prasad | Bill Collector |
| 67 | Sri K.Nageswara Rao | Bill Collector |
| 68 | Sri B.Prakash, | Bill Collector |
| 69 | Sri P.Srinivasa Rao | Bill Collector |
| 70 | Paleti Mariyamma | Public Health Worker |
| 71 | Neethipudi Polamma | Public Health Worker |
| 72 | Ganja Marthamma | Public Health Worker |
| 73 | Akumarthi Ammaji | Public Health Worker |
| 74 | Teki Yogeswara Rao | Public Health Worker |
| 75 | Kurasa Lakshmi | Public Health Worker |
| 76 | Paramata Suryanarayana | Public Health Worker |

| | | |
|---|---|---|
| 77 | Chode Satyanarayana | Public Health Worker |
| 78 | Kondru Mariyamma | Public Health Worker |
| 79 | Pulapakura Subbalakshmi | Public Health Worker |
| 80 | Rayudu Satyavathi | Public Health Worker |
| 81 | Meesala  Ganga Ratnam | Public Health Worker |
| 82 | Koppula Subbayamma | Public Health Worker |
| 83 | Mallarapu Kanakam | Public Health Worker |
| 84 | Gampala Vazram | Public Health Worker |
| 85 | Chedugondi Nagaraju | Public Health Worker |
| 86 | Kondru Subba Rao | Public Health Worker |
| 87 | Koppula Satyanarayana | Public Health Worker |
| 88 | Uppada Ganga | Public Health Worker |
| 89 | Mallarapu Satyanarayana | Public Health Worker |
| 90 | Neethipudi Venkanna | Public Health Worker |
| 91 | Vemala Sarojini | Public Health Worker |
| 92 | Mallarapu China Satyavathi | Public Health Worker |
| 93 | Mallarapu Laxmi Swarajyam | Public Health Worker |
| 94 | Relangi Satya Nageswararao | Public Health Worker |
| 95 | Nela Salomi | Public Health Worker |
| 96 | Bhavirisetty Pallalamma | Public Health Worker |
| 97 | Mummidivarapu Subbalaxmi | Public Health Worker |
| 98 | Peta Veeramani | Public Health Worker |
| 99 | Duvva Srinivasa Rao | Public Health Worker |
| 100 | Viparthi Satyanarayana | Public Health Worker |
| 101 | Chedugonda Yesu | Public Health Worker |
| 102 | Kaligineedi Saheb | Public Health Worker |
| 103 | Pothumudi Prasad Rao | Public Health Worker |
| 104 | Chedugonda Venkateswar Rao | Public Health Worker |
| 105 | Yarlagadda Subbayamma | Public Health Worker |
| 106 | Neelapu Chittemma | Public Health Worker |
| 107 | Bommi Talupulamma | Public Health Worker |
| 108 | Meesala Srinivasa Rao | Public Health Worker |
| 109 | Gunja Subba Rao | Public Health Worker |
| 110 | Uppada Dasu | Public Health Worker |
| 111 | Rayudu Chittemma | Public Health Worker |
| 112 | Mallarapu Subrahamanyam | Public Health Worker |
| 113 | Kona Nagamani | Public Health Worker |
| 114 | Make Venkateswara Rao | Public Health Worker |
| 115 | Boddu Simhachalam | Public Health Worker |
| 116 | Talla Satyavathi | Public Health Worker |
| 117 | Kesanakurthi Gurubabu | Public Health Worker |

| | | |
|---|---|---|
| 118 | Kondru Nagababu | Public Health Worker |
| 119 | Duvva Mangaraju | Public Health Worker |
| 120 | Amaladasu Subba Raju | Public Health Worker |
| 121 | Bhavirisetti Rambabu | Public Health Worker |
| 122 | Koppula Raja | Public Health Worker |
| 123 | Kankipati Satyanarayana | Public Health Worker |
| 124 | Bhavarisetti Satyanarayana | Public Health Worker |
| 125 | Sri A.N.V.Prasad | Public Health Worker |
| 126 | Smt. M.Venkayamma | Public Health Worker |
| 127 | Bommi Padma | Public Health Worker |
| 128 | Nimmakayala Raju | Public Health Worker |
| 129 | Bhavirisetti Govindu | Public Health Worker |
| 130 | Ch.Papayamma | Public Health Worker |
| 131 | M.Satyanarayana | Public Health Worker |
| 132 | N.Durga Prasada | Public Health Worker |
| 133 | T.Varalakshmi | Public Health Worker |
| 134 | Kona Yesuratnam | Public Health Worker |
| 135 | Mallarapu Durga Prasad | Public Health Worker |
| 136 | Kondru Sandhya Kumari | Public Health Worker |

## 19.1 Vacancy positions in Amalapuram Municipality

| Sl. No. | Category of posts | Total No. of Sanctioned posts (Old & New) | Working Strength | No. of post Vacant |
|---|---|---|---|---|
| 1 | Municipal Commissioner | 1 | 1 | 0 |
| 2 | Office Manager | 1 | 1 | 0 |
| 3 | Senior Assistants | 4 | 4 | 0 |
| 4 | Junior Assistants | 12 | 9 | 3 |
| 5 | System Manager | 1 | 0 | 1 |
| 6 | System Assistant | 1 | 0 | 1 |
| 7 | Typist | 1 | 0 | 1 |
| 8 | Attender | 12 | 7 | 5 |
| 9 | Night Watchmen | 2 | 0 | 2 |
| 10 | Sr.Steno Grapher | 1 | 0 | 1 |
| 11 | Water Women | 1 | 1 | 0 |
| 12 | Record Assistant | 10 | 4 | 6 |
| 13 | Office Sweeper | 1 | 1 | 0 |
| | Total | 48 | 28 | 20 |
| 14 | Dy. Executive Engineer | 1 | 1 | 0 |
| 15 | Municipal Asst. Engineer | 2 | 2 | 0 |

| | | | | |
|---|---|---|---|---|
| 16 | Environmental Engineer (AE/AEE Cadre) | 1 | 0 | 1 |
| 17 | CAD Operator | 1 | 0 | 1 |
| 18 | Draughtsman | 1 | 0 | 1 |
| 19 | Fitter | 1 | 0 | 1 |
| 17 | Lighter | 3 | 1 | 2 |
| 18 | Tap Inspector | 2 | 1 | 1 |
| 19 | Lighting Superintendent | 1 | 0 | 1 |
| 20 | Turn Cock | 1 | 1 | 0 |
| 21 | Technical Maistry | 1 | 1 | 0 |
| 22 | Park Gardeners | 2 | 2 | 0 |
| 23 | Electrician | 3 | 2 | 1 |
| 24 | Public works Maistry | 1 | 0 | 1 |
| 25 | Watchmen | 3 | 3 | 0 |
| 26 | Gang Mazdoor | 5 | 3 | 2 |
| 27 | Helper | 1 | 1 | 0 |
| | Total | 30 | 18 | 12 |
| 28 | Sanitary Supervisor | 1 | 0 | 1 |
| 29 | Sanitary Inspector | 3 | 1 | 2 |
| 30 | Women Medical Officer | 1 | 0 | 1 |
| 31 | Health Assistant | 2 | 0 | 2 |
| 32 | PH Mastries | 6 | 6 | 0 |
| 33 | Maternity Assistant | 3 | 0 | 3 |
| 34 | Ayah | 3 | 1 | 2 |
| 35 | Thoti | 1 | 0 | 1 |
| 36 | Tractor Cleaner | 2 | 0 | 2 |
| 37 | Tractor Driver | 2 | 1 | 1 |
| 38 | Public Health Workers | 125 | 70 | 55 |
| | Total | 149 | 79 | 70 |
| 47 | T.P.O., | 1 | 1 | 0 |
| 48 | T.P.S. | 2 | 2 | 0 |
| 49 | T.P.B.O. | 4 | 0 | 4 |
| 50 | Town Surveyor | 1 | 0 | 1 |
| 51 | CAD/GIS Operator | 1 | 0 | 1 |
| 52 | TP Tracer | 1 | 1 | 0 |
| 53 | TP Chainman | 2 | 2 | 0 |
| | Total | 12 | 6 | 6 |
| 59 | Junior Accounts Officer | 1 | 1 | 0 |
| 60 | Senior Accountant | 2 | 1 | 1 |
| 61 | Junior Accountant | 2 | 0 | 2 |
| | Total | 5 | 2 | 3 |

| | | | | |
|---|---|---|---|---|
| 62 | Revenue Officer | 1 | 1 | 0 |
| 65 | Bill Collector | 6 | 6 | 0 |
| | Total | 7 | 7 | 0 |
| | **Grand Total** | **251** | **140** | **111** |