CWIS-FSM Support Cell

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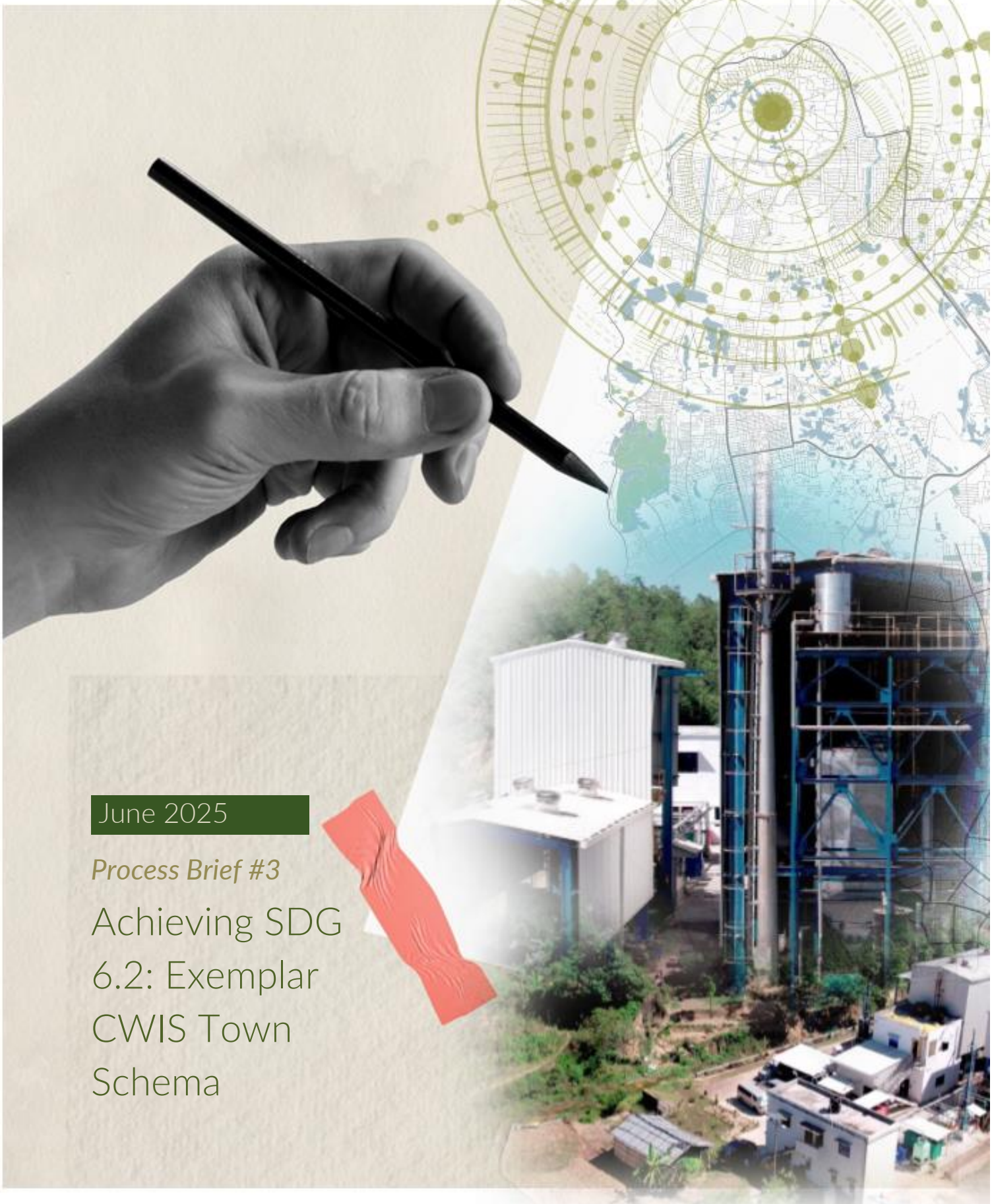

June 2025

*Process Brief #3*

# Achieving SDG 6.2: Exemplar CWIS Town Schema

## About This Document

*This series of process documents, initiated by the CWIS FSM Support Cell of the Department of Public Health Engineering (CFSC-DPHE), captures learnings from national and global interventions to assist City Corporations and Pourashavas in becoming more inclusive and improving sanitation service delivery. These documents have been prepared with technical support from Athena Infonomics and other development sector partners in Bangladesh.*

*From a planning perspective, broadly cities could be categorized into a) Cities with no plan, b) Cities with a Master Plan, and c) Cities with a City Sanitation Plan. However, despite the prevalence of guidance notes, toolkits, and frameworks dedicated to sanitation planning, many fundamental principles and guidelines outlined in these toolkits are not always present or operationalized in City Sanitation Plans and Sanitation Master Plans.*

*When assessing the masterplans developed for the City Corporations and Pourashavas, there were observed gaps identified in them. The situational assessments in most were limited to infrastructural assessment with weak analysis of mandate gaps, overlaps and exclusions. There were no assessments of public data systems' capacity to manage and operationalize service improvements. The service authorities' financial health is not included and proposed investments are not linked to financial baselines, leading to service authorities taking sub-optimal loans not translating into improved services. The staffing capacities of the service providers are not assessed. Targets are adopted from national benchmarks without an incremental roadmap as to how they will be achieved. Plans equate infrastructure with services, with a limited set of hardware options considered. Limited analysis of the full lifecycle cost of the intervention, who will bear that cost, and how it will be financed. Overall, masterplans were short-term, easier to showcase, and more transactional in nature, thereby, ending up discounting future financial sustainability, equity, and environmental considerations.*

*This process document provides guidance on developing strategic sanitation service plans, addressing the identified planning gaps and with a comprehensive approach to achieving safe management across the full-service chain, from toilet access, containment, emptying, and conveyance, to treatment and reuse; equal service levels for the poor; cost burden for low-income households vis-à-vis non-low-income households; and containing financial burden within the authority's ability to repay, considering affordable tariff levels for households.*

*The strategic sanitation service plan will address key sanitation infrastructural issues, linked to the broader masterplan of the City Corporations and Pourashavas, such as containment technologies, upgrades to community and public toilets, capacity and number of vacuum trucks, wastewater / faecal sludge treatment plants, waste reuse facilities and business models, along with institutional and governance, regulatory principles, financial structuring for inclusive sanitation service delivery.*

*The aim of the sanitation service plan is to build an Exemplar CWIS Town, with an incremental roadmap as to how they will achieve SDG 6.2. This document elaborates methodology undertaken to develop the sanitation-related interventions in designing the city's or town's strategic sanitation service plans.*

# Acknowledgement

*This process document was jointly commissioned by Gates Foundation, coordinated by Roshan Shrestha and Neelima Thota; and by CWIS-FSM Support Cell, coordinated by Abdullah Al-Muyeed, Sanjoy Mukherjee, Md. Tawhidur Rahaman, Rifat Binte Jia and Monzur Morshed.*

*The research was conducted by Athena Infonomics, with key contributions from Ramkrishna Paul, Ashraful Islam and Sonia Shahid. The team benefited from the advisory support of Y. Malini Reddy. We extend our sincere thanks to Monzur Morshed for his editorial guidance, and to Niranjana Ramakrishnan for her support with design.*

*In particular, we would like to thank the Lakshmipur Municipality officials who supported us with coordinating the field visits, conducting the consultations and in co-developing their strategic sanitation service plan. Special thanks are due to the officials of the Department of Public Health Engineering, whose contributions were coordinated by Md. Shafiqul Hassan and Dilruba Farzana.*

*Finally, we acknowledge the valuable insights provided by members of the FSM Network who participated in interviews and consultations.*

## List of Acronyms

| | |
|---|---|
| *SDG* | *Sustainable Development Goal* |
| *CWIS* | *Citywide Inclusive Sanitation* |
| *FSM* | *Faecal Sludge Management* |
| *CFSC* | *CWIS FSM Support Cell* |
| *DPHE* | *Department of Public Health Engineering* |
| *SSSP* | *Strategic Sanitation Service Plan* |
| *KIIs* | *Key Informant Interviews* |
| *PEA* | *Political Economy Analysis* |
| *SFD* | *Shit Flow Diagram* |
| *WFD* | *Waste Flow Diagram* |
| *CSDA* | *City Service Delivery Assessment* |
| *IDIs* | *In-Depth Interviews* |
| *FGDs* | *Focus Group Discussions* |
| *FSTP* | *Faecal Sludge Treatment Plant* |
| *IMIS* | *Integrated Management Information System* |
| *HR* | *Human Resources* |
| *PIPs* | *Performance Improvement Plans* |
| *IaDB* | *Inter-American Development Bank* |
| *PTs* | *Public Toilets* |
| *LIH* | *Low-Income Households* |
| *PWD* | *Persons with Disabilities* |
| *SBCC* | *Social and Behavior Change Communication* |
| *DPP* | *Development Project Proposal* |

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# Introduction

Ensuring that sanitation services are safely managed, equitable, and sustainable has been a primary focus for both central and local governments in Bangladesh. However, the development and effectiveness of local government service systems and the operational functions of sanitation authorities often do not receive adequate attention or investment, despite being essential for sustaining these services.

Insufficient investment in these local systems leads to poor planning and decision-making, which undermines the ability of sanitation providers to maintain and sustain their interventions. As a result, cities frequently face the burden of expensive infrastructure that cannot be financially sustained, leading to crippling debt for service authorities. This debt limits their ability to secure financing, offer high-quality services that residents are willing to pay for, and address shortcomings in institutional, governance, and regulatory frameworks, ultimately causing a decline in the quality of sanitation service delivery.

To tackle these challenges and provide safe, equitable, and sustainable sanitation for all—especially focusing on the poor, marginalized communities, and women and girls—Bangladesh has embraced the Citywide Inclusive Sanitation (CWIS) public service approach. Based on its principles, an exemplar CWIS town in Bangladesh emphasizes sanitation management by incorporating several key elements: data-driven urban planning and decision-making, smart, climate-resilient sanitation infrastructure, real-time monitoring and management, active citizen participation, waste recycling, and promotion of a circular economy.

*Textbox 1. Principles for City-Wide Inclusive Sanitation (CWIS)*

The CWIS principles[1] guide the framework for an exemplar CWIS city and facilitate the process of achieving SDG 6.2 across Bangladesh.

- **Equitable Sanitation Services:** All residents of the municipality, including marginalized and low-income communities, should benefit from inclusive sanitation services, ensuring that no one is left behind.
- **Gender and Social Equity:** Planning, managing, and monitoring sanitation services in municipalities should integrate gender and social equity, ensuring that the specific needs of women, vulnerable groups, and persons with disabilities are addressed at all levels.
- **Safe Management of Human Waste:** Sanitation systems in municipalities must ensure the safe management of human waste across the entire sanitation service chain, from proper containment at the household and community levels to treatment and disposal in an environmentally sound manner.
- **Inclusive Governance and Accountability:** Municipality authorities should operate with a clear mandate, defining performance targets, allocating adequate resources, and enforcing accountability mechanisms to ensure transparency and inclusivity in service delivery.
- **Diverse Infrastructure and Financing:** A mix of funding models, business strategies, and both sewered and non-sewered sanitation infrastructure should be employed to meet diverse local needs and achieve long-term sanitation goals for all municipality residents.
- **Comprehensive and Innovative Planning:** Long-term planning for municipality sanitation systems should be driven by a comprehensive analysis of current needs and available

[1] Adapted from the Bill & Melinda Gates Foundation (BMGF).

resources, encouraging innovation and adaptability to changing circumstances, including climate resilience and rapid urbanization.

- **Political Will and Leadership Accountability:** Strong political will and robust accountability frameworks should be in place to enhance leadership in municipalities, driving improvements in planning capacity, service delivery, and overall sanitation outcomes, with regular monitoring and evaluation.

**These principles ensure that city corporations and municipalities across Bangladesh align with national sanitation goals, the global SDG 6.2 targets, and the national SDG action plan, fostering inclusive, sustainable, and equitable sanitation services for municipal residents. Exemplar CWIS town follows a holistic, integrated approach based on CWIS principles to support the achievement of SDGs. By eliminating open defecation, it directly contributes to SDG 6.2 and sets an example for other cities to provide universal access to dignified sanitation. This access is ensured through comprehensive infrastructure and effective waste management systems. Climate change and environmental sustainability are prioritized through wastewater treatment, recycling, and pollution reduction, aligning with SDG 6.3. The city integrates sanitation infrastructure into resilient urban development, supporting SDG 11, and emphasizes inclusivity, addressing the needs of women, children, and vulnerable groups. Gender-sensitive policies promote equality within the sanitation system. Improved sanitation leads to better public health and increased economic productivity.**

***The development of this process document was informed by a structured and methodical approach, drawing on the planning methodology previously applied in the formulation of the sanitation service plan for Lakshmipur Pourashava. This adaptive framework served as a foundational reference, ensuring both contextual relevance and practical applicability to the current planning environment.***

## Strategic Sanitation Service Plans

**Strategic Sanitation Service Plan (SSSP)** is a key element in the efforts to achieve exemplar CWIS towns in Bangladesh. Exemplar CWIS towns are defined by the CWIS Outcome-Function framework, which comprises service outcomes and system functions, as outlined in Figure 1.


*Figure 1 CWIS Outcome-Function Framework*

The SSSP is a comprehensive service planning system designed to manage the dynamic interplay of people, processes, functional workflows, and hardware needed to deliver safe, equitable, and sustainable sanitation services that meet the needs and aspirations of all city residents. Its framework outlines how a municipality and other stakeholders will build capacity to deliver sanitation services over time and across different areas, ensuring that internal and external resources are aligned with the interventions required by the service authority to extend and maintain safe, equitable, and sustainable sanitation. Figure 3 elaborates sanitation investment allocations to address gaps and challenges in the city's sanitation sector, including institutional, governance, regulatory, infrastructure, and facility-related issues, while facilitating the successful implementation of the interventions to achieve SDG 6.2.


*Figure 3 Process flow to allocating sanitation investments effectively to achieve safe, equitable, sustainable sanitation service delivery*

## Step 1: Identifying and tracking critical data points across the sanitation value chain

This framework is designed to assist municipalities in Bangladesh in tracking key data points across the entire sanitation value chain. Its aim is to ensure municipalities can systematically monitor the status and performance of sanitation services. Key data points such as access to sanitation, waste management practices, and service delivery will be identified and collected to establish performance metrics. These metrics will help municipalities measure progress and guide their reporting on sanitation outcomes. The framework also outlines potential data collection sources, ensuring that municipalities gather reliable and comprehensive data.

To implement this framework effectively, municipalities need to identify sector experts and key project stakeholders. These stakeholders, including municipal staff, local NGOs, and community leaders, will be involved in developing Key Informant Interviews (KIIs). Through KIIs, municipalities can gather valuable insights from experts who understand the local context. Furthermore, conducting a Political and Economic Analysis (PEA) will help assess the political and economic factors influencing sanitation service delivery, enabling municipalities to understand challenges and opportunities in their environment.

Municipalities will develop and utilize various data collection tools to gather both quantitative and qualitative data. Frameworks employed for thorough analysis are Political Economy Analysis (PEA); Shit Flow Diagram (SFD), Waste Flow Diagram (WFD), City Service Delivery Assessment (CSDA) and the CWIS Outcomes-Functions Metrics[2].

*Table 1 Data Collection Tools*

| Framework | Purpose | Type of Data |
|---|---|---|
| Political Economy Analysis | Understand political and economic factors affecting sanitation | Qualitative |
| Shit Flow Diagram | Visualize faecal waste flow from collection to disposal | Quantitative |
| Waste Flow Diagram | Visualize solid waste flow from collection to disposal to reuse | Quantitative |
| City Service Delivery Assessment | Assess service delivery quality and coverage | Quantitative & Qualitative |
| CWIS Outcomes-Functions Metrics | Track equity, safety, sustainability, responsibility, accountability, and resource planning and management | Quantitative & Qualitative |

These tools will be used to collect data from diverse sources such as households, educational institutions, healthcare facilities, financial institutions, private businesses, and government offices. Comprehensive data collection will ensure a detailed quantitative analysis of sanitation service chain across the city corporation / municipality.

In addition to quantitative data, municipalities will also collect qualitative insights. In-depth Interviews (IDIs) and Focus Group Discussions (FGDs) will be conducted with various stakeholders, including:

[2] Learn more about the full list of indicators in the CWIS Outcomes-Functions Metrics, here.

- **Low-income and non-low-income residents**: To understand their experiences and challenges related to sanitation services.
- **Sanitation workers, including pit emptiers, masons, and public toilet operators**: To capture their perspectives on working conditions, service delivery challenges, and safety concerns.
- **Faecal Sludge Treatment Plant (FSTP) staff**: To gain insights into the operational aspects of faecal waste management.

These qualitative methods provide a deeper understanding of the real-life experiences and needs of different groups within the municipality, helping to inform more effective and equitable sanitation strategies.

To ensure that the perspectives of all relevant stakeholders are considered, municipalities will engage in consultations with their leadership. This includes discussions with the mayor, ward councilors (both male and female), and senior municipal staff such as the municipal executive officer, executive engineer, town planner, and accountant. Key staff from departments such as engineering, tax collection, licensing, and public health will also be involved.

These consultations will focus on understanding the functionality of the Citywide Inclusive Sanitation (CWIS) system and evaluating the City Service Delivery Assessment (CSDA)[3] framework. The feedback gathered from these discussions will ensure that the entire municipal administration is aligned and committed to the sanitation strategy. Insights gained from these consultations will be crucial in developing the Sanitation Services Strategic Plan (SSSP), ensuring that the voices and concerns of both officials and residents are incorporated.

[3] Learn more about the CSDA tool in the FSM Toolbox here.

## Step 2: Creating the baseline for strategic roadmap

To ensure effective and sustainable improvements in sanitation services across a municipality, baseline data will be meticulously analyzed using several key frameworks and tools. These frameworks help municipalities understand the complex political, social, and technical dimensions of their sanitation systems, ensuring that interventions are targeted and impactful. Some key frameworks are briefly discussed below[4]:

**Political Economy Analysis (PEA):** PEA is crucial for understanding the influence and interests of stakeholders within the municipality. It identifies key actors, both direct and indirect, who shape the decision-making process. By mapping their significance, municipalities can identify potential supporters and challengers when implementing sanitation projects. This helps build a more inclusive and collaborative strategy that accounts for local power dynamics and political interests.

**Shit Flow Diagram (SFD):** The SFD offers a clear visual representation of how human waste is managed within a city. It traces the flow of excreta from households through the various stages of collection, transport, treatment, and disposal. By highlighting areas where faecal waste is mismanaged, the SFD helps municipalities identify critical gaps in the sanitation value chain, ensuring targeted interventions for better waste management practices.

**Waste flow Diagram (WFD)**: The WFD depicts how solid waste generated in the city is managed and evaluated the flow of waste by different mechanisms across the city's waste value chain.

**City Service Delivery Assessment (CSDA):** CSDA evaluates the overall environment in which sanitation services are delivered. It examines the city's policy framework, institutional structure, and regulatory environment. By understanding these foundational aspects, municipalities can pinpoint the root causes of weak sanitation services and devise policy reforms or institutional strengthening initiatives to improve service delivery across the city.

**CWIS Outcomes-Functions Metrics:** This framework focuses on the broader impact of sanitation services on the population. It assesses equity, safety, and sustainability, ensuring that sanitation services are inclusive and accessible to all residents, especially marginalized groups. Additionally, the framework evaluates the enabling environment, considering responsibility, accountability, and resource planning and management within the municipality. This comprehensive view supports the development of more equitable and sustainable sanitation systems.


After rigorously analyzing baseline data using these key frameworks, the creation of a **strategic roadmap** is crucial. A strategic roadmap is essential for the municipality aiming to improve sanitation services sustainably. By analyzing baseline data through the above frameworks, the municipality gains a clear understanding of existing

[4] Learn more about frameworks and tools from here.

challenges and opportunities. This informed analysis enables the design of interventions that are context-specific, feasible, and scalable.

Additionally, a strategic roadmap serves as a blueprint, outlining clear goals, timelines, and resource allocations. It provides a structured approach to addressing sanitation gaps and enables municipalities to track their progress over time. Moreover, a well-defined roadmap helps prioritize interventions, ensuring that immediate needs, such as faecal waste management and safe sanitation access, are addressed first, while planning for long-term sustainability.

Furthermore, having a data-driven roadmap improves accountability and transparency in municipal governance. It allows local governments to make evidence-based decisions, ensuring that resources are used efficiently, and interventions produce measurable impacts. A roadmap also fosters collaboration between stakeholders by aligning their efforts with a shared vision for improved sanitation.

## Step 3: Engagement modality to developing the Strategic Sanitation Service Plan

Effective engagement helps translate needs of the municipality residents into goals for the municipality and create the basis for an effective strategy development. The workshop with the municipality officials is conducted to build the point of consensus and shared motivations to arrive at decisions and ensure that sanitation investment results in meaningful outcomes.

Developing the Strategic Sanitation Service Plan (SSSP) requires holding a workshop in the municipality, where baseline data will be presented and discussed with local officials from both the municipality and the Department of Public Health Engineering (DPHE). This workshop will also include a demonstration of the EquiServe tool for scenario analysis of the current sanitation situation and the development of various scenario models. The workshop can be led by teams of consultants and experts and will be organized for municipal representatives, including the mayor, councillors, and municipal officials, with local DPHE officials also invited to participate.

The interventions are phased out over the period of the next six years under two alternating scenarios. Eleven crucial interventions across three distinct phases, are exhibited in Figure 2, where Phase 1 focuses on laying a strong foundation by strengthening WASH regulations at the city level, integrating gender equality measures into sanitation systems, developing a Strategic Sanitation Service Plan (SSSP), and instituting CWIS planning processes. Phase 2 is dedicated to capacity building and empowerment, with tailored programs, the establishment of sanitation workers' cooperatives, and the implementation of Integrated Management Information Systems (IMIS) for data-driven decision-making, tracking, and reporting. Phase 3 shifts towards infrastructure development and community engagement, involving the construction and upgrading of toilets and containment systems, implementing a pro-poor tariff system, running behaviour change campaigns, and establishing a comprehensive sanitation monitoring and reporting framework. Each phase builds on the previous one, ensuring a holistic and inclusive approach to sanitation.

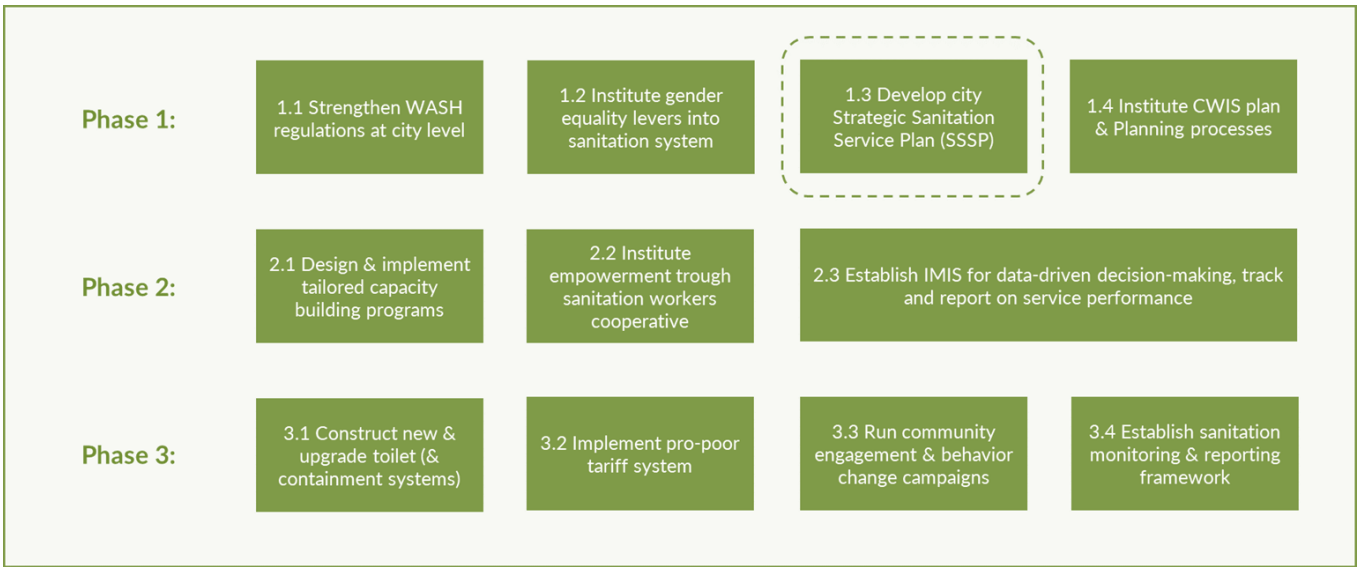


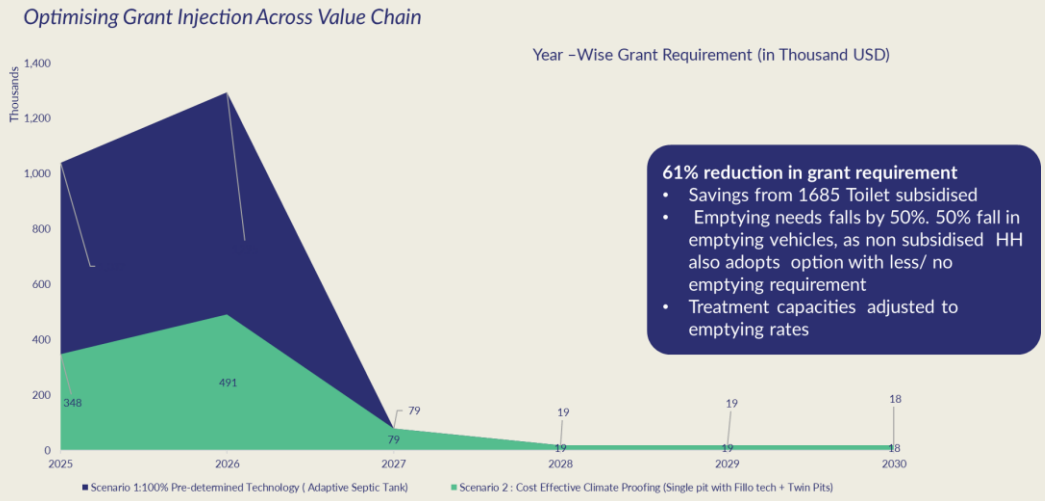

*Figure 2 Path to Exemplar CWIS town framework, developed in the context of municipalities in Bangladesh*

During the workshop, the SSSP process will be introduced, followed by a demonstration of the EquiServe tool's scenario analysis. EquiServe, as a scenario planning tool, can greatly benefit municipalities in Bangladesh by supporting evidence-based and coordinated efforts to improve sanitation services. In the context of Bangladeshi municipalities, it can assess existing sanitation systems, identify service gaps, and evaluate potential improvement strategies. It enables municipal authorities to visualize the outcomes of different interventions and make informed decisions, ensuring better resource allocation and addressing key challenges such as limited access to sanitation, environmental impacts, and public health concerns. Additionally, this tool helps municipalities navigate the trade-offs involved in sanitation improvements, leading to more sustainable and efficient service delivery across both urban and rural areas. A brief introduction to EquiServe is provided in Textbox 2. The session will also focus on identifying the challenges, priorities, and gaps in the municipality's current sanitation situation.

*Textbox 2: EquiServe tool.*

EquiServe[5] is a decision-making tool that helps compare sanitation interventions by assessing their impact on equity, financial sustainability, and safety. It provides cities with insights into which interventions will have the greatest impact, especially in low-income areas, while maintaining service providers' financial viability and enhancing waste disposal. The tool supports a mix of sewered and non-sewered technologies, service delivery models, and pricing strategies, enabling the prioritization of cost-effective options for expanding access to safely managed sanitation.

**Illustrative: Scenario Modelling in the EquiServe Tool**




EquiServe maps current citywide sanitation coverage, costs, revenues, and safety levels, allowing users to model up scenarios involving changes in hardware or service models. It then compares these scenarios based on investment needs, low-income household coverage, and other key outcomes, showing, for example, how subsidy reliance can be reduced through targeting toilet subsidies with alternate mix of technologies.

Governments and development partners aim to achieve Sustainable Development Goal 6.2 for universal, equitable sanitation access, but limited public funds make it crucial to evaluate the impact of interventions on service access, spending equity, affordability, and provider viability. While improving sanitation infrastructure can advance SDG 6.2, they are often overlooked in favor of service delivery improvements. EquiServe allows for a comparison of both approaches and captures the full costs of each, helping providers make informed, financially sustainable decisions.

[5] Learn more about EquiServe from here.

*Comparison of Scenario Outcomes in the EquiServe Tool from Lakshmipur*

### Key functions of the EquiServe tool include:

**Prioritizing Interventions:** The tool helps service providers decide which interventions to prioritize based on public needs and financial sustainability.

**Substantiating Tariff Proposals and Business Plans:** Results can support regulators in validating business plans or tariff proposals by comparing different options and detailing the impacts of proposed resources.

**Supporting Resource Mobilization and Advocacy:** The tool aids in making a case for interventions to stakeholders, such as city governments, ministries, and development finance institutions, for purposes like sanitation master planning or loan package design.

**Assisting Data Collection and Prioritization:** EquiServe provides a framework for identifying essential data points needed to understand city-level costs, coverage, and affordability for both sewered and non-sewered services. It encourages the collection of accurate data and helps prioritize the most relevant information for decision-making.

The Planning Implementation Committee needs to be formed, consisting of councilors and municipal officials. The roles and responsibilities of each committee member will be clearly defined, and all members will commit to fulfilling their assigned duties. This committee will play a key role in co-creating the Strategic Sanitation Service Plan. Forming such a committee requires representation from key municipal departments to ensure a comprehensive and effective approach. Councilors provide community representation and political support, while the Engineering Department offers technical expertise in the design and implementation of sanitation projects. The Accounts Department ensures financial viability through budgeting and cost management, while the Water and Sanitation Department oversees service delivery and system maintenance. The Roads and Drainage Department integrates sanitation with broader infrastructure, managing wastewater and preventing flooding, while the Civil Engineering Department ensures the structural integrity and sustainability of sanitation facilities. Finally, the Conservancy Department focuses on waste management and public health, ensuring safe waste disposal and maintaining hygiene standards. Together, this multi-disciplinary team ensures a coordinated, sustainable, and effective sanitation service plan.

Athena's Rapid Service System Assessment tool will support to deliver on quarterly/annual assessments by the pourashava. The municipality level of service performance will enable

strategic planning outputs, emphasizing internal functions and systems that improve risk prediction and management for delivering inclusive sanitation services.

*Text Box 3: Rapid System Assessment Tool*

Rapid System Assessment Tool[6] is a comprehensive framework for assessing the maturity of the service providers' internal systems, establishing a baseline, identifying and setting targets, allocating budgets and tracking progress. This is inspired by frameworks such as IaDB's Aquarating and the World Bank's Utility of the Future, which draw on experiences and examples of service systems in more mature contexts for local service authorities to reference as they draw up their plans. This resource will help planners and service authorities undertaking city sanitation plans, city/utility master plans and performance improvement plans (PIPs) to target investment in the internal service systems of sub-national service providers. This resource can also help national governments and regulators to undertake system maturity reviews/audits to improve the resilience of water and sanitation service providers and advance the goals of safe, equitable and sustainable sanitation services for all..

It is complemented by an Excel tool that allows users to self-assess where the municipality stands across the nine service areas.

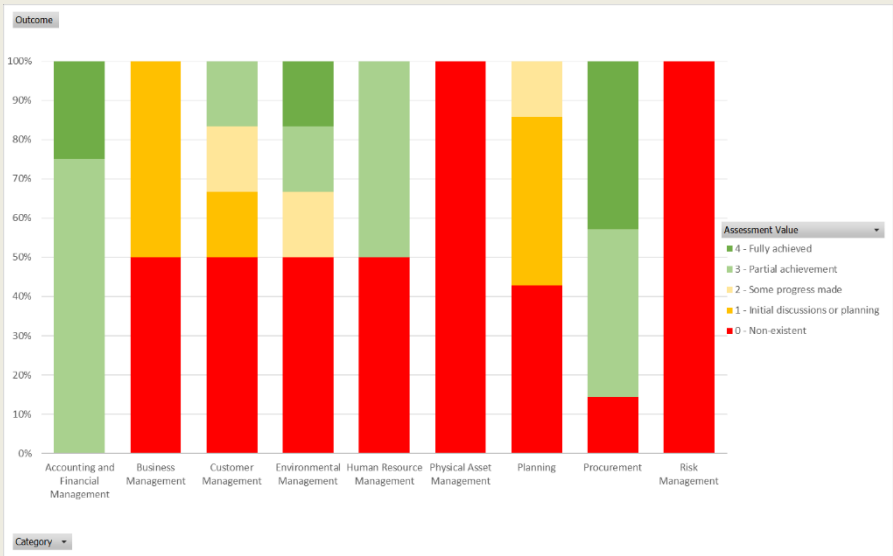



*Figure 2 Summary chart highlighting baseline across different outcome areas of Lakshmipur municipality as of 2024*

Physical asset management – looks at the asset management strategy and investment plans that are aligned with strategic planning cycles

Planning – looks at the comprehensive scenario modelling and impact simulation conducted to measure equity, environment and financial sustainability.

Accounting and financial management – looks at regularly monitoring financial systems and reporting to track revenue, costs, subsidies through financial controls.

Customer management – looks at disaggregating customer data by demographics, location, service level, preferences, service history, customer segments (such as gender), and integrate it into the IMIS.

Business management – looks at partnerships formed to improve capabilities where gaps exist, and knowledge management systems adopted to retain and transfer knowledge.

1. Risk management – Integrating physical asset risk management into planning, budgeting, operations and monitoring risk-based design standards for physical technologies and infrastructure.

[6] Learn more about the Rapid System Assessment Tool from here.

2. Human resource management – Training programs for skills development, HR policies for recruitment, development retention and separation and HR administration through information systems.
3. Procurement – Periodical audits to ensure procurement compliance, training in procurement policies, procedures and qualified/accredited vendors created.
4. Environmental management – Environment risks identified with mitigations plans, environment metrics, indicators tracked, and climate action plan in place.

This section describes the service system to be assessed during the drafting process of strategic sanitation service plan, and subsequent activities that should be addressed in the service plan output. The team will be guided in compiling the learnings and progress against each intervention and reporting either on a quarterly or annual basis, progress reports, resource mobilization reports, environmental impact assessments, ringfenced sanitation budgeting, scheduled desludging service report, disputes and grievance redressal reports, etc.

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## Step 4: Incorporating the strategic interventions in city corporations / pourashavas masterplan and annual report

Leveraging both the baseline data and workshop insights on the EquiServe tool to analyse and build various scenario models that facilitate the development of the Strategic Sanitation Service Plan (SSSP) report for the municipality. A SSSP report includes the following chapters.

| **Chapter 1: City Profile**<br>**CWIS Baseline Assessments and city-wide sanitation surveys are prerequisites in developing the sanitation precis, based on which the strategic roadmap and service plan is built on.** | |
|---|---|
| **Demographic and geographic profiling of the city** | Demographic data includes total population, male and female distribution, proportion of persons with disabilities (PWD), and household size, among other factors. The geographic profile covers location, average temperature, rainfall, and elevation above sea level. |
| **Economic profiling to determine low-income households (LIH), non-LIHs; socially vulnerable communities** | Economic profile presents the employment rate across different sectors and the financial inclusion status. These three determinants are crucial for evaluating the current situation of the municipality. |
| **Ground water levels, extent of water contamination and safe access to water for all in the city** | Water supply situation outlines the proportion of households using safely managed, basic, or limited water sources, along with the presence of contaminants such as arsenic, iron, or fecal coliforms in the water sources. Furthermore, this section also maps low-income and non-low-income communities to determine demand and identify specific technological interventions for different income groups. |
| **City's Climate vulnerability scenario & environment impact assessment of new investments** | Climate vulnerability is essential to study, as it highlights the impact of climate-related disasters such as cyclones, storms, tidal floods, flash floods, waterlogging, salinity, and riverbank erosion on the sanitation infrastructure and facilities. |

## Chapter 2: Strategic Roadmap

**Identifying gaps and challenges in the current service delivery mechanisms, including the institutional and governance framework, regulatory framework, financial structure, and sanitation infrastructure and facilities. Within the institutional and governance framework, the analysis covers staffing, segregation of duties, regular training and capacity-building programs, monitoring and evaluation practices, and data-driven decision-making. In the regulatory framework, the focus is on central and local government laws, acts, policies, strategies, plans, rules, standards, and guidelines regarding sanitation service delivery. The financial structure review includes the municipality's budget, total revenue generation, grants and allocations to the sanitation sector, tariff structure, and revenue generated from sanitation services. Lastly, in terms of infrastructure and facilities, the assessment includes user interfaces and containment solutions such as household-level toilets, institutional-level toilets, public and community toilets, emptying and transportation services such as the number of vacuum trucks, and treatment and reuse facilities like FSTPs. After identifying the gaps and challenges, specific interventions are proposed for each service delivery mechanism to address these issues.**

**CWIS exemplar town models focus on establishing inclusive, sustainable, and safe sanitation systems that serve all residents. By implementing strategic approaches, these towns aim to create resilient communities where faecal waste is managed effectively, and sanitation services are equitable, affordable, and environmentally sound. The following strategies outline key actions to achieve these goals.**

| | |
|---|---|
| **Forming or reforming the institutional and governance framework for sanitation to improve service delivery by recognising it as an essential service** | The goal is to establish effective institutions that ensure every resident's waste is safely managed, creating waste-free communities. Sanitation infrastructure and service delivery systems protect workers, households, and the wider community at every stage, from access and containment to disposal or reuse. Hiring, infrastructure development, service planning, and delivery are conducted through public consultation, incorporating the needs, values, and constraints of all residents, especially those from marginalized groups, including women, girls, and individuals without formal land tenure or access to sanitation. Occupational health and safety standards are consistently upheld, safeguarding the health and rights of sanitation workers. A commitment to safe, inclusive urban sanitation is demonstrated through transparent budget allocations and spending, driven by principles of equity and accountability. Autonomous accountability systems empower marginalized communities, while service authorities receive political support to implement institutional reforms. |
| **Reforming Local Regulations on Sanitation infrastructure, sanitation services and consumer behaviours to ensure safe access to sanitation** | Towns strive to establish inclusive, equitable, and safe sanitation regulations, where legal mandates are grounded in urban planning principles. The regulations are free from restrictions based on land tenure, technological structures, or local political boundaries. The needs of all workers—whether formal or informal, temporary or permanent, transient or non-transient—as well as downstream communities, are reflected in these mandates, ensuring effective resolution of disputes and citizen grievances. |

| | |
|---|---|
| **Restructuring service authorities' financial budgets to separate sanitation revenue, expenses** | Service levels, affordability, and availability are aligned with pricing structures, ensuring that adequate financial support is provided to the poorest residents, enabling them to access safe, climate-resilient sanitation technology and services. Activity-based accounting of costs and revenues informs investment and financing decisions, with clear and inclusive performance targets for service quality. Climate change, water scarcity, and energy resource constraints are carefully considered in investment planning and resource allocation. |
| **Improving sanitation infrastructure and service facilities, making it widely accessible to all** | Towns aim to ensure that the containment, disposal, and reuse of faecal waste are managed to protect groundwater and environmental health. Investments in sanitation hardware and service delivery models prioritize resource recovery, incentivizing safe faecal waste management. Local government authorities adopt viable business models to serve diverse customer segments, engaging private sector service providers, where appropriate, to deliver safe, equitable, and sustainable sanitation services. |
| **Chapter 3: Sanitation Service Strategies Development** | |
| **Interventions costed with source of funding and phasing it out over an effective implementation period** | Short term interventions focus on user interface enhancements and regulatory interventions to improve immediate sanitation management. Medium term interventions build on these efforts by incorporating demand enhancement through Social and Behavior Change Communication (SBCC) initiatives and capacity-building programs, further strengthening the system. Long term interventions add additional infrastructure assets, including new desludging vehicles and an extra Faecal Sludge Treatment Plant (FSTP), to address increasing demand and ensure long-term sustainability. |
| **Scenario Modelling with interventions to assess impact on equity, financial sustainability, and safety** | Scenario models developed using the EquiServe tool, the phasing of interventions, and the tracking process for SSSP implementation. In the scenario models, the EquiServe tool conducts scenario analysis for the municipality's sanitation strategy in several phases, each building on the previous one. For instance, Scenario 1 might address the short term, Scenario 2 the medium term, and Scenario 3 the long term. Each scenario is evaluated using the EquiServe tool to determine funding requirements and measure progress toward achieving safely managed, equitable, and sustainable sanitation service delivery in the municipality. The phasing of interventions involves creating a detailed action plan that outlines specific activities, timelines, and responsible entities for each step of the implementation process. Lastly, the formation of a Planning Implementation Committee is outlined. This committee monitors progress toward achieving the set objectives of the interventions. |

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| | This includes establishing indicators and methods for data collection, continuously monitoring progress to identify any deviations from the SSSP plan and making necessary adjustments. |
| **Forecast on 10-year budget to deliver city-wide sanitation services** | A financial strategy is developed to present projected revenues and expenditures under the different scenarios. Based on these projections, towns can plan their 10-year budget more effectively as household and institutional access to sanitation services expands and service quality is gradually set to improve. |
| **Business Model for Public toilets, desludging, and FSTP management** | For Public Toilet operations & maintenance – The registered Sanitation Workers Cooperative will engage in a 'Community-Led Service Level Agreement Model' to economically empower the marginalized groups to operate and maintain the PTs through a community lease. The cooperative will employ its members in operations while reporting on key performance indicators to the municipality daily on the IMIS. The cooperative will pay a fixed lease fee to the pourashava every year.<br>For Desludging services – The emptiers will be hired through a private entity and will engage in a 'Hybrid Model - LGI Owned and Operated by Private Sectors' to manage the vacuum truck services. Each vacuum truck requires one driver and two helpers, in addition to expensing fuel, and other maintenance of the trucks. The pourashava will divide service regions into different private service providers for each of the 5 trucks and license them gradually as their key performance indicators on service coverage and service delivery improves. The private operators will report back to the pourashava daily on the IMIS. The pourashava will pay the private service operators for all the expenses they incur, in addition to a percentage of service fees received from households based on performance targets achieved.<br>For FSTP operations and maintenance – Managing a Nature-based faecal sludge treatment plan will require one manager and two plant operators, in addition to expensing on utility bills and office miscellaneous costs. However, for a co-compost plant, it will also require a team of solid waste workers. The private entity will engage in a 'Hybrid Model - LGI Owned and Operated by Private Sectors' to manage the daily operations of the FSTP and report back to the pourashava on the IMIS. Their key performance indicators will be tracked on daily volume of FS received / safely treated, the treatment plant will be capable of treating 100% of the FS generated in the city. The pourashava will pay the private service provider for all the expenses they incur, in addition to a variable income for the entrepreneur, which is based on the number of trucks that disposed FS in the FSTP. |

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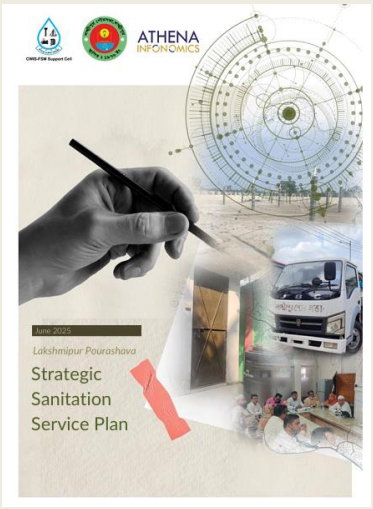
| **Service authorities' Baseline Rapid Service System Assessment** | This section describes the service system to be assessed during the drafting process of strategic sanitation service plan, and subsequent activities that should be addressed in the service plan output. The nine service system areas are identified and further explained below.<br>Physical asset management – looks at the asset management strategy and investment plans that are aligned with strategic planning cycles<br>Planning – looks at the comprehensive scenario modelling and impact simulation conducted to measure equity, environment and financial sustainability.<br>Accounting and financial management – looks at regularly monitoring financial systems and reporting to track revenue, costs, subsidies through financial controls.<br>Customer management – looks at disaggregating customer data by demographics, location, service level, preferences, service history, customer segments (such as gender), and integrate it into the IMIS.<br>Business management – looks at partnerships formed to improve capabilities where gaps exist, and knowledge management systems adopted to retain and transfer knowledge.<br>Risk management – Integrating physical asset risk management into planning, budgeting, operations and monitoring risk-based design standards for physical technologies and infrastructure.<br>Human resource management – Training programs for skills development, HR policies for recruitment, development retention and separation and HR administration through information systems.<br>Procurement – Periodical audits to ensure procurement compliance, training in procurement policies, procedures and qualified/accredited vendors created.<br>Environmental management – Environment risks identified with mitigations plans, environment metrics, indicators tracked, and climate action plan in place. |

*Textbox 3: Strategic Sanitation Service Plan (SSSP) for Lakshmipur Pourashava*




The *Strategic Sanitation Service Plan (SSSP)* for Lakshmipur Pourashava outlines a comprehensive process for developing and implementing sanitation infrastructure and services in the municipality. This plan is rooted in public health and hygiene goals, focusing on equitable, safe, and sustainable sanitation solutions for all residents, especially those in vulnerable communities.

The process begins with establishing a Planning Implementation Committee (PIC) comprising municipality staff and elected representatives. This team is responsible for monitoring progress and ensuring that interventions are executed on time. The committee's members have clearly defined roles, including tracking sanitation interventions, mobilizing resources, and ensuring compliance with local regulations. Additionally, they address community outreach and social behavior change campaigns, which are crucial for promoting sanitation awareness.

Baseline assessments and a Citywide Inclusive Sanitation (CWIS) analysis are conducted to evaluate the current sanitation systems and identify gaps in Lakshmipur Pourashava. The assessment covers the institutional and governance framework, regulatory framework, financial mechanisms, and sanitation infrastructure, while also considering city profile and climate vulnerabilities. It highlights the need for safe sanitation, with a particular focus on low-income areas that lack adequate facilities.

The SSSP, then, identifies the gaps in each area, highlighting the strategy that will lead to achieving 'access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030', in line with SDG 6.2. The action plan further provides costed interventions phased out in yearly installments with key performance indicators outlined for the planning implementation team. The total cost to reach 100% safely managed sanitation by 2030 in Lakshmipur will be 27 crore BDT with annual revenue generated from sanitation service delivery at 2.11 crore BDT and annual expenditures for sanitation service operations and maintenance at 54 Lakh BDT (Scenario 1 from the EquiServe analysis). This is based on the structure of the current Development Project Proposal (DPP) of the Department of Public Health Engineering. Lakshmipurs' scenario models show a strong case in financial sustainability of the investment.

The Lakshmipur SSSP document outlines strategic investments in upgrading sanitation technologies and infrastructure, such as public toilets and faecal sludge treatment plants. It also emphasizes improving governance and institutional frameworks, regulatory frameworks, financial mechanism, ensuring that sanitation services are equitable, gender-sensitive, safely managed, sustainable, and resilient to climate impacts.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**Athena Infonomics** is a global data solutions group that applies social science research, data analytics, and technology to provide global development leaders with user-centric, context-specific outcomes. Founded in Chennai, India in 2010, Athena now has offices in India, the United States, the United Kingdom, and Kenya, alongside program hubs spanning Sub-Saharan Africa and South Asia. Having worked on more than 200 projects across practices with various clients, we have built a reputation for meaningful outcomes delivered by a skilled, energetic, committed, and passionate team. This work is gaining recognition: in 2022 alone, we were included in *The Financial Times*' Asia-Pacific High-Growth Companies list and India's Growth Champions list, compiled by *The Economic Times*.