

# CWIS

## MEASUREMENT

**Citywide Inclusive Sanitation (CWIS)** is a public service approach to planning and implementing urban sanitation systems to achieve outcomes of Sustainable Development Goal 6: Safe, Equitable, and Sustainable sanitation for everyone in an urban area, paying special attention to the needs of the poor, the marginalized, and women and girls.<sup>1</sup>

*“CWIS is based on the fundamental understanding that urban human waste management is characterized by **inherent market failures**, and therefore must be organized as a **public service** – including ensuring safe containment – to achieve public interest components of sanitation.”*  
(Schrecongost et al, 2020)

CWIS emerged as a sectoral response to the failure of the “conventional approach”, which focuses on infrastructure investment for sewer expansion, to address the needs of the urban poor and being financially sustainable. While the more recent approach of Fecal Sludge Management (FSM) has made substantial progress in areas neglected by the sewerage approach, it assumes inherent advantage of

FSM over sewers for servicing the poor, without considering the need for broader planning of public service delivery systems.<sup>2</sup> CWIS bridges the gap between the sewerage and FSM approaches. It shifts away from the traditional focus on hardware inputs, whether for sewerage or non-sewerage categories, and is technology agnostic. A CWIS approach requires planning and investment in incremental hardware and service improvements across diverse contexts within cities, deploying a range of technologies best suited to the context and specific needs.<sup>3</sup>

CWIS focuses on how a city’s service delivery system functions, which is influenced by both national/ state level policy/ legal/ institutional design and city level implementation of the design, and the resulting outcomes. It establishes sanitation as a public service without marginalizing the

<sup>1</sup> The Bill & Melinda Gates Foundation (2020). Citywide Inclusive Sanitation: An Urban Sanitation Service Framework for Sustainable Development Goal 6.

<sup>2</sup> Schrecongost A, Pedi D, Rosenboom JW, Shrestha R and Ban R (2020). Citywide Inclusive Sanitation: A Public Service Approach for Reaching the Urban Sanitation SDGs. *Front. Environ. Sci.* 8:19. doi: 10.3389/fenvs.2020.00019




<sup>3</sup> The Bill & Melinda Gates Foundation, Emory University, Plan International, The University of Leeds, WaterAid, and the World Bank (2016). Citywide Inclusive Sanitation: A Call to Action. 07 01.

role of the private sector. CWIS recognizes inherent market failures of urban sanitation and creates market incentives for private sector participation to invest and innovate.

## THE CWIS SERVICE FRAMEWORK

The Bill & Melinda Gates Foundation’s approach to CWIS is characterized by a CWIS Service Framework consisting of three core outcomes and three core functions. The core CWIS outcomes of Equity, Safety, and Sustainability are closely correlated with various SDGs. These outcomes can only be achieved through a service delivery system that demonstrates the core CWIS functions of Responsibility, Accountability, and Resource Planning and Management. The core CWIS functions are measured at two levels—at the national/ state level, where most of the sanitation related policies, laws, and institutional mechanisms governing city level service delivery are designed; and at the city level, where these designs are implemented.

The table below presents the definition of each of the CWIS outcomes and functions as well as their mapping to the SDGs.

CWIS SERVICE FRAMEWORK			
CORE CWIS OUTCOMES	<b>EQUITY</b>  Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies.	<b>SAFETY</b>  Services safeguard customers, workers, and communities from safety and health risks by reaching <i>everyone</i> with safe sanitation.	<b>SUSTAINABILITY</b>  Services are reliably and continually delivered based on effective management of human, financial and natural resources.
	<b>RESPONSIBILITY</b> Service authorities have a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.	<b>ACCOUNTABILITY</b> Service authorities’ performance against their mandate is monitored and managed with data, transparency and incentives.	<b>RESOURCE PLANNING AND MANAGEMENT</b> Resources—human, financial, natural, assets—are effectively managed at the national/ state level to support execution of mandate across time/space.
CORE CWIS FUNCTIONS	<b>National / State Level Design</b>		
	<b>City Level Implementation</b>		
	Service authorities are delivering safe, equitable, and sustainable sanitation services as per their mandate.	Service authorities regularly collect and report data for performance monitoring.	Resources are effectively managed at the city level to deliver safe, equitable, and sustainable sanitation for all.

## THE CWIS MEASUREMENT FRAMEWORK

To track city progress towards CWIS, a list of CWIS indicators have been developed under the CWIS-MLE initiative. The CWIS indicators are organized around and designed to measure the key aspects of each of the six focus areas in the CWIS Service Framework. The method followed for developing these indicators is documented in [this note](#). These indicators serve as a reference that can help inform the design of sanitation data systems at various levels. They can be used by city level service authorities to plan interventions and improve services, by national policymakers to strengthen accountability and more effectively allocate resources, and by international financial institutions and donors to better understand investment outcomes and improve the design of new investments.

The table below summarizes CWIS-MLE indicators corresponding to the CWIS Framework. A detailed list of specific indicators (quantitative and qualitative) used for measurement is available in the annexure. The CWIS-MLE program is facilitating the collation of data on these indicators across the eight cities<sup>4</sup> for the duration of the Foundation program. City grantees are working in tandem with the MLE effort to strengthen the monitoring systems of sanitation authorities, regulators and other key government stakeholders. Institutionalizing adequate, data-driven management information systems will allow decisions—daily service delivery decisions and large national financing decisions—to be better informed and more transparent and collaborative moving forward.

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<sup>4</sup> The eight cities and corresponding CWIS Grantees are: Kampala (Kampala Capital City Authority), Lusaka (Lusaka Water and Sanitation Company), Dakar (Office National de l'Assainissement du Sénégal), Khulna (SNV Netherlands Development Organisation), Trichy (Indian Institute for Human Settlements), Wai (CEPT University), Warangal and Narsapur (Administrative Staff College of India, for both cities).

Summary of the CWIS Framework MLE Indicators

	<b>EQUITY</b>	<b>SAFETY</b>	<b>SUSTAINABILITY</b>
<b>SERVICE OUTCOMES</b>	<p>Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies</p> <ul style="list-style-type: none"> <li>• Toilet access and safe services in LICs are proportionate to citywide levels</li> <li>• Equitable use of public finance across populations &amp; communities</li> <li>• HH &amp; users’ costs to access sanitation services are equitable across the city</li> <li>• Gender intentional representation in decision-making</li> <li>• Sanitation workers’ rights, protections, and safety nets are actively fostered</li> </ul>	<p>Services safeguard customers, workers, and communities from safety and health risks by reaching <i>everyone</i> with safe sanitation</p> <ul style="list-style-type: none"> <li>• Residents and city users have access to adequate toilet facilities in residential, community &amp; public spaces, schools &amp; healthcare facilities</li> <li>• Toilet facilities and waste services are managed to protect public health and environmental outcomes</li> <li>• Waste disposal and treatment facilities are sufficient and operational</li> </ul>	<p>Services are reliably and continually delivered based on effective management of human, financial and natural resources</p> <ul style="list-style-type: none"> <li>• Cost recovery of service delivery system operating expenses</li> <li>• Financing resources for CAPEX expansion and renewal</li> </ul>
	<b>RESPONSIBILITY</b>	<b>ACCOUNTABILITY</b>	<b>RESOURCE PLANNING &amp; MANAGEMENT</b>
<b>SYSTEM FUNCTIONS</b>	<b>National/ State Level Design</b>		
	<p>Service authorities have a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.</p> <ul style="list-style-type: none"> <li>• Clear and non-overlapping mandate covering the entire service chain</li> <li>• Mandate covers all urban areas without exclusions related to land tenure or artificial administrative boundaries</li> <li>• Mandate is explicitly pro-poor, gender intentional, and inclusive of other vulnerable groups</li> </ul>	<p>Service authorities’ performance against their mandate is monitored and managed with data, transparency and incentives.</p> <ul style="list-style-type: none"> <li>• Service authority performance is monitored with clear KPIs and progressive targets</li> <li>• Service authority performance is managed with data-driven incentives and/or penalties</li> <li>• Accountability process is inclusive of customer and non-customer engagement, including marginalized voices</li> </ul>	<p>Resources—human, financial, natural, assets—are effectively managed at the national/ state level to support execution of mandate across time/space.</p> <ul style="list-style-type: none"> <li>• Sanitation budget allocation at the national/ state level is based on mandate and city/ service area strategies</li> <li>• Decision-making process for budget allocation is transparent and inclusive</li> </ul>
	<b>City Level Implementation</b>		
<p>Service authorities are delivering safe, equitable, and sustainable sanitation services as per their mandate.</p> <ul style="list-style-type: none"> <li>• Mandated authorities are delivering inclusive services</li> <li>• Authorities deploy sufficient staff and budget to execute their mandate</li> </ul>	<p>Service authorities regularly collect and report data for performance monitoring.</p> <ul style="list-style-type: none"> <li>• Authorities regularly collect data that is representative of the entire city, including in low income settlements and on vulnerable groups</li> <li>• Authorities actively report on performance indicators with transparency</li> <li>• Data is used to inform and manage service delivery and enforcement of performance incentives</li> </ul>	<p>Resources are effectively managed at the city level to deliver safe, equitable, and sustainable sanitation for all.</p> <ul style="list-style-type: none"> <li>• Sanitation investment decisions are driven by impact and cost considerations, and are technology agnostic</li> <li>• Sanitation planning is pro-poor, gender intentional, and inclusive</li> <li>• Sanitation revenue and operating costs are understood and managed, and budgets are allocated to meet targets</li> </ul>	

## ANNEXURE: LIST OF CWIS PRIMARY INDICATORS & INDICATOR AREAS

CWIS indicators are mapped to the six areas of the CWIS Service Framework—Equity, Safety, Sustainability, Responsibility, Accountability, and Resource Planning and Management. There are 34 quantitative and qualitative indicators and indicator areas. An indicator area is a description of a set of indicators but is not measured as an indicator in itself. All indicator areas are marked with **[Indicator Area]** at the beginning. Some of the indicators and indicator areas also have sub-indicators that further dive into specific aspects of the indicator or indicator area. The full list of CWIS Indicators, including all sub-indicators, is downloadable [via this link](#).

 These are not additional indicators requiring data collection but composite scores constructed from some of the existing indicators under “Safety”. While no new information is collected through these indicators, the intention of presenting them as separate indicators is to highlight the extent of equity of access to sanitation services.

	EQUITY	SAFETY	SUSTAINABILITY
OUTCOMES	EQ-1: % of Low Income Community (LIC) population with access to ‘safe’ individual toilets / % of total population with access to ‘safe’ individual toilets	SF-1: % safely managed sanitation (citywide Individual Household Latrines/ IHHLs)	SS-1: % of treated FS and wastewater that is reused
	EQ-2: % safe management LIC/% safe management citywide (IHHL)	SF-2: % safely managed sanitation for LIC IHHLs	SS-2: % of operational cost recovered for STPs/WWTPs and FSTPs (from revenue generating activities)
	EQ-3: Subsidy amount paid to NSS/SS	SF-3: % safely managed liquid waste for shared facilities (shared HH toilets + Community Toilets/ CTs)	SS-3: % of sanitation capital investments covered by budget line/ government transfers
	EQ-4: % of women in sanitation related decision-making bodies (government institutions)	SF-4: % of public spaces that have adequate sanitation facilities (Public Toilet/ PT)	
	EQ-5: Gender pay gap in the sanitation workforce	SF-5: % of educational institutions where Fecal Sludge/ Wastewater (FS/WW) generated is safely transported to TP or safely disposed in situ	
	EQ-6: [Indicator Area] Sanitation worker equity	SF-6: % of healthcare facilities where FS/WW generated is safely transported to TP or safely disposed in situ	
		SF-7: % of desludging services completed mechanically or semi-mechanically (gulper)	
		SF-8: % of desludging vehicles which comply with maintenance standards	
		SF-9: % of water contamination compliance (on fecal coliform)	
		SF-10: Incidence (per 1000) of fecal-oral pathway diseases	
		SF-11: [Indicator Area] Sanitation worker safety	
		SF-12: Presence of certification mechanism for which treated WW/FS has to qualify	

	RESPONSIBILITY	ACCOUNTABILITY	RESOURCE PLANNING & MANAGEMENT
<b>FUNCTIONS</b>	<b>National / State Level Indicators</b>		
	RS-1a: [Indicator Area] Legal mandate for service delivery is clear and inclusive	AC-1: [Indicator Area] Performance indicators are set and monitored	RPM-1a: [Indicator Area] Clear financing framework at the national level to guide allocation of resources
	RS-2a: Approved local service authority staff positions within mandated authority areas are sufficient to execute mandate <i>[*Context specific. Evaluated at point where staff head count and organogram is determined for mandated authority. This could be city, state or national.]</i>	AC-2: [Indicator Area] Clear and progressive performance targets are set, monitored, and enforced for sanitation <i>[*Context specific. Evaluated at the level where performance targets are set. This could be city, state or national.]</i>	RPM-2a: [Indicator Area] National/ state level decision-making process for sanitation budget allocation is transparent, inclusive, and informed by city /service area strategies
		AC-3a: Performance data from service authorities are transparent	
		AC-4a: Incentives and/or penalties tied to performance exist for sanitation service authority	
	<b>City Level Indicators</b>		
	RS-1b: [Indicator Area] Mandated service authorities are delivering inclusive services	AC-1b: [Indicator Area] Service authorities actively report on the performance indicators	RPM-1b: [Indicator Area] Clear financing framework at the city level to guide allocation of resources
	RS-2b: [Indicator Area] Local service authority staff positions are filled and capable to execute mandate	AC-2: (same as for national/ state level) <i>[*Context specific]</i>	RPM-2b: [Indicator Area] City level decision-making process for sanitation budget allocation is transparent, inclusive, and informed by city /service area strategies
	RS-3: Local service authority sanitation budget is a separate line item independent of water, solid waste management, health, or environment	AC-3b: [Indicator Area] Service authorities regularly collect representative data	RPM-3: [Indicator Area] Quality of investment decision-making
	RS-4: Local authority's sanitation revenue is ringfenced	AC-4b: Incentives and/or penalties are actively used/applied by national/ state accountability authorities at the service area level	RPM-4: [Indicator Area] Integrated citywide inclusive sanitation strategy