Government of West Bengal
Department of Urban Development & Municipal Affairs
(NGT Cell)
NAGARAYAN, 6th Floor,
DF- 8, Sector – I, Salt Lake: Kolkata – 700064

No. WBSPMG-179-SMCG/TWW-818/2024 **Dated, Kolkata, the 5th March, 2026**

PUBLIC NOTICE

Intimation for Inviting Suggestions/Feedback on the Draft Policy on Safe Reuse of Treated Wastewater of West Bengal

The Urban Development & Municipal Affairs Department, Government of West Bengal hereby invites suggestions and feedback from all stakeholders and members of the public on the Draft Policy on Safe Reuse of Treated Wastewater of West Bengal.

The said draft policy has been prepared with the objective of promoting safe and sustainable reuse of treated wastewater in the State.

All stakeholders, experts, institutions, and members of the public are requested to submit their suggestions/comments on the draft policy within 30 (thirty) days from the date of publication of this notice.

Suggestions/feedback may be submitted through the following mode:

Online submission: By availing the online submission option available on the official website.

Email: ngt.udma@gmail.com

Email: es.smcgwb@gmail.com

All suggestions received within the stipulated period shall be duly considered by the Department before finalization of the policy.

05/03/2026

Secretary to the Government of West Bengal
&
Program Director, SMCG-WB

NANDINI GHOSH, IAS
Secretary
Department of Urban Development & Municipal Affairs
Govt. of West Bengal

DRAFT

WEST BENGAL STATE POLICY ON SAFE RE-USE POLICY OF TREATED WASTEWATER

February 2026

Prepared by

Urban Development & Municipal Affairs Department Government of West Bengal

PREFACE

Poor sanitation and wastewater management in developing countries leads to the contamination of fresh water sources and is a major cause of water borne diseases and also affect the health of eco-systems. Around 80% of all waste water is discharged into the surface water bodies without any treatment where it creates health, environmental and climate-related hazards. Urbanization further exacerbates this challenge with increasing wastewater generation, while at the same time using more of Earth's dwindling resources. Recycling and safe reuse of treated wastewater is an important part of the sanitation cycle and critical in an environment with decreasing freshwater availability and increasing costs for delivering desirable quality water, often from far distance. Recovering the water, energy, nutrients and other precious materials embedded in wastewater is a key opportunity to be seized. Target 6.3 of the Sustainable Development Goals (SGD) commits governments to halving the proportion of untreated wastewater and sustainability, increasing recycling and safe reuse by 2030.

The policy presents possible strategies for city and state planners in view of the sanitation situation and the role of safe wastewater recycling in the cities in West Bengal, and focuses on recycling at the end of sewage systems with appropriate centralized or decentralized technology solution alongwith extensive public awareness activities.

Terminology

Glossary

Emerging Contaminants (ECs): chemicals that had not previously been detected (or were previously found in far lesser concentrations) and pose a risk to human health and the environment including pharmaceuticals, personal care products and endocrine disrupting compounds.

Implementing agency: the entity responsible for provision of used water services which includes conveyance, treatment, distribution of treated used water and all other functions related to management of the services. This role is typically provided by the State or Urban Local Body or parastatal agency or Panchayati Raj Institutions and is referred to as the implementing agency. Private sector companies may provide the service through private public partnership arrangements with the implementing agency.

Industry effluent: wastewater discharged from industries that comprises a variety of pollutants depending on the nature of industry. Industrial effluent is a separate resource that is covered under other policy instruments.

Safe Reuse of Treated Water (SRTW): the beneficial and safe use of treated used water for a range of purposes of this Framework. Direct reuse relates to applications where the TUW is conveyed straight to the designated end - use whereas indirect reuse involves a mixing or dilution of the TUW with other sources of water before it is reused, as in the case of discharge of TUW to a surface water body or groundwater.

Sewage: is defined as the used water containing human body waste matter (faeces and urine etc.) either dissolved or undissolved; discharged from toilets and other receptacles intended to receive or retain such human body waste. The effluent coming out of septic tanks or any such facility is also termed as sewage.

Sewage Treatment Plant (STP): equipment and structures that treat sewage.

Treated Used Water (TUW): the treatment of used water for non -potable purposes through one or more of a number of primary, secondary and tertiary processes. Also referred to in other documents as treated wastewater.

Treatment:

Primary Treatment: involves screening and grit removal, equalization and the removal of high concentration of solids that might decrease the efficiency of subsequent treatment processes.

Secondary Treatment: commonly used to describe any of the following biological processes: activated sludge, extended aeration, trickling filters, aerobic and anaerobic lagoons and anaerobic and facultative (mixed) ponds. 4 Also referred to as Secondary Treated Water (STW).

Tertiary Treatment: a further stage of treating sewage or effluents, by removing suspended solids and or pollutants. Consequential removal of suspended solids may also remove residual BOD or other pollutants. Tertiary treatment of effluents may consist of varied processes, the most common being, Grass Plots, Reed Beds, Upward flow Clarifier, Rapid Gravity Sand Filter, Micro-strainer, Sand Filter, Drum Filter, Lagoons, Nitrifying Filter.

Used Water: a combination of one or more of: a) domestic effluent consisting of blackwater (excreta, urine and faecal sludge) and greywater (kitchen and bathing used water); b) water from commercial establishments and institutions, including hospitals; c) stormwater and other urban run-off; d) industrial effluent, e) agricultural, horticultural and aquaculture effluent, either dissolved or as suspended matter. This Framework addresses the reuse of treated used water from sources (a), (b) and (c). 'Used water' is also referred to as wastewater in other documents.

Zero Liquid Discharge (ZLD): refers to installation of facilities and systems towards transformation of industrial effluent to absolute recycling of permeate and converting solute (dissolved organic and in-organic compounds/salts) into residue in the solid form, by adopting method of concentration and thermal evaporation.

CONTENTS

OVERVIEW

About Wastewater: At a Glance

What is Wastewater:

Wastewater can have a number of definitions (UN-Water 2015). The approach taken in this policy is a very broad definition following that outlined in the UNEP/UN-Habitat document 'Sick Water?'. Thus, Wastewater is defined as "a combination of one or more of:

- domestic effluent consisting of blackwater (excreta, urine and faecal sludge) and grey- water (kitchen and bathing wastewater);
- water from commercial establishments and institutions, including hospitals;
- industrial effluent, storm water and other urban run-off;
- agricultural, horticultural and aquaculture effluent, either dissolved or as suspended matter

Although, using this definition, the term 'wastewater' clearly encompasses domestic, commercial, industrial, agricultural components and also faecal sludge, these are sometimes covered separately in order to clarify or highlight the importance of the individual components or wastewater streams. (UN-Water, 2015).

Types of Wastewater:

Wastewater comes in three main types namely Black water, Grey water and Yellow water.

Black water

This is wastewater that originates from toilet fixtures, dish washers, and food preparation sinks. It is made up of all the things that one can imagine going down the toilets, bath and sink drains. They include poop, urine, toilet paper and wipes; body cleaning liquids, anal cleansing water and so on. They are known to be highly contaminated with dissolved chemicals, particulate matter and is very pathogenic.

Grey Water

This is wastewater that originates from non-toilet and food fixtures such as bathroom sinks, laundry machines, spas, bathtubs and so on. Technically it is sewage that does not contain poop or urine. Grey water is treated very differently from Black water and is usually suitable for re-use.

Yellow water

This is basically urine collected with specific channels and not contaminated with either black water or grey water.

Sources of wastewater

Domestic Sewage

This includes all wastewater generated by home dwellings, public restrooms, hotels, restaurants, motels, resorts, schools, places of worship, sports stadiums, hospitals and other health centres, apartments and the like. They all produce high volumes of wastewater.

Non-sewage

This includes water from floods (storm water), runoff (rainwater running through cracks in the ground and into gutters), water from swimming pools, water from car garages and cleaning centres including laundromats, beauty salons, commercial kitchens, energy generation plants, industries and so on.

Wastewater is also generated from agricultural facilities. Water used for cleaning in animal farms, washing harvested produce and cleaning farm equipment.

How is wastewater harmful?

In certain parts of the world, especially in developing countries, wastewater is pumped directly into the sea or into fresh water bodies without any form of treatment. In other parts of developed countries, lack of adequate wastewater treatment infrastructure, maintenance and outdated systems heavily compromise wastewater treatment efforts. The effects of this (either treated or partly treated) can be classified in the following:

Water pollution:

Fresh water bodies and marine waters, into which wastewater is discharged may be polluted and rendered unsafe for human use. Depending on what is discharged, aquatic life may be harmed too.

Water security:

There is water scarcity in many places in the world. Wastewater discharged on lands can leach into underground water tables and potentially contaminate aquifers and underground water. If discharged in freshwater bodies, it may render water sources unsuitable for use.

Ecosystem services:

All ecosystems are connected and they all ultimately depend on water. Similarly, all water (surface and underground) is connected. This means careless wastewater discharge can have some serious ripple effect. One common effect of wastewater is the eutrophication of fresh water bodies and oceans. If one part of the ecosystem chain is destroyed, it can upset its entire food chain.

Agriculture / Fisheries / Tourism:

Wastewater for irrigation may contain unsuitable chemicals and higher concentrations of nutrients needed for crops. This can result in delay and under yielding. Wastewater used for animal farming may also contain harmful things and chemicals dissolved in them. Animals may die, and there is a chance that the contamination reach human via the animals. In some places, faecal sewage is discharged directly into the sea/river. The discharge contains pathogens and harmful dissolved chemicals which can affect fishing in that area. The smell and such behaviour do not encourage tourism to that area.

Health of urban and rural populations:

Wastewater is a big health issue, as it carries and transports a myriad of diseases and illnesses. It is believed that about 2.2 million people die each year (globally) from diarrhoeal disease. (WHO).

What is Waste water Management?

Wastewater management is the process of taking wastewater and treating/managing it in order to reduce the contaminants to acceptable levels so as to be safe for discharge into the environment. There are effectively two basic types of wastewater treatment: centralized and decentralized. Centralized systems are large-scale systems that gather wastewater from many users for treatment at one or a number of sites, whereas decentralized systems are dealing with wastewater from individual users, or small clusters of users, at the neighbourhood or small community level.

POLICY STATEMENT

1. Preamble

West Bengal is the most densely populated state of India at 1000 persons per square km. Its average urban density is much higher at around 7500 persons per square km. West Bengal has liberal water availability as a natural resource that supports intensive rain-fed agriculture. However, the pressure on urban water resources has been increasing over some years due to increasing population, low investment in supply augmentation and dilapidating state of existing systems. It is realized that current and future fresh water demand could be met by enhancing water use efficiency and demand management.

With rapid expansion of cities and domestic water supply, quantity of wastewater is increasing in the same proportion. As per CPHEEO estimates about 70-80% of total water supplied for domestic use gets generated as wastewater. The per capita wastewater generation by the class-I cities and class-II towns, representing 72% of urban population in India, has been estimated to be around 98 lpcd while that from the National Capital Territory-Delhi alone (discharging 3,663 mld of wastewaters, 61% of which is treated) is over 220 lpcd (CPCB, 1999). As per CPCB estimates, the total wastewater generation from Class I cities (498) and Class II (410) towns in the country is around 35,558 and 2,696 MLD respectively. While, the installed sewage treatment capacity is just 11,553 and 233 MLD, respectively, thereby leading to a gap of 26,468 MLD in sewage treatment capacity. Maharashtra, Delhi, Uttar Pradesh, West Bengal and Gujarat are the major contributors of wastewater (63%; CPCB, 2007a). Further, as per the UNESCO and WWAP (2006) estimates (Van-Rooijen et al., 2008), the industrial water uses productivity of India (TWP, in billion constant 1995 US$ per m3) is the lowest (i.e. just 3.42) and about 1/30th of that for Japan and Republic of Korea. It is projected that by 2050, about 48.2 BCM (132 billion litres per day) of wastewaters (with a potential to meet 4.5% of the total irrigation water demand) would be generated thereby further widening this gap (Bhardwaj, 2005). Thus, overall analysis of water resources indicates that in coming years, there will be a twin edged problem to deal with reduced fresh water availability and increased wastewater generation due to increased population and industrialization.

Though wastewater reuse is endorsed in many policies and programmes, there is a lack of clear guidelines and frameworks to support the implementation of such projects considering the safe use of it. As a result, the safe reuse of reclaimed water for non-potable purposes continues to face challenges. The problem is further exacerbated by limited enforcement of the restriction to extract groundwater for non-potable purposes. More detailed policies and stronger enforcement is needed for safe wastewater reuse projects to be viable.

To address these issues in a coordinated and focused manner by the development actors, a need has been felt to articulate a uniform State Policy on safe re-use of treated water with specific direction towards the reforms in planning, institutional framework, capacity building, research & development, legal & regulatory measures, financial arrangement, public-private partnership, technology upgradation, community participation and awareness. The UD & MA Department has formulated this Policy taking the note of the National Policy of Government of India.

This Policy is applicable to the interventions carried out by Urban Development & Municipal Affairs Department, Development Authorities, Urban Local Bodies and private organizations in urban areas. Other Departments and Institutions carrying out similar/related projects in urban areas are also requested to follow this, Policy.

2. Statement of Intent:

The Government intends to shift his role from 'Provider' to 'Provider cum Facilitator cum Regulator' in sustainable management of water resources by way of establishing an effective system of safe re-use of treated water by the urban citizens of West Bengal thereby reducing dependency on fresh ground/surface water resources bringing reforms in the areas of Planning, Institution, Finance, Technology and Legal & Regulation.

3. Objectives:

The main objectives for the Framework are to set the context, priorities and direction for SRTW, raise awareness of its importance and facilitate its implementation through support programmes. More specifically, the Framework will:

a) Move State on a pathway of mainstreaming SRTW by 2030 by encouraging States to adopt the necessary enabling environment and actively promoting its implementation.
b) View SRTW as part of the wider water cycle encouraging multiple cycles of use-reuse.
c) Contribute to the Government's commitment to environmental sustainability and achievement of SDG 6.3 on improving water quality through increased recycling and safe reuse.
d) Define the roles and responsibilities of various government entities and agencies and of other key stakeholders such as industry and other parts of the private sector, local government, civil society organisations and citizens.
e) Establish funding mechanisms and support synergies among relevant Central Government programmes such as AMRUT, NMCG, SBM and JJM.

4. Scope:

The Framework covers non-potable reuse of urban and rural used water. It recognizes diversity across the country in relation to levels of economic development and water endowment that call for a context-specific response, particularly in relation to setting priorities for re-use.

The Framework embraces the principle of integration and holistic management of the water cycle by encouraging linkages to existing and proposed policies on sanitation, faecal sludge management, and the re-use of industrial used water, within a broader context of river basin planning and actions to address climate change.

It fulfils the mandate for the reuse of treated used water for a range of non-potable end-uses, setting out the principles to incorporate in the planning and design of SRTW projects and encouraging adoption of national standards for different end-uses.

5. Alignment with National Policy and Frameworks (2022):

Several policy and guideline documents in India recognized the concept of waste water re-use, and the need to include the same in water supply management programs. Specifically, this policy aligns with the following national agenda:

- *UN Sustainable Development Goals:* The Sustainable Development Goals (SDGs) are focused, among other areas, on environmental protection and prosperity creation. In particular, the policy aligns with the following SDGs: SDG 3: Good Health and Well-Being; SDG 6: Clean Water and Sanitation; SDG

8: Decent Work and Economic Growth; SDG 11: Sustainable Cities and Communities.

- *National Water Policy 2012:* The National Water Policy 2012 promotes and incentivizes the reuse of wastewater, including through Section 6.3: 'Recycling and reuse of water, including return flows, should be the general norm'; Section 7.3: 'Recycling and reuse of water, after treatment to specified standards, should also be incentivized through a properly planned tariff system'; and Section 11.7: 'Subsidies and incentives should be implemented to encourage and recycling / reuse, which are otherwise capital intensive.

- *National Service Level Benchmarks; National Urban Sanitation Policy (NUSP):* The National Service Level Benchmarks, instituted by the Ministry of Housing & Urban Affairs, Government of India, establish a 20% target for reuse of urban wastewater generated.

- *Power Tariff Policy (revised, 2016):* The revised power tariff policy mandates thermal power plants within 50 kms of a city STP to off-take all the treated wastewater from the STP. Charges incurred in conveyance of wastewater from the STP to the power plant are eligible for pass through in the power tariff.

- *Atal Mission for Rejuvenation & Urban Transformation (AMRUT):* Following the policy guidelines implementation of wastewater reuse infrastructure solutions in selected towns and cities has been taken up.

6. Policy Actions:

6.1 Institutional Set up for Implementation, Monitoring and Management:

- State Level High Powered Committee should be constituted under the Chairmanship of the Chief Secretary to Government of West Bengal alongwith the other members – the Additional Chief Secretary/Principal Secretary/Secretary from the Departments of Health & Family Welfare, Environment, PHED, MSME, Water Investigation, Irrigation & Water Ways, UD & MA, P&RD and Commerce & Industry, for overall supervision, monitoring and policy advice.
- A State Level Steering Committee should be constituted under the chairmanship of Principal Secretary/Secretary, UD & MA Department alongwith the representatives of Health & Family Welfare, Environment, WBPCB, PHED, P&RD, MSME, Water Investigation, Irrigation & Water Ways, UD & MA and Commerce & Industry, for supervising the regular implementation and monitoring of wastewater treatment and its use.
- Urban Development & Municipal Affairs Department should act as Nodal Department for implementation of Treated Wastewater Re-use Policy and its action plan.
- State Urban Development Agency under UD & MA Department should act as Nodal Agency for implementation of Treated Wastewater Re-use Policy and its action plan.
- A State Level Waste Water Management Cell with sufficient experts should be established at SUDA for day-to-day monitoring and technical advisory.
- Technical support in implementation should be provided by Municipal Engineering Directorate. If required, professional technical agency may be engaged.
- The primary responsibility of Urban Local Body is to aware the citizen and industries towards treatment of wastewater and its reuse implementing all

legal provisions, even imposition of fine for non-treatment. In this connection, ULBs will get strong support from WBPCB.

- The Development Authorities/Unnayan Parishads should be responsible for implementation and O&M of large Sewage Treatment Plants, whereas the Urban Local Bodies should be responsible for implementation and O&M of small Sewage Treatment Plants and decentralized wastewater treatment plants.
- The Urban Local Bodies should promote establishment of decentralized wastewater treatment plants and rain water harvesting technologies encouraging the citizen through incentives.
- ULBs and Development Authorities should constitute Task Force for implementation and monitoring of treatment of wastewater & its use in their jurisdiction.
- Requirement of manpower resource gap in ULBs/Development Authorities should be addressed by way of filling up the vacant posts or engaging outsourced agency.

6.2 Development and Maintenance of Information Base and planning:

A Comprehensive Database Development and appropriate Management Information System utilizing GIS platform should be established for regular assessment of water demand, wastewater generation and reuse of treated wastewater in several sectors and mapping the requirement/location of centralized and decentralized treatment plants. For these following steps should be adopted:

- Develop coordination between UD & MA Department, Environment Department, PHED and Water Resource Investigation & Development Department
- Develop coordinated information sharing mechanism between water promotion departments like
- UD & MA, PHED and Water Resource Investigation & Development Department, and
- ULBs/Development Authorities
- Develop GIS enabled Management Information System for the cities.
  i. Preparation of Geo-referenced City base Map
  ii. Conducting Technical Surveys like Plane Table, Contour Survey
  iii. Conducting Study on 'as is' situation of underground water, surface water, water lines, sewer lines etc.
  iv. Conducting Socio-Economic Survey and Development of Management Information System
  v. Integration of Spatial Data with the information of abovementioned surveys/studies to create GIS enabled MIS.
  vi. Establishment of Central Data Monitoring Centre

- Develop coordination between UD & MA Department and Land & Land Reforms Department for updation of Land Records of the cities and development of Land Bank for plants.
- Provision of manpower & development of physical infrastructure for maintaining database development & management system in the concerned Departments especially in UD & MA Department, Development Authorities, Unnayan Parishads, and Urban Local Bodies.
- Preparation of Urban Water Resource Management Plan alongwith Wastewater Resource Management Plan by each ULB: Traditionally, water authorities have managed their water supply, sewerage and storm water drainage systems as

separate entities. Integrated urban water resource planning is a structured planning process to evaluate concurrently the opportunities to improve the management of water, sewerage and drainage services within an urban area in ways which are consistent with broader catchment and river management objectives. Catchment management impacts directly and indirectly on all three components of the urban water cycle, having effects on drinking water quality, wastewater treatment and storm water management.

- Each waste water treatment plant should have a physical and financial pre-feasibility study alongwith environmental impact assessment
- Planning for establishment of water testing laboratory in affordable location regionally should be developed.
- Each ULB/implementing organization should develop a plan for commercialization/marketing of treated waste water involving citizen and private actors.
- DPR of STP should include effective plan for reuse of treated water, long term operation & maintenance and commercialization i.e. pricing of treated water, and the DPR implementing agency should ensure that.
- Management of STPs should be effectively planned involving user groups.
- Management of ETPs/CETPs should be efficiently monitored by ULB/DA/WBPCB on regular interval and in planning of ETP/CEPT establishment by the industry, mandatory provisions should be there to include the purpose of use of treated water.
- Local or regional storage facility of treated waste water and network plan for supply for reuse shall be developed through a systematic study.

6.3 Comprehensive Land Use Planning:

New Land Use Development and Control Plan for West Bengal specifically for the Statutory Towns, other Census Towns and upcoming Growth Centres are very much required for systematic planning of wastewater treatment plants both for centralized and decentralized plants.

6.4 Legislation and Guidance Documents to follow:

Environment (Protection) Act, 1986

- The Environment (Protection) rules,1986
- The West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006
- Water Bodies Conservation Act
- The East Kolkata Wetlands (Conservation and Management) Act, 2006/2008
- The West Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005/2006
- Manual on Sewerage and Sewage Treatment Systems, 2013 of CPHEEO
- The water (Prevention and control of pollution) Act,1974
- The water (Prevention and control of pollution) Amended rules, 2011
- The water (Prevention and control of pollution) Rules, 1975
- National Urban Sanitation Policy 2008
- National Water Policy 2012
- West Bengal Municipal Act and Municipal Corporation Acts
- Quality standards suggested by Central Pollution Control Board and West Bengal Pollution Control Board.
- Standards set by Bureau of Indian Standards (BIS)
- Effluent Quality guidelines for health protection measures in aquaculture use of waste water

- ► Quality guidelines for health protection in using human wastes for aquaculture.
- ► Service Level Benchmarks Fixed by Ministry of Urban Development

6.5 Legal Issues:

Imposition of legal provision to the respective stakeholders for installation of STP/ETP/CETP.

- ► The legal rights over the sale and revenue issues of reclaimed water is an emerging issue and being addressed by the State Government separately.
- ► ULB/Industry should reuse, recycle, & resale the effluents, sewage, septage water to the end users within or outside the jurisdiction of the ULB.
- ► West Bengal Municipal and Municipal Corporations Acts should be amended incorporating the provision for treatment of waste water in centralized & decentralized manner and reuse of the same.
- ► Ground water extortion shall be mandatorily prohibited, especially for agriculture, industry & construction sectors, and instead of that use of surface water and treated waste water should be imposed.
- ► Mandatory provisions shall be made for bulk user of water like Fire Brigade, Industrial Clusters, Metro rail, Indian Railways, road wash, Infrastructure Projects, Construction Sectors, Agriculture & Agriculture Extension sectors, Bus Depots and Public Works Department to use treated waste water.
- ► Imposition of fine on the industries for not establishing Effluent Treatment Plant/Common Effluent Treatment Plant and non-reuse of that water.
- ► State level treated waste water specifications and standards shall be amended (to be encouraged to adopt as per IS and ISO standards) to include and ensure a safe reuse and to produce high economic return products.

6.6 Research & Development:

Research and development are to be conducted on new technologies for TUW and also across the range of technical, financing, pricing, procurement, health and environmental aspects.

Regarding water quality, research studies should be conducted to analyse the composition of the pollutants to assess the soil health, emerging contaminants in agricultural produce and impact on groundwater.

6.7 Safe Reuse of Treated Water

Wastewater is a huge resource that should be harnessed properly, it can bring a lot of health and economic benefits, increase food production, enhance fishing, tourism, rural and urban livelihoods. Following areas of reuse of treated water should be followed:

A. <u>STANDARDS FOR INDUSTRIAL USE:</u>

- WBPCB/Commerce and Industry Department shall encourage all industries to reuse treated effluent/wastewater to minimize use of fresh water. For industrial reuse the responsibility for tertiary treatment to a higher level, depending of industry requirements rests with the individual industry. WBPCB/Commerce and Industry Department shall make a target for reuse of treated municipal wastewater with respect to different categories of industry in the range between 10%–40% so as to ensure at least 20% of the total State-wide water requirement of industrial water use of treated municipal wastewater by 2030.
- In compliance with the Government of India's recently revised Power Tariff Policy (2016), Department of Power, Government of West Bengal should coordinate

partnerships of thermal power plants with urban centres within 50 km radius for off-take of all Wastewater treatment available; and facilitate operational sustainability of wastewater treatment plants.

- WBPCB will prepare a guideline for industries based on mapping of the STP vis-a-vis treated wastewater receiving outlet points/reservoirs to facilitate drawal of treated wastewater for reuse by industries.
- The guidelines for "Treated Industrial Wastewater Reuse" being drafted by CPCB, highlighting water quality standards for reuse of industrial used water to facilitate State-PCB will develop criteria for water quality standards regarding reuse of treated industrial wastewater for industrial purposes to be followed.
- This will help to achieve the following:
    - □ Promotion of safe reuse of treated wastewater for non-potable industrial purposes
    - □ Reduction in dependence of industries on fresh surface and groundwater sources.
    - □ Enhancement of industrial water security, environmental compliance, and climate resilience.
    - □ Encouragement of circular economy practices in industrial water management.

B. <u>STANDARDS FOR AGRICULTURAL AND AQUACULTURE USE:</u>

- All efforts will be made to promote safe, regulated and sustainable reuse of treated wastewater for agriculture and aquaculture purposes to reduce dependence of fresh water sources (surface and ground water) and to support climate-resilient agriculture.
- TUW can be reused in agriculture, aquaculture, forestry and horticulture. Using TUW for agriculture and aquaculture requires water quality compliance to protect food safety.
- CPHEEO Manual 2013 provides a list of Indian crops with guidelines and safety standards for horticulture, edible and non-edible crops. It also has specifications for dissolved phosphorus, nitrogen and faecal coliform.
- State PCB will set minimum standards for treated sewage, specifically for agriculture and other non-potable uses. Development of more specific national end use standards for agriculture as well as aquaculture will be coordinated by CPCB.
- WBPCB shall monitor emerging contaminants and heavy metals in treated municipal wastewater and assess any risk of bioaccumulation in the context of safeguarding the environment and public health.
- The selection of edible and non-edible crops depends upon the available quality of TUW, soil type, and measures to ensure safety to consumers and farm workers against pollution.

C. <u>STANDARDS FOR NON-POTABLE DOMESTIC AND MUNICIPAL USE:</u>

- SRTW can be utilised for municipal uses in landscaping, parks, gardening, toilet flushing, dust suppressing and firefighting as per the quality norms as advised by WBPCB, CPCB and CPHEEO depending on the reuse option.
- Residential housing units constructed after obtaining environmental clearance as per statutory rules must ensure reuse of treated wastewater as much as possible for non-potable use.
- Reuse of treated wastewater shall be encouraged for multi-storied buildings, gated communities, public buildings, commercial establishments, hotels, airport, major railway stations etc.

D. <u>STANDARDS FOR GROUNDWATER:</u>

- Managed Aquifer Recharge (MAR) is the purposeful recharge of water to aquifers for subsequent recovery or for environmental benefit. MAR supports water supply resiliency. MAR is a well-developed groundwater technology increasingly used for water security.

- Use of TUW for groundwater recharge shall be restricted in view of risk of groundwater contamination. Unless proper studies vis-a-vis monitoring of water quality of TUW are carried out properly recharging of groundwater with TUW shall not be undertaken.

E. STANDARDS FOR RELEASE TO SURFACE WATER BODIES INCLUDING ENVIRONMENTAL USE:

- For abatement of pollution of rivers, lakes and other water bodies, wastewater generating from urban centres (cities and towns) needs treatment. The treatment of used water shall be done according to the effluent discharge norms set up by the WBPCB and CPCB.
- Stricter norms for minimum water quality standards may be set up by WBPCB for critical environments, including lakes and wetlands or where points of TUW discharge are close to the points of extraction of water for domestic water supply.
- There shall not be any adverse impact on the aquatic biodiversity of the receiving water body due to discharge of untreated/partially treated/treated wastewater.

F. STANDARDS FOR ENERGY AND CONSTRUCTION:

- In order to safeguard surface water as well as groundwater sources, faecal sludge and septage shall be either treated in FSTPs or co-treated in STPs. As a part of resource recovery, treated and matured sludge can be used as manure/soil conditioner, provided it conforming to the standards and treated liquid waste can be used for non-potable purposes such as gardening, landscape development, plantation, etc.
- Efforts shall be made to use treated and matured sludge from STPs as manure/soil conditioner (conforming to the standards) to minimize the use of chemical fertilizers.

6.8 Awareness Generation:

Government intends to promote awareness among all the stakeholders for achieving the goal of 'Reuse of treated wastewater'. For the said purpose, Government is directing the development actors to promote the awareness considering the following issues.

- ► Awareness should be generated regarding different Government Programmes to reach & sustain the benefit upto the end beneficiary.
- ► Awareness should be generated regarding several Policies, Acts and Laws related to Water resource and wastewater management & reuse.
- ► Awareness should be generated regarding Environment Protection.
- ► Awareness should be generated widely on good quality and cost effective centralized & decentralized technologies of wastewater management systems.
- ► Awareness should be generated for providing service charges, user fee and fine
- ► Awareness should be generated regarding maintenance of created assets and also for developing environment friendly & hygienic city
- ► Multiple channels like media (social, print, broad cast etc.), advertising, flyers, brochures, booklets, road shows, rallies, public addressing, etc. should be used.
- ► Techniques for Community Mobilization to be adopted
  - i. Involving community in their own development process
  - ii. Growing interest of Community through Cultural & Healthy Recreational facility
  - iii. Educating community on Human Rights
  - iv. Preparing IEC materials according to community need
  - v. Display Programme, Activity & Achievement Charter
  - vi. Display success story in different places
  - vii. Disseminating/ Displaying Literal & Visual

viii. Documentation
ix. Fair
x. Involving Media.

- A system of incentives and penalties should be devised to encourage greater participation among residents, compliance by service providers and better performance of ULBs.
- Reward system may be developed for high performing ULBs/citizens.
- Government shall issue appropriate guideline for community mobilization and awareness generation.

6.9 Capacity Building and Training:

Capacity building is crucial in achieving and sustaining wastewater management and its use. Focus on capacity building, exposure visit and training of concerned staffs of State/Regional/District level agencies/departments, ULB level officials and elected representatives, Community based organizations and other stakeholders shall be made.

i. Capacity building of the personnel should be coordinated by ILGUS involving the State Training Agencies, Institutes of Private & Public Bodies and Technology Universities.
ii. Specialist institutions shall also be involved so that the knowledge development on newer approaches and technologies is quickly made available.
iii. The State Agencies/ULBs/Private Actors shall take assistance from National and State level resource organizations in consolidating and applying the existing and new knowledge in a 'learning by doing' framework and building capacities of a range of personnel from different kind of backgrounds.
iv. State shall give an effort to create new posts and fill up the vacant posts for the promotion of these activities.
v. State shall give an effort to develop institutional infrastructure of all the related State / District / Regional / Sub-Division / ULB level Departments / Agencies / Resource Centres to promote wastewater treatment and its reuse.

Capacity building will comprise:

- Bulk training/workshop/exposure visit for a range of municipal and other stakeholder personnel - right from start of the campaign in the ULB.
- Differentiated and specialized training on a demand-basis to personnel over the period of the Plan implementation.
- For Technical assistance, the State shall arrange for bulk and specialised training of State/Regional/District/ULB level personnel, assisting State Agencies/ULBs by procuring and deploying/ managing service providers (study consultants and NGOs, technical resource agencies), and providing coordination support to city-wide communications, planning and implementation management.

6.10 Monitoring and Evaluation:

- To establish the strong monitoring and evaluation system involving community, State shall endeavour to engage independent/ external Monitoring & Evaluation Agency for Third Party Quality Monitoring and time to time evaluation of the projects/progress parallel with the abovementioned monitoring mechanism.

- West Bengal Pollution Control Board shall monitor the water quality of the treated plants (centralized or decentralized) to ensure compliance with quality standards required for different reuse categories.
- An effective Grievance Redressal mechanism should be developed at State/ULB and Development Authority level.
- State shall also institutionalize Social Audit System to involve community in monitoring & evaluation system.

6.11 Involvement of NGO/Private Sector:

Government shall encourage the development actors to engage NGO/Private Agency in the following areas for promotion of waste water treatment and its reuse

- Capacity Strengthening of ULB & Community Level Staffs
- Planning
- Research & Development
- Piloting innovative projects
- Community Mobilization
- Mapping Job Potentiality
- Private Public Partnership Projects
- Operation & Maintenance
- Facilitating in Social Audit
- Quality Assurance
- Evaluation

6.12 Source of Funding:

In this rapid urbanization stage, to reuse of treated waste water in Urban West Bengal, Government wants to develop some innovative financial instruments to meet up the demand for investment. Financing should be arranged in following ways.

- Central and State Finance Commission Funds
- State Budget for this purpose
- Available Programme funds
- Leveraging similar fund of several Departments
- Pooled Fund of West Bengal Municipal Development Fund Trust as loan
- Externally Aided Funds
- Provide incentives to the financial institutions, Micro finance institutions, mutual funds, corporate sectors, trusts and foreign institutional investors for investing in treatment of wastewater.
- Promoting well designated Public-Private Partnership
- Inviting Corporate Social Responsibility
- Inviting Foreign Direct Investment developing a mechanism for direct investment from Non-Resident Indians and Persons of Indian Origin.
- Imposing service charge on wastewater treatment
- Imposing penalty on ULB/Industry for non-treatment of waste water and not developing provision for reuse of that water
- Imposing user charge on treated wastewater use and also commercializing the use of treated water i.e. revenue generation from selling of treated water.

6.13 Targeted Timeline:

- WBPCB/Commerce and Industry Department shall make a target for reuse of treated municipal wastewater with respect to different categories of industry in

the range between 10%–40% so as to ensure at least 20% of the total State-wide water requirement of industrial water use of treated municipal wastewater by 2030.

- Increased quantity of treated municipal wastewater reuse in industries will be reviewed immediately after 2030 so as to reach a target of average of 30% of total freshwater use in West Bengal.
- Target has been set up to reuse at least 20% of treated wastewater for non-potable use in different sectors such as industry, power generation, agriculture, housing etc. by 2030.
- Immediately after 2030, the issue of reuse of treated wastewater in different sectors will be reviewed.
- So as to increase the use of treated wastewater to 30% by 2035 and 40% by 2040.

6.14 Expected outcome of this Policy:

- New social and economic opportunities and avenues emerge where wastewater is recycled and reused based on cost recovery and profit generating business models.
- Augmented capacities across institutions (State & ULB level) that could possibly be replicated in other sectors.

6.15 Interpretation and Amendment:

- Any issue or doubt regarding this policy shall be referred to Department of UD & MA, GoWB whose decision will be final and binding on all concerned.
- Department of UD & MA, GoWB may from time to time amend the provisions as contained in this policy as considered necessary.
- Department of UD & MA, GoWB shall have the power to issue guidelines and instructions from time to time to operationalise this policy.