

Proposed Action Plan for Rejuvenation of River Kagina



Karnataka State Pollution Control Board

“Parisara Bhavana”, # 49, Church Street,

Bengaluru - 560 001

January 2019

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

2

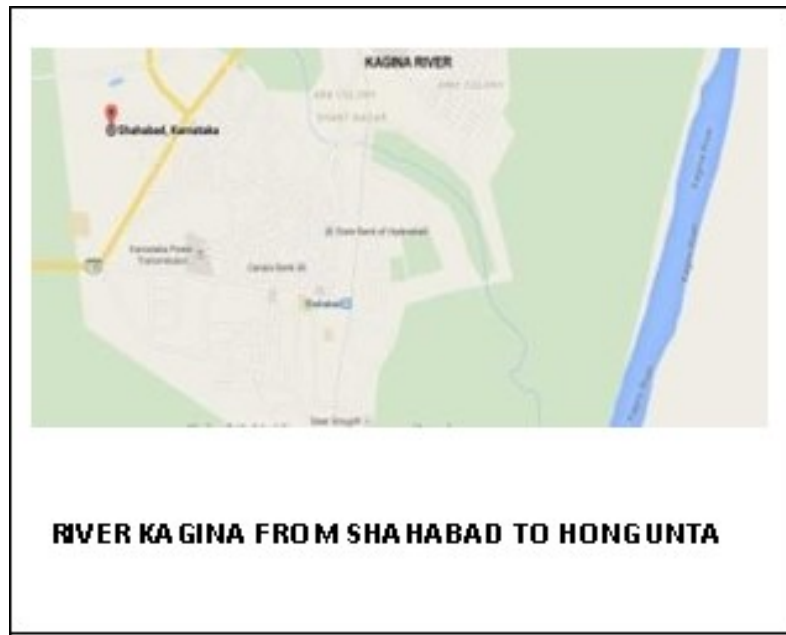
INDEX

Sl. No.	Topic	Page No.
1	Introduction to Kagina River	3
2	Sources of Pollution - Municipal Sewage generation and Treatment	4
3	Characteristics of River water quality	5
4	Action taken by the Board	5
5	Action to be taken for Rejuvenation of River Water Quality	5-6
6	Cost component involved in the Restoration of Polluted stretch	6
7	Status of Environmental Flow (E-Flow)	7
8	Short Term and Long Term Action and the Identified Authorities for initiating actions and the time limits for ensuring compliance	7-12

Proposed action plan for Rejuvenation of River KAGINA

08. State : **Karnataka**
River Name: **Kagina**
River Stretch: **SHAHABAD TO HONGUNTA**
Priority: **IV (BOD 6-10 mg/L)**
BOD Range: **4.6-7.4 mg/L**

1.The river **Kagina** rises near Kohir in Andhra Pradesh and enters Gulbarga district near Habal village in Sedam Taluk. The river has a serpentine course, almost parallel to the Hyderabad -Wadi Railway line. The length of the river from where it enters the Gulbarga District to its confluence with the Bheema river near Hungunata village in Chittapur taluk, is about 64 km. The main tributaries to this river are the Mullamari, Bennithora and Kamalavathi streams. The river passes through Sedam and Chittapur taluks. **The total polluted stretch of the river is about 10 kms from Shahabad to Hongunta.**



2. Major Polluting Sources:

2.1 The main source of pollution along the said Kagina River Stretch is the entry of sewage at downstream of Shahabad Bridge from CMC Shahabad.(CMC Shahabad population is 47582 as per 2011 census).

2.2 Vehicle washings and other anthropogenic activities at different places.

2.3 Non point sources from agricultural fields etc.

2.4. Municipal Sewage generation and Treatment:

The Town wise sewage generation and treatment capacity developed so far is provided in **Table-1**

Table-1: Status of Domestic Pollution in River - Kabini

Sl No.	Name of the local body	Type	Total Sewage generation in MLD	Total Capacity of Sewage treatment in MLD	Status of STP
1	Shahabad	CMC	7.06	13.50 (Proposed, FSSM)	Not provided

3. Characteristics of River water quality:

The monitoring results of **Kagina** River Kagina D/S of Sewage disposal point & At Shahabad Bridge for the year 2017 & 2018 are shown in **Table-2** River water quality of Class C-water is fit for drinking purposed after conventional treatment and disinfection for both the years except At Shahabad Bridge during 2018.

3.1 Status of Water Quality

The details of parameter and specific concentration are provided in **Table-2**

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

5

Table-2 : Status of Water Quality of River - Kagina

Year	Locations	DO (mg/L)		BOD(mg/L)		Fecal Coliform (MPN/100ml)		Total Coliform (MPN/100ml)		Class
		Min	Max	Min	Max	Min	Max	Min	Max	
2017	Kagina D/S of Sewage disposal point	6.2	7.3	1.9	2.9	170	1800	500	3200	C
	At Shahabad Bridge	6.5	7.5	2.3	2.8	240	900	900	1800	C
2018	Kagina D/S of Sewage disposal point	6.6	7.5	3	3	600	1000	1800	2000	C
	At Shahabad Bridge	6.8	7.7	2.6	3.2	900	1200	1800	3600	D

The results indicate that the water is polluted due to sewage from Shahabad Town.

4. Action taken by the KSPCB:

- 1) Inspection, Collection, analysis of river Kagina water sample monthly and report to CPCB, New Delhi
- 2) Letters have been issued to CMC Shahabad to provide UGD and STP.
- 3) Directed CMC to dispose MSW scientifically as per guidelines.

5. Action plan to be taken for Rejuvenation of River water quality.

- a) CMC Shahabad has to provide STP, Dhobi Ghats to reduce the pollution load on river.
- b) CMC Shahabad shall have to provide 100% UGD system to the entire municipality.

- c) Municipal solid waste including poultry and slaughter house waste shall be disposed only in MSW sites as per MSW guidelines.
- d) Vehicle washings and other activities shall have to be regulated.
- e) River cleaning and rejuvenation activities like removal of algae sediment shall have to be undertaken during the lean flow.
- f) Caution display boards at strategic points shall have to be displayed.
- g) Creation of buffer zones on either side of the river bank has to be notified.

6.0. Cost component involved in the Restoration of Polluted stretch

Cost component shall be an integral part of Detailed Project Report (DPR). Most of the cities and towns are deficient in treatment of its total sewage generated. In order to cater each identified town on the bank of polluted river and gaps observed between total sewage generated and treatment capacity needs to be considered for planning.

Cost component shall invariably depend towards construction, operation and maintenance of sewage treatment plant. On an average Rupees 2.5 Crore has been estimated as Capital Cost per MLD (for primary, secondary and Tertiary treatment) excluding Operation and maintenance cost for all the available conventional and recent technologies. In some cities and towns developed capacity of STP is fully or partially underutilized due to inadequate sewerage network and other implementation issues.

Total estimated cost of **Rs. 22.05 Crores** is already made budgetary provision for Capital cost including O&M for proposed new STP's in the identified city along the Kagina River.

Table -3: Cost Component involved in the Rejuvenation of Polluted Stretch of Kagina

Sl. No.	Activity	Cost in Crores
		Shahabad
1	Operation & maintenance (O&M) cost for existing STP per annum	Not Applicable
2	Capital cost including O&M for proposed new STP's with FSSM: (13.50 MLD)	22.05 Crores
	Total Rupees	22.05 Crores

7. Status of Environmental Flow (E-Flow) :

The details of Flow (discharge) is provided in **Table-4**

Table-4 : Status of E-Flow of River - Kagina

Year	Hydrological Observation Site	Flow (m ³ /s)	
		Min	Max
2015	Malkhed	0.49	120.66
2016		0.81	10.37

8. Action Plan- Short Term and Long Term Action and the Identified Authorities for initiating actions and the time limits for ensuring compliance

Short term and long term action plans and the implementing agencies responsible for execution of the action plans and the time limits are given in table as below :-

Sl. No	Action plan for rejuvenation of river Kagina	Organisation/ Agency Responsible for Execution of the Action plan	Time Target
I.	Industrial Pollution Control		
	(a)) Compliance of industries located in catchment area with respect to effluent discharge standards and its disposal as per consent conditions	KSPCB	Complied

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

	(b) Inventorisation of the industries in the catchment area of River Kagina covering assessment on aspects relating to Status of Consents under Water & Air Acts and Authorisation, Effluent Generation, ETP capacities and final mode of effluent discharges	KSPCB	Complied
	(c) Actions against the Identified industries in operation without Consents under Water & Air Acts/Authorisation under the H&OW (M & TM) Rules, 2016 as amended	KSPCB	Complied
	(d) Action against the industries not installed ETPs or ETPs exist but not operating or ETP outlet or treated effluent is not complying to the effluent discharge standards or norms	KSPCB	Complied
	(e)Action against the red category industries for installation of OCEMS and not transferring data to CPCB and KSPCB	KSPCB	Complied
	(f) Small scale/tiny and service providing units located in urban or semi-urban limits like Dairies, Auto Service Stations to have minimum provision of O & G traps	Local bodies(Shahabad)/DMA	Within three months
	(g)Prohibition of Burning of any kind of waste including agro-residues	State Govt./District and Local bodies(Shahabad) and agriculture dept.	Within three months

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

	(h) Directions to all the Industries which are observed to be not in operation or closed or temporarily closed to remain close till further orders from CPCB.	KSPCB	Within three months
	(i) Estimation of industrial effluent generation and the existing CETP capacity and to arrive gap between the industrial effluent generation and the existing treatment capacity	KSPCB	Not Applicable
	(j) Channelization of industrial effluents to CETPs for ensuring treatment to comply with the discharge standards.	KSPCB and District /Local Administration	Not Applicable
	(k) Identification of suitable site within industrial estates, Execution and Commissioning of Adequate Capacity CETPs.	State Government , District/Local Administration /KIADB	Not Applicable
II.	Sewage Treatment and Disposal Plan		
	(a) District-wise estimation of total sewage generation, existing treatment capacities, quantum of disposal of sewage presently through drains and the gaps in sewage treatment capacity.	State Government, KUWS & DB, District Administration & Local bodies(Shahabad)	Within six months
	(b) To undertake measurement of flow of all the drains presently contributing pollution load in river Kagina and to formulate detailed project report (DPR) for each drain and corresponding town and	State Government, KUWS & DB, District Administration & Local bodies(Shahabad)	Within six months

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

	submission of DPR .		
	(c) Proper design, execution of STPs with full utilisation capacity	State Government, KUWS & DB, District/Local Administration/UDD.	Within 24 months
	(d) Channelization including diversion of sewage generated from household/townships/villages to sewer lines/interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	State Government, KUWS & DB, District/Local Administration/UDD.	Within 24 months
	(e) Ensuring dairy/automobile service stations and Hotels / Restaurants particularly located on road-side should have a treatment system and levy of fine in case found Violations	Local authorities/DMA	Within three months
III	Ground water quality		
	(a) Sealing of contaminated hand pumps and found to be unfit for drinking purpose by the public	State Government, Karnataka rural drinking water and Sanitation Department and Local authorities	Contaminated ground water is not noticed
	(b) Supply of potable water to the affected communities in the identified critical blocks	State Government, Karnataka rural drinking water and Sanitation Department and Local authorities	Not Applicable
	(c) Carrying assessment of ground water survey for quality and to identify over exploited and critical blocks in the district (Kalaburgi) .	Karnataka Ground Water Authority	Within Six months

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

	(d) To conduct periodic surprise inspection of the industry to rule out any forceful injection of industrial effluents into ground water resources	KSPCB/KGWA	Complied
	(e) All the industry should be directed to obtain NOC from the CGWB and action against the Units in Operation without obtaining of NOC from CGWA	KSPCB, CGWB/CGWA and Karnataka .Ground Water Department	Within six months (The proposed new industries will be directed to obtain NOC from CGWA)
	(f) To ensure rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	CGWA/ Karnataka Ground Water Department	Within six months

IV	Flood Plain Zone (FPZ)		
	(a)Plantation in Flood Plain Zone (FPZ)	Karnataka State forest Department	Within Six months
	(b)Checking encroachments in the FPZ of river Kagina	District/Local administration	Within Six months
	(c)Prohibition of disposal of municipal plastic and bio- medical waste particularly in drains	Local administration	Within Six months
	(d)Notification of Flood Plain Zone FPZ	State Government	Within six Months

ACTION PLAN FOR REJUVENATION OF RIVER KAGINA

V	Environmental Flow (E-Flow) and Irrigation Practices		
	(a) Measurement of flow in the river and records maintained	Central water Commission/Karnataka Irrigation Department/Water Resources Department	Regularly (Daily/monthly)
	(b) To conserve water and good irrigation practices to be adopted by the farmers by organising mass awareness programmes and through media in vernacular language	Karnataka water resources department/Karnataka Irrigation Department	Once in six months
