

**Original Application. No. 673/2018 dated 20<sup>th</sup> September, 2018 19<sup>th</sup>  
December, 2018 and 08<sup>th</sup> April, 2019**

**in the matter of  
News Item published in “THE HINDU” titled  
“More river stretches are now critically polluted: CPCB”**

## **Report**

**On**

**Prevention and Control of Pollution in River Ashwani: A  
**Revised Action Plan****

**for Rejuvenation of River Ashwani, District- Shimla & Solan, HP**

*(Submitted in compliance to the Hon’ble National Green Tribunal (NGT) order  
dated 20<sup>th</sup> September, 2018 and 19<sup>th</sup> December and 8<sup>th</sup> April 2018)*



**HP State Pollution Control Board**

**Him Parivesh, Phase – III, New Shimla - 171009**

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# **Comprehensive Report on Prevention and Control of Pollution in Ashwani Khad: An Action Plan for Rejuvenation of Ashwani Khad at Shimla, District- Shimla, HP**

## **1.0 BACKGROUND:-** Hon'ble National Green Tribunal passed the following orders in OA No. 673/2018 titled "More river stretches are now critically polluted: CPCB".

*"This application has been registered on the basis of a news item dated 17.09.2019 in "The Hindu" under the heading "More river stretches are now critically polluted: CPCB". According to the news item, 351 polluted river stretches have been noted by the Central Pollution Control Board (CPCB). 117 such stretches are in the state of Assam, Gujarat, and Maharashtra. The CPCB has apprised the concerned States of the extent of the pollution in the rivers. According to the news item, most polluted stretches are from Powai and Dharavi – with Biochemical Oxygen Demand (BOD) 250 mg/L; the Godavari – from Someshwar to Rahed – with BOD from 4.0-147 mg/L; and the Hindon-Saharanpur to Ghazibad – with a BOD of 48-120 mg/L. The CPCB has programme to monitor the quality of rivers by measuring BOD. BOD greater than or equal to 30mg/L is termed as 'Priority I' while that between 3.1-6 mg/L is 'Priority V'. The CPCB considers a BOD less than 3mg/L an indicator of a healthy river. In its 2015 Report, the CPCB had identified 302 polluted stretches on 275 rivers, spanning 28 States and six Union Territories. The number of such stretches has now been found to be 351.*

*All States and Union Territories are directed to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalization of the action plans.*

*The action plans may be prepared by four-member committee comprising Director Environment, Director Urban Development, Director Industries, Member Secretary, State Pollution Control Board of concerned State. This committee will also be the Monitoring Committee for execution of the action plan. The Committee may be called "River Rejuvenation Committee" (RRC). The RRC will function under the overall supervision and coordination of Principal Secretary, Environment of the concerned State/Union Territory.*

## **2.0 About Ashwani Khad**

- a) **Ashwani Khad in District Shimla:-** The Ashwani Khad in Shimla is formed by Churat Nallah and Jagroti Nallah. The catchment area in District Shimla mainly comprising of Shimla town, Dhalli, Bhatta Kuffer, Shanan, Malyana, Vikasnagar, Kasumpti, Bishop Cotton School, Fagli, Tutikandi, Taradevi, Chhachhroo, Ganoti, Mehli Shakrala, Beolia, Kawalag, Pujarli, Boh Malothi, Tipra Gadogm, Chamiana, Shurala, Gussan and near by areas. Various drains/ rivulets and nallahs emerging from the Shimla town also meets the Ashwani Khad. The Ashwani Khad after travelling a distance of 16 Km enters District Solan at Sadhupul. There is no industrial area in the entire stretch of Ashwani Khad in District Shimla. However, there are hotels, educational institutes (having boarding facility), service stations, slaughter house and fruit and pickle manufacturing unit.
- b) **Ashwani Khad in District Solan:-** Ashwani Khad enters District Solan upstream of Village Sadhupul. The catchment area in District Solan mainly comprises of villages i.e. Kohari, Ded, Galai, Mathia, Shanbar, Andi, Sunnu Tikri, Bayela, Jalkhara, Dawarli and exits District Solan at Village Gaura near Yashwantnagar. The total stretch of Ashwani Khad in District Solan is approx. 22 Km. The Ashwani Khad meets River Giri at Village Gaura in Yashwantnagar. There is no industrial area in the entire stretch of Ashwani Khad in Solan District from Sadhupul till it meets River Giri at Yashwant Nagar. Yashwant Nagar falls in Sirmour district of Himachal Pradesh.

## 2.1. Drains in the catchment of River Ashwani

The main sources of pollution in the catchment area of Ashwani khad :

- Shimla town and surrounding semi urban areas and rural areas.
- Untapped domestic sewage from the household/commercial activity which are not connected with the sewerage line provided by MC Shimla.
- The STP's installed by the MC Shimla are not meeting the prescribed standards. The treated sewage is ultimately discharged through nallahs into the Ashwani Khad.

The total population of the catchment area of Ashwani Khad which includes the area of Municipal Corporation Shimla is 1,20,923 and near by rural population is 18,799. In addition to this floating population of 70,000 is also contributing to the pollution load. There are three number of STP's located in the catchment area of Ashwani Khad i.e STP Dhalli, STP Malyana and STP Lalpani having total capacity of 25,540KLD. It is pertinent to mention here that due to topographical constraints there are some left out areas, which are not connected with common STPs. The houses which are not connected with common STPs have provided individual septic tanks/soak pits for treatment of domestic sewage.

**Table: Sources of Pollution in the catchment of Ashwani Khad falling in District Shimla**

Sr. No.	Sources of Pollution of Ashwani Khad and its tributary	Sub Catchment area of Ashwani Khad	Jurisdiction of Centralized treatment schemes existing and proposed at
1	Industrial (Hotel industry) and Domestic Habitation	<ul style="list-style-type: none"> <li>➤ Upper spur on the hill near Dhalli, Dhalli Bazar and surroundings</li> <li>➤ Mundaghat</li> <li>➤ Janedghat</li> <li>➤ Jagroti Nallah and Churat</li> </ul> <p>Nallah</p>	Common Sewage Treatment Plant at Dhalli and individual septic tank and STP
2	Industrial (Hotel industry) and Domestic Habitation	<ul style="list-style-type: none"> <li>➤ Engine Ghar</li> <li>➤ Sanjauli Bazar</li> <li>➤ Part of Nav Bahar</li> <li>➤ Bhatta Kuffer</li> <li>➤ Dhingu Devi Temple</li> <li>➤ Cemetry</li> <li>➤ Housing Board Colony</li> </ul>	Common Sewage Treatment Plant at Malyana and individual septic tank and individual ETP
3	Industrial and Domestic Habitation  Drain carrying the waste water/ run off from Shimla Town	<ul style="list-style-type: none"> <li>➤ Ridge</li> <li>➤ The Mall</li> <li>➤ Lower Bazar</li> <li>➤ Middle Bazar</li> <li>➤ Ram Bazar</li> <li>➤ Bus Stand</li> <li>➤ Winter-field</li> <li>➤ Jakhoo</li> <li>➤ US Club</li> </ul>	Common Sewage Treatment Plant at Lalpani and individual septic tank and individual ETP and Proposed STP at Panthaghati

		<ul style="list-style-type: none"><li>➤ Bemloe</li><li>➤ Western Commend</li><li>➤ Panthaghat</li><li>➤ Nabla</li><li>➤ Phagli</li><li>➤ Ram Nagar</li><li>➤ Chaura Maidan</li><li>➤ Ghoda Chowky</li><li>➤ Tutikandi</li><li>➤ Boileauganj</li><li>➤ Lalpani</li><li>➤ Krishna Nagar</li><li>➤ Indian Institute of Advanced study</li></ul>	
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# Drainage map of Ashwani Catchment in Shimla & Solan

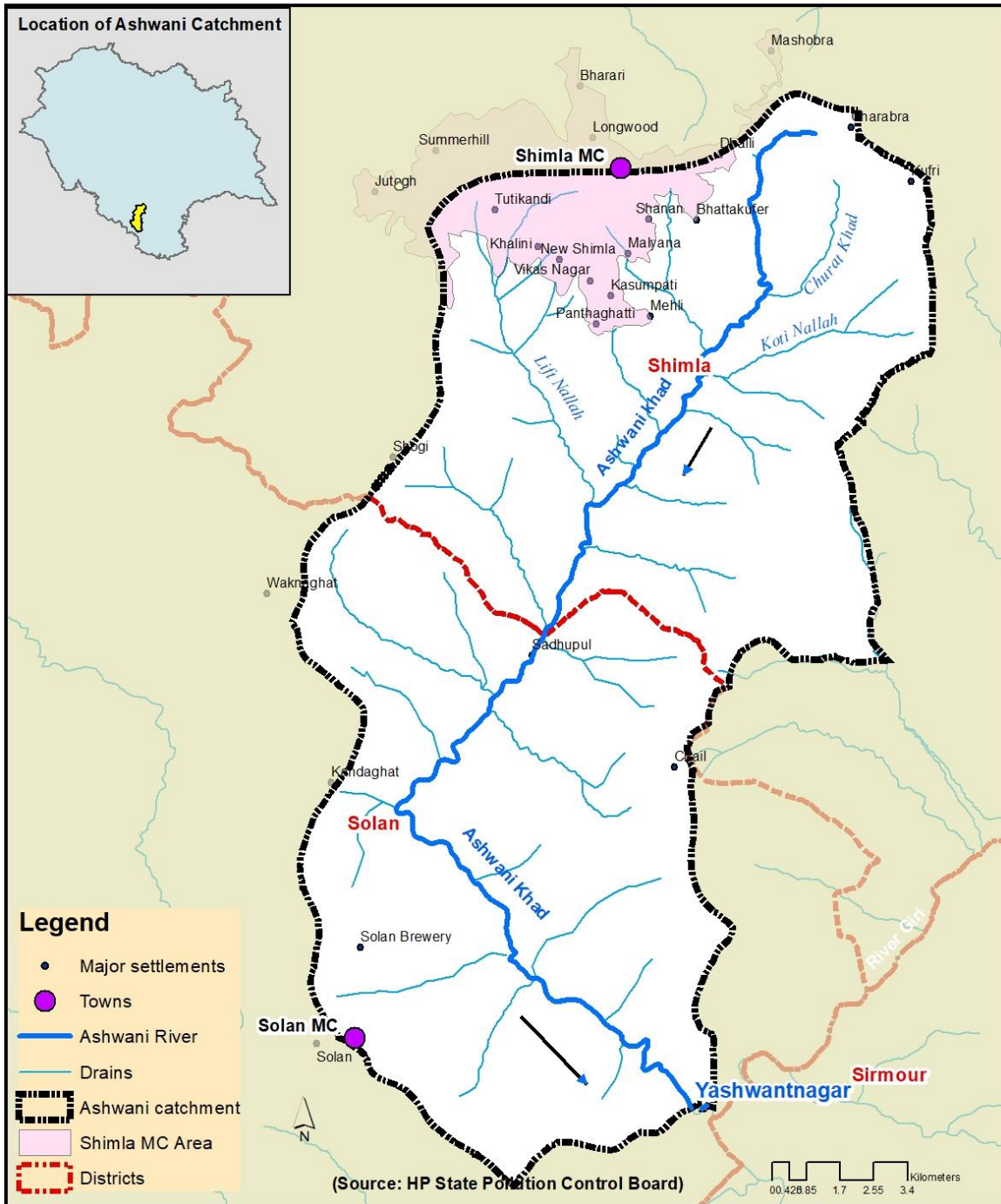


Figure: Digital Map showing drainage map of the catchment area of Ashwani Khad

### 3.0 Achievable Water Quality with quoted timelines as per the existing provisions guidelines and specifications of Central Pollution Control Board (CPCB)

It is an important aspect for revival of Ashwani Khad in context of its utility as it is of perennial nature. The ultimate goal for beneficial use of khad will determine the level of actions to be taken for maintaining the water quality. Under the present circumstances, it appears that AshwaniKhad may serve the purpose of outdoor bathing (organized) and for this objective generated domestic sewage should be treated to meet the outdoor bathing standards. Also, the sewage generated from Hotels and other commercial activities contribute to the pollution load in Ashwani Khad should be treated to meet the effluent discharge standards stipulated under Schedule-VI of the Environment (Protection) Rules, 1986 which is given as **Annexure-I. As per the court orders vide OA No. 673 of 2018, Ashwani Khad falls under Priority –V of designated criteria depending upon the level of Bio-chemical Oxygen Demand.**

Sr. No.	River Name	River stretch	Priority	Criteria defined by CPCB (mg/l)	BOD range/ max value (mg/l)
1	Ashwani	Along Yawshwant Nagar Distict Shimla/Sirmour	V	03-06	3.2

The requirement of river water quality for outdoor bathing (organized) also requires more stringent conditions and river water quality has to maintain adequate Dissolved Oxygen (DO) content. Suggested criteria for outdoor bathing (organized) in Ashwani Khad is given in the following **Table –1. As per Hon'ble NGT Directions, following quality to be achieved within 02 Years w.e.f 01<sup>st</sup> April, 2019.**

**Table :-Primary Water Quality Criteria for Bathing Water (Annexure-II)**

Sr. No.	Parameters	Water Quality Criteria –for Outdoor Bathing (Organized)
1	pH	6.5-8.5
2	Dissolved Oxygen (DO)	5 mg/L or more
3	Biochemical Oxygen Demand 5 days 20C	3 mg/l or less
4	Facal Coliforms Organism	MPN/100 ml shall be 500 or less

### 4.0. Aspects in compliance of Hon'ble NGT Order 20<sup>th</sup> September 2018, 19<sup>th</sup> December 2018 and 08<sup>th</sup> April, 2019

#### 4.1. Rain Water Harvesting/ Ground Water Recharge aspects

In Shimla region, there are 2 no's small rain water harvesting structures have already been constructed by IPH Department on the tributaries of River Ashwani. These 2 nos. rain water harvesting structures on the following location - i) At Jharech Nallah in GP Beolia ii) At Ashwani Khad near shooting range in GP Beolia. More rain water harvesting structures in the catchment area of river Ashwini has been proposed on following location :- i) At upstream of Ashwani Khad at a distance of about 50 meter upside of pump house of LWSS Chewara Pandli in GP Junga for Rs. 75.00 Lakh.

For Solan region of Ashwani khad, Rain water harvesting structures has been constructed at feasible sites in the catchment of Ashwani under AIBP schemes. There are 13 Nos rain water harvesting structure/water bodies constructed along the catchment of Ashwani River as under:-

1. Water body Kanewla in GP Jhaja.
2. Water body Powash in GP Jhaja.
3. Water body Chhaura in GP Jhaja.
4. Water body karon in GP Jhaja.
5. Water body banjani in GP Banjani.
6. Water body Bg(shallai) in GP Banjani.
7. Water body Chhari in GP Jhaja.
8. Water body Kurgal in GP Hinner.
9. Water body Dochi in GP Hinner.
10. Water body Ser Banera in GP Ser Banera.
11. Water body Suro in GP Bisha.
12. Water body Shungal in GP Bish.
13. Water body Bisha in GP Bisha.

The proposal for rainwater Harvesting/Dam structure in Ashwani Khad has already been explored by different departments including I&PH Department at Sadhupul, but due to geological conditions the site was found not feasible as per the Investigating Report submitted by State Geological Department. However, downstream of Ashwani Khad near LWSS to Solan town from Ashwani Khad intake point, RWH/Dam structure can be constructed. Being a specialized job, consultancy service is require to be hired for investigating and design & preparation of DPR for which a tentative amount of Rs. 20 lakhs is required. The timeline after receipt of funds is as under:-

Activity	Consultancy, preparation of DPR & finalization of DNIT and calling of tenders.	Calling & finalization of tenders	Geological investigation, survey work & preparation of DPR including design.
Time	1 Month	1 ½ Month	6 Months

#### **4.1.1 Ground Water Management:**

Due to topographic conditions there is not continuous water table in this area and only perched aquifers are encountered. The area has not been notified under HP Ground Water Management and Regulations Act-2005 accordingly. It is pertinent to mention here that check of water quality of River Ashwani is being done by the department frequently and samples of the Ashwani Khud are being sent to National Institute of Virology (NIV) Pune for bacteriological tests with an interval of 15days. So far all the samples have been found negative for Hep-A & Hep-E.

#### **4.2. Maintaining E-Flows**

Ashwani River is a perennial river but the discharge of this river is very low during summer season. However the e-flow is being maintained. Maintaining E-flow in River and rivulets is an activity covered under Watershed Management Program. However, while formulating a scheme be it Water Supply Scheme or Irrigation department taps only 75% of available lean period discharge as dependable discharge work automatically takes care of maintaining e-flow at point of extraction. However as per Action plan for modification in existing sewage treatment plants, of Shimla region at Dhalli, Malayana and Lalpani the treated water will be discharged. E-flow will be assessed accordingly.

#### **4.3. Water Shed Management:**

There is no proposal of forest department.

#### **4.4. Use of Treated Sewage:**

Shimla Jal Prabandhan limited has proposed modification i.e provision of equalization and tertiary treatment to bring the treated water quality up to <10 mg/l Bod, so, however there is no proposal for utilization of treated sewage as there is no sufficient land for irrigation, and also techno-economic non-viability because of pumping sewage to higher elevation, Non-acceptability of public at large.

#### **4.5. Good Irrigation Practice:**

At present there exist 1 No tube well based water supply scheme of IPH Department on the River Ashwani and no irrigation schemes is existing from this river.

Good Irrigation Practices is being adopted by the IPH department. In place of open channel system for conveyance of irrigation water. Closed conduits system are being introduced resulting in reduction of water losses. Micro irrigation system is also being introduced in the new system. In this system per hectare water requirement reduces and more area can be covered with available water. Command area development scheme is being introduced which increases water use efficiency and ensure water availability at the tail end. Water use Association has been constituted for effective management of irrigation schemes. There are six nos. irrigation schemes in the catchment area of River Ashwani which irrigate 225.73 hectare. Command Area Development work is being executed for one scheme at an estimated cost of Rs. 25.18 lakh, to introduce good irrigation practices.

#### **4.6. Development of Bio-diversity parks:**

There is no proposal of Water Shed Management of Forest department on the catchment of Ashwani khad.

#### **5.0. Budget Estimate from Pooling the Recourses from State Budget, Local Bodies, SPCBs and Central Schemes, if any for all Action Plans**

Total Cost implication for the implementation of above Action Plan **Rs. 260.40 Crore**. The Chief Secretary has reviewed the proposal during meeting on 08<sup>th</sup> April, 2019 and directed the concerned department to complete the proposal from state government budget wherever applicable. The mass awareness, Cleanliness drive is done from funds available with SPCBs. Utilization of Environmental Compensation as levied by RRC will be used rejuvenation of Rivers. Budget for Management of Solid Waste along the stretch of River Ashwani will be done from local bodies or Urban Development Department. The details are elaborated in point no. 07.

#### **6.0. Executive Summery**

The Action Plan mainly comprising of Sewage Treatment's Plant and proposal of new STP, Solid Waste Management, Plantation Proposal. As per the directions of Hon'ble NGT, Action Plan implementation shall be done within 02 years as directed by Hon'ble NGT vide order dated 08<sup>th</sup> April, 2019.

**07. Proposed action plans (Short, Medium and Long term plans) with time lines including the organization/agency responsible for its implementation for Rejuvenation of Ashwani have been given below:**

Sr No.	Action Plan for Rejuvenation of Ashwani	Agency Responsible for Execution of Task	Time Line for Execution	Total Budget Estimate	Remarks
<b>I</b>	<b>Industrial Effluent Management</b>				
(a)	Inventorization of the water polluting Industries and Hotels in the catchment of Ashwani covering assessment on aspects relating to status of Consents under Water & Air Acts and Authorization, Effluent and Sewage Generation, ETP and STP Capacities and final mode of effluent/ sewage discharge.	HPSPCB	28 <sup>th</sup> February, 2019.	Department Own Budget	-
(b)	Action against the identified Industries and Hotels in operation without Consent under Water & Air Act/ Authorization under Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016.	HPSPCB	28 <sup>th</sup> February, 2019.	Department Own Budget	Action as per relevant provisions of Water Act, 1974 and Air Act, 1981 shall be taken against any unit found operating without mandatory consent of the HPSPCB.
(c)	Action against the Hotels and industries who have not installed ETPs and STPs but not operating or treated effluent is not meeting the prescribed standards.	HPSPCB	28 <sup>th</sup> February, 2019.	Department Own Budget	-
(d)	Prohibition of littering of any kind of Solid Waste, Plastic Waste, e-waste & Bio-Medical, Hazardous waste including agro residue along the stretch of drains conversing to	MC Shimla, MC Solan,  Rural Developme	31 <sup>st</sup> July, 2019	Department Own Budget	-

	Ashwani by providing grids along the stretch .	nt Shimla			
(e)	Estimation of industrial effluent generation and commissioning of new Effluent Treatment Plant and Sewage Treatment Plant at Industries/Hotels premise including Himachal Road Transport Corporation workshops along the stretch of Ashwani.	HPSPCB, Himachal Road Transport Corporation	30 <sup>th</sup> April, 2019 and regular process 3 <sup>rd</sup> August, 2019	Department Own Budget	-
(f)	Proposal for Solid Waste Management for disposal of solid waste generated along Ashwani from rural areas for decentralized composter, shredding of plastic waste and its disposal at Waste to Energy Plant at Bhariyal (MC Shimla Plant).	Rural Development Shimla, MC Shimla	-	Department Own Budget	-
<b>II</b>	<b>Domestic Sewage Management</b>				
(a)	Area wise estimation of total population, water requirement and sewage generation.	IPH, Rural Development Department, MC Shimla	28 <sup>th</sup> February, 2019	Department Own Budget	-
(b)	Connectivity of left out areas through conveyance pipeline to existing common sewage treatment plants operational along the stretch of Ashwani located at Lalpani, Dhalli, Malyana.	MC Shimla	31 <sup>st</sup> March, 2022	Department Own Budget	-
(c)	Septage management for drains contributing to Ashwani catchment. (Honey Sucker)	MC Shimla	31 <sup>st</sup> August, 2020	Department Own Budget	-
(d)	Installation of continuous Real Time Water Quality Monitoring Stations at discharge points of STPs at Lalpani, Malyana and Dhalli.	MC Shimla	31 <sup>st</sup> July, 2019	Department Own Budget	-
(e)	Modification/upgradation in existing common Sewage Treatment Plants at Dhalli, Malyana and Lalpani, in order to improve the	MC Shimla	31 <sup>st</sup> March, 2021	Department Own Budget	-

	discharge effluent quality and setting up of new common Sewage Treatment Facility at Panthaghati (02 MLD) to cover rural and urban area in the catchment of Ashwani.				
(f)	Proposal for improving the water quality of Ashwani by improving the quality of water in natural nallah's contributing to Ashwani by setting up of Phytoid treatment.	MC Shilmla	31 <sup>st</sup> March, 2021	Department Own Budget	-
(g)	Sewage management of rural areas falling under catchment of Ashwani, outside the jurisdiction of Municipal Corporation by providing community toilets and upgradation of septic tanks.	Rural Development Shimla, IPH	31 <sup>st</sup> July, 2019	Department Own Budget	-
(h)	Shimla : Proposal for connecting left out households by upgrading septic tanks in panchayats, providing community toilets and provision to treat the sewage in existing STPs at Lalpani, Dhalli and Malyana.	Rural Development Shimla, MC Shimla	31 <sup>st</sup> March, 2022	Department Own Budget	-
<b>III</b>	<b>Ground Water Management</b>				
(a)	Sampling of Tube wells, Bore wells, Hand Pumps in Shimla urban and rural areas under Ashwani catchment.	I & PH, HPSPCB	Already completed and regular process	Department Own Budget	-
(b)	Sampling and analysis of Drinking Water Supply Schemes in and around Shimla urban and rural areas	I & PH	Already completed and regular process regular process	Department Own Budget	-
(c)	Sealing of contaminated handpumps and found to be unfit for drinking purpose by the public.	I & PH, HP GWA	30 <sup>th</sup> April, 2019	Department Own Budget	-

(d)	Carrying assessment of ground water survey for quality and to identify over exploited and critical areas.	I & PH, HP GWA	31 <sup>st</sup> July, 2019	Department Own Budget	-
(e)	To conduct periodic surprise inspection of the industries/hotels to rule out any forceful injection of industrial and sewage effluents onto surface water sources.	I & PH, HPSPCB	15 <sup>th</sup> February, 2019 & regular process	Department Own Budget	-
<b>IV</b>	<b>Miscellaneous</b>				
(a)	Regular monitoring and sampling of water quality of Ashwani and various drains on monthly basis.	HPSPCB	Every 1 Month.	Department Own Budget	-
(b)	Impact of water pollution on health of public by organizing Health Camp.	State Health Department	Every 3 Month	Department Own Budget	-
(c)	Plantation in Flood Plain Zone, complete removal of encroachments in forest land in the catchment of Ashwani also providing check dams.	Forest Department	31 <sup>st</sup> March, 2020 and regular process	Department Own Budget	-
(e)	Conducting feasibility study for setting up of bio-diversity parks.	Forest Department	30 <sup>th</sup> April, 2019	Department Own Budget	-
(f)	Regular checking of muck dumping in catchment of Ashwani.	Forest Department	15 days and continuous process.	Department Own Budget	-
(g)	Prohibition of disposal of Municipal Plastic and Bio-medical Waste particularly in drains by providing grids at outer boundary of drains.	MC Shimla HPSPCB	31 <sup>st</sup> July, 2019	Department Own Budget	-
(h)	Notification of flood plain zone by identifying flood prone areas in the catchment of Ashwani.	IPH Department Forest Department	31 <sup>st</sup> July, 2019	Department Own Budget	-
(I)	Setting up of Website for Public Participation.	HPSPCB	Completed	Department Own Budget	-

(J)	Measuring the E-flow in the Ashwani Khad and its tributaries on the monthly basis	MC Shimla IPH	28 <sup>th</sup> Februray 2019	Department Own Budget	-
(k)	Organizing cleanliness drive along the stretch of Ashwani	MC Shimla,  Rural Development Shimla, HPSPCB	Every 02 Months	Department Own Budget	-
<b>V</b>	<b>Other Aspects as NGT Order dated 20.09.2018 and 19.12.2018</b>				
(a)	Rain Water Harvesting/ Ground Water Recharge aspects	I & PH	Already operational	State Government Budget	02 No's of project operational at Shimla region whereas 13 No's operate at Solan regions.
(b)	Maintaining E-Flows	I & PH	31 <sup>st</sup> March 2021	State Government Budget	After compiling sewage proposal.
(c)	Water Shed Management	Forest Department	No scheme exit		
(d)	Use of Treated Sewage	I & PH	31 <sup>st</sup> March 2022	-	Tertiary Treatment Proposed on 03 STPs and 01 New STP proposed for utilization of treated sewage.
(e)	Good Irrigation Practice	I & PH	operational	State Government Budget	6 No's of scheme of IPH Department already executed with estimated cost of Rs. 25.18 Lakhs.

(f)	Development of Bio-diversity parks	Forest Department	No scheme exit	-	No Forest land available hence not viable.
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Director, Urban  
Development

**RRC Member**



Director, Environment  
Science and  
Technology

**RRC Member**



Member Secretary, HP  
State Pollution Control  
Board

**RRC Member**



Director, Industry  
Department

**RRC Member**