Srinagar

Srinagar is a Municipal Council in Pauri Garhwal district of Uttarakhand state, India. Srinagar is also a major town for Char Dham Yatra and provides a topography suitable for tourists to stay. It is also an educational hub with four major educational institutes in the city.

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**OVERVIEW: WATER AND SANITATION**

**Faecal Sludge and Septage Generation:** 
~11 KLD

**Wastewater Generation:** 
~6 MLD

- **85% coverage** | **170 lpcd**
- **4 WTPs (11.5 MLD)**

*Water Supply:* Alakananda River (Major Source)

**Sewerage Network** | **Open Drains (major source)** | **Pits**

*Greywater:* 35% HHs are connected to the sewerage network and non-sewered areas ends into the natural water stream

- **8 TPD** | **2 TPD (C&D waste)**

*Solid Waste:* 2 Tonnes dry and 2.5 Tonnes Bio-degradable waste segregated at MRF

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**User Interface**

- **IHHT:** 100% coverage (6038 HHs)
- **CT/PT:** 5 no.

**Containment**

- Open bottom tank: 24%
- Septic tank connected to either drain or soak pit: 30%
- Fully lined tank: 10%
- Sewered: 36%

**Emptying**

- Cesspool Vehicle: 2 no. (Tractor Mounted)
- Capacity: 3 KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
- Around 80% HHs have access road equal or more than 3 m

**Disposal/Reuse**

- Currently treated sludge or treated wastewater is not being reused.
- At some spots, wastewater and septage enters directly into the river through open drains

**Treatment**

- **STP 1:** 3.5 MLD (MBBR Technology) - 37% Utilised
- **STP 2:** 1 MLD (SBR Technology) - 30% Utilized
- No separate treatment Facility for septage treatment

**Transportation**

- Desludging Charges: INR 4000
- Sludge is dumped into sewer manhole outside STP
- INR 1000 tipping fee charged by Jal Sansthan for discharging into sewer manhole
- Sewage is conveyed through 12 existing Nallahs after tapping, which are further connected to the STP

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**Srinagar, Uttarakhand, India**

**Version:** Draft

**SFD Level:** 2 - Intermediate SFD

Date prepared: 6 Mar 2020
Prepared by: NIUA

**Key:** WW: Wastewater, FS: Fecal sludge, SK: Septage

- **Containment:**
  - In-Store containment: 70%
  - In-Store delivery: 10%
  - Offsite containment: 20%
  - Offsite delivery: 0%

- **Emptying:**
  - Cesspool Vehicle: 2 no. (Tractor Mounted)
  - Capacity: 3 KL
  - Desludging: On demand basis
  - Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
  - Around 80% HHs have access road equal or more than 3 m

- **Transportation:**
  - Desludging Charges: INR 4000
  - Sludge is dumped into sewer manhole outside STP
  - INR 1000 tipping fee charged by Jal Sansthan for discharging into sewer manhole
  - Sewage is conveyed through 12 existing Nallahs after tapping, which are further connected to the STP

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**Population:** 44000
**Households:** 6038 HHs
**No. of Wards:** 9 wards
**Municipal Area:** 13 sq. km
**Annual Budget 2018-19**
Inc.: ~ 4.85 Cr.
Exp.: ~ 5.42 Cr.
**Septage Management cell:** Yes

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**Treatment**

- **STP 1:** 3.5 MLD (MBBR Technology) - 37% Utilised
- **STP 2:** 1 MLD (SBR Technology) - 30% Utilized
- No separate treatment Facility for septage treatment

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**Emptying**

- Cesspool Vehicle: 2 no. (Tractor Mounted)
- Capacity: 3 KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
- Around 80% HHs have access road equal or more than 3 m

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**District:** Pauri Garhwal

**State:** Uttarakhand

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**Source:** SFD Team, NIUA

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**Tipping Fee:** INR 1000

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**In-Situ:**

- **Cesspool Vehicle:** 2 no. (Tractor Mounted)
- Capacity: 3 KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
- Around 80% HHs have access road equal or more than 3 m

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**Septage Management cell:**

- **Cesspool Vehicle:** 2 no. (Tractor Mounted)
- Capacity: 3 KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
- Around 80% HHs have access road equal or more than 3 m

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**In-Situ:**

- **Cesspool Vehicle:** 2 no. (Tractor Mounted)
- Capacity: 3 KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs cycle
- Around 80% HHs have access road equal or more than 3 m
Bhimtal

Bhimtal is a Notified Area Council (Nagar Panchayat) having a beautiful and one of the largest lake of Kumaun Central Himalayan Region of Nainital district, Uttarakhand, India. Bhimtal is about 22kms away from the district headquarters Nainital.

OVERVIEW: WATER AND SANITATION

Faecal Sludge and Septage Generation: ~5 KLD
Wasterwater Generation: ~1.3 MLD

>90% coverage | 108 lpcd | 5 Borewells
Water Supply: Borewells and Natural stream

Open Drains (major source) | Pits within HH premises
Greywater: 35% HHs are connected to the sewerage network and non-sewered areas ends into the natural water stream

2.5 TPD
Solid Waste: Door to door collected waste taken to dumping site at nearby town Haldwani

User Interface
- IHHT: 100% coverage (2935 HHs)
- CT/PT: 6 no.

Containment
- Septic tank 2%
- Open Bottom Tank 40%
- Sewered 36%
- Deamage 18%
- Fully Sealed Tank 4%

Emptying
- Cesspool Vehicle: Cesspool operators are called from Haldwani on demand
- Capacity: 3KL
- Desludging: On demand basis
- Emptying frequency: Majority of HHs desludge in more than 10 yrs. cycle and Fully sealed tank desludge in up to 5 yrs.
- Around 70% HHs have access road equal or more than 3 m

Disposal/Reuse
- FS transported and discharges into sewer manhole outside STP, Haldwani
- Currently treated sludge and treated wastewater is not being reused.
- There are some points where wastewater entering directly to Bhimtal lake through open drains

Treatment
- STP 1: 1.25 MLD (UASB Technology) ~ 66% Utilised
- Two pumping stations connected to the STP in series
- No separate septime treatment Facility

Transportation
- Desludging charges: INR 6000
- Sludge is dumped into sewer manhole outside STP, haldwani
Devprayag is a Municipal Council situated in Tehri Garhwal district, Uttarakhand, India. It is one of the smallest municipalities in the state. Devprayag is one of the five prayags and is famous for being the place where rivers Bhagirathi and Alaknanda meet and there by the confluence is known as Ganga.

**User Interface**
- IHHT: 100% coverage (642 HHs)
- Public Toilet: 8 nos.

**Containment**
- Fully lined tank: 6%
- Septic tank: 12%
- Open bottom tank: 26%
- Sewered: 56%

**Emptying**
- Cesspool Vehicle: No cesspool vehicle available
- Capacity: NA
- Desludging: Manual emptying using bucket and put in freshly dug pit and later covered within house premises
- Emptying frequency: approx. 5-6 years

**Disposal/Reuse**
- Treated wastewater is let off into the river
- Dried sludge from STP is used for gardening within the STP premises

**Treatment**
- STP 1: 1.4 MLD SBT Technology (21% Utilized)
- STP 2: 0.15 MLD SBR Technology (86% Utilized)
- STP 3: 0.75 MLD SBR Technology (Not Utilized)
- No separate treatment facility for septage treatment
- Septage emptied at sewer manhole at Baha Bazar location

**Transportation**
- No desludging through cesspool vehicle

**OVERVIEW: WATER AND SANITATION**
- **Faecal Sludge and Septage Generation:** ~1 KLD
- **Wastewater Generation:** ~3.3 MLD

**Water Supply:** Borewells

**Sewerage Network and Open Drains**
- **Greywater:** Almost 55% conveyed to STPs and rest through open drains that ends up into river

**Solid Waste:** Door to door collected waste taken to collection site for segregation and dumping. No treatment is being done
Doiwala

Doiwala is a Municipal Council and a town in Dehradun District of Uttarakhand. It is an strategically important location for the state because of the presence of Jolly Grant Airport. Doiwala comes under Doon Valley’s Terai and Bhabhar region.

**OVERVIEW: WATER AND SANITATION**

- **Faecal Sludge and Septage Generation:** ~18 KLD
- **Wastewater Generation:** ~7.36 MLD

- **Almost 100% coverage**
- **150 lpcd | 31 Borewells**
- **Water Supply:** Borewells

- **Open drains and soak pits**
  - Greywater: open drain are major source to convey grey water

- **2 Tonnes per day**
  - Solid Waste: 100% Door to door collected waste taken to dumping yard for segregation and dumping. No treatment is being done

**Doiwala, Uttarakhand, India**

**Version:** Draft

**SFD Level:** 2 - Intermediate SFD

**Containment**

- Fully lined tank: 1%
- Open bottom: 2%
- Septic tank: 9%
- Deamanage: 88%

**Emptying**

- Cesspool Vehicle: 2 cesspool vehicles
- Capacity: 3 KL
- Emptying frequency: More than 10 years
- Desludging: Emptying through cesspool vehicle on demand basis

**Disposal/Reuse**

- No proper disposal and reuse

**Treatment**

- No treatment facility for sewage and septage
- Septage emptied at sewer manhole at Kargi chowk STP, Dehradun

**Transportation**

- Septage is discharged into sewer manhole at Kargi chowk STP, Dehradun

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**User Interface**

- IHHT: 100% coverage (12302 HHs)
- CTs/Pts: 2 CTs and 2 PTs

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**Municipal Council**

- Population: 61370
- Households: 12302 HHs
- No. of Wards: 20 wards
- Municipal Area: 32.6 sq. km
- Annual Budget (2018-19): Inc. : ~3.03 Cr. Exp. : ~3.07 Cr
- Septage Management cell: Yes

**Local Govt**

- Municipal Council: 32.6 sq. km
- Population: 61370
- No. of Wards: 20 wards
- Annual Budget (2018-19): Inc. : ~3.03 Cr. Exp. : ~3.07 Cr
- Septage Management cell: Yes
Bageshwar is a Municipal Council in Bageshwar district, Uttarakhand. It is situated in a valley of the Kumaon hills of the Central Himalaya range. The drainage of the area is mainly controlled by Saryu, Gomti and Pindar rivers and their tributaries.

### Overview: Water and Sanitation

**Faecal Sludge and Septage Generation:** ~8 KLD

**Wastewater Generation:** ~2.4 MLD

- 85% coverage | 120 lpcd | 1 infiltration well and 1 mini well | 1.2 MLD WTP
- **Water Supply:** Infiltration well, natural streams and community tubewells

**Open drains**

**Greywater:** open drain are the major source to convey greywater

- 6.2 TPD | 100% D2D collection & 60% segregation

**Solid Waste:** Door to door collected waste taken to collection site for segregation and dumping at Matla road. No treatment is being done

### User Interface
- IHHT: 100% coverage (4808 HHs)
- CT/PT: 9 PTs and 4 CTs

### Containment
- Deamagge: 40%
- Septic tank: 6%
- Fully lined tank: 14%
- Open bottom tank: 40%

### Emptying
- Cesspool Vehicle: No cesspool vehicle available
- Capacity: NA
- Desludging: Manual emptying using bucket and put in freshly dug pit and later covered within house premises
- INR 3000-4000 charged for manual emptying
- Emptying frequency: Average more than 10 years
- Around 40% HHs have access road equal or more than 3 m

### Disposal/Reuse
- No proper disposal and reuse of grey water and septage
- Bhagirathi Nallah & Gomti Pul are few points where grey water directly drains to Gomti River

### Treatment
- No treatment Facility for sewage and septage
- Septage emptied at sewer Manhole at Baha Bazar location

### Transportation
- No desludging through cesspool vehicle
New Tehri

Tehri is a Municipal Council in Uttarakhand, India. It is the district headquarters of Tehri Garhwal district. Tehri also known as New Tehri, it was planned to accommodate people of Old Tehri which got submerged after the construction of Tehri dam, one of India’s highest dam. Old Tehri was completely vacated in 2004 and people were relocated to New Tehri, Dehradun and Haridwar districts.

OVERVIEW: WATER AND SANITATION

100% coverage | 135 lpcd
Water Supply: Borewells, natural streams and springs

Sewerage Network and Open Drains
Greywater: Almost 90% conveyed to STP through sewer lines

12 TPD | 100% Door to Door collection
Solid Waste: Door to door collected waste taken to collection site for segregation and dumping at Mukri. No treatment is being done

User Interface
- IHHT: 100% coverage (4284 HHs)
- CT/PT: 17 PTs

Containment
- Sewered 89%
- Septic tank 8%
- Damaged Fully lined Tank 3%

Emptying
- Almost 89% wastewater is conveyed to STP
- Cesspool Vehicle: 2 cesspool vehicles (tractor mounted)
- Capacity: 3.5 KL
- Desludging: Manual emptying in some areas, using bucket and put in freshly dug pit and later covered within house premises
- Emptying frequency: Average 1 year from septic tanks
- Around 80% HHs have access road equal or more than 3 m

Treatment
- STP: 5 MLD, Aerobic Sludge Process technology (50% utilized)
- Tehri STP receives septage from nearby town Chamba (thrice a month)

Transportation
- Cesspool vehicle from nearby town Chamba desludge septage into Tehri STP (thrice a month)
- Desludging charge: INR 10,000 fro HHs in Chamba (includes INR 2000 tipping fee paid to Jal Sansthan, Tehri

Disposal/Reuse
- The treated wastewater is let off into the river and the sludge is used for gardening within the STP premises
Bhowali is a Municipal Council or Nagar Palika Parishad (NPP) in the Nainital district of Uttarakhand. It is also known as a health resort during the pre-independence era due to its salubrious climate and rejuvenating environs.

SFD Level: 3 - Comprehensive SFD

**User Interface**
- IHHT: 100% coverage (2237 HHs)
- PT: 7 no.

**Containment**
- Damaged
- Fully lined 54%
- Open bottom tank 30%
- Septic tank 16%

**Emptying**
- Cesspool Vehicle: Cesspool operators are called from Haldwani on demand
- Capacity: 3KL
- Desludging: On demand basis
- Manual emptying in some areas, using bucket and put in freshly dug pit and later covered within house premises

**Disposal/Reuse**
- Desludging through cesspool: FS transported and discharges into sewer manhole outside STP, Haldwani
- Currently, the faecal sludge and wastewater are neither treated nor being reused.

**Treatment**
- No treatment Facility for sewage and septage
- Surveying is undergoing across the ULB for preparation of a sewerage plan for Bhowali city

**Transportation**
- Desludging charges: INR 6000
- Sludge is dumped into sewer manhole outside STP, Haldwani

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**OVERVIEW: WATER AND SANITATION**

- **Faecal Sludge and Septage Generation:** ~3.3 KLD
- **Wastewater Generation:** ~0.8 MLD

**Transportation**

- **Disposal/Reuse**
  - Desludging through cesspool: FS transported and discharged into sewer manhole outside STP, Haldwani
  - Currently, the faecal sludge and wastewater are neither treated nor being reused.

- **Treatment**
  - No treatment Facility for sewage and septage
  - Surveying is undergoing across the ULB for preparation of a sewerage plan for Bhowali city

- **Emptying**
  - Cesspool Vehicle: Cesspool operators are called from Haldwani on demand
  - Capacity: 3KL
  - Desludging: On demand basis
  - Manual emptying in some areas, using bucket and put in freshly dug pit and later covered within house premises

- **Disposal/Reuse**
  - Desludging through cesspool: FS transported and discharged into sewer manhole outside STP, Haldwani
  - Currently, the faecal sludge and wastewater are neither treated nor being reused.

- **Treatment**
  - No treatment Facility for sewage and septage
  - Surveying is undergoing across the ULB for preparation of a sewerage plan for Bhowali city

- **Emptying**
  - Cesspool Vehicle: Cesspool operators are called from Haldwani on demand
  - Capacity: 3KL
  - Desludging: On demand basis
  - Manual emptying in some areas, using bucket and put in freshly dug pit and later covered within house premises

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**User Interface**
- IHHT: 100% coverage (2237 HHs)
- PT: 7 no.

**Containment**
- Damaged
- Fully lined 54%
- Open bottom tank 30%
- Septic tank 16%

**Emptying**
- Cesspool Vehicle: Cesspool operators are called from Haldwani on demand
- Capacity: 3KL
- Desludging: On demand basis
- Manual emptying in some areas, using bucket and put in freshly dug pit and later covered within house premises

**Disposal/Reuse**
- Desludging through cesspool: FS transported and discharged into sewer manhole outside STP, Haldwani
- Currently, the faecal sludge and wastewater are neither treated nor being reused.

**Treatment**
- No treatment Facility for sewage and septage
- Surveying is undergoing across the ULB for preparation of a sewerage plan for Bhowali city

**Transportation**
- Desludging charges: INR 6000
- Sludge is dumped into sewer manhole outside STP, Haldwani
Haldwani

Known as the 'Gateway of Kumaon' Haldwani is the third most populous state in the Uttarakhand state. It is a Municipal Corporation in Nainital district. The city of Haldwani along with its twin township of Kathgodam forms the Haldwani-Kathgodanm Municipal Board. It is one of the major commercial and educational hubs in the state.

OVERVIEW: WATER AND SANITATION

- **Faecal Sludge and Septage Generation:** ~110 KLD
- **Wastewater Generation:** ~31 MLD

100% coverage | 135 lpcd

**Water Supply:** 40 Tubewells and Gaula river

**Sewerage Network and Open Drains**

- **Greywater:** Approx. 10% sewerage network laid but not STP
- **120 TPD** | 100% Door to Door collection

**Solid Waste:** Door to door collected waste taken to collection site for segregation and dumping at Gaula Rokhar. No treatment is being done

**User Interface**
- IHHT: 100% coverage (53,962 HHs)
- CT/PT: 32 PTs

**Containment**
- Damaged containment systems 10%
- Sewered 20%
- Fully lined 8%
- Septic tank 50%
- Open bottom tank 12%

**Emptying**
- 10% sewerage network laid but not STP currently exists
- Cesspool Vehicle: 16 cesspool vehicles (tractor mounted)
- Capacity: 4 - 6 KL
- Desludging: 10% through sewer network and rest through cesspool vehicles
- Emptying frequency: Average 4-5 years from septic tanks.

**Disposal/Reuse**
- Currently, the faecal sludge and wastewater are neither treated nor being reused.

**Treatment**
- STP: No existing STP. 10% sewerage network laid in the city but no existing STP.
- 28 MLD STP is to be commissioned

**Transportation**
- Cesspool vehicles empties into a designated manhole and further directed to Gaula river through existing sewer network without treatment due to absence of STP
Dehradun is the capital of the Indian state of Uttarakhand located near the Himalayan foothills. The city is governed by Municipal Corporation which comes under Dehradun Metropolitan Region, Uttarakhand.

### Dehradun, Uttarakhand, India

**Version:** Draft  
**SFD Level:** 2 - Intermediate SFD  
**Date prepared:** 30 Jan 2020  
**Prepared by:** NIUA

#### OVERVIEW: WATER AND SANITATION

- **Faecal Sludge and Septage Generation:** ~320 KLD
- **Wastewater Generation:** ~ 92 MLD

- **Water Supply:** Gigoli, Masifall, Bindal and Maldevta Rivers | Tubewells
- **Sewerage Network and Open Drains**
- **Greywater:** Approx. 34% sewerage network
- **Solid Waste:** There are 3 garbage collection points in the city: Kargi Chowk, Dhoranwala and Indiranagar

#### Containment

- **Septic tank:** 38%
- **Sewered:** 2034
- **Damaged:** 28%

#### Emptying

- **34% sewerage coverage across 6 sewerage zones**
- **Cesspool Vehicle:** 25-30 cesspool vehicles (tractor mounted)
- **Capacity:** 4 - 6 KL
- **Desludging:** 34% through sewer network and rest through cesspool vehicles
- **Emptying frequency:** Average 5-8 years from septic tanks

#### Treatment

- **7 STPs:** All SBR Technology Base Kargi Chowk 68 MLD (16% utilized) | Mothrowala I: 20 MLD (60% utilized) | Mothrowala II: 20 MLD (25% utilized) | Indira nagar: 5 MLD (20% utilized) | Jakhan: 1 MLD (30% utilized) | Salawala 0.75 MLD (42% utilized) | Vijay colony: 0.42 MLD (71% utilized)
- **No proper co-treatment infrastructure available in either STPs**

#### Disposal/Reuse

- **Treated wastewater from STPs is disposed into the river as per CPCB discharge standards**
- **Sewage sludge and treated water is used for gardening within STP premises**

#### Transportation

- **Desludging charge:** INR 1500-2200 per service
- **Tipping fee charge by Kargi STP from Cesspool operator**