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Figure A2 & A3: Work on shoulder or parking lane & Shoulder or parking lane closed on divided road

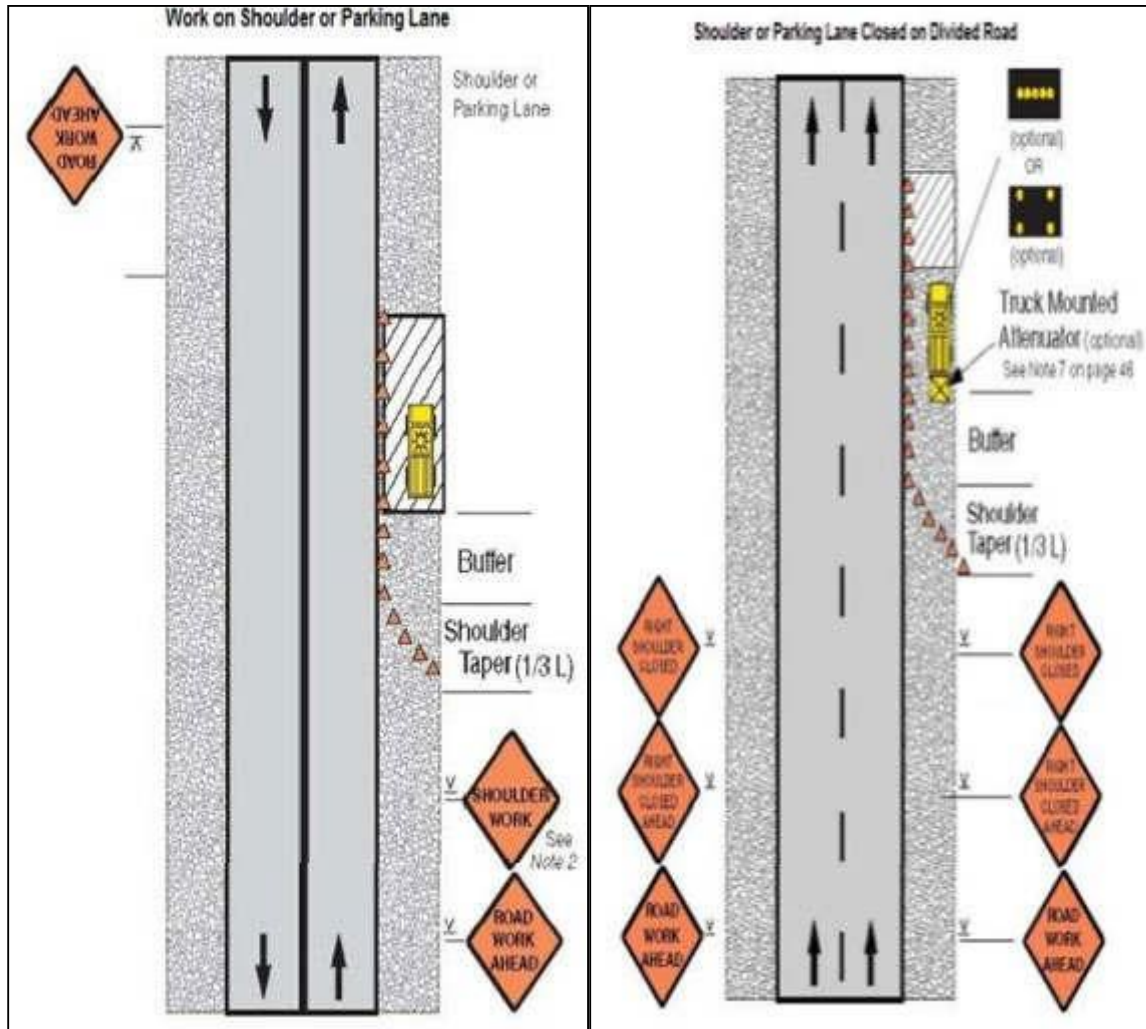


Figure A4 & A5: Work in Travel lane & Lane closure on road with low volume

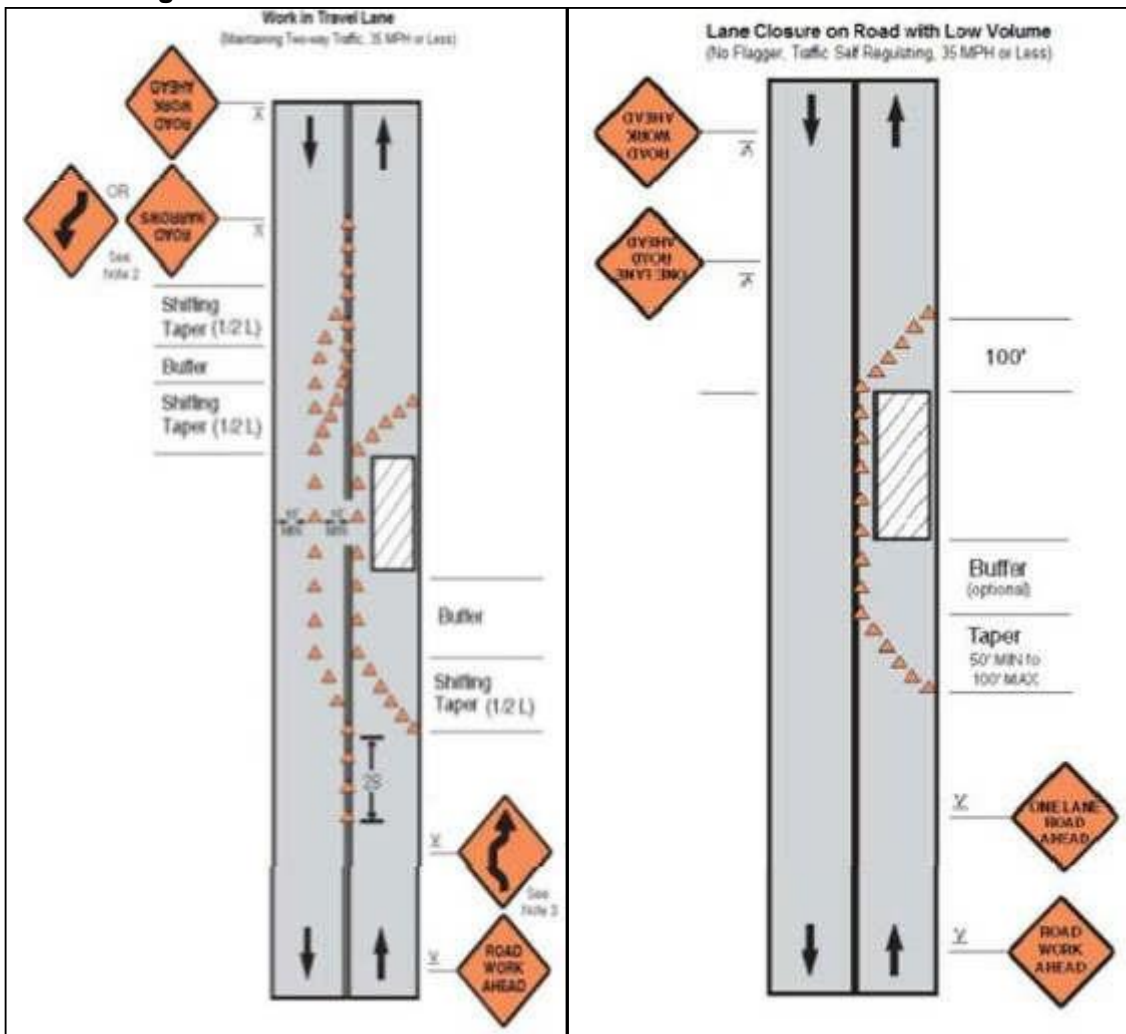


Figure A6 & A7: Lane closure on a two-line road with low volume (with yield sign) & Lane closure on a two-line road with low volume (one flagger operation)

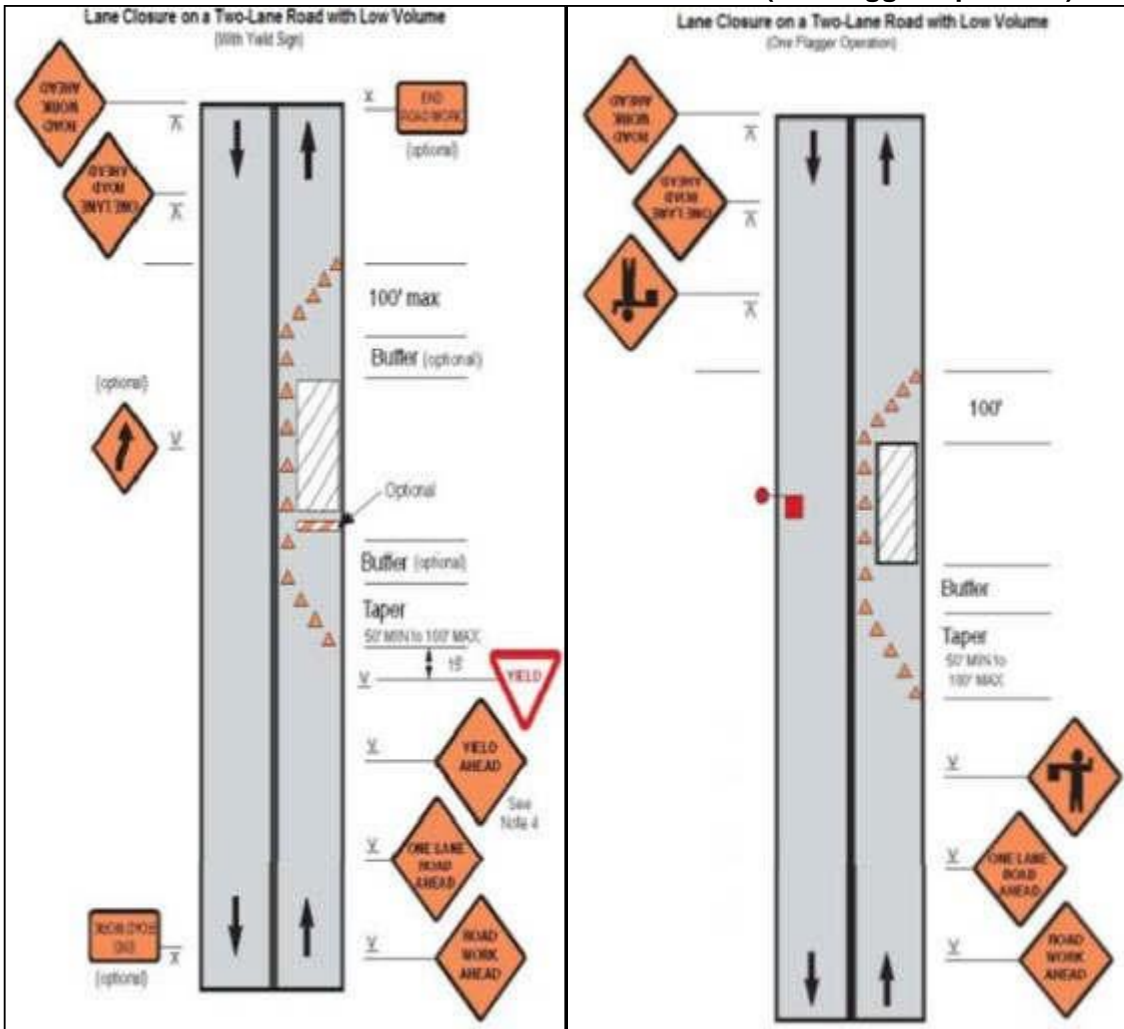


Figure A8 & A9: Lane Closure on a Two-Lane Road (Two Flagger Operation) & Lane Closure on a Four-Lane Undivided Road

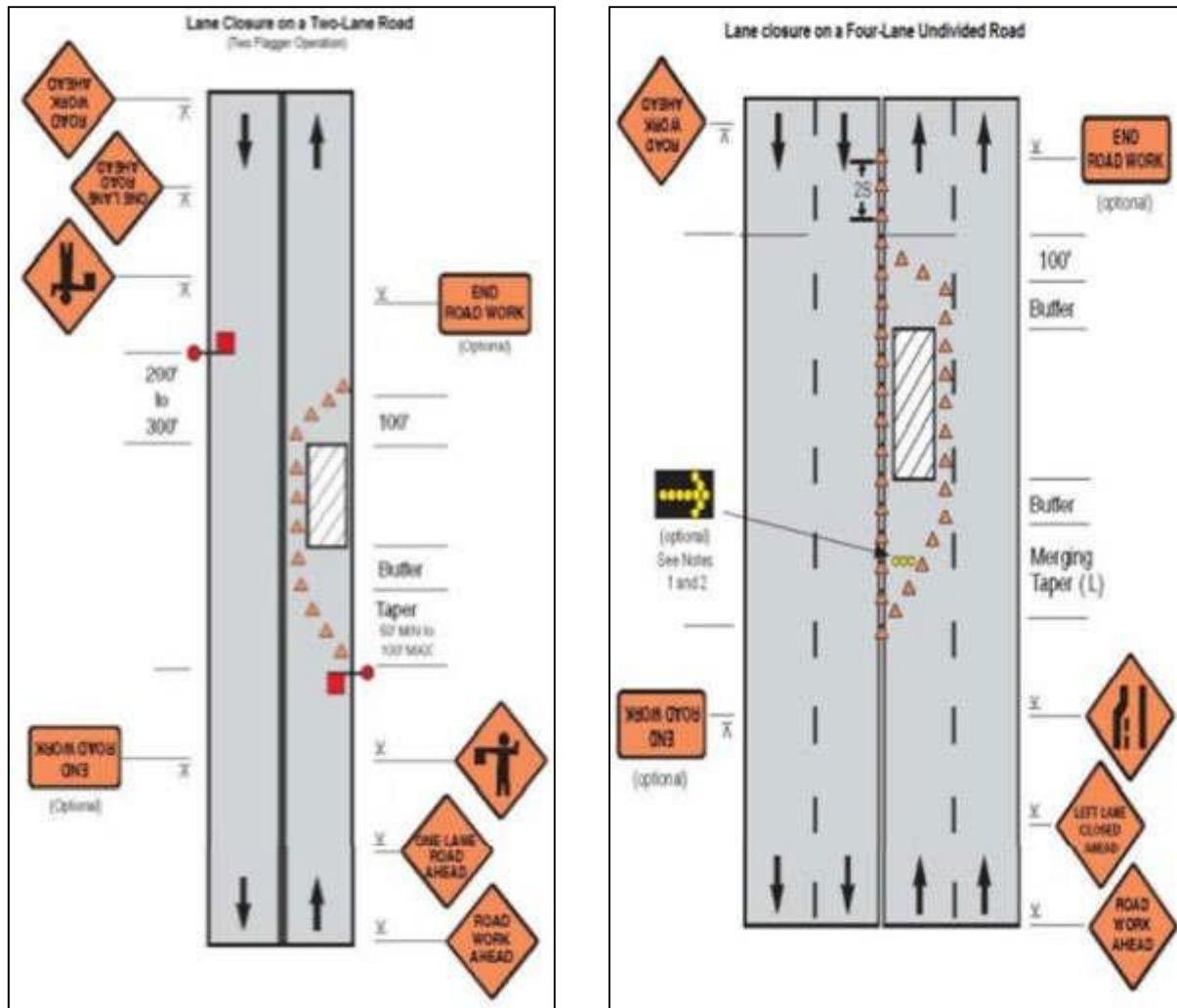


Figure A10 & A11: Lane Closure On Divided Roadway & Half Road Closure On Multi-Lane Roadway

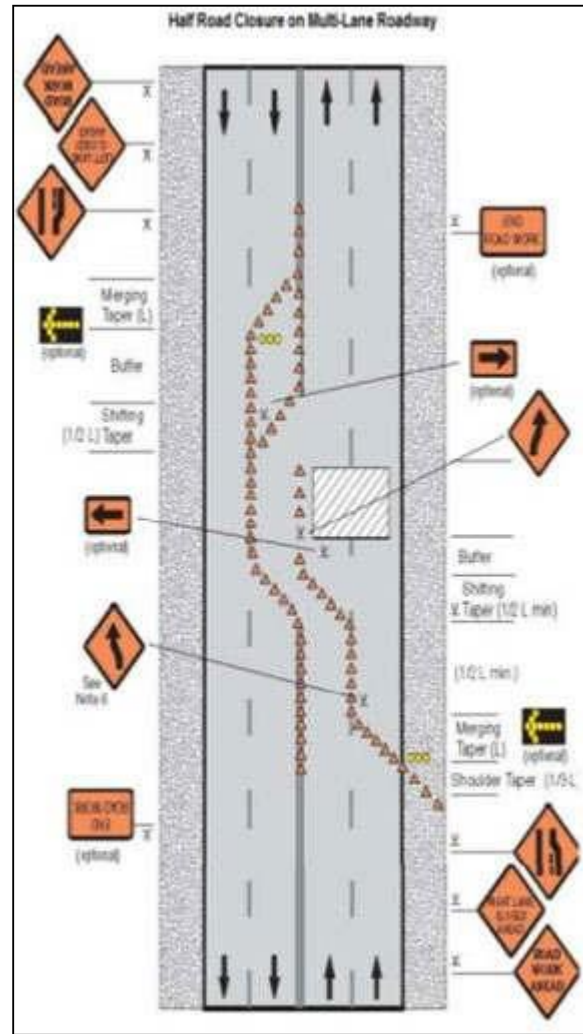
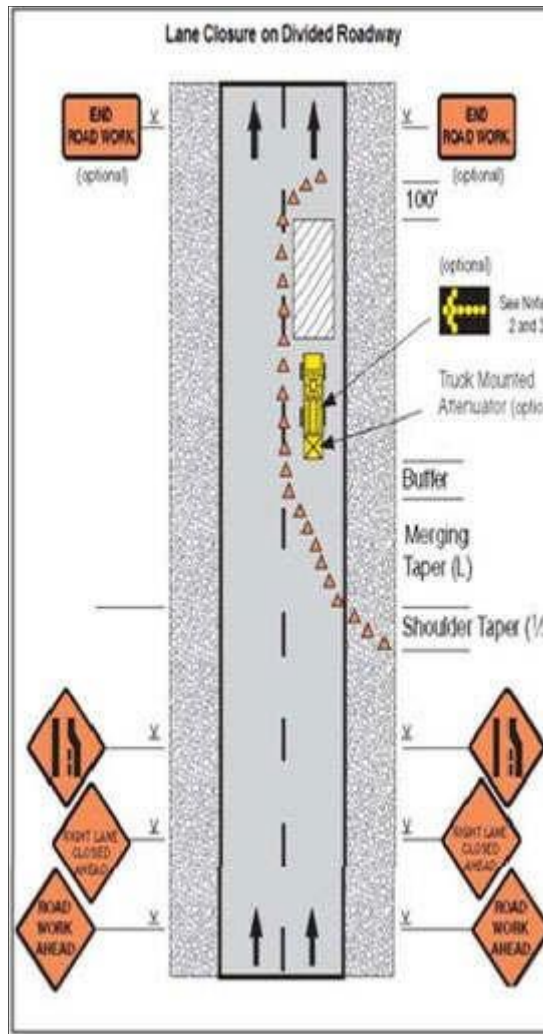
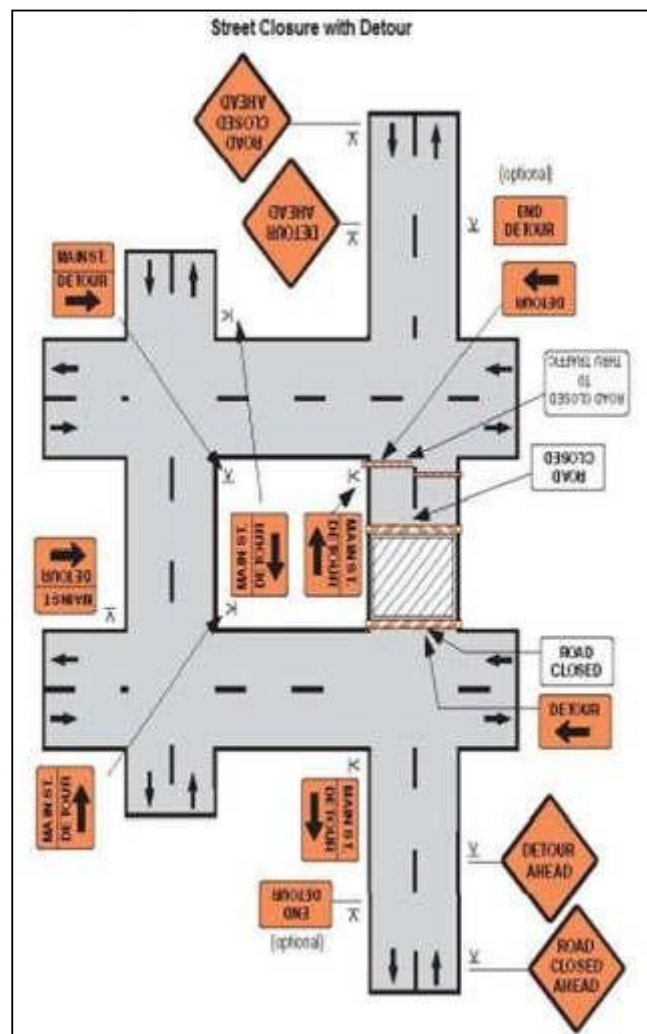


Figure A12: Street closure with detour



Appendix 13: WHO Interim Guidance on Water, Sanitation, Hygiene and Waste Management for the COVID19 virus



Water, sanitation, hygiene, and waste management for the COVID-19 virus

Interim guidance
19 March 2020

Background

This interim guidance supplements the infection prevention and control (IPC) documents by summarizing WHO guidance on water, sanitation and health care waste relevant to viruses, including coronaviruses. It is intended for water and sanitation practitioners and providers and health care providers who want to know more about water, sanitation and hygiene (WASH) risks and practices.

The provision of safe water, sanitation, and hygienic conditions is essential to protecting human health during all infectious disease outbreaks, including the COVID-19 outbreak. Ensuring good and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces, and health care facilities will help prevent human-to-human transmission of the COVID-19 virus.

The most important information concerning WASH and the COVID-19 virus is summarized here.

- Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus. WASH practitioners should work to enable more frequent and regular hand hygiene by improving facilities and using proven behavior-change techniques.
- WHO guidance on the safe management of drinking-water and sanitation services applies to the COVID-19 outbreak. Extra measures are not needed. Disinfection will facilitate more rapid die-off of the COVID-19 virus.
- Many co-benefits will be realized by safely managing water and sanitation services and applying good hygiene practices.

Currently, there is no evidence about the survival of the COVID-19 virus in drinking-water or sewage. The morphology and chemical structure of the COVID-19 virus are similar to those of other human coronaviruses for which there are data about both survival in the environment and effective inactivation measures. This document draws upon the evidence base and WHO guidance on how to protect against viruses in sewage and drinking-water. This document will be updated as new information becomes available.

1. COVID-19 transmission

There are two main routes of transmission of the COVID-19 virus: respiratory and contact. Respiratory droplets are generated when an infected person coughs or sneezes. Any person who is in close contact with someone who has respiratory symptoms (sneezing, coughing) is at risk of being exposed to potentially infective respiratory droplets.¹ Droplets may also land on surfaces where the virus could remain viable; thus, the immediate environment of an infected individual can serve as a source of transmission (contact transmission).

Approximately 2–10% of cases of confirmed COVID-19 disease present with diarrhoea,^{2,4} and two studies detected COVID-19 viral RNA fragments in the faecal matter of COVID-19 patients.^{5,9} However, only one study has cultured the COVID-19 virus from a single stool specimen.⁶ There have been no reports of faecal-oral transmission of the COVID-19 virus.

2. Persistence of the COVID-19 virus in drinking-water, faeces and sewage and on surfaces

Although persistence in drinking-water is possible, there is no evidence from surrogate human coronaviruses that they are present in surface or groundwater sources or transmitted through contaminated drinking water. The COVID-19 virus is an enveloped virus, with a fragile outer membrane. Generally, enveloped viruses are less stable in the environment and are more susceptible to oxidants, such as chlorine. While there is no evidence to date about survival of the COVID-19 virus in water or sewage, the virus is likely to become inactivated significantly faster than non-enveloped human enteric viruses with known waterborne transmission (such as adenoviruses, norovirus, rotavirus and hepatitis A). For example, one study found that a surrogate human coronavirus survived only 2 days in dechlorinated tap water and in hospital wastewater at 20°C.⁸ Other studies concur, noting that the human coronaviruses transmissible gastroenteritis coronavirus and mouse hepatitis virus demonstrated a 99.9% die-off in from 2 days⁷ at 23°C to 2 weeks¹⁰ at 25°C. Heat, high or low pH, sunlight, and common disinfectants (such as chlorine) all facilitate die-off.

It is not certain how long the virus that causes COVID-19 survives on surfaces, but it seems likely to behave like other coronaviruses. A recent review of the survival of human

coronaviruses on surfaces found large variability, ranging from 2 hours to 9 days.¹¹ The survival time depends on a number of factors, including the type of surface, temperature, relative humidity, and specific strain of the virus. The same review also found that effective inactivation could be achieved within 1 minute using common disinfectants, such as 70% ethanol or sodium hypochlorite (for details, see Cleaning practices).

3. Keeping water supplies safe

The COVID-19 virus has not been detected in drinking-water supplies, and based on current evidence, the risk to water supplies is low.¹² Laboratory studies of surrogate coronaviruses that took place in well-controlled environments indicated that the virus could remain infectious in water contaminated with faeces for days to weeks.¹⁰ A number of measures can be taken to improve water safety, starting with protecting the source water, treating water at the point of distribution, collection, or consumption; and ensuring that treated water is safely stored at home in regularly cleaned and covered containers.

Conventional, centralized water treatment methods that use filtration and disinfection should inactivate the COVID-19 virus. Other human coronaviruses have been shown to be sensitive to chlorination and disinfection with ultraviolet (UV) light.¹³ As enveloped viruses are surrounded by a lipid host cell membrane, which is not robust, the COVID-19 virus is likely to be more sensitive to chlorine and other oxidant disinfection processes than many other viruses, such as coxsackieviruses, which have a protein coat. For effective centralized disinfection, there should be a residual concentration of free chlorine of ≥ 0.5 mg/L after at least 30 minutes of contact time at pH < 8.0 .¹² A chlorine residual should be maintained throughout the distribution system.

In places where centralized water treatment and safe piped water supplies are not available, a number of household water treatment technologies are effective in removing or destroying viruses, including boiling or using high-performing ultrafiltration or nanomembrane filters, solar irradiation and, in non-turbid waters, UV irradiation and appropriately dosed free chlorine.

4. Safely managing wastewater and faecal waste

There is no evidence that the COVID-19 virus has been transmitted via sewerage systems with or without wastewater treatment. Further, there is no evidence that sewage or wastewater treatment workers contracted the severe acute respiratory syndrome (SARS), which is caused by another type of coronavirus that caused a large outbreak of acute respiratory illness in 2003. As part of an integrated public health policy, wastewater carried in sewerage systems should be treated in well-designed and well-managed centralized wastewater treatment works. Each stage of treatment (as well as retention time and dilution) results in a further reduction of the potential risk. A waste stabilization pond (an oxidation pond or lagoon) is generally considered a practical and simple wastewater treatment technology particularly well suited to destroying pathogens, as relatively long retention times (20 days or longer) combined with sunlight, elevated pH levels, biological activity, and other factors serve to accelerate pathogen destruction. A final disinfection step may be considered if existing wastewater treatment plants are not optimized to remove viruses. Best practices for protecting the health of workers at sanitation treatment facilities should

be followed. Workers should wear appropriate personal protective equipment (PPE), which includes protective outerwear, gloves, boots, goggles or a face shield, and a mask; they should perform hand hygiene frequently; and they should avoid touching eyes, nose, and mouth with unwashed hands.

WASH in health care settings

Existing recommendations for water, sanitation and hygiene measures in health care settings are important for providing adequate care for patients and protecting patients, staff, and caregivers from infection risks.¹⁴ The following actions are particularly important: (i) managing excreta (faeces and urine) safely, including ensuring that no one comes into contact with it and that it is treated and disposed of correctly; (ii) engaging in frequent hand hygiene using appropriate techniques; (iii) implementing regular cleaning and disinfection practices; and (iv) safely managing health care waste. Other important measures include providing sufficient safe drinking-water to staff, caregivers, and patients; ensuring that personal hygiene can be maintained, including hand hygiene, for patients, staff and caregivers; regularly laundering bedsheet and patients' clothing; providing adequate and accessible toilets (including separate facilities for confirmed and suspected cases of COVID-19 infection); and segregating and safely disposing of health care waste. For details on these recommendations, please refer to Essential environmental health standards in health care.¹⁴

1. Hand hygiene practices

Hand hygiene is extremely important. Cleaning hands with soap and water or an alcohol-based hand rub should be performed according to the instructions known as "My 5 moments for hand hygiene".¹⁵ If hands are not visibly dirty, the preferred method is to perform hand hygiene with an alcohol-based hand rub for 20–30 seconds using the appropriate technique.¹⁶ When hands are visibly dirty, they should be washed with soap and water for 40–60 seconds using the appropriate technique.¹⁷ Hand hygiene should be performed at all five moments, including before putting on PPE and after removing it, when changing gloves, after any contact with a patient with suspected or confirmed COVID-19 infection or their waste, after contact with any respiratory secretions, before eating, and after using the toilet.¹⁸ If an alcohol-based hand rub and soap are not available, then using chlorinated water (0.05%) for handwashing is an option, but it is not ideal because frequent use may lead to dermatitis, which could increase the risk of infection and asthma and because prepared dilutions might be inaccurate.¹⁹ However, if other options are not available or feasible, using chlorinated water for handwashing is an option.

Functional hand hygiene facilities should be present for all health care workers at all points of care and in areas where PPE is put on or taken off. In addition, functional hand hygiene facilities should be available for all patients, family members, and visitors, and should be available within 5 m of toilets, as well as in waiting and dining rooms and other public areas.

2. Sanitation and plumbing

People with suspected or confirmed COVID-19 disease should be provided with their own flush toilet or latrine that has a door that closes to separate it from the patient's room. Flush toilets should operate properly and have functioning drain traps. When possible, the toilet should be flushed with the lid down to prevent droplet splatter and aerosol clouds. If it is not possible to provide separate toilets, the toilet should be cleaned and disinfected at least twice daily by a trained cleaner wearing PPE (gown, gloves, boots, mask, and a face shield or goggles). Further, and consistent with existing guidance, staff and health care workers should have toilet facilities that are separate from those used by all patients.

WHO recommends the use of standard, well-maintained plumbing, such as sealed bathroom drains, and backflow valves on sprayers and faucets to prevent aerosolized faecal matter from entering the plumbing or ventilation system,²⁰ together with standard wastewater treatment.²¹ Faulty plumbing and a poorly designed air ventilation system were implicated as contributing factors to the spread of the aerosolized SARS coronavirus in a high-rise apartment building in Hong Kong in 2003.²² Similar concerns have been raised about the spread of the COVID-19 virus from faulty toilets in high-rise apartment buildings.²³ If health care facilities are connected to sewers, a risk assessment should be conducted to confirm that wastewater is contained within the system (that is, the system does not leak) before its arrival at a functioning treatment or disposal site, or both. Risks pertaining to the adequacy of the collection system or to treatment and disposal methods should be assessed following a safety planning approach,²⁴ with critical control points prioritized for mitigation.

For smaller health care facilities in low-resource settings, if space and local conditions allow, pit latrines may be the preferred option. Standard precautions should be taken to prevent contamination of the environment by excreta. These precautions include ensuring that at least 1.5 m exists between the bottom of the pit and the groundwater table (more space should be allowed in coarse sands, gravels, and fissured formations) and that the latrines are located at least 30 m horizontally from any groundwater source (including both shallow wells and boreholes).²⁵ If there is a high groundwater table or a lack of space to dig pits, excreta should be retained in impermeable storage containers and left for as long as feasible to allow for a reduction in virus levels before moving it off-site for additional treatment or safe disposal, or both. A two-tank system with parallel tanks would help facilitate inactivation by maximizing retention times, as one tank could be used until full, then allowed to sit while the next tank is being filled. Particular care should be taken to avoid splashing and the release of droplets while cleaning or emptying tanks.

3. Toilets and the handling of faeces

It is critical to conduct hand hygiene when there is suspected or direct contact with faeces (if hands are dirty, then soap and water are preferred to the use of an alcohol-based hand rub). If the patient is unable to use a latrine, excreta should be collected in either a diaper or a clean bedpan and immediately and carefully disposed of into a separate toilet or latrine used only by suspected or confirmed cases of COVID-19. In all health care settings, including those with suspected or confirmed COVID-19 cases, faeces must be treated as a biohazard and handled as little as possible. Anyone handling

faeces should follow WHO contact and droplet precautions¹⁸ and use PPE to prevent exposure, including long-sleeved gowns, gloves, boots, masks, and goggles or a face shield. If diapers are used, they should be disposed of as infectious waste as they would be in all situations. Workers should be properly trained in how to put on, use, and remove PPE so that these protective barriers are not breached.²⁷ If PPE is not available or the supply is limited, hand hygiene should be regularly practiced, and workers should keep at least 1 m distance from any suspected or confirmed cases.

If a bedpan is used, after disposing of excreta from it, the bedpan should be cleaned with a neutral detergent and water, disinfected with a 0.5% chlorine solution, and then rinsed with clean water; the rinse water should be disposed of in a drain or a toilet or latrine. Other effective disinfectants include commercially available quaternary ammonium compounds, such as cetylpyridinium chloride, used according to manufacturer's instructions, and peracetic or peroxycetic acid at concentrations of 500–2000 mg/L.³⁰

Chlorine is ineffective for disinfecting media containing large amounts of solid and dissolved organic matter. Therefore, there is limited benefit to adding chlorine solution to fresh excreta and it is possible that this may introduce risks associated with splashing.

4. Emptying latrines and holding tanks, and transporting excreta off-site

There is no reason to empty latrines and holding tanks of excreta from suspected or confirmed COVID-19 cases unless they are at capacity. In general, the best practices for safely managing excreta should be followed. Latrines or holding tanks should be designed to meet patient demand, considering potential sudden increases in cases, and there should be a regular schedule for emptying them based on the wastewater volumes generated. PPE (long-sleeved gown, gloves, boots, masks, and goggles or a face shield) should be worn at all times when handling or transporting excreta offsite, and great care should be taken to avoid splashing. For crews, this includes pumping out tanks or unloading pumper trucks. After handling the waste and once there is no risk of further exposure, individuals should safely remove their PPE and perform hand hygiene before entering the transport vehicle. Soiled PPE should be put in a sealed bag for later safe laundering (see Cleaning practices). Where there is no off-site treatment, in-situ treatment can be done using lime. Such treatment involves using a 10% lime slurry added at 1-part lime slurry per 10 parts of waste.

5. Cleaning practices

Recommended cleaning and disinfection procedures for health care facilities should be followed consistently and correctly.¹⁹ Laundry should be done and surfaces in all environments in which COVID-19 patients receive care (treatment units, community care centres) should be cleaned at least once a day and when a patient is discharged.²³ Many disinfectants are active against enveloped viruses, such as the COVID-19 virus, including commonly used hospital disinfectants. Currently, WHO recommends using:

- 70% ethyl alcohol to disinfect small areas between uses, such as reusable dedicated equipment (for example, thermometers);
- sodium hypochlorite at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces.

All individuals dealing with soiled bedding, towels, and clothes from patients with COVID-19 infection should wear appropriate PPE before touching soiled items, including heavy duty gloves, a mask, eye protection (goggles or a face shield), a long-sleeved gown, an apron if the gown is not fluid resistant, and boots or closed shoes. They should perform hand hygiene after exposure to blood or body fluids and after removing PPE. Soiled linen should be placed in clearly labelled, leak-proof bags or containers, after carefully removing any solid excrement and putting it in a covered bucket to be disposed of in a toilet or latrine. Machine washing with warm water at 60–90°C (140–194°F) with laundry detergent is recommended. The laundry can then be dried according to routine procedures. If machine washing is not possible, linens can be soaked in hot water and soap in a large drum using a stick to stir and being careful to avoid splashing. The drum should then be emptied, and the linens soaked in 0.05% chlorine for approximately 30 minutes. Finally, the laundry should be rinsed with clean water and the linens allowed to dry fully in sunlight.

If excreta are on surfaces (such as linens or the floor), the excreta should be carefully removed with towels and immediately safely disposed of in a toilet or latrine. If the towels are single use, they should be treated as infectious waste; if they are reusable, they should be treated as soiled linens. The area should then be cleaned and disinfected (with, for example, 0.5% free chlorine solution), following published guidance on cleaning and disinfection procedures for spilled body fluids.²⁷

6. Safely disposing of greywater or water from washing PPE, surfaces and floors.

Current WHO recommendations are to clean utility gloves or heavy duty, reusable plastic aprons with soap and water and then decontaminate them with 0.5% sodium hypochlorite solution after each use. Single-use gloves (nitrile or latex) and gowns should be discarded after each use and not reused; hand hygiene should be performed after PPE is removed. If greywater includes disinfectant used in prior cleaning, it does not need to be chlorinated or treated again. However, it is important that such water is disposed of in drains connected to a septic system or sewer or in a soakaway pit. If greywater is disposed of in a soakaway pit, the pit should be fenced off within the health facility grounds to prevent tampering and to avoid possible exposure in the case of overflow.

7. Safe management of health care waste

Best practices for safely managing health care waste should be followed, including assigning responsibility and sufficient human and material resources to dispose of such waste safely. There is no evidence that direct, unprotected human contact during the handling of health care waste has resulted in the transmission of the COVID-19 virus. All health care waste produced during the care of COVID-19 patients should be collected safely in designated containers and bags, treated, and then safely disposed of or treated, or both, preferably on-site. If waste is moved off-site, it is critical to understand where and how it will be treated and destroyed. All who handle health care waste should wear appropriate PPE (boots, apron, long-sleeved gown, thick gloves, mask, and goggles or a face shield) and perform hand hygiene after removing it. For more information refer to the WHO guidance, *Safe management of wastes from health-care activities*.²⁸

Considerations for WASH practices in homes and communities.

Upholding best WASH practices in the home and community is also important for preventing the spread of COVID-19 and when caring for patients at home. Regular and correct hand hygiene is of particular importance.

1. Hand hygiene

Hand hygiene in non-health care settings is one of the most important measures that can prevent COVID-19 infection. In homes, schools and crowded public spaces – such as markets, places of worship, and train or bus stations – regular handwashing should occur before preparing food, before and after eating, after using the toilet or changing a child's diaper, and after touching animals. Functioning handwashing facilities with water and soap should be available within 5 m of toilets.

2. Treatment and handling requirements for excreta.

Best WASH practices, particularly handwashing with soap and clean water, should be strictly applied and maintained because these provide an important additional barrier to COVID-19 transmission and to the transmission of infectious diseases in general.²⁷ Consideration should be given to safely managing human excreta throughout the entire sanitation chain, starting with ensuring access to regularly cleaned, accessible, and functioning toilets or latrines and to the safe containment, conveyance, treatment, and eventual disposal of sewage.

When there are suspected or confirmed cases of COVID-19 in the home setting, immediate action must be taken to protect caregivers and other family members from the risk of contact with respiratory secretions and excreta that may contain the COVID-19 virus. Frequently touched surfaces throughout the patient's care area should be cleaned regularly, such as bedside tables, bed frames and other bedroom furniture. Bathrooms should be cleaned and disinfected at least once a day. Regular household soap or detergent should be used for cleaning first and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite (that is, equivalent to 5000 ppm or 1-part household bleach with 5% sodium hypochlorite to 9 parts water) should be applied. PPE should be worn while cleaning, including mask, goggles, a fluid-resistant apron, and gloves,²⁹ and hand hygiene with an alcohol-based hand rub or soap and water should be performed after removing PPE.

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Appendix 14: IFC Benchmark Standards for Workers Accommodation

August 2009

11

PART II: STANDARDS FOR AND MANAGEMENT OF WORKERS' ACCOMMODATION

I. Standards for workers' accommodation

This section looks at the principles and standards applicable to the location and construction of workers' accommodation, including the transport systems provided, the general living facilities, rooms/dormitories facilities, sanitary facilities, canteen and cooking facilities, food safety, medical facilities and leisure/social facilities.

A. National/local standards

The key standards that need to be taken into consideration, as a baseline, are those contained in national/local regulations. Although it is quite unusual to find regulations specifically covering workers' accommodation, there may well be general construction standards which will be relevant. These may include the following standards:

- **Building construction:** for example, quality of material, construction methods, resistance to earthquakes.
- **Housing and public housing:** in some countries regulations for housing and public housing contain requirements on issues such as the basic amenities, and standards of repair.
- **General health, safety and security:** requirements on health and safety are often an important part of building standards and might include provisions on occupation density, minimal air volumes, ventilation, the quality of the flooring (slip-resistant) or security against intrusion.
- **Fire safety:** requirements on fire safety are common and are likely to apply to housing facilities of any type. This can include provision on fire extinguishers, fire alarms, number and size of staircases and emergency exits, restrictions on the use of certain building materials.
- **Electricity, plumbing, water and sanitation:** national design and construction standards often include very detailed provisions on electricity or plumbing fixtures/fittings, water and sanitation connection/equipment.

Benchmark

1. The relevant national and local regulations have been identified and implemented.

B. General living facilities

Ensuring good standards in living facilities is important in order to avoid safety hazards and to protect workers from diseases and/or illness resulting from humidity, bad/stagnant water (or lack of water), cold, spread of fungus, proliferation of insects or rodents, as well as to maintain a good level of morale. The location of the facilities is important to prevent exposure to wind, fire, flood and other natural hazards. It is also important that workers' accommodation is unaffected by the environmental or operational impacts of the worksite (for example noise, emissions or dust) but is sufficiently close that workers do not have to spend undue amounts of time travelling from their accommodation to the worksite. Living facilities should be built using adequate materials and should always be kept in good repair, clean and free from rubbish and other refuse.

Benchmarks

1. Living facilities are located to avoid flooding and other natural hazards.
2. Where possible, living facilities are located within a reasonable distance from the worksite.
3. Transport from the living facilities to worksite is safe and free.
4. The living facilities are built with adequate materials, kept in good repair and kept clean and free from rubbish and other refuse.

Drainage

The presence of stagnant water is a factor of proliferation of potential disease vectors such as mosquitoes, flies and others, and must be avoided.

Benchmarks

1. The building site is adequately drained to avoid the accumulation of stagnant water.

Heating, air conditioning, ventilation and light
Heating, air-conditioning and ventilation should be appropriate for the climatic conditions and provide workers with a comfortable and healthy environment to rest and spend their spare time.

Benchmarks

1. For facilities located in cold weather zones, the temperature is kept at a level of around 20 degrees Celsius notwithstanding the need for adequate ventilation.
2. For facilities located in hot weather zones, adequate ventilation and/or air conditioning systems are provided.
3. Both natural and artificial lighting are provided and maintained in living facilities. It is best practice that the window area represents not less than 5% to 10% of the floor area. Emergency lighting is provided.

Water

Special attention to water quality and quantity is absolutely essential. To prevent dehydration, water poisoning and diseases resulting from lack of hygiene, workers should always have easy access to a source of clean water. An adequate supply of potable water must be available in the same buildings where bedrooms or dormitories are provided. Drinking water must meet local or WHO drinking water standards¹ and water quality must be monitored regularly. Depending on the local context, it could either be produced by dedicated catchment and treatment facilities or tapped from existing municipal facilities if their capacity and quality are adequate.

Benchmarks

1. Access to an adequate and convenient supply of free potable water is always available to workers. Depending on climate, weather conditions and accommodation standards, 50 to 180 litres per person per day are available.
2. Drinking water meets national/local or WHO drinking water standards.²
3. All tanks used for the storage of drinking water are constructed and covered as to prevent water stored therein from becoming polluted or contaminated.

4. Drinking water quality is regularly monitored.

Wastewater and solid waste

Wastewater treatment and effluent discharge as well as solid waste treatment and disposal must comply with local or World Bank effluent discharge standards³ and be adequately designed to prevent contamination of any water body, to ensure hygiene and to avoid the spread of infections and diseases, the proliferation of mosquitoes, flies, rodents, and other pest vectors. Depending on the local context, treatment and disposal services can be either provided by dedicated or existing municipal facilities.

Benchmarks

1. Wastewater, sewage, food and any other waste materials are adequately discharged, in compliance with local or World Bank standards – whichever is more stringent – and without causing any significant impacts on camp residents, the biophysical environment or surrounding communities.
2. Specific containers for rubbish collection are provided and emptied on a regular basis. Standards range from providing an adequate number of rubbish containers to providing leak proof, non-absorbent, rust and corrosion-resistant containers protected from insects and rodents. In addition it is best practice to locate rubbish containers 30 metres from each shelter on a wooden, metal, or concrete stand. Such containers must be emptied at regular intervals (to be determined based on temperatures and volumes generated) to avoid unpleasant odours associated with decaying organic materials.
3. Pest extermination, vector control and disinfection are carried out throughout the living facilities in compliance with local requirements and/or good practice. Where warranted, pest and vector monitoring should be performed on a regular basis.

¹ www.who.int/dietary/nutrition/standards/WHO_standards/en/
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³ As per the "Pollution Prevention and Management Handbook", World Bank Group, Aug 2008, available at www.worldbank.org

C. Room/dormitory facilities

The standards of the rooms or dormitory facilities are important to allow workers to rest properly and to maintain good standards of hygiene. Overcrowding should be avoided particularly. This also has an impact on workers' productivity and reduces work-related accidents. It is generally acknowledged that rooms/dormitories should be kept clean and in a good condition. Exposure to noise and odour should be minimised. In addition, room/dormitory design and equipment should strive to offer workers a maximum of privacy. Resorting to dormitories should be minimised and single or double rooms are preferred. Dormitories and rooms must be single-sex.

Benchmarks

1. Rooms/dormitories are kept in good condition.
2. Rooms/dormitories are aired and cleaned at regular intervals.
3. Rooms/dormitories are built with easily cleanable flooring material.
4. Sanitary facilities are located within the same buildings and provided separately for men and women.
5. Density standards are expressed either in terms of minimal volume per resident or of minimal floor space. Usual standards range from 10 to 12.5 cubic metres (volume) or 4 to 5.5 square metres (surface).
6. A minimum ceiling height of 2.10 metres is provided.
7. In collective rooms, which are minimised, in order to provide workers with some privacy, only a reasonable number of workers are allowed to share the same room. Standards range from 2 to 8 workers.
8. All doors and windows should be lockable, and provided with mosquito screens where conditions warrant.
9. There should be mobile partitions or curtains to ensure privacy.
10. Every resident is provided with adequate furniture such as a table, a chair, a mirror and a bedside light.
11. Separate sleeping areas are provided for men and women, except in family accommodation.

Additional issue

Irrespective of whether workers are supposed to keep their facilities clean, it is the responsibility of the accommodation manager to ensure that rooms/dormitories and sanitary facilities are in good condition.

Bed arrangements and storage facilities

The provision of an adequate numbers of beds of an appropriate size is essential to provide workers with decent, safe and hygienic conditions to rest and sleep. Here again, particular attention should be paid to privacy. Consideration should be given to local customs so beds could be replaced by hammocks or sleeping mats for instance.

Benchmarks

1. A separate bed for each worker is provided. The practice of "hot-bedding" should be avoided.
2. There is a minimum space between beds of 1 metre.
3. Double deck bunks are not advisable for fire safety and hygiene reasons, and their use is minimised. Where they are used, there must be enough clear space between the lower and upper bunk of the bed. Standards range from 0.7 to 1.10 metres.
4. Triple deck bunks are prohibited.
5. Each worker is provided with a comfortable mattress, pillow, cover and clean bedding.
6. Bed linen is washed frequently and applied with repellents and disinfectants where conditions warrant (malaria).
7. Facilities for the storage of personal belongings for workers are provided. Standards vary from providing an individual cupboard for each worker to providing 475-litre big lockers and 1 metre of shelf unit.
8. Separate storage for work boots and other personal protection equipment, as well as drying/airing areas may need to be provided depending on conditions.

D. Sanitary and toilet facilities

It is essential to allow workers to maintain a good standard of personal hygiene but also to prevent contamination and the spread of diseases which result from inadequate sanitary facilities. Sanitary and toilet facilities will always include all of the following: toilets, urinals, washbasins and showers. Sanitary and toilet facilities should be kept in a clean and fully working condition. Facilities should also be constructed of materials that are easily cleanable and ensure privacy. Sanitary and toilet facilities are never shared between male and female residents, except in family accommodation. Where necessary, specific additional sanitary facilities are provided for women.

Benchmarks

1. Sanitary and toilet facilities are constructed of materials that are easily cleanable.
2. Sanitary and toilet facilities are cleaned frequently and kept in working condition.
3. Sanitary and toilet facilities are designed to provide workers with adequate privacy, including ceiling to floor partitions and lockable doors.
4. Sanitary and toilet facilities are not shared between men and women, except in family accommodation.

Toilet facilities

Toilet arrangements are essential to avoid any contamination and prevent the spread of infectious disease.

Benchmarks

1. An adequate number of toilets is provided to workers. Standards range from 1 unit to 15 persons to 1 unit per 6 persons. For urinals, usual standards are 1 unit to 15 persons.
2. Toilet facilities are conveniently located and easily accessible. Standards range from 30 to 60 metres from rooms/dormitories. Toilet rooms shall be located so as to be accessible without any individual passing through any sleeping room. In addition, all toilet rooms should be well-lit, have good ventilation or external windows, have sufficient hand wash basins and be conveniently located. Toilets and other sanitary facilities should be ("must be" in cold climates) in the same building as rooms and dormitories.

Showers/bathrooms and other sanitary facilities

Hand wash basins and showers should be provided in conjunction with rooms/dormitories. These facilities must be kept in good working condition and cleaned frequently. The flooring for shower facilities should be of hard washable materials, damp-proof and properly drained. Adequate space must be provided for hanging, drying and airing clothes. Suitable light, ventilation and soap should be provided. Lastly, hand washing, shower and other sanitary facilities should be located within a reasonable distance from other facilities and from sleeping facilities in particular.

Benchmarks

1. Shower/bathroom flooring is made of anti-slip hard washable materials.
2. An adequate number of handwash facilities is provided to workers. Standards range from 1 unit to each 15 persons to 1 unit per 6 workers. Handwash facilities should consist of a tap and a basin, soap and hygienic means of drying hands.
3. An adequate number of shower/bathroom facilities is provided to workers. Standards range from 1 unit to 15 persons to 1 unit per 6 persons.
4. Showers/bathrooms are conveniently located.
5. Shower/bathroom facilities are provided with an adequate supply of cold and hot running water.

E. Canteen, cooking and laundry facilities

Good standards of hygiene in canteen/dining halls and cooking facilities are crucial. Adequate canteen, cooking and laundry facilities and equipments should also be provided. When caterers are contracted to manage kitchens and canteens, special attention should be paid to ensure that contractors take into account and implement the benchmarks below, and that adequate reporting and monitoring mechanisms are in place. When workers can individually cook their meals, they should be provided with a space separate from the sleeping areas. Facilities must be kept in a clean and sanitary condition. In addition, canteen, kitchen, cooking and laundry floors, ceilings and walls should be made of easily cleanable materials.

Benchmarks

1. Canteen, cooking and laundry facilities are built in adequate and easy to clean materials.
2. Canteen, cooking and laundry facilities are kept in a clean and sanitary condition.
3. If workers can cook their own meals, kitchen space is provided separate from sleeping areas.

Laundry facilities

Providing facilities for workers to wash both work and non-work related clothes is essential for personal hygiene. The alternative is for the employer to provide a free laundry service.

Benchmarks

1. Adequate facilities for washing and drying clothes are provided. Standards range from providing sinks or tubs with hot and cold water, cleaning soap and drying lines to providing washing machines and dryers.
2. When work clothes are used in contact with dangerous substance (for example, application of pesticide), special laundry facilities (washing machines) should be provided.

Additional issue

When workers are provided with facilities allowing them to individually do their laundry or cooking, it should be the responsibility of each worker to keep the facilities in a clean and sanitary condition. Nonetheless, it is the responsibility of the accommodation manager to make sure the standards are respected and to provide an adequate cleaning, disinfection and pest/vector control service when necessary.

Additional issue

When the employer provides family accommodation, it is best practice to provide each family with a private kitchen or the necessary cooking equipment to allow the family to cook on their own.

Canteen and cooking facilities

Canteen and cooking facilities should provide sufficient space for preparing food and eating, as well as conform to hygiene and safety requirements.

Benchmarks

1. Canteens have a reasonable amount of space per worker. Standards range from 1 square metre to 1.5 square metres.
2. Canteens are adequately furnished. Standards range from providing tables, benches, individual drinking cups and plates to providing special drinking fountains.
3. Places for food preparation are designed to permit good food hygiene practices, including protection against contamination between and during food preparation.
4. Kitchens are provided with facilities to maintain adequate personal hygiene including a sufficient number of washbasins designated for cleaning hands with clean, running water and materials for hygienic drying.
5. Wall surfaces adjacent to cooking areas are made of fire-resistant materials. Food preparation tables are also equipped with a smooth durable washable surface. Lastly, in order to enable easy cleaning, it is good practice that stoves are not sealed against a wall, benches and fixtures are not built into the floor, and all cupboards and other fixtures and all walls and ceilings have a smooth durable washable surface.
6. All kitchen floors, ceiling and wall surfaces adjacent to or above food preparation and cooking areas are built using durable, non-absorbent, easily cleanable, non-toxic materials.
7. Wall surfaces adjacent to cooking areas are made of fire-resistant materials. Food preparation tables are equipped with a smooth, durable, easily cleanable, non-corrosive surface made of non-toxic materials. Lastly, in order to enable easy cleaning, it is good practice that stoves are not sealed against a wall, benches and fixtures are not built into the floor, and all cupboards and other fixtures have a smooth, durable and washable surface.
8. Adequate facilities for cleaning, disinfecting and storage of cooking utensils and equipment are provided.
9. Food waste and other refuse are to be adequately deposited in sealable containers and removed from the kitchen frequently to avoid accumulation.

F. Standards for nutrition and food safety

When cooking for a number of workers, hygiene and food safety are absolutely critical. In addition to providing safe food, providing nutritious food is important as it has a very direct impact on workers' productivity and well-being. An ILO study demonstrates that good nutrition at work leads to gains in productivity and worker morale, prevention of accidents and premature deaths and reductions in health care costs.¹⁰

Benchmarks

1. The WHO 5 keys to safer food or an equivalent process is implemented (see Box 6 below).
2. Food provided to workers contains an appropriate level of nutritional value and takes into account religious/cultural backgrounds; different choices of food are served if workers have different cultural/religious backgrounds.
3. Food is prepared by cooks. It is also best practice that meals are planned by a trained nutritionist.

Box 6 - Five keys to safer food

Keep clean

Wash your hands before handling food and often during food preparation.
Wash your hands after going to the toilet.
Wash and sanitise all surfaces and equipment used for food preparation.
Protect kitchen areas and food from insects, pests and other animals.

While most micro organisms do not cause disease, dangerous micro organisms are widely found in soil, water, animals and people. These micro organisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause food borne diseases.

Separate raw and cooked

Separate raw meat, poultry and seafood from other foods.
Use separate equipment and utensils such as knives and cutting boards for handling raw foods.
Store food in containers to avoid contact between raw and prepared foods.

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous micro organisms which may be transferred onto other foods during food preparation and storage.

Cook thoroughly

Cook food thoroughly, especially meat, poultry, eggs and seafood.
Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer.
Reheat cooked food thoroughly.

Proper cooking kills almost all dangerous micro organisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.

Keep food at safe temperatures

Do not leave cooked food at room temperature for more than 2 hours.
Refrigerate promptly all cooked and perishable food (preferably below 5°C).
Keep cooked food piping hot (more than 60°C) prior to serving.
Do not store food too long even in the refrigerator.
Do not thaw frozen food at room temperature.

Micro organisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of micro organisms is slowed down or stopped. Some dangerous micro organisms still grow below 5°C.

Use safe water and raw materials

Use safe water or treat it to make it safe.
Select fresh and wholesome foods.
Choose foods processed for safety, such as pasteurised milk.
Wash fruits and vegetables, especially if eaten raw.
Do not use food beyond its expiry date.

Raw materials, including water and ice, may be contaminated with dangerous micro organisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Take care in selection of raw materials and implement simple measures such as washing.

Source: World Health Organization, Food Safety
www.who.int/foodsafety/publications/consumer/en/5keys_en.pdf

10. C. Arjoon (2005), "Food to Work - An update on options for minimising obesity and chronic disease", the National Labour Organization, Geneva

G. Medical facilities

Access to adequate medical facilities is important to maintain workers' health and to provide adequate responses in case of health emergency situations. The availability or level of medical facilities provided in workers' accommodation is likely to depend on the number of workers living on site, the medical facilities already existing in the neighbouring communities and the availability of transport. However, first aid must always be available on site.

First aid facilities

Providing adequate first aid training and facilities can save lives and prevent minor injuries becoming major ones.

Other medical facilities

Depending on the number of workers living on site and the medical services offered in the surrounding communities, it is important to provide workers with additional medical facilities. Special facilities for sick workers and medical services such as dental care, surgery, a dedicated emergency room can, for instance, be provided.

Benchmarks

1. A number of first aid kits adequate to the number of residents are available.
2. First aid kits are adequately stocked. Where possible a 24/7 first aid service/facility is available.
3. An adequate number of staff/workers is trained to provide first aid.
4. Where possible and depending on the medical infrastructures existing in the community, other medical facilities are provided (nurse rooms, dental care, minor surgery).

Box 7 - UK/HSE First Aid facilities

What should be in a first aid kit?

There is no standard list and it very much depends on the assessment of the needs in a particular workplace:

- a leaflet giving general guidance on first aid, for example HSE leaflet *Basic advice on first aid at work*
- individually wrapped sterile adhesive dressings (assorted sizes)
- two sterile eye pads
- four individually wrapped triangular bandages (preferably sterile)
- six safety pins
- six medium-sized (approximately 12 cm x 12 cm) individually wrapped sterile unmedicated wound dressings
- two large (approximately 18 cm x 18 cm) sterile individually wrapped unmedicated wound dressings
- one pair of disposable gloves.

What should be kept in the first aid room?

The room should contain essential first aid facilities and equipment. Typical examples of these are:

- a sink with hot and cold running water
- drinking water and disposable cups
- soap and paper towels
- a store for first aid materials
- foot-operated refuse containers, lined with disposable yellow clinical waste bags or a container for the safe disposal of clinical waste
- a couch with waterproof protection, clean pillows and blankets
- a chair
- a telephone or other communication equipment
- a record book for recording incidents where first aid has been given.

Source: UK Health and Safety Executive

H. Leisure, social and telecommunication facilities

Basic leisure and social facilities are important for workers to rest and also to socialise during their free time. This is particularly true where workers' accommodation is located in remote areas far from any communities. Where workers' accommodation is located in the vicinity of a village or a town, existing leisure or social facilities can be used so long as this does not cause disruption to the access and enjoyment of local community members. But in any case, social spaces should also be provided on site. Exercise and recreational facilities will increase workers' welfare and reduce the impact of the presence of workers in the surrounding communities. In addition it is also important to provide workers with adequate means to communicate with the outside world, especially when workers' accommodation is located in a remote location or where workers live on site without their family or are migrants. Consideration of cultural attitudes is important. Provision of space for religious observance needs to be considered, taking account of the local context and potential conflicts in certain situations.

Benchmarks

1. Basic collective social/rest spaces are provided to workers. Standards range from providing workers multi-purpose halls to providing designated areas for radio, TV, cinema.
2. Recreational facilities are provided. Standards range from providing exercise equipment to providing a library, swimming pool, tennis courts, table tennis, educational facilities.
3. Workers are provided with dedicated places for religious observance if the context warrants.
4. Workers have access to public phones at affordable/public prices (that is, not inflated).
5. Internet facilities can also be provided, particularly where large numbers of expatriates/Third Country Nationals (TCNs) are accommodated.

Box 8 - Examples of social/leisure facilities

In Qatar there is a newly built 170-hectare complex which accommodates contractors and more than 35,000 workers for a project run by a major oil company. At the heart of this complex, the recreation area includes extensive sport facilities, a safety-training centre, an outdoor cinema and a park. The purpose of those facilities goes beyond providing adequate accommodation to the large numbers of contractors and workers on this project but is designed to provide the same level of services as a small town. The accommodation complex has a mayor, as well as a dedicated welfare team which is responsible for the workers' welfare, cultural festivals and also acts as the community's advocates.

II. Managing workers' accommodation

Once the living facilities have been constructed and are operational, effective ongoing management of living facilities is essential. This encompasses issues such as the physical maintenance of buildings, security and consultation with residents and neighbouring communities in order to ensure the implementation of the housing standards in the long term.

A. Management and staff

Worker camps and housing facilities should have a written management plan, including management policies or plans on health and safety, security, living conditions, workers' rights and representation, relationships with the communities and grievance processes. Part of those policies and plans can take the form of codes of conduct. The quality of the staff managing and maintaining the accommodation facilities will have a decisive impact on the level of standards which are implemented and the well-being of workers (for instance on the food safety or overall hygiene standards). It is therefore important to ensure that managers are competent and other workers are adequately skilled. The manager will be responsible for overseeing staff, for ensuring the implementation of the accommodation standards and for the implementation of the management plans. It is important the accommodation manager has the corresponding authority to do so.

If the facility is being managed by a contractor, as is often the case, the expected housing and management standards should be specified in the relevant contract, and mechanisms to ensure that those standards are implemented should be set up. As part of this process, the accommodation manager (or contractor) should have a duty to monitor the application of the accommodation standards and to report frequently on their implementation to the client.

Benchmarks

1. There are management plans and policies especially in the field of health and safety (with emergency responses), security, workers' rights, relationships with the communities.
2. An appointed person with the adequate background and experience is in charge of managing the workers' accommodation.
3. If contractors are being used, there are clear contractual management responsibilities and monitoring and reporting requirements.
4. Depending on the size of the accommodation, there is a sufficient number of staff in charge of cleaning, cooking and of general maintenance.
5. Such staff are recruited from the local communities.
6. Staff have received basic health and safety training.
7. Persons in charge of the kitchen are trained in nutrition and food handling and adequately supervised.

B. Charging fees for accommodation and services

Charging fees for the accommodation or the services provided to workers such as food or transport should be avoided where workers do not have the choice to live or eat anywhere else, or if deemed unavoidable, should take into account the specific nature of workers' accommodation. Any charges should be transparent, discussed during recruitment and specified in workers' contracts. Any such charges should still leave workers with sufficient income and should never lead to a worker becoming indebted to an employer.

Benchmarks

1. When fees are charged, workers are provided with clear information and a detailed description of all payments made such as rent, deposit and other fees.
2. When company housing is considered to be part of workers' wages, it is best practice that workers are provided with an employment contract clearly specifying housing arrangements and regulations, in particular rules concerning payments and fees, facilities and services offered and rules of notice.
3. When fees are charged, the renting arrangements are fair and do not cost the worker more than a small proportion of income and never include a speculative profit.
4. Food and other services are free or are reasonably priced, never above the local market price.
5. The provision of accommodation or other services by employers as a payment for work is prohibited.

Additional issue

To avoid that fair renting arrangements turn into unfair ones, any deposit of advance should be set at a reasonable level and it is best practice that renting prices include a fixed fee covering the water needed and the use of the energy required to the functioning of the heating/cooling/ventilation/cooking systems. However, in such cases it might be necessary to raise workers' awareness to ensure that workers will use the facilities responsibly, particularly in areas where water is scarce.

C. Health and safety on site

The company or body in charge of managing the workers' accommodation should have the prime responsibility for ensuring workers' physical well-being and integrity. This involves making sure that the facilities are kept in good condition (ensuring that sanitary standards or fire regulations are respected for instance) and that adequate health and safety plans and standards are designed and implemented.

Benchmarks

1. Health and safety management plans including electrical, mechanical, structural and food safety have been carefully designed and are implemented.

2. The person in charge of managing the accommodation has a specific duty to report to the health authorities the outbreak of any contagious diseases, food poisoning and other important casualties.

3. An adequate number of staff/workers is trained to provide first aid.

4. A specific fire safety plan is prepared, including training of fire wardens, periodic testing and monitoring of fire safety equipment and periodic drills.

5. Guidance on the detrimental effects of the abuse of alcohol and drugs and other potentially harmful substances and the risk and concerns relating to HIV/AIDS and of other health risk-related activities is provided to workers. It is best practice to develop a clear policy on this issue.

6. Workers have access to adequate preventive measures such as contraception (condoms in particular) and mosquito nets.

7. Workers have easy access to medical facilities and medical staff. Where possible, female doctors/nurses should be available for female workers.

8. Emergency plans on health and fire safety are prepared. Depending on the local context, additional emergency plans are prepared as needed to handle specific occurrences (earthquakes, floods, tornadoes).

D. Security of workers' accommodation

Ensuring the security of workers and their property on the accommodation site is of key importance. To this end, a security plan must be carefully designed including appropriate measures to protect workers against theft and attacks. Policies regarding the use of force (force can only be used for preventive and defensive purposes in proportion to the nature and the extent of the threat) should also be

carefully designed. To implement those plans, it may be necessary to contract security services or to recruit one or several staff whose main responsibility is to provide security to safeguard workers and property. Before making any security arrangements, it is necessary to assess the risks of such arrangements to those within and outside the workers' accommodation and to respect best international practices, including IFC PS4 and EBRD PR4 and applicable law.¹¹ Particular attention should be paid to the safety and security of women workers.

Benchmarks

1. A security plan including clear measures to protect workers against theft and attack is implemented.

2. A security plan including clear policies on the use of force has been carefully designed and is implemented.

3. Security staff have been checked to ensure that they have not been implicated in any previous crimes or abuses. Where appropriate, security staff from both genders are recruited.

4. Security staff have a clear mandate and have received clear instruction about their duties and responsibilities, in particular their duties not to harass, intimidate, discipline or discriminate against workers.

5. Security staff have received adequate training in dealing with domestic violence and the use of force.

6. Security staff have a good understanding about the importance of respecting workers' rights and the rights of the communities.

7. Body searches are only allowed in specific circumstances and are performed by specially trained security staff using the least-intrusive means possible. Pat down searches on female workers can only be performed by female security staff.

8. Security staff adopt an appropriate conduct towards workers and communities.

9. Workers and members of the surrounding communities have specific means to raise concerns about security arrangement and staff.

¹¹ See for reference the *Guidance Principles on Security and Human Rights* www.reportsandmaterials.org/principles

E. Workers' rights, rules and regulations on workers' accommodation

Freedoms and human rights of workers should be recognised and respected within their living quarters just as within the working environment. House rules and regulations should be reasonable and non discriminatory. It is best practice that workers' representatives are consulted about those rules. House rules and regulations should not prevent workers from exercising their basic rights. In particular, workers' freedom of movement needs to be preserved if they are not to become effectively "trapped". To this end it is good practice to provide workers with 24/7 access to the accommodation and free transport services to and from the surrounding communities. Any restriction to this freedom of movement should be limited and duly justified. Penalties for breaking the rules should be proportional and implemented through a proper procedure allowing workers to defend themselves and to challenge the decision taken. The relationship between continuing employment and compliance with the rules of the workers' accommodation should be clear and particular attention should be paid to ensure that housing rules do not create indirect limitation of the right to freedom of association. Best practice might include a code of conduct relating to the accommodation to be signed together with the contract of employment.

Box 9 - Dole housing plantation regulation in Costa Rica

In every plantation there is an internal accommodation regulation that every worker is required to sign together with his/her employment contract. That document describes the behaviour which is expected from workers at all times and basic rules such as the prohibition of alcohol and the interdiction to make noise after a certain time at night. In case there is any problem concerning the application of those internal rules, a set of disciplinary procedures which have been designed with the workers' representatives can be enforced. Workers are absolutely free to enter or leave the site and do not have any restrictions in relation to accessing their living quarters. Families are not allowed in the living quarters unless they have been registered for a visit.

Benchmarks

1. Restriction of workers' freedom of movement to and from the site is limited and duly justified. It is good practice to provide workers 24/7 access to the accommodation site. Any restrictions based on security reasons should be balanced by the necessity to respect workers' freedom of movement.
2. Where possible, an adequate transport system to surrounding communities is provided. It is good practice to provide workers with free transportation to and from local communities.
3. Withholding workers' ID papers is prohibited.
4. Freedom of association is expressly respected. Provisions restricting workers' rights on site should take into account the direct and indirect effect on workers' freedom of association. It is best practice to provide trade union representatives access to workers in the accommodation site.
5. Workers' gender and religious, cultural and social backgrounds are respected. In particular, workers should be provided with the possibility of celebrating religious holidays and observances.
6. Workers are made aware of their rights and obligations and are provided with a copy of the internal workers' accommodation rules, procedures and sanction mechanisms in a language or through a media which they understand.
7. Housing regulations, including those relating to allocation of housing, should be non-discriminatory. Any justifiable discriminatory rules – for example all-male dormitories – should be strictly limited to the rules which are necessary to ensure the smooth running of the worker camp and to maintain a good relationship with the surrounding communities.
8. Where possible, visitor access should be allowed.
9. Decisions should be made on whether to prohibit alcohol, tobacco and third party access or not from the camp and the relevant rules should be clearly communicated to all residents and workers.
10. A fair and non-discriminatory procedure exists to implement disciplinary procedures including the right of workers to defend themselves (see also next section).

F. Consultation and grievance mechanisms

All residents should be made aware of any rules governing the accommodation and the consequences of breaking such rules. Processes that allow for consultation between site management and the resident workers will assist in the smooth running of an accommodation site. These may include a dormitory or camp committee as well as formal processes that allow workers to lodge any grievances about their accommodation.

Benchmarks

1. Mechanisms for workers' consultation have been designed and implemented. It is best practice to set up a review committee which includes representatives elected by workers.
2. Processes and mechanisms for workers to articulate their grievances are provided to workers. Such mechanisms are in accordance with PS2/PR2.
3. Workers subjected to disciplinary proceedings arising from behaviour in the accommodation should have access to a fair and transparent hearing with the possibility to contest decisions and refer the dispute to independent arbitration or relevant public authorities.
4. In case conflicts between workers themselves or between workers and staff break out, workers have the possibility of easily accessing a fair conflict resolution mechanism.
5. In cases where more serious offences occur, including serious physical or mental abuse, there are mechanisms to ensure full cooperation with the police authority (where adequate).

Additional Issue

Alcohol is a complex issue and requires a very clear policy from the workers' accommodation management. If a non-alcohol policy is taken, special attention should be paid to clearly communicate the interdiction, how it applies and the consequences for breaching this rule. Special attention should also be paid to enforce it adequately.

G. Management of community relations

Workers' living facilities have various ongoing impacts on adjacent communities. In order to manage these, it is good practice to design a thorough community relations management plan. This plan will contain the processes to implement the findings of the preliminary community impact assessment and to identify, manage, mitigate or enhance ongoing impacts of the workers' accommodation on the surrounding communities. Issues to be taken into consideration include:

- community development – impact of workers' camp on local employment, possibility of enhancing local employment and income generation through local sourcing of goods and services
- community needs – ways to identify and address community needs related to the arrival of specific infrastructures such as telecommunications, water sanitation, roads, health care, education, housing
- community health and safety – addressing and reducing the risk in the increase in communicable diseases, corruption, trade in illegal substances such as drugs, alcohol (in the Muslim context), petty crimes and other sorts of violence, road accidents
- community social and cultural cohesion – ways to mitigate the impact of the presence of large numbers of foreign workers, often males, with different cultural and religious background, ways to mitigate the possible shift in social, economic and political structures due to changes in access to income generation opportunities.

Benchmarks

1. Community relations plans addressing issues around community development, community needs, community health and safety and community social and cultural cohesion have been designed and implemented.
2. Community relations plans include the setting up of a liaison mechanism allowing a constant exchange of information and consultation with the local communities in order to identify and respond quickly to any problems and maintain good working relationships.
3. A senior manager is in charge of implementing the community relations management plan and liaising with the community.

Appendix 15: Guidelines and Emergency plan for handling and storing chlorine **Instructions for Storage and Handling of Chlorine Cylinders**

(Based on the 'Manual on Operation and Maintenance of Water Supply Systems' published by the Central Public Health and Environmental Engineering Organization (CPHEEO) in 2005)

1. Storage Area

- (i) Obtain storage license from controller of explosives under Gas Cylinder Rules 2004 if the quantity of Cl₂ containers to be stored is more than 5 Nos.
- (ii) Storage area should be cool, dry, well ventilated, and clean of trash and protected from external heat sources. Please refer to Manual on "Water Supply and Treatment", (1999 Edition), for further details.
- (iii) Ventilation must be sufficient to prevent accumulation of vapor pockets. The exhaust should be located either near the floor or duct be provided extending to the floor. All fan switches should be outside the storage area.
- (iv) Do not store container directly under the sun.
- (v) Weather cock should be installed near the storage to determine wind direction.
- (vi) The storage building should be of non-combustible construction with at least two exits opening outside.
- (vii) Neutralization system should be provided.
- (viii) Continuous monitoring of chlorine leak detection equipment with alarm should be installed in the storage area.
- (ix) The area should be free and remote from elevators, gangways or ventilating system to avoid dangerous concentration of Chlorine during leak.
- (x) Two portable foam type fire extinguishers should be provided in the premises.
- (xi) Corrosive substances shall not be stored nearby which react violently with each other.
- (xii) Unauthorized person should not be allowed to enter into the storage area.
- (xiii) The floor level of storage shed should be preferably 30 cms (at least one foot) higher from the ground level to avoid water logging.
- (xiv) Ensure that all containers are properly fitted with safety caps or hooks.

2. Cylinder & Drum Containers

- (i) Store chlorine cylinders upright and secure them so that they do not fall.
- (ii) Drum containers should be stored on their sides on rails, a few inches above the floor. They should not be stacked one upon the other. They should be stored such that the valves are in vertical plane.
- (iii) Keep enough space between containers so as to have accessibility in case of emergency.
- (iv) Store the containers in a covered shed only. Keep them away from any source of heat as excessive heat may increase the pressure in container which will result into burst.
- (v) Do not store explosives, acids, turpentine, ether, anhydrous ammonia, finely divided metals or other flammable material in the vicinity of Chlorine.
- (vi) Do not store containers in wet and muddy areas.
- (vii) Store filled and empty containers separately.

- (viii) Protective covers for valves are secured even when the containers are empty, except during use in the system.
- (ix) Never use containers as a roller to move other equipment.
- (x) Never tamper with fusible plugs of tonners.
- (xi) Check leakages every day by means of ammonia torch. However, it should not be touched to brass components like valves of container for safety.
- (xii) Never carry out any welding work on the chlorine system as combustion of steel takes place at 2510C in presence of chlorine.
- (xiii) The boxes containing emergency kit, safety applications and self-contained breathing apparatus should be kept in working order in an easily approachable area.

3. Use of Cylinders & Drum Containers in Process System

- (i) Use containers in the order of their receipt, as valve packing can get hardened during prolonged storage and cause gas leaks.
- (ii) Do not use oil or lubricant on any valve of the containers.
- (iii) Badly fitting connections should not be forced and correct tool should always be used for opening and closing valves. They should never be hammered.
- (iv) The area should be well ventilated with frequent air changes.
- (v) Transport the cylinders to the process area by using crane, hoist or railings etc.
- (vi) The drum containers should be kept in a horizontal position in such a way that the valves are in a vertical plane. The upper valve gives out gas and the lower one gives out liquid chlorine.
- (vii) The cylinder should be kept in upright position in order to release gas from the valve. For liquid chlorine withdrawal, it should be inverted with the help of an inverted rack.
- (viii) Connect the containers to the system by using approved accessories.
- (ix) Use copper flexible tube, with lead washer containing 2 to 4% antimony or bonded asbestos or Teflon washer. Use yoke clamp for connecting chlorine container.
- (x) Never use rubber tubes, PVC tubes etc. for making connections.
- (xi) Use the right spanner for operating the valve. Always keep the spanner on the valve spindle. Never use ill-fitting spanner.
- (xii) After making the flexible connection, check for the leakage by means of ammonia torch but it should not come in contact with a valve.
- (xiii) Keep minimum distance between the container valve and header valve so that during change-over of the container, minimum amount of gas leaks.
- (xiv) The material of construction of the adopter should be same as that of valve outlet threads. o. The valve should not be used as a regulator for controlling the chlorine. During regulation due to high velocity of Chlorine, the valve gets damaged which in turn can cause difficulty in closing.
- (xv) The tools and other equipment used for operating the container should be clean and free of grease, dust or grit.
- (xvi) Wear breathing apparatus while making the change-over of the container from the process header.
- (xvii) Do not heat the container to withdraw more gas at faster rate.
- (xviii) Use pressure gauge and flow measuring device to control the flow and to know the quantity of gas left in the container.
- (xix) Use an inverted U type barometric leg or vacuum breaking arrangement for connecting the container to the process piping.

- (xx) Withdrawal of the gas should be stopped when the gas pressure inside the container is between 0.1 to 0.5 kg/cm² approximately.
- (xxi) If withdrawal of the gas from the container connected to the process system has to be suspended for long intervals, it should be disconnected from the system, and the valve cap and hood replaced.
- (xxii) Gas containers should be handled by trained persons only.

4. Disconnecting Containers from Process System

- (i) Use breathing apparatus before disconnecting the container.
- (ii) First close the container valve fully. After removal of chlorine the process valve should be closed.
- (iii) Remove the flexible connection, plug the flexible connection in order to avoid entry of humid air. Replace the valve cap or hood on the container.
- (iv) Put the tag on the empty container & bring it to storage area marked for empties. e. Check for the leakage.

5. Loading and Unloading of Containers

- (i) The handling of containers should be done under the supervision of trained and competent person.
- (ii) It should be done carefully with a crane, hoist or slanted ramp. Do not use magnet or sharp object for lifting the containers.
- (iii) Small cylinders should not be lifted by means of valve caps as these are not designed to carry the weight.
- (iv) The containers should not be allowed to strike against each other or against any hard object.
- (v) Vehicles should be braked and isolated against any movement.
- (vi) After loading, the containers should be secured properly with the help of wooden wedges, rope or sling wire so that they do not roll away.
- (vii) The containers should never be dropped directly to the ground or on the tyre from the vehicle.
- (viii) There should be no sharp projection in the vehicle.
- (ix) Containers must have valve caps and plugs fitted properly.
- (x) Check containers for leakage before loading/unloading.

6. Transportation of Container

- (i) The name of the chemical along with diamond pictorial sign denoting the dangerous goods should be marked on the vehicle.
- (ii) The name of the transporter, his address and telephone number should be clearly written on the vehicle.
- (iii) The vehicle should not be used to transport any material other than what is written on it.
- (iv) Only trained drivers and cleaners should transport hazardous chemical
- (v) The driver should not transport any leaking cylinder.
- (vi) The cylinder should not project outside the vehicle.
- (vii) The transporter must ensure that every vehicle driver must carry "Trem Card" (Transport Emergency Card) and 'Instructions in writing booklet' and follow them.
- (viii) Every driver must carry safety appliances with him, viz. Emergency kit, breathing apparatus etc.

- (ix) The vehicles must be driven carefully, especially in crowded localities and on bumpy roads. Do not apply sudden brakes.
- (x) Check for the leakage from time to time.
- (xi) In the case of uncontrollable leakage the vehicle should be taken to an open area where there is less population.

7. Emergency Kit It consists of various tools and appliances like gaskets, yokes, studs, tie rods hoods, clamps, spanners, mild steel channels, screws, pins, wooden pegs etc. of standard sizes. Separate kits are used for cylinders and tonners. All the gadgets are designed for using in controlling or stopping the leakages from valves, fusible plug and side walls of cylinders and containers used for handling chlorine.

I Leakage may occur through the valve. There are basically four types of valve leaks.

- (i) Valve packing
- (ii) Valve seat
- (iii) Defective inlet thread
- (iv) Broken valve thread

II. Leakage may occur through container wall. For controlling such leakages, clamps are used for cylinders and chain and yoke arrangement is used for tonner. Sometimes wooden peg is used by driving into the leaking hole as a temporary arrangement.

III. Leakage may occur through fusible plug.

- (i) If the leakage is through the threads of fusible plug, yoke, hood and cap nut arrangement is used to control the leak.
- (ii) If fusible metal itself in the plug is leaking, yoke and stud arrangement is used to control the leak.

8. First Aid to be Provided for a Person Affected by Chlorine

I. General Remove the affected person immediately to an uncontaminated area. Remove contaminated clothing and wash contaminated parts of the body with soap and plenty of water. Lay down the affected person in cardiac position and keep him warm. Call a physician for medical assistance at the earliest. Caution: Never attempt to neutralize chlorine with other chemicals.

II. Skin Contact Remove the contaminated clothes, wash the affected skin with large quantity of water. Caution: No ointment should be applied unless prescribed by the physician.

III. Eye Contact If eyes get affected with liquid chlorine or high concentration of chlorine gas, they must be flushed immediately with running water for at least 15 minutes keeping the eyelids open by hand. Caution: No ointment should be used unless prescribed by an eye specialist.

IV. Inhalation If the victim is conscious, take him to a quiet place and lay him down on his back, with head and back elevated (cardiac position). Loosen his clothes and keep him warm using blankets. Give him tea, coffee, milk, peppermint etc. for making good effect on breathing system. If the victim is unconscious, but breathing, lay him down in the position mentioned above and give oxygen at low pressure until the arrival of doctor. If breathing has stopped, quickly stretch him out on the ground or a blanket if available, loosen his collar and belt and start artificial respiration without delay. Neilson

arm lift back pressure method is useful. Automatic artificial respiration is preferable if available. Continue the respiration until the arrival of the doctor. Amboo bag can also be used for this purpose.

9. On-Site Emergency Plan to Cover the Leakage of Chlorine

Introduction As chlorine is a hazardous chemical, handling and storage of it demand adequate precautions to avoid possible hazards. Leakage of chlorine may develop into a major emergency. Therefore the emergency procedure to cover this eventuality is essential. It is drawn in the form of on-site emergency plan. The elements of onsite emergency plan are as follows:

(i) Identification of Hazard Chart

In this case the site risk is evaluated by the expert and the extent of the probable damage is calculated on the basis of stored chlorine quantity, nearby population, wind direction, type of equipment failure etc. For this purpose hazard analysis is conducted in which case all the hazardous properties of chlorine are considered. If evacuation is required, the range of it is calculated.

(ii) **Appointing Key Persons** In order to control the incident like chlorine leakage, it is essential to appoint various persons with their well-defined responsibilities. Taking into account the various activities likely to be involved, the following key persons are appointed (i) Site Controller, (ii) Incident controller, (iii) Shift Executive In charge, (iv) Communication Officer, (v) Safety Officer, (vi) Fire and Security Officer, (vii) Utilities and Services In charge, (viii) Traffic Controller, (ix) First Aider

(iii) **Assembly Points** These points are set up where persons from the plant would assemble in case of chlorine leakage. At these points the in-charge for counting the heads will be available.

(iv) Emergency Control Center

The control center is the focal point in case of an emergency from where the operations to handle the emergency from are directed and coordinated. It contains site plan, telephone lines, public address system, safety equipment, first aid boxes, loud speaker, torches, list of essential telephone numbers, viz. fire brigade, police, hospital, civil defence, collector, factory inspector, organizational authorities, chlorine suppliers, mutual aid group, social workers, list of key persons and their addresses, copy of chemical fact sheet, location plan of fire hydrant, details of dispersion model of chlorine gas, population distribution pattern, location of alarm system.

(v) Procedure to Meet Emergency

The actions to be taken by the staff and authority are given below; Emergency Alarm: An audible emergency alarm system is installed throughout the plant. On hearing the alarm the incident controller will activate the public address system to communicate with the staff about the emergency and give specific instructions for evacuations etc. anyone can report the occurrence of chlorine leakage to section in-charge or incident controller through telephone or intercom or in person.

(vi) Communication

Communication officer shall establish the communication suitable to that incident.

(vii) Services

For quickness and efficient operation of emergency plan the plant is divided into convenient number of zones and clearly marked on the plan. These are emergency services viz. firefighting, first aid, rescue, alternative source of power supply, communication with local bodies etc. The incident controller will hand over the charge to the site controller of all these coordinating activities, when the site controller appears on the site. The site controller will coordinate all the activities of the key persons. On hearing the emergency alarm system all the key persons will take their charge. In case of their absence other alternatives are nominated. The person nominated for personnel and administration purposes will be responsible for informing all statutory authorities, keeping account of all persons in the plant including contract labor, casual workers and visitors. He will be responsible for giving information to press or any outside agencies. He is also responsible for organizing canteen facilities and keeping informed the families of affected persons. The person nominated as security officer should guide police, fire fighting and control the vehicle entries. The site controller or any other nominated person will announce resumption of normalcy after everything is brought under control. The onsite emergency plan needs to be evaluated by mock drill. Any weaknesses noticed during such drills should be noted and the plan is modified to eliminate the weaknesses.

(viii) Emergency

Measures In case of leakage or spillage of Chlorine, the following emergency measures should be taken:

- (i) Take a shallow breath and keep eyes opened to a minimum.
- (ii) Evacuate the area.
- (iii) Investigate the leak with proper gas mask and other appropriate Personal protection.
- (iv) The investigator must be watched by a rescuer to rescue him in emergency.
- (v) If liquid leak occurs, turn the containers so as to leak only gas.
- (vi) In case of major leakage, all persons including neighbours should be warned.
- (vii) As the escaping gas is carried in the direction of the wind all persons should be moved in a direction opposite to that of the wind. Nose should be covered with wet handkerchief.
- (viii) Under no circumstances should water or other liquid be directed towards leaking containers, because water makes the leak worse due to corrosive effect.
- (ix) The spillage should be controlled for evaporation by spraying chilled water having temperature below 9.4oC. With this water crystalline hydrates are formed which will temporarily avoid evaporation. Then try to neutralize the spillage by caustic soda or soda ash or hydrated Lime solution carefully. If fluoroprotein foam is available, use for preventing the evaporation of liquid chlorine.
- (x) Use emergency kit for controlling the leak.
- (xi) On controlling the leakage, use the container in the system or neutralize the contents in alkali solution such as caustic soda, soda ash or hydrated lime. Caution: Keep the supply of caustic soda or soda ash or hydrated lime available. Do not push the leaking container in the alkali tank. Connect the container to the tank by barometric leg.
- (xii) If container commences leak during transport, it should be carried on to its destination or manufacturer or to remote place where it will be less harmful. Keeping the vehicle moving will prevent accumulation of high concentrations.


- (xiii) Only specially trained and equipped workers should deal with emergency arising due to major leakage.
- (xiv) If major leak takes place, alert the public nearby by sounding the siren.
- (xv) Any minor leakage must be attended immediately or it will become worse.
- (xvi) If the leakage is in the process system, stop the valve on the container at once.

(ix) Safety Systems Required at Chlorination Plant


The following safety systems should be kept ready at the chlorination plant:


- (i) Breathing apparatus.
- (ii) Emergency kit.
- (iii) Leak detectors.
- (iv) Neutralization tank.
- (v) Siren system.
- (vi) Display of boards in local language for public cautioning, first aid and list of different authorities with phone numbers.
- (vii) Communication system.
- (viii) Tagging system for equipment.
- (ix) First aid including tablets and cough mixtures.
- (x) Exhaust fans.
- (xi) Testing of pressure vessels, chlorine lines etc. every year as per factory act.
- (xii) Training & mock drill.
- (xiii) Safety showers.
- (xiv) Eye fountain.
- (xv) Personal protective equipment.
- (xvi) Protecting hoods for ton-containers.
- (xvii) Fire extinguishers.
- (xviii) Wind cock.


Appendix 16: Summary of Public Consultations


Sl. No.	Date of Consultation	Name of Persons	Location	Topic Discussed	Issues Addressed	Photographs
1	21st Feb. 2019	Rohitash Sharma, Smt, Daya Suyal, Smt. Rekhja Arya, Nirmala Chandra, Prema Adhikari, Kailash Singh Rautela, Bhagwat, Raju, Majid, Pushkar, Hema, Bhagwati, Keera, Rashmi, Geeta, Madhvi, Basanti, Saraswati, Pushpa, Sarswati Devi, Bimla Devi, Bimla Tiwari, Aliya Hasan, Bharti Bhatt, Sangeeta Negi, Ganga Devi, Tula Chandan, Sonu, Jitendra Singh Rana, Jitendra Manral, Rajesh Bahuguna, Dinesh Chandra Arya, Prabhat Kumar, Mayank Agrawal.	Nagar Nigam officials	<ol style="list-style-type: none"> About Water Supplied in area. Wastewater facility scenario in the area, Work Proposed by UUDP-subproject package Opinion of residents and other stakeholders on willingness to pay for improved services Resettlement related provisions for the vulnerable Affected Families, House service connection for all includes poor and vulnerable families. Work Proposed by UIRUDP Quality of present Water Supply. Status of Wastewater Willingness to pay for improved services GRC Mechanism for resolving Grievances R&R provision under this sub-project 	<ol style="list-style-type: none"> The Nagar Nigam Officials have shown their willingness to participate in project. And increased awareness about the direct benefits along with latent benefits of the project was discussed. Nagar Nigam Officials emphasized that prior approval before start of any construction work is very essential, Nainital being a prime tourist destination and especially the Mall road along the Naini Lake. Nagar Nigam expressed concern related to the time schedule of the construction work; it was assured that efforts will be made by the project authority to try and complete the work in time to reduce inconvenience. Shared the provision of prior intimation about the construction schedule and site level grievance system, Also discussed safety provisions under the project & R&R provisions as per entitlement matrix 	


Sl. No.	Date of Consultation	Name of Persons	Location	Topic Discussed	Issues Addressed	Photographs
					<p>5) It was informed that some road side shops may face livelihood impact during the construction work and will be eligible for compensation, including the poor and vulnerable groups additional assistance will be provided by the project.</p> <p>6) Project authorities informed that any grievances related to project work will be addressed through Common GRM system of the project. Any person, irrespective of class, creed or occupation will have the access to the said GRM to lodge complaint.</p> <p>7) Clarified that the residents will be eligible for Service connections including those who are not previously covered.</p>	

4	15.02.2022		<p>M=37 F=0 T=37</p>	<p>1) Opinion of residents and other stakeholders on willingness to pay for improved services</p> <p>3).Disclosed the details of proposed Scope of Work of the project and area to be covered under the project</p>	<p>1) The residents and shop owners expressed that prior intimation about the construction schedule such that their businesses are not disrupted.</p> <p>2) For any complaint how and to whom they can lodge with. Also discussed safety provisions under the project.</p> <p>3) With the proper implementation of the Safeguard Policy, the sufferings of local people will be reduced to a large extent during project implementation.</p>	
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5.	02.03.2022	Ganesh Gururani, Javed, Andeep, Chandn, Sanjay and Vimal Joshi (Malla krishnapur)	Total: 05 Male: 05 Female: 0	<p>1). Discussed about the details of project benefits proposed under the project,</p> <p>2).Conducted a detailed discussion about the water supply, sewer network, storm water drainage related issues</p> <p>3) Discussed the details of the benefits of sewer project and storm water drainage</p> <p>4) Discussed about the poor sewerage and irregular water supply conditions</p> <p>5) COVID-19 protocols at the project site</p>	<p>1).Community members told that they are willing to engage with the project and explore job opportunities. 2) Mostly people are willing to take the house service connections (water supply and sewer) and enjoy benefits of the project.</p> <p>2).People were concerned about poor sewerage & irregular water conditions</p> <p>3).Residents have shown willing to pay for the improved services like regular 24x7 portable water.</p>	
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6.	03.03.2022	<p>Raman Joshi Poll, Jeevan Chandra, MP Khati, Asha Joshi, Bhanu Shah, Roopa, Anu, Deep Chandra Pant, Soni, Pooja, Rohit, Harsh Shahdev and Kajal.</p> <p>(Roadways Bus stand)</p>	<p>Total: 14 Male: 08 Female: 06</p>	<p>1). Discussed about the benefits of sewer project and storm water drainage and odor, sound and other measures to reduce possible inconvenience to the residents of the area</p> <p>2) Existing sewerage facility in area.</p> <p>3).Discussed about work at rainy season as the low-lying areas and drains are submerged during rainy period.</p> <p>4).Role of Community institutions, CBOs, Nagar Nigam members in the Project for community surveillance during construction and O&M phase.</p> <p>5). Present condition of & requirement of Storm Water drainage in the targeted colonies.</p>	<p>1). It was assured that efforts will be made by the project authority to try and complete the work in time to reduce inconvenience.</p> <p>2). The local residents raised their voice about their property, they asked who will pay, if any damage will happen due to the construction activities. The local residents were informed that all the responsibility will be of DBOC.</p>	
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7.	03.03.2022	Dev Singh Bisht, Prach, Maheshwari, Mahesh, Ashish, Bharat (Tallital Dharamshala)	Total: 06 Male: 04 Female: 02	<p>1). Discussed the activities related to the sub- project.</p> <p>2). Road cutting and inconveniences to the local public during the construction period</p> <p>3). Labour camp and securities.</p> <p>4). COVID-19 Protocols at the project site.</p> <p>5) Wastewater facility scenario in the Project area.</p>	<p>1). The community welcomed the Project and expressed need for it.</p> <p>2). People were told about the Grievance Redress Mechanism (GRM).</p> <p>3). With the proper implementation of the Safeguard Policy, the suffering of local people will be reduced to a large extent during construction phase.</p> <p>4) Project authorities Informed that any grievances related to project work will be addressed through Common GRM system of the project.</p>	
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9	18.11.2022	Harish Singh, Bisht, Himmat Singh, Atul Singh, Kesar Singh, Rajan Singh, Virendra Singh, Pratap Singh, Deepak, Nilesh, Kailash, Padma, Nanda Devi, Mohit Mumar, Dr. Anil Kumar Patni, Suraj and Ravinder (Soliya Gaon near Russi Village STP site)	Total:17 Male: 14 Female: 03	<p>1) Local public was made aware about the STP at Russi village</p> <p>2) Briefing about the pipeline and components of the project</p> <p>Discussed the supply of treated water supply</p>	<p>1. All the components of STP were discussed with the local community of the concerned area.</p> <p>2. The peoples were made aware about the proposed facilities of the project in their area. They were very happy for the facilities in the area.</p> <p>3. As per the proposed design and objectives, the treated water will be supplied to the local peoples for the farming and other purposes.</p> <p>All the peoples were very concerned for the water and they were happy, as the problem related to water will be resolved after construction of STP.</p>	 <p>Smanora Range, Uttarakhand, India 9C5R+VCQ, Smanora Range, Uttarakhand 263002, India Lat 29.358131° Long 79.441582° 18/11/22 12:09 PM GMT +05:30</p>
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Participants

UTTRAKHAND URBAN SECTOR DEVELOPMENT AGENCY			
PUBLIC CONSULTATION			
Name of Project: Improvement & SCADA based automation of water supply system and development of sewerage system Location: Nagar Palika, Nainital Date: 21/02/2019			
Name of Participants	Occupation	Contact No	Signature
श्री. रमेश शर्मा	एच. नगरपालिका परिषद्-अधीनस्थ	9412050815	
श्रीमती. रमा सुगत	समाचारिका	9897337362	
श्री. माली रेखा झा	समाचारिका	7975216405	
निर्मला चन्दा	"	9837266284	Nimola.
गोपाला लाल	"	9837284070	
प्रेमा अधिकारी	समाचारिका	8755513254	
कुवाश बिंदु रौतेला	समाचारिका	9456318138	
अगवत निरुद्ध	समाचारिका	9411197321	
राजु देव	समाचारिका	9690583051	
Manjendra Singh	समाचारिका	9720948680	
Rishkar Bora	समाचारिका	9557236668	
हेमा पांडे	समाचारिका	7579171638	हेमा पांडे
अगवती निरुद्ध	समाचारिका	9456318138	अगवती निरुद्ध
किरण पांडे	समाचारिका	9690801319	किरण पांडे
रविम राणा	समाचारिका	9012803315	
गीता नेवा	समाचारिका	9412085716	
माधवी परमान	समाचारिका	9410754441	माधवी
रमा देवी	समाचारिका		
सरस्वती देवी	समाचारिका		सरस्वती
पुष्पा देवी	समाचारिका		पुष्पा
सुरेश्वरी देवी	समाचारिका		सुरेश्वरी
विमला देवी	समाचारिका		विमला देवी
Vimla Tewari	समाचारिका		
Aarjya Hassan	समाचारिका	7060487660	Aarjya
Bhaskar Bhatt	समाचारिका	7579435401	Bhaskar
रंजिता नेगी	समाचारिका	9639118006	रंजिता
गंगा देवी	समाचारिका		Gangadevi
Lata	समाचारिका		Lata
Chandamithanderni	N.P.P	9410336664	
Sonu Tewari	N.P.P	9917351877	
Jitendra Singh Rana	City Mission Manager NIP, NTL	9897770907	
Jitendra Manral	JE - PIU, UUSDIP	9760741123	
Rajesh Bahuguna	IEC officer	9055300710	
Dinesh Chandra Arya	BE, PIU NTL	9675726579	
Pramod Kumar	ENV. Exp. DSC, UUSDIP	7033680440	
Mayank Agrawal	water & waste water expert	7040082886	



Uttarakhand Urban Sector Development Agency (UUSDA)

Uttarakhand Integrated & Resilient Urban Development Project (UIRUDP)

Urban Development Department, Uttarakhand

राजधानी कार्यालय, इंदिरा नगर, बजेट नगर, कलकत्ता रोड, देवदूरी, पारासिक, उत्तराखण्ड

91-135-2753054 | www.uusdp.org | Email: uusdp@gmail.com



UUSDA

Awareness and Public Consultation Attendance Sheet

Package: WV-NIT-01

Place: Nainital

Date & Time: 15 Feb 2022

Total No. of Participants	M	F

Sr.n.	Name and Contact	Gender M/F	Signature
10.	P.S. Ahuja - 9837051661 Add - Hotel ahuja (mall road)	M.	
11.	Ganesh Gururani - 9410749561 Add - Hotel Himtrek (mall road)	M	
12.	Raman Jai - 9412085857 Add - Hotel chami Raja	M.	
13.	Chandankohli - 9458940225 Add - Bata shoe mall road	M	
14.	Javed - 9719030786 Add - Hina tour & travel	M	
15.	Nanak Restaurant - 8126886608 Add - Hotel Nanak, mall, road	M	
16.	Dheeraj - 7060012333 Add - NaNak Hotel D2x, mall road	M	
17.	Kundan Nagi - 9719169698 Add - Pushkar villa mall road	M	
18.	Banku Ram - 9897190312 Add - Aahar vihar mall road	M	



Uttarakhand Urban Sector Development Agency (UUSDA)
 Uttarakhand Integrated & Resilient Urban Development Project (UIRUDP)
 Urban Development Department, Uttarakhand
 राहिल टावर, एनईए बंगला, सरोज नगर, सीमावर्ध क्षेत्र, देहरादून, उत्तराखण्ड.
 दूरभाष-01-225-2753694 | www.uusdp.org | Email: uusdp@gmail.com



UUSDA

Awareness and Public Consultation Attendance Sheet

Package- WW-NIT-01

Place: Nainital

Date & Time: 15 Feb. 2022

Total No. of Participants	M	F

Sr.n.	Name and Contact	Gender M/F	Signature
20.	Sangay 7251880026 Add - tourisht office mall road	M.	
21.	Naveen Singh Bora 9759748449 Add - The maple Hotel mall road	M.	
22.	Sunder Singh parihar 9557390548 Add - Hotel classic mall road	M	
23.	Vinod kumar - 8958607050 Add - Zoonbys kitchen mall road	M	
24.	Manish Sah - 9458338005 Add - central Hotel mall road	M	
25.	Sunil Arya - 9412161946 Add - The Panorama Hotel	M	
26.	Amit Joshi - 8126297158 Add - House No 4-33 mall road	M	
27.	Rakesh kumar - 9758179298 Add - Alka Annexe mall road	M	
28.	Mitish Bishit - 8126883377 Add - The moonlight Restaurant	M	



Uttarakhand Urban Sector Development Agency (UUSDA)
Uttarakhand Integrated & Resilient Urban Development Project (UIRUDP)

Urban Development Department, Uttarakhand

संस्थान का पता, इंदिरा नगर, कौशल नगर, देवद्वारा, उत्तराखण्ड.
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UUSDA

Awareness and Public Consultation Attendance Sheet

Package- WV-NITC-01

Place: Nainital

Date & Time: 15 Feb 2022

Total No. of Participants	M	F

Sr.n.	Name and Contact	Gender M/F	Signature
29.	Mansu Mohand Nojari - 9837490689 Add - Hotel gurdeep Dlx mall road	M	
30.	Rahul Kumar - 9117268430 Add - Shulabh toilet complex	M	Rahul Kumar
31.	Girish Chandan - 9410580968 Add - Hotel shailimar Dlx	M	Girish
32.	Chandan Singh - 8941890875 Add - Nager palika school mall road	M	चंदन सिंह
33.	Chandan Singh - 9690532978 Add - Jagati Hotel mall road	M	चंदन सिंह
34.	Alka Hotel 85442335220 Add - Alka the Lake side Hotel	M	
35.	Yogesh Sah - 9761245065 Add - Hotel India mall road	M	
36.	Manoj - 8006666118 Add - Shulabh toilet mall road	M	मनो
37.	Puram Singh - 9411323336 Add - Hotel Evelyn mall road	M	

सात्विक टावर, द्वितीय तल, राजेन्द्र नगर, कौलागढ़ रोड, देहरादून, उत्तराखण्ड,
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UUSDA  on facebook

Package-...WN-NTL-01.....

Place: Mella, Krishnapur

Date & Time-.....2.2.22.....

Total No. of Participants	M	F
2	5	0

[illegible]

2.3.22
(Suresh chandra khanduri)
Social Gender and Resettlement
DSC - VIRODP.

Awareness and Public Consultation Attendance Sheet


Package- WW-NIL-01

Place: Nainital Roadway Island

Date & Time- 3.3.22

Total No. of Participants	M	F
14	8	6

Sr.n.	Name and Contact	Gender M/F	Signature
1)	Rampen Jorh, 05942235517	M	RJ
2)	M.P.S Khet 7217356772	M	MP
3)	Urha pol 9634061757	F	U
4)	Jeevan chandra 9456554901	M	Jeevan
5)	Arha Jorh, 8899655651	F	Arha
6)	Bhanu Jorh 9410844048	M	Bhanu
7)	Roope Jorh, 8126131956	F	R
8)	Aeno 8534933288	F	Aeno
9)	Deep chandra Pant 9411228851	M	Deep
10)	Soni Jorh, 7895944722	F	Soni
11)	Pooja arya 8755652139	F	Pooja
12)	Rohit Bhatt 9654967277	M	Rohit
13)	Hemsh Sahdeo 7060689747	M	Hemsh
14)	Kajal 9410189256	M	Kajal


 (Suresh chandra Khemari)
 Social Gender & Resettlement Expert
 DDC - UIRUDP

UUSDA 

Package- WW-NTL-01

Place: Tallital Dhamraoch

Date & Time-..... 3.3.22

Total No. of Participants	M	F
6	4	2

[illegible]

S. Suresh chandrasekhar
Social Gender and Resilience Expert
Dsc- UIRDP.

Appendix 17: Sample Grievance Registration Form

(To be available in Hindi and English)

The _____ Project welcomes complaints, suggestions, queries, and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing ***(CONFIDENTIAL)*** above your name. Thank you.

Date	Place of registration	Project Town			
		Project:			
Contact information/personal details					
Name		Gender	* Male * Female	Age	
Home address					
Place					
Phone no.					
E-mail					
Complaint/suggestion/comment/question Please provide the details (who, what, where, and how) of your grievance below:					
If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of official registering grievance)	
Mode of communication: Note/letter E-mail Verbal/telephonic	
Reviewed by: (Names/positions of officials reviewing grievance)	
Action taken:	
Whether action taken disclosed:	Yes No
Means of disclosure:	

Appendix 18: Sample Environmental Site Inspection Checklist

Project
Name
Contract
Number

NAME:

DATE:

TITLE:

DMA:

LOCATION:

GROUP:

WEATHER:

	Project Activity Stage	Survey	
		Design	
		Implementation	
		Pre-Commissioning	
		Guarantee Period	

	Compliance
Implemented (PI)	
EHS supervisor appointed by contractor and available on site	
Construction site management plan (spoils, safety, schedule, equipment etc.,) prepared	
Traffic management plan prepared	
Dust is under control	
Excavated soil properly placed within minimum space	
Construction area is confined; no traffic/pedestrian entry observed	
Surplus soil/debris/waste is disposed without delay	
Construction material (sand/gravel/aggregate) brought to site as & when required only	
Tarpaulins used to cover sand & other loose material when transported by vehicles	
After unloading , wheels & undercarriage of vehicles cleaned prior to leaving the site	
No chance finds encountered during excavation	
Work is planned in consultation with traffic police	
Work is not being conducted during heavy traffic	
Work at a stretch is completed within a day (excavation, pipe laying & backfilling)	
Pipe trenches are not kept open unduly	
Road is not completely closed; work is conducted on edge; at least one line is kept open	
Road is closed; alternative route provided & public informed, information board provided	
Pedestrian access to houses is not blocked due to pipe laying	

Spaces left in between trenches for access	
Wooden planks/metal sheets provided across trench for pedestrian	
No public/unauthorized entry observed in work site	

Children safety measures (barricades, security) in place at works in residential areas	
Prior public information provided about the work, schedule and disturbances	
Caution/warning board provided on site	
Guards with red flag provided during work at busy roads	
Workers using appropriate PPE (boots, gloves, helmets, ear muffs etc)	
Workers conducting or near heavy noise work is provided with ear muffs	
Contractor is following standard & safe construction practices	
Deep excavation is conducted with land slip/protection measures	
First aid facilities are available on site and workers informed	
Drinking water provided at the site	
Monitoring Items	Compliance
Toilet facility provided at the site	
Separate toilet facility is provided for women workers	
Workers camps are maintained cleanly	
Adequate toilet & bath facilities provided	
Contractor employed local workers as far as possible	
Workers camp set up with the permission of PIU	
Adequate housing provided	
Sufficient water provided for drinking/washing/bath	
No noisy work is conducted in the nights	
Local people informed of noisy work	
No blasting activity conducted	
Pneumatic drills or other equipment creating vibration is not used near old/risky buildings	

Signature

Sign off

Name
Position

Name
Position

- ^a All statutory clearance/s, no-objection certificates, permit/s, etc. should be obtained prior to award of contract/s. Attach as appendix all clearance obtained during the reporting period. If already reported, specify in the "remarks" column.
- ^b Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)
- ^c Specify if obtained, submitted and awaiting approval, application not yet submitted.
- ^d *Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 2 trees for every tree, etc.*

III. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN (REFER TO EMP TABLES IN APPROVED IEE/S)

- Confirm if IEE/s require contractors to submit site-specific EMP/construction EMPs. If not, describe the methodology of monitoring each package under implementation.

Package-wise Implementation Status

Package Number	Components	Design Status (Preliminary Design Stage/Detailed Design Completed)	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
			Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractors (Yes/No)		

- Identify the role/s of Safeguards Team including schedule of on-site verification of reports submitted by consultants and contractors.
- For each package, provide name/s and contact details of contractor/s' nodal person/s for environmental safeguards.
- Include as appendix all supporting documents including **signed** monthly environmental site inspection reports prepared by consultants and/or contractors.
- With reference to approved EMP/site-specific EMP/construction EMP, complete the table below
- Provide the monitoring results as per the parameters outlined in the approved EMP (or site-specific EMP/construction EMP when applicable).

- In addition to the table on EMP implementation, the main text of the report should discuss in details the following items:

(i) **Grievance Redress Mechanism.** Provide information on establishment of grievance redress mechanism and capacity of grievance redress committee to address project-related issues/complaints. Include as appendix Notification of the GRM (town-wise if applicable).

(ii) **Complaints Received during the Reporting Period.** Provide information on number, nature, and resolution of complaints received during reporting period. Attach records as per GRM in the approved IEE. Identify safeguards team member/s involved in the GRM process. Attach minutes of meetings (ensure English translation is provided).

- Confirm if any dust was noted to escape the site boundaries and identify dust suppression techniques followed for site/s.
- Identify muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads.
- Identify type of erosion and sediment control measures installed on site/s, condition of erosion and sediment control measures including if these were intact following heavy rain;
- Identify designated areas for concrete works, chemical storage, construction materials, and refuelling. Attach photographs of each area.
- Confirm spill kits on site and site procedure for handling emergencies.
- Identify any chemical stored on site and provide information on storage condition. Attach photograph.
- Describe management of stockpiles (construction materials, excavated soils, spoils, etc.). Provide photographs.
- Describe management of solid and liquid wastes on-site (quantity generated, transport, storage and disposal). Provide photographs.
- Provide information on barricades, signage's, and on-site boards. Provide photographs.
- Provide information on
- Checking if there are any activities being undertaken out of working hours and how that is being managed.

Summary of Environmental Monitoring Activities (for the Reporting Period)^a

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

^a Attach Laboratory Results and Sampling Map/Locations

Overall Compliance with CEMP/EMP

No.	Sub-Project Name	EMP/ CEMP Part of Contract Documents (Y/N)	CEMP/ EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

- Brief description on the approach and methodology used for environmental monitoring of each sub- project

VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (ambient air, water quality and noise levels)

- Brief discussion on the basis for monitoring
- Indicate type and location of environmental parameters to be monitored
- Indicate the method of monitoring and equipment to be used
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM10 µg/m ₃	SO2 µg/m ₃	NO2 µg/m ₃

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM10 µg/m ₃	SO2 µg/m ₃	NO2 µg/m ₃

Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity µS/cm	BOD mg/L	TSS mg/L	TN mg/L	TP mg/L

Site No.	Date of Sampling	Site Location	Parameters (Monitoring Results)					
			pH	Conductivity	BOD	TSS	TN	TP

				µS/cm	mg/L	mg/L	mg/L	mg/L

Noise Quality Results

Site No.	Date of Testing	Site Location	LA _{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA _{eq} (dBA) (Monitoring Results)	
			Day Time	Night Time

VII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe.

APPENDIXES

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection report
- Other

Appendix 20: Guidelines for Safety during Monsoon/Heavy rainfall

Excavation and refilling of earth are common activities, which, if not carefully executed may pose problems to the safety of works as well as passersby and road users during the impending Monsoon.

Normal and heavy rainfall event affect our ongoing works, It should be our conscientious effort to ensure that such events do not prove to be problematic to people and structures in town. During monsoon PIU/PMDSC should ensure that any further excavation work is taken up only after ensuring that the earlier work is in safe stage. It is desired that DCM/ACM & Ex En PIU should inspect all sites during rains and take proactive actions.

Some of the precautions and mitigation measures to be taken are discussed below-

- 1 The execution of works having deep excavation in smaller lanes and congested areas should be completed well before monsoon. The works of deep excavation during monsoon should not be preferably taken up or extensive care should be taken for execution of such works.
- 2 The settlement in refilled trenches of sewerage and water supply lines may occur during monsoon. PMDSC and PIU team should inspect all sites after a storm to identify such reaches and take immediate corrective action by proper refilling and compacting. It is responsibility of all engineers to look after this activity during monsoon and ensure corrective actions from Contractor's side.
- 3 The contractor's crew should be equipped with vehicle, gum boots, raincoats, torch etc. to tackle such situation during and after rains. Adequate quantities of earth, debris and gravel should be stacked at strategic places so that no time is lost in procuring such material.
- 4 In trenches where pipe laying has been done and duly tested and approved, refilling should be done and all surplus material relocated to safe disposal sites such that it does not obstruct traffic or waterways.
- 5 All open ends of WS and WW pipelines should be firmly plugged to prevent debris from entering the pipeline. Manhole covers of sewer lines should be fixed in place to avoid any harm to road users.
- 6 Drains are primary or secondary carriers of storm water. Any unutilized construction material should be relocated to allow free passage of storm water. Surplus earth should be suitably and immediately be relocated to avoid earth from falling into the drain so that choking does not occur.
- 7 Overhead works should not be carried on in-weather conditions that threaten the safety of workers. More frequent checks on scaffold and bracings should be done during monsoon season.
- 8 Additional precautions should be taken of the power lines, ignorance and carelessness can cause major accidents and casualty.
- 9 Take preventive measures for water logging in working areas by

- providing dewatering pumps. Place bright and reflective warning signs.
- 10 Inspection should also be carried out before resumption of work after a shower/rain.
 - 11 Storage of Construction Material: Steel & Cement are vital ingredients for quality construction work but in absence of proper storage, especially during monsoon, cement and steel may rapidly decline in quality and strength. Care should be taken to protect these materials and use of any exposed material should be allowed only after conducting fresh tests. Improper storage of such material should be reported to PIU/DSC and use of any apparently affected material should be done after permission of PIU/

Additional Precautions

1. Adequate set up and resources such as dewatering pumps, electrical routings etc should be planned ahead. Water logging on main roads to be avoided, where construction works are going on.
2. Ensuring the monsoon specific PPE's issued in adequate and are used during monsoon.
3. Use of electric extension box should be avoided; extension cables (if used) should not be wet and damaged. Cables connections should be only weatherproof/ waterproof. Electrical and HSE personnel of contractor should visit permanent and running sites regularly. Transparent protective sheets/rain sheds should be placed for the power distribution boards.
4. Welding machines, bar cutting machines etc. should be kept in dry conditions; should not stand in water logged area. Breakers and Drill machines should not be used when raining; dirt/mud should be scrubbed with cloth.
5. Special Trainings to all drivers and operators on safe practices and all vehicles/ equipment's maintenance checks to be more frequent.
6. High boom equipment to be stopped during blowing of high speed wind and rain storm. Arresting of parked vehicles, equipment during monsoon should be done.
7. All chemicals should be stored as per MSDS, chemicals to be protected from water ingress. Chemical waste should be disposed for preventing overflow of chemicals.
8. At labor camps following precautions should be taken:-
 - Maintaining hygiene & proper housekeeping.
 - Additional health check-up camp to identify seasonal diseases
 - Preventive measures on mosquito/parasite breeding mainly in work locations and camps
 - Frequent cleaning of toilets
 - To avoid water borne diseases, high level of cleanliness to be maintained, drinking water containers need to be cleaned and kept covered. Walk areas and pathways to be covered with Murom and soft rock particles (to avoid soft soil conditions).
 - Obstacle free approach to rest sheds, camp and toilets.
 - Proper illumination, provision of battery operated emergency lights
 - No bonfires inside resting sheds. No use of wood.

PIU and PMU should oversee the arrangements to effectively deal with the eventuality.

EHS officer of contractor should visit each site and camps more frequently. Contractor/EHS officer will also impart training on safe working methods during Monsoon and will keep a daily watch on weather conditions to share with site team to act accordingly.

Contractor should organize Monsoon Health Camps and Monitor Workmen Habitat and Hygiene.

Appendix 21: Details of Existing Sewerage System of Nainital

Items	Sewerage Treatment Plants			
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital
Capacity	0.45 MLD	0.8 MLD	10 MLD	0.45 MLD
Technology	MBBR	SBR	Primary Settling tank only	MBBR
Executing agency	UJN-GOUK for all the four STPs			
Implementing agency:	UJN-GOUK for all the four STPs			
Project name under which this STP was constructed:	JNNURM-GoUK	JNNURM-GoUK	State Fund-GOUK	AMRUT-Gol and State Fund-GOUK
Name of contractor	M/s Brisanzia technologies private limited, Delhi-NCR	M/s Enviro Projects Private limited, Kanpur	Local Contractor	Local Contractor
Date of start of the construction of STP	February 2015	February 2015	2008	December 2022 (estimated date of Completion)
Status of work progress of STP	Completed	Completed	Completed	Under Construction
Sewerage networks laid under the project (type, dia and length)	RCC Hume pipes, (early 1980), and DI pipes	Dia: 200 mm to 700 mm	Length: 26.229 km	-
TSPS	Nil	Not Applicable	No TSPS installed	-
Cumulative Progress % (including TP/SPs/Network)	Completed 100%	Completed 100%	Completed 100%	Under Construction progress - 30%

Items	Sewerage Treatment Plants			
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital
Areas of different units of plant (sq. mtrs)	Approximately 0.0350	Approximately 0.0650	Approximately 0.20	Approximately 0.035
Total Area of land used for STP: (in Hectare)	0.0350	A- 0.0650	A- 0.20	0.0350
Land ownership details:	Uttarakhand Jal Nigam, GoUK	Uttarakhand Jal Nigam, GoUK	Uttarakhand Jal Nigam, GoUK	Uttarakhand Jal Nigam, GoUK
Estimated/Final cost of STP	INR 153.98 Lakhs	INR 240.00 Lakhs	INR 153.98 Lakhs	-----
O&M period of contract:	5 years	5 years	Abandoned, not in operation	10 years
Date of completion of construction works of STP:	Commissioned on 2016	Commissioned on 2016	Commissioned on 2008	To be commissioned on December 2022
Status of Consent to Establish (CTE) from Pollution Control Board	Available from State Pollution Control Board, Uttarakand	Available from State Pollution Control Board, Uttarakand	Available from State Pollution Control Board, Uttarakand	Available from State Pollution Control Board, Uttarakand
Status of Consent to Operate (CTO) from Pollution Control Board and validity of CTO	Data not available	Data not available	Data not available	Data not available
Status of sewerage networks:	Nainital has 04 Sewerage zones, in all the four zones sewerage network is available which needs augmentation and rehabilitation			
Total area of city covered with this STP:	Nainital municipal limits has a gross area of 11.75 Sq km, which is largely coved with sewerage network.			
Whether trail run completed, if yes give date,	April 2016	April 2016	April 2008	Expected in December 2022
Estimated date of commissioning of STP:	April 2016	April 2016	April 2008	Expected in December 2022

Items	Sewerage Treatment Plants					
	Doblighat, Harinagar, Nainital		Krishnapur, Nainital,		Roosi (Primary Settling tank only)	Narayan Nagar, Nainital
What are the parameters of discharge of treated effluent	Parameters	STP Wise details				
		0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	5 day BOD at 20° C	10 mg/lit	10 mg/lit	Not applicable as unit is defunct	To be commissioned by December 2022	
	COD	50 mg/lit	100 mg/lit			
	TSS	20 mg/lit	10 mg/lit			
	PH	6 to 9	6 to 9			
	TKN (as N)	10 mg/lit	10 mg/lit			
	TP	1 mg/lit	1 mg/lit			
	What are the proposals/methods for reuse/disposal of treated effluent from STP	STP Wise details				
0.45 MLD-MBBR at Doblighat, Harinagar, Nainital		0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital		
A portion of the treated effluent will be used for gardening in plant premises, rest will be discharged in the Dhobighat Rivulet, which is tributary of Gaula River.		A portion of the treated effluent will be used for gardening in plant premises, rest will be discharged in the tributary	A portion of the treated effluent will be used for gardening in plant premises, rest will be discharged in the River Bhakra	A portion of the treated effluent will be used for gardening in plant premises, rest will be discharged in the Bhakra river through its		

Items	Sewerage Treatment Plants				
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital	
		named Krishnapur nala of Gaula River	through its tributary name Roosi Gadhera	tributary named Charkhet nala	
What are the proposals/methods for reuse/disposal of treated sludge from STP	STP Wise details				
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	The dewatered sludge from centrifuge is disposed off at a suitable location for further drying. The responsibility of sludge withdrawal and disposing off lies with the contractor within the operation and maintenance period at Indiranagar Colony- SWM site at Haldwani	The dewatered sludge from centrifuge shall be disposed off to a suitable location for further drying. The responsibility of sludge withdrawal and disposing off lies with the contractor within the operation and maintenance period at Indiranagar Colony- SWM site at Haldwani.	Not applicable as unit defunct	The dewatered sludge from centrifuge shall be disposed off to a suitable location for further drying. The responsibility of sludge withdrawal and disposing off lies with the contractor within the operation and maintenance period.	
Is the existing STPs anywhere related/dependent on proposed STP (17.5 MLD) under UUSDIP	STP WISE DETAILS				
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	

Items	Sewerage Treatment Plants			
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital
	No	No	Yes this site to be used for 17.5 MLD STP under proposed loan	No
Status and type of electricity connection:	STP WISE DETAILS			
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital
	Dedicated grid supply with approved load- 175 KW	Dedicated grid supply with approved load- 225 KW	Power supply network Available	Dedicated grid supply with approved load- 175 KW
Whether DG set installed, if yes give capacity and type of DG set:	STP WISE DETAILS			
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital
	350 KVA	500 KVA	Not applicable as plant is defunct	300 KVA
Whether consent from				

Items	Sewerage Treatment Plants				
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital	
Pollution Control Board taken for DG set:	STP WISE DETAILS				
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	Yes	Yes	Yes	Yes	
Fresh water requirements/day (for domestic use) and type of water supply:	STP WISE DETAILS				
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	Municipal water supply available	Municipal water supply available	Roosi village water supply available	Municipal water supply available	
If tube well installed, provide number and capacity of tube well and status of clearance from Ground Water Board for tube well:	STP WISE DETAILS				
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	Not applicable				
Numbers of employees proposed for operation of plant (designation wise numbers of employees):	Designation	Number of persons deployed			
		0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	

Items	Sewerage Treatment Plants							
	Doblighat, Harinagar, Nainital		Krishnapur, Nainital,		Roosi (Primary Settling tank only)		Narayan Nagar, Nainital	
		Plant Manager	1 no	1 no	Not applicable as unit defunct	1 no		
		Plant Engineer	1 no	1 no		1 no		
		Plant Supervisor	4 no	4 no		4 no		
		Centrifuge operator	2 no	2 no		2 no		
		Fitter	2 no	2 no		2 no		
		Helper	1 no	1 no		1 no		
		Chemist	1 no	1 no		1 no		
		Lab Assistant	1 no	1 no		1 no		
		Guard	3 no	3 no		3 no		
		Gardner/Cleaner	5 no	5 no		5 no		
Is Rain water harvesting system established, if yes, details and cost of rain water harvesting: No rain water harvesting system established	Provisions made							
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital		0.8 MLD-SBR at Krishnapur, Nainital,		10 MLD-Primary Settling tank only at Roosi,		Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	
	No		Yes		Not applicable as unit is defunct		Proposed for the site	

Items	Sewerage Treatment Plants			
	Doblighat, Harinagar, Nainital	Krishnapur, Nainital,	Roosi (Primary Settling tank only)	Narayan Nagar, Nainital
Power generation system installed, if yes, give details	Provisions made (Yes/No, details if yes)			
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital
	No	Yes	Not applicable as unit is defunct	Yes
O&M manual prepared by contractor (submitted/approved)				
	O&M system in Place	Provisions made (Yes/No, details if yes)		
		0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,
		Yes	Yes	Not applicable as unit is defunct
Emergency operating system prepared for O&M				
	Emergency operating system	Provisions made (Yes/No, details if yes)		
		0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD-Primary Settling tank only at Roosi,
				Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital

Items	Sewerage Treatment Plants																			
	Doblighat, Harinagar, Nainital		Krishnapur, Nainital,		Roosi (Primary Settling tank only)		Narayan Nagar, Nainital													
		prepared for O&M					Narayan Nagar, Nainital													
			Yes	Yes	Not applicable as unit is defunct	Yes														
Whether provisions for odor control taken in design	<table><tr><td rowspan="3">Odor control taken in design</td><td colspan="4">Provisions made (Yes/No, details if yes)</td></tr><tr><td>0.45 MLD-MBBR at Doblighat, Harinagar, Nainital</td><td>0.8 MLD-SBR at Krishnapur, Nainital,</td><td>10 MLD- Primary Settling tank only at Roosi,</td><td>Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital</td></tr><tr><td>Tree plantation done</td><td>Tree plantation done</td><td>Tree plantation done and site is surrounded by forest</td><td>Tree plantation proposed</td></tr></table>							Odor control taken in design	Provisions made (Yes/No, details if yes)				0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD- Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	Tree plantation done	Tree plantation done	Tree plantation done and site is surrounded by forest	Tree plantation proposed
Odor control taken in design	Provisions made (Yes/No, details if yes)																			
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD- Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital																
	Tree plantation done	Tree plantation done	Tree plantation done and site is surrounded by forest	Tree plantation proposed																
If provisions taken to protect inconvenience to nearby habitants, give details	Not applicable. No nearby habitation . Odor control measures taken in design <table><tr><td rowspan="3">Provisions taken to protect inconvenience to nearby habitants</td><td colspan="4">Provisions made (Yes/No, details if yes)</td></tr><tr><td>0.45 MLD-MBBR at Doblighat, Harinagar, Nainital</td><td>0.8 MLD-SBR at Krishnapur, Nainital,</td><td>10 MLD- Primary Settling tank only at Roosi,</td><td>Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital</td></tr><tr><td>Plantation done</td><td>Plantation done</td><td>Not applicable as unit is defunct</td><td>Plantation proposed</td></tr></table>							Provisions taken to protect inconvenience to nearby habitants	Provisions made (Yes/No, details if yes)				0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD- Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital	Plantation done	Plantation done	Not applicable as unit is defunct	Plantation proposed
Provisions taken to protect inconvenience to nearby habitants	Provisions made (Yes/No, details if yes)																			
	0.45 MLD-MBBR at Doblighat, Harinagar, Nainital	0.8 MLD-SBR at Krishnapur, Nainital,	10 MLD- Primary Settling tank only at Roosi,	Amrut Scheme 0.45 MLD – MBBR at Narayan Nagar, Nainital																
	Plantation done	Plantation done	Not applicable as unit is defunct	Plantation proposed																

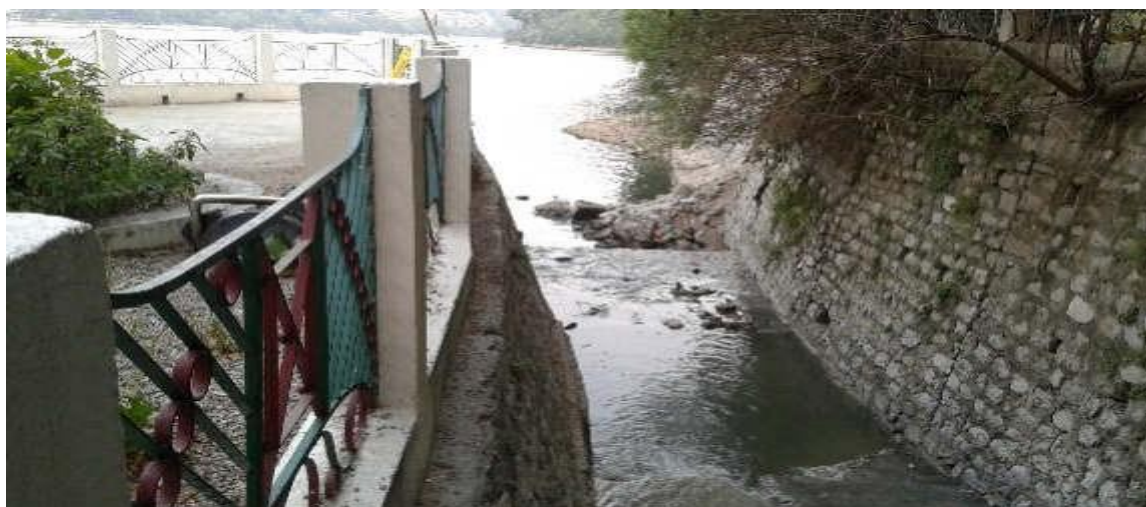
Existing Sanitation Scenario In Targeted Area



Existing 5 MLD STP at Upper Level at Russi Village (Sedimentation Tank)



Existing 5 MLD STP at Lower Level at Russi Village (Sedimentation Tank)



Drainage discharging into Nainital Lake



Existing 0.45 MLD capacity STP at Dhobighat



Existing STP of 0.8 MLD capacity STP at Krishnapur



Trunk Main Carrying sewage at STP at Russi Village

Appendix 22: COVID-19 transmission through fecal matter and workplace safety measures for waste water works during operation phase.

Coronavirus infections are a serious threat to health systems globally. The frequency of outbreaks with these viruses calls for concerted efforts to understand their occurrence and survival in different environments and how that may contribute towards an increase in infections. The current knowledge on the occurrence of coronaviruses in wastewater is limited and still evolving, this makes it difficult to fully understand their behaviour in this environment. However, a few reports of viral RNA belonging to these viruses in wastewater indicates this could potentially expose larger numbers of people to these infections.

Wastewater treatment and septage management status. The developing nations are generally poor in treating the wastewater and fecal sludge effectively and in many cases, the wastewater is discharged into surface water bodies without any treatment. For example, India treats only 37% of wastewater, while the situation in other South-East Asian countries is alarming (Vietnam, 10%; Pakistan, 8%; Philippines, 4%; Indonesia, 1%). Moreover, the performances of operational sewage treatment plants (STPs) are not satisfactory. For example, effluents from only about 39% STPs in India could meet the general standards prescribed by the Environmental (Protection) Agency (Central Pollution Control Board, India) for discharge into streams ([ENVIS, 2019](#)).

In most of the cases, the treatment and disposal of fecal sludge and septage from the onsite sanitation systems are not as per the standards. This means the risk of partially treated or untreated sewage/wastes from onsite sanitation system from COVID-19 affected areas carrying viruses into water bodies could be quite high. As most rural population use the surface or groundwater without further treatment for daily household activities like washing and cleaning, it would have a direct impact on public health ([Treacy, 2019](#)). For viruses present in faeces, water, surfaces or insect vectors e.g. houseflies, cockroaches, and another organism in contact with human faeces might act as possible transmission routes ([Heller et al., 2020](#); [Dehghani et al., 2020](#)).

COVID-19 basics for Water/Wastewater Systems. The U.S. Center for Disease Control (CDC) says: “The virus has been detected in the feces of some patients diagnosed with COVID-19. The amount of virus released from the body (shed) in stool, how long the virus is shed, and whether the virus in stool is infectious are not known”.

The risk of transmission of COVID-19 from the feces of an infected person is also unknown. However, the risk is expected to be low based on data from previous outbreaks of related coronaviruses, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). There have been no reports of fecal-oral transmission of COVID-19 to date.

At this time, the risk of transmission of the virus that causes COVID-19 through sewerage systems is thought to be low. Although transmission of COVID-19 through sewage may be possible, there is no evidence to date that this has occurred. SARS, a similar coronavirus, has been detected in untreated sewage for up to 2 to 14 days. In the 2003 SARS outbreak, there was documented transmission associated with sewage aerosols. Data suggest that standard municipal wastewater system chlorination practices may be sufficient to inactivate coronaviruses, as long as utilities monitor free available chlorine during treatment to ensure it has not been depleted. The main conclusions that can be drawn from various studies are;

- i. Coronavirus RNA are shed in feces leading to their occurrence in wastewater. This could assist in early detection of outbreaks as well the use of

wastewater-based epidemiology for estimation of infection levels in populations.

- ii. The viruses can survive for few hours to days in wastewater, remaining infectious in the process. Therefore, exposing the general public and wastewater treatment plant workers to possible risks of infections.
- iii. The survival of coronaviruses in wastewater is influenced by several factors, such as viral structure, temperature, wastewater composition/characteristics and pH.
- iv. Additionally, conventional wastewater treatment processes can potentially inactivate or remove these viruses. However, the viral RNA may still be found in the treated wastewater.

COVID-19 Preparedness for Wastewater System during Operations Phase:

Wastewater and sewage workers should use standard practices, practice basic hygiene precautions, and wear personal protective equipment ([PPE](#)). Wastewater treatment plant operations should ensure workers follow routine practices to prevent exposure to wastewater. These include using engineering and administrative controls, safe work practices, and [PPEs](#) normally required for work tasks when handling untreated wastewater.

Water supply and wastewater management are essential services and need to be geared up in order to prevent any interruptions due to any pandemic events like COVID-19. The following measures will be in place to ensure seamless operations during such events.

- (i) Identify essential employees required to maintain continuous operation and designate an emergency backup or alternative shift rotations for these employees in case they cannot report to work.
- (ii) Encourage personnel to practice good hygiene and infection-control practices. Encourage personnel to stay home if they are sick or exposed to someone who is sick. Provide work-from-home where possible or sick leave options for those under quarantine.
- (iii) Limit meetings, gatherings and travel. Encourage personnel to postpone all non-essential travel and practice social distancing.
- (iv) Partner with neighbouring systems, contractors, retirees, and the Municipality to identify operators who can substitute for personnel on an emergency basis.
- (v) Review and/or update current system's emergency response plan and contacts. Identify key customers— hospitals or care facilities—with special needs.
- (vi) Update and/or create detailed written instructions for crucial operations (i.e. shutdown, waste water quality sampling, public notification).
- (vii) Consider emergency food and overnight necessities at 24-hr facilities. Stay stocked on chemical supplies, test kits, and sample bottles. Order products ahead of schedule to avoid delays should chemical suppliers and labs experience understaffing.
- (viii) Generate a back-up supplier contact list for essential chemical and operation needs.
- (ix) Discuss cyber-security precautions when using remote access. Back up critical files frequently as prevention measure to restore data.

(x) **Disposal of Fecal Matter and Sewage** (reference: *Handbook of COVID-19 Prevention and Treatment* : Zhejiang University School of Medicine

- Before being discharged into the municipal drainage system, fecal matter and sewage must be disinfected by treating with chlorine-containing disinfectant (for the initial treatment, the active chlorine must be more than 40 mg/L). Make sure the disinfection time is at least 1.5 hours;
- The concentration of total residual chlorine in the disinfected sewage should reach 10 mg/L.

Appendix 23 : Environmental Monitoring Plan - Ambient Air, Noise, Water and Soil

1. Under UUSDA works Environmental Monitoring will done for ambient air, noise, surface water, ground water and soils with following parameters-

A. Ambient Air Quality- Particulate Matters PM10, Particulate Matter PM2.5, SO_x, NO_x, Carbon Monoxide (CO) as per methods and norms approved by CPCB

B. Ambient Noise Quality- L_{day} and L_{night} (in Leq dBA) 24 hrs basis as per methods and norms approved by CPCB

C. Surface Water Quality- pH, Turbidity, Total Hardness, DO, BOD, COD, Chloride, Hg, Iron, TDS, TSS, Calcium, Zn, Cr+6, Magnesium, Copper, Manganese, Sulphate, Cyanide, Nitrate, Sodium, Potassium, Fluoride, Cadmium, Arsenic, Lead, Boron, Selenium, Aluminium, Total residual Chlorine

D. Ground Water Quality- pH, TDS, Total Hardness, Zn, Chloride, Iron, Copper, DO, Manganese, Sulphate, Nitrate, Fluoride, Hg, Cadmium, Cr+6, Arsenic, Lead, Total Alkalinity, Phosphate, Phenolic compound

E. Soil quality- pH, Elect. Conductivity (at 250C), Moisture (at 1050C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO₄), Potassium (as K), Organic Matter, oil and grease

2. During pre-construction stage monitoring is required to establish baseline at following sites-

Environmental Monitoring in Pre-Construction Period

S.N.	Type of monitoring and Parameters	Location of monitoring and no. of samples	Total No. of samples
1	Ambient Air Monitoring	STP site-1 Pipe laying locations/ SWD construction site within the town preferably near sensitive receptor – 3 Construction /workers camps - 1	5
2.	Ambient Noise monitoring	STP site-1 Pipe laying locations / SWD construction site within the town preferably near sensitive receptor – 3 Construction/workers camps - 1	5
3	Ground Water quality	Workers camp site-1 Pipe laying locations/ SWD construction site within the town preferably near sensitive receptor – 3 Construction /workers camps - 1	5
4.	Soil Quality	STP site-1 Pipe laying locations/ SWD construction site within the town preferably near sensitive receptor – 3 Construction camp site - 1	5
5.	Surface water quality	5 locations will be selected based on the location of surface water bodies closer to the STP treated water disposal site in nearby rivulet, Nainital lake, construction zones and at Nihal river outfall points	5

3. During construction stage below monitoring should be done on minimum quarterly basis at the following sites-

Environmental Monitoring in Construction Period

Proposed sites	Ambient Air quality	Ambient Noise quality	Surface water quality **	Ground Water Quality	Soil Quality
STP site	One	One		One	One
Pipe laying site within the town preferably near sensitive receptor*	3	3		2	2
Construction camp/storage yards/ Workers Camps	One	1		2	2
Total number of samples in each quarter (A)	5	5	5	5	5
Total number of samples in construction period (B)	50	50	50	50	50

** **Surface water monitoring** locations will be selected based on the location of surface water bodies closer to the STP treated water disposal site in Bhatti- Gadhera rivulet, construction zones, Nainital Lake and at Nihal river outfall points

Calculation of total Number of samples-

- Project duration = 3 years =12 quarters
- Pre-construction phase = 3 months =1 quarter
- Monsoon period in each year =3 months =1 quarter (July-Sept)
- Monsoon period in project duration = 3 quarter
- Effective period of environmental monitoring (C) = (12 +1) - 3 =10 quarters
- Total number of samples in construction period (B) = A x C

Note –

- All the tests should be done by labs approved by CPCB and/or UEPPCB and should be accredited by NABL
- All the tests should be done as per the norms and methods approved by CPCB/UEPCB
- All the meteorological data like weather, wind, location, nearby features etc. should be recorded during sampling and indicated in the report for ambient air quality
- If surface water is not available within 500 meters of the site, ground water quality monitoring should be done from the vicinity within 500 meters and if both surface and ground water is available at any site both should be taken
- For air quality monitoring, if any two sites are within the distance of 2 km from each other, only one sampling can be done at any site
- Sensitive receptors are hospitals, schools, any major religious place etc.

Appendix 24: ADB's Interim Advisory Note on Protecting the Safety and Well-Being of Workers and Communities from COVID-19 (2020)

INTERIM ADVISORY NOTE

Protecting the Safety and Well-Being of Workers and Communities from COVID-19

ADB

Health and safety risks from the coronavirus disease (COVID-19) pandemic can cause an additional burden on workers, local communities, and employers. To support its developing member countries in managing these risks, the Asian Development Bank (ADB) has prepared the following advisory note on publicly available international good practice. These preventive measures can be adapted for a variety of workplaces and country-specific contexts.¹

Transmission, spread, and infection are the greatest health and safety risks to projects and local communities. If left unmanaged, rising infection rates can result in project delays and job losses as well as overwhelm health care systems.

What can governments and companies (including enterprises of all sizes) do to prevent and manage COVID-19 risks?

To protect the health and safety of workers, as well as surrounding communities, it is recommended to conduct a workplace review and risk assessment for exposure to COVID-19. The nature of works, stage of implementation, location of the project activities, and status of the project (whether it is ongoing or under development) must be taken into consideration. In addition, vulnerable groups such as migrant workers as well as women, older workers, at-risk workers including those with underlying health conditions, or those with combined vulnerability factors (e.g., migrant women workers with underlying health conditions) who will also be disproportionately impacted, should be taken into account.²

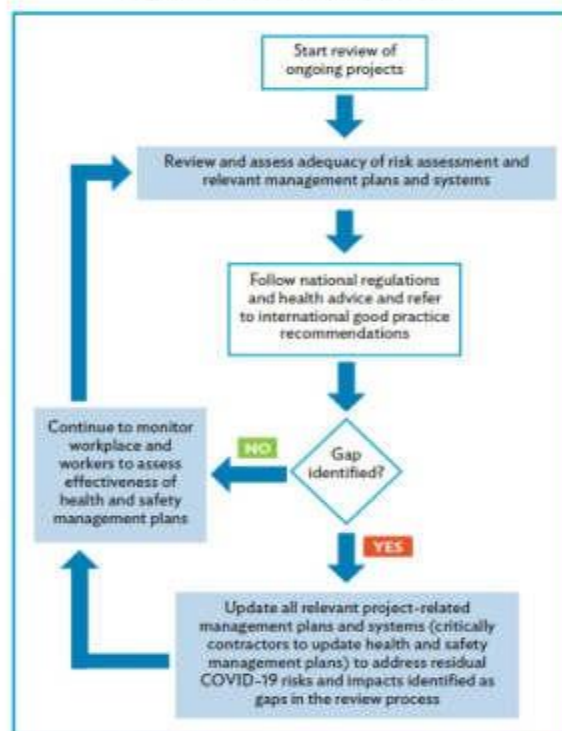
The decision tree (Figure 1) outlines how to review and assess the adequacy of management plans and systems to prevent the spread of COVID-19 in the workplace.

Which sectors are more at risk from COVID-19?

COVID-19 may be more easily transferred among workers or service users and local communities in the following sectors and associated workplace activities:³

- Projects and businesses where there are a **large number of workers in close proximity with one another**, particularly where remote work is not feasible.
- Projects that involve **worker accommodation camps**, where physical distancing and robust hygiene measures may be more difficult to implement.
- **Health care providers** including hospitals, laboratories, clinics, dentists, ambulances, and pharmacies.

Figure 1: COVID-19 Decision Tree



Source: Asian Development Bank.

¹ This advisory note may not cover all circumstances. It will remain a living document and will be updated regularly to reflect updates to international good practice in preventing and managing the COVID-19 pandemic at the workplace as listed in Annex.

² Migrant workers are faced with multiple impacts including the challenge of returning home, accessing food and medical assistance, and experiencing potential loss of income.

³ The list represents a selection and is not exhaustive.

- **Food and agriculture** including food processing plants and those handling live animals and animal products.
- **Education**, after lockdowns are lifted and schools reopen in affected countries.
- Consumer-centric businesses where workers may come into **regular contact with customers** including **hotels, retail, and other tourism- related sectors**.
- **Logistics and transport**, where **workers come into contact with a large number of people** across potentially a large geographic region.
- Businesses where **workers come into contact with suppliers and supply chains** operating in affected areas.

How can governments and companies apply a risk-based approach to assess exposure risks to COVID-19 in the workplace?

1. DETERMINE LEVEL OF EXPOSURE RISK

The risk of work-related exposure to COVID-19 depends on the probability of coming into close or frequent contact with people who may be infected and through contact with contaminated surfaces and objects. According to guidance from the World Health Organization (WHO), the risk levels (Figure 2) may be useful in carrying out a workplace risk assessment for exposure risk to COVID-19 and planning for preventive measures in non-health care workplaces.⁴

Figure 2: COVID-19 Risk Categories

LOW EXPOSURE RISK
Jobs or work tasks without frequent, close contact with the general public and other co-workers , visitors, clients or customers, or contractors, and that do not require contact with people known to be or suspected of being infected with COVID-19.
MEDIUM EXPOSURE RISK
Jobs or work tasks with close (less than 1 meter) frequent contact with the general public, or other co-workers , visitors, clients or customers, or contractors, that do not require contact with people known to be or suspected of being infected with COVID-19.
HIGH EXPOSURE RISK
Jobs or work tasks with high potential for close contact with people who are known or suspected of having COVID-19 as well as contact with objects and surfaces possibly contaminated with the virus.

Source: World Health Organization.

2. DETERMINE ADDITIONAL EXPOSURE RISK FACTORS

Work-related exposure can occur anytime in the workplace, during work-related travel to an area with local community transmission, as well as on the way to and from the workplace.

In the same work setting, there may be jobs with different levels of risk, and different jobs or work tasks may have similar levels of exposure. Therefore, risk assessment should be carried out for each specific work setting and for each job or group of jobs. For each risk assessment, it is important to consider the environment; the task; the threat, if any (e.g., for frontline staff); and resources available such as personal protective equipment.

Some workers may be at higher risk of developing severe COVID-19 illness because of age or pre-existing medical conditions; this should be considered in the risk assessment for individuals. Essential public services, such as security and police, food retail, accommodation, public transport, deliveries, water and sanitation, and frontline workers may be at an increased risk of exposure.

3. CONSULT WITH WORKERS

Employers and managers, in consultation with workers, are encouraged to carry out and regularly update the risk assessment for work-related exposure to COVID-19, preferably with support from occupational health services and local primary health care facilities.

4. UPDATE OR DEVELOP NEW HEALTH AND SAFETY MANAGEMENT PLANS

Following completion of the review and risk assessment process, health and safety plans in the workplace may require updates or may have to be developed for ongoing projects that did not require one previously. Relevant approvals of the health and safety plan should be obtained.

5. REVIEW INTERNATIONAL GOOD PRACTICES

ADB recommends that employers review WHO-issued key guidance to manage the spread of COVID-19 in the workplace (Table).

⁴ WHO. 2020. Considerations in adjusting public health and social measures in the context of COVID-19 interim guidance. 15 April. <https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance>.



Table: Guidelines on Preventive Measures at the Workplace

MEASURES FOR ALL WORKPLACES	
Hand hygiene	<ul style="list-style-type: none"> Regular and thorough handwashing with soap and water or hand hygiene with alcohol-based hand-rub before starting work; before eating; frequently during the work shift, especially after contact with co-workers or customers; after using the bathroom; after contact with secretions, excretions, and body fluids; after contact with potentially contaminated objects (gloves, clothing, masks, used tissues, waste); and immediately after removing gloves and other protective equipment but before touching eyes, nose, or mouth. Hand hygiene stations, such as handwashing and hand rub dispensers, should be put in prominent places around the workplace and be made accessible to all staff, contractors, clients or customers, and visitors along with communication materials to promote hand hygiene.
Respiratory hygiene	<ul style="list-style-type: none"> Promote respiratory etiquette by all people at the workplace. Ensure that medical face masks and paper tissues are available, for those who develop a runny nose or cough at work, along with bins with lids for hygienic disposal. Develop a policy on wearing a face mask or cover in line with national or local guidance. Masks may carry some risks if not used properly. If a worker is sick, they should not come to work. If a worker feels unwell while at work, provide a medical mask so that they may get home safely. Where masks are used, whether in line with government policy or by personal choice, it is very important to ensure safe and proper use, care, and disposal.
Physical distancing	<ul style="list-style-type: none"> Introduce measures to keep a distance of at least 1 meter between people and avoid direct physical contact i.e., hugging, touching, shaking hands), strict control over external access, queue management (marking on the floor, barriers). Reduce density of people in the building (no more than one person per 10 square meters), physical spacing at least 1 meter apart for workstations and common spaces, such as entrances/exits, lifts, pantries/canteens, stairs, and other areas congregation or queuing of employees or visitors/clients might occur. Minimize the need for physical meetings, e.g., by using teleconferencing facilities. Avoid crowding by staggering working hours to reduce congregation of employees at common spaces such as entrances or exits. Implement or enhance shift or split-team arrangements, or teleworking. Defer or suspend workplace events that involve close and prolonged contact among participants, including social gatherings.
Reduce and manage work-related travels	<ul style="list-style-type: none"> Cancel or postpone non-essential travel to areas with community transmission of coronavirus disease (COVID-19), provide hand sanitizer to workers who must travel, advise workers to comply with instructions from local authorities where they are traveling as well as information on whom to contact if they feel ill while traveling. Workers returning from an area where COVID-19 transmission is occurring should monitor themselves for symptoms for 14 days and take their temperature twice a day; if they are feeling unwell, they should stay at home, self-isolate, and contact a medical professional.

Source: World Health Organization.

Regular environmental cleaning and disinfection	<ul style="list-style-type: none"> • Clean surfaces by brushing or scrubbing thoroughly using soap or a neutral detergent to remove dirt, debris, and other materials. After the cleaning process is completed, disinfection is used to kill pathogens and other microorganisms on surfaces. • Selection of disinfectants should align with the local authorities' requirements for market approval, including any regulations applicable to specific sectors. • Identify "high-touch" surfaces for priority disinfection (e.g., commonly used areas, door and window handles, light switches, kitchen and food preparation areas, bathroom surfaces, toilets and taps, touchscreen personal devices, personal computer keyboards, and work surfaces). • Prepare and use disinfectant solutions according to the manufacturer's instructions, including instructions on how to protect the safety and health of disinfection workers and how to use personal protective equipment (PPE); avoid mixing different chemical disinfectants. • In indoor workplaces, routine application of disinfectants to environmental surfaces via spraying or fogging is generally not recommended because it is ineffective at removing contaminants outside of direct spray zones and can cause eye, respiratory, and skin irritation and other toxic effects. • In outdoor workplaces, there is currently insufficient evidence to support recommendations for large-scale spraying or fumigation. • Spraying of people with disinfectants (such as in a tunnel, cabinet, or chamber) is not recommended under any circumstances.
Risk communication, training, and education	<ul style="list-style-type: none"> • Provide posters, videos, and electronic message boards to increase awareness of COVID-19 among workers, and promote safe individual practices at the workplace and engage workers in providing feedback on the preventive measures and their effectiveness. • Provide regular information about the risk of COVID-19 using official sources such as government agencies and the World Health Organization, and emphasize the effectiveness of adopting protective measures and counteracting rumors and misinformation. • Special attention should be given to reaching out to and engaging vulnerable and marginalized groups of workers, such as those in the informal economy as well as migrant workers, domestic workers, subcontracted and self-employed workers, and those working under digital labor platforms.
Management of people with suspected COVID-19 or their contacts	<ul style="list-style-type: none"> • Urge workers who are unwell or who develop symptoms consistent with COVID-19 to stay at home, self-isolate, and contact a medical professional or the local COVID-19 information line for advice on testing and referral. • Where local community transmission is high, and work continues, allow for a telemedicine consultation where available, or consider waiving the requirement for a medical note for workers who are sick so that they may stay home. • Urge all workers to self-monitor their health, possibly with the use of questionnaires, and take their body temperature regularly.

SPECIFIC MEASURES FOR WORKPLACES AND JOBS AT MEDIUM RISK

In addition to the measures for all sites

- Enhance cleaning and disinfection of objects and surfaces that are touched regularly, including all shared rooms, surfaces, floors, bathrooms, and changing rooms.
- Where the physical distancing of at least 1 meter cannot be implemented to a particular activity, workplaces should consider whether that activity needs to continue; if so, take all the mitigating actions possible to reduce the risk of transmission between workers, clients or customers, contractors, and visitors such as scheduling staggered activities, minimizing face-to-face and skin-to-skin contacts, placing workers side-by-side or facing away from each other rather than face-to-face, assigning staff to the same shift teams to limit social interaction, and installing plexiglass barriers at all points of regular interaction and cleaning them regularly.
- Enhance hand hygiene—regular handwashing with soap and water or use of alcohol-based hand rub—before entering and after leaving enclosed machinery, vehicles, confined spaces, and before putting on and after taking off PPE.
- Provide PPE and training on its proper use—e.g., masks, disposable gowns, and disposable gloves or heavy-duty gloves that can be disinfected. Provide face or eye protection (medical mask) during cleaning procedures that generate splashes (e.g., washing surfaces).
- Increase ventilation rate, through natural aeration or artificial ventilation, preferably without re-circulation of the air.

SPECIFIC MEASURES FOR WORKPLACES AND JOBS AT HIGH RISK

In addition to the measures for all sites

- Assess the possibility of suspending the activity.
- Adhere to hygiene before and after contact with any known or suspected case of COVID-19, before and after using PPE.
- Require use of medical mask, disposable gown, gloves, and eye protection for workers who must work in the homes of people who are suspected or known to have COVID-19. Use the protective equipment when in contact with the sick person, or respiratory secretions, body fluids, and potentially contaminated waste.
- Train workers on infection prevention and control practices and use of PPE.
- Avoid assigning tasks with high risk to workers who have pre-existing medical conditions, are pregnant, or older than 60 years of age.

Source: World Health Organization.

The application of the international good practice within job-specific method statements/schedules and environments should be informed by a job-specific risk assessment.

How do governments and companies ensure effective implementation?

Cooperation between workplace managers, workers and their representatives, surrounding communities, and primary health care facilities is an essential element of workplace-related preventive measures in line with international good practice. To assess the effectiveness of implementation of the workplace health and safety management plan, regular monitoring of site conditions and those of surrounding communities is recommended. It is also important for management of workplaces to keep abreast with the latest updates to the international good practice guidance referenced in this advisory note including government issued health advice in relation to COVID-19 to ensure effective implementation. A select list is provided in Annex.

Risks communication, training, awareness campaigns, and the development of an emergency action plan are also recommended to address suspected cases of COVID-19 in the workplace.

The decision to close or reopen workplaces, and suspend or downscale individual work activities at the workplace should be made in light of the risk assessment, the capacity of contractors to implement proposed preventive measures within the Health and Safety Management Plan, and also the recommendations of national authorities for adjusting public health and social measures at the workplace in the context of COVID-19.

Further Assistance

ADB may be able to provide assistance to our developing member countries in emergency planning, emergency assistance, and continuous sharing of international best practice. Please contact [ADB resident missions and offices](#) to request assistance.



The Pandemic Sub-National Reference Laboratory at the Jose B. Lingad Memorial Regional Hospital in San Fernando City, Pampanga on 9 May 2020. The laboratory financed by the \$3 million grant from the Asia Pacific Disaster Response Fund, can perform up to 3,000 COVID-19 tests daily, significantly increasing the country's testing capacity (photo by Eric Sales/ADB).

Annex: Publicly Available Sources and Useful Links

Asian Development Bank

Managing Infectious Medical Waste during the COVID-19 Pandemic, April 2020. An outline of key considerations for governments to understand their country's capacity to manage an anticipated surge in infectious medical waste. Also includes practical recommendations to improve disposal of household and hospital waste—as well as municipal solid waste—with the aim of reducing the further spread of the coronavirus disease (COVID-19) and other diseases. Links to important technical resources and guidance materials are also provided.

Belgian Investment Company for Developing Countries

COVID-19: ESG Guidance Note for Employers, March 2020. General Environmental, Social and Governance guidance to employers on how to minimize business disruptions and take the most adequate actions.

Canadian Construction Association

Standardized Protocols for All Canadian Construction Sites

Centre for Disease Control

Centre for Disease Control (CDC) Group COVID-19 Guidance for Employers, March 2020. Summary of publicly available guidance and examples of practice adopted by some CDC Group investees and fund managers. Aims to provide a framework that can be applied to many companies and situations, but guidance is not able to cover all circumstances and not every company will be able to benefit from all of the guidance, in particular if employees are not able to work from home or practice social distancing.

European Bank for Reconstruction and Development Workers Accommodation

Worker accommodation and COVID-19, April 2020. Note on key issues relating to workers living in accommodation camps and considerations on how to address certain risks. In alignment with good international industry practice and international lenders' standards. Developed by Mott MacDonald's social, labor, and health specialists based on their experience, drawing on the guidance of the World Health Organization (WHO).

Her Majesty's Government, United Kingdom

Her Majesty's Government. Working safely during COVID-19 in construction and other outdoor work, 2020. Guidance for employers, employees, and the self-employed.

Inter-American Development Bank

Corporate Governance: COVID-19 and the board of directors, March 2020. Indicative guidance for the Board of Directors in identifying, prioritizing, and implementing a governance framework to deal with the strategy and oversight challenges that COVID-19 may present, and a list of questions that can be asked by investors and that Board of Directors should consider to build an effective response to the COVID-19 crisis.

COVID-19 Guidance for Infrastructure Projects, March 2020. Guidance for clients to identify project performance and capacity gaps, along with context and project-related risks, that could contribute to COVID-19 transmission.

International Federation of Consulting Engineers

COVID-19 guidance memorandum for users of International Federation of Consulting Engineers (FIDIC) standard forms of works contract. An outline of the provisions in FIDIC's various general conditions of contract for works which may be relevant with regard to likely scenarios that are arising as a consequence of COVID-19. Guidance memorandum to help parties to a FIDIC contract to consider mutually satisfactory solutions and avoid disputes arising between them.

Coronavirus (COVID-19): FIDIC Guidance for Global Consulting Engineering Businesses, March 2020.

International Finance Corporation

Interim Advice for International Finance Corporation (IFC) Clients on Preventing and Managing Health Risks of COVID-19 in the Workplace, April 2020. A selection of publicly available advice from internationally recognized sources to help IFC clients rapidly identify measures for preventing and managing outbreaks of COVID-19 in the workplace, and for responding to community COVID-19 infection. Not exhaustive, and provides generic rather than sector-specific advice. Companies in high-risk sectors should refer to sector-specific procedures and standards.

Interim Advice for IFC Clients on Supporting Workers in the Context of COVID-19, April 2020. Tip sheet of useful information to support decision making in response to the impacts of COVID-19 on workers and employment. Focus areas include:

- (i) Health and safety, including actions to prevent transmission.
- (ii) Job protection, including supporting workers through difficult times and building resilience for businesses to operate during and after the immediate crisis.
- (iii) Responsible retrenchment as an option only if there is no other alternative, and how to re-employ those workers, when possible, once the situation has improved.

Corporate Governance Tip-Sheet for Company Leadership on Crisis Response, Facing the COVID-19 Pandemic, April 2020. Generally applicable to any type of business, some tips may not be relevant based on the nature or size of business, shareholding structure, or other factors.

International Labour Organization

International Labour Organization (ILO) Standards and COVID-19 FAQ, March 2020. A compilation of answers to most frequently asked questions related to international labor standards and COVID-19.

Family-Friendly Policies and other Good Workplace Practices in the Context of COVID-19: Key steps employers can take, March 2020. General recommendations to help employers strengthen support for workers and their families. In collaboration with UNICEF.

International Organization for Migration

COVID-19: Guidance for employers and business to enhance migrant worker protection during the current health crisis, April 2020.

KfW

KfW DEG COVID-19 Guidance for employers, March 2020. Guidance specifically from the perspective of international guidance on social topics and occupational health and safety.

Occupational Health and Safety Organization

Guidance on Preparing Workplaces for COVID-19. Recommendations and descriptions of mandatory safety and health standards (based on the United States' Occupational Safety and Health Act of 1970). Advisory only. Identifies four categories of risk (low, medium, high, very high) depending on proximity to the people infected with the virus and recommends taking different level of precautions in the areas of engineering control, administrative control, and personal protective equipment (PPE).

Pan American Health Organization, World Health Organization, and United Nations Office for Project Services

COVID-19 Prevention Measures at Construction Sites

The United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)

Guidance for Action: Addressing the Emerging Impact of the COVID-19 Pandemic on Migrant Women in Asia and the Pacific for a Gender-Responsive Recovery. Note on the emerging impacts of the COVID-19 pandemic on women migrant workers and recommendations to support governments, donors, civil society organizations, employers, and the private sector in addressing those impacts.

World Health Organization

Considerations in adjusting public health and social measures in the context of COVID-19 (Interim Guidance) (WHO 2020).

Considerations in adjusting public health and social measures in the context of COVID-19 (Interim Guidance, April 2020) (WHO 2020).

Coronavirus disease (COVID-19) advice for the public, March 2020. Web page providing advice for the public, including on social distancing, respiratory hygiene, self-quarantine, and those seeking medical advice.

Getting your workplace ready for COVID-19, March 2020. Summary of general considerations for getting businesses ready for work in the context of COVID-19. Does not provide technical detail but useful starting point to develop further awareness. Also provides some specific guidance on meetings and travel.

Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response, March 2020. Advice on communicating effectively with the public, engaging with communities, local partners, and other stakeholders to prepare and protect public health relating to COVID-19.

Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19), March 2020. Guidance to member states on quarantine measures for individuals in the context of COVID-19. Intended for those responsible for establishing local or national policy for quarantine of individuals, and adherence to infection prevention and control measures.

Operational considerations for case management of COVID-19 in health facility and community, March 2020. Intended for health ministers, health system administrators, and other decision makers. Guidance for the care of COVID-19 patients as the response capacity of health systems is challenged; aims to ensure that COVID-19 patients can access lifesaving treatment, without compromising public health objectives and safety of health workers.

Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19), February 2020. Summary of WHO's recommendations for the rational use of PPE in health care and community settings, as well as during the handling of cargo. Intended for those who are involved in distributing and managing PPE as well as public health authorities and individuals in health care and community settings. Provides information about when PPE use is most appropriate.

Water, sanitation, hygiene and waste management for COVID-19, March 2020. Technical brief that supplements existing infection prevention and control (IPC) documents by referring to and summarizing WHO guidance on water, sanitation, and health care waste which is relevant for viruses (including coronaviruses). Written for water and sanitation practitioners and providers.

Safe management of wastes from health care activities, 2014. Handbook of practical guidance on the management of healthcare waste in local facilities. Provides guidelines for national and local administrators.

Advice on the use of masks in the community, during home care and in health care settings in the context of the novel coronavirus (COVID-19) outbreak, March 2020. Intended for individuals in the community, public health and IPC professionals, health care managers, health care workers, and community health workers. Updated version also includes advice to decision makers on the use of masks for healthy people in community settings.

Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19), March 2020. Interim guidance on laboratory biosafety related to the testing of clinical specimens of COVID-19 patients.

Infection prevention and control during health care when novel coronavirus infection is suspected, March 2020. Guidance for healthcare workers, health care managers, and IPC teams at the facility level, also relevant for national and district/provincial level.

Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, March 2020. Outline of rights and responsibilities of health workers, including the specific measures needed to protect occupational safety and health.

Disability Considerations during the COVID-19 outbreak, March 2020. Mitigation actions and protective measures that can reduce the impacts of COVID-19 on advice on vulnerable groups, focusing on those with disabilities.

This advisory note does not constitute medical or legal advice and is not a substitute for professional advice from international public health organizations such as the World Health Organization, national public health authorities, and national governments. We strongly encourage our borrowers and clients to seek guidance and monitor regular updates as the COVID-19 pandemic evolves. ADB is not responsible for the content of any external references within this document.



Cover photo. Tokyo, Japan—Elementary students wearing masks sit with distance to each other during graduation in Tokyo, 25 March 2020.

Japanese Prime Minister Shinzo Abe has called for all schools in the country to close until the end of the spring holidays to reduce the risk of spreading the virus (photo by Richard Atrero de Guzman/ADB).

Annex 1 photo. San Fernando, Pampanga—Medical technicians test the equipment inside a sterile lab during the inauguration and turnover of the Pandemic Sub-National Reference Laboratory at the Jose B. Lingad Memorial Hospital in San Fernando, Pampanga on 9 May 2020. The laboratory financed by the \$3 million grant from the Asia Pacific Disaster Response Fund, can perform up to 3,000 COVID-19 tests daily, significantly increasing the country's testing capacity (photo by Veejay Villafranca/ADB).



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APPENDIX 25: DETAILS OF PACKAGED STPs OUTFALL DRAINS IN NAINITAL

Sr. No	Name of Packaged STP	Type of Existing Drain	Existing Drain dia (m)	Length of drain from Nainital lake (m)	Photo of outfall drain
1	Rajbhavan Complex	Stone masonry	0.75 X 0.75	400	
2	PWD guest House	Stone masonry		50	No drain available, proposed under DBO Contractors scope
3	High Court Premises	Stone masonry	0.45 x 0.60	700	

Sr. No	Name of Packaged STP	Type of Existing Drain	Existing Drain dia (m)	Length of drain from Nainital lake (m)	Photo of outfall drain
4	Forest Rest House Premises	Stone masonry	0.45 x 0.60	800	
5	Govt. Poly Technique College campus	Stone masonry	0.75 X 0.75	800	

Appendix 26: Photographs of Roads through which Sewer Pipelines will be Laid

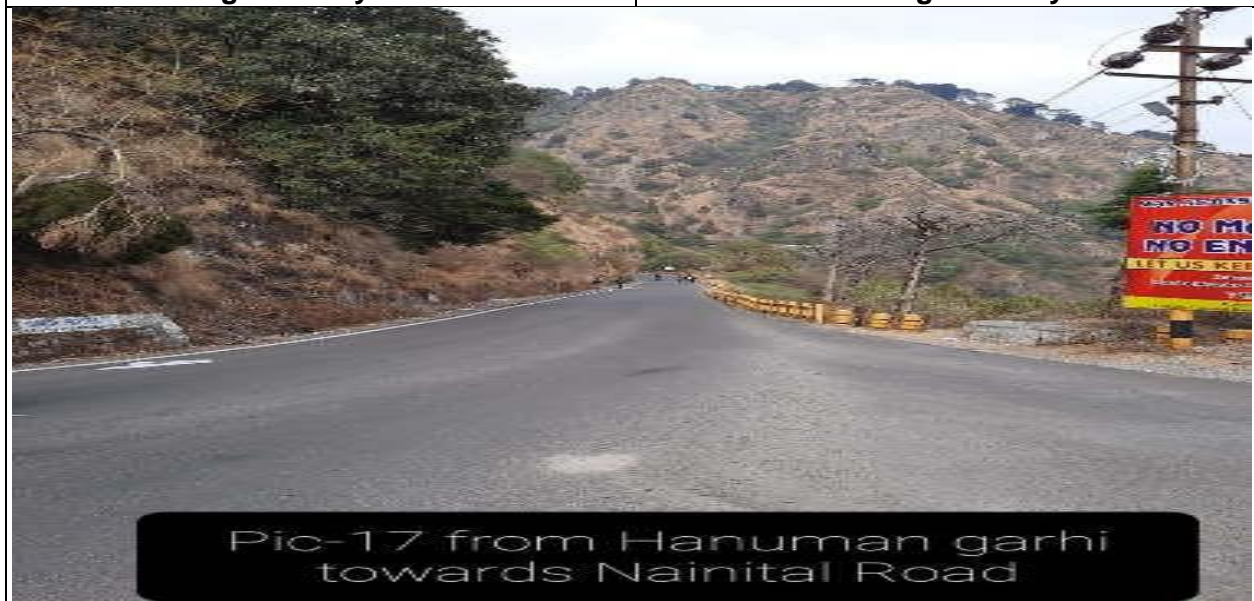
 <p>pic -3 from tallital rickshaw stand to bus stand</p>	 <p>Pic-11 from hotel shashi to tallital dharmashala</p>
<p>Nainital Nagar Palika Road, Upper Mall Road, High Density</p>	<p>Nainital Nagar Palika Road, upper Mall Road, High Density</p>
 <p>Pic-1 at Mall road near zoo road bend towards tallital rickshaw stand</p>	 <p>pic-13 from tallital dharmashala towards distric jail tallital</p>
<p>Nainital Nagar Palika Road, upper Mall Road, High Density</p>	<p>NH High Density area</p>
 <p>Pic-14 at tallital distric jail</p> <p>NH High Density area</p>	



NH High Density area



NH High Density area



NH High Density area

Appendix 27: Application Letter for permission of road cutting and manholes for trunk sewer line and other construction related activities

Office of the Project Manager
Project Implementation Unit
Uttarakhand Urban Sector Development Agency
Government of Uttarakhand
Neel Kanth Guest House, Pilgrim Lodge Compound, Mallital Nainital
Telephone No. 05942-236599, Email - punit.usdip@gmail.com

पत्रांक 113 / WWNTL01 / 195 दिनांक 18.07.2022

सेवा में,
अधिसासी अभियन्ता
राष्ट्रीय मार्ग खण्ड
लो0नि0वि0, हल्द्वानी (नैनीताल)

विषय:- राष्ट्रीय राजमार्ग सं0-87 (नवीन सं0 109) के तल्लीताल पोस्ट ऑफिस से
हुनमान गढ़ी मन्दिर चैक पोस्ट, नैनीताल तक ए.डी.बी. वित्त पोषित परियोजना
WWNTL01 के अन्तर्गत ट्रंक सीवर लाईन बिछाने के सम्बन्ध में।

संदर्भ:- आपके कार्यालय पत्रांक - 990/3 mg दिनांक 18.07.2022।

महोदय,
उपरोक्त विषयक एवं संदर्भित पत्र द्वारा ट्रंक सीवर लाईन बिछाये जाने के लिये
अनापत्ति हेतु इस कार्यालय से प्रेषित प्रकरण पर प्राप्त आपत्तियों के क्रम में अवगत कराना है
कि विषयगत प्रकरण राष्ट्रीय राजमार्ग सं0 87 (नया 109) के चैनेज सं0 6/121 से किमी0
123 के मध्य 1900 मी0 ट्रंक सीवर लाईन बिछाई जानी है, उक्तानुसार प्रकरण में संशोधन
कर लिया गया है।
अतः अनुरोध है कि उपरोक्तानुसार संशोधित प्रकरण पर ट्रंक सीवर लाईन
बिछाने हेतु अनुमति/अनापत्ति प्रदान करने का कष्ट करें।
संलग्नक :- उपरोक्तानुसार

भवदीय
(गीतेश गुरव सैनी)
परियोजना प्रबन्धक

प्रतिलिपि:-
1. सम्बन्धित सहायक अभियन्ता, पी.आई.यू. नैनीताल को सूचनार्थ एवं आवश्यक कार्यवाही हेतु।
2. परियोजना प्रबन्धक, मै0 तिरुपति सीमेन्ट प्रोडक्ट्स, नैनीताल को सूचनार्थ एवं आवश्यक
कार्यवाही हेतु प्रेषित।

परियोजना प्रबन्धक

To,
Executive Engineer
State Division
PWD, Nainital

Subject: From Tallital Post Office on National Highway No.-67 (New No. 109) to Hanuman Garhi Mandir Check Post, Nainital Regarding laying of trunk sewer line under ADB funded project WWNTL01

In the order of the objections received on the matter sent from this office for no-objection for laying the trunk sewer line through the above-mentioned and referred letter, it is to be informed that 1900 m truck sewer line is to be laid between chainage number 6/121 to km 123 of National Highway No.67 (New 109). Amendment in the case as above has been done.

Therefore, it is requested that the trunk sewer line on the modified case as above, please kindly grant permission/no-objection for laying of sewer pipeline.

Gitesh Gaurav Saini

Appendix 27A: NOC of Road cutting from PWD, Nainital



कार्यालय जिलाधिकारी नैनीताल

ई-मेल - dlm-nai-us@nic.in

पत्रांक

16

/23-स्थानीय निकाय/2022

दिनांक 21 अक्टूबर, 2022

परियोजना प्रबन्धक,
पी.आई.यू. (यू.यू.एस.डी.ए.)
नैनीताल।

विषय:-

ए.डी.बी. विल्ट पोखित नैनीताल नगरीय सीवररेज परियोजना के पैकेज संख्या WWNTL01 अन्तर्गत रोड कटिंग एवं चार्ज लाईन बिछाये जाने की अनुमति के सम्बन्ध में।

कृपया अधिशासी अभियंता, प्रा.ख. लो.नि.वि. नैनीताल के पत्र संख्या 2262/200 दिनांक 03.10.2022 का संदर्भ ग्रहण करने का कष्ट करें, जिसके द्वारा अवगत कराया गया है कि आप द्वारा मकली नैनीताल टॉकी किलवरी चंगोट मोटर मार्ग रा.मा. सं. 63 के तल्लीताल पोस्ट ऑफिस से क्लासिक होटल (अपर मॉल रोड) लम्बाई 1200 मी. व नैनीताल बाईपास मोटर मार्ग लम्बाई 2100 मी. कुल लम्बाई 3300 मी. में सीवर लाईन बिछाने हेतु रोड कटिंग की अनुमति चाही गयी है।

उक्त के क्रम में आज दिनांक 21.10.2022 को शहरी विकास अनुभाग-2 द्वारा गठित जिला स्तरीय अनुश्रवण एवं परामर्श समिति की बैठक आयोजित की गयी। बैठक में लिये गये निर्णय के अनुसार रा.मा. सं. 63 के तल्लीताल पोस्ट ऑफिस से मल्लीताल पंत पार्क तक लम्बाई 1700 मी. में ट्रंक सीवर लाईन का कार्य ट्रंचलेस तकनीक से व नैनीताल बाईपास से रुस्ती ग्राम तक लम्बाई 2100 मी. में नवीन ट्रंक सीवर फाईप लाईन बिछाये जाने हेतु रोड कटिंग की अनुमति इस प्रतिबन्ध के साथ प्रदान की जाती है कि सीवर लाईन बिछाये जाने के उपरान्त सड़क के पुर्ननिर्माण का कार्य लोक निर्माण विभाग के मानकों/डिजाईन के अनुसार किया जाना होगा, जिसका नियमित अनुश्रवण अधिशासी अभियंता, लो.नि.वि. प्रान्तीय खण्ड, नैनीताल द्वारा किया जायेगा।

रुस्ती ग्राम के समीप अवस्थित 60 मीटर स्वान ब्रिज पर चार्ज लाईन बिछाये जाने हेतु अनापत्ति के लिये शासन स्तर पर पृथक से आवेदन किया जाना होगा।

(धीराज सिंह गव्याल)

अध्यक्ष, जिला स्तरीय अनुश्रवण एवं
परामर्शीय समिति / जिलाधिकारी नैनीताल

प्रतिलिपि:- निदेशक, शहरी विकास विभाग, उत्तराखण्ड देहरादून को सूचनार्थ प्रेषित।

प्रतिलिपि:- निम्नलिखित को उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. मुख्य विकास अधिकारी, नैनीताल।
2. अधिशासी अभियंता, उत्तराखण्ड जल संस्थान, नैनीताल।
3. अधिशासी अभियंता, उत्तराखण्ड पेयजल निगम, भीमताल।
4. अधिशासी अभियंता, प्रान्तीय खण्ड, लो.नि.वि. नैनीताल।
5. अधिशासी अभियंता, सिंचाई खण्ड, नैनीताल।
6. अधिशासी अभियंता, राष्ट्रीय राजमार्ग खण्ड, हल्द्वानी।
7. अधिशासी अधिकारी, नगर पालिका परिषद, नैनीताल।

अध्यक्ष, जिला स्तरीय अनुश्रवण एवं
परामर्शीय समिति / जिलाधिकारी नैनीताल

Office of the District Magistrate Nainital

Letter No. 16/23- Local Body / 2022 dated 21 October 2022

Project Manager

P.I.U (UUSDA)

Nainital.

Subject- Regarding permission for road cutting and laying of pipeline under package number WWNTL-O1 of ADB funded Nainital Urban Sewerage Project.

Please refer the letter no. No. 2262/200 dated 03.10.2002 of Executive Engineer PWD State Division Nainital by which it has been informed that Bhawali Nainital Tanki Kilwari Pangoht Motor Marg State Highway No. 63 Tallital Post Office to Classic Hotel (Upper Mall Road) Length 1200 m. and bypass motor road length 2100 m. Total length 3300 m. permission has been sought for road cutting for laying sewer line.

In order of the above, today on 21.10.2002, a meeting of the District Level Monitoring and Consultation Committee constituted by the Urban Development Section-2 was organized. Asper the decision taken in the meeting, State Highway No. 63 From Tallital Post Office to Mallital Pant Park, the length is 1700 meters' permission of road cutting is allowed for the work of trunk sewer line with trenchless technology and for laying new trunk sewer pipeline from Nainital bypass to Russi Village in length 2100 m. with the restriction that after the sewer line is laid, the reconstruction of the road will be done. The work will have to be done according to the standard/ design of the Public Works Department, whose regular monitoring will be done by the Executive Engineer, PWD Provincial Division, Nainital.

There will be separate application on administrative level for the pipe laying on 60 m. span bridge near Russi village.

Appendix 28. Letter issued by PMU on Grievance Redressal Mechanism



Office of the Program Director
Uttarakhand Urban Sector Development Agency (UUSDA)
Urban Development Department, Govt. of Uttarakhand
777, Saavik Tower, II Floor, Kaulagarh Road, Rajendra Nagar, Dehradun
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Letter No.- Social/UUSDA/IEC/ 182

Date- 10/02/2022

E-mail/ Speed Post

Office Order

For addressing day to day basis grievances, needs an urgent attention by the concerning officers is required. As per Project Administration Manual (PAM) and as per project need, a Grievance redressal cell (GRC) to be formed to record and redress the public grievances in a time bound manner.

In this regard a Grievance Redressal Cell (GRC) is being constituted in PMU and each PIU of UIRUDP project comprising of the following officials/ staff:

Grievance Redressal Cell (GRC)

1. Project Manager, PIU – henceforth will be in-charge of the GRC.
2. A Data Entry Operator (DEO) will be assigned duly for registering and complying, all the grievances for putting up before the concerning authority.
3. Social & Environmental Officials- PIU, Contractor, CAPP, PMDSC officials will work as a representative / grievances (Social, Environmental and Safety) receiver and recorder from community.
4. IECO, SDGO, EO, Social & Environmental Officials of CAPP and PMDSC will oversee the grievances under supervision of DPD, APD (Tech.).
5. Social & Environmental officials – PMDSC, CAPP will weekly report the grievance data to IECO, SDGO, EO- PMU.
6. IECO, SDGO will record the calls on Toll free 1800 180 4159 at PMU level and will forward to the concerned Project Manager- PIU (A Data Entry Operator (DEO)-PMU will be assigned duly for registering and complying, all the grievances for putting up before the concerning authority).

The GRC w.e.f. 09.02.2022 and will put up the compilation of all the concern, complaints and grievances received from any platform (Field, public meetings, whatsapp, social media, calls and etc.). They all should be registered, recorded, attended and closed, along with pending cases on weekly basis, having co-ordination with the stakeholders and line-agencies.

The above officials are directed that they will perform the above tasks along with their work, for this no additional allowance will be payable to them.

The said orders will be effective immediately.

Enclosure: As above.

C.C. to-

- 1- Program Director, UUSDA for kind information.
- 2- To the all concerned officials for necessary action.

(Vinay Mishra)
Addl. Program Director

Addl. Program Director

A. Grievance Redress Mechanism

- 91-85. A project-specific, grievance redress mechanism (GRM) will be established to receive, evaluate and facilitate resolution of both social and environment related concerns raised by the affected persons, communities and other stakeholders during project implementation. GRM aims to provide a time-bound and transparent mechanism to voice and resolve complaints/grievances of the project stakeholders. Assessment of the GRM designed and implemented for the previous ADB-financed Uttarakhand Urban Sector Development Investment Program (UUSDIP)²⁶ shows

²⁶ The procedures followed for grievance redress during implementation of UUSDIP²⁶ Loan 1 and 2 included the project level GRM, including providing toll free number for grievance registering, Samadhan (www.samadhan.uk.gov.in), portal of Government of Uttarakhand and the Chief Minister's helpline. Complaints received through various channels were mostly minor and pertained to damage to existing water supply pipelines and disruption of water supply during construction, delays in road restoration, pending new connections and increase in Noise and dust levels. Complaints

that the system was effective in timely resolution of grievances in a transparent manner.²⁷ The multichannel, project-specific, three-tier GRM is functional at UUSDIP, hence the design of GRM for UUSDIP2 takes into account the proposed institutional structure for UIRUDP and the positive features and learning from the previous GRM.²⁸

- 92-80. **Common GRM** - A common GRM will be in place for social, environmental, or any other grievances related to the project. Implementation of the resettlement plans/initial environmental examination (IEEs) will follow the GRM described below. The GRM will provide an accessible and trusted platform for receiving and facilitating resolution of affected persons' grievances related to the project.

- 93-91. The grievance redress mechanism will provide an accessible, inclusive, gender-sensitive and culturally appropriate platform for receiving and facilitating resolution of affected persons' grievances related to the project. The construction works under the contract package will be carried out along inhabited areas, therefore, it is anticipated that it may lead to some disturbance and inconvenience to local people. In order to provide a direct channel to the affected persons and stakeholders for approaching project authorities and have their grievance registered and redressed in an appropriate time frame, PMU will establish a Grievance Redress Mechanism, which will be functional throughout the project period.

- 94-82. A complaint receiving system will be put in place at each site with the help of Community Awareness and Public Participation Agency (CAPPA). A Complaint Register and Complaint Forms will be made available at the site office of each contractor, with a display board indicating availability of such facility.

- 95-83. Public awareness campaigns within entire ULB/Municipal area will ensure that awareness on grievance redress procedures is generated. The nodal officer- social/environment at field level through Community Awareness and Public Participation Agency (CAPPA) will conduct ULB/Municipal area-based awareness campaigns to ensure that poor and vulnerable households are made aware of grievance redress procedures and entitlements. Contractors will provide leaflets to communities prior to start of works and erect billboards during construction mentioning details of the project work. The pamphlets and billboards will include relevant environmental and

related to damage to private property (compound walls/steps, etc.) were less in number. The grievances were resolved in coordination with the contractors. Complaints received were immediately referred by the Consultation and Participation Agency (CAPA) / design and supervision consultant (DSC) supervision staff to the Implementing Project Implementation Unit (PIU) Nodal officer (safeguards) and concerned engineer at PIU, who advised them on further action. Follow up with the contractor on complaint resolution was undertaken by PIU Nodal officer CAPA; and DSC and final feedback sought from complainant upon resolution. Complaints requiring inter-departmental coordination were referred to the implementing PMU (IPMU) for resolution, and feedback provided to complainant.

²⁷ Town-level grievance registration data at PIU level under UUSDIP indicates that a large number of grievances were registered, pointing to the effectiveness of the multi-channel GRM. No major grievance was received for both the phases of UUSDIP. The GRM helped smoothen the process of project implementation, hence the proposed architecture for the URUDP GRM remains similar, with some refinement, taking into account the changes in institutional setup proposed for project implementation.

²⁸ Logistics support at field level will be key to successful management of grievance redress under URUDP. The target date for establishment of the first level (Field/PIU level) and second level (PMU level) of GRM is before loan negotiation. For UUSDIP, billboards were used to inform communities about the filing process, and community mobilizers supported creating a continuous consultation process. Pamphlets were distributed, and community consent was obtained before the commencement of work. Stakeholders were able to file their grievances through a toll-free number (which do not exist now); a new toll-free number will be in place for URUDP. Grievances can also be uploaded in USDA website at: <https://www.usda.org/grievance.php> (which is still functional).

social safeguards, GRM information, and contact details of key personnel from PIU and contractors.

- 96 84. Affected persons will have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complaint/suggestion boxes that will be installed by project PIUs or by e-mail, by post, or by writing in a complaint register in ULB offices/complaints register at contractor's work site. Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken and feedback provided to the complainant on action/decision taken. The Social and Environmental Safeguard Nodal Officers of town/city level PIU will have the overall responsibility for timely grievance redressal on environmental and social safeguards issues and for registration of grievances, related disclosure, with the assistance of project consultants. In case of grievances that are immediate and urgent in the perception of the complainant, the contractor, and officials of PIU with assistance from CAPPa on-site will provide the most easily accessible or first level of contact for quick resolution of grievances. Contact numbers and names of the concerned PIU safeguard and safety officer, EHS Supervisor of contractors, CAPPa and SDGO/EO will be posted at all construction sites at visible locations.

B. Grievance Redress Process

- 97 85. Grievances received during public outreach programs and consultations by CAPPa will be brought to the notice of concerned PIU and formally registered. Grievances not redressed at field/PIU level and PMU level will be brought to grievance redress committee (GRC). The Town Level Committees (TLC) set up to monitor project implementation in each town will be the members of GRC. The proposed GRC will be gender inclusive and will have civil society representation. The grievance redress committee (GRC) is chaired by the Chairman of TLC (Mayors or Chairpersons). The members of TLC are as follows:

- (i) Mayor or Chairperson as chair;
- (ii) Municipal Commissioner or Executive Officer as member;
- (iii) Concern Line Agency representatives as member;
- (iv) NGO and Civil Society Organization as member; and
- (v) Executive Engineer of Town PIU as member secretary.

- 98 86. The GRC, including Town Level Committee (TLC) members, will meet every month (if grievances are brought to the Committee), determine the merit of each grievance, and resolve grievances within a month of receiving the complaint. This will accept complaints regarding the social safeguard issues in implementation of the project. The grievances received and actions taken will be included into the environmental and social monitoring reports submitted to ADB. The following 3-stage process will be followed in grievance redress:

- 99 87. **First Level Grievance (Field/PIU level):** Complaints received (written or oral communication) will be registered in Complaint Register assigning complaint number with date of receipt, name of complainant, address/contact number of complainants. The PIU/PMU will review the complaint and direct the Contractor for necessary action (will try to resolve the issue within 7 days from the date of receipt of complaint); depending on the type/nature of complaint

the Contractor will be given reasonable time for corrective action; the CAPPa will inform the complainant, within 24 hours, the time frame in which the corrective action will be communicated by e-mail, text message or telephonically; if the grievance referred will not fall under the purview of the project/program, the same will be intimated to the complainant; Contractor will take corrective action or as directed by PMDSC; the CAPPa in coordination with DSC will conduct the site visit to check the action taken and its appropriateness. The action taken will be documented

in the Complaint Register, and the complaint will be closed if it is satisfactorily addressed, and the complainant will be informed through website/e-mail/telephonically. The responsible persons for field/PIU level²⁸ grievance redress are as follows:

- (i) Social Development and Gender Officers (SDGO) and Assistant Environmental Officers (AEO), PIUs;
- (ii) Social, Gender and Resettlement and Environmental Experts, Engineers (if required), PMDSC;
- (iii) Contractor representative (EHS Supervisor);
- (iv) CAPPa;
- (v) Municipal Ward Member (if required)

28. Second Level Grievance (PMU level): In case of no satisfactory action in 1st level, the complainant can approach PMU level grievance redress team for necessary action; CAPPa will assist the complainant in doing so. Grievance redress team at PMU level with the assistance of PMDSC will initiate action and take the corrective measures as required, and CAPPa will intimate the complainant about the action taken; upon satisfaction of complainant, the case will be closed and marked as resolved within 15 days of receipt of compliance/grievance. The responsible persons for PMU level grievance redress are as follows:

- (i) Deputy Program Director 1, responsible for project, GESI and safeguard implementation;
- (ii) Social Development and Gender Officer (SDGO);
- (iii) Environmental officer (EO);
- (iv) Information, Education and Communication Officer (IECO);
- (v) Social, Gender and Resettlement Experts (SGREs) and Environmental Experts, Engineers (if required), PMDSC; and
- (vi) CAPPa.

29. Third Level Grievance (GRC): If complainant is not satisfied with the action made or due to noncompliance of grievance at Level 2, the complainant can approach the Grievance Redress Committee (it is expected that the grievance will be redressed within 7 days²⁹ from date of receipt). The GRC will comprise of the following members:

- (i) Town Level Committee (Dehradun/Nainital), chaired by respective Chairperson/Mayor of the particular town;
- (ii) Program Director, UIRUDP;
- (iii) Additional Program Director (APD) Technical, UIRUDP;
- (iv) DPD 1;
- (v) Social Development and Gender Officer (SDGO);
- (vi) Environmental Officer (EO);
- (vii) PMDSC (Env. and SGRE Experts);
- (viii) Women Member of Civil Society under TLC;
- (ix) Elected Representative (if required); and
- (x) CAPPa.

²⁸ Each PIU will have a dedicated WhatsApp helpline number for registration of grievances and provision of quick feedback, to be followed by formal communication. Project contractors in all project towns will have a toll-free number with specific working hours for registration of grievances related to UIRUDP.

²⁶ Given the challenging times (due to COVID-19), an additional 7 days time period would be given to each level to resolve the complaints/grievances.

10.3. Grievance Redress Committee. The grievance redress committee (GRC) will address both social safeguard and environment issues. The TLC²⁷ would be chaired by Mayor of Dehradun Municipal Corporation or Nainital Municipal Corporation (as the case may require), and will have the member from civil society (preferably a woman representative), local elected representatives, engineers from UJS/UJN/Irrigation Department and any other concerned line department officials (Forrest Department). Grievances related to social and environmental safeguards will be handled by GRC through periodic meetings. The PMU Social Development and Gender Officer (SDGO), Environment Officer, experts from PMDSC and CAPP will assist the PO, UIRUDP, APD, UIRUDP and other members of GRC, in facilitating smooth functioning of GRM and timely resolving the complaints/grievances.

10.4. Court of Law: Under the project specific GRM, an aggrieved person shall have access to the country's legal system at any stage and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM. In case of grievance related to land acquisition, resettlement and rehabilitation, the affected persons will have to approach a legal body/court specially proposed under the RFCTLARRA, 2013.²⁸ However, as none of the impacts are complex, long-term, or significant in nature, it is unlikely that there will be any unresolved issues after the first three stages. The PMU will submit RP/EMP/SEMP implementation report to ADB's review and will ensure that affected persons will receive compensation and other assistances as per EM prior to impact / displacement and before commencement of civil works. The issues relating to environment will be redressed as per the guidance provided in EMP/SEMP.

10.5. ADB's Accountability Mechanism. The People who may /are in future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach ADB accountability mechanism.²⁹

10.6. Record-keeping. The town level PIU will keep records of grievances received, including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were affected and final outcome in gender segregated manner. The number of grievances recorded and resolved, and the outcomes will be displayed/disclosed in the PMU office, PIU offices, and on the websites, as well as reported in monitoring reports submitted to ADB on a semi-annual basis. The sample grievance registration format is attached.

10.7. Periodic review and documentation of lessons learned. The PMU safeguard officers (SDGO and EO) will periodically review the GRM functioning at PIU/ Construction Contractor level and record information on the effectiveness of the mechanism, especially on the project's ability to transparently prevent and address the reported grievances.

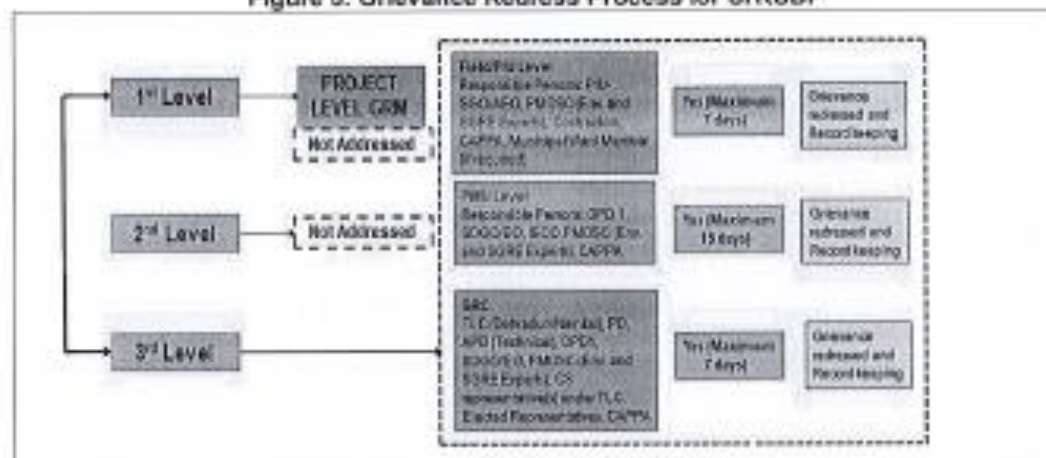
²⁷ The TLC has been formed at each of the targeted towns for planning and monitoring of work, resolve grievances and issues related to departmental coordination etc. It is headed by Commissioner /Executive Officer ULB(Chairman) and Executive Engineer of UJS/UJN, public works department (PND) and head of PIU acting as Member Secretary.

²⁸ The Authority admits grievances only with reference to the Land Acquisition and R&R issues under the RFCTLARRA, 2013.

²⁹ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

107 **Costs.** As part of the EMP cost the Construction Contractors will be allocating budget for pamphlets and billboards and site level grievance registers as per requirement. PIU at town level will bear the costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) while costs related to further action on intensified grievances will be met by the PMU. GRM structure for UIRUDP is presented in the figure below.

Figure 5: Grievance Redress Process for UIRUDP



AEO = Assistant Environmental Officer; APO = Additional Program Director; CAPPA = Community Awareness and Public Participation Agency; CS = Civil Society DB-O = Design Build and Operate Contractor; DPO = Deputy Program Director; EO = Environmental Officer; IECD = Information Education and Communication Officer; PD = Program Director; PIU = Project Implementation Unit; PMDSC = Project Management, Design Supervision Consultant; PMU = Project Management Unit; SDO = Social Development and Gender Officer; SGRS = Social, Gender and Resettlement Expert; TLC = Town Level Committee
Source: Asian Development Bank.

Appendix 29. Office order related to Safeguard staff



Office of the Program Director
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Letter No.- Social/UUSDA/IEC/ 196

Date- 1.1.2022

E-mail/ Speed Post

Office Order

As per ADB project guidelines, during execution and implementation of projects, compliance related to social safeguard and environmental safeguard will be done on priority basis. As per Project Administration Manual (PAM) and as project need these officials are being nominated for Safeguard Officers, Environmental Officer, Social and Gender Officer and Assistant Environmental Officer under UIRUDP Project packages, as below:

S.N.	PMU/ PU	Designated Safeguard Officer (AE)	Designated Environmental Officer (AE)
1	PMU	Mr. S. K. Verma	Mr. Jatin Singh Saini
2	Nainital	Mr. Krishna Chandra Bughani	Mr. Anil Parihar
3	Dehradun	Mr. Rajveer Singh	Mr. Amit Kumar Saini

S.N.	Package Name	Designated Social and Gender Officer (JE)	Designated Assistant Environmental Officer (JE)
1	WWNTL01 Nainital	Mr. Ravindra Singh Chitwal	Mr. Mahesh Kumar Sengar
2	WWDDN01 THDC&Yamuna Colony	Sh. Shailendra Bhatt	Sh. Saurabh Bisht
3	WWDDN02 Raipur	Sh. Jagmohan Singh Rawat	Sh. Saurabh Bisht
4	WS&SDDN01 Banjarawala-1	Sh. Ajay Singh Rawat	Sh. Anoop Khanduri
5	WS&SDDN02 Banjarawala-2	Sh. Manoj Patwal	Sh. Prem Prakash Bhadri
6	WS&SDDN03 Banjarawal-3	Sh. Nitish Tariyal	Sh. Jitendra Nautiyal

The above officials are directed that they will perform the above tasks along with their work, for this no additional allowance will be payable to them.


The said orders will be effective immediately.

Enclosure: As above.


 (Vinay Mishra)
 Addl. Program Director

C.C. to-

Appendix 30: Consent to Establish for sewerage treatment plant at Russi, Nainital



मुख्यालय
उत्तराखण्ड प्रदूषण नियंत्रण बोर्ड
"गौरा देवी पर्यावरण भवन"
46वी, आई.टी. पार्क, सहस्त्रधारा रोड, देहरादून-248001
 कार्यालय दूरभाष सं०-2976157, 2976158, 2607082

पत्रांक-दूधौली/एचओ/एचओसी-1728/2022/903

दिनांक 08.08.2022

सेवा में,

Project Manager,
Uttarakhand Urban Sector Development Agency,
C/o Neelkanth Guest House, Mallital, Nainital,
Distt. Nainital,

Registered/AD
 CAF ID.: 42426
 CTE : Fresh

विषय :- पर्यावरणीय प्रदूषण की दृष्टि से सीवेज ट्रीटमेंट प्लांट (एसटीपी) की स्थापना हेतु सहमति पत्र (Consent to Establish) निर्गमन।

महोदय,

कृपया उपरोक्त विषयक आपके आवेदन पत्र दिनांक 21.06.2022 (Application No.: 2726756) एवं तत्सम्बन्धी संबंधित कार्यालय की निर्देशन अथवा एवं तत्सम्बन्धी का बोर्ड मुद्राबलन में परीक्षण किया गया एवं परीक्षणोपरान्त लिए गए निर्णय के अन्त में सीवेज ट्रीटमेंट प्लांट की पर्यावरणीय प्रदूषण से दृष्टिकोण से निम्नलिखित शिष्टिटी दर्ज एवं सम्बन्धित शर्तों के अनुचित अनुपालन की शर्त के साथ तर्ज स्वामित्व सहमति पत्र निर्गत किया जाता है।

- यह स्वामित्व सहमति पत्र निम्नलिखित शिष्टिटी विवरणों के लिए ही निर्गत किया जा रहा है :-

(क) स्थल :	VIII. Russi, Distt. Nainital.
(ख) निर्यात :	Sewage Treatment Plant-17.5 MLD Capacity.
(ग) शुद्धिकृत उपग्रह निस्तारण :	17.5 MLD
(घ) प्रयुक्त ईंधन :	Diesel for DG Set (500KVA) x 1Nos.

उपरोक्त विषय वस्तु में किसी भी प्रकार से परिवर्तन करने पर पुनः स्थापना हेतु सहमति पत्र प्राप्त करना आवश्यक होगा।

- सीवेज ट्रीटमेंट प्लांट (एसटीपी) में सभी आवश्यक यन्त्र, संयंत्र, शक्ति पट्टिका, उपग्रह शुद्धिकरण संयंत्र तथा वायु प्रदूषण नियंत्रण की व्यवस्था की स्थापना में की गई इज्जति रिपोर्ट इस कार्यालय में प्रत्येक माह की दसवीं तारीख तक निस्तार प्रेषित करें।
- एसटीपी में परीक्षण संयन्त्रन तथा तक प्राप्त नहीं करें, जब तक कि वह बोर्ड से जल अधिविद्यन एवं वायु अधिविद्यन के अन्तर्गत सहमति (CTO) प्राप्त न कर ले। जल एवं वायु सहमति (CTO) प्राप्त करने हेतु इकाई में उत्पादन प्रारम्भ करने की तिथि से कम से कम 2 माह पूर्व निर्धारित सहमति आवेदन पत्रों को उत्पादन पूर्व प्रथम आवेदन का उत्तर देकर तुरंत इस कार्यालय में अद्यतन कर दिया जावे। यदि इकाई उपरोक्त का अनुपालन नहीं करता है तो जल अधिविद्यन की वैधानिक प्रविधियों के अन्तर्गत संयन्त्रन के विरुद्ध विना किसी पूर्व सूचना के विधिक कार्यवाही की जा सकती है।
- एसटीपी में परीक्षण उत्पादन से पूर्व संबंधित कार्यालय द्वारा एसटीपी का निरीक्षण सुनिश्चित कराया जावे।
- घोलु उपग्रह की मात्रा 1.0 किलोलीटर प्रति दिन से अधिक नहीं होनी। जलित घोलु उपग्रह को स्थापित सीवेज ट्रीटमेंट प्लांट के मालिक से शुद्धिकृत एवं निस्तारित किया जावे।
- एसटीपी में संयन्त्रन प्रतिवर्ष माह सितम्बर तक पर्यावरणीय बलान प्रस्तुत करना सुनिश्चित करें।
- यह स्वामित्व हेतु सहमति पत्र जारी होने की तिथि से 05 वर्ष तक की अवधि के लिए वैध होगा।
- एसटीपी का संयन्त्रन इस प्रकार से किया जावे कि परिवेशीय वायु गुणवत्ता सदैव बोर्ड मानकों के अनुगम्य रहे।
- एसटीपी से जलित लेस अपशिष्ट पदार्थों को इस प्रकार निस्तारित किया जावे कि जल, वायु तथा मृदा प्रदूषण की सम्भावना न रहे।
- एसटीपी में परिसंयन्त्रन एवं अन्य अपशिष्ट (प्रयोज्य एवं प्रसंशोधनीय मूल्यवत्) नियम, 2016 का अनुपालन सुनिश्चित करें तथा उत्पादन से पूर्व परिसंयन्त्रन अपशिष्ट के निस्तारण हेतु बोर्ड से प्रविष्टि प्राप्त किया जावे।
- एसटीपी में कार्यालय परिसंयन्त्रन रसयन प्रविष्टि, भण्डारण एवं आयात नियम, 1989 का पालन किया जावे।

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12. एसटीपीडी में सुरक्षा सम्बन्धी समस्त उपग्रह किये जायें तथा उपग्रह प्रारम्भ करने से पूर्व सक्षम विभागों से अनुरोधित प्रमाण वक्त प्राप्त किया जाये।
13. एसटीपीडी के प्रभावी संवर्धन हेतु वृद्धक विद्युत मीटर की स्थापना सुनिश्चित की जाये। उक्त हेतु प्रतिदिन विद्युत/संयंत्रों की खपत का विवरण तब तक न हो जाये।
14. 500 के.वी.ए. क्षमता के क्लोस्ड रीटो में इन्वर्टर सेट की उचित मालिकों के अनुमति स्थापित की जाये एवं यहाँ प्रदूषण निर्वन्धन हेतु एयरलिफ्ट इन्वर्टर सेट की स्थापना की जाये।
15. एसटीपीडी में बोर्ड की पूर्वाभूमिति के बिना वायरलेस/ओवन, फ्रीज अतिरिक्त डीसी/एसी सेट अदि की स्थापना न की जाये।
16. यह सुनिश्चित मात्र सीकेड ट्रीटमेन्ट प्लान्ट (एसटीपीडी) क्षमता-17.5MLD की स्थापना हेतु मान्य है।
17. यह स्थापना सक्षमता जल अधिविवरण एवं जल अधिविवरण के अन्तर्गत विनियम की जा रही है। इसमें सक्षम विभागों से आवश्यक अनुमति प्राप्त करना सुनिश्चित कर ले।
18. इन्वर्टर सेट के विविध भूमि उपयोग एवं विद्यमान/अन्य विभाग से वॉल्टेज स्वीकृति अवश्य प्राप्त कर ली जाये।
19. सीकेड ट्रीटमेन्ट प्लान्ट (एसटीपीडी) की स्थापना इस प्रकार सुनिश्चित करें कि शुद्धिकृत अपवर्ण की सुपल राईट विनियमित मानकों के अन्तर्गत रहे। ट्रीटमेन्ट प्लान्ट में जलित सेट अतिरिक्त के विद्यमान सीपीसी के मॉडरनिजेशन के अनुसार करना सुनिश्चित करें।
20. एसटीपीडी की स्थापना प्रस्तुत प्रस्ताव के अनुसार इन्वर्टर सेट पर पर्यावरण की मानकों के अनुसार की जाये।
21. एसटीपीडी में राज्य प्रदूषण निर्वन्धन बोर्ड की पूर्वाभूमिति के बिना क्षमता विस्तार/कटौती कदापि न किया जाये।
22. इसमें द्वारा पर्यावरण, जल एवं जलवायु परियोजना संरक्षण, माला सरकार की अधिसूचना दिनांक 12.08.2021 एवं उत्तराखण्ड सरकार की अधिसूचना सं०-84/XXVIII-1-20-13811/2001 दिनांक 16.02.2021 में अधिसूचित banned Single Use Plastics का प्रयोग इसमें बहिष्कृत न किया जाये।
23. सीकेड ट्रीटमेन्ट प्लान्ट (एसटीपीडी) में शुद्धिकृत से उपरान्त शुद्धिकृत अपवर्ण को नवा सम्भव अधिकतम पुनः प्रयोग किया जाये।

सूचना ध्यान दें कि उपर्युक्त लिखित विनियम शर्तों एवं सामान्य शर्तों का प्रभावी एवं सम्बोधन/अनुपालन न करने पर बोर्ड द्वारा निर्गत स्थापना/सहमति (CoE) पत्र निरस्त कर दिया जायेगा। बोर्ड का अधिकार सुनिश्चित है, कि स्थापना/सहमति पत्र (CoE) की शर्तों में संशोधन किया जाये अथवा निरस्त कर दिया जाये।

उपर्युक्त विनियम एवं सामान्य शर्तों के सम्बन्ध में इसमें द्वारा इत संचालन में दिनांक 02.09.2022 तक प्रथम अनुपालन अथवा अवकाश प्रेषित की जाये। अनुपालन अथवा निषेधक प्रेषित की जाये, अन्यथा स्थापना सहमति पत्र निरस्त कर दिया जाएगा।

सदस्य

(एसटीपीडी)
सदस्य सचिव

पृ० सं० एवं दिनांक/उपस्थानानुसार।

प्रतिनिधि :- क्षेत्रीय अधिकारी, उत्तराखण्ड प्रदूषण निर्वन्धन बोर्ड, इलाहाबाद, जयपुर रोज़ेताल को सूचना एवं उपर्युक्त के अनुपालन हेतु प्रेषित।

मुख्य पर्यावरण अधिकारी

एसटीपीडी

English Translation of CTE (Refer Appendix 30)

Letter number UKPCB/ HO/NOC 7728/ 2022/903

Dated: 05/08/2022

To,

Project Manager,
Uttarakhand Urban Sector Development Agency,
C/o Neelkanth Guest House, Mallital, Nainital,
Distt, Nainital

CAF ID: 42426 CTE: Fresh

Subject: Consent for the Establishment of STP from the environmental pollution's point of view.

Sir,

Please refer your application dated 21.06.2022 (application no.2725796) and in this regards, regional office's inspection report and recommendations on the above subject at the Board Headquarters. And in the order of the decision taken after the tests, the unit has to be given the following specific recommendations from the point of view of environmental pollution.

Consent to Establish is issued for conditional establishment with the condition of proper compliance of conditions/recommendation.

1 .This consent letter for establishment is being issued only for the following specific details.

Venue	Vill. Russi, Distt. Nainital
Construction	Sewerage Treatment Plant- 17.5 MLD Capacity
Treated effluent	17.5 MLD
Used Fuel	Diesel for DG Set (500 KVA) x1Nos.

In case of any change in the above subject matter, it will be necessary to obtain consent letter for re-establishment.

2. The progress report regarding establishment of all necessary equipment, plants , green belt, effluent treatment plant and air pollution control system in the unit should be continuously sent to this office by the 10th of every month.

3. The unit should not start its trial operation in the unit, until it has obtained the consent (CTO) from the board under Water Act and Air Act. For obtaining Water consent and Air consent (CTO) at least 2 months before the date of commencement of production in the unit, the prescribed consent forms must be submitted in this office mentioning the first application before production. If the unit does not comply with the above, then legal action can be taken against the unit without any prior notice under the statutory provisions of the said Acts.

4. Before trial production in the unit, inspection of the unit should be ensured by the regional office.

5. The quantum of domestic effluent generated shall not exceed 1.0 Kg/day. Domestic effluent should be disposed as per the norms. This consent letter for establishment is valid only for domestic effluent. The industrial effluent from the unit should never be disposed off.

6. Make sure to submit the environmental statement by September every year.
7. It will be valid for a period of 05 years from the date of issue of consent letter.
8. The unit should be operated in such a manner that the ambient air quality is always in conformity with the Board Standards.
9. The solid waste generated from the unit should be expanded in such a way that there is no possibility of water, soil, air pollution.
10. Ensure compliance of Hazardous and Other waste (Management and Transboundary Movement) Rules 2016 in the unit and authorization should be obtained from the board for disposal of hazardous waste before production.
11. Hazardous/ Hazardous Chemicals Manufacturing storage and import Rules 1989 should be followed in the unit.
12. All safety related measure should be taken in the unit and before starting production No Objection Certificate should be obtained from the competent departments.
13. For effective operation of the water, air pollution control system installed in the unit, installation of two separate electricity meters should be ensured. For the above, the details of daily consumption of electricity/chemicals should be recorded in the log book.
14. In the generator set of 500 KVA, the height of the exhaust stack in the generator set should be set as per the standards and acoustic enclosures should be installed for noise pollution control.
15. No installation of boiler/furnace/oven and additional DG set etc. should be done in the unit without prior permission of the board.
16. This consent will be valid only for the establishment of 17.5 KLD capacity Sewage Treatment Plant.
17. Consent for this establishment is being issued under the Water Act and the Air act. The unit should ensure to obtain necessary permission from the concerned departments.
18. For the legal use of proposed land the desired permission obtained from the concerned department.
19. The establishment of the STP should be in proper manner without compromising of water flow as per the standard. The generated solid waste from the STP should be disposed as per the standard of CPCB.
20. The proposed STP must be established on proposed land as per the Environmental norms.
21. The capacity of the proposed STP should not be enhanced without prior permission of State Pollution Control Board.
22. Banned single use plastic notified by the unit in the Ministry of Environment, Forest and Climate Change, Government of India notification dated 12.08.2021 and Uttarakhand Government Notification No. 84/XXVII-1-20-13(1)/2001 dated 16.02.2021. should never be used in the premises.

23. The treated water of the proposed STP should be reused as much as possible.

Please note that non-compliance of the above mentioned specific conditions and general conditions effectively and satisfactorily will result in cancellation of Consent letter for establishment issued by the

board. The Board reserves the right to amend or cancel the conditions of Consent to Establish.

Regarding the above specific and general conditions , the first compliance report must be sent by the units to this office by 02.09.2022. Compliance report should be sent regularly; otherwise the consent letter for establishment will be cancelled.

Sd (S.P
Subudhi)
Member
Secretary
UKPCB, 46 B,
IT park ,
Shahastradhara
Road Dehradun,
Uttarakhand

Appendix 31: Letter from IIT Roorkee for slope stabilization



भारतीय प्रौद्योगिकी संस्थान रुड़की
रुड़की - 247667, उत्तराखण्ड, भारत

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sandpfes@iitr.ac.in

IIT Roorkee

प्रो० संदीप सिंह
प्राध्यापक, भू-विज्ञान विभाग

Prof. Sandeep Singh
Professor, Deptt. of Earth Sciences

To
Sri. Gitesh Gaurav Saini
Project Manager,
Uttarakhand Urban Sector Development Agency,
Nainital, Uttarakhand

November 17, 2022

Dear Sri. Gitesh Gaurav Sainiii

This is in reference to our meeting in the office and letter no. 51/WWNTL01/306 dated 11.11.202 regarding the slope stabilization of the STP site at Russi Village, Nainital. In this regard, before giving you a full estimation we would like to visit the site with officials of Uttarakhand Urban Sector Development Agency on a mutually agreed date with the following IITR team:

1. Prof. Sandeep Singh, P.I., Geological Expert
2. Prof. N K Samadhiya, Geotechnical Expert
3. Prof. Anand Joshi, Geophysical Expert

The charges for the visit will be Rs. 2,00,000.00 (Rupees two Lakh only) plus prevailing taxes (GST ~18% at the current rate). It includes the Honorarium of the experts (as per the Institute rule), all travel expenses, and all other miscellaneous expenses.

An advance payment along with an acceptance/award letter has to be made before the field visit through RTGS (Name of Account Holder: Dean SRIC, Account Number: 4044000100031597, Bank name PNB, IIT Roorkee, Branch Code: 4044, IFSC code: PUNB0404400) in favor of Dean (SRIC), IIT Roorkee payable at Roorkee (interest-free, without Bank Guarantee/undertaking).

The GST No. of IIT Roorkee is GSTIN-05AAALI0033RIZ5

Looking forward to hearing from you soon.

With best regards

Sandeep Singh
17th Nov. 2022
Sandeep Singh