Environmental & Social Screening Report

for

Wholesale Market Yard, Paonta, Sirmour District, H.P.

Submitted to

Himachal Pradesh Horticulture Development Project

Shimla

Prepared by

Ramky Enviro Services Private Limited

Hyderabad

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Sub-Project Description

Government of Himachal Pradesh (GOHP) with support of World Bank and in association with Himachal Pradesh State Agriculture Marketing Board (HPSAMB) is implementing Himachal Pradesh Horticulture development Project (HPHDP), where the present sub project, the expansion and refurbishment of **Wholesale Market yard, Paonta, Sirmour** is under progress. Currently the market yard has an annual throughput of 4481 MT provisioning approximately 300-400 visitors/day. The population of the Paonta is projected to increase in the coming years, as well continually increase agri and horticultural produce, growing purchase power of the customer, expanding tourism sector in the region. This will vitally necessitate wholesale market yard, Paonta to expand their facility and reduce potential post-harvest losses.

The Paonta wholesale market yard is located in an area of 6.8 acres (34 bighas) and is well connected to road transport system as it holds NH-7 at a distance of 0.3 km NE enhancing the ease of the produce to be transported to the market yard from surrounding districts. A variety of infrastructure facilities such as administrative block, APMC office, commission agents' shops, canteen, control room with weighbridge, covered auction platform loading unloading parking facilities etc. exist at the market yard. The total water estimated to be utilized following proposed up gradation of the sub-project along with the existing facility is about 17 KLD. The wastewater generated in the yard is principally domestic waste water and will be treated in a portable sewage treatment plant proposed. Currently about 2.8 ton/day of solid waste is generated from the facility. In order to substantially abate adverse impacts following solid waste generation at the market yard a composting procedure/bio molecule extraction technology has been proposed to facilitate sustainable solid waste management. The operations at the market yard are principally concentrated towards fruit and vegetable sale through auction or negotiation disregarding any potential opportunity for harmful gas emissions. Consequentially, 2 km of study area is identified all around the project site to collect the baseline data for air, water, soil, noise, ecological and social conditions etc., and the environmental impacts expected to be identified for the project are also reported within the study area.

Environmental Screening and Classification

(A) Impact Identification

Has sub-project a tangible impact on the environment?	A systematic flow of fruits and vegetables from farm gate to the consumer is a vital component of national or state food security. The flow of fruits and vegetables are generated upstream in growing areas and gathered in market yards and sub yards. The wholesale market yard at Paonta has an annual throughput of 4481 MT of produce, of which major produce traded at market yard include apple, banana, mango, cauliflower, tomato, potato, and other seasonal vegetables. The market yard serves the population of around 40,000 to 50,000 (approximately) with commissioners' total annual turnover of 7 to 8 crores. It consists of basic amenities prerequisite for market yard operations such as administrative office, control room with weigh bridge, loading, unloading and parking space, trader and commissioner agents' shops and canteen etc. The total number of daily visitors to market comprise of 300-400 people (estimated average) for the business. Approximately 150-156 vehicles travel across the market yard, which include all types of vehicles, every day to transport the produce with average sales volume of 4200 kg per week per commissioner. Consequently operations at the market yard premises generate about 2.8 ton of waste per day principally comprising of fruit and vegetable waste and insubstantial quantity of paper, carton and plastic disturbing the environment. The organic waste (Fruit and vegetable waste) produced in markets initiate odor annoyance due to its high moisture content, with in the premises as well as during further waste management practices. The solid waste generated at the premises is sourced into organic and inorganic waste material. Recyclable waste material such as plastic, paper, cardboard waste is recycled and reused within the sub-project activities. Organic waste generated at market yards provides great opportunity to be reutilized as value added products such as compost, fuel brickets etc., into various industries owing to its organic fraction composition. It can as well be processed by compositing or anaerobic

	treatment technologies to generate biogas and reutilize it as an alternative fuel. The inorganic material will be disposed off in low lying landfill sites of suitable nature. Furthermore, as referred earlier, the produce reaches the market yard through vehicles ranging from large trucks to autos. Improperly maintained vehicular conditions and unorganized vehicular movement within the premises also initiate air and noise pollution. Properly organized vehicular movements would abate potential pollution levels in the premises. Laterally the waste water at the market yards is majorly generated due to sanitary activities or from domestic activities and canteens. An appropriate portable sewage treatment plant will be installed to treat waste water and to ensure that specified parameters are meeting the regulatory standards To facilitate environmental safety and abate pollution with in the premises, an environmental management plan with appropriate sustainable technologies or strategies will be implemented. This will ensure that the environmental impacts due to market yards are minimized to an acceptable level. Correspondingly, the sub-project does not indicate any tangible impacts on the surrounding environment.
What are the significant beneficial and adverse environmental effects of the sub- project?	The anticipated environmental impacts include: • Air pollution • Water pollution • Solid waste generation • Noise pollution • Soil pollution • Floral and faunal disturbance Air emissions in market yards are mainly generated through vehicular movement or through vehicular maintenance. Flue gases are also emitted from DG operations. Accordingly, the emissions can be greatly abated by constructing concreted or asphalt roads and maintain them in proper conditions throughout. Ensure that the vehicle is properly maintained and vehicular movement is well organized to prevent any vehicular movement blockages. The waste water from the market yard activities mainly

	consists of BOD, COD, TDS, TSS and subsequently, the waste water is treated in an appropriate portable sewage treatment plant to minimize any potential environmental impact. The solid waste from the market yard mainly consists of spoiled fruit and vegetable waste that have the potential for co-product exploitation. The valorization of fruit and vegetable waste is possible through extraction of high value components such as proteins, polysaccharides, dietary fibers, and phytochemicals. The recovered by-products or biomolecules can be used in food processing or pharmaceutical or medicinal preparations. The solid waste can be further treated to produce compost which can be used as manure. Odor is also a significant nuisance within the market yards and it can be controlled by maintaining proper air flow control or negative air pressure, either through innovative design interventions, or installing odor control equipment like whirlybird or turbo ventilators, mist air dry fog odor suppression system etc. The up-gradation and expansion of wholesale market yard at Paonta will increase the operational efficiency. The approach and the methods adopted during the construction and operational phases of the proposed sub-project are however predicted to create certain environmental disorders/fluxes that could be well mitigated through embracing a proper management plan Substantial mitigation measures to abate environmental instabilities have been proposed, and are discussed in the following sections and Environmental and Social Impact Assessment (ESIA) report.
Does the sub-project have any significant potential impact on the local communities?	The proposed up-gradation and expansion of wholesale market yard at Paonta would develop and rationalize market operations and improve market management system. Concurrently, the market yard is aspired to benefit local environment as well. The existing market yard was found to have constrained sanitary and hygiene situations, unorganized sewerage and sanitation system, insufficient waste management, that cause a serious concern to the surrounding environment. However, the expansion facilities proposed will improve the public health through better sanitary conditions on site and, enhancing solid waste disposal facilities which reduce potential negative

	impacts on the surrounding environment. The expansion is also predicted to increase operational activities at the market yard, professionalize the management system, and increase the transparency within market operations there by encouraging more producers to get their produce to the market from surrounding locations. Aligned with increased operational frequency at the market, it is expected to be similar for vehicular movement that might lead to increased traffic, road congestion, air and noise pollutions in the region. Also, following the population influx into the region, there is a possibility of spread of certain communicable diseases if proper care is not taken. By adopting proposed environmental management plan, it is possible to stabilize any unwanted potential impacts on the surrounding environment. As the operations increase, there would be a greater demand for manpower that would enhance employment opportunities to local people. This would subsequently increase purchase power of the local community in surroundings there by paving a route for more business development, increased job creation and economic development of the region. This would also encourage government to construct better social infrastructure such as hospitals, schools, government offices etc. Hence, the proposed sub-project is anticipated to have positive impacts on the surrounding environment.
What impact has the sub-project on the human health?	The work force at the market yard is mainly involved into manual activities such as lifting, transferring produce from vehicle to interior of the yard and vice-versa, which involves repetitive motions, awkward postures etc. These activities can result in soft tissue injuries and musculoskeletal disorders creating both short term and long term injuries to the personnel involved. To sub side the negative effects, proper ergonomic postures' information, work place facilities and tools will be provided to the personnel. The sub-project mainly results in dust emission, noise creation, and solid waste generation at the premises due to operational activities which would have an impact on the workers involved. To recede the same, best management practices will be adopted at the operations level and this will drastically reduce the potential negative impacts on health. Furthermore, the staff will be provided with personal protective equipment such as face mask and

	eye protective equipment, to safe guard their health from the exposure to pollutant parameters. Also, the rules and regulations will be in place making sure that the personnel get enough rests or breaks during the work and in between the working hours or days eliminating any potential negative health impacts. The sub-project would also have a positive impact on health of local communities due to adoption of best management practices and best available technology not entailing excessive cost as this would negate any negative environmental damages that could have affected the local community health.

(B) Impact Mitigation

What alternatives to the sub-project design have been considered and what mitigation measures are proposed?	Sub-project design of market yard holds alternative marketing strategies such as contract farming, direct marketing, farmer's produce organizations, group marketing etc. The sub project of upgrading and expansion market yard provides an opportunity to source some of the key areas that can enhance environmental safety at the market yard premises; • Value added products from fruit and vegetable waste • Improved waste treatment facilities at the premises • Superior supply chain management and operations Accordingly, by adopting best management practices and best technologies, there exists an option to control environmental pollution while benefitting the investor. Best management practices (BMP) and Best available technologies not entailing external costs (BATNEEC) will be implemented wherever possible within the market yard, to minimize the pollution levels and carry out the operations at an appropriate scale, which results in gains compared to investments made. This practice enables least possible harm to environment through integrating sustainability considerations as a natural part of performance management as well as to create substantial balance between economic cost and environmental costs to the investor. Furthermore, the practices will create awareness and engage all the stake holders into sustainable management practices. **Mitigation measures proposed** • Appropriate mitigation measures for control of air, water & noise pollution and solid waste management are discussed in detail in the following sections and ESIA report. • The workers are suggested to be provided with necessary Personal Protective Equipment while working in facilities and periodic health check-ups for the workers and local communities • Provision of infrastructural facilities for workers'

	recreation, sanitation, health and hygiene is suggested • Sewerage and storm water systems to be provided based on maximum rainfall and maintained properly with regular checks for smooth flow of water • Training programs for workers on efficient handling of waste, safety at work, gender mainstreaming, child labor and rights of indigenous people & livelihoods.
Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in sub- project preparation?	Extensive stakeholder dialogues were conducted through different social tools like Focused Group Discussions (FGDs); participatory rural appraisal covering local farmers, workers, staff, self-help groups, community based organizations, NGOs and cooperative societies.

(C) Categorization and Conclusion

Conclusion of the environmental screening:

- ✓ Sub-project is declined □
- ✓ Sub-project is accepted ■

- ✓ Sub-project is classified as environmental Category B and needs EMP ■

- ✓ Sub-project is classified as environmental Category C and does not need EMP □

Social Screening

Social safeguards screening information		Yes	No
1	Is the information related to the affiliation, ownership and land use status of the sub-project site available and verifiable? (The screening cannot be completed until this is available)	Yes	
2	Will the sub-project reduce people's access to their economic resources, such as land, pasture, water, public services, sites of common public use or other resources that they depend on?		No
3	Will the sub-project result in resettlement of individuals or families or require the acquisition of land (public or private, temporarily or permanently) for its development?		No
4	Will the sub-project result in the temporary or permanent loss of crops, fruit trees and household infrastructure (such as ancillary facilities, fence, canal, granaries, outside toilets and kitchens, etc.)?		No
If answer to any above question (except question 1) is "Yes", then OP/BP 4.12 Involuntary Resettlement is applicable and mitigation measures should follow this OP/BP 4.12 and the **Resettlement Policy Framework**			
Cultural resources safeguard screening information		**Yes**	**No**
5	Will the sub-project be implemented in the vicinity of a cultural heritage site?		No
6	Will the sub-project require excavation near any historical, archaeological or cultural heritage site?		No
If answer to question 5 is "yes", then **OP/ BP 4.11 Physical Cultural Resources** is applicable. In this case, sub-project proponent must provide evidence that consultation was held with and an agreement on this sub- project was obtained from an authorized representative of culture and heritage protection authority. If answer to question 6 is "Yes", then **OP/BP 4.11 Physical Cultural Resources** is applicable and possible chance finds must be handled in accordance with OP/BP and relevant procedures provided in this EMF.			

Environmental Management Plan

Part A: General Project and Site Information

Institutional & Administrative		
Project title	Conducting ESIA studies and preparation of ESMP for moderate to high risk activities under - HPHDP	
Sub-Project title	Environmental & Social Impact Assessment Report for Paonta Wholesale Market Yard, Sirmour District, Himachal Pradesh	
Scope of site-specific activity	• Commission field visit based survey to determine the project interventions requiring ESIA & propose necessary ESMP • Perform an extensive stakeholder and community engagement practice to source current state of social conditions in the project site, rank key issues as well as to suggest required measures to address concern of stake holders through social impact assessment • Assessing current state of environmental and socio-economic conditions of the project site area • Identifying and evaluating the environmental and social impacts expected due to the proposed activity • Undertake an alternative evaluation process to avoid and /or minimize any potential high risk impacts to ensure protection to environment • Identifying needs or existing gaps in the socio economic conditions of the project • Prepare an intervention specific socio economic baseline survey report • Suggest to enrich work place facilities as well as the qualities such as sanitation, transportation, recreation and to safeguard the employee welfare • Suggest necessary capacity building and awareness as per identified needs • Create awareness within the man power about work place policies, employ facilities, employ safety, gender equality and generate employee opportunities for local and indigenous people	
Institutional arrangements	Task Team Leader: HPHDP	Safeguards Specialist: HPHDP

Implementation arrangements (Borrower)	Implementing entity: HPHDP	Works supervisor: PCU- HPHDP and PIU-HPSAMB	Works contractor: RESPL
Site Description			
Who owns the building to be constructed/extended/ reconstructed?	Agricultural Produce Market Committee (APMC, Sirmour)		
Who owns the land allocated for sub-project? Who uses the land (formal/informal)?	Agricultural Produce Market Committee (APMC, Sirmour) Farmers organizations, Societies and Private Entrepreneurs		
Description of physical and natural environment, and of the socio-economic context around the site	The principal physical features of the proposed project; • Location : Bhuppur (V), Paonta Sahib (T), Sirmour (D) • Geographical co-ordinate : 30° 26' 17.57" N 77° 36' 39.12" E • Elevation : 392 m • Total land area : 6.8 Acres (34 bighas) • Nearest highway : NH-7, 0.3 km (NE) • Nearest water body : Yamuna- 0.2 km (S) • Nearest Village: Bhuppur, Adjacent (N) The base lines studies in the villages within 0-2 Kms radius from the project site depicted socio-economic conditions around the proposed project, as per 2011 census. The location consists of 34,232 inhabitants of who around 18045 accounted for male and 16187 female populations. Average literacy rate is observed as 77.4%. The average household size was 4.6 of total number of households at 7489. This reveals a nuclear family pattern with in the studied area.		
Which of the project intervention sites does sub- project related to and how?	The project is related to Paonta Wholesale Market Yard, Sirmour District, Himachal Pradesh.		

Legislation	
National & local legislation & permits that apply to sub-project activity	The sub-project is required to comply with the relevant Laws and Regulations of the State Pollution Control Board.
Public Consultation	
When / where the public consultation process took / will take place	Extensive public consultations were conducted in the project area and nearby villages through FGDs, participatory rural appraisal techniques. These consultations covered issues of local farmers, women & migrant workers, staff, community based organizations, NGOs, cooperative societies.
Attachments	
Attachment 1	Eco sensitive map
Attachment 2	Facility Layout

Part B: Safeguards Information

Environmental /Social Screening			
Will the site activity include/involve any of the following?	**Activity/Issue**	**Status**	**Triggered Actions**
	A. Building rehabilitation	[✓] Yes [ ] No	See Section **A** below
	B. New construction	[✓] Yes [ ] No	See Section **A** below
	C. Individual wastewater treatment system	[✓] Yes [ ] No	See Section **B** below
	D. Historic building(s) and districts	[ ] Yes [✓] No	See Section **C** below
	E. Acquisition of land	[ ] Yes [✓] No	See Section **D** below
	F. Hazardous or toxic materials	[ ] Yes [✓] No	See Section **E** below
	G. Impacts on forests and/or protected areas	[ ] Yes [✓] No	See Section **F** below
	H. Handling / management of medical waste	[ ] Yes [✓] No	See Section **G** below
	I. Traffic and Pedestrian Safety	[✓] Yes [ ] No	See Section **H** below

Part C: Mitigation Measures

Activity	Parameter	Mitigation measures checklist
0. General Conditions	Notification and Worker Safety	**Notification** **Shop and up-gradation and expansion act** The act has the responsibility of protecting both rights of employers and employees covering various aspects but not limiting to lighting and ventilation, fire safety and precautions, accidents, record keeping, etc. **Worker safety for employers** • Employers are entitled to acquaint the staff with the significance and usage of PPE through training or orientations etc. • Employers have duties concerning the provision and assuring the staff of exercising the personal protective equipment (PPE) usage while at work. • Maintain workplace area in clean, orderly manner with sufficient infrastructure and facilities ensuring the worker safety **Worker safety for employees** • Realize the prominence of work place safety, attend all safety training from employer and adhere to the safety instructions

A. General Rehabilitation and /or Construction Activities	Air Quality	**Pre-construction and construction phase** • Water sprinkling will be carried out twice a day over main concrete/asphalt roads of the project area, as this process will reduce dust emissions significantly. Frequency is increased during windy days. • Increased duration of stockpiling the excavated mud can potentially disturb the air quality of the premises. To abate the same, excavated mud is quickly expended as backfill material for the open cut trenches towards roads development. • Dust control barriers through temporary thin sheets of adequate heights (3 m), will be erected to abate dust emissions to the surrounding areas. • Flue gases are emitted from DG set operations and fuel burning. • Tree plantation will be initiated through planting 2 to 3 years old saplings along the project boundary by drip irrigation methodology. Drip irrigation process holds the advantage of keeping the premises moist there by curtailing potential air pollutant dispersion. • All vehicles carrying raw materials will be instructed to be covered with tarpaulin/plastic sheet. • Loading and unloading activities of the raw material will be passive during windy days. • A planned schedule is kept in place to minimize/control vehicular movement within the premises. • Drivers will be instructed to turn off the engines to abate potential air emissions, rather than allowing them to run for longer periods. **Operational phase** • The proposed DG sets will be provided with sufficient stack height in accordance

		with MoEF guidelines (30 m) or 1 m above the tallest structure in the project area for proper dispersion of sulphur dioxide and oxides of nitrogen. • DG set will be installed strictly in compliance with recommendation from the manufacturer, as this would ensure an installation free from vibration and exhaust gas leaks. • Concreted/asphalted roads will be constructed and maintained to control dust emissions. • LPG is proposed as an alternative vehicular fuel entering the market yard to abate vehicular emissions. • Drivers will be mandated to turn off the engines rather than allowing them to run for longer periods as and when required. • Mandatory PUC certification for the vehicle entering the premises will be in place • Sweeping machines and sweeping process will be carried out frequently within the premises to reduce particulate matter **Odor:** • Proper air flow control or negative air pressure within the yard either through innovative design interventions, or installing odor control equipment's will be maintained to abate odor • Fruit and vegetable waste dump area will be delineated from the main activity area so as to eliminate potential public exposure to odor • Odor control equipment as mist air dry fog odor suppression systems or atomizers can be installed at odor generation source • Neutralizers such as sodium hypochlorite, potassium permanganate or commercial preparations as Ecosorb can be applied to control odor nuisance

	Noise	**Pre-construction and construction phase** • Drivers carrying the raw material will be made aware of the negative impacts of noise pollution through sign boards at the premises • Drivers will be instructed to turn off the engines and not run them for longer periods of time • Noise generating equipment will be exercised only during the day time or early afternoon rather than during early morning or late afternoon • Any potential noise generating equipment during construction will be kept far away from human habitation • All the vehicles entering the premises will be travelling at optimal speed to reduce potential blowing of horns • Temporary thin sheets of appropriate height will be erected around the site to control noise propagation into the surrounding areas • Noise generating equipment will be maintained and serviced properly to abate potential noise **Operational phase** • Drivers carrying the fruits and vegetables will be made aware of the negative impacts of noise pollution through sign boards at the premises or as a part of occasional training • Drivers will be instructed to turn off the engines and not run them for longer periods of time • All the vehicles entering the premises will be travelling at optimal speed to reduce potential blowing of horns

		• The maximum permissible sound level for new diesel generator (DG) sets, that are proposed at the market yard, shall be within 75 dB(A) and will be placed 1 m away from the enclosure • Acoustic enclosures will be provided, else the DG set room will be acoustically treated • Installing noise barriers or shields around the DG sets will abate noise pollution • DG set will be installed strictly in compliance with recommendation from the manufacturer as this would ensure an installation free from vibration and exhaust gas leaks, which source the noise pollution • A proper routine and preventive maintenance procedure for the DG sets should be set and followed in consultation with the manufacturer
	Water Quality	**Pre-construction and construction phase** • The total water required for construction is about 6 KLD and is sourced from ground water. • The raw water collected from the hand pump is used for construction activities. **Operational phase** • The total water requirement is about 17 KLD and the source is ground water. • Water used for domestic activities should meet IS 10500:2012 drinking water standards and inland surface water standards IS 2296-1992. • The treated wastewater can be reused for floor washing, fruit and vegetable washing, vehicle washing, greenbelt etc.

	Waste management	**Pre-construction and construction phase** • Waste produced from the construction activities within the facility area of 6.8 acres will be regularly collected in a storage area and protected with proper sheets to prevent any potential waste scatter. • A designated waste storage area with sufficient waste storage facility will be maintained on site. • 3 R's-Reduce, Reuse and Recycle are three prescriptions that are mainly practiced during the construction phase waste management. • Construction personnel are made aware about proper collection and handling procedures related to the solid waste generated. • Proper care will be taken to regularly dispose the waste and prevent any potential over topping of waste containers. • Construction waste generated will be deposited at collection center made by local body or handed over to the authorized processing facilities of Construction and Demolition waste. • Construction activities may generate some quantity of muck, which is managed by mixing it with straw, stone dust or rice husk, to reduce the adverse impacts. **Operation phase** • Fruit and vegetable waste and other solid wastes of about 2.8 ton/day from the market yard will be segregated into different heaps such as biodegradable, non-biodegradable, recyclables etc. • The rejected fruits and vegetables, peels, cuttings, inner cores/seeds will be collected and sold for reuse as cattle feed.

		• Value added biomolecules can be extracted from food and agricultural waste by adopting bioactive compound extraction techniques. • Alternatively, general wastes and fruit and vegetable wastes can be used for vermicomposting process, and the manure generated can be sold to farmers or to local markets to generate extra revenue.
B. Individual wastewater treatment system	Waste Water Quality	• The waste water generated from the market activities principally include: i. Domestic waste water ii. Fruit/vegetable, floor, equipment and vehicle wash water iii. Waste water from service workshops • The domestic waste water will be collected through closed pipes and is diverted towards portable sewage treatment system, and the treated water is reused for plantation, floor wash and sanitary activities. • The waste water generated from other activities is diverted to a water treatment scheme and the treated water can be reused for floor, vehicle wash, greenbelt and sanitary activities.
C. Historic building (s)	Cultural Heritage	There exists no historical building representing cultural heritage within the 2km radius study area.
D. Acquisition of land	Land Acquisition Plan/Framework	Since the land belongs to APMC, which operates under HPSAMB, the proposed sub-project activities are limited within the premises of market yard and there exists no further Land Acquisition Plan/Framework
E. Toxic Materials	Toxic / hazardous waste management	The major activities at market yard include sales through auction and it does not involve any production processes or activities that involve exercising toxic components. Hence, there will not be any toxic materials arising out of this project.

F. Affected forests, wetlands and/or protected areas	Protection	The proposed project does not encompass any forest lands, wetlands or protected area
G. Disposal of medical waste	Infrastructure for medical waste management	Medical waste is usually not envisaged in the facility. However, any medical waste that may be generated through the use of first aid kids, due to minor injuries at the facility, will be sent to appropriate bio-medical waste handlers as per the Bio-Medical Waste Management Rules, 2016
H. Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	Vehicular emissions are the major source of air quality impacts in the study area. The principal cause of air pollution during the construction phase is the diesel-powered vehicles used in haulage of aggregates, earth and other construction material. Gaseous emissions like NO_X, CO and Hydro Carbon might be released from the vehicular movement, which have a direct impact on the environment. Increase in the traffic in the study area has a direct impact on the existing natural environment such as air quality and the ambient noise levels as a heavy release of automobile exhaust and vehicular noise generation is envisaged. **Impacts:** • Minor effect on health, such as headache, cough, respiratory problems etc., of nearby residents. • Increase in accidents due to the speed of the vehicles. **Mitigation measures :** • Existing roads have to be repaired; new roads and road intersections have to be laid.

		• The construction material should be transported during non-peak hours to avoid heavy traffic. • The construction material will be placed inside the boundary of facility without causing inconvenience to the pedestrians and to avoid traffic jams. • Only trained and licensed drivers should be allowed to access vehicles used for transport of materials to project site

Part D: Monitoring Plan

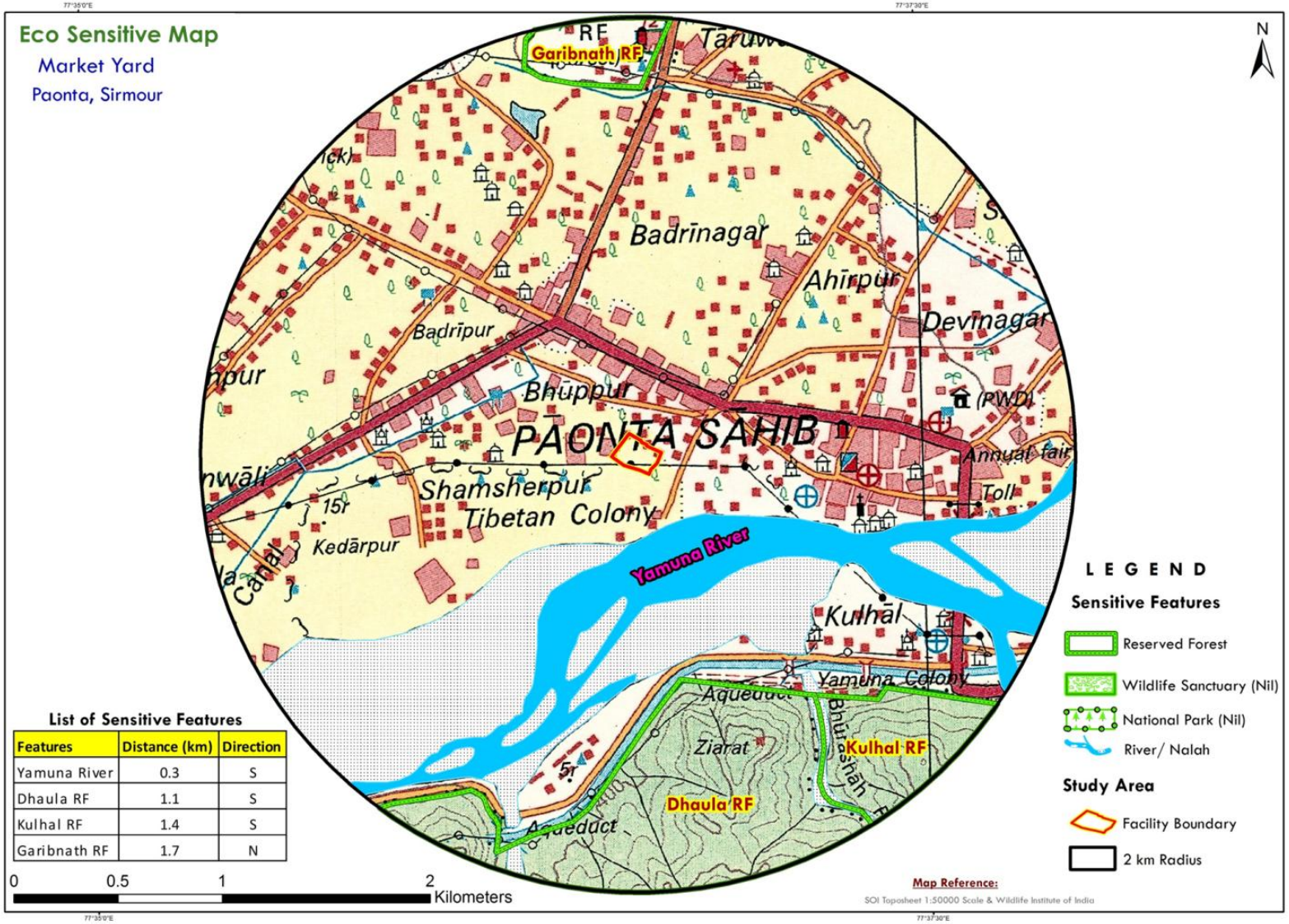
Potential impact of sub-project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Air quality	PM_{10}, $PM_{2.5}$, SO_2, NO_x, and CO	Ambient air quality within the premises of the facility to be monitored.	As per the CPCB/SPCB guidelines and standards	Every quarter/ once in a month as per CFE/CFO conditions issued by SPCB	The parameters are monitored to observe any deviation with the specified standards and propose the respective control measures to maintain the levels well within the standards.	Plant Manager
Noise quality	Noise levels (day and night equivalents)	Noise levels within the premises of the facility to be monitored.	As per the AAQ Standards in respect of Noise SO 123 E dt. 14th Feb 2000 standards	Daily till the construction activities are completed/once in a month during operation phase as per CFE/CTO conditions given by SPCB	The noise levels are monitored to observe any deviation with the specified standards and propose the respective control measures to maintain the levels well within the standards.	Plant Manager / Site In charge

Potential impact of sub-project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Water quality	Physico-chemical and Biological parameters such as Colour, pH, TDS, EC, *E. Coli* etc.	Monitoring ground & surface water quality in the project site.	As per IS – 10500:2012 and IS 2296–1992 Inland surface water standards	Once in a quarter/ as per CFE/CTO conditions given by SPCB	To monitor, analyze and observe any deviation from the standards and taken measures to avoid contamination of ground and surface water.	Plant Manager / Site In charge
Soil quality	Physico-chemical parameters such as Colour, Texture, NPK, heavy metals etc.	Monitoring of soil quality in the project site	As per the standard soil classification – Indian Council of Agricultural Research, New Delhi	Once in a quarter/ as per CFE/CTO conditions given by SPCB	For maintaining the soil quality in and around the project site and to protect topsoil.	Plant Manager / Site In charge
Waste Management	Solid waste	Within the facility	As per Waste Management rules 2000 and its consequent amendments	Once in a month/ as per CFE/CTO conditions given by SPCB	For reducing the quantity of waste generation, reusing and recycling.	Plant Manager / Site In charge

Potential impact of sub-project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Health	All relevant parameters of occupational health such as immunisation, vaccination etc.	Health check-ups for employees within the facility and specially for migrant labour and women workers	Applicable rules of Occupational health and Factories act, 2016	Once in six months as per CFE/CTO conditions given by SPCB and Factories act, 2016	Maintaining health and safety at workplace and reducing the risk of exposing to hazard.	Plant Manager / EHS Manager
Social aspects - Workers	Workers, including women, migrant workers and contract workers and Child labour (if any)	Migrant workers passbooks to be maintained, employment health records to be maintained. Likewise, physical verification of birth certificates and others to check	Applicable rules of inter-state migration act, child labour prevention act and other applicable labour laws	Once in a year, before the commencement of season especially.	Protection of project workers - women, migrant workers, contracted workers etc.	Plant Manager / EHS Manager
Community Health	Water-borne, vector-borne diseases and communicable	Periodic health camps for workers, truck drivers and local community	As per the applicable labour laws and	Once in six months and continuous monitoring of premises and	Anticipate and avoid adverse impacts on the health of workers and communities.	Plant Manager / EHS Manager

Potential impact of sub-project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
	and non-communicable diseases		international standards and social management framework	floating population to facility		
Traffic risks	Road safety risks to workers, local communities and other road users	Conducting periodic road safety assessment to monitor and preparation of regular reports	As per the applicable regulations and international standards	Once in an year	Minimize workers and community exposure to project specific traffic risks	Plant Manager / EHS Manager

Attachment 1- Eco-Sensitive Map



Attachment 2- Facility Layout