

Environmental and Social Management Plan (ESMP) for Construction of Artisan Centre at Kachhpura, Agra, Uttar Pradesh



February 2022

Uttar Pradesh Pro-Poor Tourism Development Project



DEPARTMENT OF TOURISM
GOVERNMENT OF UTTAR PRADESH

Consultants-

STC	Shah Technical Consultants Pvt. Ltd.
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1. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

1.1 Introduction

1. Environmental and Social Management Plan (ESMP) is a practical and achievable plan of management to ensure that any environmental impact during the design, planning and construction phase is minimized. An Operational ESMP is focused on sound environmental management practices that will be undertaken to minimize adverse impacts on the environment through normal operation of a facility. The management plan further identifies what measures should be taken in the event of emergencies or incidents during the operation of the facilities.
2. The purpose of the ESMP is to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with.
3. A copy of the ESMP must be kept on work sites at all times. This ESMP will be included in the design documents (Detail Project Report) under appropriate contractual clauses and will be further reviewed and updated during implementation if required. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance and attracts penal action against contractor.
4. The contractor will be required to (i) establish an operational system for managing environmental and social impacts (ii) carry out all of the monitoring and mitigation measures set forth in the ESMP; and (iii) implement any corrective or preventative actions set out in safeguards monitoring reports that SPCU and TSU will prepare from time to time to monitor implementation of this ESMP. The contractor shall allocate a budget for compliance with these ESMP measures, requirements and actions.

1.2 Responsibilities for ESMP Implementation:

5. The following agencies will be responsible for ESMP Implementation:
 - U.P. Pro-poor Tourism Development Project (UPPPTDP) under the Department of Tourism (DoT), Govt. of Uttar Pradesh consisting State Project Coordination Unit (SPCU) headed by the Chief Project Director, U.P. Tourism, has been established in Lucknow to facilitate coordination of project implementation, planning, financial control as well as monitoring and reporting of project activities.
 - Agra Development Authority (ADA) is the Implementing Agency (IA), who have established their representative (Nodal In-charge) who is responsible for project coordination at city level and oversee implementation of activities of their respective departments for overall management, coordination, and execution of all activities funded under the loan. Technical Support Unit (TSU) consisting of one Project Coordinator is established in Agra Development Authority, Agra for managing the environmental and social safeguards requirements during design and construction
 - The Project Consultant (deputed for Preparation of Environmental & Social Safeguards Documents and Monitoring of Compliances of proposed subproject in Agra) assists SPCU

- The contractor (Engineering, Procurement and Construction-EPC) will be responsible for project designs and execution of all construction works. The contractor will work under the guidance of the ADA, SPCU and TSU. The environmental mitigation measures will also be implemented by the contractor.
6. The contractor's conformity with contract procedures and specifications during construction will be carefully monitored by the TSU and Consultants and consultants will submit safeguard compliance report in the prescribed format (**Annexure 12**) with monthly report to SPCU. Safeguard Specialists are deputed in SPCU, who will monitor the environmental performance of contractors with assistance of Consultant's environmental and social experts.
7. **Responsibility for preparation and updating ESIA during detailed design.** Consultant Firm has prepared this ESIA during detailed design and also will update, when required and submit to SPCU for final review before submission to World Bank. SPCU will coordinate with Consultants and World Bank for approval of this ESIA.
8. **Responsibility for monitoring.** During construction, Consultant's Environmental and Social Specialist and the designated representative engineer of the TSU will monitor the contractor's environmental performance on regular basis while Nodal In-charge (ADA) and safeguard experts of SPCU will randomly monitor the performance for corrective measures if required.
9. **Responsibility for reporting.** Contractor shall submit monthly reports of project implementation along with safeguards compliance to SPCU through TSU. Consultant firm; on the basis of monthly report from contractor and in coordination with TSU will prepare and submit monthly, quarterly and annual monitoring report to SPCU, who will review the quarterly and annual report through safeguard experts and will submit to World Bank for reporting of compliance of ESMP and will permit World Bank to field review missions which will review in detail the environmental and social aspects of the project. Any major accidents having serious environmental consequences will be reported immediately.

1.3 ESMP Tables

10. Tables 21 to 26 show the potential adverse environmental impacts, proposed mitigation measures, responsible parties, and cost of implementation in all stages of project (Design, Pre-construction, construction and Operation & Management phases). This EMP will be included in the bid documents and will be further reviewed and updated during implementation.

TABLE -1: DESIGN STAGE ENVIRONMENTAL MANAGEMENT PLAN

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation/ Monitoring	Cost and Source of Funds
Location impacts of proposed components- Project location in Regulated area of protected monument-Permission from ASI/NMA	Impact on protected monuments- Without permission from ASI/NMA work can't be started	(i) Obtain permission from ASINMA for proposed construction works within regulated zone of GyarahSidhi (ASI protected monument) (ii) Design should include all the required measures as per ASI permission	SPCU/TSU	SPCU
	Nearby community may be affected due to increased pollution during construction and operation	(i) Project design should be done so that nearby community may have no or minimum impact due to proposed works (ii) Mitigation measures are prepared and included in design and SEMP is attached with contract documents	Contractor/TSU	No cost required
Requirement of tree cutting	Tree cutting may result loss of aesthetics and vegetation cover and increase in resultant air pollution	(i) Design should be done so that minimum tree cutting is required (ii) project documents should include the minimum tree cutting provisions (iii) Provision for Compensatory plantations should be included in contract documents	Contractor /IA/TSU	No cost required as no tree cutting is envisaged.
Energy Efficiency	Loss of natural resources	(i) Use energy efficient electrical equipment (ii) Provision of use of energy efficient equipment in contract agreements and BOQ	Contractor /TSU	No cost required
Preparation of Site Specific EHS Management Plan (SEMP)	SEMP will guide the contractor for required procedures for compliance of EHS requirements of project	(i) Prepare SEMP as per project requirement, applicable legal and contractual requirement	Contractor	No cost required

TABLE-2: ENVIRONMENTAL MANAGEMENT PLAN OF ANTICIPATED IMPACTS DURING PRE-CONSTRUCTION

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Responsibility and criteria for Monitoring	Source of Funds
Legal compliance- Consents, permits, clearances, NOCs, etc.	Environmental legal non-compliance may attract legal actions Failure to obtain necessary consents, permits, NOCs etc. can result to design revisions and/or stoppage of works	(i)Obtain all consents, clearances (CTE/CTO from UPSPCB), permits NOCs etc. before start of construction works Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction	Contractor	TSU Copies of NOC/Consents	Cost of obtaining all consents, permits, clearance, NOCs, etc. prior to start of civil works responsibility of IA.
Deployment of EHS officer	EHS requirements for project will not be fulfilled	Depute qualified and experienced EHS officer who will be responsible for EHS compliance	Contractor	TSU/Consultants	Contractor
Environmental monitoring of pre-construction conditions of air, noise, water and soil	To establish pre-construction environmental conditions	Environmental monitoring through NABL approved laboratory	Consultant	TSU Results of baseline environmental monitoring	Consultant
Temporary water and electrical connections for construction works	Without prior permission no electrical and water connections can be obtained for construction works	Take prior permission for temporary water and electrical connection for construction works from relevant authorities	Contractor in collaboration with TSU	TSU/consultants Copies Of Electrical and Water Connection NOCs	Contractor
Construction work camps, stockpile areas, storage areas, and disposal areas.	Disturbance to nearby community and sensitive receptors	(i) Prioritize areas within or nearest possible vacant space in the project location; (ii) If it is deemed necessary to locate elsewhere, consider sites that will not promote instability	Contractor to finalize locations in consultation and approval of TSU	TSU/consultants/Code of Conduct for workers (Annexure 6)	No cost required. Mitigation measures are part of contractual terms

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Responsibility and criteria for Monitoring	Source of Funds
		<p>and result in destruction of property, vegetation, irrigation, and drinking water supply systems;</p> <p>(iii) Do not consider residential areas;</p> <p>(iv) Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community.</p> <p>(v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 300 m away from sensitive locations like protected monuments, settlements, ponds/lakes or other water bodies.</p> <p>(vi) strictly follow the code of conduct for workers (Annexure 6)</p>			
Sources of Materials	Extraction of materials can disrupt natural	(i) Prioritize sites already permitted by the Department of	Contractor to prepare list of approved quarry	TSU/consultants (i) List of approved quarry	No cost required.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Responsibility and criteria for Monitoring	Source of Funds
	land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	Mines and Geology (ii) If other sites are necessary, it will be contractor's responsibility to verify the suitability of all material sources and to obtain the approval of TSU and (iii) If additional quarries will be required after construction is started, contractor to obtain a written approval from cluster office of TSU.	sites and sources of materials with the approval of TSU	sites and sources of materials; (ii) Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.	Mitigation measures are part of contractual terms
Requirement of construction workers and construction materials- Employment Generation	Proposed construction works will generate employment for local community	(i) Employ at least 50% or as much as possible, local labour from nearby areas within 10 Km of project area so that community involvement with project may be increased which will help to development of ownership in community (ii) Procure as much as possible, construction materials from local market to increase economy of the nearby areas	Contractor	TSU	Contractor

TABLE-3: ENVIRONMENTAL MANAGEMENT PLAN OF ANTICIPATED IMPACTS DURING CONSTRUCTION

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
EMP Implementation	Irreversible impact on the environment,	I. Project manager, engineers and all key workers will be required to undergo EMP	Consultant- for first orientation training/	TSU Safeguards Compliance	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
Training	workers, and community	<p>implementation training including spoils management, Standard operating procedures (SOP) for construction works; occupational health and safety (OH&S), core labor laws, applicable environmental laws, etc.</p> <p>II. Contractor has to depute a qualified EHS official in the start of the project to conduct training to all the personnel and effective monitoring of mitigation measures during construction.</p> <p>II. Regular refresher training to staff and workers by contractor's EHS officer</p>	Contractor for refresher trainings	Orientation report	
Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	<p>I. Consult with cluster office of TSU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>II. Damp down exposed soil and any stockpiled material on site by water sprinkling necessary during dry weather.</p> <p>III. Use tarpaulins to cover sand and other loose materials when transported by trucks; and</p> <p>IV. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p> <p>V. Quarterly environmental monitoring for ambient air as per EMP</p>	Contractor	<p>TSU/Consultants</p> <p>(i) Location of stockpiles;</p> <p>(ii) Complaints from sensitive receptors;</p> <p>(iii) Heavy equipment and machinery with air pollution control devices;</p> <p>(iv) Certification that vehicles are compliant with Air Act(PUC)</p> <p>(v) Quarterly environmental monitoring report for ambient air, noise, water and soil</p>	Contractor
Water quality	Mobilization of settled silt materials, and	(i) Prepare and implement a spoils management plan (Annexure-7)	Contractor	TSU/Consultants	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
	chemical contamination from fuels and lubricants during construction works	<ul style="list-style-type: none"> (ii) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; (ii) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; (iii) Place storage areas for fuels and lubricants away from any drainage leading to water bodies; (iv) Dispose any wastes generated by work in designated sites; and (v) Conduct quarterly ground water quality Monitoring according to the Environmental Management Plan (EMP). 		<ul style="list-style-type: none"> (i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of ground water quality Monitoring; (iv) Effectiveness of water management measures; (v) No visible degradation to nearby drainages, nallahs or waterbodies due to civil works 	
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<ul style="list-style-type: none"> (i) Plan activities in consultation with TSU/Consultants so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; (ii) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; (iii) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and provide sound barriers to reduce the sound impact to surrounding sensitive receptor; and (iv) Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s. (v) Fortnightly environmental monitoring for 	Contractor	TSU/Consultants <ul style="list-style-type: none"> (i) Complaints from sensitive receptors; (ii) Use of silencers in noise-producing equipment and sound barriers; (iii) noise quality monitoring reports 	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
		ambient noise as per EMP			
Electrical works - Outdoor lighting, indoor lighting, operation of DG set	Safety risk to workers Suitable Electrical connection, if not taken, will be causing problem during operation	(i) Engage only trained persons and provide proper PPEs to workers during electrical works (ii) All the electrical safety during live electrical works, like provision of ELCBs/RCCBs, commercial type (IP44) of electrical connections, proper earthing of electrical panel and equipment etc. shall be provided (iii) Daily/weekly inspection of electrical installations and connections	Contractor	TSU/Consultants	Contractor
Landscape and aesthetics	Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	(i) Prepare and implement spoils management plan (Annexure-7); (ii) Avoid stockpiling of excess excavated soils; (iii) Coordinate with TSU/local authorities for beneficial uses of excess excavated soils or immediately dispose to designated areas; (iv) Recover used oil and lubricants and reuse or remove from the sites; (v) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; (vi) Remove all wreckage, rubbish, or temporary structures which are no longer required; and (vii) Request cluster office of TSU to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.	Contractor	TSU/Consultants (i) Complaints from sensitive receptors; (ii) Worksite clear of hazardous wastes such as oil/fuel (iii) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	Contractor
Ecological Resources –	Loss of vegetation and tree cover	(i) Minimize removal of vegetation and disallow cutting of trees;	Contractor	TSU/Consultants	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
Terrestrial		(ii) If tree-removal will be required, obtain tree-cutting permit from the competent authority; and (iii) Plant three native trees for every one that is removed.			
Socio-Economic - Employment	Generation of temporary employment and increase in local revenue	(i) Employ at least 50% of the labour force, or to the maximum extent, local persons within the 10-km immediate area if manpower is available; (ii) Secure construction materials from local market. (iii) Comply with labor laws	Contractor	TSU/Consultants (i) Employment records; (ii) Records of sources of materials (iii) Compliance to labor laws (Annexure-3)	Contractor
Occupational Health and Safety	Occupational hazards which can arise during work	(A) Comply with all national, state and local core labor laws (Annexure-3) (B) Ensure that qualified EHS personnel is deputed to look the H&S matter (i) Develop and implement Site-specific EHS Management Plan (SEMP) which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs; (c) OH&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; (ii) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; (iii) Provide medical insurance coverage for workers;	Contractor	TSU/Consultants (i) Site-specific EHS Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage for workers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of H&S orientation trainings (viii) personal protective equipment; (ix) % of moving equipment out fitted with audible back-up alarms;	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
		<p>(iv) Secure all installations from unauthorized intrusion and accident risks;</p> <p>(v) The project area experiences extreme temperature during summer months of April and May, which may affect the health of workers engaged in construction work. Contractor should take necessary measures during summers including the following:</p> <p>(a) work schedule should be adjusted to avoid peak temperature hours (12 – 3 PM); (b) provide appropriate shade near the work place; allow periodic resting and provide adequate water, and (c) provide necessary medicine and facilities to take care of dehydration related health issues</p> <p>(v) Provide supplies of potable drinking water;</p> <p>(vi) Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers;</p> <p>(viii) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted;</p> <p>(ix) Ensure the visibility of workers through their use of high visibility vests when working in or</p>		<p>(xi) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.</p> <p>(xii) Compliance to core labor laws (Annexure-3)</p>	

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
		<p>walking through heavy equipment operating areas;</p> <p>(x) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>(xi) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and</p> <p>(xii) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.</p> <p>(xiii) Provide proper solid and liquid waste management program in workers' campsite, separate from spoils and debris disposal, as their presence can add to existing waste volume at the project sites.</p>			
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<p>(i) Plan routes to avoid times of peak-pedestrian and tourist activities.</p> <p>(ii) Liaise with TSU in identifying high-risk areas on route cards/maps.</p> <p>(iii) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.</p>	Contractor	TSU/Consultants	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
Work Camp and construction camp	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	(i) Consult with TSU before locating project offices, sheds, and construction plants; (ii) Minimize removal of vegetation and disallow cutting of trees; (iii) Provide drinking water, water for other uses, and sanitation facilities for employees; (iv) Ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; (v) Train employees in the storage and handling of materials which can potentially cause soil contamination; (vi) Recover used oil and lubricants and reuse or remove from the site; (vii) Manage solid waste according to the preference hierarchy: reuse, recycling and disposal to designated areas; (viii) Ensure unauthorized persons especially children are not allowed in any worksite at any given time.	Contractor	TSU/Consultants (i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Contractor
Social and Cultural Resources	Risk of archaeological chance finds	(i) Strictly follow the protocol for chance finds in any excavation work; (ii) Request TSU or any authorized person with archaeological field training to observe excavation; (iii) Stop work immediately to allow further investigation if any finds are suspected; (iv) Inform TSU if a find is suspected, and take any action they require ensuring its removal or	Contractor	TSU/Consultants Records of chance finds (Annexure 13)	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
		protection in situ.			
Submission of EMP implementation report	Unsatisfactory compliance to EMP	(i) Appointment of EHS officer to ensure EMP implementation (ii) Timely submission of monitoring reports including pictures	Contractor	TSU/Consultants Availability and competency of appointed supervisor Monthly report	Contractor
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	(i) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and (ii) All affected structures rehabilitated/compensated (iii) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. (iv) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed (vi) The contractor must arrange the cancellation of all temporary services. (vii) Inform TSU in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.	Contractor	TSU/Consultants	Contractor

TABLE-4: ENVIRONMENTAL MANAGEMENT PLAN OF ANTICIPATED IMPACTS DURING OPERATION

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Responsibility and criteria for Monitoring	Cost and Source of Funds
Increased tourists/ visitors flow in the area	Increased load on existing infrastructures and resources	Necessary infrastructure and resources in the areas to be increased as per tourist/visitors flow in the area	Agra Development Authority (ADA)	-	ADA
Increase traffic in the area	Increased load on traffic, traffic congestion in the area	Provide traffic assistance and signages, improve conditions of roads in the area	Agra Development Authority (ADA) / Traffic department	-	ADA
Increased solid waste	Increased solid waste will increase problem of pollution and other nuisance	Provide efficient solid waste management-regular collection, transportation and proper disposal arrangement	Agra Development Authority (ADA)/Municipal Corporation	-	ADA
Sewage generation from Artisan Centre	Increased sewage generation will create problem of safe disposal and treatment of sewage and other nuisance, if not handled properly	Provide efficient sewage conveyance and treatment facility for increased sewage generated due to increased tourist flow in the area	Agra Development Authority (ADA)/Municipal Corporation	-	ADA
Operation and management of created facility (Artisan Centre)	Objective of creation of Artisan Centre will not fulfil if adequate operation and management of Artisan Centre is not ensured	Ensure efficient and objectively operation and management of Artisan Centre as per management plan of the area	DoT/ADA	-	DoT/ADA
Monitoring of Environmental Parameters	Assessment of environmental conditions due to increased tourist/visitors	Monitoring of environment parameters such as ambient air, noise, water and soil	ADA	Test reports of ambient air, noise, water and soil	ADA

TABLE-5: SOCIAL MANAGEMENT PLAN OF ANTICIPATED IMPACTS DURING CONSTRUCTION

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Cost and Source of Funds
Labor and Working Conditions	Impacts on Laborhealth, safety and Working Conditions	<ul style="list-style-type: none"> • Ensure compliance with Workers' accommodation: processes and standards for accommodation; including clean and safe areas that ensure the minimum space requirements, and ventilation that is appropriate for the existing climatic conditions, genderbased accommodation facilities, etc.). Processes and standards for onsite facilities (canteen, sanitary facilities, adequate amenities for socialization and resting, etc.). • Ensure drinking and utility water to be supplied • Provide all accommodation sites with sufficient emergency response equipment such as first aid kits and fire-fighting equipment and conduct periodic checks to ensure they are in working condition. • Provide trainings to personnel on general waste management, housekeeping, first aid practices and communicable diseases. • Conduct visual checks on site to ensure proper housekeeping. • Ensure proper first aid equipment is kept on site, at various related locations. • Conduct periodic medical checks for personnel and provide vaccination and/or other mitigating measures when required. 	Contractor	Contractor
Labour influx from distant locations	Risk of social conflicts due to religious, cultural or ethnic differences	<ul style="list-style-type: none"> • Use local labors in work force as much as possible. • Orientation of migrant labors before mobilizing in project sites about the religious, cultural and ethnic characteristics of the project town and code of conduct to be followed in project. 	Contractor	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Cost and Source of Funds
		<ul style="list-style-type: none"> Provide all the basic facilities in the labour camps as well as at work sites to decrease chances of conflicts of workers with nearby villagers for use of resources. of recreation facilities at worker's camps such as radio, television, etc. for recreation of labors. Periodical public consultations with locals to find out any issue between locals and project workers 		
Labour influx from distant locations	Increased risk of illicit behavior and crime	<ul style="list-style-type: none"> Conduct screening of migrant and local labors before deployment at site, verify their previous records and police verification of labors before deployment at site. Orientation of labors about code of conduct. Strict action against labors who are found guilty of illicit behavior during works at sites. 	Contractor	Contractor
Labour influx from distant locations	Influx of additional population ("followers")	<ul style="list-style-type: none"> Orientation of labors about code of conduct and strictly follow up: Provide all the basic facilities in worker's camp. Provide periodical leaves to migrant labors to visit their homes and meet their families so that they may not search sex workers for their sexual needs in nearby areas Prohibit any temporary shops and vending activities near the permanent project sites 	Contractor	Contractor
Labour influx from distant locations	Increased risk of communicable diseases and burden on local health services	<ul style="list-style-type: none"> Clean sanitary facilities of workers camp daily to ensure health and hygiene standards are met. Issue camp residents with soap and towels. Do not use outside areas for defecation, orient workers in this regard Health check-ups of all workers during screening specially for communicable diseases and sexually transmitted diseases. Periodical health check-ups of all workers by registered 	Contractor	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Cost and Source of Funds
		<p>practitioner.</p> <ul style="list-style-type: none"> Identify the worker infected with any communicable disease, quarantine and give proper medical ailment in recognized hospital and after recovery give sufficient rest before joining his duties 		
Impacts on Gender equality and children	Communicable disease, conflicts in labour wages, safety of women and children	<ul style="list-style-type: none"> Continue to promote communication to raise awareness about gender equality and HIV / AIDS to all levels of people and women themselves. Develop and implement communication activities, models of gender equality in accordance with the subproject area. At the construction site area, there should be propaganda materials on gender, HIV / AIDS. Manage labor flow, especially women. Coordinate with the locality to have good management measures. To promote the responsibility of the local government, the contractor is to promote the role of the heads of agencies, localities, supervision consultants and site leaders in implementing gender equality objectives; arrange and assign work to women. In the process of construction, it is necessary to take measures to prevent prostitution, sexual assault on women and children. Construction site should have signs and lights at night to ensure that women and children are not affected when passing through the construction site at night. Children are strictly prohibited from entering the construction site Orientation of labors about code of conduct and strictly follow up. (Annexure 6) Educate labors about various privileges given to women through various acts and 	Contractor	Contractor

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Cost and Source of Funds
		<p>other laws/acts which protect women from violence and harassment.</p> <ul style="list-style-type: none"> Engage local NGOs working in such fields to educate labors on gender based issues including gender based violence. Take strict action who is found guilty of any type of gender based violence 		

1.4 Environmental and Social Monitoring

11. The Environmental and Social Management Plan (ESMP) presented earlier in this report summarizes the key impact elements identified and the remedial measures, the actions to be taken by various parties and the monitoring activities. An indication of the time scale for implementation and cost involved is also provided in next sections. The ESMP will further be updated by consultant during implementation (if required) with documented procedures. The implementation of the ESMP should be done within the contract provisions of the project and for the ultimate benefit of the people in the Project area. The effectiveness of the ESMP shall be monitored and assessed during spot checks, formal inspections and at the end of the Project when an overall audit of the works shall be carried out.

12. Implementation arrangements and responsibilities for safeguard compliance is already discussed in previous chapter. Regular monitoring will be ensured by executing agency (ADA) and SPCU through core unit at Lucknow and the field staff in Agra (TSU/Consultants). Contractor will also appoint qualified safeguard staff to regularly monitoring of safeguard compliances as described in ESMP.

1.4.1 Monitoring and Evaluation

13. The EA will be responsible for carrying out Monitoring and Evaluation. Internal monitoring will be carried out by the SPCU through TSU and consultants. This will help monitor project activities closely. Regular monitoring by undertaking site visits will help identify potential difficulties and problems faced in the project implementation and subsequently help take timely corrective measures including deviations, or change in designs, if needed.

14. Prior to commencement of the work, the contractor will submit a compliance report to TSU ensuring that all identified potential Environmental and Social impacts and their mitigation measures as detailed in the ESMP are meeting project requirements and scope of works and will be undertaken and will provide SEMP for the proposed works with his design submissions covering all the requirements proposed in this ESMP. SPCU with the assistance of the TSU and Consultants will review the report and thereafter SPCU Core Unit will allow commencement of works.

15. During construction, contractor will be submitting compliance of ESMP and results from internal monitoring through monthly reports to the TSU. Environmental and Social Experts of SPCU will review and advise contractors for corrective actions if necessary.

Quarterly report summarizing compliance and corrective measures taken will be prepared by Consultants and submitted to SPCU Core unit.

16. Based on quarterly reports and measurements received from TSU, SPCU with assistance of Safeguard experts of consultants will draft and submit to the World Bank, Quarterly and Annual EMP implementation progress report. Once approval from the World Bank is received the report will be disclosed in the Project website.

17. World Bank will review project performance against the project commitments as agreed in the legal documents. The extent of World Bank's monitoring and supervision activities will be commensurate with the project's risks and impacts. Monitoring and supervision of social and environmental safeguards will be integrated into the project performance management system.

1.4.2 Internal monitoring

18. Internal monitoring of the project should be undertaken on regular basis by the TSU and consultants. A monthly and quarterly report of internal monitoring will be prepared by the TSU with assistance of Consultant's environmental and social experts. The internal monitoring will also provide feedback on community concerns, grievances and requests. Internal monitoring will focus on and ensure the followings:

- Compliance of contractor's EHS and Social commitments/obligations
- Information dissemination/public consultations
- Effective operation of the Grievance Redress Committees detailing out number of complaints received and those resolved; reasons for not being able to resolve the grievance and status of unresolved grievances.

TABLE-6: INTERNAL MONITORING FRAMEWORK

Stage	Issue	Procedure	Timing	Responsibility
Project Implementation (construction phase)	Employment of local labor including women	Site observation, attendance record, interaction with laborers and contractors	Monthly	TSU/consultants
	Campsite management including lodging arrangement and basic facilities	Site observation, interaction with laborers, contractors	Monthly	TSU/consultants
	Implementation of health and safety measures	Site observation, interaction with laborers, contractors	Monthly	TSU/consultants
	Discrimination of wage rate between male and female workers	Interaction with laborers, labour survey, record of wage payment	Monthly	TSU/consultants

Stage	Issue	Procedure	Timing	Responsibility
	Incidence of communicable diseases like respiratory, STD, HIV/AIDS etc.	Discuss with local people, health workers/ health post/ center records	quarterly	TSU/consultants
	Compliance of provisions of ESMP and World Bank safeguard policies	Site visit, public consultations, interaction with labours and contractor's staff	Quarterly/ Random	ADA/SPCU

1.4.3 External Monitoring and Evaluation

19. It is recommended that an external agency should be engaged by the Project Authority which shall carry out the evaluation at two stages viz., mid-term and after the completion of implementation of this subproject as well as other subprojects under UPPPTDP. The evaluation will be carried out under a set term of reference. The evaluation study would involve both quantitative and qualitative surveys and compare results before and after the implementation of the project. It will focus on assessing whether the overall objectives of the project are being met and will use/ develop/ defined impact indicators as a basis for evaluation. The main tasks of External Monitoring are as below:

- Undertake overall project Monitoring and Validation
- Verify results of internal monitoring and verify compliance of the World Bank policy along with all prevailing national laws.
- Assess the level of satisfaction acquired by community/ members/community groups.
- Assess efficiency, effectiveness, impact and sustainability, drawing lessons as a guide to future policy making and planning;
- Assess efficiency, effectiveness, impact and sustainability of Gender Action Plan, drawing lessons as a guide to future policy making and planning;
- Issues raised during monitoring and evaluation of ESMP implementation and action plan to improve ESMP implementation
- Documentation of lessons learnt and good practices in ESMP implementation.
- Implementation lessons to determine whether project is on track to achieving results
- Ensure that corrective action can be taken on a timely basis
- Suggestions/ Recommendations for the project

1.4.4 Environmental and Social Monitoring Plan

Monitoring of environmental safeguards shall be assured through regular site visits, document checks and public consultations in all stages of project throughout the project duration. Monitoring plan is summarized in following tables-

TABLE-7: ENVIRONMENTAL MONITORING PLAN OF ANTICIPATED IMPACTS DURING CONSTRUCTION

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Consent to establish of batching plants, crusher, source of raw materials etc.	Batching plants, crusher, etc	Consents are taken	Once before start of construction	EHS officer, Environment Specialist	Cost for obtaining CTE/CTO from Contractor
Construction disturbances, nuisances, public & worker safety	Proposed work site	Implementation of dust control, noise control, traffic management, & safety measures. Site inspection checklist to review implementation work.	Weekly	TSU, EHS officer and safeguards specialists of consultants	No costs required
Tree cutting	Proposed work site	No Tree cutting is envisioned	Continuous	TSU,, EHS officer and safeguards specialists	Cost for plantation from contractor
Construction, Labour Camp, storage yard Management	Construction, Labour Camp, storage yard Management	As per EMP	Monthly	EHS officer	contractor
Solid waste management	Construction, Labour Camp, storage yard Management	As per EMP	Weekly	EHS officer	contractor
Construction and demolition waste management	Proposed work site	As per EMP and applicable rules and regulations	Weekly	EHS officer, Environment Specialist	contractor
Ambient air quality	Proposed work site	PM ₁₀ , PM _{2.5} , NO ₂ , SO ₂ , CO	Quarterly except Monsoon period	Contractor	Contractor
Ambient noise	Proposed work site	Day time and night time noise levels	Monthly	Contractor	Contractor

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Ground Water quality	Proposed work site	As per IS: 10500 standards with minimum following parameters- pH, TDS, Total Hardness, Zn, Chloride, Iron, Copper, DO, Manganese, Sulphate, Nitrate, Fluoride, Hg, Cadmium, Cr ⁺⁶ , Arsenic, Lead, Total Alkalinity, Phosphate, Phenolic compound	Quarterly except Monsoon period	Contractor	Contractor
Soil Quality Monitoring	Proposed work site	pH, Elect. Conductivity (at 25 ⁰ C), Moisture (at 105 ⁰ C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO ₄), Potassium (as K), Organic Matter, oil and grease	Quarterly except Monsoon period	Contractor	Contractor

TABLE-8: ENVIRONMENTAL MONITORING PLAN OF ANTICIPATED IMPACTS DURING OPERATION

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Tourists/visitors influx	Project location (Kachhpura)	Numbers of tourists/visitors	Monthly	DoT/ADA	DoT
Monitoring of plantations	Plantations locations	Nos. of tree survived	monthly	ADA	ADA
Sustainability/ efficiency of basic infrastructure and services in the project location	Project location (Kachhpura)	Assessment of working efficiency of basic services such as sewerage, traffic, solid waste management and water supply services	Quarterly	ADA	ADA
Testing of	Project location (Kachhpura)	Ambient air, noise, water and soil	Yearly	ADA	ADA

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Environmental parameters					

TABLE-9: SOCIAL MONITORING PLAN ANTICIPATED IMPACTS DURING CONSTRUCTION

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Employment- Engaging local labour	Project location (Kachhpura)	Associated project worker	Weekly	DoT/ADA	DoT
Women Worker/ Vulnerable/ Disadvantaged- GBV	Project location (Kachhpura)	Wage, increment, working hour, incidents of GBV etc.	Monthly	DoT/ADA	DoT
Community or labour- Social conflict and labour rest	Project location (Kachhpura)	GRM	Weekly	DoT/ADA	DoT
Community disturbance and potential safety hazard due to road traffic	Project location (Kachhpura)	Accidents, incidents, and complaints	Based on occurrence	Contractor	Contractor

TABLE-10: SOCIAL MONITORING PLAN OF ANTICIPATED IMPACTS DURING OPERATION

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Female Worker, disadvantaged and vulnerable people- GBV	Project location (Kachhpura)	Wage, increment, working hour etc.	Monthly	DoT/ADA	DoT
Community or labour- Social conflict and labour rest	Project location (Kachhpura)	GRM	Weekly	DoT/ADA	DoT

1.5 Cost Estimates to Implement the ESMP

20. Most of the mitigation measures require the contractors to adopt good site practice. Construction contractor is bound to adopt several mitigation measures through various applicable legal obligations (e.g. BOCW Act, Labour acts etc.) such as use of PPEs, provide toilets and potable drinking water, labour camp management, safety at work sites, safety in equipment operations etc. which should be part of their normal procedures; are not included in EMP cost of this project. Mitigation that is the responsibility of DoT (e.g SPCU/TSU/Consultants) will be considered as part of their management of the project, so this also does not need to be duplicated here. Regardless of these, project specific costs of mitigation by the **construction contractor** and cost for the **capacity building program** is considered as part of the project cost and are included in the EMP budget for the civil works.

21. **List of mitigations measures (including but not limited to) that are to be borne by Contractor, which is deemed to be responsibility of the contractor is given below-**

- Establishment of organized workers camps with all basic facilities such as- proper ventilated rooms, beds, electricity, safe drinking water, solid waste management at camp site, gender-based toilets and bathrooms with flushing arrangement, crèche for workers' kids, clean fuel for cooking, firefighting arrangements etc.;
- Transportation of workers from camps to work sites and back with safe means of transportation;
- Providing proper Personnel Protection Equipment (PPEs) such as helmets, safety jackets, safety shoes, safety belts, eye and ear protections, hand gloves etc. as per nature of works;
- First aid and other medical facilities such as free medical assistance in case of any injury or illness during stay at work camp/work sites, ambulance and tie up with renowned hospital;
- Taking consents for batching plant, hot mix plant, crushers and PUC for vehicles;
- Acoustic enclosures in noise producing equipment;
- Maintenance of all construction equipment and machineries to avoid/reduce air, noise and soil contamination;
- Electrical safety during construction works;
- Labour license, labour insurance and other legal requirements as per applicable acts and rules and contract provisions.

22. Cost Estimated for implementation of ESMP is given in following tables-

TABLE-11:ENVIRONMENTAL MONITORING COST

S. N.	Particulars	Stages	Frequency	No. of Location	No. of Samples	Unit Cost/Sample (INR)	Total Cost (INR)	Costs Covered By
1	Ambient air quality monitoring	Pre - Construction	Once before start of physical works at site	1	1	6,000	6,000	Civil works contract
		Construction	Once in a quarter for 3	1	3	6,000	18,000	Civil works

S. N.	Particulars	Stages	Frequency	No. of Location	No. of Samples	Unit Cost/Sample (INR)	Total Cost (INR)	Costs Covered By
			seasons (for 24 hrs) except monsoon for one years					contract
		Post Construction	Once after completion of construction works	1	1	6,000	6,000	Civil works contract
2	Noise levels monitoring	Pre – Construction	Once	1	1	1,000	1,000	Civil works contract
		Construction	Monthly	1	11	1,000	11,000	Civil works contract
		Post Construction	Once	1	1	1,000	1,000	Civil works contract
3	Surface/Ground Water	Pre - Construction	Once	1	1	4,500	4,500	Civil works contract
		Construction	Once in a quarter	1	3	4,500	13,500	Civil works contract
		Post - Construction	Once	1	1	4,500	4,500	Civil works contract
4	Soil Testing	Pre - Construction	Once	1	1	6,000	6,000	Civil works contract
		Construction	Once in a quarter	1	3	6,000	18,000	Civil works contract
		Post-Construction	Once	1	1	6,000	6,000	Civil works contract
Subtotal (A)							95,500	

Note:

1. Construction period is considered 12 months (1 year)

TABLE-12: MITIGATION/ ENHANCEMENT COST

SN	Particular	Stage	Unit	Quantity	Cost	Total Cost (INR)	Costs Covered By
1.	Dust suppression with sprinkling of water	Construction	Per tanker of 1 KL	1 tanker per day x 300 days in a year	500	1,50,000	Civil works contract

SN	Particular	Stage	Unit	Quantity	Cost	Total Cost (INR)	Costs Covered By
				for 1 years = 300 tanker			
2.	Provision of sanitation facility at labour camp	Construction	As per BOCW Act	As per requirement	Contractor's contract liability	-	Incidental
3.	Health Check-ups	Construction	Per person	Before deployment at site and then quarterly	Contractor's contract liability	-	Incidental
4.	Immunization and preventive health measures	Construction	Lump Sum	-	-	1,00,000	Civil works contract
5.	Mobile Toilets at work site (4 seater)	Construction	Number	As per BOCW Act	Contractor's liability	-	Incidental
6.	Project Information Board, Safety signages	Construction	Lump Sum	-	-	20,000	Civil works contract
Sub Total (B)						2,70,000	

TABLE-13: ENVIRONMENTAL HEALTH AND SAFETY (EHS) STAFF OF CONTRACTOR

SN	Particular	Stage	Unit	Quantity	Unit Rate (Rs)	Total Cost (INR)	Costs Covered By
1	Engagement of EHS officer for 12 months	Construction	Man Months	12	70000	8,40,000	Contractor's cost
Subtotal (D)						8,40,000	

TABLE-14: CAPACITY BUILDING BUDGET

SN	Particular	Stage	Unit	Total Cost (INR)	Costs Covered By
1.	Introduction and sensitization to environmental and social issues	Pre-construction	lump sum	1,00,000	DoT, Govt. of U.P.
2.	ESMP implementation	Construction	lump sum	1,00,000	DoT, Govt. of U.P.
3.	Plans and Protocols	Construction	lump sum	50,000	DoT, Govt. of U.P.
			lump sum	50,000	DoT, Govt. of U.P.
4.	Experiences and best practices sharing	Construction/Post-Construction	lump sum	1,00,000	DoT, Govt. of U.P.
Subtotal (C)				4,00,000	

TABLE-15: -COST FOR IMPLEMENTATION OF SOCIAL MANAGEMENT PLAN

SN	Activity	Unit Cost	Project Phase	Total cost
1	Activity Cost			
1.1	IEC Development (Banner, Leaflets, posters, announcement costs, new paper Notices, signage, etc.) (Sample Templates given in Annexure 10)	lump sum	Pre-construction and construction	1,00,000
1.2	Community meetings in nearby locations	lump sum	Construction	50,000
1.3	Awareness & training programs with Stakeholders	lump sum	Construction	2,00,000
	Sub Total			3,50,000
2	Other Direct Cost/contingencies	lump sum	Construction	50,000
			Total	4,00,000

TABLE-16: SUMMARY OF COST ESTIMATE FOR ESMP IMPLEMENTATION

S.N.	Particulars	Cost (INR)	Source of Funds
1	Environmental Monitoring Cost	95,500	Contractor
2	Mitigation/Enhancement Cost	2,70,000	Contractor
3	Environmental Health and Safety (EHS) Staff	8,40,000	Contractor
4	Capacity Building	4,00,000	DoT, Govt. of U.P.
5	Implementation of Social Management Plan	4,50,000	DoT, Govt. of U.P.
	Total Cost	20,55,500	