

**Energy Resilience for Climate Adaptation Project (ERCAP)
Environmental Code of Practice (ECOP)
for**

COMPONENT 1: Long-Term Planning and Capacity Building for Adaptation

Background: Component 1 includes installation of 14 meteorological (MET), six hydrological-meteorological (HYDRO-MET) and rainfall monitoring stations. Of the 14 MET stations, half will be replacing older existing manual models with more modern automatic equipment that can provide real time information. Installation of the meteorological monitoring stations primarily consists of equipment installation in an area of about four square feet with possible anchoring with guide wires. HYDRO-MET stations¹ will consist of depth and flow meters placed in surface waters with leads to onshore electronic recording systems.

ISSUES/RISKS	MITIGATION MEASURE
MET and Rainfall Monitoring Stations Installation	<ul style="list-style-type: none"> • New stations will not be installed in areas that are at or near critical ecosystems, natural habitats or nesting sites of important species, or are in the migratory paths of any birds or land species. • To the extent possible, existing roads/routes to the station sites will be used. If access roads must be established, they will be planned to cause minimal disruption to local habitats and only with the guidance and approval of the Department of the Environment (DoE). The same access road used for construction/installation will be used for maintenance operations.
HYDRO-MET Station Installation	<ul style="list-style-type: none"> • Equipment placed in surface waters will be located in areas that will not impact breeding, feeding or migratory patterns of any aquatic species. Installation activities will only take place outside of spawning or migration periods. • Connections to land based data collection systems will follow the same general requirements cited above for MET/Rainfall installation.
Dust generation/ Air pollution	<ul style="list-style-type: none"> • The Contractor shall implement dust control measures to ensure that the generation of dust is minimized and does not become a nuisance by local residents. To maintain a safe working environment, measures such as the following will be taken: <ul style="list-style-type: none"> - water dusty roads and construction sites; - Cover exposed soil and material stockpiles as protection against wind erosion.
Noise and vibration	<ul style="list-style-type: none"> • All construction vehicles and other machines will have silencers in good condition to avoid excessive noise emissions. • Every effort will be made to ensure that activities are conducted during normal working hours, i.e. 08:00 hrs to 17:00 hrs. • If activities must be conducted in the evening after and/or weekend, local affected groups will be provided with at least one-week's notice of start and completion times.

¹ These will be installed by a contractor, thus the provisions of the ECOP will be built into the contract.

	<ul style="list-style-type: none"> Any construction equipment deemed too noisy by the DoE and/or local government shall be repaired or replaced.
Water pollution	<ul style="list-style-type: none"> Portable or constructed toilets will be provided on site for construction workers if there are no other such facilities nearby. There shall be no direct discharges of human sewage to any water body. Vehicles and other machinery will not be washed in or near natural water sources. Any construction wastewaters will be sent to temporary on-site storage facilities to be collected by companies licensed to receive and manage construction wastewaters or individually treated.
Drainage and sedimentation	<ul style="list-style-type: none"> The Contractor shall follow the detailed drainage design included in construction plans, to ensure any drainage system is always maintained cleared of mud, debris and other obstructions. Areas of the site not disturbed by construction activities shall be maintained in their existing conditions.
Solid waste	<ul style="list-style-type: none"> The Contractor shall seek to minimize waste and shall provide airtight litterbins, containers and refuse collection facilities at convenient places of work. If it becomes necessary, solid waste will be temporarily stored on site in a designated area approved by the DoE and relevant local authorities prior to collection and disposal by the Contractor or the National Meteorological Service (NMS), as the case may be. Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. Wastes shall be separated into biodegradable and non-biodegradable components. No burning, on-site burying or dumping of solid waste shall occur. Recyclable materials such as wooden plates for trench works, steel, scaffolding material, site holding, packaging material, etc. shall be collected and separated on-site from other waste sources for reuse, for use as fill, or for sale only to operators officially licensed to conduct recycling/recovery If not removed off site, solid waste or construction debris shall be disposed of only at sites identified and approved by the DoE (sites/locations officially designated by the government). Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas, such as in areas of natural habitat or in watercourses. Components that have remaining useful life will be stored and/or used at other sites as the need arises. If older meteorological equipment is being replaced, the older equipment will either be reused elsewhere or dismantled and elements with value reused. In all cases, unused equipment will be stored at the compound NMS until they can be written off the inventory and discarded at a government approved disposal site.

<p>Chemical or hazardous wastes(spent lubricants, paints, adhesives, solvents)</p>	<ul style="list-style-type: none"> • Any used oil and grease resulting from project activities shall be removed from site and managed in a sustainable manner as advised by the DoE. • Used oil, lubricants, cleaning materials, etc. from the maintenance of any vehicles and machinery shall be collected in holding tanks and removed from site by a specialized firm licensed to receive such materials or disposed of in a manner as approved by the DoE. • Unapproved toxic materials, including lead-based paints, asbestos, etc. on any structures, shall not be used. • If any hazardous wastes are produced, such will be stored with appropriate labeling at temporary facilities on-site or brought to a central facility, as determined by the DoE that is well ventilated with impervious floors, includes hazard-warning signs and is locked when not in use.
<p>Disruption of vegetative cover and ecological resources</p>	<ul style="list-style-type: none"> • Location of sites will be strategically chosen so that clearing of any vegetation can be kept to a minimum and only done if absolutely necessary. • The Contractor shall remove topsoil from all areas where topsoil will be impacted on by rehabilitation activities, including temporary activities such as storage and stockpiling, etc. Any stripped topsoil shall be stockpiled in areas agreed with the NMS for later use in re-vegetation and shall be adequately protected. All topsoil will be replaced as soon as possible after works are completed so that re-vegetation can be expedited. • Application of pesticides (herbicides) for vegetation clearing and/or maintenance is not permitted, unless the proposed pesticide is approved by the Pesticides Control Board and the DOE. Preference for land clearance/maintenance shall be either manual and/or mechanical. Disposal of vegetative cover will be to a government approved site or as approved by the DoE. • Any vegetation will only be removed with the explicit authorization of the Forest Department. • If needed, temporary protective fencing will be erected to efficiently protect vegetation before commencement of any works within the site. • The Contractor shall ensure that no hunting, trapping shooting, poisoning of fauna or any other disturbance take place.
<p>Traffic management</p>	<ul style="list-style-type: none"> • None of the stations will be installed in high traffic areas; nevertheless appropriate Traffic Management Arrangements/Plan will be prepared to minimize disruption to normal traffic patterns, consistent with overall project implementation schedule to include: <ol style="list-style-type: none"> a. Significant increases in number of vehicle trips estimated in the construction plan previously approved. b. Routing, especially of heavy vehicles, will take into account sensitive sites such as schools, hospitals, and markets. c. It is not envisioned that any work at night will be undertaken; however, if such becomes necessary, installation of lighting at night will be done to ensure safe traffic circulation.

	<p>d. Appropriate signage will be placed around the construction areas to facilitate traffic movement, provide directions to various components of the works, and provide safety advice and warning.</p> <p>e. Safe traffic control measures, including road/rivers/canal signs and flag persons to warn of dangerous conditions, will be employed.</p> <p>f. Material transportation for construction will not be done during rush hour.</p> <ul style="list-style-type: none"> • Where installation of any system will be done in or around communities, consultation will be conducted with the local government and the Traffic Department/Department of Transport² at a time and location that is convenient to these entities.
Interruption of utility services	<ul style="list-style-type: none"> • Relevant information will be provided to households to be affected, i.e. information on working schedules as well as planned disruptions of water/power at least 2 days in advance (the latter will be done in conjunction with the relevant utility). • Any damages to existing utility systems shall be reported to authorities and repaired as soon as possible.
Restoration of affected areas	<ul style="list-style-type: none"> • Cleared areas such as disposal areas, site facilities, workers' camps, stockpiles areas, working platforms and any areas temporarily occupied during construction of the project works shall be restored using landscaping, adequate drainage and re-vegetation. • Soil contaminated with chemicals or hazardous substances shall be removed, transported and buried in specific waste disposal areas approved by government authorities (e.g. DoE).
Worker and public Safety	<ul style="list-style-type: none"> • Belize's requirements for worker health and safety will be followed. • All workers will be trained on occupational safety regulations and provided with sufficient protective clothing for workers in accordance with applicable Belize laws. • Appropriate fences, barriers, dangerous warning/prohibition will be installed site around construction areas as necessary to show potential danger to the public. • The contractor shall provide safety measures as installation of fences, barriers warning signs, lighting systems to prevent traffic accidents as well as other risk to people and sensitive areas. • Consumption of alcohol by workers during work hours will be strictly prohibited. • Use of personal protective equipment (PPE) by workers will be strictly enforced.
Communication with local communities	<ul style="list-style-type: none"> • The contractor shall coordinate with local authorities (leaders of local communes, leader of villages) for agreed schedules of construction

² In Belize, towns and cities have a Traffic Department while the central government has a Department of Transport. The Department of Transport has jurisdiction for all transport related activities outside of the municipalities. The final location of the stations will therefore determine which entity will be consulted.

	<p>activities at areas near sensitive places or at sensitive times (e.g., religious festival days).</p> <ul style="list-style-type: none"> • Copies of these ECOPs and of other relevant environmental safeguard documents shall be made available to local communities and to workers at the site at least two weeks in advance of the commencement of any work. • Project information will be disseminated to affected parties and beneficiaries (for example local authority, enterprises and affected households, etc.) through community meetings, fliers, radio, etc. before the commencement of any on-the-ground activities. • Contact information for a lead person that can provide information on site activities, project status and project implementation results will be provided to local communities by the NMS at least two weeks before any activities commences. • Local residents will be informed about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate. • Posters & fliers to provide relevant information will be placed in communities near construction sites. The posters and fliers will include information about the project, as well as contact information about the site managers, environmental staff, health and safety staff, telephone numbers and other contact information so that any affected people can have the channel to voice their concerns and suggestions. Posters and fliers will be placed at strategic locations a minimum of two weeks before commences of activities and remain in place no less than one month after activities are completed or as agreed to with communities.
<p>Chance find procedures</p>	<p>If the Contractor discovers sites/artifacts of archeological, historical, significance, including graveyards and/or individual graves during construction, the Contractor shall:</p> <ul style="list-style-type: none"> • Stop the construction activities in the area of the chance find and immediately inform the NMS and the Institute of Archeology (IoA); • Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible authorities take over; • The IoA will be in charge of protecting and preserving the site before deciding on subsequent procedures. • Decisions on how to proceed shall be taken by the IoA. • If the cultural sites and/or relics are of high value and site preservation is recommended by the IoA, the NMS will need to make necessary design changes to accommodate the request and preserve the site; • Decisions concerning the how to manage of the finding shall be communicated in writing by the IoA; this is to ensure that all relevant regulations are strictly adhered to and for accountability purposes. • Construction works could resume only after written permission is granted from the IoA concerning safeguard of the heritage.

	<ul style="list-style-type: none"> • Any worker removing such artifacts without the explicit authorization of the IoA shall be dismissed and subjected to legal action.
<p>Site selection</p>	<ul style="list-style-type: none"> • Meteorological Stations – sites to be used will be at locations with little or no obstruction. As the variables to be measured are environmental, there shall be minimal changes, if any, to the surrounding landscape. Stations shall be placed a distance from the nearest obstruction of ten (10) times the height of the nearest obstruction. The obstruction shall be left in its natural state. • Hydro-meteorological Stations - suitable points along the river will be chosen and shall be at locations where there are no runs or rapids in the river/stream. Stations will be located where the river runs straight for a significant distance and the housing of the data logger shall be placed above the flood zone. • The land for any of the stations shall not become the property of the NMS. For placement on national lands, a written permission shall be sought from the relevant agencies with jurisdiction over such lands. For example, lands within the areas where the HYDRO-MET stations will be placed are under the jurisdiction of the Forest Department, thus permission will be obtained from that department or its parent ministry. • Where the public land falls within a community, written permission shall be obtained from such community before the installation of any station. Such permission will be preceded by discussions with community leaders where matters such as the importance of the station, benefits to institutions, e.g. schools, the fact that the community will have no major obligations, etc. are explained. • For placement on private property, the process shall also include discussion/meetings to explain the benefits and obligations of the station with the intent of a voluntary Memorandum of Understanding covering the sharing of data, the security of the station and the recovery of the station if one or both parties desire to discontinue the cooperation.