

[Back to Table of Contents](#)

Environmental Monitoring and Mitigation Plan						
Activity Type:	Construction and rehabilitation activities will occur in urban, peri-urban areas, and remote locations for select specialized activities. Rehabilitation may include small commercial buildings, market activities, and individual homes. Some activities will involve planning and rehabilitation of more specialized projects, such as botanical gardens, plazas, and other communally designated recreational areas. NOTE: Because of similar impacts and mitigation measures, small-scale new construction and building and infrastructure repair and rehabilitation were consolidated.					
Key Components:	The IRP 2 Grants Management Unit (GMU) will work with recipient communities on construction and rehabilitation designs and preparation of Implementation Planning documents, including activity profiles and budgets. The construction work may be conducted by the grantee or implemented via a subcontractor through a competitive bid process and managed by the GMU. The GMU will review and monitor IRP 2 grantees to ensure adherence to environmental compliance requirements and mitigation measurement requirements in the EMMP. Where Implementation Planning and design requires the preparation of site-specific mitigations, sampling or an environmental plan, an IRP 2-approved format will be provided to the grantee. The Program Compliance Officer (PCO) provides oversight for environmental compliance during the full project life-cycle: planning and design (P&D); construction (C), or operations and maintenance (O&M).					
Scale:	Activities include construction or rehabilitation of one-story, small and medium sized structures with no complicating factors. Also, repair and rehabilitation of schools, clinics, government buildings, market places, parks, and open-air markets.					
Ambient Environment:	Construction and rehabilitation activities will occur primarily in urban and peri-urban areas. Locations are typically office or small commercial buildings, markets, and individual homes. There is minimal natural vegetation in these sites, except for some low grasses and an occasional tree. New construction will not be located on or near sensitive habitats, such as wetlands or undisturbed pristine forests. Community-based construction and rehabilitation includes cultural and archeological sites, marketplaces, urban parks, and other similar structures. The land is not occupied by unauthorized residents or squatters. Legal documentation related to land ownership will be requested from local entities prior to rehabilitation or construction of new structures.					
Potential Environmental Impact / Climate Risk	Mitigation Measure(s)	Phase of Mitigation Measure Planning and Design (P&D), Construction (C), Operation and Management (O&M)	Indicator	Responsible Authority	Timing	Priority of Mitigation Measure 1 = High, 2 = Medium, 3 = Low
1: Damage to sensitive ecosystems near construction work site during construction including staging of construction, erosion, grading, borrow pits, storm water, vehicle operation, and waste management.	1.1 IRP 2 GMU will initially screen the grant proposal using the Environmental Review Form (ERF) to identify all activities to be carried out by the grantee. GMU will review the activity site to assess proximity to potentially sensitive ecological areas, potential toxic hot spots, archeological landmarks, incompatible land use, among other factors. Public consultation will be conducted to inform and obtain support for larger construction activities that could impact the local community. • Where appropriate, the construction design will be reviewed by a certified local engineer and other subject matter experts to ensure that the construction design and implementation conforms with internationally-recognized best management practices (BMPs), Iraqi laws and regulations, and applicable USAID Environmental Sector Guidelines.	P&D	1.1: ERF completed and reviewed by IRP 2 identifies sensitive areas and surrounding land uses. Stakeholder consultation, when needed, documented through community meetings and other methodologies informing the community of the activity and soliciting input. Meeting summaries will be maintained with project files.	IRP 2 GMU, grantee, and Environmental Officer	ERF completed prior to initiating work. Community meetings during design and on-going, as needed.	1
	1.2 New construction will be designed to control run-off and provide adequate site drainage using methodologies appropriate for the site including, physical barriers, permeable ground surfaces, vegetation, among other methodologies, as needed. Local certified engineer used as needed.	P&D, C, O&M	1.2: IRP 2-approved implementation plan documents mitigations for managing run-off. . Site visits confirm plan is accurate and implemented.		Plan developed prior to construction, implemented throughout activity	1
	1.3: Waste management procedures during construction will be documented and follow the IRP 2 guidelines . Documentation is appropriate for the size and type of activity. The Implementation plan will provide site-specific discussion on management of construction waste, recycling (if available), site access and disposal. Construction waste will be securely stored during project construction and removed to an approved final, disposal site at the completion of the activity. Construction waste having potentially hazardous substances such as asbestos, PCBs, or other materials will be disposed in an IRP 2-approved site suitable for receiving the waste. As feasible, promote minimal use of plastic by construction firms by including language in construction procurement documents prioritizing proposals that maximize use of recyclable construction materials and in on-site operations in areas where recycling companies are available (for PVC, glass, metal,		1.3: IRP 2-approved waste management plan (WMP) or procedure. Implementation of the waste management process.		Plan prepared prior to beginning the activity	1
	1.4 During construction, measures for erosion control will be taken as needed including the use of physical barriers such as silt fences, revegetation of graded soil and slope stabilization.		1.4: Implementation plan documents site-specific erosion control measures.		Plan completed prior to initiating work.	1
	1.5 Project will conduct equipment and vehicle maintenance off-site, as feasible, to reduce/eliminate release or spills of oil and solvents. Vehicle maintenance shall not be done within 50 meters of water systems. Appropriate for the size and type of construction, the project should have appropriate spill clean up equipment/supplies on site and workers will be trained in their use.		1.5: IRP 2-approved implementation plan documents vehicle maintenance and spill clean-up procedures.		Plan prepared prior to construction and implemented throughout construction period.	2
	2.1: If construction requires rehabilitation or installation of a potable water system, the grantee will follow Iraqi government standards, or in their absence, World Health Organization standards. For new potable water sources, the grantee will prepare a USAID Water Quality Assurance Monitoring Plan and submit it to GMU for review and approval. Refer to Water systems section for additional mitigations.	P&D, C, O&M	2.1: IRP 2-approved Water Quality Assurance Plan for new water sources. Water sampling of rehabilitated water systems prior to release to public.		Plan approved prior to construction of system.	1
2. Improperly designed or undersized water and sanitation services , or waste management systems that may result in inadequate services for the number						

of facility users.	2.2: To control run-off, design adequate drainage, the grantee will develop/plan or procedures for storm water pollution. (appropriate for the size and complexity of the construction activity), which will be provided to IRP 2 for review and approval.		2.2: IRP 2-approved storm water controls documented in Implementation Plan.		Plan prepared prior to construction and implemented throughout construction period.	1
3. Occupational health and safety concerns from improper use of building materials, with health risks; lack of, or inconsistent use of personal protective equipment, and inadequate sanitation.	3.1: Procure building materials that comply with international best management practices and Iraqi country laws and regulations. The activity will not use materials known to cause health impacts, including asbestos-containing materials, lead-based paint, and materials that off-gas unsafe levels of formaldehyde. Include the use of sustainable building materials (e.g. recycled products, renewable materials, etc.) where possible. Design storage areas to ensure hazardous materials are above ground and in leak-proof containments to prevent spills occurring during normal operation or natural disaster events.	P&D, C	3.1: IRP 2-approved implementation plan documents use of appropriate building materials. IRP 2 provides list of materials not to be used by the project.	IRP 2 GMU, grantee, and Environmental Officer	Plan prepared prior to construction and implemented throughout construction period.	1
	3.2: Project will prepare and follow a health and safety plan/procedures that are appropriate for the size and complexity of the construction activity, including personal protective equipment (PPE) for worker safety, training on PPE use and instruction on safe use of equipment. Project drivers will be licensed and instructed on requirements for reporting work-related driving violations.	P&D, C	3.2: Health and Safety plan/procedure and training developed in implementation plan. PPE monitoring log maintained by grantee.		Plan is prepared prior to construction and monitoring occurs throughout project activity.	1
	3.3: Worker sanitation will be managed through provided latrines and water for hygiene. As a best practice, use a ratio of 20 people per one pit latrine. Never exceed a ratio of 50 people per latrine. Source: http://conflict.ishtm.ac.uk/page_161.htm	P&D, C	3.3: Number of temporary latrines in the construction or rehabilitation place		Prior to construction, identify the number of latrines needed. Maintain throughout construction	2
4.: New construction can exceed capacity of local utilities and services.	4.1: As feasible for project scope and size, assess utility and local services demand for new construction. Incorporate energy efficiency measures and use of renewable energy sources to reduce energy use and costs. This may include the use of insulation and reflective building materials to reflect heat, energy efficient fixtures, and high-efficiency heating, cooling, and lighting systems, solar energy. The use of solar systems for residential and commercial projects may realize cost savings through the use of renewable energy. As feasible, IRP 2 will assess and incorporate solar systems, especially in areas where solar system providers are present (Erbil, Duhok, Sulaymaniyah, Baghdad, Mosul, and Kirkuk). To ensure maintenance and safe use of the system, IRP 2 will provide trainings to beneficiaries and/or grantees and subcontractors.	P&D, C	4.1a: Assessment of utility and service demand of new construction and documented in ERF. As feasible for scope of activity, installation of energy efficiency measures or justification for not including. 4.1b: If solar systems are installed, trainings provided to beneficiaries, grantees, and/or subcontractor on maintenance and safe use.	IRP 2 GMU, grantee, and Environmental Officer	4.1a: Review during activity design phase 4.1b: Prior to activity and training logs saved to activity file.	2
5. Construction can result in impacts to the local community including traffic disruption and noise which may result in social tension among stakeholders, local authorities, and construction firm.	5.1: IRP 2 will identify any community outreach requirements in the ERF to inform stakeholders about the project and obtain input and support for project. If required, the grantee will document the type and timing of community outreach activities. The grantee will document communications and complaints, if received, from community stakeholders concerning project activities and maintain in their project file.	P&D, C	5.1: Community outreach process included in implementation. Log with community feedback and complaints about project implementation. Document the response to stakeholders. Designate a point of contact for the activity.	IRP 2 GMU, grantee, and Environmental Officer	Prior to activity and updates as documented in the activity file.	1
	5.2: Construction operations will be managed to reduce noise disturbance to surrounding areas, if applicable, and feasible. In residential areas, larger construction activities will follow a schedule to minimize noise disturbance to the surrounding neighborhood.	P&D,C	5.2: Documented procedures for noise mitigation in implementation plan. Work hours managed to reduce disturbance to surrounding community, to the extent feasible.	IRP 2 GMU, grantee, and Environmental Officer	Throughout the construction activity	2
	5.3: Traffic obstruction resulting from construction work will be managed to reduce disruptions. Signage will advise drivers of any circulation changes and workers will be present to guide traffic, if needed.	P&D,C	5.3: Documented procedures to minimize traffic disruption using signage, traffic circulation workers and work schedule, as needed.	IRP 2 GMU, grantee, and Environmental Officer	As needed during construction	2
	5.4: IRP 2 construction activities will identify a point-of-contact (POC) to conduct outreach to surrounding community and stakeholders. The POC is responsible for documenting and responding to community grievances.	P&D, C	5.4: Documented POC and contact information and record of community contact.	IRP 2 GMU, grantee, and Environmental Officer	Throughout planning and construction	1
6. Climate risk: Construction workers may face increased risk of heat exhaustion or impacts of climate-related extreme events (e.g., heavy rain storms, flooding, dust storms or wildfires)	6.1: Require that construction crews receive proper hydration and are not exposed to dangerously high heat levels, in accordance with local and national health and safety requirements.	C	6.1: Implementation plan documents process of providing work breaks	IRP 2 GMU, grantee, and Environmental Officer	Throughout construction period	2
	6.2: Ensure emergency plans are in place (and well-communicated to crews) to respond to climate-related extreme events.		6.2: Documented emergency plans posted at the work site.		Throughout construction period	2
7. Climate risk: Climate-related precipitation and storm events (e.g. storms, wildfires, extreme heat, flooding, landslides, erosion) can reduce the durability of project structures and transportation systems necessary to	7.1: To the extent feasible and appropriate, use enhanced construction methodologies, best practices and resilient materials to address specific potential climate stressors and increase construction longevity and durability. Design will be reviewed by local certified engineer, as needed.	P&D	7.1: Documented climate risk considerations in building designs or justification for not including. For construction activities requiring an Engineer of Record, this Engineer will be responsible for reviewing the climate risks prior to the activity and during the planning and design phase. The Engineer will be required to confirm that climate risks have been considered and addressed.	IRP 2 GMU, grantee, and Environmental Officer	Design review prior to construction.	1

management systems necessary to access the project structures.	7.2: IRP 2 will consider long-term sea-level rise and potential flooding scenarios as a result of climate change storm events, when siting new construction. New construction will not be undertaken in areas vulnerable to flooding.		7.2: Documented climate risk considerations in construction site selection.		Site review prior to construction	1
8. <i>Climate risk:</i> Water scarcity - Declining precipitation rates and changed distribution patterns are causing water stress in Iraq.	8.1: To the extent feasible, design community-based facilities to increase water efficiency to promote resilient communities. Design review by local certified engineer as needed.	P&D, C, O&M	8.1: IRP 2-approved design that enhances water efficiency, to the extent feasible.	IRP 2 GMU, grantee, and Environmental Officer	Prior to construction	2
9. <i>Climate risk:</i> Extreme climate-related events (drought, extreme heat waves, wildfires, flooding) can affect the longevity of buildings and infrastructure; these impacts can be worsened or mitigated based on construction design and siting / location	9.1 Use local knowledge and best practices in designing measures to address specific potential climate stressors (e.g., use more resilient materials or construction methods, design for future upgrades/repairs, promoting smart design for cities and areas of implementation)	P&D	9.1 Indication of climate risk considerations in building designs	IRP 2 GMU, grantee, and Environmental Officer	Prior to construction	1
	9.2 Consider alternative locations if proposed site faces higher climate risks (e.g., floods, wildfires, high winds, or other site-specific threats) than other potential, appropriate locations		9.2 Indication of climate risk considerations in construction site selection		Prior to construction	1
Acronyms Planning and design: P&D Construction: C Operations and maintenance: O&M Environmental Review Form: ERF Implementing partner (grantee): IP Project development officer: PDO Storm water pollution prevention plan: SWPP Health and safety plan: HASP Waste management plan: WMP World Health Organization: WHO Program Compliance Officer: PCO Subcontracts and grants manager: SGM						



