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JORDAN TOURISM DEVELOPMENT PROJECT II (JTD II)

**ENSURING ENVIRONMENTAL COMPLIANCE OF THE PROPOSED
CITADEL FUNICULAR RAILWAY PROJECT /GAM**

FINAL

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JORDAN TOURISM DEVELOPMENT PROJECT II (JTD II)

**6151 ENSURING ENVIRONMENTAL COMPLIANCE OF THE PROPOSED
CITADEL FUNICULAR RAILWAY PROJECT /GAM**

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS

DBOT	Design, Build, Operate and Transfer
DOA	Department of Antiquities
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GAM	Greater Amman Municipality
JTD II	Jordan Tourism Development II
MOTA	Ministry of Tourism and Antiquities
NGO	Non-Governmental Organization
RFP	Request for Proposal
TOR	Terms of Reference
USAID	United States Agency for International Development

1. INTRODUCTION

The Greater Amman Municipality (GAM) is committed towards the development of the Citadel as a unique attraction and functional space in Amman that is linked to the downtown cluster and can be leveraged to facilitate tourism-related economic development and activity in Amman as a venue for education, cultural events, and day and night time tourism. To that purpose, GAM has identified the development of a funicular railway to link the Citadel site with downtown as a potential initiative. The project needs to be carried out in a manner that is environmentally compliant taking into consideration all necessary mitigation measures throughout its life cycle.

As part of JTDII's aims to introduce best practice in site conservation and management and promoting sustainable tourism, JTDII will be providing technical support to GAM to enable the development of the necessary decision-making tools to ensure environmental compliance for this project. JTDII will be supporting GAM through the development of the terms of reference for an environmental due diligence to be carried out during the pre-feasibility phase, as well as the terms of reference for an environmental impact assessment to be carried out during the feasibility study stage in compliance with the Jordanian EIA By-law No. 37 for the year 2005. The terms of reference will be released by GAM as part of their tendering documents for the project.

The second phase of JTDII's deliverables as part of this collaborative effort will be to support GAM in the evaluation of proposals, and providing oversight during the implementation phase to ensure that deliverables under the EIA process adhere to the terms of reference of the EIA.

Annex 1 presents the terms of reference for the EIA for the Citadel Funicular Railway Project to be carried out during the feasibility study stage. Annex 2 presents the terms of reference for the environmental due diligence to be carried out during the pre-feasibility study stage. Annex 3 provides a list of Jordanian consulting firms accepted by the Ministry of Environment to conduct environmental impact assessments. Annex 4 presents an unofficial translation of EIA Regulation No. 37 of 2005 provided from the Ministry of Environment.

ANNEX 1

TERMS OF REFERENCE FOR ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CITADEL FUNICULAR RAILWAY PROJECT

1. INTRODUCTION

Greater Amman Municipality (GAM) intends to connect the two major tourist attractions in Amman, namely, the Citadel and the Roman Theater via a funicular railway in order to provide an easy and convenient link for tourists and visitors between these two historic sites.

Local Jordanian legislation requires development projects to conduct a form of environmental assessment (Environment Protection Law No. 52 of 2006 and EIA Regulation No. 37 of 2005). Under these laws, GAM, as the Project Proponent, will produce and submit an Environmental Impact Assessment (EIA) for approval before commencing implementation of the project. The EIA will be used by the relevant government authorities to monitor the impacts within the life span of the project on the immediate environment and will enable major stakeholders of the project, including the Government, to manage the environment for the well being of the affected communities.

This annex presents the Terms of Reference (TOR) for conducting the Environmental Impact Assessment to be carried out by a qualified environmental consultant (hereinafter referred to as the "Consultant") for the proposed Amman Citadel Funicular Railway. The TOR will ensure that the EIA will meet the requirements of relevant Jordanian regulations.

2. PROPOSED PROJECT

2.1 PROJECT NAME AND PROJECT PROPONENT

The formal name of the project is "The Amman Citadel Funicular Railway".

The Project Proponent is the Greater Amman Municipality whose address is:

Greater Amman Municipality
Amman City Hall
Tel. +962-6 463 6111 - +962-643 5111
Fax +962-6 464 9420
Amman 18111 P.O. Box 132
Amman, Jordan
Contact Person: Mr. Ibrahim Hashem, Engineering Director
Tel: +962-6-463 6111
Fax: +962-6 905 4755

2.2 OBJECTIVES OF THE PROJECT

The project is proposed by GAM in response to the need to provide a connection between the two major historic attractions, the Citadel and the Roman Theater, which are closely located but separated by difficult topography. Steep gradients effectively isolate the Citadel from its neighboring tourist attractions. The proposed project will launch a process that will lead to that connection being improved. With the Funicular project in place, coaches would drop tourists at either the Citadel site or the Roman Theatre with the connection between the two sites being made via the Funicular. The Funicular will eliminate the need for

coaches to travel between the two sites thus reducing traffic impact and generating an ability to manage coach impact/circulation.

The objectives and benefits of the project are multi-sectoral. If properly planned, designed and operated, the following benefits are expected to accrue:

- a. Create a connection between two close tourist attractions (The Citadel and the Roman Theater);
- b. Create an effective and efficient tourist circuit that will enable visitors to enjoy more attractions in a pleasant environment;
- c. Significantly improve the City image and its inward investment potential; and
- d. Add positive environmental benefits and protect the historical sites by reducing vehicular traffic between The Roman Theater and Citadel.

2.3 PROJECT DETAILS

Currently, tourists and Citadel visitors have only one option to access the Citadel and that is through the use of car (or bus) where the trip from downtown Amman to the Citadel could take from 20 minutes up to 40 minutes in peak traffic hours. The urban stairs facing the Roman Theater are only used by the local area residents. Al-Hashemi Street experiences a heavy traffic load due to a huge number of vehicles and lack of parking areas. Inaccessible and unsafe pedestrian link between the Hashemite Plaza and the opposite sidewalk is a concern.



Figure 1- Proposed Path of the Funicular Railway (shown by arrow)

It should be noted that this project description is based on conceptual designs developed by GAM with some aspects/details likely to change once the DBOT investor/provider is engaged and initial project design plans are developed. It will be the Consultant's task to ensure that the most recent project information is used in preparing the EIA.

Funicular Technical Information

The Funicular Railway will be an engineering system for the transport of passengers on slope in carriers or vehicles running along rails at ground level and drawn by cable at one end, together with any machinery, equipment or plant connected therewith.

It is expected that information related to the technology to be adopted and passenger delivery models will be available for the Consultant conducting the EIA.

Land Status and Ownership

Figure 2 shows the plots that are expected to be affected by the proposed funicular railway. These are categorized as either built-up plots or empty land.



Figure 2 – Empty and Built-up Land Areas

Figure 3 shows the status of land ownership for the plots that are expected to be affected by the Funicular Project.

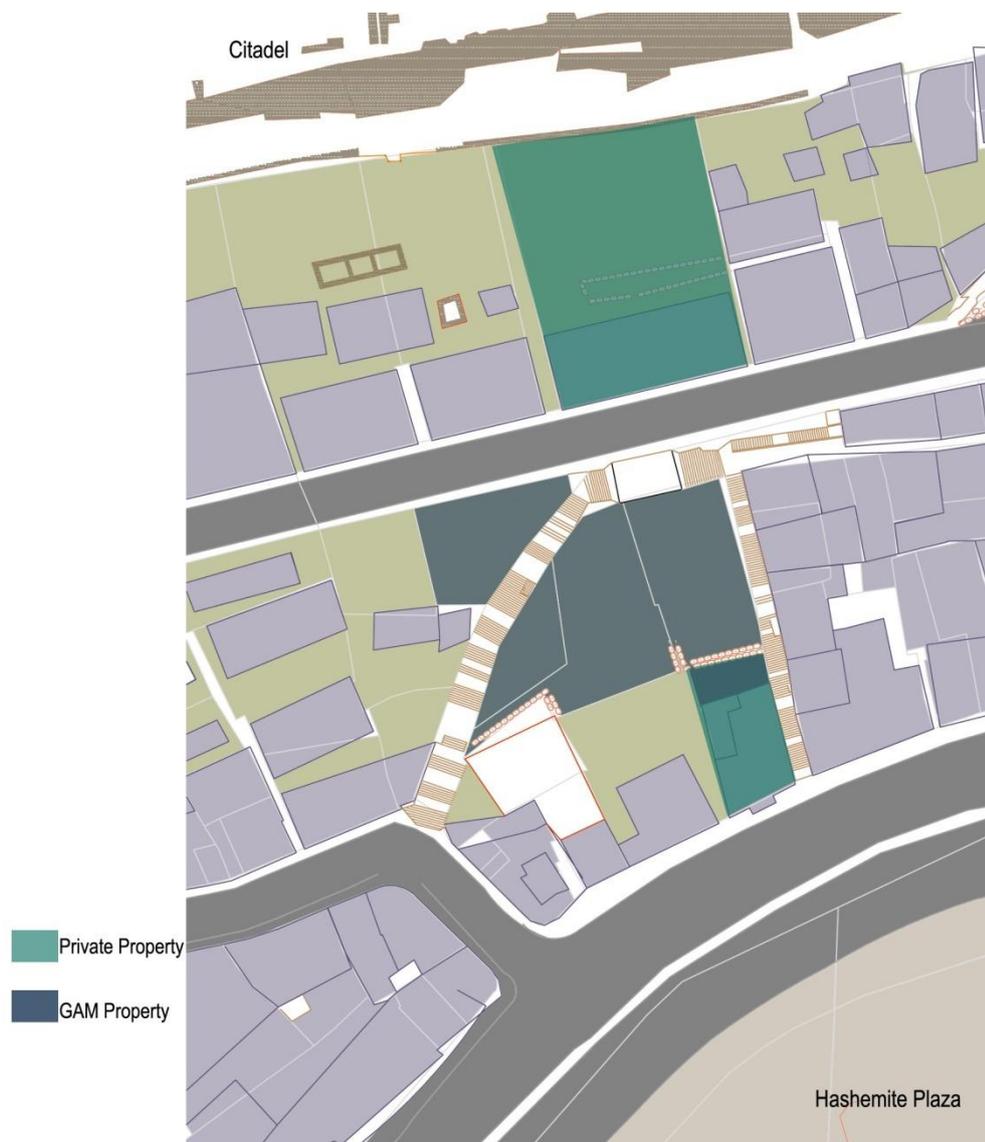


Figure 3 – Land Ownership Status

The following table presents information on the affected plots. As can be seen, two of these plots are privately owned.

Table 1 – Land Ownership for Affected Plots

No	Lot number	Area	Ownership
1	31	470	GAM Property
2	32	160	GAM Property
3	88	230	GAM Property
4	89	293	GAM Property
5	23A	416	GAM Property
6	23B	262	Private Property
8	36	1291	Private Property

Design Considerations:

The following considerations will guide the design of the Funicular Railway Project:

- a. Preserve the historic resources through which it passes and the attractions which it seeks to connect. A new visitor centre is being built at the Citadel together with a tourist route that will better present the primary link with this tourist route.
- b. The Funicular must respect the vistas and historic fabric of the ancient fortification walls, located at the base of the site and defining its boundaries. As such any hilltop terminal structure must be of light footprint and sit below the wall whilst ensuring appropriate passage of pedestrians between the Funicular and the Citadel site.
- c. Recognize the historical and cultural significance of the site and seek to preserve and maintain it whilst improving accessibility to it.
- d. Sympathy to the character of the residential area: The Funicular route passes through a predominantly residential area which has social, environmental sensitivities that the project must recognize. At its lower terminal it meets Al Hashemi Street at street level. At this location the Funicular terminal building may present a commercial opportunity, consistent with the retail frontage within which it will sit, and that could support its business case.

Pedestrian Safety and Accessibility

A wide foot bridge is proposed which will link the Funicular with Hashemite Square and onward to the Roman Theatre to ensure a safe pedestrian crossing between the Hashemite Square and the Hashemi street funicular station. The Funicular may have a relationship with this bridge at both deck height and ground level dependent upon the final design of the Funicular. Design and construction of the bridge will progress in parallel to that of the Funicular. The pedestrian bridge will be treated as part of the whole image of the project; innovative, modern, accessible and safe.

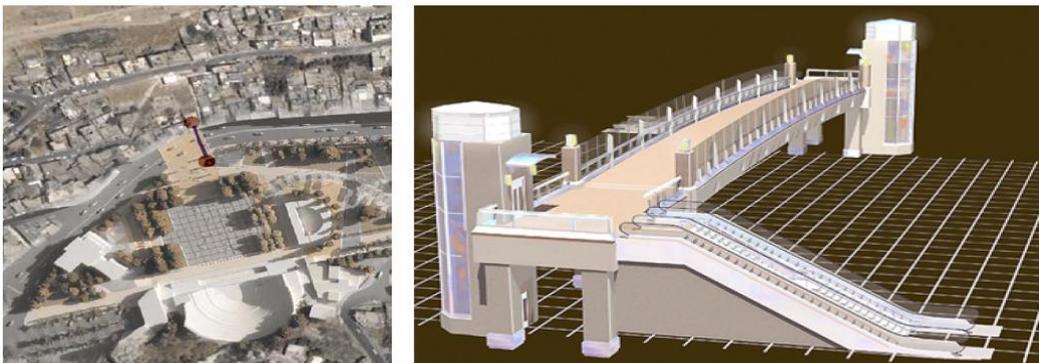


Figure 4 – Proposed Pedestrian Bridge to Provide Accessibility

Urban Development and Touristic Attractions

The project will help develop the whole area by emphasizing on the area's touristic attractions through linking the two major archeological sites. Enhancing the condition of some of the existing elements will create effective and efficient tourist circuit:

- Stairs: The existing stairs could be treated as a touristic urban access; by adding touristic activities such as souvenirs shops, art galleries and beverage shop and internet booths along the stairs, treating it as a stair open-market. This will attract not only tourists but encourage the local society involvement in the development plan.

- Providing parking area in Raghadan tourism terminal beside the Hashemite plaza will help attracting people to the area.

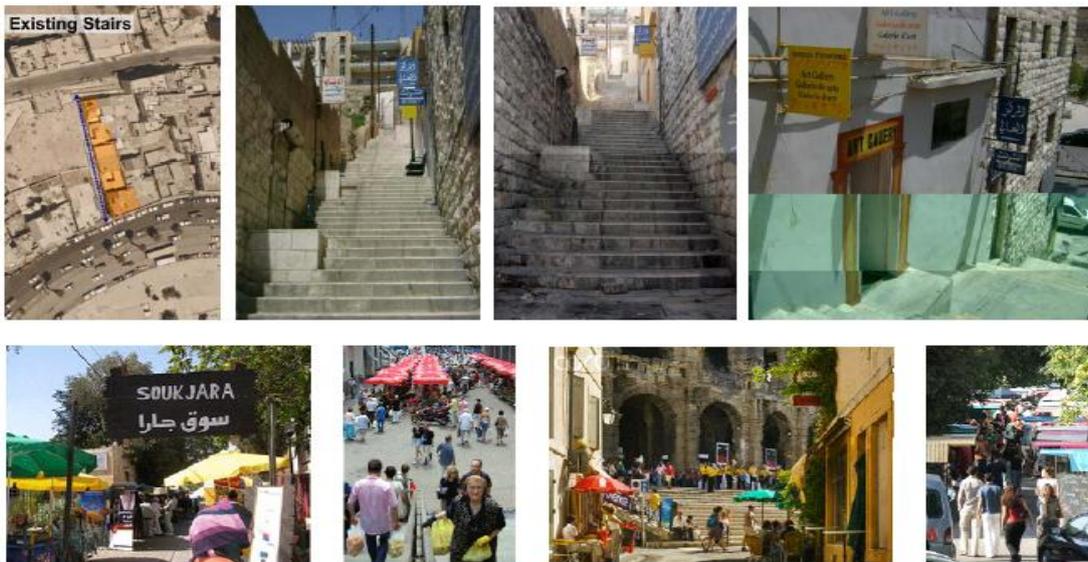


Figure 5 – Existing Stairs

Implementing a pedestrian passage from the Hashemite plaza to the funicular station on Al-Hashemi street level will increase the safety of the visitors and encourage them to use the funicular.

3. OBJECTIVES OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The Funicular route passes through a predominantly residential area which has social, environmental sensitivities that the project must recognize. Whilst negative impacts must be minimized there may be significant positive social impacts as the Funicular may be able to generate micro-economic opportunity.

GAM plans to implement the project on the basis of Design, Build, Operate and Transfer (DBOT) which would require engaging a DBOT investor/provider. The Environmental Impact Assessment will follow an Environmental Due Diligence carried out at the pre-feasibility study stage.

The environmental impact assessment will be conducted to meet the Ministry of Environment requirements. It will demonstrate to the Jordanian authorities that all potential environmental and socio-economic impacts have been accounted for through a systematic process of identification and assessment and that safeguards have been developed to ensure that adverse impacts are mitigated. As the EIA process proceeds, it will provide regular input into the design of the funicular railway system in order to guarantee that options considered are based on sound environmental principles.

4. GENERAL REQUIREMENTS FOR THE EIA

- 4.1 The EIA should cover the all stages of project development; namely, the construction and operation phases, in addition to the decommissioning phase.
- 4.2 The EIA should be a stand-alone document. It should contain sufficient information on the Amman Citadel Funicular Railway project and other studies to the extent that will avoid the need to search out previous or supplementary reports by the EIA reviewer.
- 4.3 Information provided in the EIA should be clear, succinct, objective and, where appropriate, be supported by maps, diagrams or other descriptive detail. The purpose of the documents is to

enable the reviewer(s) (e.g. GAM/Ministry of Environment/ Department of Antiquities) as well as members of the public or any other interested agency to properly understand the environmental consequences of the proposed funicular railway project and assess effectiveness of the impact mitigation measures.

4.4 The EIA should refer by suitable appendices to all relevant studies/investigations that may have been carried out. This documentation should be made available on request.

4.5 An Executive Summary shall be provided in the EIA and be available separately for public information.

4.6 The level of analysis and detail for the various issues in the EIA shall reflect the level of significance of the impacts.

5. SCOPE OF WORK

The EIA process shall involve tasks and cover issues that need to be completed in order to fulfill the requirements for the environmental impact assessment. The following issues and tasks must specifically be addressed in the Environmental Impact Assessment:

5.1 PROJECT CONTEXT AND OBJECTIVES

Describe the context, components and activities of the funicular railway project as they relate to the surrounding environment and to GAM's larger plans for Amman. The project objectives should be presented and discussed including the relationship of the proposal with the planned and existing arrangements for developing the Citadel site.

5.2 PROJECT DETAILS (DESCRIPTION OF THE PROPOSED PROJECT AND ITS ACTIVITIES)

Illustration of the Alignment – using maps and diagrams of appropriate scale to indicate clearly the proposed railway corridor with respect to nearby residences, streets and access points, and environmental features and constraints.

Easement Details – any property acquisition and easement requirements, extent of clearing, any easement conditions, and construction and maintenance access requirements.

Design Objectives – capacity and design details of the funicular railway and expected service life.

Physical Details of Structures and Facilities – the form, dimensions and construction materials of the proposed funicular railway, number of tracks to be used and the area needs for the project, pedestrian access structures, loading/off-loading terminals and other ancillary facilities.

Construction Details – including staging of works, method to construct and install the railway and carriages, access and transportation arrangements, provision of services, hours of construction activities, size of workforce and local employment opportunities.

Operation and Maintenance Details – information on operation and maintenance activities including the frequency of such activities for the railway, passenger carriages, terminals, and maintenance of the access tracks along the railway.

Decommissioning Details – an outline of how the funicular railway would be dismantled and removed

and how its proposed location including any easement would be rehabilitated if a decision were made to decommission the funicular.

5.3 PROJECT ALTERNATIVES

The EIA should analyze, present and discuss project alternatives that have regard to the objectives of the proposal, the key physical and engineering constraints, relevant environmental and socio-economic factors and community concerns. Alternatives to be considered include possible railway routes (alignment), pickup and delivery options, number of tracks, etc. Discussion of reasons for rejecting certain alternatives and a summary of the environmental trade-offs of each option should be presented.

5.4 BASELINE CONDITIONS

The EIA should examine the site of the proposed funicular project and its surroundings and describe its main environmental features. This includes the physical, biological and human environment.

5.5 INSTITUTIONAL AND LEGAL CONTEXT

The EIA should describe the legislative framework in Jordan related to the environment including existing policy and administrative framework under which the Funicular project will be implemented. Jordan's environmental legislation that is relevant to the funicular project would include regulations and guidelines that are applicable to this type of project and to the Citadel site.

5.6 ENVIRONMENTAL IMPACTS AND MITIGATION

The potential impacts of the significant issues (as determined in the EIA scoping stage) during the construction, operation/maintenance and decommissioning stages of the funicular railway shall be addressed in the EIA. This will include identifying and assessing key positive as well as adverse environmental and socio-economic impacts that may result from the construction, operation, and decommissioning of the funicular. Impacts (if any) which might impede or significantly affect the implementation of the funicular railway project should be clearly presented;

When some impacts are not quantifiable, they should be fully described. Where applicable, safeguards and mitigation measures to ameliorate the impacts should be proposed with an objective assessment of their effectiveness. Legislative restrictions applicable to the physical impacts are to be detailed.

The EIA should recommend appropriate and practical mitigation measures to avoid or minimize the adverse environmental impacts including any design and planning modifications that may be needed. The EIA should evaluate if significant environmental impacts can be reasonably and cost-effectively mitigated during the construction and operational phases. It is suggested to group mitigation measures under 3 categories: no-cost, low-cost, high-cost.

- **Bio-Physical Impacts**

This will involve impacts on the biological and physical environmental components of the project site including the following:

Natural and Conservation Areas – impacts on any natural or conservation areas or habitats for important species.

Flora and Fauna – any likely impacts on the flora and fauna especially where the railway corridor will be constructed.

Vegetation Clearance – clearance requirements and amount of natural vegetation affected. Information

on possible mitigation measures such as compensatory vegetation and tree planting should be included.

Noise – the existing background noise levels in the area traversed by the railway; any increase at noise-sensitive locations during construction, operation, and decommissioning activities.

Other impacts – any likely impacts on soil erosion (considering the slope between the Hashemi Street and the Citadel mountain), earth slippage/movement, air quality, water quality, litter and solid waste, including mitigation measures and their effectiveness, rain/water drainage.

- **Socio-Economic Impacts**

Assessment of the socio-economic impacts should examine how the funicular project will change the lives of current and future residents of the community surrounding the funicular railway. The indicators used to measure the potential socio-economic impacts may include changes in community employment and income levels and changes in the aesthetic quality of the community.

The extent to which the Consultant is expected to address the socio-economic impacts from the funicular project should be commensurate with the level of community concerns.

Property Acquisition and Compensation – likely impacts on the land use status of the area crossed by the proposed funicular railway including compensation for possible acquisition of the privately-owned plots.

Land Use – potential site specific and cumulative impacts of the funicular on the existing and potential land use and nearby residences taking into consideration possible severance and loss of accessibility for the areas located on both sides of the railway.

Features of Community Concerns – impacts on any feature or areas of community concern such as those of recreation or cultural heritage value.

General Social Impacts – on affected property owners or users and the local community.

Visual Impacts – visual impacts of the funicular at sensitive locations.

Health Risk – assessment of the potential risk of electric current and/or magnetic fields from the proposed funicular, any electric substations, transformers or communication equipment.

Traffic and Amenity – potential impacts on traffic and community amenity especially during construction phase of the funicular.

- **Archaeological, Urban and Architectural Heritage Impacts**

The Citadel site and the Roman theatre and the downtown area are Amman's most important archaeological and heritage attractions. They contain outstanding archaeological and historical architectural resources which make them culturally significant for Amman. It is not expected that Consultant will need to generate any additional data than what is available regarding the archaeological and cultural heritage components for these two sites. However, the Consultant will use and build upon this available information to identify and assess potential impacts on cultural heritage resulting from the construction and operation of the funicular project.

5.7 ENVIRONMENTAL COST-BENEFIT SUMMARY

The EIA should present a summary of both the short and long term environmental costs and benefits to be borne by the community and the environment, such as reduced property value for the properties

surrounding the funicular railway including the cost of mitigation measures to be applied. Where costs/benefits are not quantifiable, they should be described. This summary may be included in the section on environmental impacts or presented separately in the EIA.

5.8 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental management Plan (EMP) for both the construction, operation/maintenance and decommissioning stages of the funicular project shall be prepared and included in the EIA. The EMP should contain all relevant details available at the time when the EIA is prepared. When information is not available, they should be described with indication of how and when the information will become available and how they will be incorporated into the EMP. The EMP should describe the environmental monitoring that will be needed during construction and/or operation.

The EMP should address, but not be limited to the following issues:

- The environmental management objectives;
- Specific strategies to meet the management objectives, and identification of responsible persons;
- Legislative requirements including the Project Proponent's obligations;
- The quality assurance, monitoring and auditing requirements and programs including the identification of performance indicators and criteria. Monitoring and auditing locations and frequency;
- Identification of responsible persons in the hierarchy; and
- Reporting procedures.

5.9 CONSULTATION

The EIA should identify all stakeholders who may be affected from the construction and operation of the funicular project and conduct consultations with them to obtain their feedback. The concerns of the relevant departments at GAM, service/utility providers (e.g. Jordan Electric Company), relevant NGOs, community groups and individuals shall be identified and addressed in the EIA. Consultation should include but be limited to the following stakeholders:

- Relevant departments at GAM
- Department of Antiquities
- Ministry of Environment
- Utility/service providers
- Tourist bus and taxi drivers
- Tourism operators and agencies
- Friends of Archaeology (NGO)
- Local community representative groups

The EIA Consultant is expected to coordinate with other project consultants working on the feasibility study and to provide environmental input at key milestones during the development of the funicular design.

6. EIA CONSULTANT

6.1 The Consultant shall provide information on the qualifications, experience and track record of his expert(s) who will be conducting the environmental impact assessment.

6.2 It is the responsibility of the Consultant preparing the Environmental Impact Assessment to identify and address, as fully as possible, all matters relevant to the proposed funicular project.

There may be issues other than those specified within the Terms of Reference which should be considered by the EIA.

6.3 It is the responsibility of the Consultant preparing the Environmental Impact Assessment to determine, in conjunction with the project proponent, those parties which should be consulted during the EIA preparation stage in addition to those specified by the Terms of Reference.

7. EIA STAGES

The Environmental Impact Assessment Study shall involve the following two stages:

ENVIRONMENTAL SCOPING STAGE

The main purpose of this phase is to determine the scope of the EIA and identify the significant issues that will be examined in greater depth in the EIA. It will identify the specialists who will be involved in preparing the EIA and the timeframe for completing it. The scoping stage will define the reasonable and practical alternatives to the proposed project.

A scoping session should be conducted involving the key stakeholders to identify the main concerns and issues, assess the significance of the funicular project's impact on the environment and affected community. A scoping report will be prepared at the conclusion of this stage which shall contain the proposed methodology and terms of reference for conducting the EIA. The report shall be submitted to the Ministry of Environment for review and approval. It is expected that the Ministry of Environment will forward the report to any and all other departments whose approval is needed for the EIA's overall approval.

The Consultant shall prepare any necessary documentation for the purpose of supporting the scoping session. If necessary, part or all of this documentation shall be prepared in Arabic to facilitate the participation of the local community in public consultations and hearings.

ENVIRONMENTAL IMPACT ASSESSMENT STAGE

This stage will involve the collection of detailed information, analysis of data, identification and assessment of anticipated environmental impacts for each of the alternatives, recommendation for the preferred alternative, and proposing adequate and suitable mitigation measures for anticipated impacts. This stage will proceed based on the TOR and methodology as presented in the scoping report and approved by the Ministry of Environment. It will conclude with the preparation of the environmental impact assessment report.

8. DELIVERABLES

8.1 SCOPING SESSION(S) AND SCOPING REPORT

The Consultant is expected to prepare a pre-scoping document which will be submitted and approved by Ministry of Environment. This document will be circulated in advance of the scoping session and in preparation for it.

The scoping session(s) is considered a required deliverable.

At the conclusion of the scoping stage, a draft scoping report will be produced by the Consultant and submitted to all participants/stakeholders for review, comment and feedback within a set timeframe. Comments or suggestions made on the draft scoping report will be taken into consideration in producing a final scoping report which shall then be submitted to the Ministry of Environment for review and approval.

8.2 EIA REPORT

The Consultant shall prepare an EIA report outlining all the tasks described in the Scope of Work above. The report will first be prepared in draft form then finalized after receiving comments (if any) from the Project Proponent and the Ministry of Environment which will review the report.

The following report structure is suggested but the Consultant is at liberty to use any other suitable report organization that fulfills the requirements of the Jordanian EIA by-law No. 37 for the year 2005:

Section 1: Background, Objectives and Methodology of EIA

Section 2: Description of the Project and its Alternatives

Section 3: Legislative and Administrative Framework

Section 4: Baseline Data

Section 5: Identification and Assessment of Environmental Impacts and Mitigation Measures

Section 6: Analysis of Alternatives

Section 7: Environmental Management and Monitoring Plan

Section 8: Conclusion and Recommendations

Section 9: Annexes

A non-technical executive summary of the EIA is required by the Ministry of Environment which shall be prepared in English and Arabic to present the EIA's key findings, conclusions and recommendations.

8.3 PROGRESS REPORTS: Every two week, the Consultant shall prepare and submit to GAM a progress report that briefly shows - among other information - work progress, planned tasks and any unresolved issues.

8.4 PRESENTATIONS: The Consultant is expected to undertake one or more presentation of the report to GAM and/or the Ministry of Environment at the two key milestones (Scoping Stage and EIA Stage) to outline key findings and recommendations.

9. EIA WORK SCHEDULE

The EIA for the proposed Amman Citadel Funicular Railway project shall be completed within a period of 3 months from the date of commissioning the study. The EIA work schedule should be compatible with the planning and design time horizon.

10. TENDERING PROCESS

The competitive tendering process for the Project is conducted in accordance with the applicable tender and procurement law. GAM will make available the tender document, including instructions for prequalification, financial and technical qualification criteria (reference project/s), outline of the bidding process and binding guidelines for the Interested Parties for participation in the tender process and a deadline for submission of the proposals.

After issuing the invitation to bid there will be a pre bid meeting at which Bidders can address their ideas, concerns, questions, etc. to GAM. This meeting will be followed by the actual bid submission. Bidders are requested to submit their proposals to GAM, with a defined demonstration of their financial and technical capacities for the execution of the Project.

The submission of bids by interested parties in response to the RFP would be required to be in three separate sealed covers as indicated below.

Cover 1: Corporate, Technical and Financial Capability (Part A)

Cover 2: Technical Proposal (Part B)

Cover 3: Commercial Proposal (Par C)

The Bids received would be subject to a prima-facie check for responsiveness followed by GAM's stepwise evaluation procedure.

11. INSTRUCTIONS FOR PRE-QUALIFICATION

The Consultant may be required to go through a pre-qualification stage where he is requested to submit information on company credentials and the qualifications for key personnel including the project manager, and any other required documentation that will enable GAM to shortlist qualified consultants.

The Ministry of Environment requires that consultants performing environmental assessments in Jordan be registered with the Ministry. The Ministry provides project proponents with a list of Jordanian consultants/consulting firms who are pre-qualified to conduct environmental assessments.

It is expected that lead consultants bidding for the Project will be local, however specialized expertise can be subcontracted to regional or international experts. It is essential that entities bidding for this project have direct experience related to the project. Whilst it is recognized that the experience and expertise required for the project may not be available in Jordan, Jordanian companies will not be disqualified provided they meet the requirements listed herein. In the event that international firms submit a proposal, they should do so in association with a local entity/individual that meets the legal requirements to bid for the project.

Corporate capability statement including general experience, specific experience in the related field and staff profiles should be provided by the consultant and all subcontracted partners. Copies of original document defining the constitution or legal status, place of registration and principal place of business of the bidder should be provided.

12. INSTRUCTIONS FOR PREPARING THE TECHNICAL OFFER

Generally, the technical proposal for conducting the EIA should include but not necessarily be limited to:

- The proposed methodology for conducting the EIA.
- A proposed Table of Contents for the EIA report.
- Work plan with timetable and key milestones.
- Proposed EIA team. Key positions on the EIA team include: Team Leader (with 15 years experience conducting EIAs); Socio-economist; Archaeologist/Cultural Heritage Expert; and Environmental Management Specialist. It is preferable to use a CV template of no more than 3 pages for each proposed team members which must include a 'key qualifications paragraph'.
- Company profile and credentials, including consortium partners (if applicable) and highlighting similar projects completed to date

13. INSTRUCTIONS FOR PREPARING THE FINANCIAL OFFER

These instructions for the preparation of the financial proposal are provided in order to ensure uniformity in comparing financial proposals by the different offerors.

The offeror is requested to provide a breakdown of costs in terms of labor (LoE and daily rates), meetings, data collection, etc. for each of the EIA stages noted below:

- Scoping stage
- Data collection and baseline surveys stage
- Impact assessment stage
- EMP preparation stage

Positions with corresponding man hour rates should be given for any out of scope work that may be required, including any field work that may need to be undertaken. An indicative table is supplied below. Additional positions may be added as needed.

Position	Daily Rate (JD)
Project Manager/Team Leader	
Socio-economist	
Archaeologist/Cultural Heritage Expert	
Environmental Management Specialist	
Senior Specialist	
Junior Specialist	

14. CONDITIONS ON ELIGIBILITY OF OFFERORS

To be eligible to submit an offer under his RFP, the offeror must:

- Demonstrate suitable and adequate technical and financial capabilities to undertake the EIA study. This would include a corporate capability statement showing general experience, specific experience with similar projects and staff profiles.
- Submit his offer by the due time and date as specified by GAM.
- Submit an offer that is substantially responsive to the RFP conditions and that conforms to GAM's requirements without material deviation or reservation.
- Provide annual audited accounts for the last 5 years demonstrating the current soundness of his financial position and its prospective long term profitability.
- Not have a potential or actual conflict of interest when his commitments and obligations to GAM or to recognized professional norms and ethics are likely to be compromised by his other interests or commitments, especially financial, particularly if those interests or commitments are not disclosed.

15. PROPOSED EVALUATION CRITERIA

The following evaluation criteria will be used to select the successful offer:

Company Credentials: 10%

EIA Team: 25% (Project Leader: 15%, Other Key Personnel: 10%)

EIA Methodology: 30% (Technical approach: 15%, Work plan: 15%)

Cost Competitiveness (financial offer): 35%

16. AVAILABLE REPORTS AND REFERENCES

- The Citadel Tourism Development Concept, USAID/ Jordan Tourism Development Project (Siyaha), Prepared by John Robinson Planning and Design (International Development Ireland (IDI)), September 2007
- The Citadel Site Conservation and Management Plan, USAID/ Jordan Tourism Development Project (Siyaha), Prepared by Chemonics International, September 2008
- Amman Citadel Funicular Pre-design Study, GAM, May 2009

ANNEX 2

TERMS OF REFERENCE FOR PRE-FEASIBILITY “DUE DILIGENCE” FOR THE CITADEL FUNICULAR RAILWAY PROJECT

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1. INTRODUCTION

Greater Amman Municipality (GAM) intends to connect the two major attractions, the Citadel and the Roman Theater in Amman with a funicular railway to provide a convenient link for tourists and visitors between these two sites.

These Terms of Reference (TOR) are written to provide the conditions for an environmental Due Diligence to be carried out by an environmental consultant (hereinafter referred to as the "Consultant") for the proposed Amman Citadel Funicular Railway. GAM intends to request the Due Diligence in advance of conducting a detailed Environmental Impact Assessment (EIA) for the proposed project.

Local Jordanian legislation requires development projects to conduct a form of environmental assessment (Environment Protection Law No. 52 of 2006 and EIA Regulation No. 37 of 2005). Under these laws, GAM (hereinafter referred to as the "Project Proponent") is required to submit an EIA report for approval before commencing implementation of the project. The EIA will be used by the relevant government authorities to monitor the impacts within the life span of the project on the immediate environment and will enable major stakeholders of the project, including the Government, to manage the environment for the well being of the affected communities.

The TOR have been prepared based on consultations with the Project Proponent, field visits and information collected from both primary and secondary sources including information provided by the Project Proponent.

2. BACKGROUND INFORMATION

2.1 DESCRIPTION OF THE PROJECT

Name of Project

The name of the project is "The Amman Citadel Funicular Railway".

Project Proponent

The Project Proponent is the Greater Amman Municipality whose address is:

Contact Person : Mr. Ibrahim Hashem, Engineering Director
P. O. Box 132 Amman 1118, Jordan

Tel : +962-6 463 6111

Fax : +962-6 905 4755

Objectives of the Project

The project is proposed by GAM in response to the need to provide a connection between the two major attractions, the Citadel and the Roman Theater, which are closely located but separated by difficult topography. Steep gradients effectively isolate the Citadel from its nearby neighboring attractions. The proposed project will launch a process that will lead to that connection being improved.

The objectives and benefits of the project are multi-sectoral. If properly planned, designed and operated, the following benefits are expected to accrue:

- a. Create a connection between two close tourist attractions (The Citadel and the Roman Theater);
- b. Create an effective and efficient tourist circuit that will enable visitors to enjoy more attractions in a pleasant environment;
- c. Significantly improve the City image and its inward investment potential; and
- d. Add positive environmental benefits and protect the historical sites by reducing vehicular traffic between the Roman Theater and Citadel.

Project Details

Currently, tourists and Citadel visitors have only one option to access the Citadel and that is through the use of car (or bus) where the trip from downtown Amman to the Citadel could take from 20 minutes up to 40 minutes in peak traffic hours. The urban stair facing the Roman Theater is only used by the local area residents. The potential within the site of Downtown discourages investors due to lack of pedestrian routes. Al-Hashemi Street experiences a heavy traffic load due to a huge number of vehicles and lack of parking areas. Inaccessible and unsafe pedestrian link between the Hashemite Plaza and the opposite sidewalk is a concern.



Figure 1- Proposed Path of the Funicular Railway

Funicular Technical Information

The Funicular Railway will be an engineering system for the transport of passengers on slope in carriers or vehicles running along rails at ground level and drawn by cable at one end, together with any machinery, equipment or plant connected therewith.

It is expected that the technology to be adopted and delivery models will be identified at the prefeasibility stage by other project consultants.

Land Status and Ownership

Figure 2 shows the plots that are expected to be affected by the proposed funicular railway. These are either built-up plots or empty land.



Figure 2 – Empty and Built-up Land Areas

Figure 3 shows the status of land ownership for the plots that are expected to be affected by the Funicular Project.

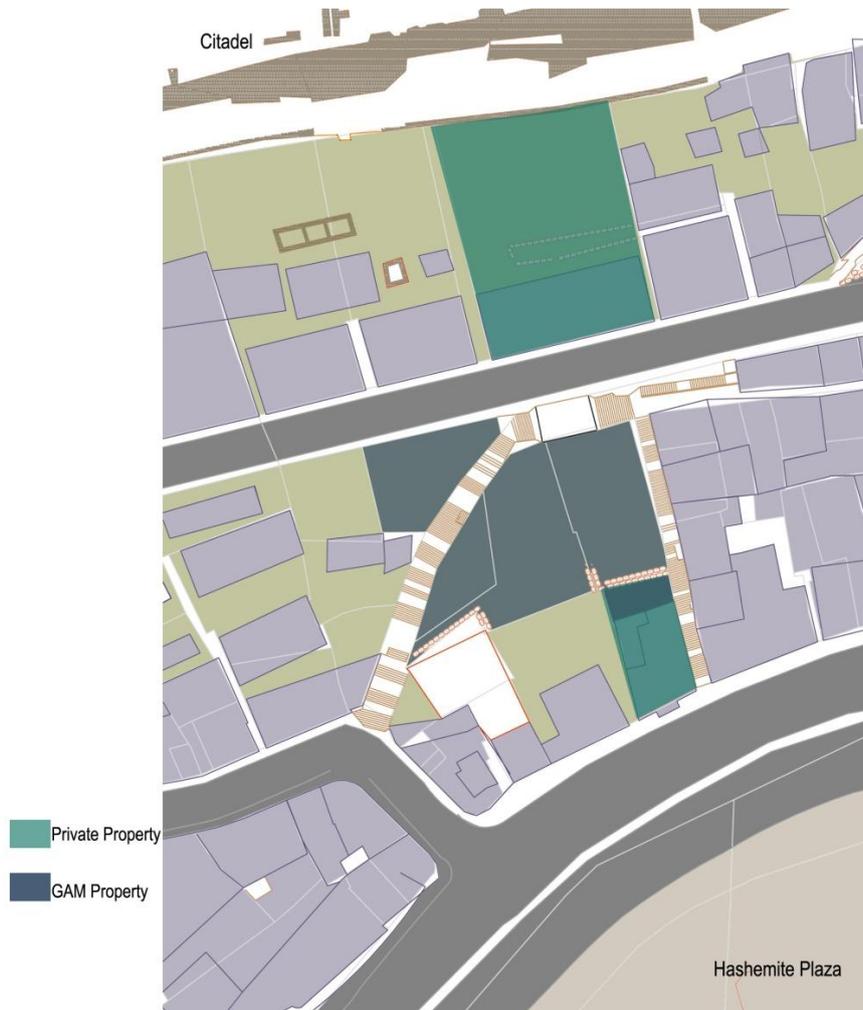


Figure 3 – Land Ownership Status

The following table presents information on the affected plots. Two of these plots are privately owned.

Table 1 – Land Ownership for Affected Plots

No	Lot number	Area	Ownership
1	31	470	GAM Property
2	32	160	GAM Property
3	88	230	GAM Property
4	89	293	GAM Property
5	23A	416	GAM Property
6	23B	262	Private Property
8	36	1291	Private Property

Design Considerations:

The following considerations will guide the design of the Funicular Railway Project:

- a. Preserve the historic resources through which it passes and the attractions which it seeks to connect. A new visitor centre is being built at the Citadel together with a tourist route that will better present the primary link with this tourist route.
- b. The Funicular must respect the vistas and historic fabric of the ancient fortification walls, located at the base of the site and defining its boundaries. As such any hilltop terminal structure must be of light footprint and sit below the wall whilst ensuring appropriate passage of pedestrians between the Funicular and the Citadel site.
- c. Recognize the historical and cultural significance of the site and seek to preserve and maintain it whilst improving accessibility to it.
- d. Sympathy to the character of the residential area: The Funicular route passes through a predominantly residential area which has social, environmental sensitivities that the project must recognize. At its lower terminal it meets Al Hashemi Street at street level. At this location the Funicular terminal building may present a commercial opportunity, consistent with the retail frontage within which it will sit, and that could support its business case.

Pedestrian Safety and Accessibility

The first stage of implementing this project is to ensure a safe pedestrian crossing between the Hashemite plaza and the Hashemi street funicular station; by providing a pedestrian bridge that will be treated as part of the whole image of the project; innovative, modern, accessible and safe.

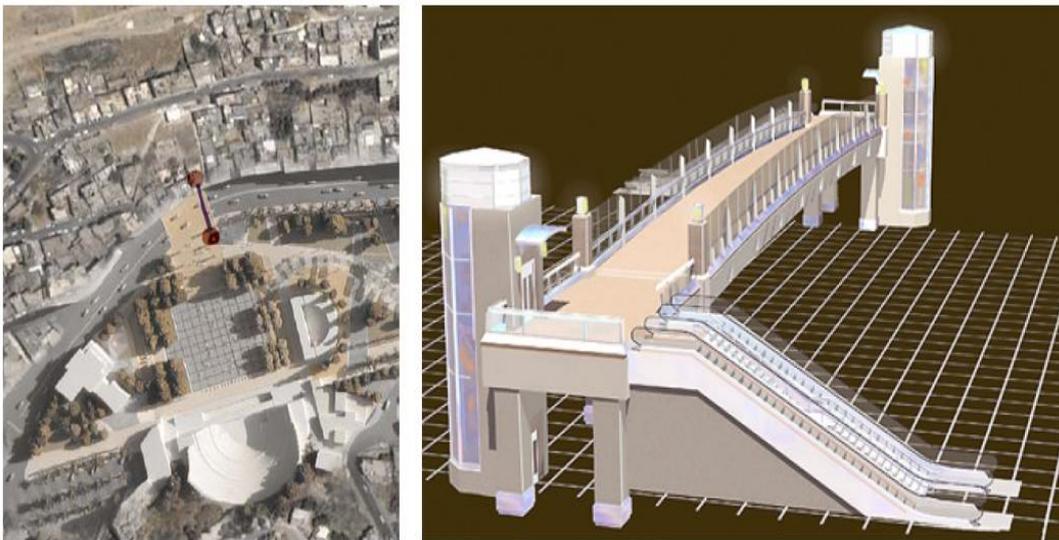


Figure 4 – Proposed Pedestrian Bridge to Provide Accessibility

Urban Development and Touristic Attractions

The project will help develop the whole area by emphasizing on the area's touristic attractions through linking the two major archeological sites. Enhancing the condition of some of the existing elements will create effective and efficient tourist circuit:

- Stairs: The existing stairs could be treated as a touristic urban access; by adding touristic activities such as souvenirs shops, art galleries and beverage shop and internet booths along the stairs,

treating it as a stair open-market. This will attract not only tourists but encourage the local society involvement in the development plan.

- Providing parking area in Raghadan tourism terminal beside the Hashemite plaza will help attracting people to the area.

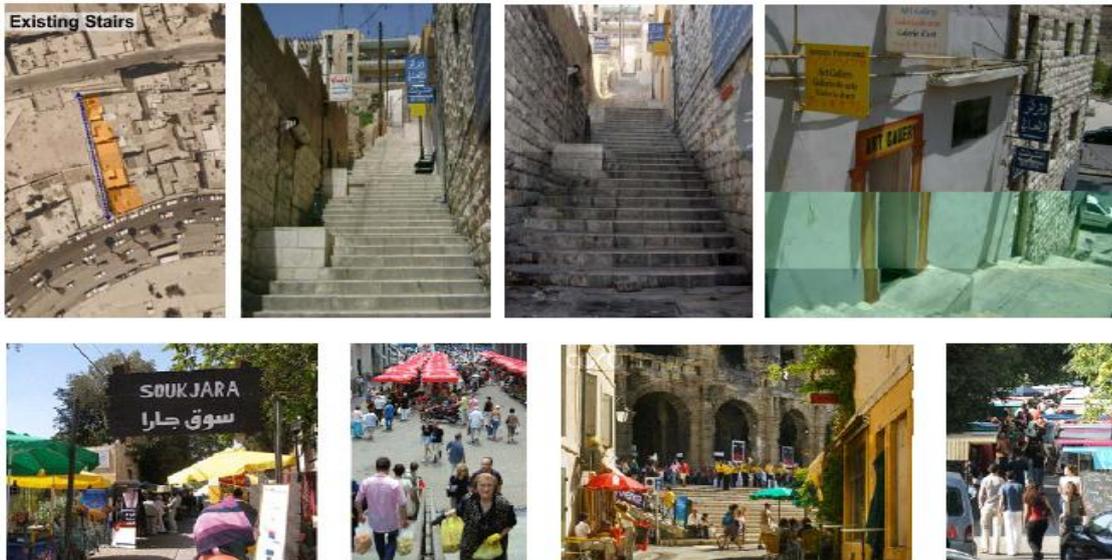


Figure 5 – Existing Stairs

Implementing a pedestrian passage from the Hashemite plaza to the funicular station on Al-Hashemi Street level will increase the safety of the visitors and encourage them to use the funicular.

2.2 ENVIRONMENTAL CONSULTANT

The Consultant shall provide information on the qualifications and track record of his expert(s) who will be conducting the environmental due diligence.

3. OBJECTIVES OF THE DUE DILIGENCE

GAM plans to implement the project on the basis of Design, Build, Operate and Transfer (DBOT) which would require engaging a DBOT investor/provider. The purpose of the Due Diligence is to provide the potential DBOT investor with a clear picture regarding potential environmental and socio-economic issues that the funicular project will entail. It will identify environmental liabilities and provide a general prediction of the level of cost involved in mitigating them. The Due Diligence will ensure that adequate and relevant project information are disclosed by GAM to the prospective investor.

4. SCOPE OF WORK

The scope of work for the Due Diligence Consultant shall involve the following tasks:

- Examine the site of the proposed project and identify its main environmental features;
- Describe the context, components and activities of the project as they relate to the surrounding environment;
- Identify and assess key positive and adverse environmental and socio-economic impacts that may result from the construction and operation of the funicular;

- Highlight any potential environmental constraints or issues that may impede or significantly affect the implementation of the funicular railway project;
- Identify affected parties from the construction and operation of the funicular project and conduct preliminary consultations with them to obtain their general feedback;
- Highlight relevant environmental legislation applicable to the project and the site;
- Evaluate if significant environmental impacts can be reasonably and cost-effectively mitigated during the construction and operational phases. It is suggested to group mitigation measures under 3 categories: no-cost, low-cost, high-cost;
- Coordinate with other project consultants working on the prefeasibility study and provide environmental input in the development of the preliminary/conceptual design; and
- Meet with the Project Proponent to clarify any issues as needed.

5. DELIVERABLES

The Consultant shall prepare a brief and concise report outlining all the tasks described in the Scope of Work above. The following report structure is suggested but the Consultant is at liberty to use other suitable report organization:

Section 1: Background, Objectives and Methodology of Due Diligence

Section 2: Description of the Project and its Alternatives

Section 3: Relevant Jordanian Environmental Legislation

Section 4: Identification and Assessment of Key Environmental Impacts and Major Constraints

Section 5: Mitigation of Impacts

Section 6: Conclusion and Recommendations

Section 7: Annexes (if any)

At the conclusion of the study, the Consultant is expected to undertake a presentation of the report to GAM to outline key findings and recommendations.

6. WORK SCHEDULE

The Due Diligence for the proposed Amman Citadel Funicular Railway project shall be completed within a period of five (5) weeks from the date of commissioning the study.

ANNEX 3

LIST OF COMPANIES ACCEPTED BY THE MINISTRY OF ENVIRONMENT TO CONDUCT ENVIRONMENTAL IMPACT ASSESSMENTS

وزارة الأشغال العامة والإسكان
دائرة العطاءات الحكومية
كشف بالمستشارين المؤهلين
حسب تخصصاتهم

رقم التصنيف	اسم المستشار	التلفون	فاكس	التخصص
	الروابي للاستشارات البيئية والطاقة	5347332	خلوي 0777425839	
1	دار العمران	5604200	5606606	البيئة
17	دار الهندسة (الأردن) للتصميم والاستشارات الفنية	5661448	5673167	البيئة
29	شركة سيجما-مهندسون مستشارون	5661031 5662612	5678320	البيئة
39	شركة المستشار للهندسة ذ.م.م	4602120	4602130	البيئة
40	مركز الاستشارات الهندسية/سجدي وشركاه	5699162 5699172	5699248	البيئة
42	شركة اتحاد المستشارين للهندسة والبيئة	4612377	4612380	البيئة
133	ام دبيلو اتش ارايكتك جردانه/الأردن	5861074	5861075	البيئة
1002	المركز العربي للدراسات الهندسية	5810777	5812777	البيئة الجيوتقنية
9	شركة بيطار/مهندسون مستشارون	4641884 4613198	4655390	البيئة المتعلقة بالأبنية
129	مكتب الشامل للهندسة	5347516	5333585	بيئة-تخصص مياه
11	الاتجاهات الجديدة (ECO CONSULT) للاستشارات	5699769	5697264	
10	الجمعية العلمية الملكية	5344701		
11	اليقين للهندسة و التدريب	5331686	5331686	بيئة-بيئة صناعية
12	مكتب السراج الهندسي	5561148		

ANNEX 4

UNOFFICIAL TRANSLATION OF EIA REGULATION NO. 37 OF 2005 – PROVIDED BY THE MINISTRY OF ENVIRONMENT

REGULATIONS NO. (37) OF 2005

Environmental Impact Assessment Regulations

Issued by Virtue of Sub-paragraphs 9 and 11 of Paragraph A of Article 23 of the Environmental Protection Law No. (1) of 2003

Article 1

These Regulations shall be cited as the Environment Impact Assessment Regulations of 2005, and shall be effective as of the date of their publication in the Official Gazette.

Article 2

A. The following terms and expressions wherever appearing herein, shall have the meanings assigned to them hereunder unless the context provides otherwise:

The Ministry: The Ministry of the Environment.

The Minister: The Minister of the Environment.

Secretary General: The Secretary General of the Ministry.

Technical Committee: The committee formed by virtue of the provisions hereof and specialized in studying projects from the environmental aspect.

Environmental Approval: The approval given to the owner of a project to commence implementation of his project pursuant to the provisions hereof.

Significant Impact: An adverse change that affects the Environment whether this change is dangerous or potentially dangerous.

Terms of Reference: The bases submitted by the project owner prior to conducting the environmental impact assessment study for his project, provided that it is within the broad framework of environmental requirements adopted by the Ministry.

Environmental Impact Assessment Document: The report submitted by the project owner, prepared in accordance with the Terms of Reference.

B. The definitions of the terms appearing in the Environmental Protection Law in force shall apply herein.

Article 3

The environmental impact assessment means any procedure that aims to identify the impact of all the phases of the establishment of a certain project, and describe and study this impact on the project and its impact from the social and economic aspects, and identify the methods for limiting any adverse impact on the Environment. The assessment shall be conducted during the preparation of the economic feasibility study, and planning, design, implementation, operation and removal of the project.

Article 4

- A. No industrial, agricultural, commercial, housing or tourism project or any construction development project or any of the projects specified in Annexes 2 and 3 of these Regulations may commence operations with the services relevant thereto, until it obtains the Environmental Approval required for this purpose from the Ministry.
- B. The Ministry, upon the recommendation of the Secretary General, may require the owner of the project not from among those specified in Annexes 2 and 3 of these Regulations to conduct an environmental impact assessment study based on the nature or location of the project, or the nature of the impact that may result therefrom.

Article 5

- A. A Technical Committee shall be formed at the Ministry, chaired by the Secretary General, and the membership of experienced and specialized persons from the following Ministries and entities:
 - 1. The Ministry of the Environment.
 - 2. The Ministry of Planning and International Cooperation.
 - 3. The Ministry of Municipal Affairs.
 - 4. The Ministry of Health.
 - 5. The Ministry of Agriculture.
 - 6. The Ministry of Industry and Trade.
 - 7. The Ministry of Energy and Mineral Resources.
 - 8. The Ministry of Water and Irrigation.
 - 9. The Ministry of Tourism and Antiquities.
 - 10. The Ministry of Public Works and Housing.
 - 11. Any other concerned entity specified by the Minister.
- B. The members representing the ministries referred to in Sub-paragraphs 1-10 of Paragraph A hereof shall be nominated by decision of the concerned minister. The member representing any other entity shall be nominated by that entity.
- C. The Minister shall nominate from among the Committee members a vice-chairman to chair the Committee when the chairman is absent.
- D. The Minister shall nominate from among the Ministry's officers a rapporteur who shall prepare the invitation to Committee meetings, keep its records and books and record the minutes of its meetings, and follow up on the implementation of its decisions.

Article 6

The Committee shall review the Terms of Reference submitted by the project owner, and review the Environmental Impact Assessment Document, and submit its recommendations to the Minister to make the required the decision with regard thereto.

Article 7

- A. The Committee shall meet whenever deemed necessary, upon the invitation of its chairman, or of the vice-chairman during his absence. Quorum for the meeting is met in the attendance of a simple majority of its members, provided that the chairman or the vice-chairman is in attendance. Its decisions are passed by a simple majority of the vote. In the event of a tie, the side with whom the meeting chairman voted shall prevail.
- B. The Committee may invite any person to a meeting for consultation purposes, but that person shall not be entitled to vote on its recommendations.

Article 8

- A. The project owner shall submit an application to the Ministry to obtain the Environmental Approval needed to establish his project, in accordance with the special form prepared for this purpose, and shall present with it all the necessary information and data, and attaching thereto the preliminary maps, designs and specifications referred to in Annex 1 of these Regulations.
- B. The project shall be classified in any of the following categories by decision of the Secretary General on the basis of the recommendations of the competent party at the Ministry:
 - 1. Category 1: includes the projects referred to in Annex 2 of these Regulations and which require a comprehensive environmental impact assessment.
 - 2. Category 2: includes the projects referred to in Annex 3 of these Regulations and which require a preliminary environmental impact assessment, based on which the need to conduct a comprehensive environmental impact assessment will be determined.
 - 3. Category 3: includes the projects that require neither a preliminary nor a comprehensive environmental impact assessment.

Article 9

- A. If a project is classified as Category 1, the Ministry shall advise the project owner in writing, requesting him to conduct a comprehensive environmental impact assessment for the project.
- B. The project owner shall submit a preliminary draft of the Terms of Reference for the environmental impact assessment study he intends to conduct after agreeing with the Ministry on the content of the draft, the general framework of the study, the scope of the study, the nature of anticipated Significant Impacts of the project, and the entities concerned with and affected by the project.
- C. The Ministry shall call the project owner and any concerned individual or representative of a public or private party that may be potentially affected by the project to participate in investigating the preliminary draft to identify the Significant Impacts of the project on the Environment. The Ministry and the project owner shall provide all the available information on the project and its surrounding Environment to all concerned entities within an appropriate time prior to the date of the meeting, in order to facilitate the identification thereof.
- D. The project owner shall submit a report to the Ministry including a summary of the meeting's discussions, the parties attending, and the Significant Impacts identified, and demonstrating the Terms of Reference for the environmental impact assessment study, the names of the experts responsible for preparation of the Environmental Impact Assessment Document, the required technical expertise, and the expected level of effort needed to prepare this document. The competent party at the Ministry shall submit this report to the Technical Committee.
- E. The Technical Committee shall review the Terms of Reference within one week from the date of receiving the report, and this period may be extended by agreement with the project owner. It shall submit its recommendations in this regard to the Minister to issue the appropriate decision in that regard, provided that the project owner shall be informed of this decision.

Article 10

If the Minister approves the Terms of Reference of the project, the project owner shall prepare the draft of the Environmental Impact Assessment Document, and he shall be responsible for the accuracy and authenticity of the contents thereof. This draft must include the significant environmental impact relevant to the project under review in the manner referred to in Annex 5 of these Regulations.

Article 11

- A. Upon the Ministry's receipt of the draft Environmental Impact Assessment Document, the Technical Committee shall review and analyze the draft to ascertain its compliance with the provisions of these Regulations. If it finds that the application fulfills the conditions and requirements thereof, the party making the submission is advised thereof. But if it finds that the application does not fulfill the conditions and requirements thereof, the Technical Committee shall require the project owner to provide any additional information needed to complete its analysis of the draft.
- B. If the draft Environmental Impact Assessment Document fulfills all of the requirements of the provisions of these Regulations, the Minister, upon the recommendation of the Secretary General that is based on the recommendation of the Technical Committee, shall issue his decision in this regard within 45 days after the date of receipt of the draft that is in fulfillment of the conditions and requirements thereof, in accordance with the following:
 - 1. Approving the draft and considering it the final Environmental Impact Assessment Document if it is shown that the project's environmental impacts are appropriately dealt with throughout the study including the plan for reducing adverse impacts. The approval shall be valid for one year from the date it is issued.
 - 2. Denial of Environmental Approval of the project if it is shown that its implementation would cause Significant Impact on the Environment and that the plan for reducing adverse impacts is inadequate for the purpose.
- C. If the Minister does not issue his decision with regard to the draft Environmental Impact Assessment Document within the period set in Paragraph B hereof, the project is considered as having been approved *de jure*.
- D. The decision related to the environmental impact assessment study shall be announced to the public in the manner that the Ministry deems appropriate.

Article 12

When launching his project and during all the implementation and operation phases, the project owner shall abide by the contents of the Environmental Impact Assessment Document and any other conditions issued by the Ministry when granting its approval.

Article 13

- A. If the project is classified as Category 2, the Ministry shall request the Project Owner to conduct a preliminary environmental impact assessment of the project, taking into account the criteria referred to in Annex 4 of these Regulations.
- B. If the preliminary environmental impact assessment reveals that the project has a potential Significant Impact on the Environment, the Minister shall request the project owner to conduct a comprehensive environmental impact assessment study in accordance with the provisions of these Regulations.
- C. If the preliminary environmental impact assessment reveals that it is not likely for the project to have a Significant Impact on the Environment, the project shall obtain the Ministry's approval in accordance with the provisions of these Regulations and instructions issued by virtue hereof, and the Ministry shall inform the project owner of this approval.

Article 14

If the project is classified as Category 3, the Ministry shall inform the project owner that his project does not require an environmental impact assessment study, and in this case, the project is considered approved in accordance with the provisions of these Regulations and instructions issued by virtue hereof.

Article 15

Any amendment to or expansion of a current project the establishment of which requires an environmental impact assessment and may impact the Environment in a significant way is considered a separate project, and shall be treated as a new project. In this case, the project owner must undertake all the measures referred to in these Regulations regarding environmental impact assessment.

Article 16

- A. The project owner may object before the Minister to the Minister's decision denying the Environmental Approval of his project within 15 days from the date the project owner is informed of such decision, and the Minister may appoint an independent panel of experts consisting of not less than three members with the appropriate technical experience, at the expense of the project owner, to review the objection submitted by the project owner, and submit its recommendations to the Minister in this regard.
- B. The Minister's decision regarding the objection is considered final and it is capable of being contested before the High Court of Justice.

Article 17

The Ministry shall regularly monitor the extent of the compliance of the project owner with all the conditions and requirements stipulated in the Environmental Approval during any of the activities of the project including its implementation, operation, and disassembling.

Article 18

The Ministry shall make available to the concerned entities and upon their request, the information and data related to the Environment provided by project owner during the phases of the environmental impact assessment study. In specific cases dictated by the public interest or the provider's own interest, the Ministry may consider some of the data or information provided as confidential.

Article 19

Annexes 1, 2, 3, 4 and 5 attached to these Regulations shall be considered part and parcel of hereof.

Article 20

- A. Upon the submission of the application, the Ministry shall charge the following:
1. Twenty-five Jordanian Dinars for projects that do not require an environmental impact assessment study.
 2. Fifty Jordanian Dinars for projects that require a preliminary environmental impact assessment study.
 3. Seven hundred and fifty Jordanian Dinars for projects that require a comprehensive environmental impact assessment study.
- B. Costs of experts and consultants who are assigned to review the environmental impact assessment study shall be borne by the project owner, provided that such costs shall be determined by decision of the Minister, upon the recommendation of the Secretary General.

Article 20

The Minister shall issue the instructions necessary for the implementation of the provisions of these Regulations.

15/3/2005

Faisal Bin Al-Hussein

Annex (1)

General information on the project, which need a comprehensive or initial an EIA study:

1- Project Description:

- The nature of project and cases of using the land through the preliminary, building up, operation, rehabilitation stages.
- The nature of production processes (the quality and quantity of the used substances and the productions' inputs and outputs.
- Estimating the expected quality and quantity of wastes and emissions resulted from operating the project (water, air, soil, noise, vibrations, light, emissions and heat).
- Estimating the number of people, vehicles and equipments through different project stages.

2- list of the main proposed projects' alternatives including the design, location and the used techniques in addition to discuss the main reasons to choose and prefer the proposed project than other projects, taking into consideration the environmental impacts.

If the project' owner did not choose the least damage alternatives on the environment as a design, location and the used technique, he has to discuss and view the reasons.

3- Determining the most important environmental aspects affected by the proposed project as the public health, infrastructure, flora, fauna, soil, water, air, weather parameters, natural aspects and the Ancient monument and the interrelationships between these aspects.

Annex (2)

Projects, which need an EIA, study:

- 1- Raw petroleum Refining.
- 2- Electricity generating plants.
- 3- An establishments designed as permanent stores or as landfills for the irradiant nuclear wastes.
- 4- Iron and steel factories.
- 5- Establishments for extracting, treatment, conversion the asbestos and the substances which asbestos part of its structure.
- 6- Integrated chemical industries such as:
 - Petrochemicals.
 - Fertilizers, pesticides and peroxides industries.
 - Chemical products, petrochemicals and petroleum storage facilities.
- 7- Roads, airports and rails constructing projects.
- 8- Hazardous wastes treatment plants and disposal from these wastes.
- 9- Establishing the industrial cities.
- 10- Extraction industries:
 - The excavating processes for water and the geo- thermal digging except the digging for investigating the soil.
 - Mining processes and relevant industries.
 - Natural fortunes extraction.
- 11- Generating energy industries.
 - The industrial establishments which producing electricity, vapor, hot water.
 - The industrial establishments which conveying gas, vapor, hot water and electrical energy.
 - Natural gas surface storage.
 - Flammable gases storage under ground surface.
 - Fossil fuels surface storage.
- 12- Tanning (leathers) factories.
- 13- Sugar factories.
- 14- Yeast factories.
- 15- Building up Marine ports.
- 16- Establishing ships and boats for industrial and recreational purposes.
- 17- Sea dumping for using the land in industrial and recreational uses.
- 18- Glass factories.
- 19- Establishing slaughterhouses (abattoirs).

Annex (3)

Projects need initial EIA study:

1- Agriculture Projects:

- Poultry Farms if the capacity exceed 30.000 birds,
- Caws Farms if the capacity exceed 50.000 caws.
- Sheep Farms Caws Farms if the capacity exceed 1.000 sheep.

2- Minerals treatment projects:

Iron and steel works including galvanizing, varnish factories.

Establishments producing non-irony minerals including production, purification (washing), liquefying, demonetizing (pulling) and galvanizing processes.

- Compressing Bullions.
- Treatment of minerals surfaces and covering (coating).
- Boilers, cisterns, tanks, industrialized from minerals plates.
- Establishments for felting and scorching (roasting). Raw minerals
- Complexes industry and aligning (collecting).

3- Food Industries:

- Oils, animal and vegetarian fats.
- Bottling, Packaging the animal and vegetarian products.
- Milk products industry.

4- Fabric, leather, wood, papers and tissues industries.

5- Rubber industry.

6- Infrastructure projects including housing projects.

7- Other projects:

- Municipal landfills
- Landfill for disposal from junk.
- Sports activities centers.
- Junk storage establishments.

8- Any additions, amendments on the projects that mentioned in this annex.

Annex (4):

The project affects environment in the following cases:

- Overlapping with other projects and planning for the residents at some place.
- The negative effects on the aesthetic aspects of the place.
- The negative effects on the endangered species on the flora and fauna or their habitats.
- Overlapping with the movements of fish and wild animals or on any of their habitats.
- Breaking declared national standards which relevant to solid and liquid wastes treatment.
- affect water quality.
- Ground water depletion or reducing its' quality.
- overlapping with ground water feeding.
- destroying or affecting Ancient monument or on the culture of society.
- Encouraging the population growth and collecting a large number of people at this area.
- affecting the traffic movements (increasing it) in comparison with the current traffic size in the roads nets and its' capacity.
- immigrating of (relegating) a large number of people from their origin homes.
- encouraging the activities which need a large quantity of the fuel, water or all the type of energy.
- causing floods, divesting and large granite sediments.
- raising the noise and vibrations limits in some place.
- Causing large geological risks on people and buildings.
- Enlarging sewer system (the nets) to serve new developments projects.
- Constricting the fish habitats or the wild animals or the plants.
- Divide the natural organization of the current groups.
- Cause danger on public health, or use or produce or disposal harmful substances which cause risk on the human, animals, plants.
- Overlapping with the recreational, educational, scientific, religion uses.
- Breaking any of ambient air quality standards or contributing in Of infraction the air quality.
- To use the agriculture land in other uses, or reduce the land productivity.
- obstructing emergency plans.

Annex (5)

The EIA study should include the following:

The EIA document should be briefed and includes the key environmental aspects, The details of this document should be appropriate to the impacts of the project and should deal with the project designers and the executing Companies, the owner of the project, and the public, also the NGOs and this document should be in English or Arabic.

This document should include the following:

- **Non-Technical Summary: includes the two versions summaries** (Arabic and English) of analysis of the outcomes (conclusions) and recommendations.

- **Framework policy legal and administrative:**

Views the legal and administrative framework, which relied on it to prepare the policy.

- **Project description:**

Includes a briefed description to the geographical, biological, social, time (chronological) framework for the project including any works needed out projects' site e.g. : open roads, laying pipes, constructing energy generation plants, providing water, housing the employees and establishing facilities to store the raw materials and products.

- **Baseline data**

Includes assessment of the studied location dimensions and describing the social, natural and economical conditions including any expected changes before the beginning of the project taking into account the current suggested development activities inside the project location (related indirectly to the project).

- **Environmental Impacts** includes:

Determining and assessing the Expected Negative and positive impacts results from the project.

Determining the mitigation measures to the adverse impacts on the environment and studying the opportunities to improve the environment.

Determining the available data type and the gaps and accompanist uncertainties for the environmental impacts.

Determining the subjects, that does not need any more research.

- **Analysis of Alternatives:**

Includes an organized comparison of the suggested alternatives for the project:

Design alternatives.

Location alternatives.

The used technology alternatives and its' environmental effects for every alternative.

Capital cost for every alternative.

The repeated coasts for every alternative. .

Stability in the national conditions for every alternative.

The institutional, training and monitoring requirements and determining

The cost and the environmental benefits for every alternative.

Economical cost.

In addition, the basis of determining the alternatives.

Mitigation Plan:

Includes determining suitable measurements with low cost to mitigate the negative impacts to be in the acceptable limits.

Estimating the supposed environmental impacts and the capital cost.

Determining institutional, training and monitoring requirements for these measurements.

Introduce a plan includes the details of proposed work programs and also the claims procedures from the negative impacts on the environment if the mitigation measurements weren't worth or were so expensive, and to work on the environmental aspects at the same time with project activities through the implementation stage.

- Monitoring and Environmental Post Auditing Plan:

Includes determining: monitoring type, the cost, the responsible persons and other inputs such as: training.

- Appendices:

- List of contributors in preparing the EIA document (institutions, individuals).
- List of references (the written materials that used in document preparing process). This list is very important due to rely on unpublished document.
- Record of consultancy meetings between the relevant parties to the project and document all these meetings which held between the effected parties and the local NGOs.