

*For more detail on these TORs and on the status of the studies
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**22 KM SECTION OF THE ALYAT-ASTARA HIGHWAY
TERMS OF REFERENCE FOR THE ENVIRONMENTAL ASSESSMENT AND
PRELIMINARY DESIGN**

I. Introduction

The Government of Azerbaijan has received a credit from the International Development Association (IDA) and intends to apply part of the funds for the preparation of the Environmental Assessment Report (EAR) and preliminary design for a 22 km section of the 313 km Baku-Alyat-Astara highway. This section is located about 5 km south of Alat between PK 80 and PK 102. In this section it is proposed to construct a four-lane carriageway within the existing right of way. No land acquisition or resettlement issues are envisaged. The design alternatives consist of two or three ways to expand the existing road into a 4-lane road on the left or on the right side of the current road, or building an entirely new 4-lane road within the existing right-of-way. Access to the adjoining (waste) land may or may not be an issue.

The exact alignment of the 22 km section of the Alyat-Astara highway will be defined during the study following appropriate consultation with the Road Transport Service Department (RTSD—the Road Administration), local officials, and other affected interests. The road section should be economically efficient, environmentally sound and its design should be compatible with international standards.

The assignment is to conduct an analysis of alternatives in terms of engineering and economics, combined with an environmental assessment of the alternative design options in the corridor in order to recommend a *Preferred Alternative* for detailed engineering. The work must be done according to the World Bank guidelines covering such studies.

For environmental assessment purposes this segment of the road has been classified as Environmental Category B under the provisions of OP 4.01.

II. Scope of services requested.

The assignment consists of the five following tasks. These are defined next.

1: Preliminary Desk Studies

- desk study (review of existing data; maps and existing plans and reports),
- orienting to the project and project area,
- preparing of detailed work schedule for field works,
- preparing of detailed work schedule for environmental and consultation activities and studies
- decision schedule, place(s) and invitations to affected interest for public consultation(s).

2: Field Surveys

- first public consultation (“scoping meeting”)
- preliminary field investigations (topographical and geotechnical surveys),
- review of traffic surveys, and possible traffic counts at the location to validate past traffic counts and traffic forecasts.
- preliminary construction materials survey.

3. Preliminary Design

- preliminary geometrical design,
- preliminary pavement design
- preliminary bridge & structure design, and
- preliminary cost estimates

The following design guidance is offered:

- reconstruction of existing 2 lane 22 km road section to 4 lane road category.
- maximum width of the road 27.5 m
- carriageway width 15 m (2x7.5m)
- number of lanes 4
- the width of the shoulder is 3.75m (2x3.75m) of which 2.5m (2x2.5m) should be paved with asphalt concrete (possibly the slope ratio should be 1:3).
- the cross-fall in the carriageway should be 2% and 4% in the shoulders
- central strip width 1.5 to 5.0 m. Its width will at least depend on the equipment it carries. If it is less than or equal to 3 metres wide, it will be stabilized and surfaced to facilitate maintenance. If not, it can be grassed and planted with shrubs, unless its width and the site topography enable the natural ground and existing vegetation to be preserved. In this case, a 1-metre wide berm is maintained at the edge of the left hard strip.

The consultant should negotiate with RTSD to arrive at the final parameters to be used, including the side slopes and drainage types. Also, the consultant must utilize the findings of social screening in order to minimize negative social impacts on the affected population.

Separate-graded intersections should be designed if required in intersections of other roads with the Alyat-Astara highway. The road should have dual carriageway with 4-lane. The pavement should be designed in accordance with the national standards.

4: Economic Feasibility

- collection of additional data,
- establishing of current costs,
- make a travel forecast in view of the predicted fast economic growth and, when appropriate, assess the access needs to the adjoining land.
- review of the B-C analysis (there is a benefit-cost study that the consultant must review to ensure consistency with new data)
- sensitivity analysis.

The study will clarify the traffic growth estimate retained by the consultant in line with the fast growing economy (overall GDP estimated to increase from \$8.5 billion in 2004 to \$19.2 billion in 2008 (non oil GDP increasing from \$5.9 billion in 2004 to \$9.6 billion in 2008). The consultant should estimate the economic rate of return (ERR) and net present value (NPV) for alternatives and compare them to the “do-nothing” alternative (adequate maintenance of the existing road) using a standard cost/benefit methodology and a 25 year period. Costs and benefits should be expressed in constant prices (base year price).

The estimate of future benefits should principally rely on vehicle-operating costs’ and accident cost savings. The average Vehicle Operating Cost of the Road with and without the road reconstruction or improvement will be estimated using the HDM-IV method of the World Bank, or other equivalent methodologies as applicable.

The Consultant will carry out sensitivity analyses on the parameters that are estimated with the greatest uncertainty, e.g. traffic forecast, cost estimate. Also, NPV with two interest rates, 8% and 12%, should be estimated.

5: Environmental Study

The consultant will prepare an Environmental Assessment (EA) Report that addresses the environmental impacts and management issues deriving from the construction of 22 km section of the Alyat-Astara highway. An Environmental Management Plan will be included in the EA Report. The EA will address the needs of applicable laws and regulations of the Government of Azerbaijan including (but not limited to) the following World Bank requirements:

- Operational Policy on Environmental Assessment (OP 4.01, January 1999)
- Operational Policy on Natural Habitats (OP 4.04, June 2001)
- Operational Policy Note on Management of Cultural Property in Bank Financed Projects (OPN 11.03, August 1999)
- The Disclosure Handbook (December 2002)

A full listing of the Bank’s safeguards policies can be accessed on:

<http://lnweb18.worldbank.org/ESSD/sdvext.nsf/52ByDocName/SafeguardPolicies>

For environmental assessment purposes the proposed 22 km section of the Alyat-Astara highway has been classified as a Category B project under the provisions of the OP 4.01. Specific tasks are outlined in more detail below.

(a) Environmental Assessment Report

The EA Report should examine the project's potential negative and positive environmental impacts and recommend any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and to improve environmental performance. The EA Report should cover the following:

- (i) **Executive Summary and Conclusions**
- (ii) **Policy, Legal and Administrative Framework** - Discuss the policy, legal and administrative framework and their requirements (e.g. Government of Azerbaijan, World Bank, relevant international environmental agreements, etc).
- (iii) **Project Description** – describe the proposed project including its location, scope, and activities associated with its design, construction and operation. Identify any offsite investments.
- (iv) **Baseline Data** – assemble, evaluate and present baseline data on the relevant environmental characteristics of the study area including the physical, biological, cultural property and socio-economic conditions. Any changes anticipated before the project commences should also be identified.
- (v) **Environmental Impacts** – determine and quantify where possible the significant positive and negative impacts, direct and indirect impacts, and immediate and long term impacts associated with the project and the alternate design options. Identify those that are unavoidable or irreversible. Identify mitigation measures and explore opportunities for environmental enhancement. State the basis for selection of the proposed design. Characterize the extent and quality of available data.
- (vi) **Environmental Management Plan** - see (b) below
- (vii) **Appendices** – (i) list of EA Report preparers, (ii) references, (iii) record of interagency and consultation meetings, (iv) supporting tables, (v) list of associated reports.

(b) Environmental Management Plan (EMP)

The EMP will identify the mitigation, monitoring and institutional measures to be eliminate adverse environmental or social impacts, offset them, or reduce them to acceptable levels. The EMP should include:

- (i) **Mitigation Plan** – identify feasible and cost effective measures to reduce potentially significant adverse environmental impacts to acceptable levels. Compensatory measures should also be addressed and links should be provided to any other mitigation plans. Institutional arrangements for the implementation of this plan should be well defined.
- (ii) **Monitoring Plan** – identify and describe the monitoring measures that will be employed to track the effectiveness of the Mitigation Plan. Describe the environmental parameters to be monitored, the monitoring methods, sampling locations, frequency, costs, detection limits and thresholds that would signal corrective actions. Outline the monitoring and reporting procedures. Institutional arrangements for the implementation of this plan should be well defined.

- (iii) **Capacity Development and Training** – assess the capacity, and outline measures to strengthen the environmental management capability, of agencies responsible for implementation of the Mitigation and Monitoring Plans.
- (iv) **Implementation Schedule and Cost Estimates** – for (i) to (iii) above, provide an implementation schedule and a cost estimate (including the source of funds) and show the integration of these elements with overall project implementation plans.

(c) Coordination, Consultation and Disclosure

RTSD will be responsible overall for the preparation of the EA and will be supported by the Consultant in these activities. RTSD will consult with groups affected by the proposed project, and with local NGOs, on the environmental and social aspects of the proposal. These groups should be consulted once a draft EA Report has been prepared and a summary of the EA Conclusion will be made available prior to the meeting. The draft EA report should also be available in a public place accessible to affected groups and local NGOs.

Relevant materials will be provided to affected groups in a timely manner prior to consultation and in a form and language that is understandable and accessible to the groups being consulted. A record should be maintained by the Consultant of the public consultation. These records should indicate: (a) any means other than consultations (e.g. surveys) that have been used to seek the views of affected stakeholders, (b) the date and location of consultation meetings, (c) a list of attendees, their affiliation and address/ telephone number, and (d) summary minutes.

III Reporting

- Work plan and time schedule (in advance of starting the work program)
- Monthly Progress reports (within one week of month end),
- Technical reports (Preliminary engineering, Environmental Assessment Report including the Environmental Management Plan, and Feasibility Study including Analysis of Alternatives)
- Report on public consultation, and
- Consultancy Completion Report summarizing the results and findings of its activities.

During the preparation of the AA and EA studies the Consultant must keep the Client, RTSD, informed of progress and any issues arising to ensure their timely resolution. When finalized, copies of all required documents shall be submitted in English and Azeri (7 paper copies in each language and one submission in electronic format). Four copies of the interim AA and EA reports shall be provided in English and a further four in Azeri. To expedite the review and comments, all reports will be sent electronically to the Bank simultaneously.

IV Team composition

The Consultant shall propose and justify the range of disciplines to be included in the core project team, and the complementary skills of short term specialists. Inputs by foreign and local

specialists should be clearly indicated. The Consultant shall name individuals to participate in specified roles within the project team and provide full curricula vitae and any other information considered relevant.

The Consultant will be expected to have:

- Significant knowledge and experience in conducting alternatives analyses of road projects, including benefit-cost analyses, geometric design, and engineering of structures including pavements
- Specific experience in the preparation of environmental assessment and management plans in accordance with internationally accepted procedures and in particular with knowledge of the policies and procedures of the World Bank.
- Significant knowledge on public consultations for major infrastructure projects, in particular for highway design and construction.

V Schedule and resources

The Client (RTSD) will provide information free of charge on existing field works and any engineering and environmental studies that are available for the existing main road.

The available time for the study is 3 months: one month for reviewing, completing the existing studies and carrying out the necessary geotechnical investigation. two months for the preliminary design studies and EA. The client and the Bank are expected to provided comments within 15 days after receiving the reports.

Annex

Insert here a list of relevant documentation