Regional Environmental Review, Environmental Assessment and Management Framework and Resettlement Policy Framework
Azerbaijan Motorway Improvement and Development

DRAFT REGIONAL ENVIRONMENTAL REVIEW
NON-TECHNICAL SUMMARY

November 2005

Scott Wilson Central Asia in association with VMV Ltd, Baku
Insert Map of Azerbaijan and Schematic Overview of Options
"The road is life."

Discussions in Lankaran, Calilabad and Bilasuvar, 9th-11th August 2005

1 Introduction/Project Scope

The Government of Azerbaijan has requested the World Bank’s (WB) support for improving several road segments to the west and south of Baku over a period of several years. It is proposed that the Azerbaijan Motorway Improvement and Development or ‘Highway II’ Project (‘the Project’) would include the:

- Rehabilitation of existing roads between Baku and Shamakhi, a 120 km section of the east-west transport between Baku and Tbilisi;
- Upgrade of the M3 Motorway between Alyat and Astara, including expansion of the existing 2 lane road to a 4 lane road, and construction of new 4 lane roads and bypasses around key towns.

The first year’s implementation programme will rehabilitate sections of the Baku-Shamakhi road and the first 22 km of the M3 Motorway south of Alyat. These and other works planned under the Project are referred to as sub-projects. Other works will be advanced in year two or later.

During the period July-September 2005, the following documents were prepared:

- Regional Environmental Review (RER)
  The RER is a broad overview of the policy, environmental and socio-economic implications of the entire Project scope.
- Environmental Assessment and Management Framework (EA&MF)
- Resettlement Policy Framework (RPF)
  The EA&MF and RPF are practical guidance documents which outline procedures for the management of environmental, land acquisition, resettlement and compensation issues of sub-projects.

This document presents the main findings and conclusions of the RER.

General Introduction to Project Including Alternatives to the Development

The main Project objective is to reduce road transport costs and improve access, transit and safety within Azerbaijan’s East-West and North-South corridors, through the implementation of a number of sub-projects involving the rehabilitation of the Baku-Shamakhi road and the upgrading of some sections of the Alyat-Astara (Baku-Iran border) road.

For road users, the Project would lead to better road quality meeting mid-term traffic projections, better safety through new alignments and bypass of cities, avoiding hazardous crossing of villages by heavy transit traffic, lower travel costs and a shorter travel time.

Sustainability for Azerbaijan is expected to come from good returns on investments through the strong growth of the traffic on the concerned roads, the decrease in fatal injury thanks to bypasses of cities and better safety standards, and the development of improved road technical specifications. It would enhance economic integration within the country and foster economic growth, especially non-oil growth which is more likely to reduce poverty.
The proposed Project also offers an opportunity to further modernize the sector, through training of RTSD staff in project planning and monitoring, enhanced design of roads and improved quality of data to plan maintenance.

The main alternatives to development are ‘do nothing’ in addition to the existing road maintenance strategy for these roads or ‘do something’.

**Baku-Shamakhi:** The Baku-Shamakhi road is a section of the shortest way from Baku to Georgia and to western Azerbaijan. As well as many long, straight sections through unpopulated semi-desert areas, the road includes a number of steep, winding sections through the mountains with tight, blind corners. The road surface, which was constructed around “40 years ago” (Head, Local Executive Power, Shamakhi) is uneven in many places due to structural problems, damage from overloaded heavy vehicles and repeated ‘patching’ of the surface during road maintenance.

For the Baku-Shamakhi road the ‘do something’ scenario involves the reconstruction of the existing two lane road including pavement strengthening, widening by adding a climbing lane where a long and steep gradient may affect travel speed or safety because of heavy vehicle traffic, and traffic safety features including illumination, road signs, road marking and road furniture, including appropriate road safety barriers (guardrails). All of the proposed works will be accommodated within the existing Right of Way (ROW), which extends 30m to either side of the centreline of the road (i.e. 60m wide in total).

**Alyat-Astara:** The options for development of the Alyat-Astara road are more complex. The Baku-Alyat-Astara road (M4/M3) is a 313 km road which runs from Baku to the Iranian border in a north-south direction. Between Baku and Alyat, the road is a four-lane section of the M4 which links to the newly improved Alyat to Hajigabul (Qazimammad) road. Between Alyat and Astara, the 240 km long and mainly two-lane M3 links the district centres of Alyat-Salyan-Bilasuvar-Jalilabad-Masally-Lenkeran-Astara. The road was built in the 1940s-1950s.

The surface condition of the existing M3 road is variable, particularly in sections between the district centres. From Alyat, the road passes through the centre of Salyan (crossing the Kura river by a major bridge), via a winding route through Bilasuvar (where a 11.8 km bypass has been planned and partly constructed), bypassing the centre of Jalilabad, through the built up areas of Goytapa and Masally, via a T-junction with the Qizilagac-Qumbasi extension of the M3 near Tazakand and the built up area of Leman (Port Ilic), around the bypass at Lenkeran city and via a narrow, winding route to Astara. The terrain through which the road passes is effectively flat up to the section between Lenkeran city and Astara, where the road has a slightly undulating profile along the base of the hills.

Traffic on Baku to Astara is currently about 10,000 vehicles per day (vpd) between Baku and Alyat, falling to around 7,000 vpd after Alyat and then ranging between 3,000 to 5,000 vpd near the Iranian border. Cross-border traffic averaged around 44 truck movements per day during the period 1996-2003. The majority of trucks entering Azerbaijan through this crossing were Iranian-registered and the majority of trucks entering Iran were Azerbaijan-registered.

Four alternative development options for the Alyat-Astara road, including the ‘without project’ and upgrading the existing road options, are discussed in the RER. A schematic overview of the alternative development options is attached.

**Upgrade Existing Road:** One of the options for improving the Alyat-Astara road would be to widen the existing road to four-lane standard between settlements and to construct bypasses around existing centres of population. During meetings with officials and representatives of municipalities at the offices of the Local Executive Powers in Lenkeran city, Masally, Jalilabad, Bilasuvar and Salyan, this option was either strongly preferred or discussed as a viable alternative to construction of a new road. Only in Masally and Astara was this not considered to be the preferred option due to:

- the extent of the built up area around Goytapa and Masally.

Scott Wilson Central Asia  
D110123RER Report  
November 2005
the winding nature of the existing road and the location of adjacent graveyards and mosques
between the Lenkeran bypass and the border at Astara.

At Lenkeran city, it was suggested that if a new road was constructed, it should link with the existing
bypass around the city.

**New Road locally following the existing Baku-Astara railway alignment**: This alternative comprises
reconstruction of the existing Alyat-Yenikand, Yenikand-Salyan and Salyan-Shorsulu sections with an
all new bypass around Salyan; between Shorsulu and Sarcuvar (south of Masally) a new road is
proposed running approximately parallel to and west of the existing Baku-Astara railway, intersecting
with an existing road near Jalilabad and up to three existing roads near Masally; between Sarcuvar and
Lenkeran an all new road construction is proposed west of the existing road, and between Lenkeran
and Astara all new road construction east of existing road; at Astara a new M4-M3 link is proposed.
This option entails construction of 7 new intersections with existing roads/main cities at Astara,
Yenikand, Shorsulu, Jalilabad, Sarcuvar (near Masally), Lenkeran and Astara, with further options for
additional links to existing roads at Goytapa and Hasanli, (near Masally). This alignment requires
construction of 52 new bridges.

**New Road with direct alignment**: This alternative comprises reconstruction of the existing
Alyat-Yenikand, Yenikand-Salyan and Salyan-Shorsulu sections with an all new bypass around Salyan;
between Shorsulu and Sarcuvar (south of Masally) a new road is proposed, up to 15 kilometres east of
the existing Baku to Astara railway, following the most direct route; between Sarcuvar and Lenkeran
an all new road construction is proposed west of existing road, and between Lenkeran and Astara all
new road construction east of existing road; no intermediate links to existing roads between Shorsulu
and Lenkeran are planned, although it has been assumed in the RER that there may be an additional
interchange at Sarcuvar; at Astara a new M4-M3 link is proposed. This option entails construction of
new intersections with existing roads/main cities at Astara, Yenikand, Shorsulu, Lenkeran and Astara.,
This alignment requires construction of at least 37 new bridges.

**General Description of the Project Area**

**Baku-Shamakhi**: As well as many long straight sections through areas of unpopulated semi
desert the road includes a number of steep winding sections through mountains with tight blind corners. Sections
of this road are known for unstable ground and landslide conditions, and flooding is reported to
regularly affect Maraza town. Shamakhi has been destroyed by earthquakes many times. Cultural
monuments in the area date back to the 11th century. The globally threatened Lesser Kestrel has
breeding sites under the bridge on the river Jeyrankechmez.

**Alyat-Astara**: The environment of the study corridor is diverse ranging from less populated dry semi
desert in the north to more densely populated areas in the southern lowlands (including swampy areas)
and foothills of the Talysh Mountains. Coastal sea plains dominate ranging from 10–40 km width in
the north to between 2–4 km width in the south between the sea and the foothills of the Talysh
Mountains. Mud volcanoes stand out in the plain in the first 30–40 km south of Alyat, and the Kura-
Talysh area is known for seismic activity with earthquakes registering magnitudes of between 6 and 7
on the Richter scale.

---

1 Access to maps in Azerbaijan is restricted and unofficial reproduction of maps is prohibited. The proposed alignment(s) for
the new road only exist currently as lines on a 1:100,000 map dating back to the period 1974-1991, so it not possible to
accurately identify where the proposed alignment will lie.
There are many rivers, canals, and wetland systems in the corridor as well as some lakes and mineral springs. Flooding is common especially on the Kura River, with catastrophic flooding occurring in 2003. The level of the Caspian Sea also fluctuates, rising 3 m between 1977 and 1995. Several protected areas and other significant natural sites of both national and international importance are found in the study corridor. Biodiversity is high and fish resources are abundant. The southern area is largely agricultural. Tea plantations abound, vegetable growing is common as is viticulture. Cultural heritage in the area is rich with archaeological finds dating back to the Neolithic period.

Lenkeran is the major developing agricultural and industrial region in southern Azerbaijan. There is active investment in health care, education and tourism facilities and in agro-processing and other industries. There are plans to re-open and expand the airport and port.

Summary of Cumulative and Significant Environmental Impacts and Mitigation Measures

The strategic decision on the variants to be investigated further within the individual EIA studies will be key to successful Project implementation. This decision should be based on an independent and balanced view taking the findings and recommendations of the present RER into account.

The 45 km section to the south of the first sub-project (i.e. the 22 km section south of Alat) between Yenikand and Shorsulu is heavily influenced by agriculture and is criss-crossed by a dense network of drainage and irrigation channels and collectors. There is no evidence that valuable or sensitive natural habitat that could be directly or indirectly impaired by construction and operation of a new road if appropriate management measures are employed and road design takes account of the existing water regime.

South of this section, two alignments (direct and railway alignments) are under consideration for traversing the area between Shorsulu and Masalli and both options route through existing natural wetlands.

The ‘direct’ alignment of 55 km includes a 12 km section that routes through the Madmudchala and Akhchala wetlands, IBA sites that are proposed for future Ramsar designation but are currently unprotected. The ‘railway’ alignment is 94 km long and includes an 11 km section between Mungan Channel and Uzuntapa that runs in parallel and approximately 2 – 3 km to the northwest of the railway line and that also routes through the Akhchala wetland. The first 23 km of the ‘railway’ alignment up to the Mungan Channel runs through irrigated land and the final 30 km after Uzuntapa crosses largely agricultural land gradually becoming more densely populated to the south. A number of tree plantations could be affected in this latter section depending upon the final alignment selected.

The Madmudchala and Akhchala wetlands provide natural habitats for numerous rare and endangered wildlife species and have significance as a buffer zone for the adjoining wetlands that form part of the Gizilagach State Reserve, an official Ramsar site located 3–5 km from this area. The water balance in the Akhchala wetland is unstable and under constant threat of drying out. Controlled hunting is permitted here and there is pressure from poaching and fishing.

Routes through these wetland areas have significant potential for adverse environmental impacts including large scale sedimentation due to construction on unstable ground, habitat fragmentation and the creation of barriers for wildlife movement, disruption of breeding colonies for rare and endangered species and to the hydrology in the area. Natural wetlands and areas with saline soils also raise concerns for construction: saline soils are prone to collapse under load or vibration and may lead to the corrosion of steel reinforcements and also require high volumes of construction materials.

The RER assesses the impacts associated with the ‘railway’ alignment to be less significant than the ‘direct’ alignment, due to the presence of the existing line, but notes there is no reliable baseline data on the hydrological setting, the interrelation of the railway route with the adjacent wetlands or the...
geotechnical requirements for road construction in terms of design and construction and their impact on local hydrology.

The most southern section between Masalli and Astara is about 60 km long. Sensitive natural areas are in the south western part of the corridor and alignments need to be carefully selected to minimize their direct and indirect impact on natural forest vegetation of the Hirkan Forest to the west of Lankaran and the Talysh Relict Forest in Hirkan National Park. In addition, measures to compensate for any loss of tree plantations will be required.

Potential adverse construction impacts may be minimized by avoiding wildlife breeding and fish spawning seasons, developing pollution controls, implementing strict hunting controls within the construction workforce, designing drainage structures to minimize impacts on local hydrology in wetland areas and designing bridges and culverts to minimize impacts on fish habitats. Borrow pits for construction materials should avoid areas of national park or known ecological value. Material haulage also raises issues with traffic congestion, safety, noise, dust and damage to existing roads. While rail transport represents a possible alternative to road transport of materials, the cost implications need to be carefully weighed.

A wide range of people and businesses have the potential to be impacted in all areas of new road construction between Alyat and Astara. All necessary measures should be taken to minimise land acquisition, in particular the permanent loss of valuable agricultural land, and to minimise the resumption and relocation of residential and other properties, including businesses, by the careful choice of alignment at the detailed design stage. Similarly physical damage or impaired access to cultural objects and common property resources should be avoided. Measures to minimise adverse impacts on the natural hydrology and associated irrigation and drainage systems through design will be required. The need to provide continued, safe access for pedestrians to agricultural, residential areas and community services, and for livestock to pastureland, by appropriate design is also essential. Land acquisition, compensation and resettlement procedures are set out in the RPF.

Baku-Shamakhi: The planned rehabilitation works will take place within the existing ROW. Within the ROW, some sections of tree plantations and shrubs that fall under the ownership of the State Forest Fund may require removal. There are likely to be temporary and short term impacts associated with construction on the local population such as noise, heavy vehicle traffic, dust, traffic disruption and loss or impaired access to properties adjacent to the ROW but no impacts on cultural properties are anticipated. Careful planning and management is required to ensure that breeding sites near the river Jeyrankechmez for the globally threatened Lesser Kestrel are not affected by construction activities and that sites selected for material extraction do not impact Important Bird Areas in the region. A few roadside business may need to be relocated and compensated appropriately in line with the recommendations of the RPF.

Alyat-Astara: The Local Executive Powers in southern Azerbaijan are actively implementing plans to improve local transport, education, health care and tourism infrastructure and to stimulate investment and economic development in their areas on the basis of the ‘no project’ scenario. Transit traffic will continue to cross the Iran-Azerbaijan border in both directions irrespective of whether the Project proceeds. However, improvements to the Alyat-Astara road, regardless of the financing arrangements, could be an important factor in the future economic development of the region.

The scale and nature of potential cumulative environmental and socio-economic impacts associated with the Project will depend on the following strategic decisions, the responsibility for which lies ultimately with the Government of Azerbaijan and its implementing agency the Road Transport Service Department (RTSD):

---

For example, wells, hand pumps, schools, community buildings, graveyards

Scott Wilson Central Asia
D110123RER Report

November 2005
Regional Environmental Review, Environmental Assessment & Management Framework and Resettlement Policy Framework

- Whether or not the decision is taken to proceed with the Project;
- Phasing of the study and construction programme (e.g. start in the north working southwards, start in the south working northwards);
- Selection of sections of the road to progressed for detailed study and implementation;
- Selection of the general alignment between Shorsulu and Sarcuvar, Masally;
- Determination of exact alignment of road and associated ROW;
- Determination of exact number and location of intersections with existing roads;
- Implementation of the recommended land acquisition and resettlement procedures.

Whatever route is chosen for whatever section should be designed to minimise land acquisition and resettlement requirements; avoid any socio-cultural impacts on common property resources, e.g. mosques, graveyards, cultural monuments and water points; minimise severance by maintaining safe access to agricultural and pastureland and services; and minimise impacts on the natural environment particularly hydrology and areas protected for their flora and fauna. All project affected people should be compensated appropriately in accordance with the recommendations of the RPF.

During the engineering feasibility and environmental impact assessment (EIA) studies, detailed environmental and social impact assessment studies will be undertaken for sub-projects. At this stage, more precise details of the alignment and engineering features (e.g. interchange configuration and bridge location, embankment height) will be known. The EIA consultant will, together with the engineering consultant, develop a practical programme of monitorable mitigation measures to ensure that any adverse environmental impacts are minimised during the detailed design, construction and operation phases.

Environmental Assessment & Management and Resettlement Policy Framework

Once the scenario/alignment have been selected for a specific section of road, the EA&MF and RPF will be used by the Government and WB to guide and manage environmental studies, land acquisition, any required resettlement of people and properties, and to guide the compulsory public consultation process.

Site specific environmental assessments, appropriate study work and environmental management plans will be developed during project implementation to specifically address the issues and concerns raised in the RER for the sub-projects that are proposed in this study area.

RTSD's Environment and Safety Sector (ESS) will be responsible for management of the environmental assessment and environmental monitoring and reporting process for sub-projects, ensuring that the requirements of Azerbaijan's legislation, procedures and policies, international Conventions and WB safeguard policies, in particular in terms of environment, are met.

Further details of the procedures for preparation and approval of environmental studies, including requirements for public consultation and disclosure, are presented in the EA&MF. In addition, practical guidance on the monitoring and reporting of environmental mitigation measures during the construction and operation phases is provided.

Once the scenario/alignment have been selected for a specific section of road, the RPF will be used by the Government and WB to manage land acquisition, any required resettlement of people and properties, and to guide the compulsory public consultation process.
The RPF describes the existing compensation valuation methods in Azerbaijan as well as WB requirements under OP4.12, provides a sample entitlements matrix, and outlines the principles and procedures for preparation of a Resettlement Action Plan (RAP). The roles and responsibilities of RTSD's Land Acquisition Department as well as other organisations, including WB, in land acquisition and the preparation and implementation of RAPs for sub-projects are set out. WB requirements for internal performance monitoring and post-compensation evaluation monitoring are also listed.

Public Consultation Summary

At this stage, given the degree of uncertainty on route selection, the timing of project implementation and thus the communities which might be affected by the Project, consultation took the form of an initial round of discussions with local officials and village representatives at key district centres along the Baku-Shamakhi and Alyat-Astara roads in August-September 2005.

In all cases a high level of interest in the project was indicated by the participants, who on the whole had only heard rumours of the proposal to build a new road between Alyat and Astara. They seemed surprised and appreciative of being given an opportunity to express their views about the project. They were also concerned in a variety of ways about the potential social/economic impacts of the proposal to construct a new road, which in many cases would be distant from their settlements and businesses.

Views expressed in the meetings along the Baku-Shamakhi road related mainly to technical issues and traffic safety improvements. The wide-range of views expressed in the meetings between Salyan and Astara along the Alyat-Astara road have been categorised as follows:

**Important factors in views in favour of upgrading existing road**

- Existing houses & businesses have already been demolished 30 m either side of existing road
- ‘Road is life’ — importance of road to current social and economic life of settlements along route
- Existing investments along road and desire to retain them
- Settlements very near existing roads would benefit from bypasses

**Important factors in views against upgrading existing road**

- Graveyards, historical and cultural sites near to existing route making widening of route difficult
- Economic and social costs associated with resettlement of large existing population
- Current zig-zag route between Lenkeran city and Astara is bad for lorries and difficult to widen
- Current poor condition of existing road

**Important factors in views in favour of new road**

- Expected benefits to planned economic and social development in different sectors
- Expected improvement for delivery of agricultural goods to markets
- Expected reduction in current level of accidents
- Expectations of associated improvements, such as new public services and infrastructure

**Important factors in views against new road**

- Expected negative impact of new road on economic life of existing settlements, including informal trade resulting from current users of route
- Expected negative impact of the road on existing economic and social development plans for settlements along existing route
- Previous clearance alongside existing route, raising expectations of improvements to existing road
- Fear that new road will result in existing road not being maintained
Other generic issues of anxiety/concern expressed during the consultation

- Basic facts about the proposed route: width, exact alignment, feasibility or new route especially over wetlands
- Compensation: categories of compensation, including for land, private land and state land, rented state land, investment in houses and shops, potential productivity of land; fear of economic loss where illegal structures not compensated – treatment of illegal businesses – cases where businesses demolished in past, even though owner claimed to have official permission; differing willingness to accept compensation between those who cultivate land and those who do not use land

Participants at the meeting at Alyat focussed on access, crossings/underpasses for cattle and Sand Gazelles (from the National Park) and employment opportunities for local people in the proposed road construction works.

Comments were also sought on the draft RER, EA&MF and RPF. In light of the upcoming elections, and at the request of the Cabinet of Ministers, comments were sought in the following manner: (i) the cabinet of ministers distributed all draft reports (in Azeri) to key ministries and agencies including the local executive powers; (ii) on October 20, 2005 an advert was placed in local papers to inform the public that these reports were available in the offices of the local executive powers and that comments could be submitted during a 3 week comment period that closed on November 10, 2005.

As a result, for Baku-Shamkhy road there aren’t noticeable comments and proposals against the report. Absheron, Gobustan and Shamakhy support the rehabilitation process in the road. For Alat-Astara road, Masally, Jalilabad, Lankaran and Astara have many reasons to support the new road. They agree with the new road because of the less demolishing and less acquisition of private land. Salyan wants a new road in international standards to reduce road accidents. Only Bilasuvar doesn’t want direct alignment, main reason is that, they don’t want to be away from the main highway and socio-economic development.

Relevant ministries agree with this report and support this process. Common proposal is to make some amendments on the appropriate items of the report. Ministry of Culture and Finance want detailed necessary information to give comments or proposals. From the point of view of State Committee of Construction and Architecture, Movables State Register Agency should be indicated in the implementation process with the RTSD.

Conclusions

The results of the RER indicate that the road upgrading works for the Baku-Shamakhi road should go ahead as planned.

The results of the RER indicate that all construction of new road sections will have adverse impacts including permanent landtake of agricultural land, impacts on hydrology, resumption of residential and other properties and businesses, reduced access to agricultural land and services, as well as temporary construction phase nuisance. Improved infrastructure links may also reduce traffic accidents within built up areas and help stimulate economic development in the region.

Whatever route is chosen for whatever section should be designed to minimise land acquisition and resettlement requirements, and avoid any socio-cultural impacts on common property resources, e.g. mosques, graveyards, cultural monuments and water points, and to minimise impacts on the natural environment.

Between Yenikand and Shorsulu, building a new road including a major new bridge over the Kura River will have greater environmental and socio-cultural impacts than upgrading the existing road.
It is recommended that the direct alignment between Shorsulu and Sarcuvar, near Masally should be dropped from any further consideration under the Project by RTSD and WB. There is a lack of detailed knowledge of hydrological and geotechnical conditions in the area, and the potential direct and indirect impacts on wetland systems linked to the Giziligach State Reserve and Ramsar site. In addition, this option provides few links into the existing transport network.

If the decision is made to build a new road between Shorsulu and Sarcuvar, near Masally, the railway option linked into existing roads is recommended. On the basis of currently available information, this option combines the least environmental impacts with, on balance, the greatest potential for stimulating economic development in the region.

Between Masally and Astara, a new alignment linked to the Lenkeran bypass appears to be the only feasible option given the state of the current road and proximity of settlements and cultural monuments. The alignment should be chosen to minimise land take and resettlement, minimising impact on cultural monuments and common property resources.

The strategic decision on the variants to be investigated further within the individual EIA studies will be key to successful Project implementation. This decision should be based on an independent and balanced view taking the findings and recommendations of the present RER into account.

All future sub-project development studies and implementation should implement the findings and recommendations of the EA&MF and RPF, which are presented as separate documents.

**Annex:**

**Second Phase of the Public Consultation:**

In this phase “Regional Environmental Assessment”, “Environmental Assessment and Management Framework”, “Resettlement Policy Framework” was sent to the Cabinet of Ministers and then Cabinet of Ministers sent them to the relevant Executive Powers and Ministries for their reference. Their comments will be included in the final draft (Regional Environmental Review).