



Tacis Regional 2000 Traceca Programme

**Rehabilitation of Caucasian
Highways
Azerbaijan, Georgia and Armenia**

Final Report No 1- GEORGIA & ARMENIA

(FR / No 1 / 2004 / GE & AR)

April 18, 2004



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funded by the
European Union



A technical
Support Project
By Louis
Berger SA

Report Cover Page

Project Title	Rehabilitation of Caucasian Highways Azerbaijan, Georgia and Armenia	
Project Number	EUROPEAID/113179/C/SV/MULTI	
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Date of Report April 18, 2004
Reporting Period Final Report
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1.0 PROJECT SYNOPSIS

Project Title	Rehabilitation of Caucasian Highways Azerbaijan, Georgia and Armenia
Project Number	EUROPEAID/113179/C/SV/MULTI
Country	Georgia and Armenia

Wider Project Objectives	The Wider Project Objectives are to support the Republics to catch up with their serious backlogs in road maintenance, and to cope with growing local, and international transport.
Specific Project Objectives	The Specific Project Objectives are to provide consultancy services for three Beneficiaries. These all being the State Departments of Roads in their respective Countries namely Azerbaijan, Georgia and Armenia.
	<p>In Georgia the main objective is the developing of a Pre-Feasibility Study for modernization of the existing Poti –Tbilisi- Red Bridge road under the standard of the international motorway passing by larger inhabited areas. Determining the deadline for road carrying capacity, based on the dynamics of traffic volume growth at sections of the existing road, and modernization periods, technical and economic study.</p> <p>Duration estimated 10 months, in conjunction with the project in Armenia.</p> <p>The Project in Armenia covers the investigations, designs, preparation of contract drawings, cost estimates, environmental impact assessment and tender documents for 3 tunnels on the road from Vanadzor to the Georgian Border. Also exchange of technical expertise.</p> <p>Duration estimated 10 months, in conjunction with the project in Georgia.</p>
Planned Outputs	For Georgia Component, the planned output is the production of a Pre-Feasibility Study for the road improvements to the Poti to Red Bridge Road.
Project Activities	In Armenia Component, the production of complete set of tender documents for the 3 tunnels.
Project Starting Date	The Project is set up in the form of separate components all of which form the main basis of the proposed project activities. For Georgia Component the project activities are to provide a Pre-Feasibility study of modernisation of Poti-Tbilisi-Red Bridge Road in Georgia. For Armenia Component is to provide design and preparation of tender documents for three tunnels on the road from Vanadzor to the Georgian Border.
Project Duration	Contract signed on 25 th November 2002
	24 months for the 3 Components

2.0 SUMMARY OF PROJECT SINCE THE START OF THE PROJECT

The Team Leader arrived in Baku on 19th January 2003 accompanied by the Project Director. The Project team Leader has resigned from the project and LBSA project Coordinator has replaced him from June 10th to mid August 2003. The new Project Team Leader has been taking activities since 14th August 2003.

The Team Leader has visited Tbilisi in 23 - 25 March 2003 and 4 - 7 July 2003 to meet with EC delegation and State Road Department.

LBSA Project Director, Mr. Signor in November 15-24, accompanied by the Team Leader, has visited the Project in order to perform project's progress review. Mr. Signor has participated to the meeting in TACIS Monitoring office, Tbilisi with Mr. Gotsiridze.

Meetings in Tbilisi with Team Leader and Mr. Gotsiridze have been performed on October 8, November 19, 2003 and March 2, 2004. This helped to receive monitor's valuable recommendations on project progress.

Team Leader has performed site visits to Armenia in 1-3 July, 16-18 November 2003 and 22-29 February 2004. Meetings were held with Mr. H. Petrosyan and Mr. E. Karapetyan, SRD Armenia and the NCU. This helped to evaluate progress on submission of Tender Documents.

LBSA proposes to define commencement of July 2003 as the Project's start date for the 2 Components (Georgia and Armenia) through the arrival of LBSA highway engineer to Tbilisi.

2.1 Summary on Component 2, Georgia: Pre-Feasibility Study of Modernisation of Poti-Red Bridge Road

In order to improve project performance and reporting, it was agreed during the meeting with Mr. Gotsiridze in Tbilisi Tacis Monitoring Office that project components should be reviewed in terms of unification of understanding of project's specific objectives. Thus, updated definition was proposed and used in all required **Forms** included in the reports.

The revised definition of the specific objectives on **Component 2** is as follows:

1. Data collection and Surveys;
2. Develop technical specification;
3. Perform environmental assessment;
4. Assessment of economic costs;
5. Perform economic analysis;
6. Determining cost estimates; and
7. Reporting.

The ToR requires the following project's milestones on component 2:

- Inception Report end of month 2;
- Progress Report end of month 4;
- Draft Final Report end of month 6 (postponed to end of month 8 without any change to overall calendar time);
- Final Report end of month 10.

Inception and Progress Reports were produced on 15th August and 15th October 2003 respectively and the Draft Final Report on 18 February 2004.

2.2 Summary on Component 3, Armenia: Design and Preparation of Tender Documents for Three Tunnels on the Road from Vanadzor to the Georgian Border

The proposed definition of the specific objectives on **component 3** is as follows:

1. Field investigations;
2. Design works;
3. Determination of excavation works;
4. Technical description of construction and engineering process;
5. Cost estimate;
6. Preparation of Tender Documents;
7. Reporting.

Four reports have been produced. Three Technical Reports: Engineering-Geological Conclusion, Survey of Tunnels and Site Inspection & Rehabilitation Works in addition to the Inception Report.

Four Tender Documents have been forwarded to the SRD and appropriate authorities as per the ToR in the last week of February 2004.

3.0 PROJECT PROGRESS IN FINAL PROJECT PERIOD

3.1 Project Progress on Component 2, Georgia: Pre-Feasibility Study of Modernisation of Poti-Red Bridge Road

Inception Report for the **3 Components** was produced in April 2003. On **Component 2**, additional Inception Report was produced on August 15, 2003. Progress Report and Draft Final Report delivered on October 15, 2003 and 18 February 2004, respectively.

The Final Report was submitted directly at the end of the project activities, as the Contract duration is less than 12 month "EU Visibility Guidelines "and as required by the ToR reporting Program.

The Final Report contains the following volumes:

Volume I	Explanatory note and tables of main works
Volume II	Drawings and photos
Volume III	Road transport economics
Volume IV	Environmental Assessment

All required tasks have been performed and reported in the above 4 volumes annexed to the Final Report. Output results carried out by Consultant and Local Sub Consultant "Transproject" are summarized in **section 4** of this Report.

Project progress and resources inputs for **component 2**, Georgia are presented in the **Forms 2.2 Project Progress Report** and **2.3 Resources Utilization Report**.

3.2 Project Progress on Component 3, Armenia: Design and Preparation of Tender Documents for Three Tunnels on the Road from Vanadzor to the Georgian Border

Four reports have been produced. Three Technical Reports: Engineering-Geological Conclusion, Survey of Tunnels and Site Inspection & Rehabilitation Works in addition to the Inception Report.

Four Tender Documents have been forwarded to the SRD and appropriate authorities as per the ToR in the last week of February 2004. Consultant has prepared additional Tender Documents for the 3 tunnels jointly in order to help the MoT for future financial planning.

As required by the ToR, Consultant has submitted the Tender Documents using the World Bank Standard Bidding Documents (WB SBD) for International Competitive Bidding (ICB) including updated corrigenda. Tender Documents for each tunnel and for the 3 tunnels mutually have been presented in the following 4 documents:

Volume I	Sections I, II, III, IV and V
Volume II	Section VI
Volume III	Section VII
Volume IV	Sections VIII and IX

In addition, Consultant has submitted Environmental Impact Assessment Report and cost estimates for the 3 tunnels.

Project progress and resources inputs for **component 3**, Armenia are presented in the **Forms 2.2 Project Progress Report** and **2.3 Resources Utilization Report**.

Deviations, reason for deviations and comments are presented in **Form 2.4 Output Performance Report**.

EC's staff approval is included in the **Annex 2** to this Report. **Table 1** shows the approval dates of International long and short-term Experts. **Tables 2** and **3** illustrate Local Staff approval on Components 2 and 3 respectively.

4. OVERALL REPORT ON THE TOTAL PROJECT

4.1 Overall report on Component 2, Georgia: Pre-Feasibility Study of Modernisation of Poti-Red Bridge Road

Inception and Progress Reports were produced on August 15 and October 15, 2003 respectively and the Draft Final Report on 18 February 2004.

The road design was performed using Trans European North-South Motorway¹ (TEM). According to the ToR, Consultant is required to investigate whether it is possible to improve the existing road to motorway standard. For this purpose the road was divided into fourteen sections as shown in **Table 4.1** of this report.

Table 4.1- Splitting up the road into 14 sections

No	Section	Land Description	Design Speed [km / h]
1	Poti – Samtredia	Flat	120
3	Samtredia – Kutaisi	Flat	120
4	Kutaisi Bypass	Flat	120
5	Kutaisi - Zestafoni	Rolling	120
6	Zestafoni Bypass	Rolling	120
7	Zestafoni - Khashuri	Mountainous	80
8	Khashuri Bypass	Rolling	120
9	Khashuri - Gori	Rolling	120
10	Gori - Natakhtari	Rolling	120
11	Natakhtari - Zagesi	Rolling	120
12	Zagesi – Lochini	Mountains and rolling	80 & 120
13	Lochini – Rustavi	Rolling	120
14	Rustavi - Red Bridge	Rolling	120

An economic analysis of each alternative has been carried out. This analysis consisted of comparing the construction cost with the Vehicle Operating Cost (VOC).

To complete the economic analysis on the chosen alignment a World Bank's HDM-4² has been applied.

The Final Report was submitted in the following 4 Volumes:

Volume	I	Explanatory note and tables of main works
Volume	II	Drawings and photos
Volume	III	Road transport economics
Volume	IV	Environmental Assessment

All the following tasks have been performed and reported in the above 4 volumes attached to the Final Report and in order to emphasize output results on **Component 2**, the performance carried out by Consultant and Local Partner "Transproject, the Sub Consultant" could be summarized as follows:

Volume I: Explanatory note and tables of main works

The volume I highlights the Project location and Standards used while developing the Pre-Feasibility study. It contains historical examination and archeological consideration and focused generally on:

¹ European Standards TEM prepared by UNECE, Third Edition, February 2002;

² HDM-4 Highway Development and Management series, version 1.3 revised and updated 2001.

- 1.1 Main Characteristics of the existing road (geometry, pavement, structures, roughness and etc.) and Standards used;
- 1.2 Selection of alternatives on a scale of 1:50000 and of some alternatives in mountainous areas on a scale of 1:25000;
- 1.3 Choice alternatives to be carried out and updating them after field reconnaissance and examination of satellite photographs;
- 1.4 Analysis of the main technical parameters, estimated volumes and construction costs of the alternatives;
- 1.5 Analysis of local roads and interchanges;
- 1.6 Preparing layouts of horizontal alignment (TEM Standard), 2 or 3 alternatives for each section with a scale of 1:50000 using AutoCAD;
- 1.7 Preparing layouts of interchanges, local roads and facilities as parking using AutoCAD and according to TEM Standards;
- 1.8 Preparation the vertical alignment for all chosen alternatives by mean of CREDO (local software for road design) after calculation of economical cost and choice of alternatives for each section;
- 1.9 Analysis of the natural conditions (Climate, precipitation, geological conditions and etc.);
- 1.10 Analysis of the construction volumes and costs and Calculation of the cost estimation for each alignment section by section for the preparatory works, removal of existing structures, land acquisition, earthworks, road pavement, box and pipe culverts, bridges and retaining walls, overpasses junctions and interchanges, local roads, road marking and etc.

Volume II: Drawings and Photos

As required by the ToR, the following Drawings have been included in the Volume II:

- 2.1 Longitudinal profile and typical cross-sections;
- 2.2 Typical drawings of road pavement;
- 2.3 Typical drawings of pipe and box culverts;
- 2.4 Typical drawings of bridge (deck and beam);
- 2.5 Typical design of overpasses (roads and railways);
- 2.6 Typical design of tunnels;
- 2.7 Typical design of retaining walls;
- 2.8 Typical design of interchanges;
- 2.9 Photos for road sections Senaki-Poti-Sarpi, Tbilisi-Senaki-Leselidze, Tbilisi-Red Bridge and Tbilisi bypass.

Volume III: Road Transport Economics

Georgia's geographic location takes a particular significance on international trade between the countries of western and Eastern Europe and those of central Asia and the Far East. The Volume III emphasizes the economic analysis and economic appraisal and consists of:

- 3.1 Economic review: Trends in gross domestic product; Transport section and road traffic growth projections;
- 3.2 Description of the existing road and traffic: Analysis of the Origin-Destination (OD) Survey results; Analysis of the traffic counts results; Calculation and determination of traffic forecast till 2030; Analysis of road accident Database;
- 3.3 Determination of the road capacity by using Highway Capacity Manual HCM 2000;
- 3.4 Calculation of the Level of Service (LOS) for the existing road;
- 3.5 Calculation of the LOS for the next 20 years;
- 3.6 Economical appraisal and Road network input data;
- 3.7 Analysis of alternative motorway alignments;
- 3.8 Vehicle fleet input data;
- 3.9 Works standards input data;
- 3.10 Methodology approach;
- 3.11 Results of the Economic appraisal.

Volume IV: Assessment of the Environmental impact

Consultant has identified nature of environment problems with landslides, subsidence and proximity of residential areas along the route and environmental constraints. He has attended meetings on 17 October 2003 with Biodiversity and protection of Mineral Resources and Mining departments. Records of meetings are included in **Annex 4** of this Report.

Meeting held on 26 November 2003 with Consultant, Mr. G. Gogiashvili, Dr. M. Chantladze (TRACECA IGC), and Mr. Shota Keldishvili. This helped finalizing the Environmental Assessment Study.

In the Volume IV of the Final Report, Consultant has assessed the environmental impacts and mainly the following:

- 4.1 Overview of the relevant legislation and general environmental analysis of the construction and operations stages in terms of expected impacts;
- 4.2 General data collection and analysis of the existing condition of the route;
- 4.3 Identification of the main impact categories, sources and receptors;
- 4.4 Prognosis for the qualitative and quantitative changes of the environment;
- 4.5 Concluding the general assessment of the environmental and social risks;
- 4.6 Public awareness and public consultations;
- 4.7 Environmental Management System;
- 4.8 Environmental Analysis of the alternatives.

Project completion report and output performance resources for **component 2** are presented in **Forms 3.2** and **3.3** respectively.

4.2 Overall report on Component 3, Armenia: Design and Preparation of Tender Documents for Three Tunnels on the Road from Vanadzor to the Georgian Border

Four reports have been produced. Three Technical Reports: Engineering-Geological Conclusion, Survey of Tunnels and Site Inspection & Rehabilitation Works in addition to the Inception Report.

The output results carried out was the submission of the Tender Documents for the 3 tunnels.

Four Tender Documents have been forwarded to the SRD and appropriate authorities as per the ToR in the last week of February 2004. Consultant has prepared additional Tender Documents for the 3 tunnels jointly in order to help the MoT Armenia for future financial planning.

As required by the ToR, Consultant has submitted the Tender Documents using the World Bank Standard Bidding Documents (WB SBD) for International Competitive Bidding (ICB) including updated corrigenda.

Technical characteristics and appropriate Norms on each tunnel during the preparation of detailed Drawings, Volume III of the Tender Documents, have been carried out in accordance with Norms and features as shown in **Table 4.2** of this Report.

Tender Documents for each tunnel and for the 3 tunnels mutually have been presented in the following 4 documents:

Volume I	Sections I, II, III, IV and V
Volume II	Section VI
Volume III	Section VII
Volume IV	Sections VIII and IX

Table 4.2 Features and Norms for the 3 Tunnels

Description	Tunnel 1	Tunnel 2	Tunnel 3
Location From km to km	25+460-25+566	31+200-31+476	31+910-32+090
Road Technical Category	IV	IV	IV
Assignment purpose	CNRA II-2.02-94	CNRA II-2.02-94	CNRA II-2.02-94
Traffic Volume (vpd)	1865	1889	1889
Seismic zone	2nd	2nd	2nd
Carriageway pavement type	Asphalt-concrete	Asphalt-concrete	Asphalt-concrete
Clearance of obstructions and equipment	GOST 24451-80	GOST 24451-80	GOST 24451-80
Width of secondary passage mm	500	500	500
Width of protection zone mm	350	350	350
Radius of horizontal curve m	Keep the existing radius R 175 m	Keep the existing radius R 90 m ³	Keep the existing radius R 550 m
Road design near the tunnel	CNRA IV-11.05.02-99 & 11.05.04-97	-	CNRA IV-11.05.02-99 & 11.05.04-97
Tunnel lining design	CNRA IV-2.02-94	CNRA IV-2.02-94	CNRA IV-2.02-94
Rehabilitation of tunnel lining	CNRA IV-11.05.04-97	-	CNRA IV-11.05.04-97
Portals rehabilitation	CNRA IV-11.05.04-97	CNRA IV-11.05.04-97	CNRA IV-11.05.04-97
Electric lighting	Natural according to table 7 of CNRAIV-11.05.04-97	CNRA IV-11.05.04-97	CNRA IV-11.05.04-97
Ventilation	Natural	Natural	Natural
Fire protection	Do not provide L=106 m <600 m	Do not provide L=276 m <600 m	Do not provide L=180 m <600 m
Turning area for vehicles before portal	Do not provide; narrow mountains condition	Do not provide; narrow mountains condition	Do not provide; narrow mountains condition
Approaches M-6	Use the existing approaches	Use the existing approaches	Use the existing approaches
Other conditions	1.Implement reconstruction by closing the traffic and rehabilitate the existing bypass; 2.Follow the organizational plan of tunnel construction (OPC).	1.Replace and reinstall existing water pipe; 2.Implement reconstruction stage by stage; 3. Follow the organizational plan of tunnel construction (OPC).	1.Replace and reinstall existing water pipe; 2.Implement reconstruction stage by stage; 3. Follow the organizational plan of tunnel construction (OPC).

Each volume of The tender Documents comprises the following:

VOLUME I:

Section I Invitation for Bids (IFB).

Section II Instructions to Bidders:
A. General;
B. Bidding Documents;
C. Preparation of Bids;

³ For economic purpose.

	D. Submission of Bids; E. Bid Opening and Evaluation; F. Award of Contract; G. Bidding Data.
Section III	Forms of Bid, Qualification Information, Letter of Acceptance, and Agreement
Section IV	Conditions of Contract: General; Time Control; Quality Control; Cost Control; Finishing the Contract.
Section V	Contract Data

VOLUME II:

Section VI	Specifications
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VOLUME III:

Section VII	Drawings
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VOLUME IV:

Section VIII	Bill of Quantities
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Section IX	Security Forms: Form of Agreement, Forms of Performance Security and Bank Guarantee for Advance Payment
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In addition to the Tender Documents, Consultant has submitted:

Environmental Impact Assessment Report and cost estimates for the 3 tunnels. The Environmental Report comprises:

- The project objectives;
- Policy and administrative framework;
- Project description and baseline conditions;
- Potential environmental impacts;
- Environmental management plan;
- Implementation arrangements; and
- Summary of mitigation plan.

Project completion report and output performance resources for **component 3** are presented in **Forms 3.2** and **3.3** respectively.



5.0 LESSONS LEARNT AND RECOMMENDATIONS

5.1 Planning Performance and Utilisation

The planning inputs were outlined in the inception reports for **Components 2 and 3**. **Table 5.1** shows local staff inputs realized during the project implementation of the Pre-feasibility study. **Tables 5.2 and 5.3** illustrate the Local Staff position and inputs man / working day as planned and realized for the design and preparation of Tender Documents for the three tunnels.

Table 5.1 Local Staff Inputs realized - Component 2 Georgia

Position /Month	May 03	June 03	July 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03	Jan 04	Feb 04	Mar 04	Total
Highway Eng.	20	20	20	20	22	20	20	20	18	14	20	214
CAD Bridge Eng.	20	19	19	14	14	20	20	20	0	0	0	146
Bridge Eng.	20	19	20	11	10	20	20	20	0	0	0	140
CAD Bridge Eng.	20	19	19	14	12	20	20	20	0	0	0	144
Geot. Eng	20	19	19	12	12	20	20	20	0	0	0	142
CAD Road	20	20	19	14	14	20	20	20	0	0	0	147
Surveyor	20	20	20	20	22	20	20	20	18	14	0	194
Highway Eng.	20	20	20	20	22	20	20	20	18	14	0	194
CAD Road	0	0	0	0	0	0	0	0	18	14	11	43
CAD Highway	0	0	0	0	0	0	0	0	18	14	11	43
Cost Est.	0	0	0	0	0	0	0	0	18	14	11	43
Surveyor	0	0	0	0	0	0	0	0	18	14	0	32
Bridge Eng.	0	0	0	0	0	0	0	0	18	14	4	36
Total	160	156	156	125	128	160	160	160	144	112	57	1518

Table 5.2 Local Staff Planned Inputs - Component 3 Armenia

Position /Month	May 03	June 03	July 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03	Jan 04	Feb 04	Total
Highway Eng.	22	22	23	23	22	23	20	23	22	20	220
CAD Eng.	22	22	23	23	22	23	20	23	22	20	220
Traffic	0	22	23	0	0	21	0	0	0	0	66
Tunnel	22	22	23	23	22	23	20	23	22	20	220
Cost Est.	0	0	0	0	0	0	20	13	21	12	66
Surveyor	20	22	23	22	22	23	0	0	0	0	132
Bridge	22	22	0	0	0	0	0	0	0	0	44
Drainage	22	22	0	0	0	0	0	0	0	0	44
Pavement	21	22	23	22	0	0	0	0	0	0	88
Env. Eng.	0	0	0	0	0	0	0	22	22	0	44
Geot. Eng.	20	22	23	22	22	23	0	0	0	0	132
Contract Specialist	0	0	0	0	0	0	23	20	15	8	66
Total	171	198	161	135	110	136	103	124	124	80	1342

Table 5.3 Local Staff realized Inputs - Component 3 Armenia

Position /Month	May 03	June 03	July 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03	Jan 04	Feb 04	Mar 04	Total
Highway Eng.	20	22	23	21	22	23	20	20	18	20	11	220
CAD Eng.	20	22	23	21	22	23	20	20	18	20	11	220
Traffic Eng.	0	22	23	0	0	23	0	0	0	0		68
Tunnel Eng.	20	22	23	21	22	23	20	20	18	20	11	220
Cost Estimator	0	0	0	0	0	0	20	11	18	17	0	66
Surveyor	20	22	23	21	22	23	0	0	0	0	0	131
Bridge Eng.	20	22	0	0	0	0	0	0	0	0	0	42
Drainage Eng.	20	22	0	0	0	0	0	0	0	0	0	42
Pavement Eng.	20	22	23	21	0	0	0	0	0	0	0	86
Env. Eng.	0	0	0	0	0	0	0	20	18	15	0	53
Geot. Eng.	20	22	23	21	22	23	0	0	0	0	0	131
Contract Specialist	0	0	0	0	0	23	20	0	0	20	0	63
Total	160	198	161	126	110	161	100	91	90	112	33	1342

As can be seen from the above tables, there are no changes to the total planned and realized man/working days on each component over the duration of the project.

Working days realized during 2003 and 2004 and financial topics are shown in **Tables 5.4, 5.5** and **5.6** respectively.

Table 5.6 exemplifies working days billed in the first six-month (period 1, January-June 2003) and the second six month (period 2, July-December 2003) on the Local staff for each components including **component 1**. Local staff long and short-term experts have been classified into senior and junior. Consultant has adjusted inputs all through project progress and achievement in order to keep the contract value consistent.

Working days performed by International experts are shown in **Table 5.7** of this Report.

Final financial implication and data would be reported in the Final Report when the overall project would be achieved (at termination of **Component 1**, Azerbaijan). However, Consultant has assessed and planned staff working days without any additional financial implication to the project. **Table 5.8** illustrates Consultant arrangement for the whole project performance.

Table 5.8- Adjustment of Local staff without additional cost

Item	Original Contract	Adjustment
Local long-term senior	2192	2042
Local long-term junior	2077	2027
Local short-term senior	1118	1268
Local short-term junior	716	766
Total	6103	6103

Reports produced on **Components 2** and **3** including this one are detailed in **Annex 1** of this Report.

Important correspondences are attached in **Annex 3** to this Report.

5.2 Lesson Learnt

Consultant would like to express thanks to Local Authorities, National Coordinating Unit (NCU), EC and all Project's Partner for their specific actions to overcome of problems arisen during the project implementation.

Being the project objectives are implemented for 3 countries with no contact between 2 of them has affected delay in reports delivery and difficulty in communication.

Consultant recommends that Mot and SRD, Armenia, to engage with tendering procedures for the 3 tunnels.





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