Twinning Agreement
between
Swedish Road Administration
and
Republic of Serbia Roads Directorate

COMPLETION REPORT

November 2007

Foreword

Twinning projects often bring significant mutual advantages to both parties, but they can also have potential disadvantages or risks. Both SRA and PERS were fully aware of these impacts, from the very beginning of the cooperation and our joint efforts were growing in accordance with challenges and demands for transfer of certain techniques and skills needed.

This 3-year Project (2004-2007), supported by SIDA and coordinated with complementary World Bank project in Serbia, was successfully completed based on the Twinning Agreement between our two Roads Authorities, covering four main areas of cooperation: Road Safety Management - Routine and Winter Road Maintenance - Environmental Protection and Road and Bridge Management.

The Project "Support to Institutional Strengthening and Technical Assistance" realized by the Swedish Road Administration (SRA) for the Public Enterprise "Roads of Serbia" through the Twinning Agreement, had its independent assessment which resulted in positive findings within the Evaluation Report. However, our judgment is that the project has had great achievements:

PERS management has adopted strategic approach, and technical sectors are now better trained for solving specific problems in road planning and management. Some parts of the project are highly successful.

Concerning the overall objective, PERS has made significant improvement during the three-year period while the SRA assistance lasted. PERS is now in a better position to fulfill the requirements of the EU harmonization. It has an improved attitude towards summer and winter maintenance, as well as more professional attitude towards certain areas of road network management.

This 1,5 million euro constrained budget project proved more cost-efficient than expected. The work was successfully done via a mixture of courses, seminars, study visits and secondments, in short via staff development both in Sweden and in Serbia. It created real involvement and commitment of the receiving institution and its staff, long term relations and long lasting impacts on both sides.

Completion of the project is a result of joint effort of both parties, SRA and PERS, which both expect the successful affirmation of the achieved Twinning results and a possibility for the continuation of mutual future cooperation.

Branko Jocić

Director General
Public Enterprise "Roads of Serbia"

ЈАВНО ПРЕДУЗЕЋЕ "ПУТЕВИ СРБИЈЕ" * БЕОГРАД 3

Ingemar Skogö

Director General
Swedish Road Administration

Vägverket

Summary

This Completion Report covers the cooperation during 2004 and 2007 between the two Road Authorities in Serbia and Sweden, covering four main areas of cooperation, Road Safety Management, Routine and Winter Maintenance, Environment Protection and Road and Bridge Maintenance Management. The cooperation was formalized in a Twinning Agreement and the costs were partly financed by Sida, the Swedish International Development Agency.

The work during the agreement period was carried out via seminars, short term training, study trips and secondments to PERS, Public Enterprise "Roads of Serbia". Most of the seminars and training took place in Serbia. The progress has been reported in four semi-annual reports plus an Inception Report and the Final Report.

The final results of the twinning have been successful and in one case exceptional. The latter applies to the result in the Routine and Winter Maintenance, where the introduction of performance based contracting of routine and winter maintenance reduced the winter maintenance costs by between 40 and 70% in the two pilot areas and the consumption of salt for de-icing by between 75 and 88%.

The impact of the project on the organization and work in Environmental Protection and Traffic safety Areas is also quite noticeable, resulting in the creation of a new Sector under the General Director with Departments for Quality, Safety and Environment on the same level as the Sectors for Investments, Maintenance, Toll Roads and Planning/Design. The General Director also decided on new policies for Traffic Safety, Road Maintenance and Environmental Protection as a direct result of work undertaken.

In summary the project has provided useful lessons and demonstrations in how to in a relatively short time with limited inputs of development funds create achieve major results n some of the key areas for the future development of road management.

Contents

Appendices 4

Glossary 5

Introduction 6

Background 6

Project framework and formulation 6

Agreement Period 6

Organization 7

Co-ordination with other projects 7

The World Bank Transport Rehabilitation Project 7

Institutional Capacity Building of the Public Enterprise Roads in Serbia (EAR or PERS) 8

Support to the transition of RSRD into a Public Enterprise 8

Legislation 9

Political and Other Risks 9

LFA 10

Main Objectives and Achievements 10

Overall objectives 10

Implementation and Progress Reporting 12

Methodology 12

Activities 13

Progress Reports 13

Results 13

Technical results 13

Budget and Budget Follow Up 17

Time Schedule and Resource Utilization, Deviations 17

Discussion and Conclusions 18

Methodology 18

LFA 18

Results and sustainability 18

Appendices

1. Organizational schemme, Twinning
2. Decision on Project establishment
3. LFA June 2005
4. LFA April 2007
5. Traffic Safety Policy
6. Road Maintenance Policy
7. Environmental policy
8. Gender policy, Twinning
9. Organizaciona shema JPPS
10. Follow Up of Winter Maintenance
11. Time Schedule
12. Swedish Staff
13. Budget
14. Budget follow up
15. Expenditures PERS 2005-2006
16. Request for reallocating
17. Budget follow up final
18. Final Report

19.

Glossary

EC European Commission

EAR European Agency for Reconstruction

EBRD European Bank for Reconstruction and Development

EIB European Investment Bank

EU European Union

LF Logistical Framework

LFA Logical Framework Approach

MoCI Ministry of Capital Investments

OVI Objectively Verifiable Indicator (of log frame)

PERS Public Enterprise "Roads of Serbia" (PERS)

PR (Project) Progress Report

RSRD Republic of Serbia Road Directorate (became PERS in 2006)

RWIS Road Weather Information System

SEK Swedish Kronor

Sida Swedish International Development Agency

SRD Serbian Road Directorate (see above RSRD)

WB World Bank

Technical and Administrative Report

Introduction

Background

The contacts between the Republic of Serbia Roads Directorate (RSRD) [1]and the Swedish Road Administration (SRA) were initiated in a connection with a World Bank (WB) mission to Serbia regarding the WB Transport Rehabilitation Project. In October 2002 representatives of the RSRD visited SRA and the state of art in various fields of common interest was presented. The RSRD and the WB was in particular interested in the Swedish model for road and bridge maintenance using performance based contracting for the routine maintenance and in Road Safety. At an early stage contacts between the WB Team Leader and the Sida Representative took place, facilitating further discussions RSRD/SRA and what was later to become a twinning agreement between the two Roads Authorities, covering four main areas of cooperation being:

- Road Safety Management ;
- Routine and Winter Road Maintenance;
- Environmental Protection; and
- Road and Bridge Management

Project framework and formulation

Agreement Period

On 21st March 2004 the Agreement between RSRD and SRA was signed, and a few weeks later the Country Agreement confirmed the cooperation, which covered the period up to May 2007. Prior to the formal signing SRA had already undertaken some preparatory work (climatic mapping in February 2004) in order not to lose one year in

[1] The Republic of Serbia Roads Directorate (RSRD) was in 2006 transformed into the Public Enterprise "Roads of Serbia" (PERS)

the implementation of the maintenance pilot projects and to be able to brief the bidders on the WB Pilot Project.

The Agreement was later extended to October 2007 in order to include an extension of the winter maintenance model covering the entire country. During the extension PERS has received support in developing the payment model used in the Pilot Project Areas and previously run by SRA as an additional county.

Organization

The organization of the implementation was organized as a project with counterparts and assistants in RSRD/PERS, an organization which was subject to continuous small and big changes from project start except that the counterparts for the Environmental component remained throughout. After the second PERS Team Leader/Coordinator was left the previous counterpart for the Environmental component took over as Coordinator for PERS, and after introducing a new organizational scheme and a Steering Committee at PERS in 2005the situation was stabilized (see Appendix 1 and 2)

The change over from the original Swedish Team Leader to the then Deputy Team Leader in 2005 was done after the situation had stabilized and did not cause any difficulties as the original Team Leader was available on a consultative basis and the new Team Leader proved to have all required competence.

For details on project counterparts and organization of PERS, see Appendices 1 and 2 respectively.

Co-ordination with other projects

The World Bank Transport Rehabilitation Project

This 55 million US$ project aims at strengthening PERS and enhance Road Maintenance Rehabilitation and Safety. One of the components was to maintain the road network in two provinces, Kolubara and Macva, and to rehabilitate a number of selected roads. The implementation of the routine maintenance via competitive tendering and the introduction of performance based payments were new concepts to Serbia and were presented in a pre bid seminar by SRA.

The actual supervision of the Pilot Project was awarded to the local Highway Institute and the role of SRA was here advisory. The co-operation with the Highway Institute supervising the Project has been very good, and it increased during and after the

secondment of an SRA maintenance engineer to the World Bank Maintenance Pilot Project.

The co-operation between the two donors involved has continued in a good climate with a mutual decision to share information and when possible participate in each other's project reviews.

In this context it should also be mentioned that from the very start of the twinning project the findings of the Booz-Allen-Hamilton (BAH) report were available to the twinning team, who found them to be sound and had no problem in supporting their recommendations in training courses and seminars. A very good co-operation with the BAH consultants was established and information has been exchanged regularly.

Institutional Capacity Building of the Public Enterprise Roads in Serbia (EAR or PERS)

The twinning team has had several informal contacts with the TA consultants for the Ministry of Capital Investments (MoCI). There have been no formal liaisons but several joint seminars have been organized for participants from MoCI and PERS

Support to the transition of RSRD into a Public Enterprise

In the beginning of 2005 the Ministry of Capital Investments (MCI) procured a major TA consultancy funded by EIB to strengthen the administration and the original Terms of Reference were formulated in a way inviting duplications of the assistance provided in this project. This in particular pertained to the component "Institutional Capacity Building of the Republic of Serbia Road Directorate". However, appropriate changes and clarifications were made prior to signing the agreement. In addition the project team established a contact with the selected consultants and endeavored to develop a regular liaison on matters of mutual concern.

The adoption of the new Road Law meant that the RSRD automatically was transformed into a Public Enterprise – Public Enterprise "Roads of Serbia" (PERS). The RSRD started in 2005 to prepare for this transformation from a Government Administration to a Public Enterprise with the appropriate business plan and organization based on vision, objectives and subsequent necessary work processes.

The RSRD has been advised that involvement by SRA in such work would be a deviation from present ToR for the twinning, which must be discussed directly with Sida in advance. The RSRD has also been advised that Sida may support the transition but this will then be done as a separate project and should not be included in the twinning.

There have been no further discussions on this subject within the Twinning Agreement.

Legislation

The work to modernise the legislation in the Road Sector and to harmonize it with EU was in progress at time of project start. The present status is as follows:

- **The Road Law**
  The new Road Law contains major changes regarding the organization and the funding of the Road Administration. As from 2006 the old Road Directorate has been transformed into a Public Enterprise "Roads of Serbia", which in some ways is more similar to SRA e.g. when it comes to possibilities to set market salaries. However, the most important part is related to the funding of the road maintenance, which will come mostly from the toll collection and the excise duties on fuels into the account of the new Public Road Enterprise, through the Ministry of Finance.

- **Law on Traffic Safety**
  The draft with contributions from the Twinning Project and the public discussion are completed and the Law is since long waiting for approval by the Government and Parliament. The Law will have an impact on the liaison with the police and is thus quite important for any future development, in particular of the accident reporting.

- **Law on Environmental Protection**
  This law together with another 3 new complementary environmental laws were adopted in December 2004 and published in Official gazette of RS, No 135/04 from 21st December.

  The overall objective of the new law was to adapt Serbian environmental legislation to international standards and especially to EU standards.

- **Laws on Road Transport**
  This legislation comprises two laws, one on domestic and one on international transport. They are both in place and were last revised in 2001 and 2000 respectively.

- **Laws on Transport of Dangerous Goods**
  This sector is regulated by two laws, Transport of Dangerous Goods and Road and Rail Transport of Dangerous Goods. Both laws were last revised in 2002. In addition, the regulation on Road Transport of Dangerous Goods, dated 1990 is still in force.

Political and Other Risks

The risks involved have been discussed in the early reporting and in particular three aspects were considered, understaffing of the Republic of Serbia Roads Directorate

(RSRD), possible lack of continuity due to change of key staff and the political will to pursue a policy of procurement changes which could be locally unpopular.

During the execution all of the above risks materialized. However, the commitment of the RSRD staff and management continued throughout a difficult period with change of Government, change of legal status and organization, change of management and change of key counterparts. The Director of RSRD was replaced once and the RSRD Project Manager three times. At the same time the change over from state directorate (RSRD) to Public Enterprise "Roads of Serbia" (PERS) took place.

The political will to pursue the project was also tested but has not waivered despite political changes and serious initial lobbying by discontent contractors. The only effect on the project was a delay of about 2 months in the implementation.

LFA

The objectives, activities and expected results were put into a simple LFA matrix at the time the request for financing via Sida was made but was not at that time developed or processed within the RSRD, who then lacked the necessary knowledge and time required. However, as part of the management training it was one year later decided to review the LFA and implement an improved version. As the Sida guidelines rather than the SRA "score card model" was to be followed, the Monitoring Consultant provided hands on guidance to produce the version May 2005, which was processed at seminars in Sweden.

The reporting and follow up has since followed the framework of this LFA (see Appendix 3) although some minor adjustments later were made (see Appendix 4)

Main Objectives and Achievements

Overall objectives

Five overall objectives of the twinning were identified in the LFA together with objectively verifiable indicators.

- Adapt policies and guidelines to the EU standards
- Facilitate cooperation with IFIs
- Stimulate economic growth
- Enhance the development of the private contracting sector
- Reduce the burden to public finance and the society by improved road safety

These objectives are very ambitious and also difficult to objectively verify. Especially it is difficult to verify some of them over such a short period as 3 years in an environment with major political and management changes.

Notwithstanding what is said above it is quite clear that noticeable and in some cases exceptional progress has been made. The main achievements are

- In three areas out of four SRA has decided new policies and also started implementing these policies. These policies are in the areas of

  Traffic Safety (see Appendix 5);

  Road Maintenance (see Appendix 6); and

  Environmental Protection (see Appendix 7).

  In addition a number of handbooks and guidelines have been provided as well as a paper on Gender Policy (see under each sub area and Appendix 8). The importance of Traffic Safety and Environment is also indicated in the revised organization where they are shown as individual departments which together with Quality Department form a Sector reporting directly to the Top Management (see Appendix 9)

  The above indicates that significant achievements towards the first overall goal have been made. It should also be noted that in several of the cooperation areas PERS has reached a level of development making further assistance in this form unnecessary (see below "Discussion and Conclusions).

- The introduction of competitive tendering and performance based contracting for routine maintenance has been a very major success during the last two winters reducing the winter maintenance costs by 40-70% compared with Central Serbia (see Appendix 10). At the same time the standard has increased rather than decreased and the contractors are satisfied being paid on objective grounds.

  This is considered to be a major success and a strong indicator that the project has contributed to stimulate economic growth and in particular to enhancing the development of the private contracting sector including the capacity of PERS to handle also other types of performance based contracting. Another major indicator of success is the decision to introduce the Pilot Project Model in entire Serbia. Since successful road maintenance will greatly extend the life of the roads it has an impact on the overall economy but whether this means a reduction of borrowing from IFIs is beyond the possibilities to evaluate in this context.

- As regards reducing the burden to public finance by improved traffic safety, a solid groundwork is laid but this goal remains a goal since the Road Safety Law is still not adopted by the Parliament.

Implementation and Progress Reporting

Methodology

The methodology adopted by SRA in all projects involving some kind of assistance to another Road Authority is very simple and straight forward. The sister Authority must send their senior representatives to visit the SRA and have a firsthand look at areas of interest. SRA will assist in arranging such visits by and prepare the agenda for the visiting Authority. Normally SRA could make available their specialists and many times also staff with experience from the relevant country or at least the region. However, it is very important that the visitors both select areas of interest and make the initial evaluation whether they believe what they see is not only desired but also possible to transform into their own environment, considering not only technical but also cultural and political aspects.

Should further contacts reveal a serious interest to proceed the SRA would normally make their own evaluation of the viability while the discussion is ongoing and perhaps resulting in an agreement either of cooperation with or without cost implications or, as in this case, in a twinning with a sponsoring donor/IFI. Part of the viability evaluation is to assess if SRA really have the resources required and also to advise where to find the "best practice" if not at SRA.

The method then applied will vary but a normal agreement includes seminars and study visits in either country over an extended period. The implementation shall be done by the receiving Authority and it shall be clear that the owner of the project always primarily is the receiving country. If a major program is agreed SRA also consider it necessary to second at least one senior SRA staff on long term in the receiving country. Although with some difficulty this was also possible to achieve in this program.

When conducting international technical seminars SRA has among its staff a number of specialists working in EU and other international committees and their experience are often utilized to conduct seminars. Seminars, handouts etc are always documented and provided to the participants. In this project all relevant documentation was also enclosed to the Progress Reports or made available on a web site www.projectplace.se to enhance the dissemination of the information.

(The original activities is found in Appendix 11)

Activities

The activities have been reported in the project reports (see below) following the same headings and sub headings as in the LFA.

Progress Reports

In addition to this Completion Report there are four semi-annual Progress Reports plus an Inception Report and the Final Report each containing a number of enclosures with detailed information and evaluations as well as references to the project website. The latter was created to simplify dissemination of information to counterparts and other key stakeholders and is still available until 2007-12-31. The reports with enclosures are available on CD

The Final Report dated September 2007 contains a section, "LFA-Based Activities and Achievements", with details on outputs from each activity as well as a recommendation. The report is enclosed for ease of reference (Appendix 18).

Results

Technical results

The individual results for each cooperation area are discussed below. The references refer to the LFA.

Road Safety Management (LFA 3.1)

1. Foundation for the new organization and staffing is laid

   A new Department has been created in PERS under the Sector for Quality, Traffic Safety and Environment (see Organization Schedule, Appendix 9)

2. New policies related road safety management adopted and converted into procedures and operational guidelines

   A new Traffic Safety Policy has been formally adopted by the General Director (see Appendix 5)

   A draft 5-year Action Plan has been developed.

3. New operational principles for monitoring of and reporting on road safety management work adopted

   The result has not been achieved although some of the basic work was done in the management part (see LFA 3.4 below).

4. New principles for appraisal of projects to account for road safety impact adopted

   Procedures for Road Safety Audits and Black Spot Analyses have been provided. The Road Safety Audit is mandatory in the new Traffic Safety Law. However, as the new Traffic Safety Law still has not been adopted the new principles have not got the legal backing required to take full effect, although the practical work based on the new principles is ongoing.

5. Staff adequately trained to operate new procedures and principles

   The expected result is here not the training but the end result that the staff is capable of operating the new procedures and principles in their daily work. The activities to reach this goal have been adequate and the fact that PERS now operates a Traffic Safety Department is a strong indication that the training has been successful

Routine and Winter Maintenance (LFA 3.2)

1. New policies and procedures for competitive tendering for road maintenance adopted and implemented

   The first model for tender documents covering performance based routine and winter maintenance has been drafted as part of the Twinning Project. Experiences from this draft has been input to the version covering Serbia state roads

   PERS has decided to expand the Pilot Project to include the entire state road network. The implementation will take place from 2007/2008. Early November 2007 supplementary work assisting PERS to install the payment model for winter maintenance on a Serbian server will be done.

2. RWIS will be in operation and used to develop the winter maintenance contracts

The RWIS with initially 6 weather stations for the Pilot Project have been a success. The results from the two winters in use have been exceptionally successful with cost reductions of 40-70% (see Appendix 10). The results have been analyzed and used as input in the development of the system, which now shall cover the whole of Serbia.

A separate evaluation has contributed

to improve the procurement documents and is reported in Progress Report 3 (see also enclosed Final Report)

3. Staff adequately trained to operate new procedures and principles.

   The training program has managed not only to train staff at PERS but also contractor and supervisory staff capable of operating the new contracts in the pilot project. The next question is if the training of trainers has been adequate to cover the need now when the project is expanded. This question can only be answered after the first year.

Environmental Protection (LFA 3.3)

1. New environmental impact mitigation measures are effective

   The groundwork is done. The Environmental Law is in place and an Environmental Policy is adopted by PERS (see Appendix 7). A department has been organized in a sector directly responsible to the Top Management thus the status of environmental and safety issues have been strengthened in PERS (cf Traffic Safety above). The department has been influential and proven capable of conveying their messages to the other departments. This forms a good basis for influencing future road design and maintenance.

   Performing an EIA process in accordance with new Law has been successfully established, yet the effectiveness of the above when looking at the roads remains to be evaluated.

2. Comprehensive guidelines for EIA adapted to Serbian environmental legislation

   As reported in the Final Report all or most of the relevant Swedish guidelines have been translated to Serbian, adapted to Serbian legislation and prepared for application as PERS Environmental Publications. The "Expert Seminars" have also provided PERS with material suited for further development of Serbian guidelines.

3. Staff adequately trained to operate new procedures and principles

   The Twinning Project has not only delivered and implemented an efficient training program but the end result is an efficient department staffed with highly competent specialists. However, considering the tasks, the department is like many others still understaffed.

Road and Bridge Maintenance Management (LFA 3.4)

1. Improved Maintenance Management Organization

   The obvious and hands-on improvements are reported under maintenance above. The intention with this project was to introduce a network planning

covering also maintenance but involving both top management and other departments (strategic planning, design, information systems...). This could be a most difficult task under the best of circumstances and was certainly not made easier considering the difficulties with new organization, understaffing and historical approaches to management.

Despite these problems the seminars conducted have proven to be instrumental in arriving at new accepted policies in several areas not only maintenance. However, there is still much work to do developing management thinking in strategic planning on a general basis, which must be done as the first step towards state of the art road management.

2. New policy for road asset management drafted.

   New policies have been drafted for Maintenance, Traffic Safety and Environment. The work has been done involving the Steering Committee and interdepartmental liaison, demonstrating a new management philosophy.

   The new policy is general and does not specifically target the establishment of a systematic process of maintaining, upgrading, and operating the network, though it contains the major elements of what will be required.

3. Assisting RSRD on describing suitable procedures for assessment of Bridges in general and evaluation of Bearing Capacity of bridges in particular.

   The original objective intended here was to establish strategic thinking and an activity plan for classification of the bridges of Serbia. In addition a very specific sub project to develop a methodology to estimate the bearing capacity of bridges was included.

   The project resulted in providing a number of key documents regarding Bearing Capacity and Bridge Inspection including presentations and introductions by the most experienced staff and experts from the SRA but the result is still below target. The main reasons are understaffing in PERS and difficulties to get the project going, which also was a main reason for reallocation funds to the maintenance project.

4. Staff adequately trained to operate new procedures and principles.

   The training and seminars executed can only be seen as a start and an introduction. It falls short of the target that the PERS staff should be adequately trained to operate the new methods (strategic bridge planning and evaluation of remaining Bearing Capacity in old bridges)

Budget and Budget Follow Up

The original budget was set at SEK 13000000 from Sida plus Dinar 7502000 from PERS[2]. The detailed budget is shown in Appendix 13.

The costs have been closely monitored and events during the course of execution causing additional costs have been managed by jointly (SRA/PERS) setting priorities and reallocating funds between sub projects. The original project was completed at a cost of SEK12738613 plus PERS' direct financial inputs of Dinar 7487975 , (Appendices 14 and 15)

The left over in SEK made it possible add value to the project by extending the Agreement with Sida to include also assistance installing the winter "Payment Model" on PERS' own server (see Appendix 16). SRA has paid all development of this model on its own budget. The direct access on the PERS server is a necessity when the Pilot Project now will be extended to cover the whole Serbia. The project including this extension was completed at a cost of SEK12934695 (see Appendix 17).

Time Schedule and Resource Utilization, Deviations

The original and final Time Schedules for each activity with resources in man weeks are found in Appendices 11 and 12 respectively. The total amount of man weeks was planned to be 310 and ended on 312. However, the resources for each sub project have been reallocated to meet unforeseen demands and changed circumstances. The most significant deviation is the additions to the winter maintenance component to meet the additional training needs for both PERS and contractor staff and to assist in calculating winter costs and contractor remuneration.

The resources were redistributed from the Traffic Safety and Management components and this was made against the background that

- the Traffic Safety Law was (and is) substantially delayed; and
- the ongoing reorganization of RSRD into PERS made it difficult to arrange the training on this level
- the understaffing of the Bridge Department delayed the input considerably

[2] Rates of exchange per 1st November 2007:€1.00=SEK9.17=RSD77.14

Discussion and Conclusions

Methodology

Since there has been a long discussion in the Evaluation Report on the suitability of twinning versus a standard consultancy agreement, it should primarily be noted that no development project can be successfully implemented without the commitment and support of the Top Management of the receiving agency and in the case of twinning without the commitment and support of the Top Management in both agencies. Another pre-requisite is that the implementing project staff regardless of the methodology chosen must have not only an intimate hands-on experience of their specialist areas but also the ability to transfer their knowledge and motivate their counterparts.

Having said the above there are other circumstances which should considered and in particular the flexibility allowed in a twinning arrangement to adapt to changed circumstances, something that has proven very necessary in this project. Without this flexibility it would have been next to impossible to achieve the high degree of cost efficiency demonstrated in this project.

Another aspect to be considered is the availability of experts with front line knowledge. In the areas of cooperation such knowledge is hard to find in Sweden outside the state authorities.

LFA

The LFA was considerably revised after the project had started. The reason is simply lack of time as the implementation of the maintenance component could not be postponed. While this approach is undesirable it still had the benefit of the LFA being properly processed at a seminar by the top managers of PERS. However, the rule should of course be that once agreed the LFA should not be amended.

Results and sustainability

The project has achieved most of the goals and in some cases (maintenance by contract/performance based maintenance) more than fulfilled the expectations. PERS is fully competent to sustain and develop the result in all areas of cooperation but would benefit from assistance with additional training/seminars in winter maintenance and use of RWIS when expanding the pilot project to cover the whole country.

When the Law on Traffic Safety is implemented a more comprehensive training and information program should be started and in this area support in some form would be required. However, this must not necessarily be in the form of a twinning agreement. The same applies to the future development of the Road and Bridge Maintenance Management component, which well could be implemented together with a consultant. As regards major parts of the Bridge Management it should also be noted that here the Highway Institute would perhaps be a more appropriate receiving agency.

APP 1.

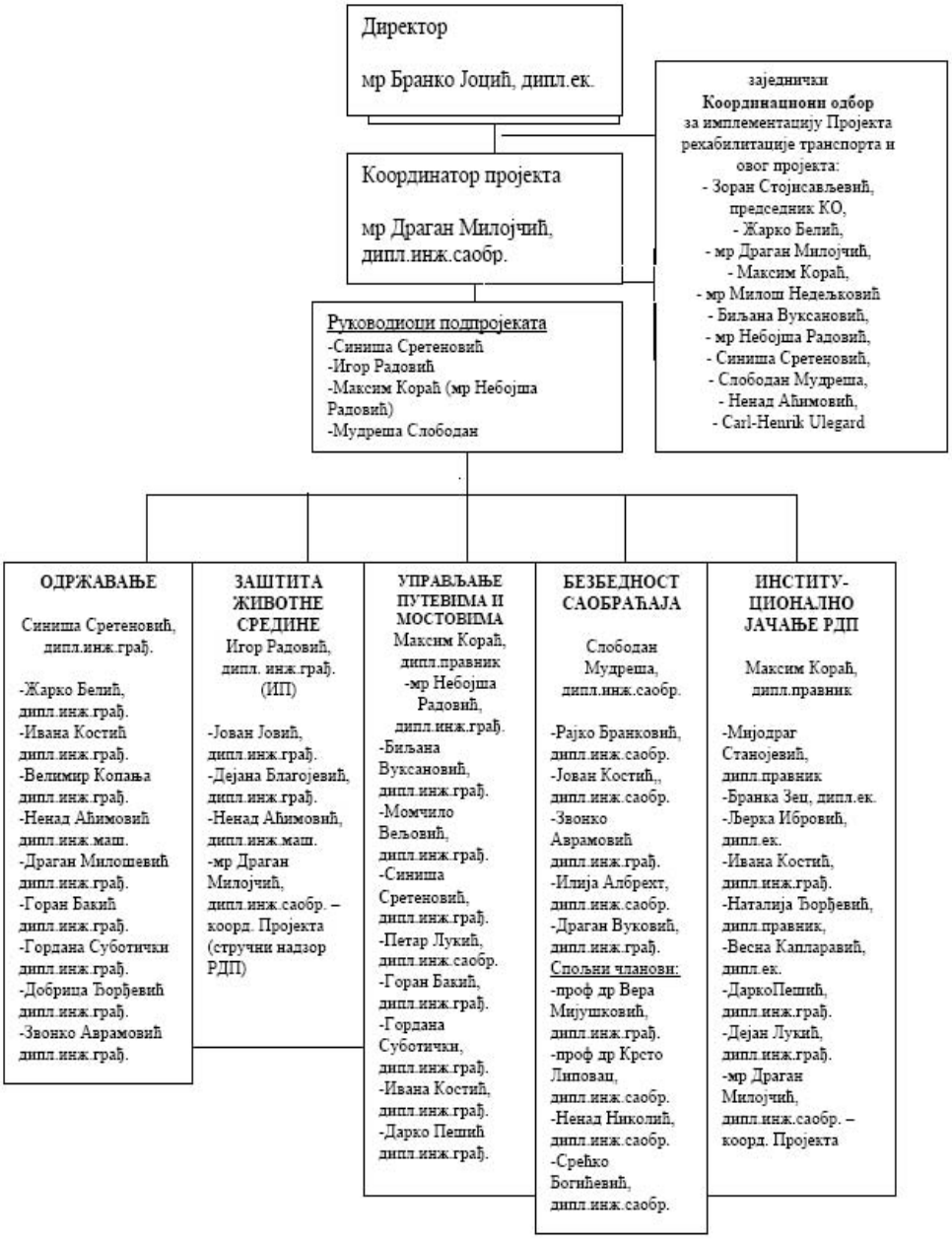
Organizational schemme, Twinning

ОРГАНИЗАЦИОНА ШЕМА

Назив пројекта: **Споразум о сарадњи између СНРА и РДП (Twinning Agreement)**
Број пројекта: Пројекат бр: С 82158
Решење о оснивању пројекта: 953-00-3224

Ревизија бр:1

Датум: 07.06.2005



APP 2.

Decision on Project establishment

REPUBLIC OF
SERBIA
ROADS
DIRECTORATE

DECISION ON PROJECT ESTABLISHMENT No 953-00-3224

Project Name:
TWINNING AGREEMENT (TA), Twinning Arrangement between the Swedish National Road Administration (SNRA) and the Republic of Serbia Road Directorate (RSRD).

(Cooperation in Capacity Building and Technical Assistance to the Roads Directorate of the Republic of Serbia)
Decision on Project Establishment: 953-00-3224/05
Project No.: S 82158 / 2004

Date of Issuance:
05 May 2005

Address Donor:

Swedish National Road Administration (SNRA)
SE-78187 Borlänge
Sweden

Agreement No:
Twinning Agreement RSRD, Serbia C 82158 / 2004

Project Manager:
Dragan Milojčić, B.Sc (Traffic), M.Sc (Env.), Project Coordinator

Scope:
The Twinning Agreement is a supplement to the project of the World Bank – TRP (Transport Rehabilitation Project).
It enables effective approach to the capacity building and technical assistance;
It reduces time and efforts needed for harmonization with EU legislation, standards and procedures; it rehabilitates and builds capacities in the Serbian road sector
The aim of TA is capacity building of the Roads Directorate of Serbia complementary to TRP outcomes

TA should:

i. Provide service and training for RD capacity building in order to introduce regular winter road maintenance and road rehabilitation
ii. Initiate the traffic safety issues with the focus on the responsibility of the RD
iii. Initiate ecological issues in connection with the roads and to support establishment of RD eco-unit
iv. Improve management of road and bridge maintenance
v. Enable study visits and personnel exchange

TA should provide technical assistance and training for the implementation and management of "maintenance according to the Agreement", improvement of the procedures for purchase and works supervision, establishment of RWIS, development and management of Plans and Rules for traffic safety and environmental protection, improvement of collection of data related to roads, bridges, traffic, etc.

Expert assistance and training shall be mainly oriented to a higher and medium level of RD staff, as well as to local consulting companies.

Limits of Authority of the Project Leaders, Special Instructions:
By the Decision no. 953-00-2409 dated 17.03. 2005. – Project Leader (Project Coordinator) is authorized to manage the Twinning Project under Swedish National Road Administration (SNRA) - Twinning Agreement – assisted by a Team of Experts which is established by a special decision of the General Manager. From the date this Decision comes into force Dragan Milojčić, as a Project Manager, is obliged to act fully in compliance with the Decision No. 953-00-2021 dated 17.03.2005, as well as with
- Project Proposal and the Twinning Agreement including Annexes 1, 2 and 3.

Steering Committee for the Implementation of Transport Rehabilitation Project and the Twinning Agreement, established by a special decision, guides and coordinates professional activities within the Project.

Payment mode: SIDA / RD			*Roles:*		*Summary Schedule:*	
Phase	*%*	*Amount*	*Contractor (RD)*	*Participants: sub-project leaders+ teams*	*Key event*	*Date*
			Aleksandar Radojčić, BCE, PhD, (until 30.04.2005.)		*Beginning*	*1 February 2004*
			Aleksandar Radojčić, BCE, PhD, (until 30.04.2005.)		*Initial Report*	*15 June 2004*
			Aleksandar Radojčić, BCE, PhD, (until 30.04.2005.)		*Progress Report 1*	*April-May 2005*
			Dragan Milojčić, BE (Traffic), MSc (from 30.04. 2005)	-Siniša Sretenović -Igor Radović -Maksim Korać (Nebojša Radović) - Slobodan Mudreša	*Progress Report 2*	*October-November 05*
			Dragan Milojčić, BE (Traffic), MSc	- Siniša Sretenović -Igor Radović -Maksim Korać (Nebojša Radović) - Slobodan Mudreša	*Progress Report 3*	*April-May 2006*
			Dragan Milojčić, BE (Traffic), MSc	Siniša Sretenović -Igor Radović -Maksim Korać (Nebojša Radović) - Slobodan Mudreša	*Progress Report 4*	*October-November 06*
			Dragan Milojčić, BE (Traffic), MSc	Siniša Sretenović -Igor Radović -Maksim Korać (Nebojša Radović) - Slobodan Mudreša	*Completion*	*31 March 2007*
			Dragan Milojčić, BE (Traffic), MSc	Siniša Sretenović -Igor Radović -Maksim Korać (Nebojša Radović) - Slobodan Mudreša	*Final Report*	*Until 1 May 2007*

Decision received by:						*Decision issued by:*
Dragan Milojčić, Project Manager		Nebojša Radović, MSc, BCE		Biljana Vuksanović, BCE		**Branko Jocić, BEc.** **General Manager**
Zoran Stojisavljević, BCE		Slobodan Mudreša, BE (Traffic)		Miloš Nedeljković, BEc, MSc		
Maksim Korać, BL		Carl-Henrik Ulegard		Igor Radović, BCE		*Seal*
Siniša Sretenović, BCE		Nenad Ačimović, BME		Archive		

APP 3.

LFA June 2005

Revised LFA Matrix; 3 June 2005

Project:	Twinning Arrangements between Swedish Road Administration (SRA) and Republic of Serbia Road Directorate (RSRD)	Client:	RSRD – Republic of Serbia Road Directorate
		Consultant:	SRA
Project No.:			
Country/Region:	Serbia	Agreement period:	2004 - 2007

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Overall objectives	1 Adapt legislation and standards to the EU standards. 2 Facilitate cooperation with IFIs 3 Stimulate economic growth 4 Enhance the development of the private contracting sector 5 Reduce the burden to public finance and the society by improved road safety	- Compliance with EU environmental legislation/procedures - Reduced transaction costs for borrowing for roads from IFIs, to be verified by interviews - Reduced transport costs as result of improved road management, as verified through roughness surveys - Increase participation of private sector to be verified by number of competitive public tenders, the number of bids per tender and the total amount of these tenders - Number of road accidents reduced as verified through official statistics	- Interviews IFIs staff - Project completion report - In depth report (Evaluation Report)	- Timely action by government on the passing of required new legislation - Measures are taken to ensure a sufficient allocation of funds to the road sector - Official and reasonably reliable statistics exists or can easily be made available - The private sector can exploit new opportunities in road sector and privatization of sector continues

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Project objectives	Improved overall performance of SRD	- New procedures for monitoring of, planning and budgeting for road maintenance are available - New policies for tendering for road works adopted and implemented - New procedures for procurement by way of competitive tendering are operational - New procedures for EIA and environmental monitoring are operational - New policies based on the new law on traffic safety adopted and implemented - Supplementary Legislation for road traffic safety is in place	- Semi annual progress report - Project completion report - WB evaluation reports - Final reports from each of the activity areas (1-5).	- Modern management principle is implemented by the Ministry. - Timely action by Ministry on issues of Ministerial concern (budgets, legislation and regulations). - Coordination between IFIs and donors on policies and operational principles. - Other government authorities, organisations and projects support the new road legislation and policies.

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.1 Road safety management:** 1. Foundation for the new organisation and staffing is laid. 2. New policies related to road safety management adopted and converted into procedures and operational guidelines. 3. New operational principles for monitoring of and reporting on road safety management work adopted 4. New principles for appraisal of projects to account for road safety impact adopted 5. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures Review of road planning manual. Training programmes concluded successfully	- Semi annual progress reports	- The new law on traffic safety is in place. - The managerial level of the newly established project organisation will remain till the end of this project - Timely SRD management support for proposed new policies on road safety - Timely approval by SRD management of new regulatory procedures - Use of cost-benefit analysis in road planning

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.2 Routine maintenance of roads in summer and winter:** 1. New policies and procedures for competitive tendering for road maintenance adopted and implemented 2. RWIS will be in operation and used to develop the winter maintenance contracts 3. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ Expansion of the Pilot Project to other maintenance districts Functioning Network and number of installed RWIS Stations (6 no, Pilot Project) Introduction of preventive winter maintenance in new contracts Training programmes concluded successfully	- Semi annual progress reports	- The new law on public roads in place - Timely management support for proposed new policies and procedures for tendering for road maintenance - World Bank Pilot Projects implemented on timely basis

	Intervention logic	Objectively verifiable indicators	Sources of verification products (outputs)	Important assumptions
Results	**3.3 Environmental protection:** 1. New environmental impact mitigation measures are effective 2. Comprehensive guidelines for EIA adapted to Serbian environmental legislation 3. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ - Acceptance of the environmental guidelines to be proposed by the new environmental unit - Training programmes concluded success-fully	- Environmental questioner - Semi annual progress reports	- New environment laws are implemented - New environmental unit is operational

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.4 Road and bridge maintenance management:** 1. Improved maintenance Management organisation 2. New policy for road asset management drafted. 3. Assisting RSRD on describing suitable procedures for assessment of Bridges in general and evaluation of Bearing Capacity of bridges in particular. 4. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ ' - Strategy and activity plan for the classification of the RSRD bridge stock is drafted - Training programmes concluded successfully .	- Assessment of the Evaluation form after each course - Semi annual reports	- Law on public roads in place

	Intervention logic		Important assumptions
Activities	*3.1 Road safety management:* i) Assistance in development of road safety management strategy and plan ii) Assistance to RSRD in proposals for needed supplementary legislation iii) Assistance in planning and preparation for introduction of road safety audits. iv) Development of methodology to identify cost-efficient countermeasures to improve safety at identified accident black spots v) Revision/development of guidelines for road safety aspects of road design vi) Revision/development of guidelines for road signs, road markings and directional signing. vii) Development of methodology to include monetary estimates of accident costs in planning of road improvements and routine maintenance. viii) Development of methodology to estimate accident costs and application of methodology	Project and costs 3.1 Road Safety management **Swedish financing** Operating costs 318 550 Technical assistance 103 Mws 3 461 350 **Total Swedish cost 3 779 900** **Local financing** Operating costs 2 725 660 Total local cost in local currency 2 725 660 **Total local cost in SEK 381 600** **Total cost for Sweden and Rec. Country in SEK** **4 161 500**	- Coordination with Parallell project financed by EBRD. - Staff for training is appointed and given sufficient time for practice. - Staff is appointed and given sufficient time for participating in the development. - Staff is appointed and given sufficient time for participating in the development.

	Intervention logic		Important assumptions
Activities	*3.2 Routine maintenance of roads in summer and winter:* i) Forms for bidding documents and procurement guidelines; training ii) Assistance in evaluation of bids for World Bank Pilot Project. iii) Introduction of pre-qualification system for contractors in routine maintenance. iii) Preparation of plan for network of RWIS stations in the World Bank Pilot areas. iv) Assistance during implementation of RWIS plan. v) Training of RSRD staff and contractors in contract management and supervision v) Support to RSRD during annual reviews of World Bank Pilot Project	Project and costs: 3.2 Routine maintenance of roads in summer and winter: **Swedish financing** Operating costs — 273 000 Technical assistance — 88 Mws — 2 882 600 **Total Swedish cost** — **3 155 600** **Local financing** Operating costs — 2 004 360 Total local cost in local currency — 2 004 360 **Total local cost in SEK** — **280 600** **Total cost for Sweden and Rec. Country in SEK** — **3 436 200**	- Qualified staff for are appointed and given sufficient time for practice.
	3.3 Environmental protection in the road sector: i) Review of environmental issues in the Serbian road sector. Seminar on environmental protection and basic EIA ii) Seminar on EIA (step 2) iii) Assistance during creation of environmental unit in RSRD and in: 1 development of specifications for mitigation of environmental impact at road works; 2. review of quarry operations and asphalt production; and 3.provision of sample environmental assessment and management plans	Project and costs: 3.3 Environmental protection in the road sector **Swedish financing** Operating costs — 136 500 Technical assistance — 35 Mws — 1 224 900 **Total Swedish cost** — **1 361 400** **Local financing** Operating costs — 1 002 180 Total local cost in local currency — 1 002 180 **Total local cost in SEK** — **140 300** **Total cost for Sweden and Rec. Country in SEK** — **1 501 700**	- Qualified staff for are appointed and given sufficient time for practice.

	Intervention logic		Important assumptions
Activities	*3.4 Road and bridge maintenance management:* *Pavement:* i) Seminars on: • Overview Pavement & Bridge Management Policy • Maintenance activities in Serbia and Europe • Data and data collection ii) Trainee Courses on planning, covering: • Strategic planning • Programme analysis • Project analysis iii) Review of axle load standards *Bridge* iv) Initial review of current practice v) Load-bearing classification of bridges vi) Object level planning, work programming and procurement. vii) Strategic bridge planning and general sup-port.	Project and costs : 3.4 Road and bridge maintenance management **Swedish financing** Operating costs — 136 500 Technical assistance — 40 Mws — 1 399 900 **Total Swedish cost** — **1 536 400** **Local financing** Operating costs — 1 002 179 Total local cost in local currency — 1 002 179 **Total local cost in SEK** — **140 300** **Total cost for Sweden and Rec. Country in SEK** — **1 676 700**	- Good co-operation between different departments particularly Planning- Maintenance and Information Department. - Qualified staff are appointed for taking part in the arranged courses - Appointed staff are given sufficient time for practice.

	3.5 Staff exchange and study tours: i) Staff exchange ii) Study tours	Project and costs : 3.5 Staff exchange and study tours **Swedish financing** Operating costs Technical assistance **Total Swedish cost** **Local financing** Operating costs Total local cost in local currency **Total local cost in SEK** **Total cost for Sweden and Rec. Country in SEK**	 14 Mws 	 533 500 495 100 **1 028 600** 768 424 768 424 **107 600** **1 136 200**	The 'right' staff can participate. Selection is purely on merit.

Summary of Project costs

3.1 Road Safety management		
Swedish financing	SEK	3 779 900
Local financing	DIN	2 725 660
3.2 Routine maintenance of roads in summer and winter		
Swedish financing	SEK	3 155 600
Local financing	DIN	2 004 360
3.3 Environmental protection in the road sector		
Swedish financing	SEK	1 224 900
Local financing	DIN	1 002 180
3.4 Road and bridge maintenance management		
Swedish financing	SEK	1 536 400
Local financing	DIN	1 002 180
3.5 Staff exchange and study tours		
Swedish financing	SEK	1 028 600
Local financing	DIN	768 420
Total Swedish financing in SEK	SEK	10 725 400
Total local financing in local currency	DIN	7 502 800
Total cost for Sweden and Rec. Country in SEK	**SEK**	**12 826 200**

APP 4.

LFA April 2007

Revised LFA Matrix: 10 April 2007

Project:	Twinning Arrangements between Swedish Road Administration (SRA) and Republic of Serbia Road Directorate (RSRD)	Client:	RSRD – Republic of Serbia Road Directorate
		Consultant:	SRA
Project No.:			
Country/Region:	Serbia	Agreement period:	2004 - 2007

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Overall objectives	1 Adapt policies and guidelines to the EU standards. 2 Facilitate cooperation with IFIs 3 Stimulate economic growth 4 Enhance the development of the private contracting sector 5 Reduce the burden to public finance and the society by improved road safety	- Compliance with EU environmental legislation/procedures - Reduced transaction costs for borrowing for roads from IFIs, to be verified by interviews - Reduced transport costs as result of improved road management, as verified through roughness surveys - Increase participation of private sector to be verified by number of competitive public tenders, the number of bids per tender and the total amount of these tenders - Number of road accidents reduced as verified through official statistics	- Interviews IFIs staff - Project completion report - In depth report (Evaluation Report)	- Timely action by government on the passing of required new legislation - Measures are taken to ensure a sufficient allocation of funds to the road sector - Official and reasonably reliable statistics exists or can easily be made available - The private sector can exploit new opportunities in road sector and privatization of sector continues

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Project objectives	Improved overall performance of SRD	- New procedures for monitoring of, planning and budgeting for road maintenance are available - New policies for tendering for road works adopted and implemented - New procedures for procurement by way of competitive tendering are operational - New procedures for EIA and environmental monitoring are operational - New policies based on the new law on traffic safety adopted and implemented - Supplementary handbooks and guidelines for road traffic safety is in place	- Semi annual progress report - Project completion report - WB evaluation reports - Final reports from each of the activity areas (1-5).	- Modern management principle is implemented by the Ministry. - Timely action by Ministry on issues of Ministerial concern (budgets, legislation and regulations). - Coordination between IFIs and donors on policies and operational principles. - Other government authorities, organisations and projects support the new road legislation and policies.

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.1 Road safety management:** 1. Foundation for the new organisation and staffing is laid. 2. New policies related to road safety management adopted and converted into procedures and operational guidelines. 3. New operational principles for monitoring of and reporting on road safety management work adopted 4. New principles for appraisal of projects to account for road safety impact adopted 5. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures Review of road safety planning manual. Training programmes concluded successfully	- Semi annual progress reports	- The new law on traffic safety is in place. - The managerial level of the newly established project organisation will remain till the end of this project - Timely SRD management support for proposed new policies on road safety - Timely approval by SRD management of new regulatory procedures - Use of cost-benefit analysis in road planning

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.2 Routine maintenance of roads in summer and winter:** 1. New policies and procedures for competitive tendering for road maintenance adopted and implemented 2. RWIS will be in operation and used to develop the winter maintenance contracts 3. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ Expansion of the Pilot Project to other maintenance districts Functioning Network and number of installed RWIS Stations (6 no, Pilot Project) Introduction of preventive winter maintenance in new contracts Training programmes concluded successfully	- Semi annual progress reports	- The new law on public roads in place - Timely management support for proposed new policies and procedures for tendering for road maintenance - World Bank Pilot Projects implemented on timely basis

	Intervention logic	Objectively verifiable indicators	Sources of verification products (outputs)	Important assumptions
Results	**3.3 Environmental protection:** 1. New environmental impact mitigation measures are effective 2. Comprehensive guidelines for EIA adapted to Serbian environmental legislation 3. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ - Acceptance of the environmental guidelines to be proposed by the new environmental unit - Training programmes concluded success-fully	- Environmental questioner - Semi annual progress reports	- New environment laws are implemented - New environmental unit is operational

	Intervention logic	Objectively verifiable indicators	Sources of verification	Important assumptions
Results	**3.4 Road and bridge maintenance management:** 1. Improved maintenance Management organisation 2. New policy for road asset management drafted. 3. Assisting RSRD on describing suitable procedures for assessment of Bridges in general and evaluation of Bearing Capacity of bridges in particular. 4. Staff adequately trained to operate new procedures and principles.	SRD Management decisions on: - organisation and staffing - policy - procedures/ ' - Strategy and activity plan for the classification of the RSRD bridge stock is drafted - Training programmes concluded successfully .	- Assessment of the Evaluation form after each course - Semi annual reports	- Law on public roads in place

	Intervention logic		Important assumptions
Activities	*3.1 Road safety management:* i) Assistance in development of road safety management strategy and plan ii) Assistance to RSRD in proposals for needed supplementary technical guidelines and handbooks iii) Assistance in planning and preparation for introduction of road safety audits. iv) Development of methodology to identify cost-efficient countermeasures to improve safety at identified accident black spots v) Revision/development of guidelines for road safety aspects of road design vi) Revision/development of guidelines for road signs, road markings and directional signing. vii) Development of methodology to include monetary estimates of accident costs in planning of road improvements and routine maintenance. viii) Development of methodology to estimate accident costs and application of methodology	Project and costs 3.1 Road Safety management **Swedish financing** Operating costs 318 550 Technical assistance 103 Mws 3 461 350 **Total Swedish cost 3 779 900** **Local financing** Operating costs 2 725 660 Total local cost in local currency 2 725 660 **Total local cost in SEK 381 600** **Total cost for Sweden and Rec. Country in SEK** **4 161 500**	- Coordination with Parallell project financed by EBRD. - Staff for training is appointed and given sufficient time for practice. - Staff is appointed and given sufficient time for participating in the development. - Staff is appointed and given sufficient time for participating in the development.

	Intervention logic		Important assumptions
Activities	*3.2 Routine maintenance of roads in summer and winter:* i) Forms for bidding documents and procurement guidelines; training ii) Assistance in evaluation of bids for World Bank Pilot Project. iii) Introduction of pre-qualification system for contractors in routine maintenance. iii) Preparation of plan for network of RWIS stations in the World Bank Pilot areas. iv) Assistance during implementation of RWIS plan. v) Training of RSRD staff and contractors in contract management and supervision v) Support to RSRD during annual reviews of World Bank Pilot Project	Project and costs: 3.2 Routine maintenance of roads in summer and winter: **Swedish financing** Operating costs 273 000 Technical assistance 88 Mws 2 882 600 **Total Swedish cost 3 155 600** **Local financing** Operating costs 2 004 360 Total local cost in local currency 2 004 360 **Total local cost in SEK 280 600** **Total cost for Sweden and Rec. Country in SEK 3 436 200**	- Qualified staff for are appointed and given sufficient time for practice.
	3.3 Environmental protection in the road sector: i) Review of environmental issues in the Serbian road sector. Seminar on environmental protection and basic EIA ii) Seminar on EIA (step 2) iii) Assistance during creation of environmental unit in RSRD and in: 1 development of specifications for mitigation of environmental impact at road works; 2. review of consequences of the Serbian IPPC Law to quarry operations and asphalt production; and 3.provision of sample environmental assessment and management plans	Project and costs: 3.3 Environmental protection in the road sector **Swedish financing** Operating costs 136 500 Technical assistance 35 Mws 1 224 900 **Total Swedish cost 1 361 400** **Local financing** Operating costs 1 002 180 Total local cost in local currency 1 002 180 **Total local cost in SEK 140 300** **Total cost for Sweden and Rec. Country in SEK 1 501 700**	- Qualified staff for are appointed and given sufficient time for practice.

	Intervention logic		Important assumptions
Activities	*3.4 Road and bridge maintenance management:* *Pavement:* i) Seminars on: • Overview Pavement & Bridge Management Policy • Maintenance activities in Serbia and Europe • Data and data collection ii) Trainee Courses on planning, covering: • Strategic planning • Programme analysis • Project analysis iii) Review of axle load standards *Bridge* iv) Initial review of current practice v) Load-bearing classification of bridges vi) Object level planning, work programming and procurement. vii) Strategic bridge planning and general sup-port.	Project and costs : 3.4 Road and bridge maintenance management **Swedish financing** Operating costs — 136 500 Technical assistance — 40 Mws — 1 399 900 **Total Swedish cost** — **1 536 400** **Local financing** Operating costs — 1 002 179 Total local cost in local currency — 1 002 179 **Total local cost in SEK** — **140 300** **Total cost for Sweden and Rec. Country in SEK** — **1 676 700**	- Good co-operation between different departments particularly Planning- Maintenance and Information Department. - Qualified staff are appointed for taking part in the arranged courses - Appointed staff are given sufficient time for practice.

	3.5 Staff exchange and study tours: i) Staff exchange ii) Study tours	Project and costs : 3.5 Staff exchange and study tours **Swedish financing** Operating costs Technical assistance **Total Swedish cost** **Local financing** Operating costs Total local cost in local currency **Total local cost in SEK** **Total cost for Sweden and Rec. Country in SEK**	 14 Mws 	 533 500 495 100 **1 028 600** 768 424 768 424 **107 600** **1 136 200**	The 'right' staff can participate. Selection is purely on merit.

Summary of Project costs

3.1 Road Safety management		
Swedish financing	SEK	3 779 900
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3.2 Routine maintenance of roads in summer and winter		
Swedish financing	SEK	3 155 600
Local financing	DIN	2 004 360
3.3 Environmental protection in the road sector		
Swedish financing	SEK	1 224 900
Local financing	DIN	1 002 180
3.4 Road and bridge maintenance management		
Swedish financing	SEK	1 536 400
Local financing	DIN	1 002 180
3.5 Staff exchange and study tours		
Swedish financing	SEK	1 028 600
Local financing	DIN	768 420
Total Swedish financing in SEK	SEK	10 725 400
Total local financing in local currency	DIN	7 502 800
Total cost for Sweden and Rec. Country in SEK	**SEK**	**12 826 200**

APP 5.

Traffic Safety Policy

PUBLIC ENTERPRISE
ROADS OF SERBIA

ROAD AND TRAFFIC SAFETY POLICY IN THE PUBLIC ENTERPRISE "ROADS OF SERBIA"

Basis

In conformity with the Law on Public Roads, the Public Enterprise "Roads of Serbia" is responsible for construction, maintenance, protection, operation, development and management of the state roads category I and II in the Republic of Serbia.

The basis of the Road and Traffic Safety Policy in the Public Enterprise 'Roads of Serbia' is:

- Strategic orientation of the Republic of Serbia in road transport sector towards increasing the level of road traffic safety and functional integration into the European road network.
- For The Public Enterprise to manage the traffic safety improvement on state roads in accordance with the development policy and aims of the Republic of Serbia.

This policy will be implemented through middle-term road and traffic safety programs as well as through annual work programs for improvement of road safety in the framework of the Strategy of Road Development and Maintenance harmonized with the Strategy of Transport System Development of the Republic of Serbia.

Aim

The aim of traffic safety improvement on roads in the Republic of Serbia is to reduce the number of fatalities in traffic accidents in 2010, to the level of most European countries in 2005 and thus provide acceptable level of road traffic safety with minimal negative impact on environment.

Approach:

The Public Enterprise 'Roads of Serbia' will implement improvements of traffic safety on roads through:

- Harmonization and improvement of regulations and technical standards with the EU,
- Efficient and rational planning of road traffic safety activities in accordance with the provided financial resources and with the requirements coming from the new Road Traffic Safety Law,
- Introduction of Road Safety Audits in all phases of road designing,
- Introduction of Black Spot Management through monitoring road traffic accidents with the identification, analysis and remedying of black spots on roads.
- Introduction of In Depth Studies of traffic accidents with fatalities immediately after the accident has occurred.
- Update of technical traffic documentation on traffic signalization and equipment, quality monitoring and control, as the preconditions for the introduction of the system into the zero state.
- More significant check of securing and signing of road works.
- Improvement of the protection of road users (unsafe access roads, structures, billboards, etc.) in road protection zone in accordance with the new Road Law.
- Improvement of the principle of publicity with enabling the participation of all interested parties in road management process by efficient and good-quality two-way information exchange.

Version: 1 Date: December 11, 2006

- Introduction of an accident database within the Public Enterprise with statistical information input from the Police reports.
- Efficient follow up and comparison of achieved improvements.
- Permanent training and education of professional staff.

Indicators of Policy implementation:

When appraising the achieved goals, the Public Enterprise will use the following indicators of the Policy implementation:

- The number of participations in started initiatives for the harmonization of regulations and technical standards on annual level.
- The number of realized projects in road traffic safety area on annual level.
- The number of projects of new or rehabilitated roads that have been scrutinized within Road Safety Audit.
- The number of identified and investigated black spots by using the accident database, on annual level.
- The number of In Depth Studies of fatal accidents, carried out on annual level.
- The total number of realized projects for road and traffic safety improvements, initiated and prioritized upon Road Safety Audits, Black Spot investigations or In Depth Studies on annual level.
- The number of updated traffic technical documentation on road signalisation and equipment on annual level.
- The number of conducted quality control of traffic signalisation and equipment on annual level.
- The number of checks of securing and signing of road works on annual level.
- The number of realized projects done in cooperation with other authorized institutions on annual level.
- The number of participations in projects initiated by other institutions on annual level.
- The number of public professional discussions on annual level.
- The number of participants on seminars and other forms of advanced studies on annual level.

Responsibility

General Manager and the Top Management of the Public Enterprise "Roads of Serbia" are responsible for the implementation of this Policy.

All employees in the Public Enterprise will be acquainted with the Road and Traffic Safety Policy in the Republic of Serbia and operate in accordance with its intentions.

General Manager of the Public Enterprise "Roads of Serbia"

Branko Jocić, Ph.D. (Oecc.)

Competent control:

Dušan Drinjaković, B.Sc (Techn. Eng)	Jovan Ristivojević, B.Sc (Civ.Eng)	Života Borovac, B.Sc (Civ.Eng)
Slavoljub Tubić, B.Sc (Civ.Eng)	Branka Zec, B.Sc (Oecc)	Zoran Kerebić, B.Sc (Lawyer)

Version: 1 Date: December 11, 2006

APP 6.

Road Maintenance Policy

PUBLIC ENTERPRISE
ROADS OF SERBIA

ROAD MAINTENANCE POLICY IN THE PUBLIC ENTERPRISE "ROADS OF SERBIA"

Basis

In conformity with the Law on Public Roads, the Public Enterprise "Roads of Serbia" is responsible for construction, maintenance, protection, operation, development and management of the state roads category I and II in the Republic of Serbia.

The basis of the Road Maintenance Policy in the Republic of Serbia is:

- Strategic orientation of the Republic of Serbia in road transport sector towards functional integration into the European road network
- Public Enterprise "Roads of Serbia" should manage the maintenance of the state roads category I and II in accordance with the development policy and aims of the Republic of Serbia

This Policy will be implemented through mid-term road development and maintenance programs as well as through annual work programs, with obeying the Road Development and Maintenance Strategy harmonized with the Strategy of Transport Sector Development in Serbia.

Aim

The aim of road maintenance in the Republic of Serbia is to provide an optimum level of service along with providing acceptable level of safety of participants in traffic and minimal negative impact on environment.

Road maintenance policy of the Public Enterprise "Roads of Serbia" aspires to the preservation of the existing roads and the realization of safe and efficient transport of goods and passengers.

Approach:

The Public Enterprise "Roads of Serbia" will implement road maintenance through:

- Harmonization and improvement of regulations and technical standards
- Efficient and rational planning of the execution of road maintenance works in accordance with the provided financial resources
- Improvement of management and planning of road maintenance works
- Cooperation with all responsible institutions, authorities and traffic participants
- Reduction of adverse impacts of road maintenance works and road operations on environment in accordance with the Environmental Policy of the Public Enterprise "Roads of Serbia"
- Improvement of traffic safety in accordance with the Traffic Safety Policy of the Public Enterprise "Roads of Serbia"
- Procurement of goods, works and services based on the principles of market operations, prevention of monopoly and enabling bidding competition
- Application of severe sanctions for low-quality execution of contracted obligations
- Improvement of the principle of publicity of operations enabling the participation of all interested parties in the road management process by efficient and good-quality two-way information exchange
- Efficient observing and comparison of achieved results
- Permanent training and education of professional staff

Version: 1 Date: December 11, 2006

PUBLIC ENTERPRISE
ROADS OF SERBIA

Indicators of Policy implementation:

When appraising the achieved goals, the Public Enterprise "Roads of Serbia" will use the following indicators of the Policy implementation:

- The number of participations in started initiatives for the harmonization of regulations and technical standards on annual level
- The number of kilometers of roads with recovered carriageways on annual level
- The number of rehabilitated structures on annual level
- The number of realized traffic safety projects on annual level
- The number of realized projects where environmental impact assessment, protection measures and environmental monitoring are included on annual level
- The number of realized projects done in cooperation with other authorized institutions on annual level
- The number of participations in projects innitiated by other institutions on annual level
- The number of realized public procurements without any complaints about the procedure in relation to the total number of public procurements on annual level
- The number of sanctions for not carrying out the contracted obligations on annual level
- The number of public professional discussions on annual level
- The number of participants on seminars and other forms of specializations on annual level

Responsibility

General Manager and the Top Management of the Public Enterprise "Roads of Serbia" are responsible for the implementation of this Policy.

All employees in the Public Enterprise will be acquainted with the Road Maintenance Policy in the Republic of Serbia and operate in accordance with its intentions.

General Manager of the Public Enterprise "Roads of Serbia"

Branko Jocić, Ph.D. (Oecc.)

Competent control:

Dušan Drinjaković, B.Sc (Techn. Eng)	Jovan Ristivojević, B.Sc (Civ.Eng)	Života Borovac, B.Sc (Civ.Eng)
Slavoljub Tubić, B.Sc (Civ.Eng)	Branka Zec, B.Sc (Oecc)	Zoran Kerebić, B.Sc (Lawyer)

Version: 1 Date: December 11, 2006

APP 7.

Environmental policy

PUBLIC ENTERPRISE
ROADS OF SERBIA

ENVIRONMENTAL POLICY
IN THE PUBLIC ENTERPRISE «ROADS OF SERBIA»

Basis

In conformity with the Law on Public Roads, the Public Enterprise "Roads of Serbia" is responsible for construction, maintenance, protection, operation, development and management of the state roads category I and II in the Republic of Serbia.

The basis of the Environmental Policy in the Public Enterprise "Roads of Serbia" is:

- Strategic orientation of the Republic of Serbia in road transport sector towards reducing the harmful impacts of road traffic on environment.
- Management of state roads in accordance with regulations, Strategy and National Environmental Protection Program in the Republic of Serbia.

This policy will be implemented through long-term and middle-term Work and Development Plan and Annual Business Plan of the PE "Roads of Serbia".

Aim

The Environmental Policy of the Public Enterprise "Roads of Serbia" aims within its scope towards reducing the contribution of road sector to air, water and soil pollution, noise, global warming, as well as the reduction of risk in transport of hazardous goods.

The aim of environmental protection in the sector of state roads is the realization of infrastructure that is adapted to natural and cultural environment, in the way that natural resources are preserved, and the impacts of traffic has acceptable influence on people's health and well-being.

Approach:

The Public Enterprise "Roads of Serbia" will implement environmental protection through:

- fulfilling the conditions for performing operations of general interest in view of environmental protection and improvement;
- planning, design and construction of roads in a way that design-plans and technical solutions are harmonized with the regulations on environmental protection, so that adverse environmental impacts from the expected traffic are minimized;
- reduction of harmful impact of works by administering the implementation of EMPs, monitoring the condition of environmental protection equipment, and monitoring of works and the state of environment;
- cooperation with all relevant institutions, authorities and interested parties and promotion of the principle of public participation and access to information;
- dealing with the issues of environmental protection in general, in an open, serious and competent way
- continual development and improvement.

Indicators of Policy implementation:

- the number of realized projects in which the environmental impact assessment, protection measures and environmental monitoring are included, on annual level;

- the number of published professional publications (manuals, instructions, guidelines) in the field of roads and environment, on annual level;
- the number of realized EIA and SEIA studies without any substantial remarks from the responsible authority's technical committee, on annual level;
- an unbiased appraisal of the contribution of the Public Enterprise towards the implementation of integral environmental strategy in transport sector;
- the number of locations along state roads sections where air pollution exceeds the limits;
- the number of persons exposed and disrupted by excessive traffic noise, along state roads sections;
- the number of positive reports on performed environmental monitoring of road works;
- the number of joint consultation meetings held by traffic planning experts and spatial/urban planners;
- the number of inspection's bans of the execution of works due to unobtained conditions or approvals referring to environmental protection;
- the number of public professional reviews and consultations on annual level;
- the number of positive articles/broadcasts in media, which show the Public Enterprise and the public behaviour concerning roads and environment;
- the number of meetings / conferences in the Public Enterprise on environmental protection issues on roads and the number of present managers and experts from the P. E.;
- the number of seminars and other forms of knowledge development on environmental protection on roads and the structure of participants, on annual level.

Responsibility

General Manager and the Top Management of the Public Enterprise "Roads of Serbia" are responsible for the implementation of this Policy.

All employees in the Public Enterprise will be acquainted with the Environmental Policy within the road sector of the Republic of Serbia and will operate in accordance with its intentions.

General Manager of the Public Enterprise "Roads of Serbia"

Branko Jocić, Ph.D. (Oecc.)

Competent control:

Dušan Drinjaković, B.Sc (Techn. Eng)	Jovan Ristivojević, B.Sc (Civ.Eng)	Života Borovac, B.Sc (Civ.Eng)
Slavoljub Tubić, B.Sc (Civ.Eng)	Branka Zec, B.Sc (Oecc)	Zoran Kerebić, B.Sc (Lawyer)

APP 8.

Gender policy, Twinning

Project: Twinning Arrangements between Swedish Road Administration (SRA) and Republic of Serbia Road Directorate (RSRD) - **Support for Institutional Strengthening and Technical Assistance to the Public Enterprise of Roads of Serbia ('the Support')**

POLICY ON GENDER
WITHIN THE SCOPE OF THE TWINNING AGREEMENT
(Annex to the Completion Report)

1. Background

Twinning Agreement

The Twinning Agreement (2004-2007) is a supplement to the project of the World Bank – TRP (Transport Rehabilitation Project).

It has enabled effective approach to the capacity building and technical assistance and reduced time and efforts needed for harmonization with EU legislation, standards and procedures. It has contributed to rehabilitation and building of capacities in the Serbian road sector. The aim of TA was capacity building of the Roads Directorate of Serbia complementary to TRP outcomes. Within its scope, the Twinning project has contributed to improved road safety, mobility and accessibility of all social segments, **both men and women,** disabled categories and other weak road users. Among the results of the Project, several new traffic safety and environment impact mitigation measures have become effective.

Undertakings of SRD (Article 3 of the Specific Agreement)

With reference to Minutes of Fifth Semi-annual Review Meeting, Belgrade 12 April, 2007, (Para 13 and 15) the Parties have considered how two of the undertakings (the Environmental Management Plan and Policy on Gender) could be addressed adequately. The following actions have been taken by the Parties: PERS will report on undertakings with regard to environmental plan and gender. This matter will be covered in the Completion Report

TRP (Transport Rehabilitation Project), WB

The TRP which has been in implementation since 2004, have monitored its performance in terms of social development outcomes. It has included the overall social component of the project together with safeguard policies triggered and provisions made by the project to ensure compliance with applicable safeguard policies.

In addition to Social indicators, locally produced public opinion surveys and reports have been used to assess access to services, improved living standards, **gender impacts,** safety issues as part of the monitoring plan. The monitoring and measuring of project performance have been carried out by the SRD/PERS, involving: (i) the nature of the required technical assistance for strengthening of the SRD for the measurement of these outcomes; and (ii) establishment of a baseline for these outcomes at the beginning of project implementation.

2. Facts and Figures on Gender Equality in Serbia

2.1 Legal Framework:

ILO Conventions ratified: No. 100, 111 and 156 – ratified in 2000, No. 183 – not ratified
(No. 103 – ratified in 2000)

National legislation:

Constitutional Charter of the State Union of Serbia and Montenegro was adopted and entered into force in 2003. It provides inter alia for human and minority rights as well as civil liberties in Serbia and Montenegro.

Law Gender Equality in Kosovo adopted in February 2004 and amended in June 2004 establishes gender equality as a fundamental value for the democratic development of the society in Kosovo, by providing equal opportunities for both female and male participation in the political, economical, social, cultural and other fields of social life. Section 13 deals with gender equality in employment.
Serbia and Montenegro has no act on gender equality, however a general anti- discrimination law has been drafted.

The ***Serbian Labor Law,*** from 2001, prohibits discrimination of people seeking employment and employees based on several grounds including sex and marital statues. Equal pay for equal work is stated regardless of gender but equal pay for work of equal value is not mentioned. The law also includes protective provisions for female employees.

Labor Law of Montenegro of 9 July 2003 Establishes labour rights and obligations of employees and means of their implementation.

Law of 10 July 2003 on Employment and Unemployment Insurance of the Republic of Serbia regulates employment activities, measures of active employment policy, rights and obligations of persons seeking employment. Establishes the National Employment Service, unemployment insurance and contributions, and procedure for realizing the rights derived from insurance.
Both Serbia and Montenegro are countries of origin, transit points and final destinations for trafficking in women. New anti-trafficking laws, passed in Montenegro in summer 2002. It governs the establishment, organization, jurisdiction and powers of special government bodies for detection and prosecution of perpetrators of criminal offences such as human trafficking. Date of partial entry into force: 2003-03-01
New Law to amend the Criminal Code of the Republic of Serbia of 17 April 2003 amends, inter alia, sections relating to sexual harassment, and human trafficking.

2.2 Gender Equality Machinery In Serbia

In Republic of **Serbia**, in October 2004 the ***Council for Gender Equity within*** The Serbian Ministry of Labour, Employment and Social Policy was reestablished after few years of not functioning. The council is tasked with preparing a national action plan for gender equality, the council which will also be charged with monitoring the enforcement of antidiscrimination laws.

Some Basic Indicators:

Employment: Women made up 42% of the total employment (15+) in **Serbia** and Montenegro (Kosovo and Metohia excluded) in 2001. In 2002 the employment rate of women in **Serbia** was 37.78% while for men it was 51.47%. In 2002 women constituted 39.95% of employed in Montenegro.

Unemployment: In 2003, the unemployment rate was 16.4% for women and 14.4% for men
Part time work: In 2001, part-time employment constituted 0.9% of total female and 0.7% of total male employment
Sex distribution public/private sector: In 2001, women made up 42% of total employment in the public sector and 41% of total employment in the private sector
Education: In 2001, 58% of all university graduates were women. In 2002 women constituted 46.4% of population with higher education.
Retirement: The current retirement age is 63 years for men and 58 years for women

Maternity leave: The *Serbian Labour Law* states that a female employee has the right to paid maternity leave and child care leave for 365 days, whereas the maternity leave starts28 days before the birth and lasts until 3 months after the birth. Both the mother and the father are entitled to use the remaining child-care leave.

3. Facts and Figures on Gender Equality in SRD/PERS

3.1 Laws and Internal Acts

Based on the Serbian "**Law on Public Enterprises** and performing the activities of public interest", the PERS has adopted its **Statute** on 8th February 2006. Rights and responsibilities of employees and the Syndicate have been defined by the article 45 stating that …" Employees in PE are realizing their rights to appropriate salaries and other rights, duties and responsibilities regarding their work and based on the work, in accordance with the Law, the Collective Agreement and the General Act. Another 4 articles of the Statute supplement and define in more details the rights stated above, however not explicitly mentioning the policy on gender within the PE.
PERS is organized as economic and business entity. Organization parts are arranged by the **Regulation on organization and systematization of jobs**. The Regulation has been brought on the basis of **Labor Law** (Para 24) – Official journal 24/2005 and the **Statute** of PERS.

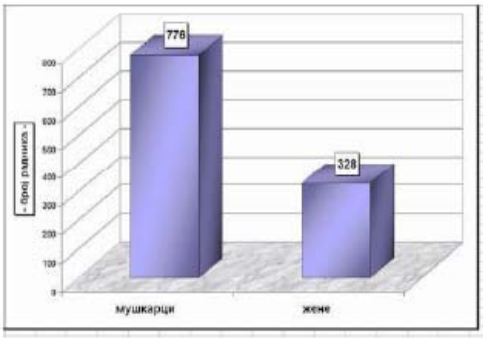
3.2 Situation

Within the PERS' **"Business Program for 2007"** (Para 2.2 Organizational structure) employees have been systematized on 1,173 work places. Actual number of employees is 1,150. Gender Structure of employees has been presented below.

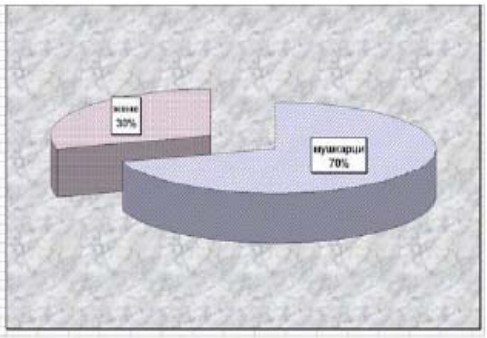
Gender Structure of employees

More than 2/3 of employees are men (776 or 70% of the total employees) and less than 1/3 are women (328 or 30%).

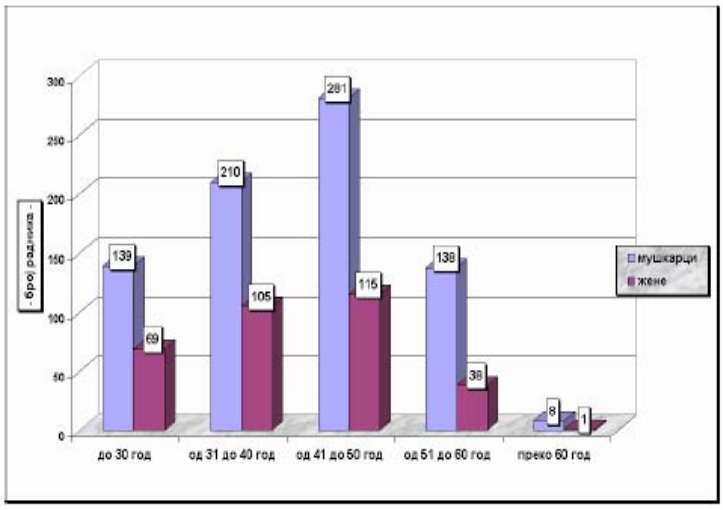
Graph 11



Graph 12

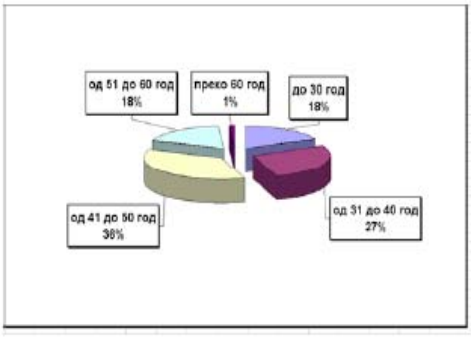


Graph 13

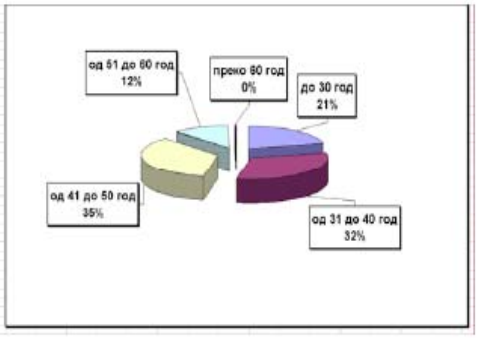


The age group between 41 and 50 is the most representative for both genders (36% with men and 35% with women), and the least representation has a group with over 60 (men: 1% and women: negligible).

Graph 14 (men)

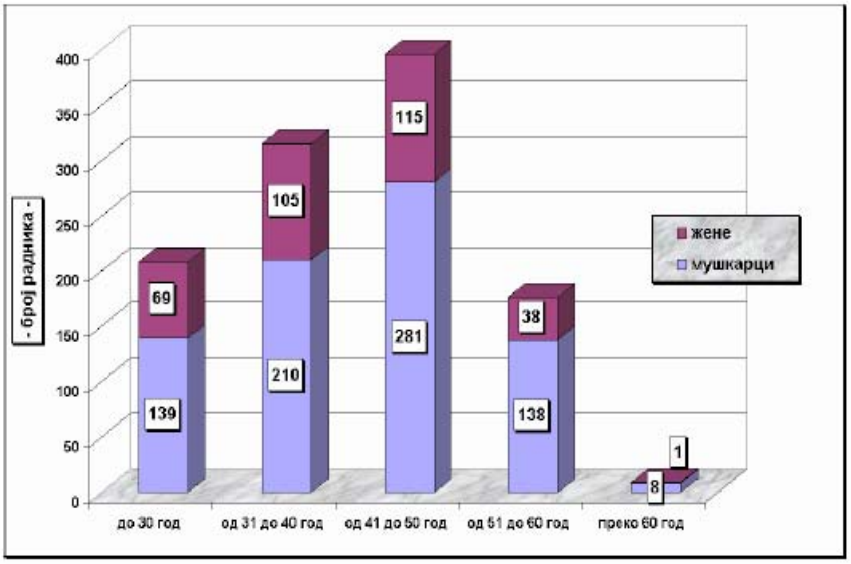


Graph 15 (women)

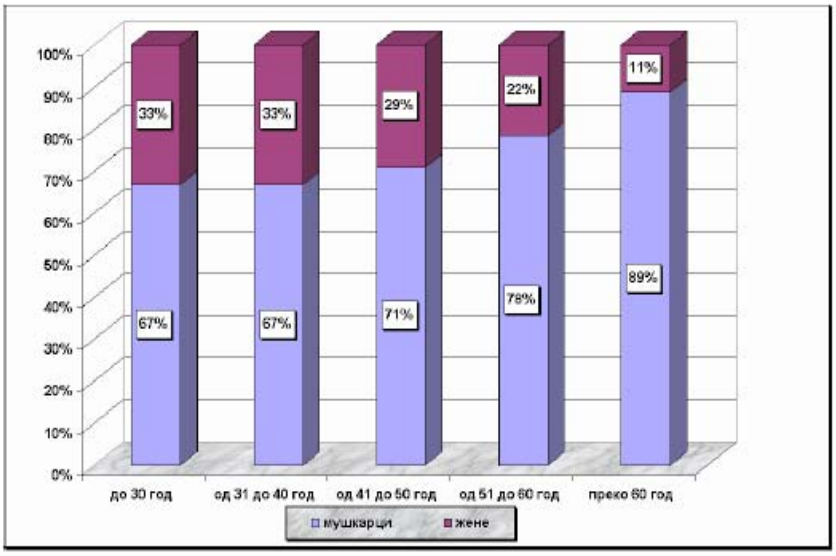


The most significant participation of women is within the age groups of less than 30 and between 31 and 40 (33%), and the least one within the group over 60 (11%). On the contrary, the most significant participation of men is within the age group over 60 (89%), and the least participation within the age groups: less than 30 and between 31 and 40 (67%) (see graphs below).

Graph 16



Graph 17



The most recent briefing (May 2007) with executives in PERS has revealed that actual gender relationship between employees (1128) is: women 39%/ men 61% (445 / 683).

4. Undertakings on Social Aspects within the TRP (Transport Rehabilitation Project), WB

The Social Aspect of the TRP has been presented in progress reports prepared by the PIT. The latest PR No 4 (1st October 2006 - 31st March 2007) was released in April 2007, including the chapter 9 - "Social Aspect".
It was stated that previously, the budget of 8,400 USD and procurement rules had been provided for the procurement of consulting services by a local individual consultant. The whole procedures started in December 2006 and Mr Stjepan Gredelj has been chosen and contracted on 5.02.2007.

Scope of his activities encompasses:
- Beginning of work by 5.02.2007
- Draft Report by 16.03.2007
- Final Report by 05.04.2007

It can be seen from the TRP Progress Report that the first phase of research has been done and the First Preliminary Report, as well as the Draft Report have been delivered to the TRP PIT. However, the consultant submitted request for one month extension of the deadline for the completion of the Final Report and it was to be delivered by 05.05.2007.

On request of Twinning Project Coordinator, the person responsible for social aspects within TRP PIT (Mrs Ljerka Ibrovic) stated that "Social Aspects" were still in preparation and delivery is expected by the end of May 2007. Additionally she explained that no gender aspects have been envisaged within the contracted consulting services.

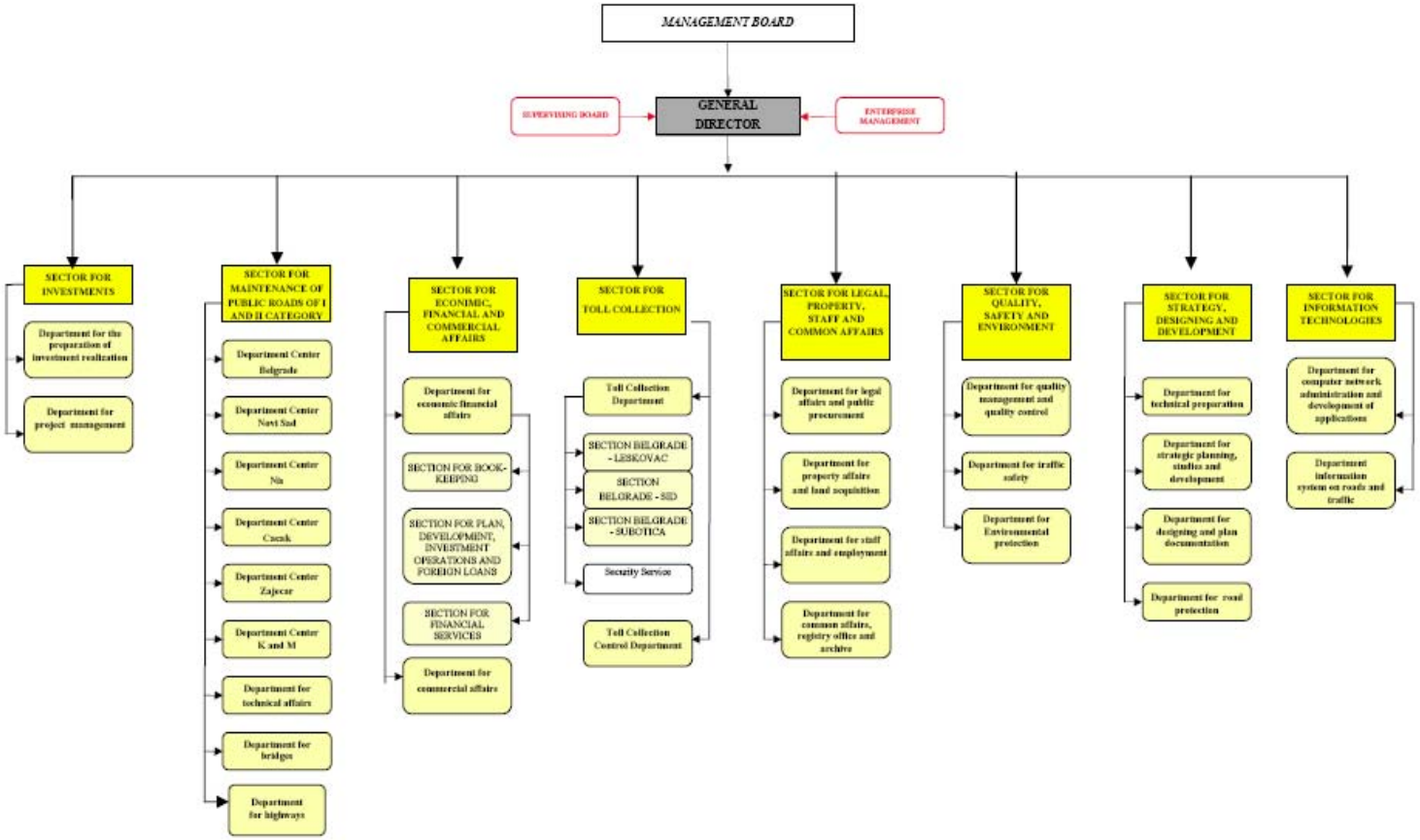
5. Conclusions

Regarding the requested report on undertakings with regard to gender within the scope of the Twinning Agreement, the following conclusions can be made:

- Within its scope, the Twinning project (2004-2007) has contributed to improved road safety, mobility and accessibility of all social segments, **both men and women,** disabled categories and other weak road users;
- The TRP (Transport Rehabilitation Project), WB which has been in implementation since 2004, has included the overall social component of the project together with safeguard policies triggered. However no safeguard policy refers to gender.
- Consultancy has been used to assess the Social Aspects of the TRP project. It is not likely that Final Report will contain any assessment of gender impacts within the project
- Gender equality in Serbia has been assured by ratified ILO Conventions and National Legislation, especially by the new **Serbian Labor Law,** from 2005
- Gender Equality in SRD/PERS has been assured through observance of several Serbian laws and internal acts of PERS
- Situation shows that gender structure of the organization has been favorably changed to the benefit of women, from 30% in 2005 to 39.5% in 2007. Compared with employment rate of women in Serbia (37.78%), it also remains positive.
- Pursuant to above mentioned it can be concluded that overall gender policy of the Twinning Project has been in accordance with Serbian national Laws. The real representation of women in Twinning activities has reflected existing state in Serbian road sector and SRD/PERS.

APP 9

Organizaciona shema


MANAGEMENT BOARD
SUPERVISING BOARD
GENERAL DIRECTOR
ENTERPRISE MANAGEMENT
SECTOR FOR INVESTMENTS
Department for the preparation of investment realization
Department for project management
SECTOR FOR MAINTENANCE OF PUBLIC ROADS OF I AND II CATEGORY
Department Center Belgrade
Department Center Novi Sad
Department Center Nis
Department Center Cacak
Department Center Zajecar
Department Center K and M
Department for technical affairs
Department for bridges
Department for highways
SECTOR FOR ECONIMIC, FINANCIAL AND COMMERCIAL AFFAIRS
Department for economic financial affairs
SECTION FOR BOOK-KEEPING
SECTION FOR PLAN, DEVELOPMENT, INVESTMENT OPERATIONS AND FOREIGN LOANS
SECTION FOR FINANCIAL SERVICES
Department for commercial affairs
SECTOR FOR TOLL COLLECTION
Toll Collection Department
SECTION BELGRADE - LESKOVAC
SECTION BELGRADE - SID
SECTION BELGRADE - SUBOTICA
Security Service
Toll Collection Control Department
SECTOR FOR LEGAL, PROPERTY, STAFF AND COMMON AFFAIRS
Department for legal affairs and public procurement
Department for property affairs and land acquisition
Department for staff affairs and employment
Department for common affairs, registry office and archive
SECTOR FOR QUALITY, SAFETY AND ENVIRONMENT
Department for quality management and quality control
Department for traffic safety
Department for Environmental protection
SECTOR FOR STRATEGY, DESIGNING AND DEVELOPMENT
Department for technical preparation
Department for strategic planning, studies and development
Department for designing and plan documentation
Department for road protection
SECTOR FOR INFORMATION TECHNOLOGIES
Department for computer network administration and development of applications
Department information system on roads and traffic

APP 10

Follow Up of Winter Maintenance

Follow Up of Winter Maintenance
2004 - 2006

KOLUBARA

1	SNOW CLEARENCE	Occasions		Km	Km Total	UP	Tot Din	BID
1.1	Snow clearance of Road Category A3	*40*	26	54,058	1.405,508	**1.530,00**	**2.150.427,24**	*3.308.349,60*
1.2	Snow clearance of Road Category A4	*40*	26	123,688	3.215,888	**1.500,00**	**4.823.832,00**	*7.421.280,00*
1.3	Snow clearance of Road Category B1	*20*	26	33,695	876,070	**1.380,00**	**1.208.976,60**	*929.982,00*
1.4	Snow clearance of Road Category B2	*20*	26	305,739	7.949,214	**1.350,00**	**10.731.438,90**	*8.254.953,00*
						TOTAL SNOW CLEARENCE 1	**18.914.674,74**	*19.914.564,60*

2	SKID CONTROL	Occasions		Km	Km Total	UP	Tot Din	BID
2.1	Skid control of Road Category A3	*80*	86	54,058	4.648,988	**240,00**	**1.115.757,12**	*1.037.880,27*
2.2	Skid control of Road Category A4	*80*	86	123,688	10.637,168	**220,00**	**2.340.176,96**	*2.176.908,80*
2.3	Skid control of Road Category B1	*20*	52	33,695	1.752,140	**140,00**	**245.299,60**	*94.346,00*
2.4	Skid control of Road Category B2	*20*	52	305,739	15.898,428	**120,00**	**1.907.811,36**	*733.773,60*
						TOTAL SKID CONTROL 2	**5.609.045,04**	*4.042.908,67*

3	EXTREME WEATHER CONDITIONS						**5.468.456,40**	

4	TOTAL KOLUBARA						**29.992.176,18**	**23.957.473,27**

Follow Up of Winter Maintenance
2004 - 2006

MAČVA

1	SNOW CLEARENCE	Occasions		Km	Km Total	UP	Tot Din	BID
1.1	Snow clearance of Road Category A3	*40*	23	112,755	2.593,365	**1.480,00**	**3.838.180,20**	*6.675.096,00*
1.2	Snow clearance of Road Category A4	*40*	23	63,657	1.464,111	**1.450,00**	**2.122.960,95**	*3.692.106,00*
1.3	Snow clearance of Road Category B1	*20*	23	85,767	1.972,641	**1.330,00**	**2.623.612,53**	*2.281.402,20*
1.4	Snow clearance of Road Category B2	*20*	23	397,077	9.132,771	**1.300,00**	**11.872.602,30**	*10.324.002,00*
						TOTAL SNOW CLEARENCE 1	**20.457.355,98**	***22.972.606,20***

2	SKID CONTROL	Occasions		Km	Km Total	UP	Tot Din	BID
2.1	Skid control of Road Category A3	*80*	82	112,755	9.245,910	**230,00**	**2.126.559,30**	*2.074.692,00*
2.2	Skid control of Road Category A4	*80*	82	63,657	5.219,874	**210,00**	**1.096.173,54**	*1.069.437,60*
2.3	Skid control of Road Category B1	*20*	50	85,767	4.288,350	**130,00**	**557.485,50**	*222.994,20*
2.4	Skid control of Road Category B2	*20*	50	397,077	19.853,850	**110,00**	**2.183.923,50**	*873.569,40*
						TOTAL SKID CONTROL 2	**5.964.141,84**	***4.240.693,20***

3	EXTREME WEATHER CONDITIONS						**2.467.353,40**	

4	TOTAL MAČVA						**28.888.851,22**	**27.213.299,40**

Follow Up of Winter Maintenance
2004 - 2006

Salt and aggregate consumption 2004-2005 and 2005-2006

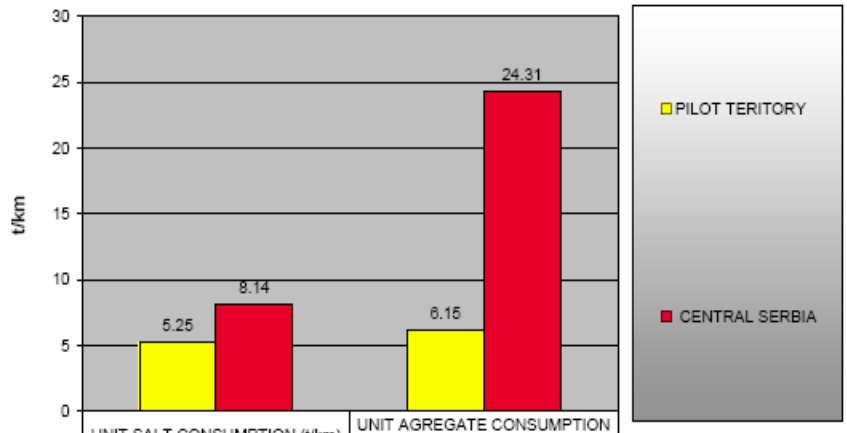
Territory	2004/2005		2005/2006	
	salt consumption (t)	aggregate consumption (t)	salt consumption (t)	aggregate consumption (t)
MACVA	1043,09	3868,24	1059,30	1430,26
KOLUBARA	1087,75	6500,00	1174,85	3628,58

Winter Maintenance cost 2005-2006

	PILOT TERITORY	CENTRAL SERBIA
UNIT SALT CONSUMPTION (t/km)	**5.25**	**8.14**
UNIT AGREGATE CONSUMPTION (t/km)	**6.15**	**24.31**
UNIT COST OF WINTER MAINTENANCE (€/km)	**892.94**	**1,518.66**

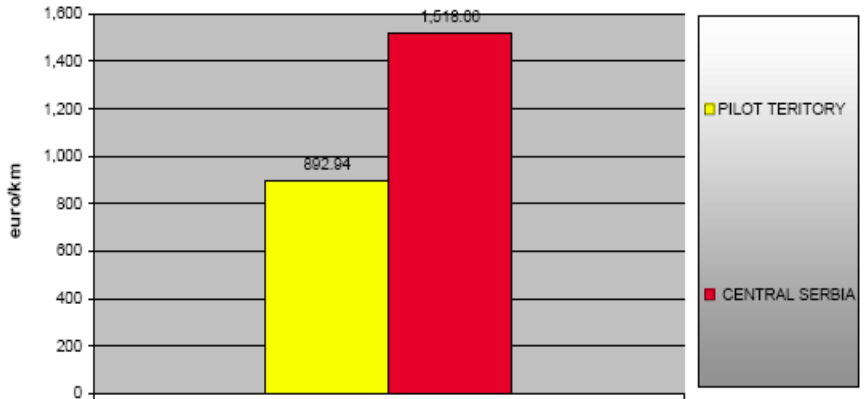
Follow Up of Winter Maintenance
2004 - 2006

UNIT SALT AND AGREGATE CONSUMPTION (WINTER SEASON 2005/2006)



	UNIT SALT CONSUMPTION (t/km)	UNIT AGREGATE CONSUMPTION (t/km)
PILOT TERITORY	5.25	6.15
CENTRAL SERBIA	8.14	24.31

UNIT COST OF WINTER MAINTENANCE (WINTER SEASON 2005/2006)



	UNIT COST OF WINTER MAINTENANCE (€/km)
PILOT TERITORY	892.94
CENTRAL SERBIA	1,518.66

APP 11

Time schedule

Time and Manning Schedule

ACTIVITY	2004												2005												2006												2007				Sum
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	man/s
Road Safety Management	0	0	0	2	0	0	0	0	4	2	2	4	4	5	9	13	9	6	2	2	2	2	6	5	4	6	3	4	2	0	0	0	1	0	0	0	2	0	0	2	103
Fact-finding visit and analysis				2																																					2
Secondments and study trips									x	x	x	x																													
RSRD road safety management strategy, plan									4	2	1	1			1		2																								11
Secondary legislation (supplement to Road Law)											1		2	2		2																									7
Road safety audit training and system														1	3	4	4	4	2	2																					20
Cost-efficient measures at black spots												2			3	3	3	2			1							2	2												18
Safety aspects of road design																					1		2	2		1							1				2				9
Guidelines for road signs and markings																								2	4	3	1	1													11
Methodology to include accident costs in planning													2	2								2				1	2	1													10
Methodology for accident costing															2	4							4			1															11
Reporting												1												1																2	4
Routine and Winter Road Maintenance	0	4	0	9	3	8	4	2	5	7	4	3	3	4	4	6	4	4	0	1	1	3	0	1	0	0	0	3	0	0	0	0	1	1	0	1	0	0	0	2	88
Finalisation bid doc, contractors' site visit				2																																					2
Seminar contractors, inspectors				5																																					5
Tender evaluation						5																																			5
Prequalification criteria, general						2																																			2
Thermal mapping and eval. RWIS pilot project		4		2																																					6
Winter-RWIS Course									3	4																															7
Secondments and study trips (see below)											x	x							x	x	x																				
Review winter model, RWIS																					1												1								2
Repetition course winter																	2																								2
Establish routines supervision/monitoring							3	2	2	2	2																														11
On-the-job training and support during supervision and monitoring					3	1	1			1	2	3	3	4	4	4	2	4		1		1		1				1								1					37
Seasonal reviews																2						2						2						1					1	8
Draft Final Report																																							1	1
Environmental Protection	0	0	0	0	0	1	1	0	2	0	2	0	3	0	5	0	0	5	0	0	3	0	0	2	0	0	2	0	0	4	0	0	2	0	0	0	2	0	0	1	36
Fact-finding visit and analysis						1	1																																		2
Secondments and study trips																	x	x																								0
Seminars on																																									0
- *Environmental Management Systems EMS*											1		1																1												3
- *Environmental Impact Assessment, EIA*											1		1																												2
- *Traffic Noise*															1														1												2
- *Emissions from traffic*																					1																				1
- *Chemicals used in the Road Sector*																		1																							1
- *Water*																		1																							1
- *Nature/Wildlife/Ecology*																		1																							1
- *Culture/Archeology*															1																										1
- *Landscaping/Road design (Road Architecture)*															1																										1
- *Project specific issues*															1			1			1			1		1			1				1				1				8
Start up and support to Env Unit										2			1		1			1			1			1		1			1				1				1				11
Reporting																																								1	1
Road and Bridge Maintenance Management	0	0	0	0	0	4	0	0	0	1	5	0	0	1	2	2	5	2	1	0	7	2	4	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	40
Fact-finding visit and analysis						2																																			2
Secondments and study trips																					x	x	x					x	x	x	x	x									
Seminars and workshops on:																																									
-Overview Pavement & Bridge Management Policy											2			1																												3
-Maintenance activities in Serbia and Europe																	2	1					1																		4
-Review and data collection																1																										1
-Strategic, Programme and Project Analysis																					2		1																		3
-Evaluation, Follow up and Feed back																			1										1												2
Review of axle-load standards																					4																				4
Bridge Management																																									0
-Initial review of current practice						2																																			2
-Load-bearing classification of bridges											1						3					2	2																		8
-Object level planning, work programming and procurement										1	1				2			1			1																				6
-Strategic bridge planning and general support											1					1													1										1	4
Reporting																																							1	1
Secondments and study trips									2	2	2					1	1	1	1		1							1	2											14
Project supervision		2		3	1	1	1	1	1	2		1	1	1	1		1	1	1	1	1		1		1		1			1		1		1				1		2	30
Total input manweeks	0	6	0	14	4	14	6	3	14	14	16	7	11	11	21	22	20	19	4	4	16	7	11	8	5	6	6	8	6	6	0	1	4	2	0	1	5	0	0	9	310

APP 12

Swedish staff

Resource utilisation per sub-project and total in manweeks (mws)

NAME	Used mws
ROAD SAFETY	**89**
Rein Schandersson	14
Krister Åhsberg	58
Fredric Gustafsson	4
T Edberg	8
F Gustafsson	4
Kenneth Svensson	2
MAINTENANCE	**114**
Carl-Henrik Ulegård	77
Anders Buhrman	4
Håkan Bertilsson	3
Tommy Sundqvist	3
Jan-Åke Karlsson	2
Jörgen Bogren	1
Torbjörn Gustavsson	1
Arne Nilsson	2
Dan Eriksson	3
Claes Brundin	3
Tobias Ulegård	1
Bo Olofsgård	2
Vladimir Milosevic	7
Lars Jacobsson	2
Lennrt Forstedt	3
ENVIRONMENT	**30**
Jarl Hammarqvist	16
Inga-Maj Eriksson	2
Anna Ward	3
L Dahlbom	1
H Johansson	1
L Ojala	1
K-E Klockars	2
Charlotte Norrlander	1
Karin Brännström	1
MANAGEMENT	**42**
Hamid Zarghampour	23
T Saarenketo	1
S Johansson	1
Lennart Lindblad	5
George Chamoun	8
Stefan Pup	1
Anders Lundqvist	1
Ebbe Rosell	1
Peder Henriksson	2
PROJECT SUPERV.	**37**
Carl-Henrik ulegård	9
Anders Buhrman	25
P-O Löfmar	4
TOTAL	**312**

APP 13

Budget

APP 14

Budget follow up

APP 15

Expenditures PERS 2005-2006

APP 16

Request for reallocating

APP 17

Budget follow up final

APP 18

Final Report

Twinning Agreement
between
Swedish Road Administration
and
Republic of Serbia Roads Directorate

FINAL REPORT

Draft Version

September 2007

CONTENTS

1 INTRODUCTION AND SUMMARY 3
2 CO-ORDINATION AND RISKS 4
2.1 Political and General Risks 4
2.2 Understaffing and Staff and Counterpart Changes 4
2.3 Co-ordination of Assistance 5
2.3.1 The World Bank Transport Rehabilitation Project 5
2.3.2 Institutional Capacity Building of the Public Enterprise Roads in Serbia (EAR) 5
2.3.3 Support to the transition of RSRD into a Public Enterprise 6
2.4 Road and Transport Legislation 6
3 LFA-BASED ACTIVITIES AND ACHIEVEMENTS 8
3.1 General ..... **Error! Bookmark not defined.**
3.2 Road Safety Management 8
Activities and Recommendations 8
3.2.1 Development of a Road Safety Management Strategy and Plan 8
3.2.2 Supplementary Legislation 8
3.2.3 Introduction of Road Safety Audits (RSA) 8
3.2.4 Countermeasures at identified Accident Black Spots 9
3.2.5 Guidelines for Road Safety Aspects of Road Design 9
3.2.6 Guidelines for Road Signs and Marking 10
3.2.7 Methods to include Accident Costs in Road Planning 10
3.2.8 Methodology to estimate Accident Costs 10
Expected results and achievements/shortcomings 10
3.3 Routine and Winter Maintenance 11
Activities and recommendations 11
3.3.1 Bidding Documents and Procurement Guidelines 11
3.3.2 Assistance in evaluation of bids for World Bank Pilot Project 11
3.3.3 Introduction of pre-qualification system for Contractors in Routine Maintenance 12
3.3.4 Preparation of Plan for Network of RWIS Stations in the World Bank Pilot Areas 12
3.3.5 Assistance during the implementation of the RWIS Plan 12
3.3.6 Training of PERS staff and contractors in Contract Management and Supervision 13
3.3.7 Support to PERS during annual reviews of World Bank Pilot Project 13
Expected results and achievements/shortcomings 14
3.4 Environmental Protection 15
Activities and recommendations 15
3.4.1 Review and Seminar on Environmental Issues and Protection including basic EIA (step 1) 15
3.4.2 Seminars on EIA (step 2) 15
3.4.3 Assistance during creation of an Environmental Unit in PERS 16

3.4.4 Assistance in development of Specifications for Mitigation of Environmental Impact at road works ... 17
3.4.5 Assistance in reviewing Quarry Operations and Asphalt Production ... 17
3.4.6 Provision of sample Environmental Assessment and Management Plans 17
Expected results and achievements/shortcomings ... 18
3.5 Road and Bridge Management ... 18
3.5.1 Introduction ... 18
Pavement activities and recommendations ... 19
3.5.2 Seminar on Overview of Pavement & Bridge Management Policy ... 19
3.5.3 Seminar on Maintenance Activities in Serbia and Europe ... 20
3.5.4 Seminar on Data and Data Collection ... 20
3.5.5 Trainee Course on Strategic Planning, Programme and Project Analysis 20
3.5.6 Review of Axle Load Standards ... 21
Bridges activities and recommendations ... 22
3.5.7 Initial review of current bridge planning practice in Serbia ... 22
3.5.8 Load-bearing capacity of bridges ... 22
3.5.9 Object Level Planning, Work Programming and Procurement ... 22
3.5.10 Strategic Bridge Planning and General Support to PERS Bridge Section 23
Expected results and achievements/shortcomings ... 23
4 DEVIATIONS AND SUPPLEMENTARY ACTION ... 25
5 PRIORITIES FOR A FUTURE EXTENDED TWINNING PROJECT OR TECHNICAL ASSISTANCE PROJECTS ... 26
5.1 Management and administration of PERS ... 26
5.2 Road safety ... 26
5.3 Road maintenance ... 26
5.4 Road and bridge management ... 27
5.5 Environment ... 27
6 TIME SCHEDULE AND RESOURCE UTILISATION ... 27
7 BUDGET AND BUDGET FOLLOW UP ... 27

1 INTRODUCTION AND SUMMARY

The format of this Final Report is linked to the LFA agreed between RSRD (now Public Enterprise Roads of Serbia, PERS), SRA and Sida (the revised LFA dated 10th April 2007).

This twinning project has been previously reported in the Inception Report (July 2004), Progress Report 1 (April 2005), Progress Report 2 (October 2005), Progress Report 3 (May 2006) and Progress Report 4 (April 2007). We will not here repeat the description of activities in the previous reports, but concentrate on their results and recommendations for continued work in the sub-projects, with or without external support.

In December 2005 the Road Law was finally passed by Parliament and this also meant the transformation of the old Republic of Serbia Roads Department to the new Public Enterprise "Roads od Serbia". However, the legal framework for some of the sub-projects and the new Public Enterprise is still not fully completed as the Traffic Safety Law remains to be finally adopted.

All sub-projects are well under way except for the bridge component, which for various reasons has been delayed. An important factor is the huge work load on this small unit which is severely understaffed and thus not prepared to deal with development projects. The other sub-projects have been successfully implemented and in most cases not only reached the goals set, but exceeded them.

Although it is considered that PERS is fully able to continue the development to increase the efficiency of the road transport sector without any external support, it would be beneficial and could speed up the development if support could be provided in the form of a new twinning project or as separate technical assistance projects. In particular development of a road data base and a road accident data base, review of summer maintenance, a lot of work on bridge inspection and maintenance, and further development of the Environmental Unit are important. Chapter 5 contains recommendations for further work, should external assistance be made available.

Finally we must say that throughout the twinning project the co-operation has been very good, not only between the twinning partners and work groups but also with other authorities, stakeholders and consultants. It has been stimulating and pleasant to work in this project thanks to the very good co-operation climate.

2 CO-ORDINATION AND RISKS

2.1 Political and General Risks

The political system in Serbia has similarities to the system in U.S.A. A new Government will change all top officials in the Government departments and authorities and subsequent changes may affect the top management. This was the case in RSRD where the top management including contact persons for the twinning were replaced. The changeover caused delays in the twinning implementation, which is understandable. It also created uncertainty regarding the willingness to proceed with what is in effect a privatisation of the maintenance work. Critics of this process made use of the opportunity to question the implementation and thus contributed to the delay.

The political risks were discussed in the Inception Report from two perspectives, the lack of continuity in the RSRD Administration, and the political commitment to the Pilot Project. The lack of continuity contributed to the implementation delay of two months but the political will to pursue the Pilot Project has remained unchanged.

The award of the contracts for the Pilot Project was made to new contractors, one of which originated from abroad, which caused considerable local opposition including demonstrations by the employees of the previous contractor and at least initially unfavourable media coverage. Unfortunately the effort by all involved on the Client side to ensure a start up of the Pilot Project before the winter season was not matched by the two Contractors and in effect the maintenance during the first winter was not carried out in accordance with the Contracts. After RSRD put some pressure on the Pilot Project contractors the site managers were replaced in the summer of 2005 and things improved rapidly.

The political will to pursue the Pilot Project has remained unchanged despite initial lobbying and hard resistance in the contracting industry. After the decision by RSRD in the beginning of 2005 the work to expand the Pilot Project has continued.

2.2 Understaffing and Staff and Counterpart Changes

At the beginning of 2005 the Project Co-ordinator, Mr Aleksandar Radojicic, moved to a management post in the City of Belgrade, but initially he tried to share his time between his new and old job. This proved increasingly difficult and also affected the counterpart situation in the sub-projects. He resigned as Project Co-ordinator in April 2005 and a new model for managing the twinning and pilot projects based on a Steering Committee with supporting expert teams in each sub-project was introduced. Since then the translation and information dissemination has been functioning a lot better. The general support by the management was also considerably improved.

The appointment of a TS counterpart was delayed but finally Mr. Slobodan Mudreša was re-appointed. As new head of the department for Main and Regional Roads was

appointed Mr. Zvonko Avramovic, who informed that Mr. Mile Zlatkovic should be counterpart and working group leader for the Maintenance sub-project.

The understaffing of the Bridge Section made it very vulnerable to sickness and unexpected events, which also affected the start of the activities in this area. A recommendation to increase the number of participants, including a representative from the Highway Institute was made in Progress Report 2. Still the understaffing remained a problem during the whole twinning project.

In December 2005 the new Road Law was passed by Parliament and the transformation of RSRD into a public enterprise started. Despite the re-organisation there were few changes of counterparts and working groups. Mr. Zivota Borovac was appointed Assistant Director for the Sector for Maintenance of Public Roads I and II Category and the maintenance counterparts were Mr. Sinisa Sretenovic (General Maintenance) and Mr. Nenad Acimovic (Winter Maintenance). Ms Biljana Vuksanović was appointed new R&B Management Technical Counterpart and Mr Dejan Jovanov Road Safety Counterpart. No other changes were made.

2.3 Co-ordination of Assistance

2.3.1 The World Bank Transport Rehabilitation Project

From the very start of the twinning project the findings of the Booz-Allen-Hamilton (BAH) report were available to the twinning team, who found them to be sound and had no problem in supporting their recommendations in training courses and seminars. A very good co-operation with the BAH consultants was established and information has been exchanged regularly.

The local Highway Institute was awarded the supervision of the Transport Rehabilitation Project. The co-operation with the Highway Institute supervising the Project has also been very good, and also increased during and after the secondment of an SRA maintenance engineer. The co-operation between the two donors involved has continued in a good climate with a mutual decision to share information and when possible participate in each other's project reviews.

2.3.2 Institutional Capacity Building of the Public Enterprise Roads in Serbia (EAR)

The twinning team has had several informal contacts with the TA consultants for the Ministry of Capital Investments. There have been no formal liaisons but several joint seminars have been organised for participants from MoCI and PERS.

2.3.3 Support to the transition of RSRD into a Public Enterprise

In the beginning of 2005 the Ministry procured a major TA consultancy funded by EIB to strengthen the administration and the original Terms of Reference were formulated in a way inviting duplications of the assistance provided in this project. This in particular pertained to the component "Institutional Capacity Building of the Republic of Serbia Road Directorate". However, appropriate changes and clarifications were made prior to signing the agreement. In addition the project team established a contact with the selected consultants and endeavoured to develop a regular liaison on matters of mutual concern.

The adoption of the new Road Law meant that the RSRD automatically was transformed into a Public Enterprise – Public Enterprise "Roads of Serbia" (PERS). The RSRD started in 2005 to prepare for this transformation from a Government Administration to a Public Enterprise with the appropriate business plan and organisation based on vision, objectives and subsequent necessary work processes.

The RSRD has been advised that involvement by SRA in such work would be a deviation from present ToR for the twinning, which must be discussed directly with Sida in advance. The RSRD has been advised that Sida may support the transition but this will then be done as a separate project and should not be included in the twinning.

There have been no further discussions on this subject within the Twinning Agreement.

2.4 Road and Transport Legislation

In December 2005 the work to modernise the legislation in the Road Sector took a major leap forward through the adoption of the new Road Law by Parliament. The present status is as follows:

- **The Road Law**
  The new Road Law contains major changes regarding the organization and the funding of the Road Administration. As from 2006 the old Road Directorate has been transformed into a Public Enterprise "Roads of Serbia", which in some ways is more similar to SRA e.g. when it comes to possibilities to set market salaries. However, the most important part is related to the funding of the road maintenance, which will come mostly from the excise duties on fuels into the account of the new Public Road Enterprise, through the Ministry of Finance.

- **Law on Traffic Safety**
  The draft and the public discussion are completed and the Law is waiting for approval by the Government and Parliament. This Law will have an impact on the liaison with the police and is thus quite important.

- **Law on Environmental Protection**
  This law together with another 3 new complementary environmental laws were adopted in December 2004 and published in Official gazette of RS, No 135/04 from 21st December.

The overall objective of the new law was to adapt Serbian environmental legislation to international standards and especially to EURO-standards.

- **Laws on Road Transport**
  This legislation comprises two laws, one on domestic and one on international transport. They are both in place and were last revised in 2001 and 2000 respectively.

- **Laws on Transport of Dangerous Goods**
  This sector is regulated by two laws, Transport of Dangerous Goods and Road and Rail Transport of Dangerous Goods. Both laws were last revised in 2002. In addition, the regulation on Road Transport of Dangerous Goods, dated 1990 is still in force.

3 LFA-BASED ACTIVITIES AND ACHIEVEMENTS

3.1 Road Safety Management

Activities and Recommendations

3.1.1 Development of a Road Safety Management Strategy and Plan

A draft "Road Safety Strategy" and a draft Traffic Safety Action Plan for the coming five years have been developed, translated and handed over to the Management of the new Public Enterprise. The drafts have been well received and will be formally decided as soon as the new Traffic Safety Law is adopted by Parliament. In the meantime the drafts have been used as a basis for the detailed work planning in the newly established Traffic Safety Unit.

Recommendation
The proposed "Road Safety Strategy" and Traffic Safety Action Plan should, together with the adopted Road Traffic Safety Policy, form the basis for any future traffic safety work within PERS.

The activity is completed.

3.1.2 Supplementary Legislation

The only supplementary legislation identified to be included as legislation is the Work Zone Guidelines (see 3.1.6 below).

Recommendation
The Work Zone Guidelines are finalised and given to MoCI for implementation as a sub-law under the Traffic Safety Law when it is approved.

3.1.3 Introduction of Road Safety Audits (RSA)

A first course in Road Safety Auditing with 20 participants was held in September 2005. After the course some of the participants asked for a deeper course for fewer persons. Such a deeper specialist course was prepared in 2006 and was held in September 2006. A Serbian certificate of attendance was handed to the participants.

The Draft Serbian Guidelines for Road Safety Audits (RSA) and translations of Manuals and Guidelines from Denmark, Canada, USA and ERF were used to develop the first specialist RSA course. The experiences from this course were utilised to develop and

prepare the second specialist RSA course held between 31st of October and 2nd of November 2006 on request by PERS.

The participants included not only PERS staff but also several other main stakeholders in traffic and traffic safety management such as Design Consultants, Faculty of Traffic and Transportation Engineering, Highway Institute, Traffic Police etc.

The course example used was one of the roads designed and currently under construction under the TRP Project. The discussions during the course were summarised after the course in a Final Report by one of the participants Professor Krsto Lipovac assisted by some of the other participants and by Mr. Fredric Gustafsson. The report should form the base for some re-designs to eliminate traffic safety hazards identified during the course.

Recommendation
The activity is completed in accordance with the LFA.

3.1.4 Countermeasures at identified Accident Black Spots

Two seminars/courses have been held to initiate the process covering identification, data collection, analysis and remedies. A catalogue with engineering methods and a list of standard solutions has been prepared. The guidelines developed in the project have been used in the practical work and the work is now concentrated to In-Depth studies, which also was the main topic of the third seminar held in September 2006. During this seminar/course the methodology was not only presented but used in practical work, visiting and examining two accident sites including examination of the vehicles involved. Finally the conclusions were discussed and summarised.

After this last course as after the previous courses, the seminar material and conclusions were handed to the participants on a CD.

Recommendation
The activity is completed in accordance with the LFA.

3.1.5 Guidelines for Road Safety Aspects of Road Design

As previously reported this activity has been reduced due to budgetary constraints.

Recommendation
As a result of the budget reduction, no special design guidelines have been produced. However, the importance of road design for traffic safety has been discussed very much in the RSA courses and the In-Depth study courses. It is considered that PERS should try to manage developing the design guidelines using the material from those courses. It is further recommended that this work will be given priority by PERS.

3.1.6 Guidelines for Road Signs and Marking

In May 2006 the new Guidelines for Work Zone Signing were presented and discussed at a seminar for Contractors, Designers and other interested parties before they were finalised and subsequently translated into Serbian and distributed.

The MoCI is expected to base a proposed sub-law to the new Traffic Safety Law on these Work Zone Guidelines. The English version of the Guidelines can be found on the website www.projektplatsen.se.

Recommendation
The Guidelines should be made mandatory to use in all construction and maintenance works under PERS and be developed into a sub-law under the Traffic Safety Law.

The activity is finalised in accordance with the LFA.

3.1.7 Methods to include Accident Costs in Road Planning

This activity has been reduced to a minimum after previous budget discussions, see Progress Report 2. The activity has focused on introductory discussions on the methodology and the need for introducing accident costs in road planning.

Recommendation
No more work will be done under this activity in the present Twinning Agreement.

3.1.8 Methodology to estimate Accident Costs

Recommendation
Although the priority of this activity has been downgraded, it is necessary to provide a basis for discussion and future inclusion in the road planning process.

This activity has been substantially reduced after the budget discussions in Progress Report 2 and only a Paper on Accident Cost Estimates has been produced.
Considering the importance of road accident costing in road planning PERS should use the paper presented as a basis for discussions on road accident costing, aiming at introducing such costs in the road planning process.

The work according to the reduced ambition is completed.

Expected results and achievements/shortcomings

Five specific results are expected in the LFA:

1. **Foundations for the new organisation and its staffing is laid**
   The new Road Law has been approved by Parliament and thus the new Public Enterprise "Roads of Serbia" established. A new organisation for the Public Enterprise has been outlined, including a new Traffic Safety unit. However, the new Traffic Safety Law is still a final draft awaiting approval by the Parliament.

2. **New policies related to road safety management adopted and converted into procedures and operational guidelines**
   A new Traffic Safety Policy has been formally adopted by the General Manager of Roads in Serbia by the end of 2006.

   Notwithstanding 1. above, the practical work in the new TS Unit has been based on this Policy and a 5-year Action Plan has been developed. Among the proposed activities are Road Safety Audit and Black Spot analysis (incl. In-depth studies). For these activities Guidelines and Handbooks have been developed and translated into Serbian. Some additional internationally used handbooks on RSA have been translated via the Public Enterprise.

3. **New operational principles for monitoring of and reporting on road safety management work adopted;**
   No reviews of the road planning manual or operational principles are done in this activity. The result is more related to the work and development of operational principles in Road and Bridge Management.

4. **New principles for appraisal of projects to account for road safety impact adopted**
   The new Traffic Safety Law will include mandatory Road Safety Audits on all new designs and rehabilitation projects to be implemented via the Public Enterprise. The new law will also make it mandatory to conduct In-Depth studies of fatal accidents and define and remedy black spots in the road network.

5. **Staff adequately trained to operate new procedures and principals**
   The basic Road Safety Audit training has been successfully completed in two different training courses. The last training was a "real" case study where the RSA-report was used to amend the design of a road under the TRP-project.

   In addition one seminar on Black Spot Analysis and two seminars focusing on In-depth studies of fatal accidents have been conducted. The last of these focused on practical investigation of crash sites and of vehicles involved in fatal accidents.

3.2 Routine and Winter Maintenance

Activities and recommendations

3.2.1 Bidding Documents and Procurement Guidelines

The activity was completed in May 2004.

3.2.2 Assistance in evaluation of bids for World Bank Pilot Project

The evaluation was carried out during mid June and included a contact with the World Bank. Draft Bid Evaluation Reports and Recommendation for Award for both districts were completed by 18th June. Most of this work was carried out by Mr Aleksandar Radojicic and Mr Zarko Belic, assisted by the Swedish advisors.
The activity was completed in June 2004.

3.2.3 Introduction of pre-qualification system for Contractors in Routine Maintenance

The activity was completed in October 2004.

3.2.4 Preparation of Plan for Network of RWIS Stations in the World Bank Pilot Areas

The activity was completed in November 2004.

A specialised winter and RWIS course was held in November 2004.The course covered fundamental meteorology and climatology as well as details of the new system. External specialists were used for RWIS data interpretation (Mr. Dan Eriksson) and in meteorology (Mr. Claes Brundin). There were 10 participants in the course, 6 from contractors, 2 from RSRD, 3 from the supervising consultant (HWI) and 1 meteorologist from the Meteorological Institute in Serbia.

3.2.5 Assistance during the implementation of the RWIS Plan

The fieldwork was successfully completed in February 2004 using a Swedish measuring vehicle and a RWIS specialist together with a local maintenance supervisor and our subproject leader. It was later evaluated by specialists from the University of Gothenburg, recommending six sites with back-up alternatives. These sites were then checked by the local maintenance supervisor together with Mr Ulegård for physical constraints before finally decided upon.

The actual procurement has been included in the two maintenance contracts for the pilot districts.

At the end of July 2005 all the six RWIS stations were in place in the Pilot Areas and in August 2005 they were delivering data to the server every half-hour.

The implementation of the RWIS in the Pilot Project was successfully completed during the second winter of the twinning project (2005-2006). This included establishing a very good co-operation with the Hydro Meteorological Institute, which has provided various weather forecasts from satellite and radar and warned the Contractors in time when extreme weather conditions could be expected. This co-operation is very important and will be beneficial as the RWIS is expanded.

Preparations for implementing RWIS in the remaining parts of Serbia have been made and a proposal how to proceed in procuring remaining maintenance districts has been presented and discussed with Mr. Zoran Stojisavljevic, Head of Main and Regional Roads.

The successful implementation in the Pilot Project resulted in PERS deciding to procure all winter maintenance according to the model in the Pilot Project. Thermal mapping of the entire road network will be carried out and two sets of special equipment for this purpose have been procured in an international tender. The order was secured by KUAB, Sweden. As a first step during the third winter (2006-2007) thermal mapping of Vojvodina and a Maintenance Area in Eastern Serbia was carried out.

Assistance in drafting the procurement documents has been provided via the Twinning Agreement.

Recommendation
The activity shall continue throughout the sub-project with PERS staff.

3.2.6 Training of PERS staff and contractors in Contract Management and Supervision

Winter Maintenance
In October 2005 two seminars/courses were successfully completed:

- Winter maintenance organisation and planning, focusing on contractor training.
- Meteorology and RWIS course, a refresher course but this time based on the actual siting of the RWIS stations.

Details on the courses regarding times, participants and contents/documentation can be found at the website www.projektplatsen.se.

During September - December 2005 a Swedish-Serbian maintenance engineer, Mr. Vladimir Milosevic, was seconded to the local Supervision team from the Highway Institute. The secondment proved very successful.

A winter and RWIS course was held 17th-18th February, 2007.The course covered fundamental meteorology and climatology as well as details of the RWIS system. External specialists were used for RWIS data interpretation (Mr. Dan Eriksson) and in meteorology (Mr. Claes Brundin). There were about 50 participants at the seminar.

Summer Maintenance
Although the new winter maintenance concept is the most important part of the program, there is reason to review also the summer maintenance and in particular those items using performance based remuneration. However, due to the resource restraints no activities have been planned.

Recommendation
The two winter courses should be conducted on a yearly basis as part of the standard winter preparations. The Meteorology and RWIS course should be a central course, while the winter planning course should be held locally for each contractor.

3.2.7 Support to PERS during annual reviews of World Bank Pilot Project

No special inputs have been made to provide support to the reviews made by the World Bank.

Recommendation

The reviews should be better co-ordinated in order to maximise the exchange of useful information.

Expected results and achievements/shortcomings

Three specific results are expected in the LFA:

1. **New policies and procedures for competitive tendering for road maintenance adopted and implemented**

PERS has decided to expand the use of competitive tendering for road maintenance to the entire road network. The expansion will be based on the Pilot Project and will be completed in 2007-2008.

Assistance in drafting the tender documents has been provided through the Twinning Agreement.

Regarding maintenance policies, see 3.5 Road and Bridge Management below

2. **RWIS will be in operation and used to develop the winter maintenance contracts**

As reported in Progress Report 3 the implementation of the RWIS was successful and the result used to develop new winter maintenance standards. There has also been a considerable improvement in the contractors' work performance between the first and second winter seasons as noted by both the Highway Institute and our seconded maintenance engineer.

The most significant result of the follow up is that it is now possible to compare unit salt and unit aggregate consumption as well as unit costs of winter maintenance between the Pilot Districts (1,176 km road) and the remaining districts in Central Serbia (about 10,000 km road). Details of this were presented in Progress Report 3 and the conclusion was that the Pilot Project has dramatically reduced maintenance costs as well as provided important environmental improvements.

An additional evaluation of the Pilot Project has been carried out by two specialists in maintenance procurement and resulted in a number of useful recommendations to improve the procurement and follow up. In particular the following could be noted:

- The system with the demerit points runs well from both the Employer's and the Contractor's point of view;
- The joint inspections function well from both parties' point of view;
- The contract period should be extended for example by adding an optional extension of 2-3 years to the original 3 years;
- More of the unit rate based activities should be made performance based;
- The Contractor's self control must be developed;
- More weight must be given to the initial inspection and agreement on the take over standard;

- Prospective contractors should be provided with more initial information and training in the implementation and pricing of the new methods and standard levels;
- The trigger and minimum values for unit price items should be made more stringent (an ever on-going activity);
- The risk distribution between Employer and Contractor and the role and responsibilities of the contracting parties could be further developed (this is new to Serbia and thus must be taken in steps);
- The contract documents and reports should be scrutinised aiming at reducing the documentation required, while insisting on fully utilising those remaining.

Details of the follow up have been used when drafting the new procurement documents for the expanded maintenance contracting.

3. Staff adequately trained to operate new procedures and principles.

The basic training has been completed and the initial goals have been continuously raised and met. Besides, the "Salt SMART Learning Guide"has been translated for application by PERS staff.

Looking ahead yearly refreshment training must take place before each winter season, using data from the Serbian RWIS and from 2007-2008 run by PERS own staff. More effort should also go into preparing prospective new contractors.

3.3 Environmental Protection

Activities and recommendations

3.3.1 Review and Seminar on Environmental Issues and Protection including basic EIA (step 1)

The activity has been completed with seminars and training differing in scope between target groups (top management and specialists).

Recommendation
The need and benefit of cost effective EIA processes should be discussed once again within the top level management of PERS to decide on the further development. The project has achieved a lot in the EIA-field and in some senses it is harvesting time for PERS.

3.3.2 Seminars on EIA (step 2)

Step 2 contains not only EIA methodology but also expert seminars on subjects where good knowledge of EIA is required. Given the subject the target groups for the seminars have not been identical. The following seminars have been organised:

- Noise, Water and Air quality Oct 2005

- Cost-effective work on Noise, Water, Air and EMP (Environmental Management Plan) May 2006
- Late steps in the EIA-process (Smooth processes) Sept 2006
- Fauna passages/animal mobility April 2007

In addition the environmental sub-project manager has contributed in seminars arranged by the other sub-projects, especially road management.

The activity has been completed.

Recommendation
The environmental field is huge and is also growing as a consequence of increasing knowledge. Subsequently there is much more to learn and implement than managed in this project. Given additional resources are made available the following seminars are next on the priority list:

- Making plans and priorities regarding noise;
- General environmental guidelines and environmental demands on contractors.

3.3.3 Assistance during creation of an Environmental Unit in PERS

The Environmental Unit is now approved and an accepted part of the established organisation at PERS ("Environmental Protection Dept"). Throughout 2005/06, the unit was small, comprising only two staff members, but both were experienced and had high and relevant competence for their task. Since August, 2006 the former manager of the unit has been promoted and is now in charge of the entire Sector for quality, safety and environmental management, the other being appointed the chief of a new environmental protection department. One new staff member has been recruited to the new department.

Above mentioned staff participated in all public seminars and have also participated in uncountable discussions with the Swedish counterpart, including a huge e-mail correspondence. Two have also participated in a tailor-made study tour to Sweden studying illustrative examples and participating in in-depth discussions with a number of Swedish experts. These contacts were later used in the choice of subjects and lecturers for the seminars in Serbia. The seminars have all been jointly planned and prepared and normally followed up by "mini seminars" for the eco-unit allowing deepening of the subject and strengthening of this small group.

The assistance has included assistance in implementing on-going road projects.

The activity is completed and the goal is more than reached as regards competence exchange, but the new department is still understaffed.

Recommendation
Understaffing makes the organisation very vulnerable. At least one more staff, preferably with experience of EIA and environmental management, is needed. But the group will still be small and must act as managers. There is still need for good routines and tools for supervising in this sense. General environmental guidelines that define the environmental demands on all contract works on a general level could play an important role in

improving the situation. Such a document, including the indicators for fulfilling the demands, should allow more of the Eco-unit's resources to be available for dealing with site specific environmental matters.

3.3.4 Assistance in development of Specifications for Mitigation of Environmental Impact at road works

Such assistance has been given continuously and such references are included in the EIA handbook, now an official PERS document. In addition all Swedish experts engaged have given such recommendations and delivered references to Swedish, EU and in some cases also other international sources. The project has assisted in creating a reference library at the Eco-unit.

Recommendation
The goal is reached and the activity concluded.

3.3.5 Assistance in reviewing Quarry Operations and Asphalt Production

On the job training regarding these matters has been carried out as "project specific matters". At an early stage it was agreed that the then RSRD, now PERS, have the capacity to handle these matters independently under the IPPC Law (Law on integrated pollution prevention and control of environment, Official Gazette of the RS, No. 135, 2004) administering the Installations, and that the project could assist on the subject when requested.

Recommendation
None.

3.3.6 Provision of sample Environmental Assessment and Management Plans

Several samples from Serbia have been reviewed and a lot of on-going projects have also been discussed. The assistance has mostly been of the type on-the-job training, including meetings/negotiations with stakeholders inside or outside PERS.

Recommendation
The Eco-unit should when possible create a demonstration example of a Serbian road project. The 3-year current annual reporting on environmental and health & safety matters within the ongoing Serbian Road Recovery Project (financed by EIB/EBRD) could be a good forum for doing so.

Expected results and achievements/shortcomings

Three specific targets are pointed out in the LFA:

1. New environmental impact mitigation measures will become effective

Huge steps in this direction have been taken. The environmental legislation is undoubtedly taken into account in road planning but there is still a way to go to develop good routines bearing the stamp of mutual trust between PERS and its stakeholders. This mutual trust is probably the most important factor for finding measures on all levels of planning that are objectively "cost effective" from the society point of view.

An environmental policy parallel with other policies has been developed and approved by the General Manager. This has the potential to stress the importance of environmental concern and responsibility within PERS.

The actual integration in the standard procedures will be made by PERS.

2. PERS staff with sufficient knowledge of environmental protection to apply it to road-related issues.

The Eco-Unit is now approved. It is small but has high competence. Stakeholders inside and outside PERS are today well aware of this. However, the staffing of the unit is in reality no bigger than at the start of the twinning. This is a frustrating fact but nothing the twinning project can be blamed for.

To get a picture of the knowledge and desires of RSRD staff, an eco-questionnaire was prepared at an early stage (see Progress Report 1). Its result influenced the EIA-seminars and constituted a platform for further planning of seminars and training. At the end of the project the same questionnaire was used again to measure the result of the whole environmental sub-project, which proved to be very positive.

3. Comprehensive guidelines for EIA adapted to Serbian environmental legislation

The series of Swedish guidelines have been translated to Serbian, adapted to Serbian legislation and prepared for application as PERS Environmental Publications. The "Expert Seminars" have also provided PERS with material suited for further development of Serbian guidelines.

3.4 Road and Bridge Management

3.4.1 Introduction

The Road Management part of the sub-project is now in phase with the Time Schedule and the LFA. Courses/seminars on Strategic Planning, Program Analysis and Axle Loads

have been implemented as planned. The contents of these courses/seminars were discussed with the counterpart and tailored to suit the target groups.

The sub-project has focused on the policy development activities and in November 2006 three policies in the area of Maintenance, Environment and Traffic Safety were signed by the General Manager of PERS.

Unfortunately the Bridge Management part is much delayed and it will not be possible to carry out the activities as originally planned. The Bridge section within PERS is severely understaffed and it has proved very difficult to keep up with the ambition level in the LFA. Notwithstanding this, some of the most needed activities have been implemented and a translation of the Swedish Bridge Inspection Manual into Serbian has been carried out as well as an evaluation of the Serbian norms for load bearing capacity.

Pavement activities and recommendations

3.4.1.1 Seminar on Overview of Pavement & Bridge Management Policy

This activity was performed through seminars and workshops on different occasions. The work began already in November 2004. However, it took a while before the importance of having a policy for supervising and improving the maintenance organisation was understood. Efforts were made to describe and promote understanding of the concept of decision making based on relevant information in different situations.

This activity began to achieve good progress after a workshop performed in July 2005.

The seminars held had four main objectives, namely:

- understanding the fundamental basis of strategic management;
- clarifying the differences between Strategy, Goals, Objectives and Policy;
- highlighting the importance of such documents as an efficient tool for transforming strategic planning from an academic exercise into the nerve centre of RSRD/PERS management;
- how to implement these ideas.

After these seminars and workshops, the working group showed confidence and agreed that the most necessary policy at the moment would be the Maintenance and Rehabilitation Policy. Since then, several drafts of M&R policy have been suggested and discussed through (mail) correspondence. The final version of this policy was released in November 2005.

Recommendation
The activity is finalised in accordance with the LFA.

3.4.1.2 Seminar on Maintenance Activities in Serbia and Europe

The seminar covering this activity was arranged under the topic "An Overview of Asphalt Pavements, Use of Ground Penetration Radar (GPR) and other Non Destructive Testing (NDT) methods in Road Condition Evaluation and Rehabilitation Planning". The courses/workshops were held in September, 2005 at the Serbian Road Directorate in Belgrade.
At the end of the course a short test was arranged where the key topics of the course were again discussed and diplomas were given to the participants.

In total 21 persons from different departments within RSRD and Ministry of Capital Investment attended the seminar, as well as people from Center for roads Vojvodina, Novi Sad, Traffic Institute , Belgrade, Highway Institute, Belgrade, Institute IMS, Belgrade, Civil Engineering University, Belgrade, Civil Engineering University , Subotica and Faculty of Technical Science, Novi Sad.

The handouts from this seminar are separately available on a CD that was distributed to the participants.

Recommendation
The activity is completed in accordance with the LFA.

3.4.1.3 Seminar on Data and Data Collection

As mentioned in Progress Report 3, this activity has been partly covered under the topic of "Seminar on Maintenance Activities in Serbia and Europe". Supplementary activities were planned in the seminar/course on Project Analysis. However, after implementing the seminar/course on Strategic Planning and Program Analysis there is almost nothing left to be done compared to the original plan. See also 3.5.5, below.

Recommendation
The activity is completed in accordance with the LFA.

3.4.1.4 Trainee Course on Strategic Planning, Programme and Project Analysis

The course/seminar on Strategic Planning was carried out as planned during September 2006. After an overview of Strategic Planning and its importance within a modern road authority, the concept of integration between different disciplines of engineering, economy, traffic safety and environment was discussed. Available tools for strategic planning were briefly reviewed. The last part of this course was dedicated to an example on Strategic Asset Management/Planning from Sweden. Selected participants both from PERS and the Ministry of Capital Investment attended the course. The course was successfully carried out and received a positive feed back. However, Mr. Milojcic, the project co-coordinator, was not satisfied with the number of participants. It was thus

decided that a short version of this course should be repeated during the coming seminar on Project Analysis.

The course/seminar on Programme Analysis was originally scheduled for implementation in October 2006. Unfortunately, the pre-planning activity was delayed due to the time necessary for establishment with new Serbian technical counterpart. However, the course was successfully completed a month later in November. The issues discussed under this topic were:

- Framework for Programme analysis;
- Tools for Programme evaluation;
- Presentation of Swedish Pavement Management system;
- Road Network Description
  - Data/ information (including Information on Environment and Traffic Safety)
  - Criteria/ indicators for selection of candidates.

The course was concluded by an example on the Swedish approach on programme analysis.

Consequently, the course/seminar on Project Analysis was postponed. It was successfully carried out on two occasions as planned in April and May 2007. A subsequent course/seminar on Quality Management Systems was planned together with the Client and Swedish counterparts and experts. It covered both internal and external quality management and was successfully carried out in June 2007.

Recommendation
The activity is completed in accordance with the LFA.

3.4.2 Review of Axle Load Standards

In October 2006 a seminar was held in Belgrade. The seminar was very well prepared and based on a list of expectations from the participants received a few weeks before the seminar. These expectations were mostly regarding information about

- The relation between heavy vehicles and estimation of residual bearing capacity of the bridges;
- Data processing and presentation of vehicle measurements;
- Organisational scheme for measurement of axle load;
- Types of vehicles and materials recorded as overloaded;
- Which types of scales/weighbridges are used at borders and which organisation (locations of scales, responsible institutions, etc.);
- Scales and organisation used on toll road sections;
- Weighing In Motion (WIM) systems;
- Legislation (rules) on stopping vehicles with foreign registration plates;
- Insurance of the load during its unloading, also protection of the goods.

Most of the above was covered by the topics selected being

- EC Directive 96/53 on vehicle weights and dimensions;
- Implementation and further development in Sweden;

- Fines and charges in Sweden for vehicle overloading;
- Swedish system for the supervision of heavy traffic;
- Control site strategy;
- Weighing equipment;
- Interaction between axle weight and road wear;
- Interaction between heavy vehicles and bridge construction.

There was a great interest in this seminar which attracted participants from the Ministry of Capital Investment, the Traffic Police, PERS and companies working with scales. A site visit to a weight control unit was also included.

The participants were given a CD with the seminar documentation.

Recommendation
The activity is completed in accordance with the LFA.

Bridges activities and recommendations

3.4.3 Initial review of current bridge planning practice in Serbia

The initial review was carried out in June 2004.

Recommendation
The activity is completed in accordance with the LFA.

3.4.4 Load-bearing capacity of bridges

An agreement was made with the Serbian counterpart that a local expert should prepare translation of the Serbian documents related to codes, bearing capacity, methods etc.

Recommendation
Apply both the Swedish and the Serbian calculation methods to the same bridges in Serbia. Compare and further analyse and evaluate the results from the two approaches (Swedish and Serbian). If needed, revise PERS code/method based on evaluations as above.

3.4.5 Object Level Planning, Work Programming and Procurement

The activity was discussed in Sweden and the contents were confirmed by Mr. Veljovic in May 2006. The Swedish Bridge Inspection Manual has been delivered in digital form to PERS (Mr Veljovic) to be used in the elaboration of the PERS manual.

A successful Bridge Management seminar was held in Belgrade in May 2007 with about 40 participants. It covered the entire operative management process as well as some strategic issues and included fruitful discussions between the Serbian participants and the Swedish specialist lecturers.

Recommendation

The activity is completed in accordance with the LFA.

3.4.6 Strategic Bridge Planning and General Support to PERS Bridge Section

This activity contains two parts, one related to network level planning and one assisting in the practical work programming. Both parts of the Swedish Bridge Management System (BMS) are of interest to PERS and were included in the Bridge Management seminar in May 2007 mentioned above.

Recommendation
There is a need for introducing planning aids such as the Swedish BMS but the capacity of the PERS is at present insufficient to receive any major assistance to develop such systems. The PERS must be given more time to consolidate and the expected activities are beyond this twinning agreement period.

Expected results and achievements/shortcomings

Four results are expected according to the project LFA:

1. **Improved Maintenance Management Organisation**

   The organisation has been properly trained and key staff has been introduced to many efficient steering tools such as Balanced Score Card and the Swedish follow up method using indicators. The extent of this improvement remains to be answered by the Serbian colleagues.

2. **New policy for Road Asset Management drafted**

   Policies on Maintenance Management, Traffic Safety and Environment have been reviewed by the PERS top management and signed by the Director General.

3. **Assisting PERS describing suitable procedures for assessment of bridges in general and evaluation of bearing capacity of bridges in particular**

   The procedure has been described during a study visit in Sweden by the Serbian counterpart. However, several agreed steps should have been taken by the Serbian colleagues to allow this component to succeed. At the moment, the only activity undertaken is the translation of some basic documents for the evaluation of Bridge Bearing Capacity.

4. **Staff adequately trained to operate new procedures and principles**

   The work on road management is well under way but the difficulties regarding the bridge part within this sub-project are well known. However, many major steps (such as translations of key documents regarding Bearing Capacity and Bridge Inspection) have been taken in order to provide necessary precondition for training of staff. For training purposes, a 3 days seminar has been held, led by most experienced staff and experts from the SRA, covering the most important issues regarding Bridge Management in general. However, this seminar is far

from sufficient considering adequate training of staff to operate new procedures and principles, particularly regarding Bearing Capacity. It is desired that the original plan for training of staff is followed in the case of possible extension or continuation of this project.

3.5 Study Tours

4 DEVIATIONS AND SUPPLEMENTARY ACTION

As discussed in Progress Report 2 resources were reallocated from Traffic Safety to Maintenance. There were further delays in the sub-project Bridge Management and subsequent reallocations were then made to the other sub-projects.

As far as the Pilot Project is concerned the Maintenance Sub-Project has been more than completed within the present twinning agreement. Given the obvious success of the project, PERS has already decided to expand it to the entire Serbian road network. Thermal measuring equipment has been procured and preparations for a staggered approach are well under way. The ambition is to prepare all tenders in time for the winter season 2007/2008.

Additional technical assistance would be useful but PERS could still go a long way without or with only limited outside input.

During the execution of the Traffic Safety sub-project it has been very obvious that the highest priority is to create a functioning Road Traffic Accident database and an establishment of overall traffic safety management system in Serbia. This includes not only developing a reporting system suitable for computerisation but also that the database should be compatible with the planned new road database (project should have started autumn 2006), using e.g. GPS for determining the location of accidents. The result should be better accuracy in reporting (cause and location) as well as better follow up with enhanced possibilities both to carry out Black Spot analysis and to compare traffic safety key-figures within and outside Serbia.

The bridge part of the Road and Bridge Management sub-project must be scaled down and was continued after the primary activities on the Serbian side had been completed. However, the target group should also be reassessed.

Since the beginning of the project reports, material used on seminars and courses and other documents related to the Twinning Project have been "stored" on the "Project Place" (website www.projektplatsen.se). This server is reachable on the Internet and has been appreciated by all users on the Swedish side as well as the Serbian side. There's a lot of useful information stored on this server that will be lost after the end of the twinning project because the server will be closed after the end of the project. To secure the data before closure everything will be copied to CD's to be distributed to PERS and SRA.

5 PRIORITIES FOR A FUTURE EXTENDED TWINNING PROJECT OR TECHNICAL ASSISTANCE PROJECTS

5.1 Management and administration of PERS

- Modelling of the integrated quality management system QMS (Quality - Road safety - Environment);
- Implementation of the elements of integrated quality management system: (quality management and quality control - traffic safety - environment);
- Development, upgrading and procurement of the PERS Archive and Documents management.

5.2 Road safety

- Assistance in formulating the action plans for the new Traffic Safety Unit in PERS;
- Participation in some Road Safety Audits on new designs including training of some external Serbian experts to act as independent auditors;
- Guidelines for Road Safety Aspects of Road Design;
- Participation in a systematic Black Spot management including training of external Serbian experts/consultants to work with Road Safety and Black Spot analysis;
- Participation in "In-depth studies" on fatal traffic accidents including training of both TS-unit staff and external Serbian experts to act as independent investigators;
- Arranging joint seminars and study trips with the Traffic Police and other stakeholders to improve co-operation and facilitate communication;
- Methods to include Accident Costs in Road Planning;
- Methodology to estimate Accident Costs.

5.3 Road maintenance

Summer Maintenance

The new winter maintenance concept was the most important part of the ongoing program, but it is advisable also to review the summer maintenance and in particular those items using performance based remuneration. Additional technical assistance would be useful for PERS, upgrading of non-winter maintenance as the logical step in co-operation.

- implementation of new methods, standards, technologies and equipment into the routine non-winter maintenance.

RWIS will be in operation and used to develop the winter maintenance contracts.

- Post-processing of data received from thermal mapping measurements, apropos defining key spots for setting up Road Weather Stations which represent integral part of future Road Weather Information System (RWIS) - Training of the PERS staff in this activity;
- Payment model for winter maintenance. Applicability and possibility of using Swedish software -Training of PERS's staff.

5.4 Road and bridge management

Strategic Bridge Planning and General Support to PERS Bridge Section
This activity contains two parts, one related to network level planning and one assisting in the practical work programming. Both parts of the Swedish Bridge Management System (BMS) are of interest to PERS and have been dealt with in a seminar in May 2007.

- There is a need for introducing planning aids such as the Swedish BMS.
- Bridge capacity for 100-200 bridges - Analysis of the calculation results as a justification of the applied methodology.

5.5 Environment

Strategic Environmental Planning and General Support to PERS Environmental department

- Sustainable transport in the domain of roads;
- Establishing the General Environmental Guidelines; and
- Formulating a Noise Abatement Implementation Plan in the Serbian road sector, referring to quality standards.

6 TIME SCHEDULE AND RESOURCE UTILISATION

A revised Time Schedule showing activities with actual and planned inputs (mws) is found enclosed as well as a detailed follow up of resources.

7 BUDGET AND BUDGET FOLLOW UP

The forecasted expenditures for fees and costs indicate that the project will be concluded within the originally agreed ceilings.