

<p>ABOUT the PROJECT:</p> <p>The Road Asset Management System Project is part of the ADB financed CAREC Corridor 2 Road Investment Program (ADB Loan No. 2635-UZB). The Project was implemented by the Japanese consulting firm PADECO under the management of the Republican Road Fund.</p> <p>The overall objective of the Project is to ensure road sector sustainability and provide an objective basis for road sector funding.</p> <p>The Project includes five components:</p> <ol style="list-style-type: none"><li>1. A review of design standards</li><li>2. Development of a Road Asset Management System</li><li>3. A review of the Contract Management Practices</li><li>4. Creation of an enabling environment for the use of Public Private Partnerships (PPPs)</li><li>5. Technical Recommendations for the Design, Construction and Maintenance of Cement Concrete Pavements.</li></ol> <p>The Terms of Reference <a href="#">TOR</a> provides a detailed description of the Project. The Consultant's approach to the implementation is presented in <a href="#">Inception Report</a>. The <a href="#">Final Report</a> presents the Consultant's findings, conclusions and recommendations. It targets high-level government officials. As part of the Project the Consultant also conducted a range of trainings. The training documents are included in the <a href="#">Training Report</a>.</p>	<p>Documents:</p> <p><a href="#">TOR</a></p> <p><a href="#">Inception Report</a></p> <p><a href="#">Training Report</a></p> <p><a href="#">Final Report</a></p>
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<p><b>DESIGN STANDARDS REVIEW</b></p> <p>This Study presents the review of the design standards applied to different classes of roads and present proposals for cost savings strategy, as per experience in other countries.</p> <p>Life-cycle cost analysis (LCCA) is the most effective means to help making decisions between pavement types, determining design lives and determination on other design and planning issues. A methodology for evaluating the benefits and costs of a Pavement is based on predicting key distresses and smoothness within the service life, and then computing the life-cycle costs associated with the evaluated design in comparison with other designs.</p> <p>It is the task of the designer to compare a number of design alternatives and calculate the life-cycle costs of these alternatives. Current service life standard should be considered as the minimum, but longer service-lives may be acceptable provided that the life-cycle cost analysis demonstrates that the life cycle costs will be lower than this minimum service life standard</p>	<p>Documents: <u>Design Standards Review</u></p>
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## ROAD ASSET MANAGEMENT SYSTEMS

The Consultant created the foundations for a RAMS in Uzbekistan. It piloted the method on the International Road Network.

The main purpose of the RAMS is to keep and reinstall the existing road network in acceptable condition for road users at lowest possible life-cycle costs. These Conditions are referred to as Service Levels. The [Strategic Network Assessment](#) discusses appropriate Service Levels that maximize the contribution of the road network to the economy of Uzbekistan. This document also present a cost estimate for a period of ten years to keep and reinstall the road network at these Service Levels. The [document Suitable Pricing Principles](#) discusses a method that can be applied by Uzavtoyul and the Republican Road Fund to generate sufficient revenues and income to finance road sector expenditures.

The [Institutional Analysis](#) for the RAMS proposes ways to mainstream the RAMS in Uzbekistan. It recognizes the importance that Uzbekistan has to develop their own systems. The document recommends appropriate institutional and organizational arrangements

The RAMS is composed of a Pavement Management System and a Bridge Management System. It highly depends on the collection of data, filling of databases and analysis of such data. The Consultant created a data base to serve as an asset register.

HDM IV is an important tool to make strategic and network assessments of pavements. The calibration of the system is described in the [HDM IV Calibration Report](#).

## Documents:

[Institutional Analysis RAMS Database Structure & Format](#)  
[PMS Data Collection Manual](#)  
[BMS Data Collection Manual](#)  
[Database User Manual](#)  
[HDM IV Calibration Report](#)  
[Suitable Pricing Principles](#)  
[Strategic Network Assessment](#)

## CONTRACT MANAGEMENT

As part of its assignment, the Consultant reviewed the current contract management practices, established procedures for quality control consistent with the FIDIC terms of contracts.

Introduction of FIDIC offers great potential to save expenses during contract implementation. It reduces contract administration needs. By reducing administrative control and assigning more responsibilities regarding quality management to contractors, the Republican Road Fund can make better use of their already heavily overloaded works supervisors. Instead of having to review contract administration of the Contractor, the Works Supervisors can allocate more time to quality assurance, which will help to protect both the contractor and client from mistakes during works implementation.

It also studied possibilities to improve maintenance and recurrent repair contracts through the application of performance-based contracts.

During the life of the project, it was established that Performance-based Maintenance & Recurrent Repair Contracts between Uzavtoyul and Avtoyul Enterprises may be feasible options to improve the performance to keep the existing maintainable road network in acceptable road conditions. For more information read, [Performance-based Maintenance](#). The Consultant prepared a generic contract for this purpose on the basis of discussions with various experts.

Documents:

[Contract Management Practices review](#)

[FIDIC based Quality Control Procedures](#)

[Performance-based Maintenance Standard PBM Contract](#)

## PUBLIC PRIVATE PARTNERSHIPS

Creation of an enabling environment for the use of Public Private Partnerships (PPPs) on the Common-use Road Network is not feasible and possibly not even desirable. The financial space for the Road Fund is sufficient for the Republican Road Fund to be a very attractive partner for the IFI, who offer cheap capital compared to the private sector.

The role of the private sector is expanding in the road sector, but needs to develop further for it to be able to participate in PPPs. Especially the performance of the private capital market is insufficient to implement PPPs. The private capital market is not yet providing long-term financing to any industry.

PPP can thus only be implemented through foreign direct investment that provide capital financing and take responsibility for the implementation of the project. Two standard contract documents were developed for this purpose. The [Draft OPRC Contract](#) allow for medium-long-term projects that do not include capital repairs, reconstructions or construction works after the Initial Works are completed. Typically such Contract have a duration between 6 to 9 years, depending on the nature, complexity and size of the Initial Works.

The [Draft Gold Book Contract](#) is a suitable document for projects with longer durations. It establishes a dual client. Uzavtoyul for Maintenance & Recurrent Repair services and Republican Road Fund for all Capital Works.

The Consultant helped to prepare [the Pilot Project Structure](#) that pilots the [Performance-based Maintenance and Recurrent Repair Contract](#) between Uzavtoyul and Avtoyul Enterprise. This Study found that the introduction of such contractual arrangements are more feasible than introduction of PPPs in the Common-use Road Sector.

## Documents:

[PPP assessment report](#)

[Performance-based Maintenance](#)

[Draft PPP Law](#)

[Pilot Project Structure](#)

[Draft OPRC Contract](#)

[Draft Gold Book Contract](#)

[Draft PBM Contract](#)

## CEMENT CONCRETE PAVEMENTS

After decades during which only Asphalt Concrete Pavements were constructed, the country is now once again constructing Cement Concrete Pavements.

The Consultant developed Technical Recommendations for (a) [cement concrete pavement surveys and Planning](#), (b) [road maintenance works and equipment](#). It also provides guidelines for the implementation of such projects to ensure quality delivery of cement concrete pavements.

The document [Technical Specifications for Construction & Repair Works](#) provide technical recommendations about technologies that have been applied on recent projects. It also proposes the temporary Works Procedures to help redeveloping Uzbekistan's construction industry to implement Works associated with Cement Concrete Pavements.

The Consultant provides recommendations to implement a number of Basic and Applied Research projects to improve the existing analytical design method. It advises against adoption of empirical design methods, as these methods were all developed for very different industry and climate environments, which governs the appropriateness of the design method. To read more, download [Technical Specifications PCC Pavement Design](#).

## Documents:

[Maintenance Survey and Planning](#)  
[Maintenance Works and Equipment](#)  
[Technical Specs PCC Pavement Design](#)  
[Specs Construction & Repair Works](#)  
[PCC Project Management Guidelines](#)

DOCUMENTS:

Pavement Design, Review, Cost Saving Strategy and Guideline

PPP Assessment Report

Draft PPP Law (Report)

Draft PPP Contract (Report)

PPP Pilot Project Design (PPP)

Performance-Based Maintenance Contracts

Review of Contract Management Practices

Quality Control Procedures

Cement Concrete Pavement Maintenance Guidelines

Cement Concrete Pavement Maintenance: Survey and Repair Identification

Cement Concrete Pavements: Maintenance Works and Equipment

Improved Technical Specs PCC Pavement Road Design

Improved Specs PCC Pavement Construction & Maintenance Works

PCC Pavement Project Management Guidelines

Institutional Analysis RAMS

Database Structure & Format

Data Collection User Manual

Data Collection Manual - Part 1 - Pavements

Data Collection Manual - Part 2 - Bridge Inspections

Data Base Application Manual

RAMS (HDM IV) Calibration Report

Definition of suitable pricing principles

Strategic Network Level Needs Assessment & Service Levels Report

Inception Report

Final Report

Trainings Report