



# Technical Assistance Consultant's Report

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## India: Institutional Strengthening and Capacity Building for the Madhya Pradesh State Road Sector (Financed by the Government of United Kingdom)

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**Asian Development Bank**



## INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING FOR THE MADHYA PRADESH STATE ROAD SECTOR

(ADB TA 4013-IND)

### Final Report



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## Table of Contents

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2.</b>	<b>GENESIS OF THE MP ROAD SECTOR REFORMS PROGRAM .....</b>	<b>1</b>
2.1	PROGRAM LOAN.....	3
2.2	KEY PROGRAM LOAN CONDITIONALITIES AND TA TOR .....	3
<b>3.</b>	<b>TA TIMELINE.....</b>	<b>10</b>
<b>4.</b>	<b>TA TEAM'S PROPOSED INPUTS AND ACTUAL TIME UTILIZATION.....</b>	<b>11</b>
<b>5.</b>	<b>TA ACTIVITIES, OUTCOMES AND RECOMMENDED ACTIONS .....</b>	<b>12</b>
<b>6.</b>	<b>TA OUTPUTS AND CAPACITY BUILDING NEEDS IN FUTURE .....</b>	<b>13</b>
<b>7.</b>	<b>LESSONS LEARNT .....</b>	<b>17</b>
	Appendix 1: GoMP PWD Current Staffing Pattern.....	19
	Appendix 2: Original Terms of Reference of the TA .....	21
	Appendix 3: Current Status of TA Activities, Outcomes and Recommended Actions.....	29
	Appendix 4: Supplementary Report Extension Period (June to December 2006) .....	50
	Appendix 5: List of Reports/ Documents/ Technical Papers Submitted by TA .....	68
	Appendix 6: List of In-country Training Programs Arranged by TA.....	71
	Appendix 7: Brief Report on Overseas Study Tours .....	74
	Appendix 8: SWOT Matrices for MP Road Sector, MPPWD and MPRDC .....	92

# Acronyms and Abbreviations

ADB	Asian Development Bank
BOT	Build, Operate and Transfer
ERR	Electronic Road Register
FIDIC	International Federation of Consulting Engineers
GOI	Government of India
GoMP	Government of Madhya Pradesh
GAAP	Generally Accepted Accounting Principle
HDM-4	Highway Development Management - 4
IDSS	Institutional Development Strategy Study
IT	Information Technology
IRC	Indian Road Congress
MORTH	Ministry of Road Transport and Highways
MPRDC	Madhya Pradesh Road Development Corporation
MPSEDC	Madhya Pradesh State Electronic Development Corporation
MDR	Major District Road
NHAI	National Highway Authority of India
ODR	Other District Road
PWD	Public Works Department
PPTA	Project Preparatory Technical Assistance
PPP	Public Private Partnership
ROMDAS	Road Measurement Data Acquisition System
RMS	Road Management System
SDP	Sector Development Plan
SHA	State Highways Authority
SHZ	State Highways Zone
SSN	Social Safety Net
SWOT	Strengths, Weaknesses, Opportunities and Threats
TA	Technical Assistant
TOR	Terms of Reference
VR	Village Road
VRS	Voluntary Retirement Scheme

## 1. INTRODUCTION

This Draft Final Report documents the developments in the road sector reforms in Madhya Pradesh initiated by the state government, terms of reference of the ADB TA, activities undertaken by the TA, achievements of the road sector reforms program and recommended future directions for sustainable reforms in PWD, MPRDC and the road sector, in general.

According to the Terms of reference for the TA, the objectives of the reforms program were as under:

To strengthen the ability of the GoMP PWD in:

- Transport planning;
- Project costing and financing;
- Commercialization of transport operations;
- Investment management;
- Social and environmental management; and
- Introduction of internationally recognized principles of engineering, technical, financial and economic analysis methodologies.

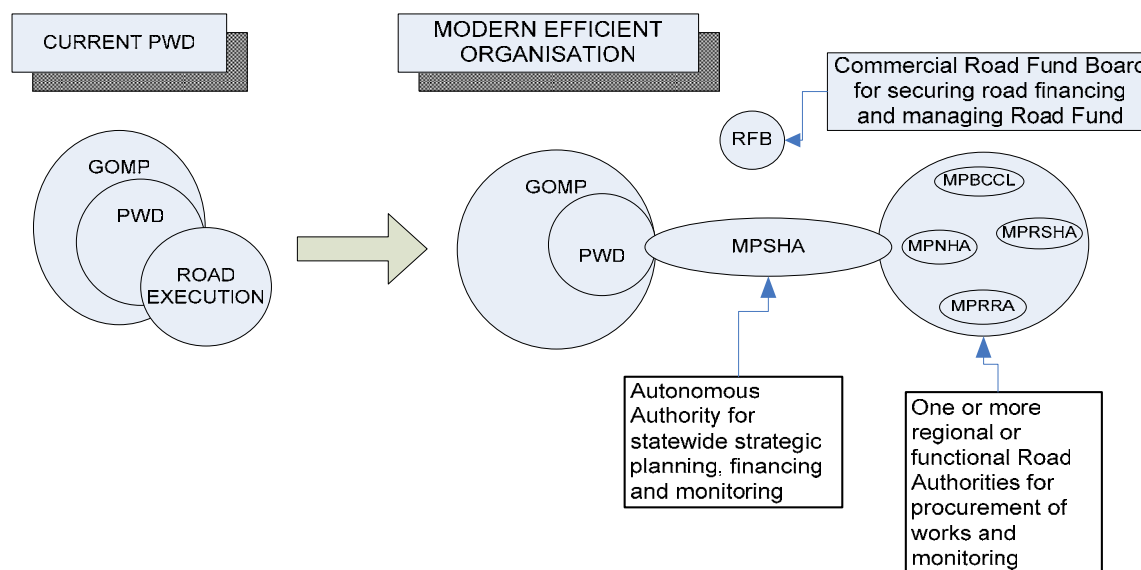
Details of the progress in the reforms program and TA activities are covered in the sections below.

## 2. GENESIS OF THE MP ROAD SECTOR REFORMS PROGRAM

The government of Madhya Pradesh was reviewing the functioning of the Public Works Department in relation with its road building functions in the years 2000 and 2001. At the same time it was contemplating to avail a credit from the International Bank for Reconstruction and Development (World Bank). The World Bank financed an Institutional Development Strategy Study (IDSS) to recommend the reforms program, which should result in making the road building activity more efficient and should result in a sustainable highways development program. Booz, Allen and Hamilton jointly with Louis Berger International and Consulting Engineering Services were appointed as consultants for the IDSS. The consultants submitted their report in 2001. Major concerns reflected in the IDSS report related to reorganization of the road building institutions, new technology induction, modern financial management practices, procurement reforms and human resource development issues. Their brief recommendations regarding the reengineering of road building institutions can be represented in the figure 1 below.

The consultants recommended that the road building organization in the state should be restructured in phases so that it converted itself from the traditional public works mode into a transitional hybrid mix of modern practices and continuously reformed organization till it finally became a High Performance modern organization. The timeframe envisaged for this reorganization process was such as to achieve the desired High Performance program delivery by the year 2007. The stage-wise transitional reengineering program recommended by the consultant is represented in the figure 2.

### THE ORGANIZATIONAL TRANSFORMATION PROCESS SUGGESTED IN THE IDS

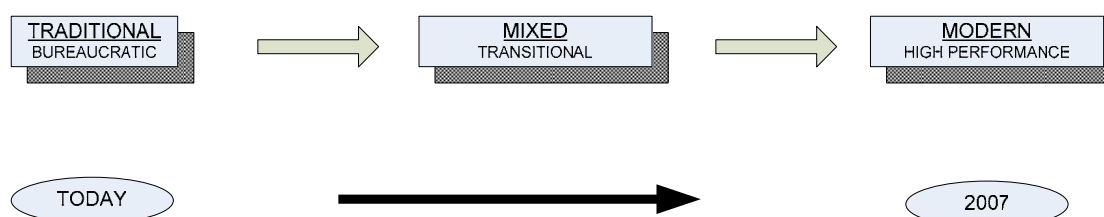


The IDSS program highlighted the following major Desirable Objectives for the reforms program.

#### DESIRABLE OBJECTIVES:

- Major sector reform is fundamental to address the key issues affecting road sector performance and enable the implementation of best practices in Madhya Pradesh;
- Implementation of the reforms program will enable road sector to obtain better funding and enable it to properly manage use of these funds;
- Reforming the regulatory structure will require sustained efforts over time;
- Strengthening core services requires improvement necessary will be in planning, design, construction and maintenance;
- Comprehensive approach to human resources management will be necessary to support the new sector structure;
- Strengthening of information systems will create efficient road sector management structure and processes.

#### STATE HIGHWAY DEPARTMENT : STAGES OF DEVELOPMENT



Meanwhile the state government initiated Project Loan discussions with the Asian Development Bank (ADB). ADB instituted a Project Preparatory Technical Assistance (PPTA-ADB TA 3751-IND), the main objectives of which were to prepare six roads identified by the state government for implementation in Phase-I of the project and to review and redesign the reengineering plan for the road building functions of PWD under a Sector Development Plan (SDP). The PPTA broadly recommended similar reforms arrangements as the earlier IDSS but the timeframes for carrying out reforms and the structure of the engineered organizations were clearly defined with staffing patterns, professional skills, roles & responsibilities of executives, financial accounting & management perspectives and use of information technology (IT) in road management functions. As a sequel to the PPTA report, ADB instituted the current TA for assisting the state government to initiate the reforms program under a Program Loan.

## 2.1 PROGRAM LOAN

The Government of Madhya Pradesh (GoMP) and the Asian Development Bank (ADB) came to an agreement in 2003 whereby ADB would lend GoMP, through the Government of India, an amount of US\$30 million in the form of a Program Loan.

Proceeds of the loan were not tied to any specific expenditure, but the loan was conditional on GoMP's execution of an agreed reform program, which was summarized in a Policy Matrix and the proceeds of the loan were to be applied to the financing of expenditures for the Program. The reform program was estimated to entail adjustment costs of US\$80.2 million comprising:

	<i>US\$ million</i>
Staff rationalization	26.0
Establishment and commissioning of SHA	7.7
Road maintenance for 5 years, in addition to existing funding level	40.0
Vehicle overloading control program	2.0
Road safety program	3.0
Study of road revenue and road user charges	0.5
Statewide stakeholder consultation by SHZ/SHA	1.0
	80.2

The loan was to be drawn in two tranches. The First Tranche (US\$12 million) was drawn in 2003. The Second Tranche (US\$18 million) was released in March 2006, on ADB's being satisfied that the relevant conditionalities have been fulfilled.

## 2.2 KEY PROGRAM LOAN CONDITIONALITIES AND TA TOR

The Program Loan conditionalities resulted from the Policy Matrix for Sector Development Plan agreed between GoMP and ADB. Details of Key Conditionalities and other measures requiring substantial compliance are furnished in the Table below.

Number	Key conditionality	Status regarding fulfilment	Comments
1.	Transform SHZ to SHA as a self contained and fully functional agency under the direction of PWD GoMP to fully take over the management of state highways in the territory of the state.	✓ Full Compliance	GoMP has enacted State Highways Act 2004. Under the Act, certain roads have been notified as State Highways. Managing Director of Madhya Pradesh Road Development Corporation has been notified as the Highway Authority for all State Highways. MPRDC is functioning as a self-contained agency under the directions of PWD. All state Highways (8300 km in length) are vested in it.
2.	Achieve staff reduction of about 7800 permanent and 8000 non-permanent employees through implementation of Voluntary Retirement Scheme (VRS) and Industrial Disputes Act 1947 under the LRP	✓ Substantially Complied	<p>VRS 2205 has been launched for 2152 employees identified as surplus in 2005. The scheme opened in January 2006 and applications were received under the scheme till 30 June 2006. Current staffing position after the conclusion of the VRS 2005 and reduction of staff on account of natural attrition is placed as Appendix 1 to this Report.</p> <p>Reduction of non-permanent employees could not take place due to shifts in the government's policies relating to labour. However, a staff audit conducted by PWD revealed that the number of gang labour in the employ of PWD was within the norms of labour component in maintenance works as prescribed by MORTH at the central level. Further, gang labourers are retired from service on reaching 60 years of age or attaining 30 years in service. An analysis of the gang labour data suggests that 8000 gang labourers will retire by the year 2010 on applying the above condition.</p>
3.	Road maintenance System <ul style="list-style-type: none"> <li>Devise performance a</li> </ul>	✓ Fully Complied	TA has delivered fully functional road database (ERR) as part of the Road



	<p>based road maintenance scheme.</p> <ul style="list-style-type: none"> <li>• Update the existing road maintenance manual in line with international standards.</li> <li>• Adopt HDM-4 for planning and budgeting of road maintenance expenditure.</li> </ul>		<p>Management System (RMS). RMS utilizes the analytical functions of HDM-4 for planning &amp; budgeting. MPRDC has acquired its own licensed version of HDM-4. PWD has started a pilot RMS project in Indore zone to be later replicated in all zones. TA developed RMS is being used by PWD as well. However, PWD has engaged MPSEDC to design, develop and install enterprise IT architecture integrating the RMS into the organization-wide IT infrastructure.</p> <p>Performance based maintenance system has been embedded in the BOT concession agreements and all BOT road projects are under performance based maintenance scheme.</p> <p>MPRDC has already adopted the road maintenance manual designed by the PPTA consultants.</p>
4.	Approve and implement an action plan, acceptable to ADB for strengthening enforcement of overloading control program.	✓ Fully Complied	The Transport department has already prepared a phased program for strengthening measures for control of overloading of vehicles at 35 border check posts. Sendhwa check post has been fully computerized with electronic weighbridges and four more are being modernized through MPRDC's assistance.
5.	Develop an accident investigation and prevention manual for highway engineers in accordance with internationally recognized standards and distribute such manual to the highway engineers for implementation.	✓ Fully Complied	TA developed the accident investigation and prevention manual for highway engineers. The manual has been circulated for implementation by highway engineers. TA conducted workshops and training sessions for highway engineers in the use of the manual in field and practical situations.

<b>Other Program measures requiring substantial compliance....</b>			
<b>6.</b>	Carry out the Social Safety Net (SSN) program, job counselling, training and information services to the affected employees, to the satisfaction of ADB throughout the program implementation	✓ Fully Complied	VRS 2005 has been launched. SSN program was to largely address the non-permanent employees. However, counselling material for permanent employees opting for voluntary retirement has been prepared and counselling sessions were held for some applicants.
<b>7.</b>	Adopt international financial management methods establish updated accounting and reporting systems for SHA/MPRDC	✓ Fully Complied	MPRDC has adopted EX-1.5 accounting software. All its accounting and financial systems are computerized. These are compliant with the Indian Accounting Standards and Generally Accepted Accounting Principle (GAAP)
<b>8.</b>	Develop and adopt guidelines and procedures acceptable to ADB for more transparent and competitive public procurement	✓ Fully Complied	MPRDC has adopted procurement systems based on FIDIC conditions. Procurement Manual and standard forms have been designed by the TA and MPRDC has adopted these for its use
<b>9.</b>	<ul style="list-style-type: none"> <li>▪ Adopt planning, budgeting and programming systems for SHA acceptable to ADB</li> <li>▪ Develop and implement a Management Information System for SHA to improve documentation and information flow for strategic decisions</li> <li>▪ Establish a road database system to update the database regularly and systematically</li> </ul>	✓ Fully Complied	MPRDC has acquired licensed version of HDM-4, ROMDAS and road database in the shape of Electronic Road Register (ERR) developed by the TA is in use at MPRDC. HDM-4 is being used as the analytical tool with the ERR for planning, budgeting and prioritization of road maintenance works.
<b>10.</b>	Develop and implement human resource development strategy and training programs for SHA staff	✓ Fully Complied	MPRDC has evolved a training and development policy for its staff recommending that every employee will undergo at least two training programs in one calendar year. Training & development Plan with a five year perspective has been designed by TA. Various training programs have already been conducted in-house or in outside institutions for MPRDC/ PWD employees.
<b>11.</b>	Implement the corridor	✓	NHAI concept is not fully

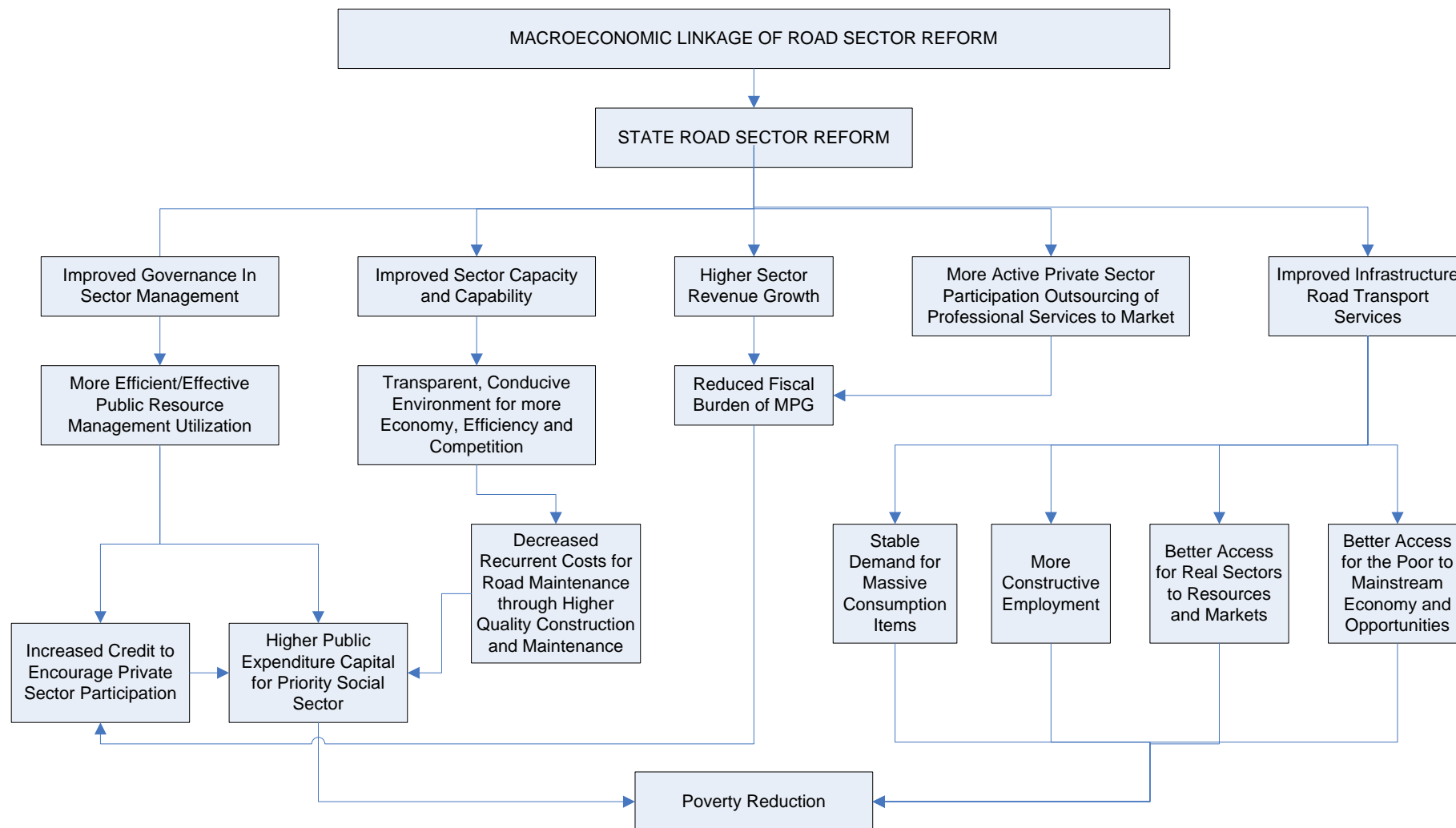
	management unit system similar to that in NHAI	Fully complied	applicable to MPRDC. It has divided jurisdictional control over State highways into seven divisions, who are completely responsible for the management of highway corridors under their control
12.	<p>Allocate US\$ 8 million equivalent under the FY 2003-04 budget for routine maintenance and US\$ 1.5 million for implementation of SSN by March 2003</p> <p>Allocate US\$ 8 million equivalent under the FY 2004-05 budget for routine maintenance by March 2004</p>	✓ Fully Complied	<p>Budget allocated for successive fiscal years since 2003-04 has been in excess of US\$ 8 million for routine maintenance. For the year 2006-07, the total budgetary provision for maintenance is of the order of US\$ 90 million.</p> <p>Since implementation of the LRP commenced in the year 2005 only, budgetary provision for SSN in 2003 did not take place. SSN provision was to account for the non-permanent employees being retired compulsorily. Now that this is not happening, such provisioning is not required.</p>
13.	Pilot test outsourcing of road maintenance using the performance based scheme	✓ Fully Complied	Maintenance of roads will be carried out using the performance-based contract once the construction work was completed. Since most of the State Highways transferred to MPRDC are under one or the other reconstruction program, it was not possible to select a road for pilot testing. However, roads under Bond BOT were just completed and had entered the operations phase. It was thus decided to introduce performance-based maintenance for all BOT toll roads. Amendments in the maintenance schedule annexed to the concession agreement have been carried out and monitoring of maintenance functions in relation with the performance indicators in the maintenance schedule.
14.	Implement the recommendations resulting from the toll system study being carried out under the	✓ Fully Complied	Findings of the study on the Western Transport Corridor were not entirely relevant to Madhya Pradesh.

	<p>ADB-financed Western Transport Corridor Project.</p> <p>Update and implement the guidelines for private sector participation in the road infrastructure (1997) in Madhya Pradesh in accordance with the recommendations of the study on development of PPP under the ADB-financed Western Transport Corridor Project</p>		<p>Madhya Pradesh has adopted a pioneering PPP scheme called the Bond BOT scheme. Projects under Bond BOT scheme were reviewed extensively and a review report prepared. Based on the recommendations in the review report, concession modelling and administration procedures and processes have been modified and updated.</p>
15.	<p>Establish and implement appropriate road and bridge design standards in line with international practices</p>	<p>✓ Fully Complied</p>	<p>IRC/ MORTH standards and Codes of practice used by PWD and MPRDC for design of roads and bridges are in line with international practices</p>
16.	<p>Identify road sector revenue sources and potential road user charges</p> <p>Carry out a study on the feasibility of a MP state road maintenance fund to be managed by SHA</p>	<p>✓ Fully Complied</p>	<p>The state set up a Road Funding Committee under the chairmanship of the Principal Secretary Finance. The TA provided secretarial assistance to the Committee. Extensive study was conducted into the road sector revenues and funds flow into the road sector. TA submitted a technical paper to assist the Road funding Committee form its recommendations. The Committee recommended that no road fund was necessary and it was possible to augment flow of funds into road sector through budgetary processes.</p>
17.	<p>Prepare an audit report and submit it to ADB on implementation of the road safety regulations</p>	<p>✓ Fully Complied</p>	<p>Road Safety Audit reports were submitted on four different road corridors</p>

As the table above shows, most of the key conditionalities have been fulfilled completely and some substantially. On being satisfied with the fulfilment level, ADB released the Second Tranche of Program Loan (US\$ 18 million) in March 2006.

The terms of reference (TOR) for the Institutional Strengthening TA largely emerged both from the Policy Matrix and Program Loan conditionalities as the prominent objectives of the TA related to assisting GoMP in achieving the objectives of the reforms initiated under the Sector Development Plan. TOR for the TA is placed as Appendix 2 to this report.

Macroeconomic linkages envisaged for the road sector reform are depicted in the chart in figure 3.



### 3. TA TIMELINE

Broad features of the TA Timeline are depicted in the Table 1 below:

**TABLE 1: TA TIMELINE**

S.No.	Event/Description	Details
1.	Date of Consultant Services Contract	17 September 2003
2.	Commencement Date	19 September 2003
3.	Inception Workshop	12 -13 November 2003
4.	Consultative Workshop	30 January 2004
5.	Date of Extension with Supplementary Grant	31 August 2005 (for 9 months)
6.	Date of Second Extension at the request of GoMP	31 May 2006 (for six months)
7.	Date of TA Close	31 December 2006
8.	Consulting Firm	ND Lea Consultants Ltd. Canada
9.	Team Leader	1.John Standingford-19 September 2003 to 30 August 2005 2.Lalit Chugh- 31 August 2005 to 31 December 2006

Important deliverables/milestones outlined in the Consulting Contract were as under.

- Inception Report;
- Consultative Workshop;
- Social Action Plan;
- Environmental Action Plan;
- Institutional Development;
- Road Maintenance Management;
- Financial Accounting and Private Sector Participation;
- VRS;
- Overseas Study Tours;
- Draft Final Report; and
- Final Report.

Due to the two extensions and the changes effected in the scope of work for these extensions, the proposal for the last extension results in addition of a Supplementary Report on the activities relating to the second extension from June 2006 to December 2006.

## 4. TA TEAM'S PROPOSED INPUTS AND ACTUAL TIME UTILIZATION

The TA Team's inputs as agreed till the end of final extension up to 31 December 2006 and actual utilization of consultant time is depicted in table 2 below.

**TABLE 2: PERSON-MONTHS BUDGETED AND EXPENDED**

Team member	Person-months at 31/12/06		
	Budgeted	Field Office	Home-office
ORIGINAL CONTRACT+ Contract Variations 1 to 7			
John Standingford (Transport Economist)	23.00	22.47	0.00
Arun Herur (Highway Engineer)	8.90	8.40	0.23
Michael Kent (Environmental Specialist)	1.57	1.57	0.00
Michael Riley (Road Maintenance Specialist)	7.75	6.49	0.72
Janusz Sobieniak (Governance Specialist)	1.80	1.80	0.00
Terry O'Donnell (Financial Analyst)	5.90	5.67	0.00
Sam Pillai (Social & resettlement Specialist)	1.03	1.03	0.00
B B Patel (Labour Rationalization Specialist)	3.90	3.40	0.40
Lalit Chugh (Commercialization & Privatization Specialist/ Team Leader) <sup>1</sup>	23.25	22.43	1.43
Kirty Dave (Legal Expert)	0.48	0.48	0.00
S Gangadharam (Highway Engineer)	4.75	3.54	0.00
Hrushikesh Kolatkar (Social & Environmental Specialist)	17.00	15.45	0.83
Mukesh Naresh (Labour Rationalization Specialist)	0.00	0.00	0.00
Team member	Person-months		
	Budgeted	Field Office	Home-office
TEAM ADDITIONS CONTRACT VARIATIONS 1-7			
Kuldeep Puri (Human Resource Management Specialist)	6.50	6.43	0.00
Anil Mishra (Road Safety Specialist)	6.25	5.90	0.00
S M Sarin (Road Safety Resource Person)	0.75	0.43	0.23
Mohan Joshi (IT/MIS Specialist)	22.50	23.54	0.00
Prashant Joshi (Highway Design Engineer)	7.00	5.37	1.43
Ramesh Gupta (Procurement Specialist)	5.30	4.34	0.93
Totals	147.63	138.74	6.21

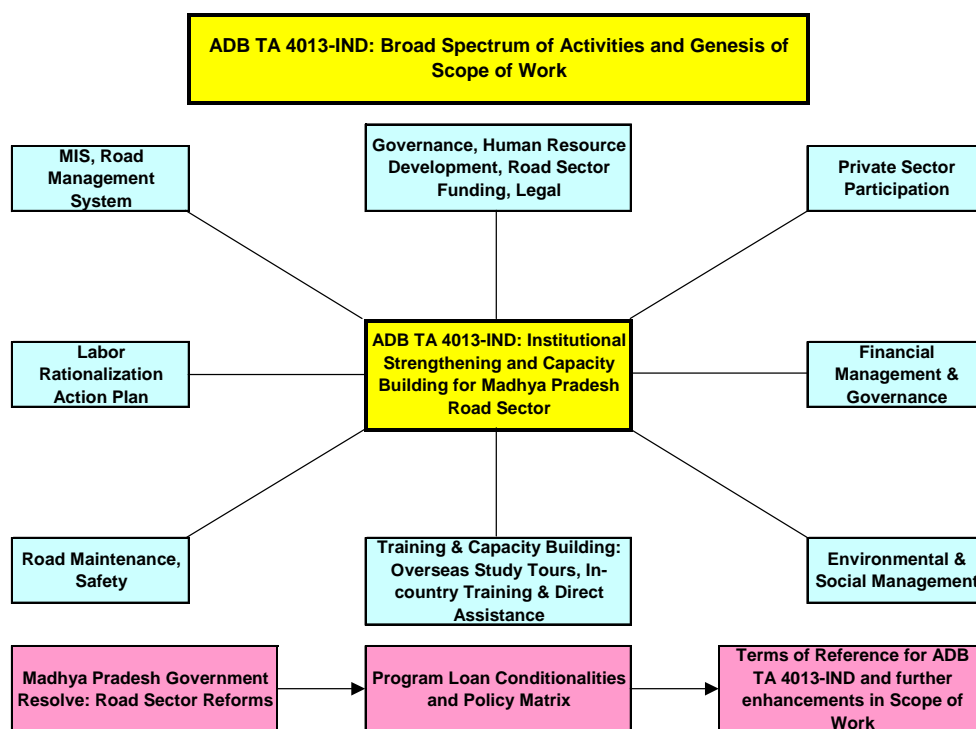
On account of amendments effected by GoMP in the Labour Rationalization Action Plan, full time of Labour Rationalization Specialist, Mukesh Naresh could not be utilized and was

<sup>1</sup> Also Domestic Governance Specialist in Contract Variations 1-3 and Team Leader in variation 4.

proposed to be reallocated among other consultants depending upon the needs emerging from time-to-time. For the six month's extension from June 2006 to December 2006, proposals for reallocation were made considering the inputs required in terms of the TOR for the extension period. The Terms of Reference for the last extension were distinct and different from the Terms of Reference originally proposed for the TA and these were drafted specifically in consultation with PWD after assessing their capacity building requirements. A brief report on the TA activities, TOR and outputs during the extension period from June 2006 is placed as Appendix 4 to this Report.

## 5. TA ACTIVITIES, OUTCOMES AND RECOMMENDED ACTIONS

The TA activities broadly emerged from the interrelationship chart depicted in Figure 4 below.



Activities of the TA have been divided into 16 (sixteen) different heads to correspond with the different areas of institutional strengthening and capacity building forming part of the TA scope of work. These are:

- Governance & Institutional Reforms;
- Human Resource Management;
- Road Sector Funding;
- Legal and Policy Issues;
- Private Sector Participation;



- Financial Management & Governance;
- Environmental & Social Management;
- Road Management System;
- Management Information System;
- Procurement;
- Labour Rationalization Action Plan;
- Road Safety;
- Road Maintenance;
- Controlling Vehicle Overloading;
- Training & Capacity Building- Overseas Study Tours;
- Training & Capacity Building- In-country Training.

Status of TA activities under each of the above sixteen heads, recommended future actions and remarks have been detailed in a tabular form and placed as Appendix 3.

## **6. TA OUTPUTS AND CAPACITY BUILDING NEEDS IN FUTURE**

The TA outputs have been defined in terms of the reports/ documents/ technical papers submitted by the consultant during the course of their work and training programs conducted and arranged to meet the objectives of the TA. List of the reports/ documents/ technical papers submitted is placed as Appendix 5 and list of In-country training programs arranged is placed as Appendix 6. A report on the Overseas Study Tours is placed as Appendix 7 to this report.

A regular reporting system was adopted whereby monthly progress reports on the TA activities and sector developments were reported to ADB and GoMP on regular basis.

Activities of the TA have resulted in capacity building both at MPRDC and PWD. MPRDC being a newly created organization, all business processes and strategy models were designed fresh for its adoption. PWD; however, follows a business process model dictated by its Works Manual. Further all high value, high density road assets (viz. state Highways) are now vested in MPRDC, whereas PWD manages the low value, low density (but critically very important for the local & rural economy) assets like MDR, ODR and VR. Capacity building needs of the two organizations are thus different and any strengthening program for the two organizations should be structured specifically keeping in mind these structural differences. A brief note on the reforms programming is placed in Box 1 below.

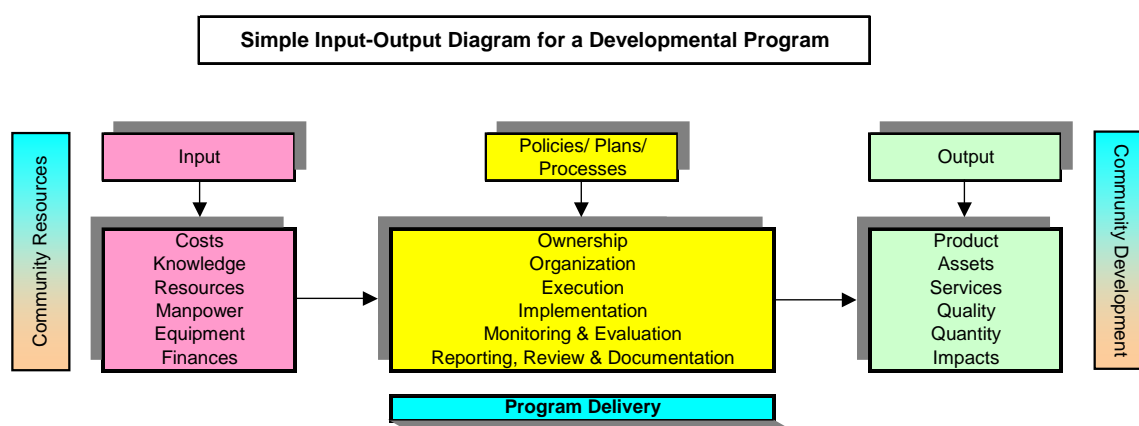
## Box 1

### MADHYA PRADESH ROAD SECTOR PROGRAM DELIVERY AND REFORMS PLANNING

#### 1. Simple Input-Output Diagram for a developmental Program:

Figure below depicts the Simple Input-Output Model for a Developmental Program. The community lines up resources as Input for the Program in line with the objectives and expected results of the Program. Some of the resources may even be sourced from providers not necessarily forming part of the community for whose benefit the Program is designed. However, the community has to bear the costs now or later for the resources provided as Input.

In order to put the Program into operation, policies, plans, processes, procedures and

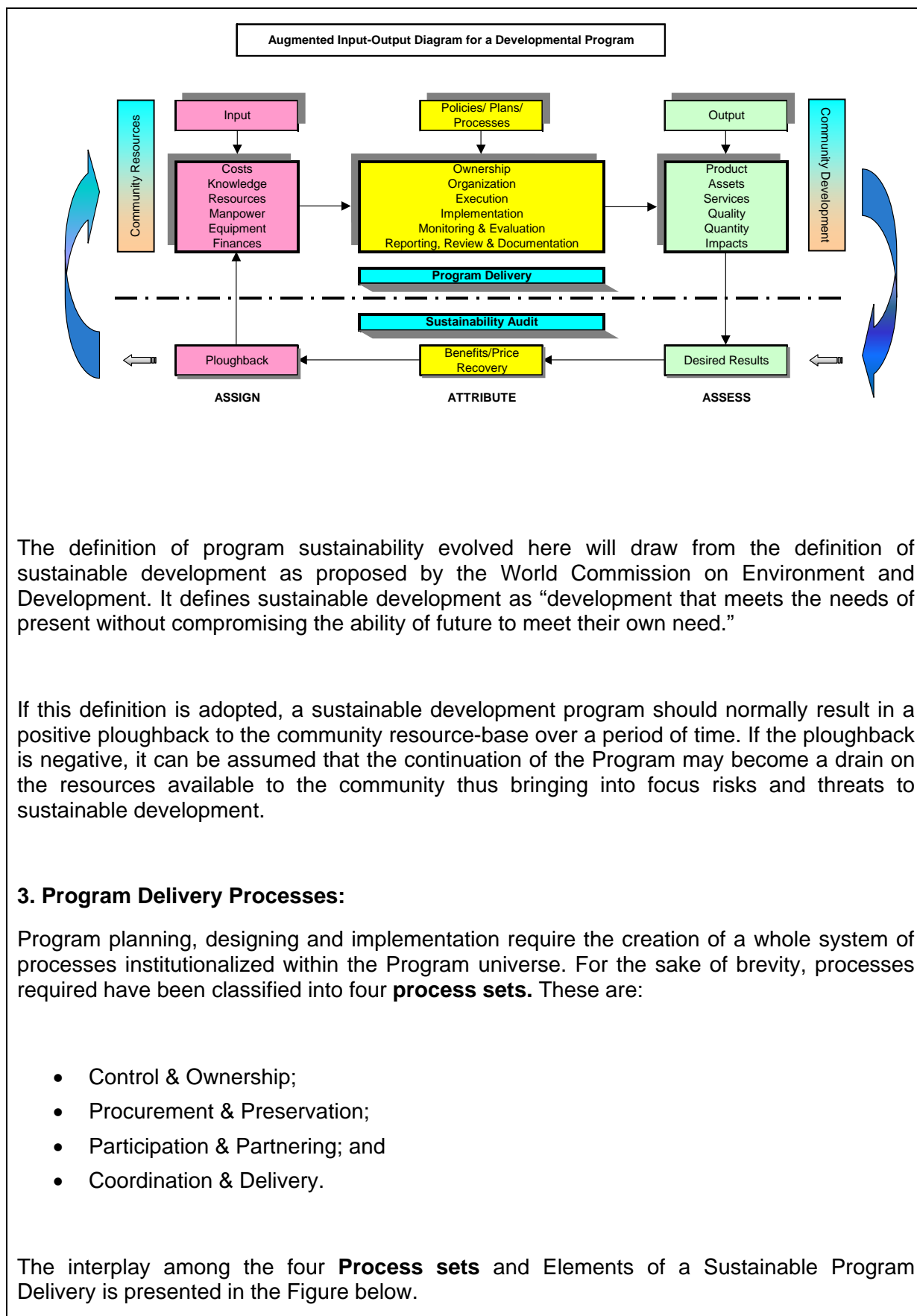


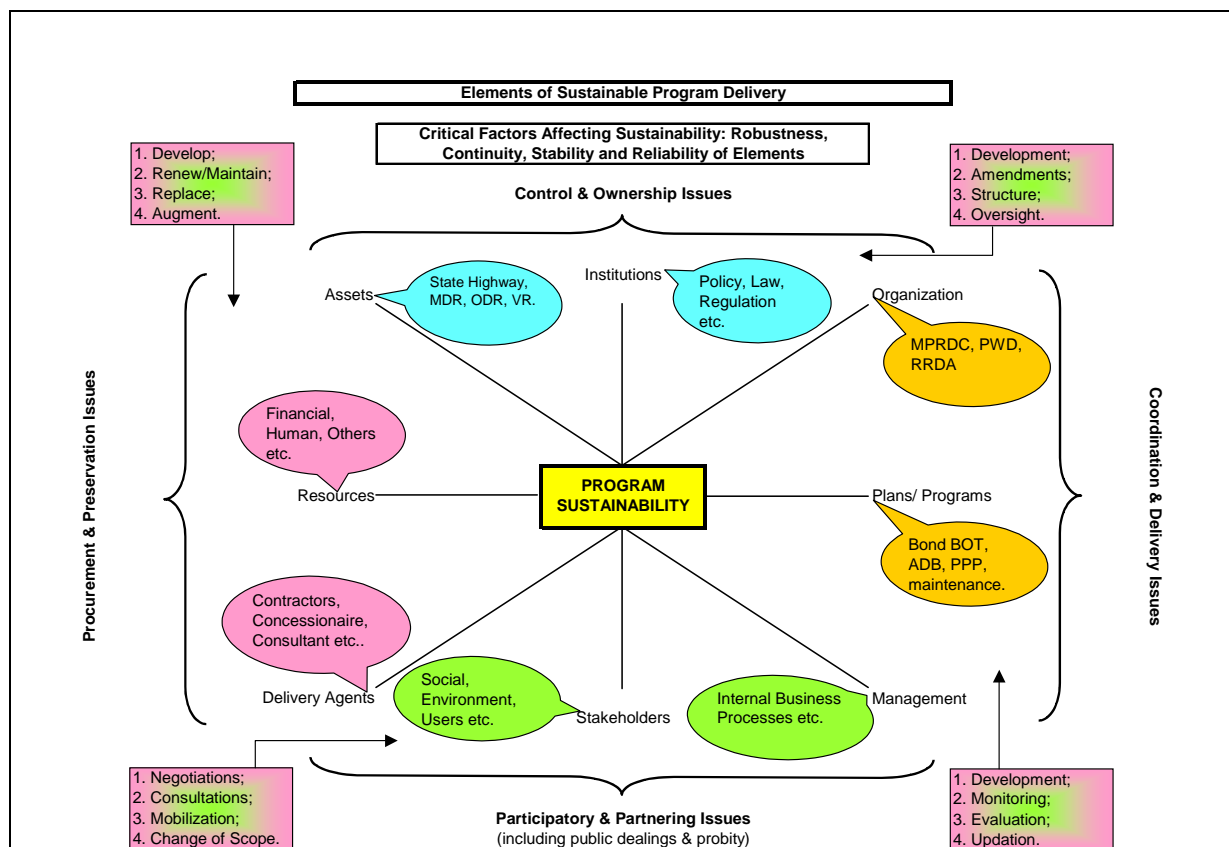
projects are designed for implementation. This results in the evolution of the Program universe comprising a whole body of players, participants, providers and beneficiaries. The desired and expected results are obtained in the shape of the Program Output.

Most often Program Output is evaluated and assessed in terms of physical and financial targets and measures of quality and quantity in relation with standards/ targets planned. The entire exercise of Program management and evaluation is attempted to be fitted into the Program Delivery cycle as an exclusive system.

#### 2. Sustainability Dimension:

Most developmental programs are designed after carrying out an economic analysis, which either determines the cost-benefit ratio or an economic rate of return to adjudge program feasibility. Even post-facto evaluations conduct such economic cost-benefit analyses. However, there is a strong need for a continuous evaluation during the entire Program life-cycle<sup>2</sup> to ensure sustainable development and program delivery. For understanding this continuous evaluation process, the Sustainability Audit module has been added to the Input-Output Diagram to reproduce the Augmented Input-Output Diagram for a Development Program in the figure below.





For a sustainable program delivery, it is essential first to establish robust definitions and structures for the eight elements of sustainable program delivery viz. Assets, Institutions, Organizations, Plans, Management Strategies (including Business Process Model), Stakeholders, Delivery Agents, Resources (including Finances). Once the elements of sustainable delivery are in place, the four process sets, which result in the working model for program delivery are structured. The process sets essentially provide the procurement processes, rules & regulations, governance systems, performance management systems, inter-institutional coordination, life-cycle costing principles and all such systems resulting in inter-element relationships and transactions.

The actual delivery involves numerous bottom level transactions pertaining to payments, receipts, storage, preservation, services, warehousing, vouching, accounting, measurement, testing and monitoring. For an effective program delivery, there has to be a continuous review and evaluation of the elements of program delivery, process sets and transaction systems. Based on these evaluations, reform plans are adopted by project organizations to enhance sustainability.

Hierarchically speaking, the first stage of evolution amounts to an Institutional & Organizational Reform, the second stage of evolution pertains to Process Reforms and the third stage (domiciled practically at the bottom most delivery end) results in the Transaction Systems Reforms.

#### 4. Madhya Pradesh Road Sector Reforms Progress:

The Madhya Pradesh Road Sector institutional strengthening program has completed the first stage of Institutional & Organizational Reforms by creating MPRDC as the new program delivery vehicle coupled with legislative and policy reforms involving designation of MPRDC as the Highway Authority for State Highways. Since MPRDC is a newly created organization,

its business process modeling and planning too are newly designed, different and distinct from the earlier processes adopted by PWD. However, MPRDC has been in existence for over two years and has been using the processes designed specifically for its use for this period. Time has come for a self-assessment and identification of areas for the secondary reforms in the nature of Process Reforms both at MPRDC and PWD. The Transaction Systems Reforms should be carried out simultaneously with the Process Reforms to synchronize the two together. While the new reforms studies for MPRDC will largely be carried out at a central level, such studies for PWD will involve a very large amount of field studies at the delivery ends.

## 7. LESSONS LEARNT

In addition to the recommended actions section above, there are some lessons learnt, which will be useful for pursuing any future reforms program.

The TA has designed SWOT (Strengths, Weaknesses, Opportunities and Threats) matrices for the Madhya Pradesh Road Sector, Madhya Pradesh Public Works Department (responsible for managing the low value, low capacity assets like MDR, ODR and VR) and MPRDC (highway authority for State Highways and other high value, high capacity assets). The SWOT matrices are placed in Appendix 7 to this report. While the weaknesses and threats identified in the SWOT matrices give an insight into the areas of concern and future capacity building needs, an inventory of the lessons learnt is listed below:

- Successful implementation of a reforms program requires strong client commitment;
- The client must identify a strong champion for carrying forward the reforms agenda and designed activities;
- The client should give ample support to the champion identified by providing adequate funding support, resources to pursue the program, meet training and capacity building needs for the new institutional framework;
- New institutions should be adequately staffed by persons of requisite qualifications, experience, aptitude and motivation levels;
- Support for new institutions and the program champion should not only be concomitant with the program requirements but should also be timely and uninterrupted;
- Adequate training, equipment and knowledge infrastructure building budgets should be provided for the institutions pursuing the reforms program;
- Modern management techniques, organizational structures, policy guidance, regulatory interventions and planning and programming tools should be adopted for program delivery efficiency;
- Strong monitoring and evaluation systems should be adopted to be able to monitor program sustainability and delivery of desired outcomes;
- Strengthening of governance systems, partnering programs, procurement policies, public accountability systems, preservation & maintenance of assets, life-cycle cost/ benefit analysis and self-assessment paves the way for value-for-money delivery and efficiency in utilization of public moneys;

- Identifying needs for continuous review of institutional arrangements, business processes, organizational capacity building in conformity with the changing business environments will be impart effectiveness, efficiency and sustainability in the road sector performance.

## **Appendix 1: GoMP PWD Current Staffing Pattern**

**Table: ADB TA 4013-IND: LABOUR RATIONALIZATION PLAN**  
**Reduction in the number of surplus regular employees in PWD and their**  
**current status**

Employee Category declared surplus for VRS 2005  (1)	No of employees declared surplus in 2002 in these categories  (2)	No of employees declared surplus for VRS 2005  (3)	Reduction in number of employees on account of natural attrition 2002-2006 and promotions and VRS 2005  (4)	No of surplus employees remaining in employment of PWD based on 2002 data  (5)	Of Column (4), number of Employees granted VRS under VRS 2005  (6)
Sub-engineer	637	488	797	nil	1
*Other surplus regular employees including timekeepers	2876	1664	1533	1343	29
Total	3513	2152	2330	1183	30

Source: Office of SE, Administration, PWD, GOMP.

\* Excluding Work-charged Employees



## **Appendix 2: Original Terms of Reference of the TA**

## BACKGROUND INFORMATION AND TERMS OF REFERENCE

### Asian Development Bank

#### BACKGROUND INFORMATION

1. The current Public Works Department (PWD) system in Madhya Pradesh, constrained by the identified institutional and policy constraints cannot perform responsibly and be accountable for effective sector management. It has resulted not only in rapid and dramatic deterioration of state road network but also substantial decrease in road use because of unreliable road transport services, and almost no transport services to the rural poor. This, in combination with inefficient management and scarce financial resources, has constrained Madhya Pradesh's social and economic progress. Serious overstaffing of Public Works Department of the Government of Madhya Pradesh (PWD GoMP) exhausts about 67% of the total annual recurrent expenditures,<sup>1</sup> or about 29% of the total budget, reducing the amount of funding for road maintenance. This also contributes to substantially reduced incentive of PWD GoMP staff, poor governance, and an almost non-performing infrastructure management.

2. Sector reform is crucial to rectify this situation, and enable Madhya Pradesh Government (MPG) to manage state roads better, and ensure reliable road transport services to support the state's economic and social development. The reform will help faster good governance in public administration and accountability in public resource and asset management for the state road sector. Improving the sector capability and capacity will enable a transparent and conducive environment for more competition, which in turn will ensure better infrastructure facilities and decrease in recurrent costs for road maintenance over the medium- and long-term. The reform will also initiate establishment of an enabling environment which will encourage more private sector participation in road projects by outsourcing professional services for road development and maintenance projects through competition and use of performance-based contracts. These together will further offset the financial burden of MPG by reducing demand on public sector resources and enabling higher expenditures and capital investment on priority social sectors and poverty reduction. Besides, the investment component will generate constructive employment opportunities and benefit other sectors, thereby contributing to poverty reduction.

3. The main reform objective of the Sector Development Program (SDP) can be achieved in about 3 years. Once this objective is achieved, further interventions will be implemented to achieve the remaining policy objectives, of the sector reform plan to make the State Highway Authority (SHA) an autonomous road agency, sustain the asset base through more active private sector participation, and ensure reliable road transport services. In support of the reform objective, a project loan will be provided to rehabilitate dramatically deteriorated state road corridors to defer huge reconstruction cost until Madhya Pradesh's economic growth and traffic<sup>1</sup> justify financing major reconstruction projects.

4. The main objective of the SDP is to enable MPG to establish more effective and efficient management of state roads and ensure reliable road transport services to support Madhya Pradesh's social and economic development, and thus reduce poverty. The objective is expected 'to be achieved by (i) instituting measures for good governance in the administration and management of the sector, improving capability and building capacity for effective road asset management, improving road transport services and road safety, and initiating steps for better private sector participation; and (ii) rehabilitating priority state road corridors that have deteriorated significantly.

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1 Non-planned budget is for recurrent expenditures.

5. Reforming the state road sector will enable MPG to manage more effectively manage state roads and ensure reliable road transport services to support Madhya Pradesh's economic and social development through two main channels. The first channel includes improving governance in public administration and accountability in public resource and asset management for state roads. Improving the sector capability and capacity will create a transparent environment conducive for increased efficiency and competition. This in turn will promote higher quality construction and road maintenance and more sustainable road infrastructure, and decrease recurrent costs of road maintenance over the medium and long term. The second channel includes identifying sources of road sector revenue to establish a sustainable road maintenance funding mechanism. The sector reform will encourage private sector participation in road projects, which will offset the financial burden to MPG and enable more funding of priority social sectors such as health and education to support poverty reduction. Further, the reform will generate employment opportunities in other sectors, thereby contributing indirectly to poverty reduction.

6. The main objective of the Program is to enable MPG to establish a strong institutional framework for more effective and efficient state road management.

7. The Program builds on the following policy themes: (i) good governance in road sector management and administration and road sector resource management, (ii) preservation and management of road asset, (iii) capacity building to improve institutional effectiveness and efficiency, and (iv) establishment of a favourable regulatory framework for private sector participation. Improvements in good governance and resource management will be key intervention focusing an efforts for more transparent and accountable budget allocation and use, and generation of more sustainable sector revenues for state road development and maintenance.

8. The Program will require MPG to undertake a number of policy actions, that are tranche release conditions. MPG will (i) set up a state highway zone (SHZ) within PWDGoMP as an interim measure, with necessary staffing and institutional authority to integrate key responsibilities and functions for state road management, implement the SDP, and prepare for transforming the SHZ into the SHA; (ii) transform of the SHZ into the SHA as a self-contained and fully functional agency to take over state highway management; (iii) staff the SHA at headquarters and regional levels, with the right skills mix to make the SHA a lean and efficient organization responsible for road sector policy, resource management, development planning and asset management; (iv) implement modern planning and decision-making tools and prepare five-year and annual road sector development and maintenance plans based on economic and other clearly-defined sector performance criteria; (v) improve internal business processes to enhance operational and financial efficiency, management accountability, transparency, and service quality; (vi) implement a staff rationalization program as approved by MPG through a labor rationalization program (LRP) following the Government's VRS for government employees and statutory reduction of labor following the Industrial Dispute Act 1947 to free more funds for road maintenance works; (vii) secure adequate budget to ensure sustainable funding of road maintenance in the near term until a road maintenance fund can be established , and (viii) introduce effective vehicle overloading controls to preserve road assets and road safety programs to reduce road deaths and injuries.

9. Capacity building for the Madhya Pradesh road sector needs to start from basic levels of defining new structures and procedures, updating technology and skills, and improving management.

10. The objective of the technical assistance (TA) is to support road sector reform in Madhya Pradesh. Consultants under the TA will also identify policy areas that need to be improved in line with the overall objectives of the SDP. It will also help MPG build the institutional capacity to strengthen and develop state roads, and strengthen PWD GoMP's

abilities in transport planning, project financing, investment management, and social and environmental monitoring by introducing internationally recognized principles of engineering; technical, financial, and economic analysis; and social and environmental impact assessment. The TA will provide a series of training programs through seminars and workshops to disseminate findings of and recommendations on program implementation and improvement of the state road sector management. Overseas training programs may also be organized to expose senior government officials and key management staff of PWD GoMP to road sector management, alternative techniques for financial and economic analysis, and resource mobilization, especially in road maintenance financing.

11. The TA will require about 84 person-months of international and domestic consulting services with expertise in governance and policy, transport economics, road engineering, financial analysis, project costing and financing, financial accounting and management, and social and environmental management. The TA will provide training in these areas. In addition, the TA will provide equipment necessary for TA implementation. The total cost of the TA is estimated at \$1.9 million: the Government of the United Kingdom will finance \$1.5 million and MPG will finance the rest in kind from its own resources. ADB will be responsible for the administration of the TA. The cost estimate and the outline terms of reference for the TA are in Supplementary Appendix E. The consultants will be recruited in accordance with ADB's *Guidelines for the Use of Consultants* and other arrangements satisfactory to ADB for engagement of domestic consultants.

## **OUTLINE TERMS OF REFERENCE FOR TECHNICAL ASSISTANCE ON INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING FOR MADHYA PRADESH STATE ROAD SECTOR**

### **A. Objectives**

12. The main objective of the TA is to facilitate policy dialogue with the Government of India (the Government) and Madhya Pradesh Government (MPG) and implementation of policy reforms initiated under the ADB-financed Madhya Pradesh State Road Sector Development Program (the SDP), and implementation of recommendations on further policy dialogue and reforms by ADB TA No. 3751 for the preparation and design of the SDP. The TA will help MPG build basic institutional capacity for Public Works Department of the Government of Madhya Pradesh (PWD GoMP) to enable recovery and further development of Madhya Pradesh's state road sector. The TA will also help PWD GoMP strengthen its ability of transport planning, project costing and financing, commercialization of transport operations, investment management, and social and environmental management by introducing internationally recognized principles of engineering; technical, financial and economic analysis methodologies.

### **B. Scope of Services**

13. The TA will (i) review the diagnosed deficiencies and bottlenecks in Madhya Pradesh's road sector development planning and management, road maintenance planning and financing, and demands in institutional strengthening for accountability and sustainable sector development, (ii) assist PWD GoMP in implementing the institutional reform under the SDP, (iii) assist PWD GoMP in establishing the proposed social and environmental monitoring unit, and (iv) provide training program/s, both in the country and overseas, to disseminate findings and recommendations on further reforms and institutional improvements to be made for the state road sector. Overseas training programs will be designed and organized to expose senior government officials and key management staff of

PWD GoMP to good governance in road sector management, alternative techniques for financial and economic analysis, resource mobilization, commercial operation and privatization of road facility operations, diversification of road maintenance financing, social impact assessment and environmental management.

### **C. Terms of Reference.**

14. The services to be provided will include, but not be limited to, the following:

#### **1. Implementation of the Reengineering of PWD GoMP**

15. The consultants shall

- (i) Review in detail the PWD GoMP reengineering plan including the transition plan and reconfirm with the MPG and PWD GoMP on the implementation arrangements and schedule for the institutional reform of PWD GoMP, in accordance with the policy measures and reform actions as stated in the policy matrix of the SDP.
- (ii) Review the existing guidelines for road sector development and planning, including guidelines for the preparation of investment pipelines, projects for road repairs and rehabilitation, and road maintenance, and recommend areas that need further policy and institutional adjustments and improvements;
- (iii) Review the existing budget allocation methodology and source of financing for road maintenance, including the current practice of bond roads for build-operate-transfer and maintenance-operate-transfer modalities and other feasible road user charges, and recommend for MPG's adoption a funding mechanism to secure sufficient financing resources for the long-term road maintenance;
- (iv) Review the existing guidelines for road maintenance management and the maintenance operation manual, if any, for PWD GoMP and its depots at district levels, and recommend a package of practical strategies and detailed operational procedures for long-term road maintenance;
- (v) Review the existing guidelines for feasibility study, and technical design standards with comparisons with internationally recognized principles and practice. to confirm the applicability of such methodologies and design standards for future projects;
- (vi) Review the existing financial accounting methodology and practice, the financial accounting management of PM GoMP, guidelines for internal financial inspection and audit, and recommend areas for improvements, such as development of a financial accounting manual for ADB-financed projects for preparation of project accounts and audit;
- (vii) Review the current institutional development plans of PWD GoMP and its human resource development programs, and recommend enhancement of institutional development supported by a mid-term human resource development program; and
- (viii) Review the current MPG's regulations and operating guidelines and social impact assessment and environmental management for infrastructure projects, and recommend institutional measures for PWD GoMP to establish the proposed social and environmental management unit in line with international practice. The unit will be responsible for environmental management and necessary capacity building for the SHZ during the transition period and later the SHA when it is fully functional to take over state highway responsibilities.

## 2. Implementation of Labor Rationalization Program (LRP)

16. Three (3) person-months of international consultants specialized on monitoring and evaluation (M&E) for labor retrenchment will be recruited to undertake independent monitoring and evaluation of LRP implementation and impacts 'to retrenched employees using ADB's *Handbook on Poverty and Social Assessment* and ADB's *Social Protection Framework*. Twenty four (24) person-months of domestic consultant will be recruited to assist the Department of Finance (EA) and PWD GoMP (implementing agency/PIU) in implementing LRP. The consultants will be recruited in accordance with the ADB's *Guidelines on the use of Consultants* and other procedures satisfactory to ADB.

17. The international consultants will assist the EA and implementing agency to:

- (i) develop institutional arrangements of VRS cell of Department of Finance and PWD GoMP to monitor and evaluate the implementation of the LRP;
- (ii) develop qualitative and qua
- (iii) XBM ntitative indicators against specific outcomes, means of verification and conditions as a basis for the monitoring and evaluation of implementation of the LRP
- (iv) assess socioeconomic impacts of the LRP implementation on retrenched employees through selective household surveys and qualitative methods and recommend appropriate mitigation measures;
- (v) conduct training needs analysis and facilitate training of PWD GoMP and Finance Department of the Government of Madhya Pradesh (FD GoMP) staff in implementing LRP and social safety net (SSN);
- (vi) conduct quarterly and mid-term review of the LRP implementation and recommend measures to improve the monitoring and evaluation procedures; and
- (vii) ensure stakeholder participation and consultation during the implementation of the LRP and SSN through workshops and seminars.

18. The domestic consultants will:

- (i) assist FD GoMP and PWD GoMP in preparing VRS and statutory reduction implementation procedures and manual;
- (ii) assist FD GoMP and PWD GoMP in implementing the LRP;
- (iii) prepare monitoring and evaluation manual and indicators for LRP;
- (iv) prepare Training manual for implementation of LRP and SSN program;
- (v) conduct training for FD GoMP and PWD GoMP staff on internal monitoring;
- (vi) assist FD GoMP and PWD GoMP in preparing internal monitoring reports;
- (vii) prepare job counselling and self-employment manual under the SSN program;
- (viii) prepare financial investment of VRS and CRS manual as part of SSN program;
- (ix) assist FD GoMP, PWD GoMP and external auditors in verifying service records, calculation of entitlements, and necessary documents to identify excess employees,
- (x) monitor consultation process and grievance redress to be conducted by the labor relations committee; and
- (xi) identify and assess the capacity of NGOs and private/public institutions to provide job Counselling and training for retrenched employees.

### **3. Institutional Strengthening and Capacity Building**

19. Based on the findings and recommendations of the above review and studies and specific needs of the institutional reforms of PWD GoMP, the consultants shall provide assistance in the following areas:

- (i) conduct seminars and case studies on the main principles of transport planning and project programming and methodologies for project Costing and financing,
- (ii) Develop a simple computerized model and software for project feasibility study, including traffic forecast, project design and technical specifications, economic and financial evaluation;
- (iii) Provide assistance to help PWD GoMP develop an analytical system and related software for determination of economic and financial viability for decision making to invest for road rehabilitation and maintenance;
- (iv) Prepare guidelines for road financing with focus to encourage private sector participation in road rehabilitation and road maintenance projects, such as commercial borrowing, issuance of bonds, private sector investment, and outsourcing of road maintenance;
- (v) Provide PWD GoMP with assistance to establish financial accounting standards following the internationally recognized principles, and enhancing skills in financial accounting methodology and financial management;
- (vi) Prepare guidelines and procedures for commercialization of transport operations, including commercialization of road construction and maintenance, commercial opportunities for site development along the state highway network, privatisation of trucking industry, and encouraging private operators for passenger transport services; and
- (vii) Provide assistance to PWD GoMP in designing an appropriate overseas training program to expose senior government officials and key PWD GoMP management staff to good governance in sector management, alternative techniques for economic and financial analysis and resource mobilization, especially in road maintenance financing.

20. The consultants shall design series of seminars and workshops in Madhya Pradesh to disseminate findings and recommendations on reforms and improvements to be made for the state road sector, and training achievements, especially those from overseas training programs.

21. The TA will require about 84 person-months of international consultants' services, and 10 person-months of domestic consultants' services with expertise in governance and policy, transport economics, highway engineering and road maintenance, social and environmental management, labor issues and labor retrenchment, financial analysis, project costing and financing, financial accounting, and financial management. Under the TA, about 20 personmonths of overseas training may be provided for subjects in the areas highlighted above. In addition, the TA will provide equipment necessary for TA implementation. The international consultants will be responsible for the purchase of equipment, office supplies and instruments required by the services and implementation of the TA.

#### **D. Counterpart Services and Facilities**

22. PWD GoMP, the Executing Agency (EA) for the T A, will be responsible for providing, free of charge, counterpart support and facilities necessary for the TA Implementation,

including office accommodations local transportation services and logistical services, information and materials necessary for the implementation of the TA.

## **E. Reporting**

23. The consultants shall furnish ADB with progress reports an implementation progress of the reform program including achievements and problems to be resolved, policy recommendations and guidelines for implementation by PWD GoMP and the new State Highway Authority and conduct of the training programs. Upon completion of their services, the consultants shall prepare a draft final report covering all tasks required by the TA. A final report shall be prepared 30 days after the tripartite review meeting with the Government, MPG ADB and the consultants.

24. The consultants in consultation with the Government and MPG shall prepare a program for overseas training of the selected candidates from PWD GoMP and its subsidiaries in the areas specified in the above terms of reference. The consultants shall establish contacts with relevant training institutes abroad and prepare comprehensive training proposals, including selection criteria for candidates, training objectives, training subjects, and so on. The proposal shall be supported by adequate cost estimates and shall be forwarded to ADB for approval prior to the commencement of training.



## **Appendix 3: Current Status of TA Activities, Outcomes and Recommended Actions**

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
I. Governance and Institutional Reforms: a) Creation of State Highway Authority				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Transform SHZ to SHA as a self-contained, fully functional agency under the direction of MPPWD to fully take over management of state highways.	MPRDC was created in July 2005. All state highways vested in MPRDC and MD MPRDC notified Highway Authority under State Highways Act 2004.	None	
2	Staffing of MPRDC both by transfers from PWD and contract positions.	Staffing of MPRDC completed. Critical positions identified held by PWD seconded employees and some new positions filled in by contracted employees.	Staff augmentation needs arising on account of new projects planned for implementation to be fulfilled.	Company Secretary position vacated to be filled soon.
3	Formulate Business Plan and prepare cash flow projections.	Business Plan formulated in June 2005. Cash flow projections prepared using an MS Excel perspective planning tool developed by the TA.	MPRDC to prepare Business Plan every year.	
4	Corporate Governance systems to be designed.	The TA submitted technical papers on role and responsibility of Company Secretary including governance measures pertaining to Board functions.	MPRDC to create governance committees of directors including audit committee and compliance monitoring.	Company Secretary and Statutory Auditors' assistance to be taken.
I. Governance and Institutional Reforms: b) State Highway Act and Rules				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
5	Enactment of Madhya Pradesh State Highways Bill and its Presidential Assent to make it a Law in the state.	Madhya Pradesh Highways Bill passed by legislature in July 2004, received President's Assent in June 2005. Highways Act became operative in October 2005.	None	
6	MPRDC to be declared as the highway authority.	Some highways in the state were notified as State Highways and Managing Director of MPRDC was notified as Highway Authority for State Highways in October'05.	None	Ideally, MPRDC, the corporate person should be the Highway Authority.
7	Frame Rules for the Highway Authority.	Rules under the State Highways Act were delivered in January 2005.	Rules should be made operative in connection with the management of right-of-way and lands appurtenant.	
8	Review Institutional & Regulatory environment concerning MPRDC emerging from enactment of State Highways Act 2004.	TA report on Institutional & Regulatory issues was submitted in September 2004 recommending certain precautionary measures.	None	

<b>I. Governance and Institutional Reforms: c) Indian Toll Act as Applicable to Madhya Pradesh</b>				
<b>S. No.</b>	<b>Planned Actions under the TA</b>	<b>Current Status</b>	<b>Future Actions Required</b>	<b>Remarks</b>
9	Examine whether MPRDC could be empowered as Highway Authority to grant toll concessions under the Indian Tolls Act as amended in 1994 in Madhya Pradesh.	A comprehensive review of Bond BOT program carried out in May-June 2005 including toll legislation. Draft notification for empowering MPRDC suggested.	Notification to be reviewed by state and issued if so suggested by the legal department.	TA considers it necessary to issue such notification.
10	MPRDC expected the TA to review Indian Tolls Act for granting longer period concessions to enhance viability of projects.	Amendment suggested in the Indian Tolls Act given to state in October 2005. Amendment passed by legislature and it becomes Law in 2006.	None	
<b>I. Governance and Institutional Reforms: d) MPRDC-Sustainability, Institutional &amp; Regulatory Concerns</b>				
<b>S. No.</b>	<b>Planned Actions under the TA</b>	<b>Current Status</b>	<b>Future Actions Required</b>	<b>Remarks</b>
11	Examine factors critical to the sustainability of MPRDC as the Highway Authority for State Highways.	TA prepared a presentation for the top government officials suggesting measures for a sustainable MPRDC in November 2004. Measures accepted, adopted.	None	
12	Review Institutional & Regulatory environment concerning MPRDC on MD MPRDC being notified Highway Authority under the State Highways Act 2004.	TA report on Institutional & Regulatory issues was submitted in September 2004. Draft notification under the Toll Act too suggested in June 2005.	Rules under Highway Act 2004 to be notified for management of right-of-way and lands appurtenant by MPRDC.	Ideally, MPRDC, the corporate person should be the Highway Authority.
13	State Highways Act 2004 empowers Highway Authority to regulate traffic including controlling overloaded vehicles.	TA reviewed situation at Road Safety Workshop held in September 2005. Better coordination between Transport Department and Highway Authorities suggested.	High-level coordination needed for implementing provisions of Highways Act jointly with Transport Department.	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
II. Human Resource Management: a) Recruitment and Personnel Policy				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	To assist MPRDC in identifying positions, advertising, shortlisting & interviewing candidates, selecting & appointing professionals.	TA structured the organization chart, identified positions, designed advertisements, assisted in selection of candidates and appointment conditions.	None	
2	To draft appropriate personnel policy including remuneration packages, conditions of service and rules of conduct for employees.	TA assisted in drafting contracts of employment, remuneration packaging, career advancement and performance appraisal procedures for contracted staff.	None	
3	To standardize appointment letters, contract for employment and conditions of service	TA assisted in preparing standardized appointment letters, contracts for employment and service rules for employees appointed by MPRDC directly.	None	
II. Human Resource Management: b) Human Resource Policy Manual and HR Strategy				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	Prepare HRD strategy including business processes for MPRDC	TA assisted in preparation the organization chart for MPRDC, roles & responsibilities of different functionaries while charting out important business processes.	None	As MPRDC expands operations, business processes need review & updation
5	Develop training programs for MPRDC	TA developed and designed several training programs for MPRDC & PWD on the basis of a needs assessment exercise jointly with MPRDC/PWD	MPRDC & PWD to adopt a rational training policy for future.	
6	Design and develop a computerized Human Resource database and assist in designing a comuterized payroll system	The HR and MIS specialists worked in tandem and designed the integrated human resource management module fo MPRDC	MPRDC to have this module integrated in the corporate MIS being developed by C-DAC.	
II. Human Resource Management: c) Training and Development Planning				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
7	Develop and design a Training & Development Plan with five year perspective for MPRDC	TA prepared a Training & Development Plan concomitant with MPRDC training policy in consultation with their executives under a needs assessment study in April 2006	MPRDC to set aside annual training budgets to meet the Training & Development Plan objectives..	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
III. Road Sector Funding: a) Road Fund				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Identify road sector revenue sources and potential road user charges	TA collated information on all direct and indirect road related surces of revenue and potential road user charges for the Road Funding Committee formed in the state	None	
2	Assist Road Funding Committee headed by the Principal Secretary Finance by providing nformation on road funding practices and possible new avenues	TA submitted report on international best practices, dedicated road funds and study on road funds in India, particularly Kerala with background papers from World Bank.	None	
3	Draft a report on Road Sector Financing in Madhya Pradesh highlighting gaps in funding and possible augmentation mechanisms	TA submitted technical paper on Road Sector Funding to the Road Funding Committee in August 2005. The Committee averred that no road fund was necessary.	None	Committee felt it was possible to fund road sector through budgets.
III. Road Sector Funding: b) Review Planning and Budgeting Systems				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	Principal Secretary PWD expected the TA to review the road sector planning & budgeting process in the state	A brief review report was submitted after reviewing the road sector planning data, state budget manual and other fiscal management documents	None	
5	TA to design a decision support tool for road sector budgeting and perspective planning as part of the above review	TA designed a perspective planning tool in MS excel for the state's road sector financing requirements based on life-cycle costing of all road assets	State PWD planning cell may make good use of the tool for arriving at primary budgetary requirements each year	This tool should be supplemented with road database (ERR) as in use at MPRDC
III. Road Sector Funding: c) Review Road Sector Expenditure Profile Including BOT Projects				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
6	TA to design a decision support tool for road sector budgeting and perspective planning for entire roads portfolio of MPRDC, PWD & BOT projects	Perspective planning tool profiles life-cycle costs for all road projects, potential sources of finance and gap in funding	State PWD planning cell may make use of the tool for arriving at road sector funding gaps each year	PWD to update costs, prices, funding sources in the Input Sheet each year

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
IV. Legal: a) Amendments in Road Sector Legislations				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	MPRDC, in order to enhance viability of BOT projects wanted to increase the legal limit of 15 years for toll collection to 30 years by amending legislation	TA delivered the draft of amended Indian Toll Act as applicable to Madhya Pradesh. The period of toll collection has been increased by amending Law.	None	
2	Land acquisition for highways is governed by the Land Acquisition Act 1984. To cut short time in the process, amendments in State Highways Act 2004 sought	TA delivered draft of amended Highways Act. Since it marks radical change, its amendment draft needs to be reviewed by Law, Revenue, Finance and GAD.	State should review the position regarding land acquisition problems and amend law if found necessary	Amended draft on the lines of provisions in National Highways Act, 1956
IV. Legal: b) Review of State Highway Bill and Institutional Framework				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
3	MPRDC was incorporated under the Indian Companies Act, 1956. On passage of the State Highways Bill need for review of institutional arrangement arose	TA reviewed legal content and structure of the State Highway Bill passed by the legislature and the institutional ramification for MPRDC as Highway Authority	None	
4	Drafting of rules for the Highway Authority under the State Highways Act 2004	TA submitted Rules drafted in connection with the management of right-of-way and lands appurtenant to it.	Rules to become operative for demarcating highway boundaries prescribed under State Highways Act 2004	

V. Private Sector Participation: a) Bond BOT Scheme Review				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Review the institutional framework in the state for inviting private sector investment in the road sector	Comprehensive review conducted and amendments in Indian Tolls act as applicable to recommended. Amendments carried out by state.	None	
2	Review the operational aspects of Bond BOT scheme initiated by the state	All operational aspects of Bond BOT projects including monitoring & evaluation, concession supervision, administrative controls reviewed and updated.	None	
3	Review the concession agreement issues pertaining to change of scope of work, toll collection from local traffic and extension of concession period etc.	Comprehensive review conducted and guidelines for extension of concession period, change in scope of work, local traffic and satellite toll plazas delivered	None	
4	Review the project preparation process and other concession related issues in consultation with various stakeholders	Stakeholders' workshop conducted in May 2005, review report submitted and fresh project preparation guidelines submitted	None	
V. Private Sector Participation: b) Guidelines for Private Sector Participation in Road Sector				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
5	Review existing guidelines for PPP project proposal solicitation	Existing guidelines reviewed and fresh guidelines submitted in September 2004	None	
6	Review procedures for approval of concession projects and granting of concession awards in view of the provisions in State Highways Act 2004	New Procedures Manual for PPP projects submitted in August 2004	None	
V. Private Sector Participation: c) Private Sector Participation Evaluation Model				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
7	Prepare a decision tool for use by MPRDC for preliminary assessment of a PPP project financial feasibility and likely amount of grant expectation by bidders.	MS Excel-based decision tool named 'PSI_Selector' designed and submitted with instructions manual. Hands-on training in its use conducted in August 2004	None	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
VI. Financial Management & Governance: a) State Highway Authority Accounting & Financial Model				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Review the financial management & accounting systems followed by PWD and assess the changes required for adoption for SHA	The accounting and financial management systems followed at PWD are single entry systems and not being in line with current standards are not useful for SHA	None	
2	Design and implement a modern financial and management accounting system for SHA/MPRDC	TA designed financial and management accounting systems for SHA in March 2004 later modified in June 2005 to meet corporate requirements of MPRDC	Financial and management accounting system to be fully integrated with corporate MIS under C-DAC's contract	
3	Assist in designing, developing and installing a computerized accounting system or assisting in selection of an off-the-shelf accounting software for MPRDC	TA assisted in evaluation of accounting software packages for MPRDC. MPRDC's accounting system and financial management are fully computerized	None	C-DAC to integrate it with corporate MIS under development
4	Develop and design MPRDC cash flow model, chart of accounts and accounting manual	TA assisted in design and development of chart of accounts adopted for EX software, annual cash flow and accounting manual for MPRDC	Accounting manual, asset valuation system and financial governance to be reviewed by MPRDC Statutory Auditors	Statutory Auditors to review MPRDC Accounting Policy for Board approval
VI. Financial Management & Governance: b) Business Plan & Company Secretary Role				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
5	Design and develop a Business Plan for MPRDC complete with corporate vision, mission, objectives, business goals and policy	TA delivered MPRDC Corporate Business Plan in June 2005	MPRDC to update Business Plan annually and in due course to identify & design long & short-term planning objectives	Business Plan prepared by TA approved by Board in June 2005
6	Draft paper on role and responsibility of financial managers, accountants and Company Secretary	TA delivered the paper outlining role and responsibility of financial managers and Company Secretary regarding corporate financial and organization governance	None	



VI. Financial Management & Governance: c) Chart of accounts and Accounting Manual				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
7	Deliver MPRDC chart of accounts and review chart of accounts templates in the accounting software package adopted by MPRDC	TA reviewed the chart of accounts embedded in EX accounting software and modified it to be in conformity with MPRDC business processes	None	TA recommendations adopted and being modified for financial year 2006-07
8	Deliver accounting manual in respect of MPRDC business processes and in conformity with Generally Accepted Accounting Principles (GAAP)	Accounting manual was delivered and is in use. It is being enhanced through the services of Institute of Public Accountants	None	
VI. Financial Management & Governance: d) Financial Governance & Board Committees				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
9	Advise MPRDC on Accounts for the Financial Year 2005-06	Draft balance sheet valuation and comments paper and technical paper on financial governance delivered to MPRDC including TOR for Audit Committee	MPRDC to initiate financial governance measures in consultation with Statutory Auditors	Board to adopt governance covenants suggested by Statutory Auditors

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
VII. Environmental & Social Management: a) Review GoMP's current regulations and operating guidelines				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Review GoMP's current regulations and operating guidelines on social impact assessment & environmental management for infrastructure projects	TA reviewed the GoMP's current guidelines and more specifically those relating to the Indira Sagar Dam project on Narmada river including surveys in Harsud village	None	
2	Draft a comparative statement of guidelines operating in the state and those issued by various multilateral funding agencies and other Indian states	TA prepared a comparative analysis of such guidelines and also conducted a study tour of Gujarat state for PWD engineers this comparative analysis	None	
VII. Environmental & Social Management: b) Institutional Review				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
3	Review institutional arrangement for assessing social impacts and environmental management in the state road sector	TA carried out this review and made recommendations for creating a cell in MPRDC responsible for environmental management	None	
4	Capacity Building of the Social & Environmental management cell in MPRDC	TA conducted several extensive training programs for the Social & Environmental Specialist and engineers of MPRDC including study tour of Gujarat	None	
VII. Environmental & Social Management: c) Revise and Update Policies				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
5	Review policy documents in use in the state and update wherever required	TA submitted the final Social & environmental Policy document for adoption of the state in January 2006	None	
VII. Environmental & Social Management: d) Rehabilitation & Resettlement Surveys on Phase-I & II roads				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
6	To have the Rehabilitation & Resettlement surveys on Phase-I and Phase-II roads conducted and prepare Resettlement Plans for acceptance by the state government	R&R Surveys on Phase-I roads have been completed and Resettlement Plans on these roads accepted by GoMP. R&R Surveys for Phase-II roads in progress	Once Resettlement Plans for Phase-II roads are submitted by the consultants, state to review and accept for implementation	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
VIII. Road Management System: a) System Characteristics and Components				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Advise on adoption of planning, budgeting and programming system for MPRDC	TA evaluated several options for adoption of the system including one being developed by CES for PWD, HDM-4 and other proprietary systems	None	
2	Finalize system for road data management	After several rounds of discussions and repeated evaluation exercises, TA considered it appropriate to design and develop a new system for road database	HDM-4 is the analytical engine for TA designed and developed road database	
3	Assist in pilot data collection	TA conducted training programs at six locations for PWD engineers between August and November 2004. Data collection commenced in January 2005	None	
4	Identify system support inputs (software, equipment, processes) for integration into total planning system	TA identified MPRDC requirements for integrated planning systems and recommended acquisition of licensed HDM-4, ROMDAS, mini-merlin and QRS-II	None	
VIII. Road Management System: b) Electronic Road Register				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
5	Identify data fields, parametric conditions, road condition & inventory requirements, demographic, geographic, psychographic parameters impacting road usage	All data requirements assessed in consultation with MPRDC/ PWD and data collection completed for all State Highways not being under a capital works program	None	
6	Design training programs in data collection, compilation, collation, dissemination and data entry operations	TA designed a road database designated Electronic Road Register (ERR). Training in all aspects of ERR operations conducted for MPRDC/PWD engineers.	None	
7	Design statutory, administrative, customized and planning reports based on query language of the database	Report formats have been designed in consultation with MPRDC to meet their requirements for reporting portfolio data, progress reports, planning documents etc.	MPRDC engineers have been trained in creating customized reports by using query language	
8	Prepare operational manuals, data retrieval guidelines and enhance these at regular intervals in consultation with MPRDC	Updated versions of manuals of instructions and guidelines for interfacing with HDM-4 have been delivered with the final enhanced version of ERR software in April 2006	C-DAC to integrate ERR and RMS with the Asset Inventory Module of corporate MIS and update guidance as necessary	

VIII. Road Management System: c) RMS and HDM-4				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
9	Interface ERR with HDM-4 tool for analytical purposes	TA interfaced HDM-4 with ERR and carried out extensive ests with raw data in the first instance, later with real data and compared results with roughness indicators	None	
10	Train MPRDC engineers in using HDM-4 as the analytical tool for processing data and information captured from ERR for critical decision making	Training sessions were conducted formally besides on-the-job training to the engineers of MPRDC and MIS Specialist.	None	
11	Profiling planning, budgeting and prioritization of road works under constrained budgets	Various alternative scenarios developed and training in using the ERR, RMS and HDM-4 combination for planning decisions given to MPRDC engineers	None	
VIII. Road Management System: d) System Functions and ROMDAS				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
12	Commission RMS system with real data and install at MPRDC for their use	The RMS system was commissioned on being installed at MPRDC in November 2005 with road data for about 4100 km of road length (State Highways)	None	
13	Enhance RMS to include timeseries data, archiving and datamining facilities, to add asset valuation module- a recent feature of the HDM-4 version 2.0	RMS enhanced for timeseries data and asset valuation modules and enhanced versions installed at MPRDC in April 2006 complete with updated manuals.	C-DAC to integrate ERR and RMS with the Asset Inventory Module and asset valuation with financial management module	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
IX. Management Information System (MIS): a) MIS Requirements				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	MPRDC were planning to outsource corporate MIS development and sought TA intervention in assessing proposals from TCS	TA assisted in assessment of MIS needs of MPRDC and initiated System Requirement discussions with TCS	None	
2	TA was expected to review the TCS proposal for corporate MIS Study and evaluate whether TCS proposal encompassed entire requirements	TA evaluated TCS proposal for its completeness keeping in view MPRDC corporate requirements, prepared a Business Process Model for MPRDC	None	
3	TCS proposal having been found inadequate, MPRDC was looking for some domain expert developer, expected TA in searching for such developer	TA assisted in assessing capabilities of several MIS developers for road agencies including C-DAC	None	
IX. Management Information System (MIS): b) Corporate MIS and Networked Operations				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	MPRDC expected TA to assist in evaluating C-DAC's capability and past similar works delivered	TA assisted in this joint evaluation by visiting C-DAC's facilities and Maharashtra PWD's corporate MIS centre at Pune and studying C-DAC's work for Rural Roads.	None	
5	Expected to assist in framing scope of work for C-DAC and review the contract terms	TA assisted in reviewing the scope of work and contract conditions	None	
IX. Management Information System (MIS): c) MIS and C-DAC				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
6	TA was expected to provide direct assistance to C-DAC by familiarizing them with MPRDC Business Process Model and operational features	TA delivered various notes to C-DAC at several meetings regarding MPRDC's operations, business processes, contracting systems and asset inventory	None	
7	C-DAC required initial guidance on integrating RMS with the Asset Inventory Management Module of the corporate MIS	All documentation, software functioning features and design structures, flowcharts relevant to RMS delivered with briefing on their use	None	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
X. Procurement: a) Procurement Policy				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Review appropriate procurement guidelines and procedures applicable to highway authority in accordance with the Reengineering Plan	Reviewed procurement guidelines and procedures contained in PWD Works Manual. Suggested new regime in adopting FIDIC conditions	None	
2	Design Procurement Policy for MPRDC Board approval	Procurement Policy document delivered to MPRDC. Approved for adoption by MPRDC Board	None	
3	Design and update Procurement Guidelines and Procedures for MPRDC	Revised Procurement Procedures and Guidelines including process of evaluation, selection and engagement of contractors/ consultants/ suppliers delivered	None	
X. Procurement: b) Procurement Manual				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	Design comprehensive Procurement Manual	Procurement Manual delivered and it has been adopted by MPRDC for its operations	None	MPRDC must carry out a value-for-money review annually
5	Design and deliver standard formats for use in procurement processes	Standard contract forms, Request for Expression of Interest, Request for Proposal and various ancillary documents delivered and adopted by MPRDC	None	
X. Procurement: c) Review of Procurement Process for BOT Projects				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
6	Review the procurement, contracting, construction supervision and construction supervision consultant's appointment procedures	The entire procurement process relating to BOT projects reviewed and updated, revised construction supervision contracting terms adopted by MPRDC	None	
X. Procurement: d) Performance-based Maintenance Contract				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
7	Design Performance-based Maintenance Contract for MPRDC use	Performance-based Maintenance Contract designed and delivered to MPRDC/ PWD	None	
8	Pilot test road maintenance using performance-based contract	No road could be identified for pilot testing at the material time, performance-based maintenance applied to BOT projects and a schedule added to Agreement.	None	BOT project maintenance is performance indicators linked

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XI. Labor Rationalization Action Plan: a) Review of LRAP				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Assist in designing and approve implementation of Labor Rationalization Action Program (LRP) for permanent employees of PWD	TA designed the VRS scheme for surplus permanent employees of PWD which after approval was christened VRS 2005 and opened for implementation in January 2006	VRS 2005 was open till 30 June 2006	
2	Assist in designing and approve implementation of Labor Rationalization Action Program (LRP) for nonpermanent employees of PWD	Original plan compulsorily retire 8000 gang labor was modified. TA assisted in staff audit, assessment of natural attrition & redeployment plan for gang labor	Measures for enhancing productivity of gang labor suggested in TA report on maintenance to be adopted.	
3	Design measures for labor rationalization and effective & efficient utilization of labor in view of huge wage bill affecting GoMP fiscal situation	TA assessed the maintenance budget requirements and suggested rationalization measures to assess labor productivity in relation with work accomplished	State's Budget for 2006-07 reflects performance indicators in as much as labor and other works are budgeted separately	
4	Study labor productivity on maintenance work by selecting a pilot road maintenance work plan	TA undertook productivity study on Matlabpura-Jamali road near Indore. TA report made suggestions for productivity enhancement, logistics control & planning	State to review this report together with the report on road maintenance submitted by TA in May 2006	One-day workshop on maintenance captured PWD feelings as well

<b>XI. Labor Rationalization Action Plan: b) VRS for Surplus Employees of PWD</b>				
<b>S. No.</b>	<b>Planned Actions under the TA</b>	<b>Current Status</b>	<b>Future Actions Required</b>	<b>Remarks</b>
5	Design Social Safety Net data forms and investment counselling material for investing VRS funds by employees seeking VRS	TA designed the SSN forms as part of the set of VRS applications to be taken from intending employees and the investment counselling dossier.	None	
6	Design Systems and procedures for receiving, recording, disposing and approving VRS applications	TA designed the Systems and Procedures for VRS 2005 and submitted to PWD in November 2005	None	
7	Develop a formula-driven ready reckoner tool for PWD for computing the VRS compensation dues payable to different categories of employees	TA delivered the ready reckoner both for manual calculations an MS Excel formula-driven tool in March 2006	None	
8	Counselling of employees seeking voluntary retirement under VRS 2005	Employees seeking VRS have been seeking guidance on investment and post-retirement occupational activities. TA hired an ex-banker for this purpose	None	
<b>XI. Labor Rationalization Action Plan: c) Staff Audit and Gang Labor Productivity Enhancement</b>				
<b>S. No.</b>	<b>Planned Actions under the TA</b>	<b>Current Status</b>	<b>Future Actions Required</b>	<b>Remarks</b>
9	Advise on staff audit and assessment of labor requirement for maintenance of low value, low capacity road assets of PWD	TA assisted in staff audit, assessment of reduction in labor over the years 2006 to 2010 due to natural attrition and guidance for labor assessment on MORTH norms	None	
10	Assess labor productivity and suggest measures for deploying them productively on maintenance works	TA carried out productivity analysis on a pilot road. Analytical inputs of this pilot study were incorporated in a detailed analysis on maintenance works	PWD to review the maintenance report submitted in May 2006 and adopt measures for productivity enhancement.	



Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XII. Road Safety: a) Accident Investigation and Prevention Manual				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Prepare and adopt accident investigation and prevention manual	Accident investigation and prevention manual submitted by TA. After a due review, GoMP adopted the manual	Manual was adopted as interim measure pending review after its operational use. Review to be conducted by GoMP	
2	Conduct workshop on use and implementation of guidance provided in accident investigation and prevention manual	TA conducted a workshop in January 2006 on using the accident investigation and prevention manual and to elicit state's comments on its first draft	None	
XII. Road Safety: b) Road Safety Audits and Practical Training				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
3	Conduct road safety audits on sample roads (high accident zones)	TA conducted road safety audits at four different roads. TA prepared a five stage road safety audit procedure and submitted to GoMP	None	
4	Prepare road safety audit reports	TA submitted road safety audit reports on all four roads. Field training provided to counterpart staff in conducting and reporting road safety audits	None	
5	Assist in creation of road safety cell in MPRDC	Practical training was given to officials involved in road safety functions at MPRDC HQ and field demonstrations were conducted with field managers as well.	None	
6	Initiate road safety audits for high accident prone sections on Phase-I and Phase-II roads to complement program objectives	Road Safety audit was conducted jointly with Construction Supervision Consultant on Bhopal-Vidisha road. Phase-II Supervision Consultant mobilized later	None	
XII. Road Safety: c) Road Safety Workshop				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
7	Conduct a Road Safety Workshop involving all connected agencies and stakeholders	Road Safety Workshop involving road construction agencies, Transport Department, Traffic Police and other stakeholders held in September 2005	None	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XIII. Road Maintenance: a) Road Maintenance Manual-MPRDC				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Update the existing road maintenance manual in line with international standards	Maintenance practices in PWD Works Manual were considered inadequate. Manual designed by PPTA consultant for Phase-II roads was reviewed for adoption.	MPRDC has adopted the maintenance manual prepared by the PPTA consultant	
XIII. Road Maintenance: b) Workshop on Road Maintenance for PWD				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
2	Review road maintenance practices prevalent in PWD on its low capacity roads	TA reviewed the maintenance practices and the Works Manual jointly with PWD engineers. One-day workshop was held to discuss related issues.	None	
3	Review road maintenance practices prevalent in PWD and recommend ways to enhance productivity of gang labor	TA selected Matlabpura-Jamali road near Indore in consultation with Chief Engineer Indore for a pilot study on gang labor productivity	TA recommendations are contained in its reports of December 2005 and May 2006 for review & implementation	
4	Submit a comprehensive report on road sector maintenance in PWD for improving productivity and establishing value-for-money regime	TA submitted its final report in May 2006 recommending measures for improvement. PWD may require further technical assistance in this regard	PWD to implement the pilot database and RMS program initiated at Indore and Bhopal at all offices	
5	Introduce road database electronic register at three zones of PWD as a pilot project	Training in data collection and compilation given by TA. Indore zone (and Bhopal recently) commenced database operations on TA developed software	PWD to implement the pilot database and RMS program initiated at Indore and Bhopal at all offices	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XIV. Vehicle Overloading: a) State's Action Plan to Control Overloading				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Review and update plan for strengthening enforcement of regulations regarding control of overloading of vehicles	TA reviewed the actions initiated by the state for controlling overloading of vehicles while recommending future measures in its technical paper submitted in August 2005	The State has evolved a plan for strengthening and technologically upgrading 35 check posts on state borders.	
2	Assist the state in implementing the plan for controlling overloading of vehicles	TA reviewed implementation of the plans for strengthening of measures at border checkpoints in consultation with Transport Commissioner, PWD and MPRDC	Sendhwa checkpoint has been upgraded to adopt modern electronic surveillance. Phased plan implementation in force.	
3	Continually review position regarding control of overloading in the state and neighbouring states	Supreme Court order to state governments of November 2005 for controlling overloading of commercial vehicles has resulted in drastic reduction in overloading	None	
XIV. Vehicle Overloading: b) Border Checkpost Modernization				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	Review the state's plans for modernization of border checkpoints jointly with MPRDC and PWD and assess possibility of private sector participation in the process	TA reviewed development of Sendhwa checkpoint and the Draft Feasibility Reports commissioned by MPRDC at the behest of Transport department for three checkpoints.	State to decide whether to develop future checkpoints under PPP model or on same lines as Sendhwa checkpoint	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XV. Training & Capacity Building: a) Overseas Study Tours				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	TA to provide assistance to GoMP in designing appropriate overseas training program to expose officials to good governance, economic & financial analysis, resource mobilization and road maintenance	TA designed four different overseas study tours for different categories of officials. The overseas study tours were designed keeping in my mind the functions performed by different category of officials and their exposure needs	None	
2	TA to design tours and arrange for interactions with road sector management organizations in different countries chosen for study	Four different Groups were sent on four structured study tours. Details of these tours are annexed in this report.	None	
3	Knowledge sharing and study exposure reporting	Tour participants were asked to share knowledge with colleagues on returning from the tour at debriefing sessions and through presentations/ reports	None	

Activities under ADB TA 4013-IND: Institutional Strengthening and Capacity Building for Madhya Pradesh Road Sector				
XVI. Training & Capacity Building: a) In-country Training				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
1	Structure, plan and conduct training programs, workshops, interactive sessions with engineers from PWD/MPRDC and other officials in road transport sector	TA structured training programs in various fields. Capacity building of road transport sector officials was done through TA conducted programs, guest faculty and outside institutions	MPRDC and PWD to budget for training & development of employees each year for continuous upgradation of skills and knowledge bank	
2	Conduct hands-on training in installation, calibration, operation and use of various equipment connected with road sector management including computer applications	TA provided training in installation, operation and use of equipment/ systems like ROMDAS, mini-merlin, QRS-II and HDM-4.	MPRDC/PWD to regularly upgrade systems as and when higher versions are released	
XVI. Training & Capacity Building: b) MPRDC Training Policy				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
3	To assist MPRDC/PWD in adopting training policy	TA assisted MPRDC in evolving a training policy for its staff	None	
XVI. Training & Capacity Building: c) Training & Development Plan				
S. No.	Planned Actions under the TA	Current Status	Future Actions Required	Remarks
4	Design Training & Development Plan with a five year perspective for MPRDC to continually enhance human resource potential	TA designed a Training & Development Plan for MPRDC. The Plan was designed in consultation with senior officials of MPRDC and was delivered in May 2006	MPRDC Board to approve and ratify the Training & Development Plan	

## **Appendix 4: Supplementary Report Extension Period (June to December 2006)**

## INTRODUCTION

This Supplementary Report documents the TA activities during the period of extension beyond May 2006 to provide assistance in capacity building in areas specifically requested by MP PWD. The Report contains a brief on the terms of reference derived for the extension period on the basis of areas of capacity building suggested by PWD and discussions held at various levels within the PWD organization.

Among the important measures proposed by PWD for institutional strengthening and capacity building for which assistance from the TA was required are:

- Wide-spread computer literacy within the organization to evolve modern MIS strategy;
- Focused induction of database management systems for installing a modern maintenance management system;
- Adoption of a Road Management System similar to the one installed at MPRDC but customized for the use at PWD for their low capacity and low value assets;
- Pilot testing logistics solutions for routine maintenance programs;
- Adoption of life-cycle costing methodology for asset management; and
- E-tendering to accommodate the large number of improvement projects now being undertaken.

Details of the progress in the TA activities during the extension period are covered in the sections below.

## **TERMS OF REFERENCE FOR THE EXTENSION PERIOD**

The contract period of TA as approved in contract variation 4 should have ended on 31 May 2006. However, senior officials from PWD expressed the desire that the TA should continue beyond that date. The TA had largely concentrated on reforms in the road sector with greater focus on creating a sustainable State Highway Authority following modern management techniques in its operations till May 2006. Madhya Pradesh Road Development Corporation (MPRDC) has culminated into a vibrant corporate organization with all the relevant characteristics and work features of the State Highway Authority proposed under the reforms program. With all State Highways constituting the high value, high density assets having been vested in MPRDC, road building activity in PWD is confined to the low value and low density road assets, which provide connectivity to the economically weaker areas thus performing a vital linkage for poverty reduction in these regions. Paucity of budgetary allocations and low priority accorded to these assets in the past had resulted in poor maintenance of these assets. Continued interaction with the TA and guest professionals invited by the TA coupled with the enthusiastic response of MPRDC to reform measures has provided the necessary impetus within the PWD organization to adopt best practices in their management processes to bring in cost efficiency and higher productivity in their operations. To meet these objectives of improved program management, PWD is embarking upon a major technology induction program. MP PWD required specific preparatory assistance in the areas identified in Section 1 above.

While realizing that the TA will not be able to deliver on all fronts and complete solutions in the areas listed above in proposed extension of service for six months except the installation of Road Management System in selected zones of PWD, PWD considers that initial support from TA will enable the organization to create an enabling environment for adoption of proposed measures. With this end in view, the focus in the extended period of the TA has been recognized to be that of a training & development institution besides playing the critical role of identifying areas of capacity building in modern project management. The terms of reference for the extension of six months emerged from this anticipated role of the TA. PWD has simultaneously engaged National Informatics Centre (NIC)/ Madhya Pradesh State Electronic Development Corporation (MPSEDC) for developing the desired computerized solutions for works management, e-governance, road database on the same lines as the Electronic Road Register developed by the TA consultant for MPRDC and e-tendering. The TA is required to provide the initial business process understanding and domain specific guidance to such solution providers including NIC/ MPSEDC.

The following terms of reference for the six months' extension period were proposed. The terms of reference are not a continuation of the terms of reference accepted till the contract variation 4 but are being construed as an independent set of new tasks specifically designed to meet the requested assistance areas for PWD. Draft Final Report in respect of the TA activities and tasks till the contract variation 4 has been submitted in September 2006 to record completion of the earlier part of TA activities. This supplementary report collates the activities under all the additional tasks. This report will be followed by an integrated Final Report for the entire period of TA at the time of TA closing. The Terms of Reference for the extension period are:

- The extension period is principally devoted to the training & development of PWD engineers. Sizable number of PWD engineers are to be trained in the use of computer applications and rigors of PWD's in-house MIS to be designed in simple MS Office applications for monitoring physical & financial progress of works;
- Assisting with the advice on central PWD database similar to the ERR developed for MPRDC. MPSEDC has been engaged by PWD for designing, developing and installing the road database management system.



- As a sequel to the review of the road maintenance activities in PWD, a guidance document will be evolved for PWD road maintenance activities. This guidance document will assist PWD zones in identifying and prioritizing roads for their maintenance activities;
- Hands-on training in the use of project management software and AutoCAD utilities will be given to select PWD engineers at locations mutually agreed;
- The Consultant will provide ongoing technical advisory services to strengthen PWD's capacity to manage the State's road system. This will be done in a responsive way to meet the emerging needs of the organization and in conformity with the provisions in the State Highway Act, 2004;
- In-country training activities will continue within the existing unutilized budget. These may include study tours, attachments and formal courses run by selected institutions, in addition to workshops and seminars organized by the Consultant/ guest invitees.
- PWD has requested for supplying some reference books, particularly on road standards and specifications for training their engineers. Part of the in-country training budget will be utilized for supplying such training material including books and periodicals for reference.

## TA RESOURCES USED IN THE EXTENSION PERIOD

The TA retained the existing Team of consultants for the extension period, with the following main features:

- Since the stress in the tasks for the proposed extension is to enhance the PWD capability to manage road maintenance projects by utilizing management tools applicable in the context of Madhya Pradesh, additional time of 1.25 months was proposed for the Road maintenance Specialist, Mike Riley. Similarly additional time was provided for Prashant Jodhi (Highway Design Engineer) and Arun Herur (Highway Engineer).
- The Domestic MIS Specialist (Mohan Joshi) will continue with the training & development of PWD engineers, guiding MPSEDC programmers in designing the road database attributes, installation of road database at selected zones and travelling to these zones for training in the use of road database. Additional time of 8.50 months was proposed for him.
- Additional time has been proposed for other consultants (and surrendering the time for some who have completed their inputs) as indicated in the Table 1 for the Budgeted and Proposed Inputs.

**Table 1: Currently Budgeted and Proposed Inputs**

Team member	Person-months			
	Currently budgeted	Proposed variation		
		+Field	+Home	Total
John Standingford	23.50	0.00	-0.50	23.00
Arun Herur	9.00	0.30	-0.40	8.90
Michael Kent	1.57	0.00	0.00	1.57
Michael Riley	6.75	1.50	-0.50	7.75
Janusz Sobieniak	3.00	-0.70	-0.50	1.80
Terry O'Donnell	6.75	-0.35	-0.50	5.90
Sam Pillai	1.03	0.00	0.00	1.03
B B Patel	5.00	-1.00	-0.10	3.90
Lalit Chugh	18.75	4.50	0.00	23.25
Kirby Dave	0.48	0.00	0.00	0.48
S Gangadharam	5.50	-0.50	-0.25	4.75
Hrushikesh Kolatkar	18.00	-1.00	0.00	17.00
Mukesh Naresh	8.00	-8.00	0.00	0.00
Kuldeep Puri	9.00	-2.50		6.50
Anil Mishra	7.00	-0.25	-0.50	6.25
S M Sarin	0.50	0.25	0.00	0.75
Mohan Joshi	14.00	8.50		22.50
Ramesh Gupta	6.00	-0.70	0.00	5.30
Prashant Joshi	5.00	1.50	0.50	7.00
Totals	148.83	1.55	-2.75	147.63
International	56.60	-0.25	-2.50	53.85
Domestic	92.23	1.80	-0.25	93.78

## EXTERNAL SUPPORT SOUGHT FOR COMPLETION OF EXTENSION ACTIVITIES

Since a large number of PWD engineers had to be trained in basic computer applications, support from outside institutions became necessary for utilizing their training infrastructure and faculty support. Of the six such training programs conducted during this period, five were held at the Centre for Research & Industrial Staff Performance (CRISP, an Indo-German Technical Cooperation) and one was held at the RCVP Noronha Academy of Administration and Management.

The training program on use of AutoCAD utilities was also held at the CRISP but the highway design engineering inputs were provided by Prashant Joshi, TA Highway Design Engineer.

Guest speakers with specific area specialization were invited to address training participants, particularly on Forest Clearances and Environment Regulations and MIS in Executive Decision-making. Details of all the Training Programs are furnished in Appendix 1.

## TA TEAM'S TIME UTILIZATION DURING EXTENSION PERIOD

The consultant time utilization during the extension period (up to 31 October 2006) is depicted in the Table below.

S.No.	Name of the Consultant & Position in Team	Number of Days' Spent						
		June	July	August	September	October	November	December
1.	Lalit Chugh, Team Leader	0	6	14	28	28	30	30
2.	Mike J. Riley, Maintenance Specialist	0	0	0	0	24	0	0
3.	Arun Herur, Highway Engineer	0	0	20	0	0	0	0
4.	Prashant Joshi Highway Design Engineer	0	0	9	3	6	14	7
5.	BB Patel, Labour Rationalization Specialist	0	0	0	14	0	0	0
6.	Mohan Joshi, MIS Specialist	26	30	30	28	22	30	30
7.	Hrushikesh Kolatkar, Environment & Social Specialist	0	0	1	0	0	0	4

BB Patel utilized his time in compilation of the current staffing position among the categories decadal surplus for VRS 2005 and the results of the VRS 2005 scheme. Hrushikesh Kolatkar assisted with the finalization of contracts for the R&R surveys and short resettlement plans for Phase II roads.

## TA OUTPUTS IN THE EXTENSION PERIOD

The TA outputs have been defined in terms of the reports/ documents/ technical papers submitted by the consultant and training programs conducted and arranged to meet the objectives of the Extension. List of training programs conducted is placed as Appendix 1.

A regular reporting system was adopted whereby monthly progress reports on the TA activities and sector developments were submitted to ADB and GoMP on regular basis. Copies of the monthly progress reports for June 2006 to September 2006 are placed in Appendix 2.

The following reports were submitted/ or are being submitted during this period.

- A technical Paper on Road Asset Management was submitted by Arun Herur, Highway Engineer;
- Integrated MIS designed on the lines of CMMIS (Chief Minister's MIS) for use at PWD divisions and consolidation of information at HQ was delivered in September 2006 by the MIS Specialist with brief guidelines on using the software;
- The Highway Design Engineer (Prashant Joshi) conducted and arranged a study tour of Maharashtra for a demonstration of the mobile patch repair units in use in Maharashtra PWD. Mr. RS Kanikar's (SE Mech. Maharashtra PWD) presentation and analytical note on the use of mobile units in road maintenance was submitted in September 2006;
- Brief guidelines on organization of maintenance activities will be delivered by the Highway Design Engineer in November 2006;
- The reference books/ guidelines requested by PWD have been delivered to them.

## FUTURE DIRECTIONS

PWD has just about started adopting IT related techniques and tools in their operations. With MPSEDC working on the design, development, testing and installation of the customized PWD organization software, the organization will be fully integrated in times to come. However, the MPSEDC plan of action is wide and all-encompassing. It may take over a year to result in the creation of a fully integrated MIS organization within the PWD. More so, MPSEDC needs to acquire support or assistance from domain specialists in order to fully capture the PWD business process model and Mission Critical Systems in the integrated MIS development. MPSEDC has consulted the TA at times but it is too early for them to start programming their design and development processes. The TA program will conclude by the end of the year 2006 but MPSEDC will require domain specialist support on a nearly continuous basis. PWD will do well to line up such support for MPSEDC in order to get timely and efficient delivery of outcomes desired from MPSEDC.

Further, the TA has already delivered ERR (road database) and a functional MIS for PWD. Both are in early stages of use in PWD. MPSEDC may study these programs to minimize its initial exploratory work and aid the systems requirement study.

PWD has embarked upon an ambitious state wide road upgradation program. Besides this, PWD is preparing 1300 km of roads for development under ADB assistance. However, the systems of procurement, contract administration, project management, human resource management, asset management and financial accounting are all guided by now outdated Works Manual and guidance documents. In order to reap full benefits of IT oriented networked working and a performance oriented program delivery, PWD must simultaneously

start working on modernization of its program delivery systems. The work undertaken by MPSEDC for designing, developing and installing the IT systems should keep the requirements of a modern business process model for PWD in mind or else the deliveries made by MPSEDC would become redundant once PWD undertakes modernization of its program delivery processes. In this regard, it would be more useful if MPSEDC works in tandem with the consultants or experts proposed to be engaged by PWD for modernization of its systems and processes and hence should prepare a timeline for action concurrent with the availability of the institutional strengthening consultants.

#### **APPENDIX 4.1: LIST OF TRAINING PROGRAMS ARRANGED IN EXTENSION PERIOD**

**Institutional Strengthening & Capacity building for the Madhya Pradesh Road Sector (ADB TA-4013-IND)**

(Extension Period from June 2006 onwards)

Training Programs/ Workshops/ Group Discussions/ Seminars Organized by TA Consultants

S.No.	Date mm/yy	Institutional Strengthening & Capacity Building Fields	Training Program Conducted by TA Consultants	Training Program Conducted by Guest Faculty	Training Programs Conducted outside (Institutes/ Other locations)
1	Aug-06	<b>Road Maintenance and Highway Design</b>	Five days AutoCad 2005 Training program to fourteen (14) MPPWD & MPRDC Engineers involved in review of designs and DPRs. This program was conducted to extend basic operational knowledge in AutoCAD		Five days AutoCad 2005 Training program to fourteen (14) MPPWD & MPRDC Engineers involved in review of designs and DPRs. This program was conducted to extend basic operational knowledge in AutoCAD.
2	Sep-06		Study Tour for Engineers of Madhya Pradesh PWD to office of the Maharashtra PWD (Amaravati) to see a demonstration of the mobile patch repair unit to explore the possibility of employing similar equipment in MP PWD		Study Tour for Engineers of Madhya Pradesh PWD to office of the Maharashtra PWD (Amaravati) to see a demonstration of the mobile patch repair unit to explore the possibility of employing similar equipment in MP PWD
3	Apr-06	<b>Management Information System and Computer Applications</b>		Basic Computer and hands-on Training on Using MS-Office Applications- (PWD Engineers) organized at Academy of Administration	
	Jul-06			Basic Computer and hands-on Training on Using MS-Office Applications- (PWD Engineers) organized at CRISP	
				Basic Computer and hands-on Training on Using MS-Office Applications- (PWD Engineers) organized at CRISP	
	Aug-06				Use of MIS in Decision Making for MPPWD & MPRDC- Talk by Dr. DK Bandyopadhyay, Director IIFM
				Basic Computer and hands-on Training on Using MS-Office Applications- (PWD Engineers) organized at CRISP	
	Sep-06			Basic Computer and hands-on Training on Using MS-Office Applications- (PWD Engineers) organized at CRISP	
4	Oct-06	<b>Demonstration on calibration of ROMDAS and mini merlin equipments</b>	Field demonstration carried out jointly with MPRDC engineers on three days on different State Highways		
5	Aug-06	<b>Environmental &amp; Forest Clearance Issues- Talk on</b>		Forest (Conservation) Act, 1980 & some related Issues- Talk by Dr. Animesh Shukla, Chief Conservator Forests	

## **APPENDIX 4.2: MONTHLY PROGRESS REPORTS FROM JUNE 2006 ONWARDS**



## **ADB TA 4013-IND: Extension Period from June-November,2006. Monthly Progress Report – June,2006.**

We are pleased to advise that ADB has given in principle acceptance to the extension of the TA 4013-IND by six months till 30<sup>th</sup> November,2006. The terms of reference for this period of extension for the TA were discussed with your senior officials during May 2006 and these are reproduced below:

- The extension period will be principally devoted to the training & development of PWD engineers. About 250 engineers will be trained in the use of computer applications and rigors of PWD's in-house MIS to be designed in simple MS Office applications for monitoring physical & financial progress of works;
- Assisting with the advice on trans-migration of zonal data into central PWD database similar to the ERR developed for MPRDC at four selected zones as a pilot project.
- As a sequel to the review of the road maintenance activities in PWD, a logistics planning model will be evolved for the Bhopal zone. This model can be later replicated by PWD in other zones for their maintenance activities;
- A review of the project management systems adopted by PWD as dictated by the Works Manual will be carried out;
- Hands-on training in the use of project management software will be given to select PWD engineers at locations mutually agreed;
- The Consultant will provide ongoing technical advisory services to strengthen PWD's capacity to manage the State's road system. This will be done in a responsive way to meet the emerging needs of the organization and in conformity with the provisions in the State Highway Act, 2004;
- In-country training activities include study tours, attachments and formal courses run by selected institutions, in addition to workshops and seminars organized by the Consultant/ guest invitees.
- PWD has requested for supplying some reference books, particularly on road standards and specifications for training their engineers. Part of the in-country training budget will be utilized for supplying such training material including books and periodicals for reference.

In this connection, the Consultant has already commenced work in the areas listed in the TOR. During the month of June,2006, following activities have taken place.

- a) E-in-C, PWD requested for supplying of certain Codes and Standards for road building activities as designed by IRC/MORTH. The relevant guides, codes/ hand books have already been procured and delivered to the E-in-C office as per list enclosed (Annex – 1). These guides/handbook have been provided to strengthen the training activities in the PWD in road building area.
- b) RCVP Noronha Academy of Administration and Management could not give definite dates for computer training program. Accordingly, the consultant explored other options. Ten batches of PWD engineers are now being given training at CRISP (Centre for Research and Industrial Staff Performance) from the week beginning 3<sup>rd</sup> July 2006. Dates for first 5 batches have already been advised to PWD as per the letter enclosed. (Annex – 2).
- c) Tentative structure of the Project Management training to be provided at 3 different locations has already been prepared in consultation with M/s Vipratech Consultants.

The program design and contents are enclosed (Annex – 3) for your reference. Please advise us the two centers (other than Bhopal), where you expect us to organize Project Management training program. Please also review the program contents and advise any changes that may be needed. In this connection, our MIS Specialist will also personally discuss this matter with the E-in-C.

- d) We had been given 5 different forms forming part of the PWD monthly MIS. The computer appreciation program mentioned at b) above includes the hands on training in using these forms designed by the consultant in MS Excel. However, it is felt by us that an integrated but simple to use MIS software (using MS Excel and VBA 6.0) should be designed for use at PWD offices. Our MIS Specialist has already started working on the design and development of this MIS software. The first trial version will be handed over to your office by third week of July. Discussion with your senior officials will be held during next week to assess any other needs of PWD to augment MIS software design to be more user friendly.
- e) Our MIS specialist visited Indore Zone and discussed the needs for customization of ERR for PWD use. On-the-spot guidance was provided to the concerned officials in the use of ERR. Further interventions are expected in July when officials from Indore are likely to visit TA office.
- f) C-DAC required some assistance in understanding the ERR database protocols. Our MIS Specialist gave necessary clarifications to C-DAC/MPRDC.

The TA will be fully mobilized in July. We request you to please circulate the TA role and about the availability of consultants for discussion on issues relating to the TOR stated above. Wide circulation of this information will help your officials to source TA assistance.

Please advise us if you require any special assistance or clarification on the matters related in this report.

## **ADB TA 4013-IND: Extension Period from June-November, 2006 Monthly Progress Report – July 2006**

The TA team has been functioning in close coordination with senior officials of PWD. During the month of July 2006, following activities have taken place.

1. The first version of the MIS software for use at PWD divisions/ field offices has already been delivered on 26<sup>th</sup> July. We have requested that the software may please be distributed among PWD division offices for installation on their computers. On identification of the officials to be trained in operation of the MIS software, please advise us the dates and venues for our conducting the practical and hands-on training programs in the use of MIS software. We have suggested three locations for the said training programs. Meanwhile, please identify four/five officials at the headquarters to be trained as resource persons for the overall MIS activities of PWD.
2. MPRDC plans to carry out road roughness surveys for all the State Highways. However, ROMDAS recalibration is required. MPRDC sought the assistance of the MIS specialist in this regard. Continuous support is being provided to them.
3. Tentative structure of the Project Management training to be provided at 3 different locations was sent to your office in the month of June. It appears the program structure is acceptable to PWD. Accordingly, the training programs will be organized in the use of Project Management software in the month of September.
4. Third program in the series of training programs on basic computer applications will be held in the first week of August at CRISP.
5. Training program in the use of AutoCAD utilities has already been arranged for 14 engineers from the seven zones of PWD. The five-day program will be held at CRISP from 21 August. Intimation in this regard has been sent to your offices.
6. Modifications requested by Indore zone in the Electronic Road Register (ERR) to customize it to meet their requirements for MDRs have been carried out. The upgraded version of ERR was delivered to Indore zone during the month. Data entry work is progressing smoothly.
7. Continuous interaction with C-DAC is on with regard to the Asset Inventory Management module of the integrated MIS to be installed at MPRDC.
8. Interactive sessions were held with MPRDC's newly recruited software engineer for database management. She has been given orientation guidance into understanding the importance of Mission Critical Systems to be used by MPRDC.

Our Highway Engineers will mobilize in August. They will be involved in the AutoCAD training program design and sessions besides the logistics planning exercise for maintenance activities in one zone.

Please advise us if you require any special assistance or clarification on the matters related in this report.

## **ADB TA 4013-IND: Extension Period from June-November, 2006 Monthly Progress Report – August 2006**

The TA team has been functioning in close coordination with senior officials of PWD. During the month of August 2006, following activities have taken place.

1. The first version of the MIS software for use at PWD divisions/ field offices was delivered on 26<sup>th</sup> July. We had requested that the software may please be distributed among PWD division offices for installation on their computers and the officials to be trained in operation of the MIS software may be identified. Meanwhile, even the consolidation module to be operated at the Headquarters is ready. The consolidation module will be delivered to PWD early in September. We request you to please also advise us the names of the resource persons at the HQ for MIS operation and maintenance so that training can be arranged by us in September 2006.
2. MPRDC plans to carry out road roughness surveys for all the State Highways. However, ROMDAS recalibration on shifting from one vehicle to another is required. MPRDC sought the assistance of the MIS specialist in this regard. Continuous support is being provided to them.
3. Tentative structure of the Project Management training to be provided at 3 different locations was sent to your office in the month of June. It appears the program structure is acceptable to PWD. Please advise us the locations for our arranging the project management training programs.
4. Third program in the series of training programs on basic computer applications was held in the first week of August at CRISP. Fourth and fifth programs scheduled for the week 21-26 August had to be postponed due to various administrative constraints at PWD. These are being rescheduled in September.
5. Training program in the use of AutoCAD utilities for 14 engineers from the seven zones of PWD was held at CRISP during the week 21-25 August. It was a hands-on training program in the CRISP computer lab. Our Highway Design Engineer structured a highway design module comprising four sessions on two days taking practical highway design cases from Madhya Pradesh to make it user-friendly.
6. Our International Highway Engineer, Arun Herur was in Bhopal for 20 (twenty) days. As a prelude to the maintenance management guidance to be prepared and delivered by the Highway Design Engineer (Prashant Joshi), the International Highway Engineer has documented and delivered a Technical Paper on Road Asset Management.
7. The Highway Design Engineer is planning to organize a study tour of Maharashtra State for five engineers from MPPWD to review and understand the operation of the mobile patch repair unit and equipments used in road maintenance works. He has organized the Maharashtra study tour for the third week of September in coordination with RS Kanikar, Superintendent Engineer, Maharashtra PWD. Please advise us the names of the officials proposed to be deputed for the three-day study tour to Maharashtra.
8. A high level meet of senior PWD officials was organized on 25 August 2006 with senior officials from the Forest Department. The meet was addressed by two eminent speakers: Dr. DK Bandyopadhyay (Director Indian Institute of Forest Management) and Dr. Animesh Shukla (Chief Conservator of Forests, MP). Dr. Bandyopadhyay spoke on the use of MIS in management decision-making and Dr. Shukla interacted with the participants on legislative and administrative issues involved in clearances from Forest Department for carrying out road building works in forest areas. Copies of the presentations made by the two speakers are enclosed for your information.

Our Highway Engineers will remobilize in September. They will be involved in the study tour to Maharashtra and designing of a guidance document on road asset maintenance.

Please advise us if you require any special assistance or clarification on the matters related in this report.

## **ADB TA 4013-IND: Extension Period from June-November, 2006 Monthly Progress Report – September 2006**

The TA team has been functioning in close coordination with senior officials of PWD. During the month of September 2006, following activities have taken place.

1. The final version of the MIS software for use at PWD divisions/ field offices was delivered on 14 September. We had requested that the software may please be distributed among PWD division offices for installation on their computers and the officials to be trained in operation of the MIS software may be identified. Meanwhile, even the consolidation module to be operated at the Headquarters has been delivered simultaneously with the later version of software to be used at divisions/ field offices. We request you to please advise us the names of the resource persons at the HQ for MIS operation and maintenance so that training can be arranged by us in October 2006.
2. MPRDC continues to carry out road roughness surveys for all the State Highways. MPRDC sought the assistance of the MIS specialist in this regard. Continuous support is being provided to them.
3. Tentative structure of the Project Management training to be provided at 3 different locations was sent to your office in the month of June. It appears the program structure is acceptable to PWD. We have not been informed the locations for our conducting the training programs. Now that very little time is left for the TA activities, we may at best be in a position to conduct one program in Bhopal in the first week of November. We request for your advices.
4. Fourth & fifth programs in the series of training programs on basic computer applications were held in the week September 21-26 at CRISP. We presume that there is no more demand for such training programs in future. However, if PWD feels that a few more of their officers need to be trained in basic computer applications, requisition for their training may please be sent to us by 15 October so that program (s) could be organized by us later during this month.
5. The meeting held at the office of the PS PWD in connection with PWD's new software development program with the assistance of MPSEDC was attended by the MIS Specialist and Team Leader on 11 September. Main issues related to MPSEC requiring domain specific guidance for their designing and developing the road database system and project monitoring & evaluation MIS. The TA assured all possible support to MPSEDC within the timeframe of balance TA activities till November. However, the request for designing a works monitoring module in the software may be difficult to fulfill as it may take more than five months to complete whereas the TA concludes in November 2006.
6. The Highway Design Engineer organized a study tour of Maharashtra State for engineers from MPPWD to review and understand the operation of the mobile patch repair unit and equipments used in road maintenance works. Maharashtra PWD organized the demonstration of the mobile unit at Amravati. Mr. RS Kanikar, SE (Mech) from Mumbai coordinated the entire program. Mr. Kanikar made a presentation on the efficiency and effectiveness of the mobile maintenance unit besides making a comparison of the costs and benefits of its induction in relation with the traditional methods of road maintenance. Copies of the presentation and analytical note prepared by Maharashtra PWD are enclosed for your information and record. Your officials may contact Mr. Kanikar for any other information required in this regard.

We place on record our sincere thanks to Maharashtra PWD and Mr. RS Kanikar for arranging the demonstration of the mobile maintenance unit.

Please advise us if you require any special assistance or clarification on the matters related in this report.

## **Appendix 5: List of Reports/ Documents/ Technical Papers Submitted by TA**



**Institutional Strengthening & Capacity building for the Madhya Pradesh Road  
Sector (ADB TA-4013-IND)**

Reports/ Documents/ Technical Papers/ Manuals/ Guidelines Submitted by TA Consultants

S.No.	Date mm/yy	Institutional Strengthening & Capacity Building Fields	Report/ Document required under Policy Matrix or TOR	Other Reports/ Presentations/ Technical Papers	Other Manuals/ Guidelines/ Handbook
1	Jan-05	<b>Governance</b>	Rules under the Highway Act, 2005		
	Nov-04			Road Sector Development Sustainability Presentation	
	Nov-04			MPRDC Organization Structure and Institutional Development	
	Sep-04			Institutional & Regulatory Issues: Highway Bill and MPRDC	
	Oct-05			Amendments in Highway Act & Toll Act as requested by MPRDC	
2	Jun-05	<b>Procurement</b>	MPRDC Procurement Manual		Standard Procurement Documents
	Mar-05		Performance-based Maintenance Contract		
	Apr-05			Technical Paper & Maintenance Schedule for BOT Projects	
	Feb-06				Guidelines on Road Project Preparation
	May-06			Report on maintenance of roads in PWD	
3	Mar-04	<b>Financial Management</b>	Sample SHA Accounting System		
	Mar-04			Financial Statements Templates	
	Mar-04				Guidelines for Financial Analysis of Bidders' Financials
	May-05			MPRDC Business Plan Review	
	May-05				Duties & Responsibilities of Company Secretary
	May-05		Note on Financial Management Information System		
	May-06		Chart of Accounts for MPRDC		
	May-06		Accounting Manual for review of MPRDC statutory auditors		
4	Aug-05	<b>Road Sector Funding</b>		Road Sector Funding in Madhya Pradesh	
5	Aug-04	<b>Road Management System</b>	Road Management System for MPPWD		
	Mar-05				ERR User Guide
	Mar-05				ERR Data Specification Manual
	Jun-05			HDM-4 Setup guide and Data Requirements	
	Jun-05			Application of HDM within RMS	
	Mar-05			HDM-4 Documentation Volume I to V	
	Nov-05		Fully functional RMS on real data submitted to MPRDC & PWD	Technical Paper on Road Management System and its enhancement	
	Mar-06			Technical Paper on Road Management System-Asset Valuation	Guidelines for using QRS-II software and Traffic Network Analysis
					Updated Manuals on ERR and RMS with enhanced features
	Apr-06				

Institutional Strengthening & Capacity building for the Madhya Pradesh Road  
Sector (ADB TA-4013-IND)

Reports/ Documents/ Technical Papers/ Manuals/ Guidelines Submitted by TA Consultants

S.No.	Date mm/yy	Institutional Strengthening & Capacity Building Fields	Report/ Document required under Policy Matrix or TOR	Other Reports/ Presentations/ Technical Papers	Other Manuals/ Guidelines/ Handbook
6	Aug-05	Vehicle Overloading		Vehicle Overloading: Economics, Practicalities & Current Practices	
7	Apr-05	Management Information System		MPRDC Business Process Model and IT Strategy	
	Apr-05			MPRDC IT Training- Structure of Training Modules	
	Apr-04			Excel Tutorial- Interactive Self-learning Program	
	Jun-05			Evaluation of SRS Proposals of TCS & C-DAC	
8	Mar-04	Private Sector Participation	Review of BOT Program in India, MP & Other States		
	Jun-05		Review of Bond BOT Program		
	Aug-04		Procedures Manual for PPP/ Concession projects		Guidelines on PPP/ Concession Project Proposal Submission
	Sep-04				
	Oct-04			Toll Operations Costs Analysis for Bond BOT Projects	
	Mar-04				Guidelines for Structuring PPP Projects- PSI Selector Model
	Mar-04				PPP Guidelines: Illustrated Reference Guide for Decision Makers
9	Jan-05	Environmental & Social Management	Resettlement Plan for Phase-I Roads		
	Dec-03		Environmental Action Plan		
	Jul-04			Environmental & Social Issues for MPRDC	
	May-04			Environmental Clearance Requirements	
	Dec-03		Social Action Plan		
	Nov-04			Social & Resettlement Impacts in Road Projects	
	Nov-04				Demonstration- Environmental Inspection of Sagar-Bina Corridor
	Jan-06		State's Policy on environmental and Social Management		
	Mar-06		Revised Resettlement Plans for Phase-I Roads		
10	Sep-05	Road Safety	Road Safety Audit Report of Bhopal Bypass and SH-18		
	Oct-05		Accident Investigation and Prevention Manual for Highway Engineers		
	Nov-05		Road Safety Audit Report on Agar- Sarangpur and Susner-Khichipur		
	Apr-06		Road Safety Audit Report on Indore- Edlabad road		
11	Jun-05	Labour Rationalization Action Plan	Explanatory Note on Computation of Employee Benefits		
	Jun-05		Computational Model for Payables, Wages forgone etc. for VRS		
	Nov-05		Information Booklet on Investment for VRS optees-Counselling SSN		
	Dec-05			Procedure for Accepting and Disposing of VRS Applications	Highway Design Engineer's guidance report on gang labor productivity
	Mar-06			Ready Reckoner for Computation of VRS Amount & Excel Tool	
12	Jul-05	Human Resources Management			HR Policies Manual for MPRDC
	Apr-06			Training & Development Plan for MPRDC	

## **Appendix 6: List of In-country Training Programs Arranged by TA**

Inception Workshop: November 2003  
Consultative Workshop: January 2004

S.No.	Date mm/yy	Institutional Strengthening & Capacity Building Fields	Training Program Conducted by TA Consultants	Training Program Conducted by Guest Faculty	Training Programs Conducted outside (Institutes/ Other locations)
1	Oct-04	Governance	Project Management Training Program		
	Oct-04		MS-Excel based Perspective Planning Tool- Hands-on		
	Nov-04		Presentation on MPRDC Sustainability Model, Strategic Planning		
2	Jan-05	Procurement & Highway Management			Construction Supervision for Bridges & Highways-Nithe
	Oct-05			Contract Administration-Practical Issues	
	Oct-05			Computerized Project Management- Highway Projects	
	Apr-06		Workshop on Road Maintenance for PWD Engineers		
3	Feb-04	Financial Management	Training Accounting Staff in SHA Accounting System-PIU PWD		
	Feb-04		Training in Balancesheet and Financial Ratios-PMU PWD		
	Apr-05		Financial accounting System-MPRDC		
	Apr-05		Implementation of Financial Computerization Plan-MPRDC		
4	Jan-06	Road Sector Funding	Road Planning & Budgeting Tool Demo- 20 yr. Perspective		
5	Nov-04	Road Management System	Road Management System Design		
	Jun-05		Use of HDM-4 for Economic Appraisal		
	Jul-05		Training in Use and Functionality of ERR		
	Nov-04		Road Data Collection		
	Jun-05		Presentation on Use of HDM-4		
	Nov-05		Data Collection and Compilation for ERR at Indore PWD		Training in Database Management for PWD Indore staff at MPRDC
	Jan-06		Data Collection and Compilation for ERR at Sagar PWD		
	Feb-06		ROMDAS calibration and operation in field		
	Apr-06		Training on Enhanced Facilities in RMS		
	Oct-05		Demonstration on fully functional RMS to CEs, PS, Secy. PWD		RMS demonstration made before MPRDC Tender Committee
6	Mar-06	Traffic Network analysis	Training on use of QRS-II software and Network Analysis		
7	Mar-04	Management Information System and Computer Applications	Hands-on Training on Using MS-Office Applications		
	Jan-04				Basic Computer Training- NIIT (PWD Engineers)
	May-04				Basic Computer Training- NIIT (PWD Engineers)
	Jul-05				Data Mining & Data Base Management at ASCI, Hyd-Qazi
	May-05				Basic Computer Training- C-Net (MPRDC Engineers)
	Apr-06			Basic Computer Training- (PWD Engineers)	
	May-06			Basic Computer Training- (PWD Engineers)	
	Feb-06		Internet as Information Resource Management Tool		

8	Aug-04	Private Sector Participation	Orientation Program for MPRDC Road Managers-PPP Principles		
	May-05		Workshop on Review of Bond BOT Program		
	Aug-04		Training Session on use of PSI Selector Excel Program		
9	Apr-05	Environmental & Social Management			Study Tour of Gujarat for MPRDC Engineers
	Aug-04		Environmental Planning Principles & Procedures		
	Aug-04			Social Action Planning Perspectives	
10	Sep-05	Road Safety	One-day Workshop on Road Safety		
	Sep-05		Demonstration of Road Safety Aspects in field		
	Jan-06		Two-day workshop on Accident Investigation & Prevention		
	Jan-06		Two-day field training on Accident Investigation &		
11	Jul-05	Labour Rationalization Action Plan	Workshop on Social Safety Net		
	Jul-05		Workshop on VRS Scheme		
	Mar-06		Demonstration on Use of Ready Reckoner for VRS Computations		
12	Apr-05	Human Resources Development	Identification of Training Needs for MPRDC/PWD		
	May-05		Identification of Training Needs for MPRDC/PWD		
	Jul-05		Total Quality Management		

## **Appendix 7: Brief Report on Overseas Study Tours**

## OVERSEAS STUDY TOURS

### 1. INTRODUCTION

Four Overseas Study Tours (OST) funded by ADB were arranged by the ADB's TA Consultant. The tours formed a part of a wide-ranging technical assistance effort designed to assist the Government of Madhya Pradesh to carry out a reform programme agreed between GoMP and ADB.

The general objectives of the study tours were to enable participants:

- To contribute more effectively to the reform process in Madhya Pradesh's road sector.
- To be more productive managers in the long term- whether at the level of strategic planning, project design and appraisal, or contract management.
- To facilitate the transfer of knowledge and insights gained from the study of the road sector reforms undertaken by the countries visited and thus further initiate and strengthen the reform process in the Madhya Pradesh road sector.

### 2. SELECTION OF PARTICIPANTS

The selection process of the participants was done on the agreed criteria between GoMP and ADB. Each participant of first three groups signed an Agreement with ADB's TA project, in which the respective obligations of the parties are defined. A copy of this agreement is appended herewith as

Annexure 1. The table given below lists the number of participants groupwise, dates of the tour, countries visited and their designations.

S. No	Group	Dates	Number of participants	Designations	Countries visited
1	Group II	21/11/04 to 13/12/04	14	Executive Engineers, Assistant Engineers	Malaysia, Singapore
2	Group 1 A	12/12/04 to 23/12/04	3	IAS officials	Malaysia, Singapore, Thailand
3	Group I	10/02/05 to 05/03/05	12	Principal Secy Chief Engineers, Superintending Engineers	Australia New Zealand Malaysia, Singapore
4	Group 4	04/06/05 to 11/06/05	4	IAS Officials	Malaysia, Singapore

### 3. TRAVEL LOGISTICS

Pre-tour briefing sessions were conducted for the groups providing the participants an opportunity to ask questions and discuss the objectives of the study tour and how participants can get the most out of them. Participants arranged for the passport themselves while visas and In-Country logistics of the host countries and design of the study programme along with the agencies responsible for conducting the same were arranged by the TA project. Given below is the list of organizations appointed for arranging the programme, accommodation, transport and payment of the per diem in the various countries.

Country	Organization	Description
<b>Australia</b>	Queensland Department of Main Roads	State Government agency responsible for Highway Management.
<b>Malaysia</b>	ITIDI	Private firm that runs the former PWD training Institution and testing Laboratory
<b>New Zealand</b>	Transit NZ	Government agency responsible for highway management
	Dinamics Destination Management accommodation and in-	Travel agency arranging country transport
<b>Singapore</b>	CPG Consultants	Australian owned company that has taken over PWD functions
	Sita World Travel Pte Ltd.	Travel agent making hotel and railway reservations
<b>Thailand</b>	CPCS Upham	Canadian consulting company with permanent office in Bangkok

#### 4. CONDUCT OF THE OVERSEAS STUDY TOURS

Actual completion of the study tours were delayed from the schedule originally planned due to the State Assembly election held in 2004 and the non-availability of appropriate time slots with the organizations appointed for conducting the study tours in the host countries. However once the final dates for the programmes were fixed, the schedules were adhered to, by all parties involved. Details of the Training activities planned and conducted are given in the Annexure 2. which is also the schedules that were planned for the various groups.

#### 5. POST TOUR ACITIVITIES

A number of participants submitted written reports which were an account of the knowledge and insight gained and their feedback as to the relevance and organization of the study tour and their ideas arising from the Study Tour. Debriefing session for Group II was held during which the participants made presentations that highlighted various points on the issues enumerated above.



## **ANNEXURE 1 : Agreement With Study Tour Participants**

i.) This is an agreement between the Asian Development Bank Project TA 4013-IND 'Institutional Strengthening & Capacity Building for Madhya Pradesh State Road Sector' (the Project) and .....  
(the Participant) in connection with the latter's proposed participation in an overseas study tour (the Study Tour) during the period November 2004 to March 2005.

ii.) The Project undertakes to:

1. Employ its best efforts to arrange a relevant programme of meetings and visits, appropriate to the interests and work responsibilities of the members of the Participant's group.
2. Arrange necessary visas to enter the countries to which the Tour's itinerary will take the Participant, provided that the Participant holds a valid Indian passport and supplies the necessary documents and information as and when required.
3. Organise at least one preparatory seminar before the start of the Study Tour, to give the Participant some understanding of the countries to be visited and the ways in which he/she can get full value from the Study Tour.
4. Provide the Participant with a written itinerary in advance of his departure from India, giving the fullest possible information about travel arrangements, meetings and visits.
5. Meet all the Participant's necessary travel and accommodation expenses during the Study Tour. (If the Participant wishes to use means of transport or accommodation other than those provided by the Project, any additional cost will be met by the Participant.)
6. Pay to the Participant per diem equivalent to US\$35 while in Malaysia, Singapore or Thailand and, if applicable, US\$45 while in New Zealand or Australia. Payment will be made in cash by the Project's agents in the countries concerned, as soon as practicable after the Participant's arrival, against a signed receipt from the Participant; or, if more practicable, in US dollars before departure from India.
7. Pay to the Participant, before leaving India, a lump-sum of Rs2,000 to cover all incidental expenses which may arise in connection with the Study Tour. Under no circumstances will any request be entertained for a supplementary payment.
8. Give all reasonable assistance to the Participant in the event of illness, injury or other problems encountered during the Study Tour.
9. Take out travel insurance covering medical and accident expenses; loss of passport; loss of or delay in receiving checked baggage; and personal liability.

iii.) The Participant undertakes to:

10. Equip himself with all necessary information, reference material, personal documents and personal effects before the Study Tour.
11. Adhere to the itinerary.
12. Make every effort to get full value from the Study Tour, in terms of enhancing his future contribution to the work of his organisation following his return to Madhya Pradesh.
13. Immediately on returning to Madhya Pradesh, give to the Project Office Manager his/her used air tickets and boarding passes, which are required by ADB to support the claim for reimbursement of air fares.

14. Within 15 days of returning to Madhya Pradesh, submit a written report of 1,000–1,500 words on his participation in the Study Tour, giving at least:
- a) an account of the knowledge and insight gained and their relevance to the Madhya Pradesh road sector;
  - b) ideas arising from the Study Tour and how they might be applied in Madhya Pradesh;
  - c) intentions with respect to applying new knowledge and ideas in his own work and sharing them with colleagues; and
  - d) feedback as to the relevance and organisation of the Study Tour, to assist organisers of future study tours to improve their value.

These reports will be aggregated and made available to other officers of PWD and MPRDC, ADB and any other agency for which they may seem relevant and beneficial.

15. Within 60 days of returning to Madhya Pradesh, participate in a series of seminars organised by the Project to facilitate transfer of knowledge and ideas from all members of the Study Tour groups to their colleagues.

*Signed*

*Signed*

.....  
*John Standingford*  
*For the Project*

.....  
*Name.....*  
*The Participant*

*Date.....*

*Date.....*

## ANNEXURE 2

### Tour Programme for Group 1

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
10/2	Th	1835	2000	Travel	BHO-BOM	CD7133. Bhopal Airport.	BOM
11/2	Fr	1330				Check out of hotel. Participants may take lunch before or after check-out.	Air-craft
		1500	1530	Transfer	Hotel to airport	Take taxis to the airport.	
		1830	1125	Travel	BOM-SYD	QF124	
12/2	Sa	1215	1245	Transfer	Airport - hotel	Take taxis to the Motel Formule 1,	SYD
		1300		Check-in	Sydney	Motel Formule 1	
13/2	Su	1730	1830	Transfer	Hotel - airport	Meet back at the hotel to collect luggage. Take taxis to Kingsford Smith Airport (Domestic Terminal) and look for a Qantas sign.	BNE
		1940	2005	Travel	SYD-BNE	QF550	
		2030	2100	Transfer	Airport - hotel	Ray Matta and Vivian Lee will meet the group at the airport, carrying a placard.	
		2100		Check-in	Brisbane	Chifley on George (twin-share).	
14/2	Mo	0900	1100	Meeting	DMR Board Room Brisbane Contact: Graham Hatley	Introduction to Department of Main Roads (DMR): road network, DMR role and organization (Gary Fisher, A/GM[SP&D]).	BNE
		1100	1300	Meeting		Local Government Alliance (Les Dunn)	
		1315	1415	Lunch	Govinda's Rest't		
		1430	1730	Present-ation	DMR Board Room Brisbane	Governance Issues (Craig Panigiris, Director Corporate Planning & Performance, and Barbara McDonagh, A/Principal Advisor); Policy and Planning (Melinda Richards, Manager Corporate Planning & Performance).	
15/2	Tu	0930	1100	Present-ation	QT Board Room Brisbane	ARMIS (A Road Management Information System) – integrated software package for road system management (Andy Boyd).	BNE
		1130	1430	Present-ation		Contract management and main roads (Graham Hobbs). Working lunch.	
		1430	1730	Present-ation		Maintaining organizational capability and leadership (Robin Francis).	
16/2	We	0830	1730	Site visit	Brisbane Metro & South Coast Hinterland	To see urban transport infrastructure: busway, Pacific Moorway, Nerang TMC, QML and inner-city bypass (Vivian Lee, Andrew Haddock, William Gondwe).	BNE

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
		1830	2030	Dinner	Sitar Restaurant, New Farm (suburb)	Hosted by Gary Fisher, A/General Manager SP&D, and Ray Matta, A/Manager T&IT. Accompanying wives are welcome to attend: estimated cost A\$25-30 per head.	
17/2	Th	0830	1730	Site visit	Brisbane Metro & North Coast Hinterland	To see rural roads: Bruce Highway 6-laning works, Sunshine Motorway, dirt/rural road issues near Gympie. (John Irvine). Possible visit to duplication works. Lunch at own cost at Buderin Ginger Factory.	BNE
18/2	Fr	0900	1030	Present-ation	Transit Board Room, Brisbane	Quality control and materials testing. Focus: quality control & materials testing (Ron Michel).	BNE
		1100	1230	Present-ation		Training: role of training for technology professionals, maintaining competency of field staff (John Mathams).	
		1245	1345	Lunch		At own cost	
		1400	1730	Alternate present-ation	Transit Board Room, Brisbane	1. Private-public partnerships (David Kelly). 2. Road safety – accident recording & analysis (Jon Douglas / Gordon Lee) <i>Participants may choose which present-ation to attend, subject to there being at least 4 at each one.</i>	
19/2	Sa	1000	1030	Transfer	Hotel - airport		AKL
		1205	1800	Travel	BNE-AKL	QF25	
		1830	1915	Transfer	Airport - hotel	A driver will meet the group at the airport, with Naveen Jayavarapu of Transit NZ and his wife, who will both go with the group to Wellington.	
		1930		Check-in	Auckland	Copthorne Harbour City Hotel (twin-share). Booking No.12000134025	
20/2	Su					Free time in Auckland	AKL
21/2	Mo	0830	1300	Travel (bus)	AKL to Northlands	165km journey to north of AKL, with lunch on the way. Stops can be made to inspect features of the road. Naveen Jayavarapu will accompany the group throughout the day and act as their guide.	AKL
		1300	1700	Site visit	Transit Office CPO Bldg Rathbone St Whangarei	Visit roads maintained under performance-based contract; talk to contractor and Transit's Area Engineer Richard Green (tel 0274 357 843)..	
		1700	1930	Travel (bus)	Return to AKL		
22/2	Tu	0730		Check-out	Hotel	Check-out time is 1000, so unaccompanied participants will have to check out before going to their morning meeting. Baggage can be stowed at the hotel and picked up on the way out of Auckland.	Roto-rua

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
		0800	0830	Transfer	Hotel – ACC office	Naveen Jayavarapu will accompany the group throughout the morning. He and his wife will travel with the group to Rotorua and Wellington.	
		0830	1130	Meetings	ACC, Level 4 Bledisloe House Wellesly Street Auckland	Joseph Flanagan of Auckland City Council, and consultants responsible for pavement management system (PMS) implementation. (Contact: Neill Forgie [mobile 027 286 8867] or Sue Liddell [tel 375 3354])	
		1130	1300	Meeting/ visit/working lunch	Central Motorway Junction Project, AKL	Terry Brown, Transit's Director Strategy & Traffic, for overviews of Transit, Grafton Gully & CMJ Project. (Terry's mobile: 027 246 1128)	
		1315		Pick-up	Hotel		
		1330	1730	Travel (bus)	Auckland to Hamilton	235km journey SSE. General inspection of road conditions. Lunch on the way. Naveen Jayavarapu will accompany the group to Wellington.	
		1730		Check-in	Rotorua	Copthorne Millennium Hotel. Booking No.14000134024.	
		1800		Feast cum cultural event	Rotorua	Leave hotel for Mai Ora Combo (Maori cultural show), starting at 1830. Venue: Mitai, 192 Fairy Springs Road, Rotorua. Tickets for all participants.	
23/2	We	0800	1030	Sight-seeing	Maori Arts & Craft Institute, Te Whakarewarewa Thermal Valley	Opportunity to see the thermal springs and Maori art and crafts.	WLG
		1100	1200	Travel (bus)	Rotorua to Lake Taupo	82km journey south. General inspection of road conditions.	
		1200	1330	Lunch	By Lake Taupo		
		1330	2000	Travel (bus)	Taupo to Wellington	378km journey SSW. General inspection of road conditions.	
		2000		Check-in	Wellington	Copthorne Plimmer Towers Hotel (twin-share). Booking No.17000133829. Bus and driver will leave the group here.	

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
24/2	Th	0900	1000	Meeting	Transit NZ, Level 7 Investment House 20-26 Ballance St Wellington.	Lisa Rossiter, Environmental Director, or Debbie Firestone, Environmental Policy advisor: Transit's Environmental Plan. (Contact tel: 496 6600)	WLG
						Douceline Van Arts will arrange lodgement of Malaysian visa applications; visas should be issued in time for same-day collection.	
		1030	1200	Meeting		Ian Clark, Principal Policy Analyst: Transit's new structure and reform process.	
		1200	1215	Walk		Douceline will walk with the group to the LTNZ office.	
		1215	1245	Lunch	LTNZ, Level 3 BP House 20 Customhouse Quay, Wellington	Hosted by Transit NZ at their office.	
		1300	1500	Meeting		Land Transport NZ (Transfund): LTNZ's function and the funding process.	
		1500	1700	Meeting		Land Transport NZ (Land Transport Safety Authority): road safety issues.	
25/2	Fr	0830	1030	Meeting	Transit NZ, Level 7 Investment House 20-26 Ballance St Wellington (as on Thursday)	Gordon Hart, Regional Asset Manager, & Chris Parkman, National Asset Information Manager. Overview of asset management, pavement management system (PMS), RIMS, dTIMS & public/private partnership (PPP).	WLG
		1030	1100	Break		Tea/coffee	
		1100	1230	Meeting		Brent McGuire, Procurement Manager, Capital Projects, Transit. Procurement overview followed by discussion/questions.	
		1230	1315	Lunch		Hosted by Transit at the National Office.	
		1345	1730	Meeting & site visits	Transit Regional Office, Level 8 Logical House 186-190 Willis St Wellington	Transit officer (TBA). Overview of the Inner City Bypass Project, followed by site visits in Wellington and environs. (Contact tel 801 2580)	
26/2	Sa	1230	1330	Transfer	Hotel - airport	Ask the hotel to arrange transit buses or taxis. The Project will reimburse fares against receipts.	SIN
		0605	0810	Travel	WLG-MEL	QF38	
						Free time in Melbourne. The Australian visas should allow participants to leave the airport transit area between flights.	
		1710	2130	Travel	MEL-SIN	QF9	
		2200	2230	Transfer	Airport - hotel	A driver will meet the group at the airport.	
		2230		Check-in	Singapore	Crown Prince Hotel (twin-share).	

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
27/2	Su					Free time in Singapore	KUL
		TBA		Check-out			
		1700	1730	Transfer	Hotel – NICE bus	CPG will arrange a transfer to the Copthorne Orchid Hotel, Dunearn Road, where the bus departs.	
		1800	2330 ?	Travel (bus)	SIN-KUL	The group should have its Malaysian visas, issued in WLG. But in case not they can e obtained on arrival at the border crossing.	
		2330	2400	Transfer	Bus - hotel	ITIDI will arrange for the group to be met and taken to the hotel.	
28/2	Mo	0000	0015	Check-in	Kuala Lumpur	Quality Hotel, Jalan Raja Laut (single occupancy for all members of the group).	KUL
		0830		Pick-up	Hotel		
		0900	1230	Meetings/ briefing	Taman Desa Kuala Lumpur	Toll road concessionaires PLUS & PROPEL.	
		1230	1430	Lunch	Kuala Lumpur	Lunch will be taken at a convenient restaurant and per diem for the week will be dispensed.	
		1430	1630	Meetings/ briefing	Jalan Sultan Salahuddin Kuala Lumpur	JKR (=PWD): introductory briefing and meetings.	
		1630	1830	Freshen up	Hotel	The group will be taken back to the hotel to freshen up before the evening's sight-seeing.	
		1830		Tour	Kuala Lumpur	'Bintang Walk'. Participants will make their own way back to the hotel at leisure.	

Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
01/3	Tu	0800		Pick-up	Hotel	This will be a very full, long day at a location 30km from the city, so an early breakfast and punctual start are essential.	KUL
		0900	1200	Seminar	IKRAM campus Kajang	Project management and the role of the supervisor.	
		1200	1300	Briefings		IKRAM Pavement Division.	
		1430	1630	Meetings/ briefing		Malaysian Highway Authority (MHA).	
		1700	2200	Seminar		Value Management (with 1-hour break for dinner on campus).	
02/3	We	0830		Pick-up	Hotel		Train
		0900	1030	Meetings/ briefing	IKRAM Campus Kajang	Road Transport Department & Ministry of Transport (MoT).	
		1030	1230	Meeting/ dialogue		Dialogue session with road user representatives.	
		1430	1630	Meeting/ briefing	Putrajaya	Ministry of Finance (MoF).	
		1230				A bus will pick up any wives who want to join the participants at Putrajaya. They may like to visit the souq at Putrajaya Square before the guided tour of Putrajaya at 1800.	
		1630	1800	Tour	Putrajaya	Administrative capital of Malaysia.	
		1800	2000	Freshen up	Hotel	After the tour participants and wives will be taken back to the hotel to freshen up and pack. Check-out time is extended to 2000.	
		2030		Transfer		Transfer to railway station for return to SIN.	
		2230	0735	Travel (rail)	KUL-SIN	Overnight train. A special 'Koc Selesa' coach will be added to this train so all the group can travel in the greatest comfort, twin-sharing self-contained cabins.	
03/3	Th	0745		Transfer	Station - hotel	As before, a driver will meet the group.	SIN
		0830		Check-in	Singapore	Crown Prince Hotel (twin-share) <i>Note A</i>	
		0930		Pick-up		CPG will arrange transport to LTA	
		1000	1200	Meeting	Singapore	Ms Eng Sok Yong, Director for Policy & Planning, Land Transport Authority (LTA).	
		1330	1630	Tour	Singapore	CPG will arrange a bus to pick up participants from where they have lunch for a tour to observe infrastructure developments in the city.	



Date	Day	Time		Activity	Location	Details	Over-night
		From	To				
04/3	Fr	0830		Pick-up	Hotel		Train
		0900	1200	Meetings	Singapore	CPG Corporation Pvt Ltd. Briefing on corporatisation and privatization of Singapore's PWD, with video presentation.	
		1130	1200	Transfer	CPG office - airport		
		1355	1710	Travel	SIN-DEL	AI481	
		1740	1840	Transfer	Airport - station	Participants will make their own arrangements for this transfer. Taxi fares will be reimbursed against receipts.	
		2100	0645	Travel (rail)	DEL-BHO	Bhopal Express (2nd class a/conditioned)	
05/3	Sa					Arrival at Bhopal Junction. Private arrangements for transfer to participants' homes.	Home

#### City/airport codes

AKL = Auckland    BLR = Bangalore    BOM = Mumbai    SIN = Singapore  
BHO = Bhopal    BNE = Brisbane    KUL = Kuala Lumpur    WLG = Wellington

#### Airline codes

AI = Air India    MH = Malaysia Airlines (MAS)    QF = Qantas  
IC = Indian Airlines    NZ = Air New Zealand    9W = Jet Airways

#### Notes

- A Since this is earlier than the usual check-out time, participants may not be able to occupy their rooms immediately, but it should be possible to leave baggage securely. Our agents are trying to arrange early occupation of rooms, however.

  Next-day arrival.

## Tour Programme for Group 1A

(At the time of writing some appointments are still not definite. Some re-ordering is likely.  
Our agents in the three countries will brief you on arrival.)

Date	From	To	Activity	Location	Details & Explanatory Notes
Sun (12/12)	0945	1125	Travel	BHO-DEL	9W3309
	1920	0650	Travel	DEL-BOM-KUL	AI6195/MH195. A Malay man called Musa will meet Group 1A, bearing a placard "MP PWD".
Mon (13/11)	0800	0930	Freshen up	IKRAM campus	A room will be made available to enable group members to shower and change before their first meeting.
	0930	1000	Tea		
	1000	1200	Meeting		Road building and maintenance contractor Roadcare Sdn Bhd.
	1200	1330	Lunch		
	1430	1600	Meeting	Putrajaya	Economic Planning Unit (EPU), Prime Minister's Department: Infrastructure and Utilities Section and Privatisation Section.
	1700		Check-in	Kuala Lumpur	Grand Continental Hotel
Tue (14/12)	0900	1100	Meeting	Kuala Lumpur	TBA
	1130	1230	Meeting		Public Works Department (JKR): Planning & Corporate Services Branch & Highway Planning Unit
	1430	1700	Meeting		Construction Industry Development Board
Wed (15/12)	0900	1230	Meeting	Kajang	Malaysian Highway Authority (MHA/LLM)
	1430	1530		Kuala Lumpur	MATRADE – export promotion body
	1600	1730	Meeting		Professional Services Development Corporation – charged with enhancing professional skills to meet Malaysia's growing demand
	2230	0735	Travel	KUL-SIN	Overnight Train (sleeper)
Thu (16/12)	0800		Check-in	Singapore	New Park Hotel
	0900				Programme organized by CPG Corporation
Fri (17/12)	0900				Programme organized by CPG Corporation
	1645	1730	Travel	SIN-HKT	TG406
	1830		Check-in		Hotel to be advised
Sat (18/12)	Free time in Phuket				
Sun (19/12)	Free time in Phuket				
	2040	2205	Travel	HKT-BKK	TG920
	2300		Check-in	Bangkok	Grand Diamond Hotel
Mon (20/12)	TBA		Pick-up		
	0900	1130	Meetings & site visits	Bangkok	BTS (Skytrain) and MRT (Subway)
	1130	1330	Lunch		
	1330	1800	Meeting & site visit	Bangkok	Expressway and Rapid Transit Authority of Thailand (ETA)
Tue (21/12)	0830		Pick-up		
	0930	1200	Meeting	Bangkok	Department of Motor traffic (DMT) – to discuss toll road policy, operation and experience

Date	From	To	Activity	Location	Details & Explanatory Notes
	1200	1300	Lunch		
	1300	1700	TBA	Bangkok	TBA
Wed (22/12)	TBA		TBA	Bangkok	TBA
	1805	2040	Travel	BKK-DEL	AI305
	2130		Check-in	Delhi	Hotel to be advised (if required)
Thu (23/12)	Free time in Delhi				
	1635	1815	Travel	DEL-BHO	9W3307

*City codes*

BHO = Bhopal      DEL = Delhi      KUL = Kuala Lumpur  
BKK = Bangkok      HKT = Phuket      SIN = Singapore

## Tour Programme for Group 2

Date	From	To	Activity	Location	Details
Sun (21/11)	1740	1940	Travel	BHO-BOM	IC 7134
	2310	0635*	Travel	BOM-KUL	MH 195
Mon (22/11)	0800	0900	Check-in	BOM-KUL	Arrive at ITIDI campus, check in and move into assigned rooms.
	0930	1300	Meeting/ Seminar	IKRAM campus	Meetings with Representatives from Ministry of Finance (MoF) & Ministry of Transport (MoT)
	1430	1700			A Talk on Project Management and the Role of Supervisor
Tue (23/11)	0900	1100	Briefing	IKRAM Campus	Opening Ceremony
	1100	1300			Overview on Malaysian Economic Development with Emphasis on Infrastructure Policies and Strategy by Representative of the Economic Planning Unit, Prime Minister Department
	1430		Tour	Putrajaya & Cyberjaya	Administrative Capital and "Silicon Valley" Valley of Malaysia
Wed (24/11)	0830	1030	Meeting/ Briefing	IKRAM Campus	Briefings on Malaysian Road Administration, Construction and Maintenance by PWD Malaysia
	1030	1300			Dialogue Session with Road User Representative
	1430	1630			Briefings on Toll Roads/Highways in Malaysia by Malaysian Highway Authority (MHA)
	1630	2030	Tour	Kuala Lumpur	KLCC Twin Tower (Tallest building in Malaysia)
	2230	0735	Travel	KUL-SIN	Overnight Train
Thu (25/11)	Singapore programme organized by CPG Consultants Pte Ltd				
Fri (26/11)	Singapore programme organized by CPG Consultants Pte Ltd				
Sat (27/11)	Free time in Singapore				
	2210	0628	Travel	SIN-KUL	Overnight Train
Sun (28/11)	Free				
Mon (29/11)	0900	1730	Seminar	IKRAM Campus	Road Construction Tendering and Contract Management, and Road Project Planning
	1730	Free			
Tue (30/11)	0900	1730	Seminar	IKRAM Campus	Pavement Performance and Specification, Road Recycling Technology, Pavement Recycling Experience in Malaysia
	1730	Free			
Wed (1/12)	0900	1730	Seminar	IKRAM Campus	Pavement Performance Assessment, Testing Equipment for Pavement Assessment and Laboratory Road Testing Equipment
	1730	Free			
Thu (2/12)	0900	1730	Seminar	IKRAM Campus	Road Asset Management, Presentation on HDM 4 Software
	1730	Free			
Fri (3/12)	0900	1730	Seminar	IKRAM Campus	Geotechnical and Environmental Aspects in Road Construction, Road Rehabilitation Design and Work
	1730	Free			

Date	From	To	Activity	Location	Details
Sat (4/12)	0800	1730	Tour	Genting Highlands	
Sun (5/12)	Rest Day				
Mon (6/12)	0800	1100	Field Visit	Kuala Lumpur	Visit to Indian High Commission
	1100	1700			Technical Visit – Road and Bridge Construction and Maintenance
	1730				Free
Tue (7/12)	0900	1730	Seminar	IKRAM Campus	Value Management in Road Construction
	1830	2000	Tour	Mines Shopping Fair	
Wed (8/12)	0900	1730	Seminar	IKRAM Campus	Road Safety Audit
	2030	2230	Present-ation	IKRAM Campus	Course Evaluation and Group Presentation by the participants <i>(Comparative findings on existing road conditions in Madhya Pradesh and how the study tour benefits the participants to further enhance and improve their daily work in Road Construction and Maintenance)</i>
Thu (9/12)	0900	1300	Field Study	University Putra Malaysia	Research and Development in Road Safety / Audit , Road Design for Safety
	1430		Tour & Field Visit	Overnight in Kuala Selangor (Coastal Town on the West Coast)	Historical Visit and Fireflies watching at night <i>(The Tour will cover traveling along highways and rural roads in the State of Selangor)</i>
Fri (10/12)	0830	1700			Hydrological Consideration for Road Construction and Site Visit to Farm Road System Visit to Pavement Recycling Technology Project Site
Sat (11/12)	0900		Tour	Kuala Lumpur	Visit to KL Tower for a 'Bird's-eye-view' of Kuala Lumpur City and other Places of Interest <i>(This Tour shall include traveling along rural and coastal road which will then join up to major highways, stopping by Rest and Relax (R&amp;R) areas and adjourn to Kuala Lumpur for City Tour)</i>
Sun (12/12)	1920	2135	Travel	KUL-BOM	MH 194
Mon (22/12)	1720	1930	Travel	BOM-BHO	9W 3105

#### City/airport codes

AKL = Auckland    BLR = Bangalore    BOM = Mumbai    SIN = Singapore  
BHO = Bhopal    BNE = Brisbane    KUL = Kuala Lumpur    WLG = Wellington

#### Airline codes

AI = Air India    MH = Malaysia Airlines (MAS)    QF = Qantas  
IC = Indian Airlines    NZ = Air New Zealand    9W = Jet Airways  
SQ= Singapore Airlines

### Tour Programme for Group 4

Date	Day	Time		Activity	Location	Details	Overnight
		From	To				
04/6	Sa	*	*	Travel	BHO-DEL	According to individual preference	Aircraft
		2315	0715	Travel	DEL-SIN	SQ407	
05/6	Su	0830	0925	Travel	SIN-KUL	SQ106. You will be met by our representative, Jenny Low <sup>18</sup> , and taken to your hotel	KUL
		1100		Check-in	Kuala Lumpur	Shangri-La Hotel, 11 Jalan Sultan Ismail [Tel +603020322388, Fax +60320701514	
						Free Time	
06/6	Mo	1430	1630	Meeting	Malaysian Highway Authority (MHA/LLM) Wisma Lebuhraya KM 6 Jalan Serdang , Kajang	Y Bhg Dato Ir George, Director General. Board Meeting Room	KUL
07/6	Tu	0745				Pick up at Hotel	KUL
		0830	1030	Meeting	Economic Planning Unit (EPU), Prime Minister's Dept., Block B5& B6 Federal Government Admin Centre	Raja Dato Kharaton R Zainal Abidin, Director General. On arrival please call 8888 3875 for security pass	
08/6	We					Spare time for follow up meetings	Melaka
		1400	1700	Travel	Kuala Lumpur to Melaka by road	General inspection of the highway. Hired van will pick you up at the hotel. The van will wait at Melaka and take you to Johor on 9 June	
		1700		Check-in	Melaka	A'Famosa Resort, Jalan Kemus, Simpang Empat, Alor Gajah [Tel + 6065520888, Fax +6065520811]	
						Free time at A' Famosa Resort	

Date	Day	Time		Activity	Location	Details	Overnight
		From	To				
09/6	Th	0700	1030	Travel	Melaka-Johor-Singapore by road	The same van will take you on to Johor, but cannot cross the causeway to Singapore. At the border you will go through immigration control and transfer to a local taxi [Note B]	SIN

		1030		Check-in	Singapore	Le Meridian Hotel, 100 Orchard Road Tel +6567338855, Fax +6567327886]	
		1100		Pick-up		CPG's vehicle will take you to their office and to other appointments in Singapore	
		1130	1330	Meeting	CPG Corporation Pte Ltd, 17-00 Tower B Novena Square	Mr. Kok King Min, Executive Vice-President for the Specialist Services & Chairman of CPG India; Mr. Pannir Chelvam, Vice President for Business Development. Mr Chelvam will escort you to subsequent meetings.	
		1500	1700	Meeting	Ministry of Transport, 460 Alexandra Road, 39-00 PSA Bldg	Mr. Choi Sing Kwok, Permanent Secretary; Mr Chee Hong Tat, Head of Strategic Planning.	
10/6	Fr	0915		Pick-up			SIN
		1000	1200	Meeting	Ministry of Finance (10 <sup>th</sup> Floor), 100 High Street 10-01 The Treasury	Mr Fong Yong Kian Director MFE ( Managing for Excellence); Mr Quek Cheng Meng, Director Corporate Services. Contact: Angeline Yap [Direct Tel: 6332 7507]	
						Spare time for follow up meetings	
11/6	Sa				Singapore	Free time in Singapore	DEL
		1600		Pick-up		Transfer to Changi Airport	
		1855	2155	Travel	SIN-DEL	SQ 408	
Individual schedules to return to BHO							

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Notes \* Arrangements made by participants themselves.

## **Appendix 8: SWOT Matrices for MP Road Sector, MPPWD and MPRDC**



**SWOT MATRIX FOR MADHYA PRADESH ROAD  
SECTOR**

<b>STRENGTHS</b>	<b>WEAKNESSES</b>
1. State Highway Act as the highway legislation in place. 2. Highway Act permits easy definition of highway asset contours. Framing of rules for highway management possible. 3. Highway Authority powers and role clearly defined under Highway Act. Powers to regulate use of land and control traffic. 4. Reforms program started by the state going ahead at good pace. Technology upgradation taken up recently. 5. Separate authorities for high value high traffic state highways, low volume village roads and district level intermediate roads. 6. Budgetary provisions increased for road sector in the current fiscal. Substantial funding for maintenance activities earmarked. 7. MP being centrally located geographically, state road network enjoys interstate traffic as well besides local traffic.	1. Years of neglect have resulted in asset erosion beyond redemption in some pockets. 2. Leaving aside the State Highway sector vested in MPRDC, district connectors sector is managed using outdated practices. 3. Excessive use of labor intensive maintenance systems results in lower level of upkeep and poor asset condition. 4. Sector underfunding persists even after increased budgetary provision. Sustained increases required for healthy assets. 5. Multiplicity of authorities in developing, managing and operating road assets. Lack of coordination among these authorities. 6. Local contractors lack financial, technological and managerial resources of quality required for delivery on a large asset base. 7. Lack of masterplanning results in adhoc and haphazard road sector development.
<b>OPPORTUNITIES</b>	<b>THREATS/ RISKS</b>
1. Road sector being accorded high priority by the political regime. Increased funding over years augurs well for sector. 2. Managed by qualified and experienced road managers. Opportunities for newer technology induction high. 3. Geographically, Madhya Pradesh located in the centre with major national highways criss-crossing the state. 4. Central location offers newer opportunities for development of freight stations and hubs thus creating highway networking. 5. Numerous tourist destinations including world heritage sites offer opportunities for higher connectivity. 6. MP road sector pioneered the Bond BOT concept. Private capital displayed keen interest in road infrastructure.	1. Continued underfunding may erode asset values further. Adequate budgetary support required to rejuvenate road sector. 2. Sustainability of programs requires assured funding support both from government budgets and cost recovery. 3. Assured and continuous support from political set up required for sustained development of sector. 4. Encroachments on right-of-way and overloading of vehicles result in faster asset deterioration. 5. Institutional reforms concurrent with the sector reforms must be sustained for the sector to deliver economic good as planned. 6. Partnering with other stakeholders by the government and public consultation process essential for sustained delivery.

**SWOT MATRIX FOR MADHYA PRADESH PUBLIC  
WORKS DEPARTMENT**

STRENGTHS	WEAKNESSES
<p>1. Large organization having state-wide presence with offices, depots, resthouses and equipment at diverse locations.</p> <p>2. Large pool of technically qualified manpower with a reserve of many graduate engineers and skilled technicians.</p> <p>3. Years of experience in developing, constructing, managing and maintaining road assets.</p> <p>4. As an agent of the Ministry of Road Transport and Highways, experienced in managing high density national highways.</p> <p>5. Networked and decentralized organization. Zonal/ divisional units responsible for program delivery in respective areas.</p> <p>6. Financial delegation at the level of Executive Engineers facilitates faster program delivery.</p> <p>7. Having designed and delivered Sendhwa border check post gained some expertise in transport regulation technology..</p>	<p>1. Years of underfunding brought in near total breakdown in road management. Outdated &amp; adhoc management practices.</p> <p>2. High level of demotivation on account of years of neglect of the road sector. Lack of Human Resource practices and training.</p> <p>3. Ageing organization with no induction of fresh blood since the eighties. Computerization is a relatively new addition.</p> <p>4. Saddled with a large ageing labor force with low productivity and little zeal to retrain.</p> <p>5. Large parts of budgetary allocations for road maintenance eroded by labor cost without any output/ performance in the past.</p> <p>6. Still relying on a Works Manual and Contract Forms designed in the seventies and eighties. Low on technology induction.</p> <p>7. Life-cycle costing of assets and prioritization in project management to be inducted for efficiency in operations.</p>
OPPORTUNITIES	THREATS/ RISKS
<p>1. High value, high density assets already transferred to MPRDC. Relatively smaller asset base to manage effectively.</p> <p>2. Deep organizational penetration lends to larger opportunities to cater to low capacity socially oriented connectivity projects..</p> <p>3. Geographically, Madhya Pradesh located in the centre with major national highways criss-crossing the state.</p> <p>4. Central location offers new opportunities for development of new links for unconnected habitats with the places of commerce.</p> <p>5. Sendhwa experience can be further used in replicating new technology transport infrastructure..</p>	<p>1. Continued underfunding may erode asset values further.</p> <p>2. Adequate budgetary support required to rejuvenate road sector.</p> <p>3. Remuneration packaging not related to market conditions may not attract outside talent. Outdated personnel policies.</p> <p>4. MDRs on conversion into State Highways get transferred to MPRDC. Left with low capacity assets.</p> <p>5. Sustainability of programs requires assured funding support both from government budgets and cost recovery.</p> <p>6. Large portfolio of assets eroded beyond redemption. Reconstruction is the only alternative but involves high cost.</p> <p>7. Encroachments on right-of-way and overloading of vehicles result in faster asset deterioration.</p> <p>8. Concern for environmental &amp; social management must be given due importance.</p>

**SWOT MATRIX FOR MADHYA PRADESH ROAD  
DEVELOPMENT CORPORATION**

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> <li>1. New organization with a slim and lean structure. Capable of creating a new work culture of its own.</li> <li>2. All State Highways in the state vested in MPRDC. These are high value, high density assets with good growth potential.</li> <li>3. MPRDC is imbibing new and modern technology oriented management approach. Capable of adopting best practices.</li> <li>4. Works in a computerized environment. It has adopted a modern procurement system based on FIDIC conditions.</li> <li>5. Values Human Resource Development and has adopted a training policy aimed at training each employee every year.</li> <li>6. Staffing pattern aimed at filling all professional positions in-house with persons of matching skills and qualifications.</li> <li>7. Acquired modern equipment, software and systems and geared to work in integrated technology based environment.</li> </ol>	<ol style="list-style-type: none"> <li>1. MPRDC needs to strive for a decentralized working with appropriate delegation structure.</li> <li>2. Most employees on secondment from PWD who can be repatriated any time.</li> <li>3. Repatriation of PWD seconded employees may result in discontinuities and loss of skills inventory built over time.</li> <li>4. Most assets under construction. MPRDC to develop long term perspective plan for new construction and maintenance together.</li> <li>5. Sustainable highway development and right-of-way management requires MPRDC to have asset control powers.</li> <li>6. Staff succession planning required. MPRDC to evolve sustainable staffing patterns with complementary skills.</li> <li>7. Controlling overloading of vehicles vests in Transport Department. Effective coordination needed for enforcement.</li> </ol>
OPPORTUNITIES	THREATS/ RISKS
<ol style="list-style-type: none"> <li>1. High value, high density assets lend to a portfolio approach to development.</li> <li>2. Relatively high density assets lead to opportunities for private sector participation or commercial capital.</li> <li>3. Geographically, Madhya Pradesh located in the centre with major national highways criss-crossing the state.</li> <li>4. Central location offers newer opportunities for development of freight stations and hubs thus creating highway networking.</li> <li>5. MPRDC's Main Objects permit undertaking other infrastructure projects. It can develop into a complete transport asset agency.</li> <li>6. MPRDC's experience with Bond BOT Program can help it develop into a PPP structuring advisor to the state.</li> <li>7. MPRDC's experience with road management databases opens opportunities for assisting PWD in this area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repatriation of PWD seconded employees may result in discontinuities and loss of skills inventory built over time.</li> <li>2. Remuneration packaging not related to market conditions may not attract outside talent in crucial management positions.</li> <li>3. Lack of succession planning may result in discontinuity and loss of time in rebuilding skills inventory.</li> <li>4. Sustainability of programs requires assured funding support both from government budgets and commercial sources.</li> <li>5. Commercial funding comes at a price and required strong governance parameters.</li> <li>6. Encroachments on right-of-way and overloading of vehicles result in faster asset deterioration.</li> </ol>