

PUBLIC WORKS DEPARTMENT

Government of Uttar Pradesh, India

UTTAR PRADESH STATE ROADS PROJECT Under IBRD Loan No. 4684-IN

Technical Assistance for Implementation of Institutional Reforms in the Road Sector of Uttar Pradesh

DRAFT OF REVISED UP ROAD POLICY TO BE SUBMITTED FOR GOUP CABINET ENDORSEMENT (FINAL)

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Glossary

ADB	Asian Development Bank	ISAP	Institutional Strengthening Action Plan
ADT	Average Daily Traffic	ILO	International Labour Organisation
AE	Assistant Engineer	IRC	Indian Road Congress
BIS	Bureau of Indian Standards	IT	Information Technology
BOOT	Build Own Operate Transfer	JE	Junior Engineer
BOT	Build Operate Transfer	MDR	Major District Roads
CBO	Community Based Organisation	MLA	Member of Legislative Assembly
CBR	California Bearing Ratio	MIS	Management Information System
CE	Chief Engineer	MoRTH	Ministry of Road Transport and Highways
CEO	Chief Executive Officer	MoEF	Ministry of Environment and Forest
CRF	Central Road Fund	M&E	Monitoring and Evaluation
CRR	Central Road Research Institute	MIS	Management Information System
CSR	Civil Service Reforms	MSS	Mixed Seal Surface
DAO	Divisional Account Officer	MoU	Memorandum of Understanding
DASP	Diversified Agriculture Support Program	NABARD	National Bank of Agricultural and Rural Development
DBC	Dense Bitumen Concrete	NITHE	National Institute for Training of Highway Engineers
DPR	Detailed Project Report	NH	National Highway
DRDA	District Rural Development Authority	NHAI	National Highway Authority of India
EA	Environmental Assessment	NHDP	National Highways Development Programme
EC	Executive Committee	ODR	Other District Road
EE	Executive Engineer	OFC	Optical Fibre Cable
E-in-C	Engineer in Chief	O&M	Operation and Maintenance
EIRR	Economic Internal Rate of Return	PAC	Public Accounts Committee
EMP	Environment Management Plan	PCC	Project Coordinating Consultant
EP	Entitled Person	PCI	Pavement Condition Index
E&SM	Environment and Social Management	PCU	Passenger Car – equivalent Unit
FIRR	Financial Internal Rate of Return	PICUP	Pradeshya Industrial & Investment Corporation of UP
GIS	Geographic Information System	PAP	Project affected persons
GNP	Gross National Product	PMS	Pavement Management System
GO	Government Order	PPP	Public Private Partnership
GOI	Government of India	PRI	Panchayat Raj Institution
GoUP	Government of Uttar Pradesh	PSP	Private Sector Participation
GSDP	Gross State Domestic Product	PWD	Public Works Department
HDM	Highway Design Model	PMGSY	Pradhan Mantri Gram Sadak Yojana
HGV	Heavy Goods Vehicle	RAP	Resettlement Action Plan
HIV	Human Immunodeficiency Virus	RBDC	Roads and Bridges Development Corporation of Kerala
HQ	Head Quarter	RES	Rural Engineering Services
HR	Human Resource	RIDF	Rural Infrastructure Development Fund
HRD	Human Resource Development	RMMS	Road Maintenance Management System
HRM	Human Resource Management	RSPEU	Road Safety Planning and Engineering Unit
IRR	Internal Rate of Return	RSC	Road Safety Cell
IBRD	International Bank for Reconstruction and Development	R&R	Resettlement and Rehabilitation
IDS	Institutional Development Strategy	RUB	Road Under Bridge
IDSP	Institutional Development And Strengthening Plan	ROB	Rail Over Bridge

ROW	Right of way
SDBC	Semi Dense Bitumen Carpet
SE	Superintending Engineer
SIA	Social Impact Assessment
SEZ	Special Economic Zone
SH	State Highway
SHA	State Highway Authority
SPV	Special Purpose Vehicle
SRF	State Road Fund
SRP-II	State Road Project-II
SRP	State Road Project
TA	Technical Assistance
ToR	Terms of Reference
TNRDC	Tamil Nadu Road Development Company Limited
UP	Uttar Pradesh
UPRNN	Uttar Pradesh Rajkiya Nirman Nigam
UPSBC	Uttar Pradesh State Bridge Corporation
UPSIDC	Uttar Pradesh State Industrial Development Corporation
UPSRTC	Uttar Pradesh State Road Transport Corporation
UPSRP	Uttar Pradesh State Road Project
UPSHA	Uttar Pradesh State Highway Authority
UNDP	United Nations Development Programme
VOC	Vehicle Operating Cost
VR	Village Roads
WB	World Bank
WBM	Water Bound Macadam

1. BACKGROUND

The Government of India has been according high priority to the transport sector recognizing it to be the most effective driver for speedy economic development of the nation. Further, the state governments have been advised by the centre to improve their core road network to facilitate an early and speedy economic development of the states and hence the nation. In response the Government of Uttar Pradesh embarked on road transport infrastructure development projects which are slowly transforming to state road development programs. As part of this effort the GoUP embarked on the Uttar Pradesh State Road Project (UPSRP) with financial assistance from the World Bank. The overall objective of the UPSRP is to implement high-return enhancements to the state's major roads and to introduce a range of policy reforms and interventions that will strengthen, in a sustainable way, the capacity of the PWD for effective management of the state road infrastructure, to better meet the demands of road users and identify the development priorities of the state.

In this respect, the Institutional Development Study-2000¹ recommended updating the UP Road Policy of 1998 in line with the recent government initiatives with the focus on identified key issues.

This document reviews the present UP Road Policy of 1998 and identifies the areas which need attention, reviews draft National Road Transport Policy, and some of the state road policies. The updated road policy aims to facilitate an efficient road transport system, which is safe and meets the aspirations of citizens for improving the travel needs and quality. This policy also aims to integrate transportation demands of other sectors.

This report is a draft on revised UP road policy. It is understood that currently the XI Five Year Plan is under preparation. Access to such basic documents is required together with extensive discussions with PWD and other Planning department so as to firm up the revision of road policy. This report therefore is an initial approach to the formulation of a UP Road Sector Policy but the help and support of the PWD, the IDS Cell, and Focus Group is accordingly solicited so that an acceptable policy may be submitted to the GoUP.

¹ Policy Support and Institutional Support, TCE Consulting Engineers Ltd., Final Report, June 2002

2. REVIEW OF EXISTING UTTAR PRADESH ROAD DEVELOPMENT POLICY 1998

The Uttar Pradesh Road Policy of 1998 is an exhaustive document and shows considerable inputs made by UPPWD. Thirteen broad objectives, covering various road development related aspects, have been stated in the document. However some crucial aspects such as long term network planning; integration of transport and land-use; protection of investment made in the road network (Asset management); dedicated funding; clear measures to protect the environment and communities from road related impacts; provision of training, awareness and education; implementation and monitoring of the road policies etc, have not been emphasised.

There is no clear direction in the policy which is more a collection of action plans. In one sense the 'policy' is more a statement of strategic objectives, which should normally be developed once the policy has been formulated. The thirteen objectives, shown in *italics*, and their coverage along with a critical appraisal of each, has been briefly given below: The objective of these comments is to raise awareness of the lack of depth and direction to the policies set out in the 1998 Road Policy Document so as to prevent the policies formulated under this Report from falling into the same trap.

1. *To keep the roads free of potholes and patches all the time by continuously maintaining and repairing them.*
 - Regular monitoring and checking needs to be an in-built task
 - In addition to pothole repairing and patching, other maintenance activities, such as clearance of drains, are also necessary to keep the pavement in acceptable condition
 - Priority for this should be established in order of the hierarchy of the roads and traffic density; First the core road network followed by the vital links and then others.
2. *To construct village roads under the Minimum Needs Program.*
 - Village connectivity needs to be part of an overall scheme for the state roads and not be treated separately, their integration with rest of the network of the state is also very important
 - Mechanism for maintenance of the roads after construction should also be specified
3. *To maintain and modernize National Highways, State Highways, Major District Roads, Other District Roads and Village Roads in the State.*
 - The proposed method of renewal of 1/5th of total length of State Highways, 1/6th length of MDRs and 1/8th length of ODRs and village roads every year is not be a feasible approach. The maintenance approach adopted should be needs based with a view to the gradual improvement and preservation of the entire road network.
 - Appropriate and reliable database with data related to road surface condition, crust type, traffic load etc. needs to be created and updated annually to enable a maintenance plan to be developed that falls within the given policy framework.

- Modernising roads is a very broad term covering various aspects of road e.g. construction, maintenance and management practices, highway amenities, traffic management etc. Hence specific area has to be targeted with-in a time frame based on the priority.
4. *To construct and reconstruct bridges, Rail Overhead / Under Bridges and Flyovers in the State.*
- A comprehensive and integrated rather than a piecemeal approach is required to identify the requirement of new construction or maintenance of old ones whether it is a case of road link, bridge, grade separator, RUB/ROB, expressway, bye-pass or a ring road.
 - Prioritisation of the bridge/ROB/RUB construction or rehabilitation has to be done based on the category of the road for example core / non-core network and on the need.
5. *To construct bypasses, ring roads and expressways in the State.*
- Planning for ring roads falls under urban area road network planning, therefore a mention of the coordination with local planning authorities for provision of bypass of external traffic is essential.
 - Construction of Expressways is extremely capital-intensive; hence policy statements should make a mention of the criteria for selection of the expressway corridors and the requirement to carry out feasibility studies along these selected corridors.
6. *To develop urban roads.*
- All transportation networks in urban areas need to develop as per a Comprehensive traffic and transportation plan with a horizon year of at least 15-20 years. Developing any urban road should be in context with its specific requirement and the city / town's future development plans. What is required is to set out the policy framework under which the roads will be developed.
7. *To arrange financial resources for the road development works.*
- Systematic investment plans in line with long term road development plans should be in place for estimating the amount of fund.
 - Private sector funding and innovative internal revenue generation mechanism should be worked out and a mention of a few identified ones should be made.
8. *To promote participation of the private sector in road development projects.*
- UPSHA has been created for the purpose of taking the lead role and prepare a policy framework and options for private sector involvement

9. *To ensure quality in construction and maintenance of roads.*

- Apart from following IRC, BIS, PWD specifications, specification of MORTH should also be followed for design, construction and maintenance works
- Who is going to 'ensure quality in construction'? Should this be done In-house or Outsourced?

10. *To ensure financial discipline, delivery and dovetailing in the road construction work.*

- Who is going to 'ensure financial discipline, etc'?

11. *To check ribbon development, encroachment and to ensure road safety.*

- What is meant by the word 'check'? Does it mean to monitor, or control, or restrict?
- For ensuring a check on ribbon development and encroachment, proper enforcement would be necessary.
- Road safety is sufficiently serious as to warrant inclusion in its own right. What is meant by the term 'to ensure road safety'? A policy statement must be clear and unambiguous. Far better to define what is meant by a policy statement such as, 'to reduce traffic accidents by 15% and to increase fines / penalties for traffic violations'.

12. *To bring about organizational and procedural improvements in the Public Works Department.*

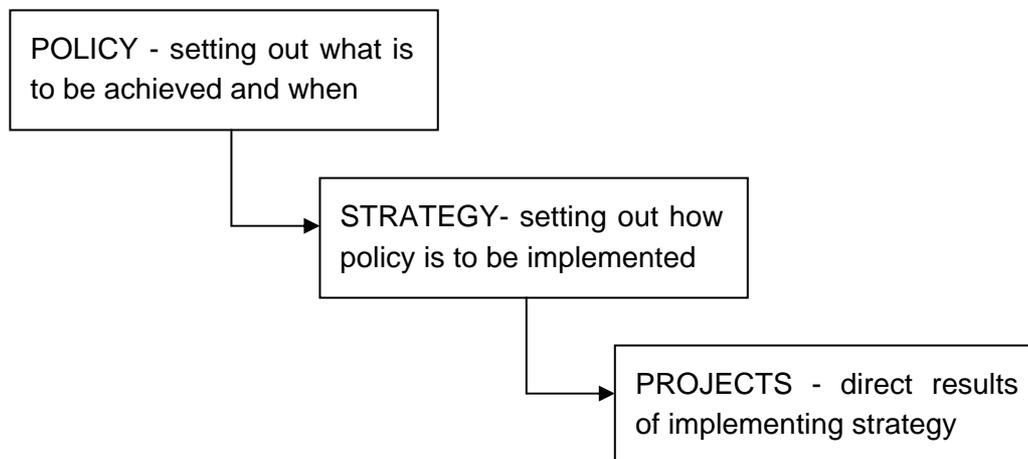
- Some form performance indicator would be helpful.

13. *To conserve environment.*

- The environment protection aspects should be elaborated further to aid in planning of road works. Needs to be specific for the state, and should refer to an environmental policy which exists at the state level².

² If the state follows the environmental protection policy of the Centre, there should be a reference to that effect.

As shown in the diagram below, Projects follow Strategy which follows Policy. There is an implicit need for the policy statements to be clear and well defined with some form of performance indicator given where appropriate.



3. NEED FOR POLICY UPDATE

The GoUP and Gol have initiated a number of programmes to support the growing demand in transport infrastructure in view of the unprecedented growth in traffic. A number of initiatives have already been taken towards capacity building within PWD to take care of works related to private sector participation. Some of the major initiatives taken by the UP PWD are as follows:

1. Establishment of the UP State Highway Authority under UP Act No. 19 of 2004
2. Establishment of Road Fund in 1998 (Annual Collection 2004-05 – Rs. 3500 mill)
3. Engaging private consultants in design, construction and supervision (UP State Road Project)
4. Introduction of toll roads / bridges on BOT basis
5. Ensuring sustainable fiscal framework by leveraging funds from external agencies such as NABARD, World Bank and other agencies
6. UPSRP and PMGSY programmes

There is a need to update the Road Policy in line with the initiatives outlined above and to set the policy framework within which they are to function. A set of plans and projects does not, on its own, create a policy, although it is possible to determine a policy based on the projects implemented. This is not the result of forward thinking but more the result of historical analysis. What is needed is for a policy framework to be determined so that initiatives within the road sector are developed both in a coordinated and integrated way and which are also in line with the overall transport policy for the State as a whole.

4. REVIEW OF ROAD POLICIES: GOVERNMENT OF INDIA AND OTHER STATE GOVERNMENTS

4.1 DRAFT NATIONAL ROAD TRANSPORT POLICY

Ministry of Shipping, Road Transport and Highways, Department of Road Transport and highways have formulated a draft National Road Transport Policy. At present, this policy is draft in nature. The policy covers transportation of passengers and freight, duly taking into account the environmental, technical and fiscal aspects of road transport.

This policy recognises the need for an efficient transport system for sustained economic development in promoting national integration, development of the backward regions by increasing their productivity and enhancing the competitive efficiency of the economy in the world market. It compares the expansion of the road transport sector both in terms of spread and capacity since independence establishes the case for major shift in provision of transport infrastructure. It identifies the deficiencies in areas of capacity and riding quality of the roads. It also establishes the need to upgrade technology in critical areas. A detailed status of the present road infrastructure and basic features of current ongoing projects and its importance has also been recorded at length.

This plan discusses inadequate outlays for the transport sector in the ninth and tenth plans and focuses on the major thrust areas. It brings out the need for a policy frame work to facilitate private sector borrowings and internal fund generation through rational pricing and user charges.

Environmental hazards, due to road transport, like excessive use of non renewable energy and pollution have been identified as major issues. A method for recommending mitigation measures, right from the start of a road project has been identified as a major area of concern.

The policy also establishes the importance of creation of database of current vehicle flow, pattern of movement and other data for use in rational decision making. Other problems in road infrastructure development like land acquisition, shifting of utilities, cutting of trees, encroachment etc. have also been discussed.

Transport related taxation practices have been criticised to bring about a reform. Other important areas of improvement like new technology vehicles, use of multi-axle vehicle, personal safety, barriers, etc have been stressed upon. Danger from road side hoardings, over-loading of vehicles, and road accidents have been highlighted and various control and enforcement measures suggested.

4.2 DRAFT ROAD POLICY, CHATTISGARH

Government of Chattisgarh state road policy aims at the following:

- To have an integrated road development which shall link together the economic clusters and take into account the road developed under PMGSY and NHDP

- To build a conducive environment to encourage Private Sector Participation in the road development and aim to draft a guideline for ensuring transparency in bidding and selection procedure and for giving financial support for non viable but key projects.
- To have a dedicated source of funding to ensure comprehensive maintenance of priority roads. For this proposal for creating a Road Fund with identified sources of revenue which is legally acceptable has been emphasized upon in the Road Policy.
- To focus on capacity building in areas of contract and construction management and employment of modern equipments and technology. There is a stress on continuous training and skill up gradation.

4.3 KERALA ROAD SECTOR POLICY, 2006

Government of Kerala has approved the Kerala Road Sector Policy (2005) vide GO (MS) 5/06/PWD. It aims at facilitating an efficient and safe road transportation system to fulfil the demand and the aspirations of the users for improving the quality of life and concomitant economic development. The policy document seeks to cover transportation of both passengers and freight, duly taking into account the environmental, technical, and financial aspects related to road transport.

The draft road policy outlines Government's strategic approach to improve the network capacity. GoK aims to rehabilitate existing high and medium-density corridors in a phased and timely manner and to upgrade the network to comply with modern highway design standards. Greater emphasis has been placed on road maintenance. The PWD has been encouraged to contract out maintenance operations to private contractors on a pilot basis and to use more modern technology for road pavement treatments. The Government aims to provide adequate funds to meet the growth in demand, simultaneously exploring avenues of private sector participation in the transport sector. Since budget allocation alone are not expected to meet the road sector's growing requirements, the State intends to supplement its road sector resource allocation by instituting a wider base of road user charges. The Government legislated the establishment of a State Road Fund that seeks to generate user fees through tolls and dedicated fuel levies. The Roads and Bridges Development Corporation of Kerala (RBDCK), recently established by the GoK, has been mandated to raise funds through loans, shares and grants from financial institutions in order to construct and maintain identified roads and bridges.

The policy is to prepare and implement Environmental Management Plans (EMP) whenever required, and to develop codes for environmental practice related to State Road construction and maintenance.

4.4 STATE ROAD POLICY – TAMILNADU

The Road Policy of Tamil Nadu aims at providing an efficient road network with emphasis on up-gradation of technology and cost effectiveness. Over the years considerable backlog on maintenance of roads has accumulated due to paucity of funds. The major highlights of the policy are:

- Evolving of a policy for maintenance of roads supported with effective method of financing maintenance activities has been emphasized upon.
- The Government has initiated a number of policy actions upfront for modernization of the department. Towards this end, the following initiatives have been put in place.
 - Formation of Tamil Nadu Road Development Company Limited (TNRDC) – The first ever-Indian joint venture initiative in road construction and maintenance.
 - Engaging private consultants in design, construction and supervision.
 - Introduction of toll roads / bridges on BOT basis.
 - Raising resources through floatation of TIDCO bonds for maintenance of ODRs.
 - Setting up of Revolving Fund for project investigation and preparation of feasibility reports.
- In addition to setting up of Road Fund the government could also explore other innovative forms of revenue generation.
 - Provide ducts in the median / on the edge of ROW which can be leased out to utility service providers, such as Telephones, OFC, Water Supply and sewerage pipes, etc. The lease rent can be used for maintenance of roads;
 - Raise nurseries along Highways and supply them to Forest, Panchayats and other Local Bodies;
 - Collect special cess from Industry for road development and maintenance; and
 - Develop commercial and industrial tourism along the road.
- Projects will be prioritized on the basis of their Internal Rate of Return (IRR) both in terms of economic viability (EIRR) and financial feasibility (FIRR).
- Complete network of roads, inventory of all roads, bridges and structures, resources, land records will be on database and updated frequently. Shelf of projects with all required basic details will be prepared and priorities will be fixed.
- Prioritization of new roads for construction and maintenance of existing roads should be based on traffic considerations and economic viability. On selective basis, maintenance and operations of State Highways may be given to private contractors in order to secure the benefits of competitive price and quality. The up-gradation contract must include a provision for maintenance for three years so as to ensure quality construction by the contractor. Another possibility is that the maintenance work could be geographically segmented where maintenance for each segment would be privatized. The State Government has demonstrated the viability of a novel framework of improving and maintaining existing road stretches through public-private partnership format. E.g. East Coast Road (ECR)
- Presently, there is weak accountability and poor monitoring of maintenance of roads. It is proposed to explore ways to contract out maintenance activities to the private sector and include operation and maintenance in construction contracts as well.

- Financing the development and maintenance of roads by creating a Central Road Fund (CRF) through an earmarked tax on diesel and petrol.
- Private sector participation in road maintenance is also envisaged.
- Presently, there is weak accountability and poor monitoring of maintenance of roads. It is proposed to explore ways to contract out maintenance activities to the private sector and include operation and maintenance in construction contracts as well.

4.5 ROAD DEVELOPMENT POLICY OF GUJARAT

Gujarat road policy is a comprehensive policy aiming at an integrated multimodal transport mix. It highlights a balanced growth in the entire region for overall economic and social up-lift. The policy calls for use of modern technology in construction methods and equipment. This seems to be one of the most futuristic policies of the nineties which identifies the need for application of scientific methods of resource allocation and prioritization. Innovative private sector incentives to attract private sector to participate in the projects, have been included in the policy :

- Granting commercial Development rights with in right of way and adjacent lands with in a legal frame work
- Granting advertisement rights and air space rights
- Inviting other sector to be a party to the investment in their industry specific connectivity projects

5. PROPOSED UP ROAD POLICY

The proposed policy framework is an updated version of the previous one, concentrating more on the weaknesses of the earlier policy, covering entire range of stake holders and taking in to account the recent developments in the transport sector to deliver quality and efficient road network for the travel needs of the people of Uttar Pradesh.

These proposals are listed under a number of key headings so that the policy framework focuses on key areas.

5.1 PURPOSE

The proposed policy framework sets out the guide lines for decision-making by the various agencies involved in road transport sector for the setting of their strategic objectives and their long term planning, implementation and management.

This Policy seeks to achieve medium and long term desired outcomes that are consistent with national planning goals. At a national road policy level, the Lucknow plan (1981- 2001) has provided strategic direction over the last 20 years for road transport. A draft plan (2001-2021) under review together with National Urban Transport Policy aims to provide an efficient and safe road based transportation system to take care of current and anticipated future demand and achieve economic, environmental and social aspirations of the people.

5.2 OBJECTIVE

The 'Objective' set out in the Uttar Pradesh Road Policy 1998 was a commendable effort to give direction to road sector development in the state. However the entire transportation arena has undergone a transformation since then. To suit the travel needs of India, with one of the fastest growing economies in the world, a road sector policy that complements all the sectoral goals has to be in place. The Tenth Five Year Plan provides both national and state strategic policy direction. The main objective (cl. 8.3.95) of the Plan refers to "balanced development of the total network" including widening and up-gradation of roads, road safety measures, wayside amenities, rural connectivity and inter-modal connectivity with airports, railways and ports.

The Road Sector Policy for the Uttar Pradesh State should reflect the thrust of these proposals which, in summary, address the issues listed below. This list is not exhaustive and should be amended as the Policy and Planning Unit considers appropriate :

1. Establish a GIS/RMMS

Develop and implement a GIS based road database to assist with the development of the Road Network Master Plan, and for the maintenance and development of the road network. Work on this should start during the latter part of 2007 with a view to completion within two years. This database would also link to the RMMS that should be purchased before the end of 2007. These systems would be incorporated within a GIS/RMMS Unit which is itself a sub-unit within the IT Unit due to be established within the PWD.

Much of the application of the GIS and RMMS would be taken up by the Policy and Planning Unit. This Unit is due to be established within the PWD.

2. Capacity Building Measures

- Implement changes in the PWD organisation structure, designed to improve management efficiency and effectiveness, taking into account the need for 'Change Management'.
- Establishment of a Human Resource Unit responsible for annual staff appraisals, performance related training, transparency in promotion and salary increases, and staff transfers.
- Establish training courses that encompass technical and management training, with training related to job performance criteria and promotion. Implementation of these training courses will be one of the major tasks to be undertaken by the Human Resource Unit.
- Introduce Financial Management Systems which aid decision making, which are transparent, and which integrate cost reduction techniques into government standards.
- Implement standardised systems and processes for procurement, quality control, technical audits, and project management
- Introduce standards for road designs, including intersections and lay-out in general, and for structures.
- Encourage the use of Contractors in maintenance and construction works associated with the Core Road Network, and to introduce Performance Based Contracts.
- Establish specialist units for dealing with legal affairs, complaints, public relations, and right to information.
- Establishment of a Road Safety Unit within PWD and procedures for links with other agencies involved in road safety.

3. Environmental and Social Development

To mitigate environmental impacts and provide quicker resettlement and rehabilitation of PAPs (Project Affected Persons).

- a policy should be developed for PAP along the lines of some of the PMGSY projects where such people are allocated land from the Gram Panchayat.
- a policy developed so that a list of PAP can be recorded in an official register along with the area of land in question and made available to the public

4. Road Safety

To ensure a proper road safety audit mechanism and to create road safety awareness among all road users. To develop and introduce road safety standards into all aspects of work undertaken by PWD, including design and development of the road network, and

maintenance and construction activities. This should include the necessary warning signs and ensure that they are in place during the life of the works.

5. Asset Value

To develop robust and supportable annual maintenance budgets based on need and on the gradual improvement of the quality of the road network so that the Annual Asset Value of the road network is taken into consideration.

To develop maintenance management, timely rehabilitation and up-gradation of existing infrastructure using a computer based road and bridge maintenance management system for the core road network that will prioritise maintenance based on economic criteria incorporating a range of maintenance interventions.

To achieve a simplified form of maintenance management system for the Non-Core Road Network.

To carry out condition surveys on which to base all maintenance interventions.

6. Private Sector Participation

To mobilize market borrowings as well as generate funds from internal resources with private sector participation.

7. Dedicated Road Fund

To establish a dedicated road fund

8. Stakeholder Participation

To establish the opportunity for Stakeholders to provide input to the PWD

9. Integrated multi-modal transportation

To give adequate importance to integrated multi-modal transportation planning with due consideration to all the sectors with adequate space for special projects in order to achieve a balanced socio-economic growth in the region

The task facing the Policy and Planning Unit is to prepare a policy framework which addresses the above issues.

The following Section considers the way in which the PWD can translate the Policy Framework into their Business Plan. In future the preparation of the Policy Framework would, in the first place, be the concern of the Policy and Planning Unit. They would present their findings to the senior officers (Director General and Additional Director Generals) of the PWD for consideration and subsequent endorsement.

Following approval of the policy framework the Policy and Planning Unit could prepare a Business Plan for the PWD. This would be an Annual Business Plan updated at the end of each year when achievements would be set against the targets set at the beginning of the year.

The Business Plan should then form part of the Annual Report published by the PWD and made available to all. It should describe the work carried out and achievements and set out the plan for the following year. One of the issues to be included in such a report would be the 'Asset Value' of the road network, indicating how this had changed over the year, hopefully for the good. This type of reporting would enable the general public to see if they were getting value for money. If a dedicated road fund is established then the general public would have a great desire to know that they were getting value for money as evidenced by improvements in the overall condition (Asset Value) of the road network.

6. POLICY STATEMENTS

Achieving objectives needs strong policy statements and commitment from the PWD which has to be implemented through right strategic direction and appropriate action plans. The following should help guide the PWD in the preparation of its short, medium and long term business plans.

Road Network Planning

1. Set targets in line with the expectations of other sectors and stakeholders for short, medium and long-term network planning involving preparation of a Road Development Plan
2. Devise a mechanism for evaluation of the Development Plan after each 5 year plan and then modify the target and the strategic network in line with the economic, environmental and social scenario
3. Integrate the development plans of other transport service providers such as railways; the over all transport plan should compliment each other and work together to achieve a central objective.
4. Demarcate right of way of the roads as per long term Road Development Plan and devise a mechanism to notify all the responsible authorities to act accordingly to safe guard the state interest.
5. Responsibility of Road Network Planning and sending timely notification should be under a policy and planning unit which will consult all the stake holding in its mechanism

Road Development, Maintenance and Management Functions:

With the establishment of GIS and RMMS the PWD will be in a much better position to address the following:

1. Adoption and use of a GIS based road management system by the end of 2009 will streamline the process of prioritization of projects for development, maintenance, monitoring and resource allocation
2. Devise a framework for road data collection within the next 12 months, for both the Core and Non-Core road networks. This should be simple and sustainable for management of the assets.
3. Give priority to the strategic core road network and assets
4. Standardise methodologies for pre-qualification, feasibility studies, design tendering, bidding, Contract and procurement process; use of IT should be maximised to ensure transparency and efficiency
5. Incentives to contractors for using modern equipment and technologies that give a quality assured product
6. Supervision and monitoring mechanisms to be strengthened and made transparent to all the stake holders; information dissemination using websites should be encouraged
7. Concentrate more on efficient Road maintenance through standardisation of maintenance practices and works

8. Quality management unit to ensure quality control during the construction, quality assurance of the equipments and processes and quality audit and standardisation of mechanism for all.
9. Road safety cell in the department should ensure safety audit for road projects in all the stages and creating awareness among the road users
10. Inspection of the core road network to be under taken at regular intervals to check encroachments and ribbon development within the right of way.

Business Planning and Funding:

1. Arrange for dedicated funding for maintenance of the core roads from Road Fund
2. For development and up-gradation of core roads, frame work to facilitate deficit funding through market borrowing and private sector participation should be encouraged
3. Facilitate granting commercial development rights along selected corridors with in right of way to encourage private parties
4. Invite other sectors to be a party to the investment in their industry specific connectivity projects
5. Facilitate optimum allocation of available resources through scientific tools
6. Identify short, medium and long term projects through road development plan and carry out investment planning for it.
7. UPSHA and UPSBC to investigate and facilitate private sector participation.

Capacity Building Measures: Road Administration Organization and management

1. Set-up policy and planning unit, road safety planning and engineering unit with in a committed time frame
2. Set-up quality management frame work
3. Frequently carryout manpower needs assessment. Human resource planning and training needs assessment should be undertaken out each year; this feed back will also help in enriching employees' database
4. Training and skill up gradation of PWD engineers to suit their new roles.
5. Frame policy and guidelines on human resource development, performance appraisal and career planning
6. Modify organisational arrangements to reflect priorities
7. Emphasis on Implementation and Monitoring with in a time frame (an implementation cell in PWD to look after the implementation of Road policy)

Mitigate Environmental and Social Impacts

1. PWD to facilitate mitigation frame work for new roads and road widening projects subjected to environmental and social impact assessment, implementation of approved management plans and mitigation measures to avoid and off-set any adverse effects of road construction and operation

2. Funding should be facilitated for plantation along the roads
3. The use of practices and selection of materials which provide environmental benefit are to be promoted where reasonable
4. Provide a quicker settlement and rehabilitation of PAPs (Project Affected Persons)

6.1 STRATEGIC DIRECTION

Road Network Planning:

Based on two earlier studies (SOS-1996, Techno-economic feasibility-2001); the strategic (Core) network has been identified which, by definition, is to provide good quality road linkages between the major population, industrial and culturally rich locations in the state to support economic and social development. The selection of the roads was based on the traffic densities and growth rates based on a period when the economy lacked the direction and momentum. Since 2001 a number of initiatives have been taken by Uttar Pradesh government to drive the economy of the state towards development. These included constitution of Special Economic Zone Development Authority and SEZ Policy to facilitate setting up of SEZs in the state. Besides this, efforts have been made to set up Textile parks, Agro Parks, Export Promotion Industrial parks and Software Technology parks by UP State Industrial Development Corporation

All these projects will require additional connectivity and capacity enhancement of the core road network of the state. Hence, a comprehensive road network planning should be a part of the frame work before each five year plan (short term to medium term) to assess the transport need to take care the changing economic scenario of the state involving the entire transport service provider including railways. The short and medium term network planning should be in line with the long term goal.

Local Self Government bodies, transport operators, road user groups, government departments, and any other relevant parties will be consulted as stakeholders for the road network. Consultation will be for both broad road network planning, and for specific road infrastructure projects. For specific projects the relevant stakeholders will be identified and consulted early in the process to ensure all relevant factors are taken into consideration – for example, education authorities on relevant school impacts and school timings related to the project

A common problem faced while widening and up grading road network is encroachment and ribbon development along the road. Demarcation of right of way shall be carried out for all road networks for which a notification to owners of land needs to be issued. However, the interests of the people presently dependent on the ROW will be safeguarded. Acquisition of privately owned land, resettlement and rehabilitation of project affected people should be done with in a time frame.

Road Development, Maintenance and Management Functions:

The primary function of PWD is to develop maintain and manage the state road network. To carry out these functions most efficiently, modification in existing systems and processes with in the organization will be required. In this matter the IDS-2000 has suggested key system and process related modifications which should be implemented by PWD in a phased and

sustainable manner. Industry standard road development, maintenance and management practices to be adopted, with adequate training and knowledge transfer from more developed road agencies like NHAI. An MOU with the concerned authority will facilitate transformation in a more gradual and realistic manner.

To manage a substantially large network of road, a GIS based road management system is extremely helpful to facilitate decisions in a scientific and equitable manner. This should eventually merge with the frame work of planning and budgeting process. This will ensure that the PWD prioritises its road works, and allocates necessary funds to achieve optimum benefits of the investment in the sector. It should be ensured that there is a continuous data collection and entry mechanism for sustenance and effectiveness of the system. A policy should be developed whereby maintenance works should be based on needs, determined from condition and other surveys, and not time based.

The quality management unit will ensure quality check, assurance and audit which will in turn ensure safe and efficient travel, reduce travel time, improve comfort and riding quality and reduce accidents. Procedures will be regularly reviewed and updated to reflect recommended actions and policies from government.

Business Planning and Funding:

The annual outlay for planned programmes has not kept pace with the requirements in terms of capacity or length under various road categories which move majority of the goods and passenger traffic. The way the state of UP is poised for a robust economic growth in coming years, there will be very large gap between the existing and required capacity for travel needs. The requirement for the maintenance works under Non-plan budget, according to a PWD estimate, is more than double, if not treble, of what is allotted. It is therefore envisaged that the gap will widen further unless the PWD looks for market borrowings and generates additional funds from its internal sources like;

- Granting commercial Development rights with in right of way and adjacent lands
- Granting advertisement rights and air space rights
- Inviting other sector to be a party to the investment in their industry specific connectivity projects

Private sector participation will play an important role in deficit funding provided conducive government mechanism is established through UPSHA and UPSBC.

Capacity Building Measures: Road Administration Organization and management

IDS-2000 has brought out a number of areas for capacity building and key process reorganisation. Adopting necessary reforms and restructuring will ensure a better future of the road agencies and the road sector. It is envisaged that PWD will be the manager of their road assets in near future. In this regard, faster contract mechanism and award, remote monitoring of projects with the help of advanced communication techniques with the help of IT and road management systems will ensure delivery of quality product within time.

Changing role of the PWD officers will need training and skill upgradation. This has to be identified as a part of comprehensive 'Human Resource Management' covering manpower need assessment, human resource planning, policy and guidelines on human resource development, Performance appraisal and career planning.

Organisational Structures should reflect new priorities, especially regarding asset management, environment and social aspects, safety, quality and financial operations. Change will be implemented through workshops and training programmes to PWD officers. This may include slight restructuring of all levels up to field units of PWD line with vision that PWD officers will be the planners and managers of road assets. For the above to materialize it needs strong commitment from the PWD officers.

Co-ordination mechanisms shall be set in place to integrate different aspects of transport currently handled by a multiplicity of agencies. As apart from PWD many other agencies are involved in road construction and all maintenance is to undertaken by PWD, a proper handing over mechanism to be followed by the agencies such as Mandi Parishad, Rural engineering Services, etc. giving construction as well as financial details of roads constructed along with regular information of road.

Mitigate Environmental and Social Impacts

The Government should publish environmental standards in line with the GOI notification for environmental protection rules-1986 that include consideration of social aspects for maintenance, upgradation and construction activities associated with roads and bridges. These standards should apply to all public and private sector road projects.

New roads/bridges and major improvements, tolled or otherwise, will be subject to environmental and social impact assessment and require implementation of approved management plans and mitigation measures to avoid and off-set any adverse effects of road construction and operation. Minor projects will require contractors to complete documentation relevant to the environmental impact of the activities.

Funding will be provided for mitigation/ rehabilitation measures and the Government should promote re-vegetation and enhancement of streetscape planting. The use of new materials and procedures that have been tested and approved should be encouraged where it contributes to the long-term sustainability in road construction. Design guidelines to be published that incorporate these changes. The use of practices and selection of materials which provide environmental benefit are to be promoted where reasonable, in the areas such as vehicle technology, fuel quality, alternative fuels and improvement in inspection and maintenance practices. Research is to be undertaken on alternative fuel that is less polluting.

Initiatives to reduce air pollution from private and public vehicles will be promoted including switching over to less polluting fuels and phasing out old vehicles / old technology vehicles.

7. CONCLUSION

The draft UP Road policy, as presented above, has been made as exhaustive a document as possible, to aid discussion and finalisation of the aspects to be included in the Policy document, which would be presented to the cabinet for endorsement. However, this document cannot be seen or decided upon in isolation as it is linked to certain other action plans, which are already in motion and are under active discussion with the Focus Groups for finalisation.

The comments, advice, and active involvement of the Policy and Planning Unit is sought so that the policy frameworks presented to the GoUP for Cabinet endorsement accurately reflect the views and interests of the PWD.

8. COMMENTS OF FOCUS GROUP MEETING HELD ON 17TH JULY 2007

With respect to Section 5.2 OBJECTIVE where possible a time frame should be set against each of the items listed. The items listed should, as far as possible, be placed in order of priority with the Establishment of GIS/RMMS given top priority.

Additional points were included in this section principally covering Social and Environmental issues.

With respect to Section 6 POLICY STATEMENTS the issues listed under the heading 'Road Development Maintenance and Management Functions' should also be placed in order of priority with 'Adoption and use of GIS....' and 'Devise a framework for road data.....' first and second respectively.

Preceding the list of issues should be a comment to the effect that with the establishment of GIS/RMMS the PWD would be in a better position to address issues listed.

9. PRESENTATION TO PROJECT STEERING COMMITTEE

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PWD Focus Group - A	
Sri Krishna Kumar Mittal	E-in-C Rural Roads
Sir S.K. Guni	SE World Bank Circle, Faizabad
Sri Govind Prasad Sharma	EE Health System Development Project, Lucknow
Sri Vinod Kumar Bansal	EE, PMGSY Cell, Lucknow
Sri Vasudev T Gulwani	EE RSD- 5, Lucknow
Sri Sanjay Gupta	AE W, B-1, Lucknow
Sri R.P Yadav	AE P.D. Kanpur Nagar
Sri Yogesh Mathur	SE, IDS Cell
Sri Anay Kumar Srivastava	AE, IDS Cell
LEA International Ltd. and LEA Associates South Asia Pvt. Ltd.	
Dr. M. P. Raju	Transport Specialist
Mr Alan Stanbury	Team Leader



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UP Road Policy-1998: Objectives (Review)

1. To keep the roads free of potholes and patches all the time by continuously maintaining and repairing them.
2. To construct village roads under the Minimum Needs Program.
3. To maintain and modernize National Highways, State Highways, Major District Roads, Other District Roads and Village Roads in the State.
4. To construct and reconstruct bridges, Rail Overhead/ Under Bridges and Flyovers in the State.
5. To construct bypasses, ring roads and expressways in the State.
6. To develop urban roads.



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UP Road Policy-1998: Objectives (Review) Contd.

7. To arrange financial resources for the road development works.
8. To promote participation of the private sector in road development projects.
9. To ensure quality in construction and maintenance of roads
10. To ensure financial discipline, delivery and dovetailing in the road construction work
11. To check ribbon development, encroachment and to ensure road safety.
12. To bring about organizational and procedural improvements in the Public Works Department.



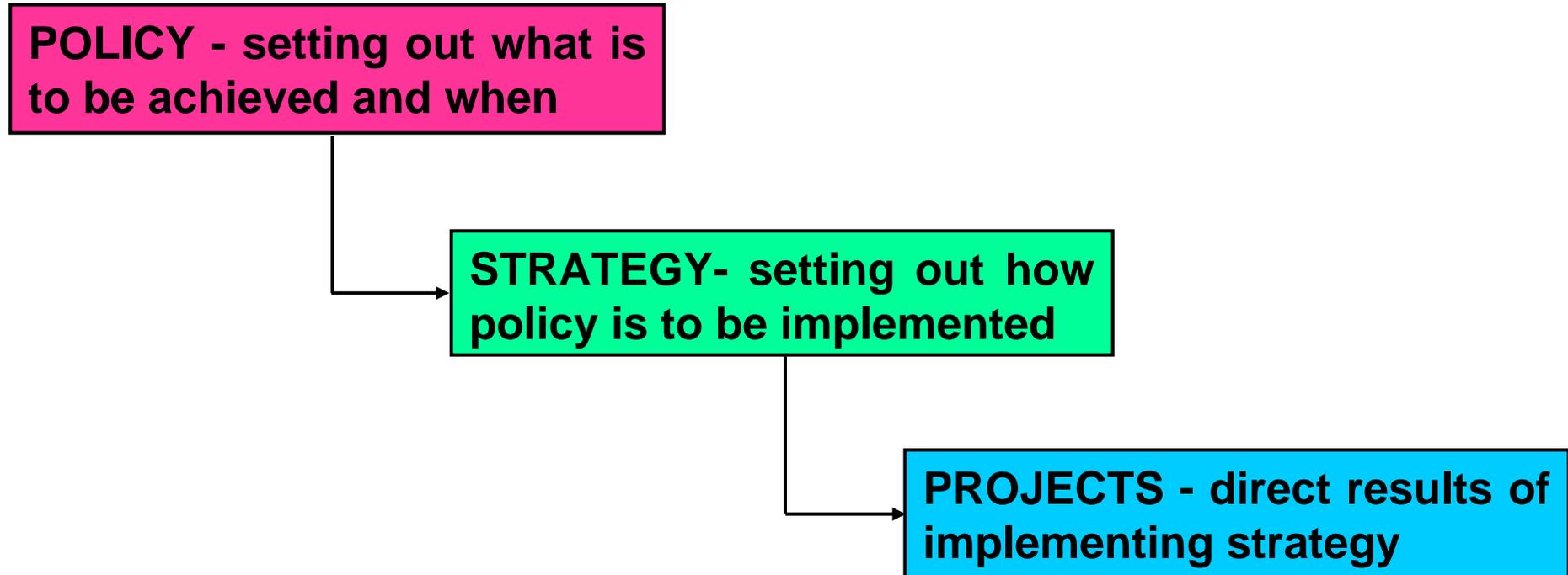
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UP Road Policy-1998: Objectives (Review) Contd.

13. To conserve environment.
14. Growing demand in transport infrastructure
15. GoUP Initiative for capacity building and private sector participation
16. Establishment of UPSHA in 2004
17. Launch of UPSRP, PMGSY projects involving private consultants
18. Establishment of Road Fund in 1998 and fund leverage from external agencies



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Policy Statements should be clear, well defined, with performance indicators / measures



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Need for Policy Update

GoUP have initiated a number of programmes to support traffic growth

1. Establishment of the UP State Highway Authority under UP Act No. 19 of 2004
2. Establishment of Road Fund in 1998 (Annual Collection 2004-05 was Rs. 3500 mill)
3. Engaging private consultants in design, construction and supervision (UP State Road Project)
4. Introduction of toll roads / bridges on BOT basis
5. Ensuring sustainable fiscal framework by leveraging funds from external agencies such as NABARD, World Bank and other agencies
6. UPSRP and PMGSY programmes



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Draft National Road Transport Policy

Ministry of Shipping, Road Transport and Highways, Department of Road Transport and highways have formulated a draft National Road Transport Policy. At present, this policy is draft in nature. The policy covers transportation of passengers and freight, duly taking into account the environmental, technical and fiscal aspects of road transport.



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Proposed UP Road Policy

1. Establish a GIS / RMMS
2. Capacity Building Measures
3. Environmental and Social Development
4. Road Safety
5. Asset Value
6. Private Sector Participation
7. Dedicated Road Fund
8. Stakeholder Participation
9. Integrated Multi-modal Transportation



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Policy Statements

1. Road Network Planning
2. Road Development, Maintenance and Management Functions
3. Business Planning and Funding
4. Capacity Building Measures: Road Administration Organisation and Management
5. Mitigate Environmental and Social Impacts



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UP Road Policy Statements: Road Network Planning

- Set targets in line with the expectations of other sectors and stakeholders for short, medium and long-term network planning (Road Development Plan)
- Devise mechanism for evaluation of the 'Road Development Plan' after each 5 year plan and modify the target and strategic network in line with the scenario
- Integrate development plans of other transport service providers such as railways and the plans compliment each other to achieve a central objective.
- Demarcate right of way of the roads as per long term Road Development Plan and devise a mechanism to notify and safe guard the state interest.
- Responsibility of Road Network Planning and sending timely notification should be under a policy and planning unit which should coordinate with stake holders



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UP Road Policy Statements: 'Road Development, Maintenance and Management Functions'

- Adoption and use of a GIS based road management system by the end of 2009 to stream line the process of prioritization of projects for development, maintenance, monitoring and resource allocation
- Devise a framework for road data collection within the next 12 months, for both the Core and Non-Core road networks. This should be simple and sustainable for management of the assets.
- Give priority to the strategic core road network and assets
- Standardise methodologies for pre-qualification, feasibility studies, design tendering, bidding, Contract and procurement process; use of IT should be maximised to ensure transparency and efficiency
- Incentives to contractors for using modern equipment and technologies that give a quality assured product



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UP Road Policy Statements: 'Road Development, Maintenance and Management Functions' Contd.

- Supervision and monitoring mechanisms to be strengthened and made transparent to all the stake holders; information dissemination using websites should be encouraged
- Concentrate more on efficient Road maintenance through standardisation of maintenance practices and works
- Quality management unit to ensure quality control during the construction, quality assurance of the equipments and processes and quality audit and standardisation of mechanism for all.
- Road safety cell in the department should ensure safety audit for road projects in all the stages and creating awareness among the road users
- Inspection of the core road network to be under taken at regular intervals to check encroachments and ribbon development within the right of way.



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UP Road Policy Statements: Business Planning and Funding

- Arrange dedicated funding for maintenance of the core roads from Road Fund
- For development and up-gradation of core roads, encourage deficit funding through market borrowing and private sector participation
- Facilitate granting commercial development rights along selected corridors with in right of way to encourage private parties
- Invite other sectors to be a party to the investment in their industry specific connectivity projects
- Facilitate optimum allocation of available resources through scientific tools
- Identify short, medium and long term projects through road development plan and carry out investment planning for it.
- UPSHA and UPSBC to investigate and facilitate private sector participation.



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UP Road Policy Statements: Capacity Building Measures

- Set-up policy and planning unit, road safety planning and engineering unit with in a committed time frame
- Set-up quality management frame work
- Carryout manpower needs assessment, Human resource planning and training needs assessment; this feed back will help in enriching employees' database
- Training and skill up gradation of PWD engineers to suit their new roles.
- Frame policy and guidelines on human resource development, performance appraisal and career planning
- Modify organisational arrangements to reflect priorities
- Emphasis on Implementation and Monitoring with in a time frame (an implementation cell in PWD to look after the implementation of Road policy)



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UP Road Policy : Mitigate Environmental and Social Impacts

- PWD to facilitate mitigation frame work for new roads and road widening projects subjected to environmental and social impact assessment, implementation of approved management plans and mitigation measures to avoid and off-set any adverse effects of road construction and operation
- Funding should be facilitated for plantation along the roads
- The use of practices and selection of materials which provide environmental benefit are to be promoted where reasonable
- Provide a quicker settlement and rehabilitation of PAPs (Project Affected Persons)

