

# A PRACTICAL CASE STUDY



Government of Rajasthan



## Rajasthan Mega Highways Project

Implemented by Road Infrastructure Development Company of Rajasthan Ltd. (RIDCOR)



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# Introduction

# CHALLENGES IN ROADS SECTOR IN RAJASTHAN

**Largest State in India  
3.42 Lakh Sq. Km.**

**Road Network : 1.77 Lakh Km**

**84% Single Lane  
5% Intermediate Lane  
11% two or more Lanes**

**Poor road geometrics  
and lack of bye-passes  
around congested areas**

**Paucity of dedicated  
financial resources**

**Requirement of Quality  
Improvement**

# GOOD ROADS IN RAJASTHAN – A NECESSITY

**State's economy largely dependent on agriculture, dairy, minerals, tourism, all requiring strong road network**



**Rajasthan being located between landlocked Northern States and Western port States imposes additional burden on roads due to interstate movement of goods and passenger traffic**

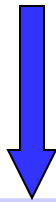


**Long international boundary necessitates good quality road infrastructure in border areas.**

# THE GENESIS OF RIDCOR



GoR conceptualized comprehensive programme 'Mega Highways Project' on PPP basis for development of highways in Rajasthan



 RIDCOR formed as 50:50 joint venture between GoR and IL&FS



**RIDCOR Objectives**

- Leverage budgetary resources of State
- Leverage strength of Private Sector

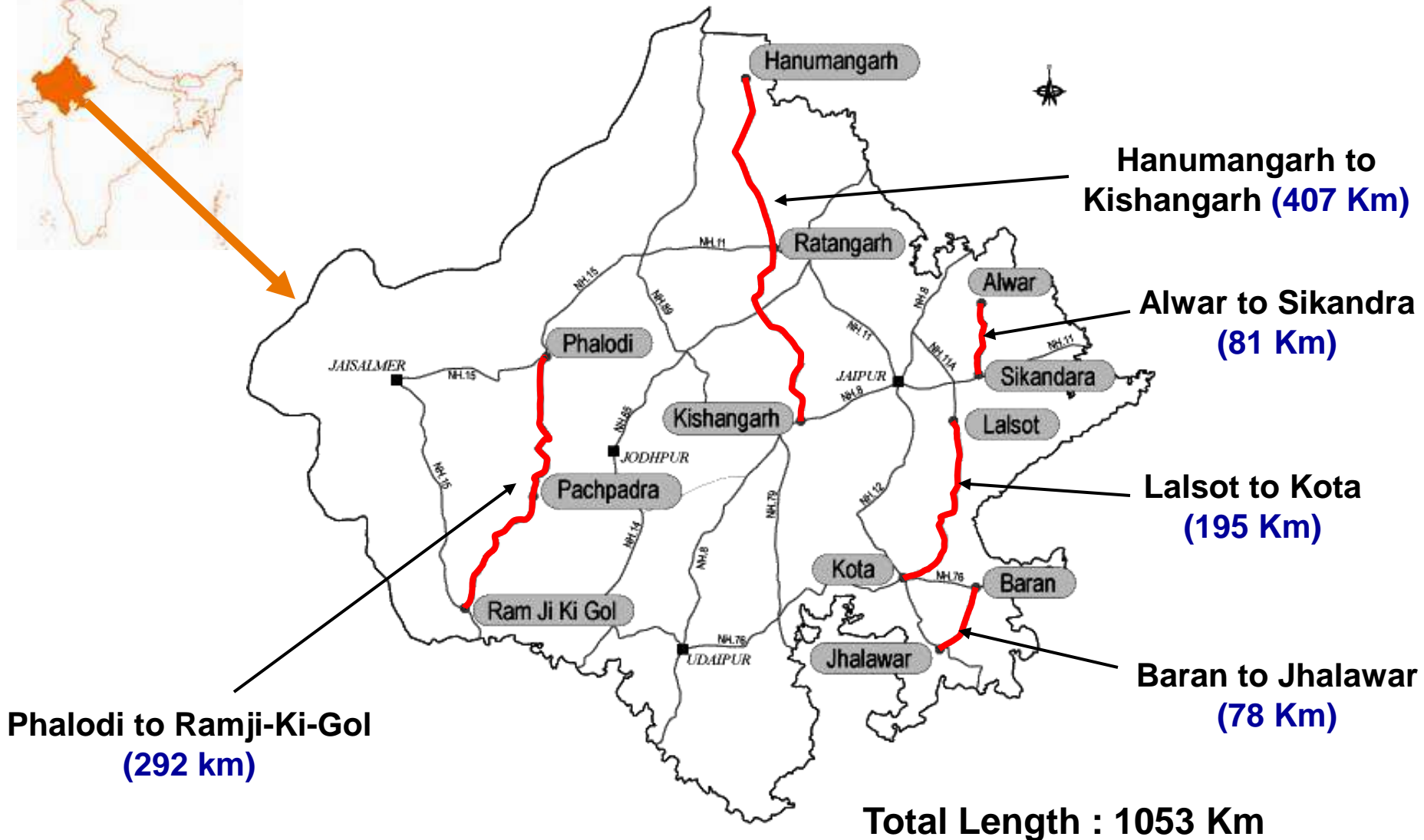
# THE RIDCOR EFFECT





# Project Profile

# ROADS COMPLETED UNDER MEGA HIGHWAYS PROJECT



# SALIENT FEATURES

- **Project Length** – **1053 Km**
- **Districts Passing Through** – **14 Nos.**
- **Culverts** – **783 Nos.**
- **Land Acquisition** – **965.40 Hect.**
- **Bypasses** – **30 Nos.**
- **ROBs** – **11 Nos.**
- **Major Bridges** – **3 Nos.**
- **24 Hours Ambulance & Highway Patrolling, Emergency/SOS facilities @ 2 Km, Vehicle Break Down/Two-way services, Environmental, community development/social and tourism initiatives along the project roads**





## RIDCOR Model

**RIDCOR positioned as a quintessential Public-Private Partnership Venture with equal shareholding amongst GoR and IL&FS**

**Set up with specific mandate to implement Mega Highways Project**

**Managed by high-powered Board comprising representatives of GoR and IL&FS, besides five prominent Independent Directors (ID)**

- **GoR : CS, PS (PWD), PS (Finance)**
- **IL&FS : MD/IL&FS, MD/ITNL**
- **Decision of Board based on consensus**

**No grants provided by GoR. Project revenue surplus to be reinvested in the State as per GoR directions.**

**All costs related to land acquisition and pre-construction included in the Project Cost.**

**IL&FS responsible for arranging finances at competitive rates facilitating reasonable levels of IDC**

**Cost of Improvement Works to account for about 85% of Project Cost**  
➤ **Cost of LA and R&R incurred by RIDCOR, against normal practice of GOR bearing costs in BOT Projects**

**Project Development and pre-operative expenses much lower**  
➤ **RIDCOR positioned as a lean and efficient organization**  
➤ **Extensive outsourcing to reduce overhead costs**

**Items pertaining to more than 95% of the Project Cost were procured through competitive solicitation process**

**Management Supervision done by IL&FS Transportation Networks Ltd. (ITNL) at minimal charges**

# PROJECT FUNDING

## Project Financing

Total revised estimated Project Cost Rs 1650 Cr against the initial estimate of Rs 1500 Cr

Equity contribution by promoters to the tune of Rs 100 Cr  
– GoR and IL&FS will contribute on 50:50 basis

Soft Loan to the tune of Rs 215 Cr from GoR  
– This is Sub Debt without interest  
– Repayable to Government of Rajasthan after retiring senior lenders' dues

Borrowings from market for around Rs 1335 Cr  
– Rates obtained at prevailing market rate  
— Includes sub-debt from IL&FS amounting to Rs 208 Cr

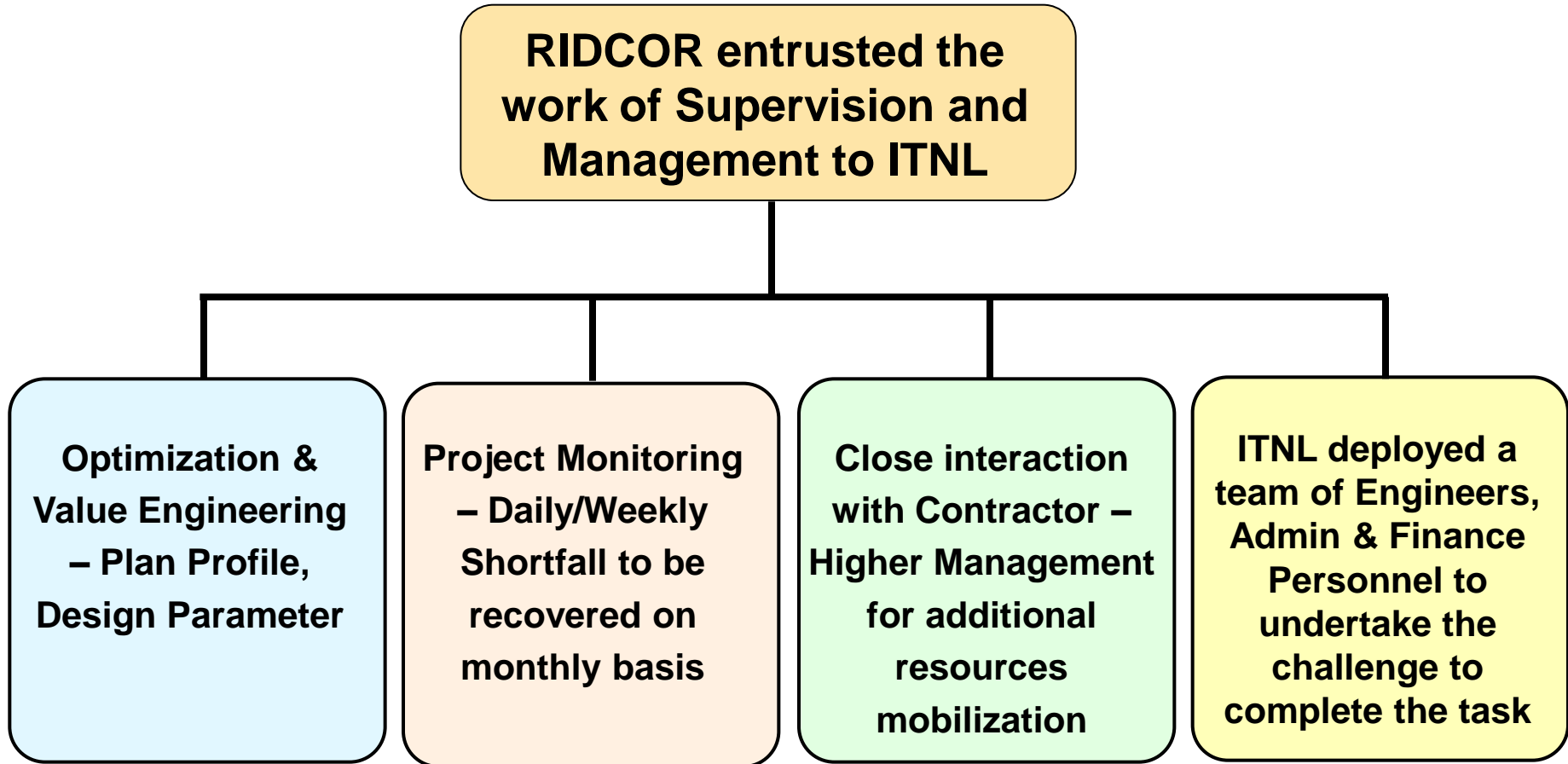
Source of Funds	Amount (in Rs Cr)
Equity Share Capital	
– GoR	50
– IL&FS	50
Interest-free Sub-debt from GoR	215
Sub-debt from IL&FS	235
Term loans from FIs/Banks	1100
<b>TOTAL</b>	<b>1650</b>

***Financial Security Fund of Rs 100 crores created by GoR for meeting Cash Deficit during Stabilization Period. Drawals from this fund would be interest bearing and carry interest equivalent to GoR bonds.***

# PROJECT ALLOCATION FINANCIALS

## Project Cost

S. No.	Particulars	Budgeted	
		Amount (Cr.)	%
1	Civil Cost of Seven Packages	1396.10	84.63%
2	Land acquisition and related cost	69.80	4.23%
3	Financing cost	21.30	1.29%
4	Pre-operative Expenses	9.60	0.58%
5	Education & Social Initiatives	2.10	0.13%
6	Toll Plaza Automation & System	21.40	1.30%
7	Interest during Construction	65.00	3.94%
8	Agency charges	64.30	3.90%
<b>Landed Project Total Cost (Cr.)</b>		<b>1649.60</b>	<b>100.00%</b>



# PROJECT MANAGEMENT SYSTEM

## Planning & Monitoring

**Level 3 Construction Schedule  
Ensure Milestone Compliances**

**Weekly and monthly monitoring  
with rescheduling along with  
resource requirement**

## Quality Control

**Four level Quality Checks (Independent  
Checks/ Internal Checks)**

- Assigning percentage checking by CSC
- By RIDCOR PM/Sr. PE/PE – Routine quality checks
- Quality checks by Independent Engineer
- MNIT, Jaipur

**Stringent measures to curb quality  
deficiencies, if any**

- Penalties on Consultants, Removal of personnel responsible
- Sacking of Team Leader/ Consultants



## Project Risks & Mitigation Strategy

- **Construction Risk**
- **Financing Risk**
- **O&M Risk**
- **Revenue Risk**
- **Other Unprecedented Risk**

# CONSTRUCTION RISKS

## Risk Involved

## Mitigation Measures

**Selection of Integrated Improvement cum Maintenance Contractor**

1. Stringent technical and financial criteria
2. Maintenance of 5 years is responsibility of the contractor
3. Introduction of replacement clause

**To provide encumbrances free Land to the contractors. (Land acquisition of 965.4 Hect. for 30 bypasses has to be done).**

**Dedicated Teams of retired administrative officials deployed to provide necessary help to Land Acquisition Officers, PWD. The cost of land acquisition is borne by RIDCOR.**

**Shifting of electrical lines and water supply lines**

**Innovative methods are used in consultation with line departments like work carried out by the contractor introduced by RIDCOR**

**Variation in the quantities of various items.**

**The variation allowed upto 25% of the Contract Amount**

**Forest Approval in 6 road stretches**

**Compensatory plantation undertaken**

**Timely completion of the project**

**Milestones related with penalty/bonus**

# FINANCING RISKS

## Risk Involved

Initial Cost of the Project is Rs. 1500 Cr. and landed cost of the Project is Rs. 1650 Cr.

GoR has Invested Rs. 50 Cr. as equity fund and a Interest free loan of Rs. 215 Cr.

Project works commenced even before Financial Close by drawing upon Viability Gap Assistance and Equity Funds

Interest reset by lenders every three years

Unprecedented hikes in Bitumen/Steel/Cement

1. Bitumen increased from Rs. 14,000 to 40,000 per MT
2. Cement bag increased from Rs. 130 to 225
3. Steel increased Rs. 28,000 to 50,000 per MT

## Mitigation Measures

Rs. 1392 Cr. (which includes Increased cost) have been arranged by IL&FS.

Financial close achieved in 90 days

IL&FS has borne all the variations

There was no escalation payable on commodities except Bitumen.

## Risk Involved

## Mitigation Measures

**Operation and maintenance of the road stretches.**

- 1. Maintenance for 5 years is responsibility of the contractor**
- 2. Monthly fees has been paid to the contractor**
- 3. Maintenance is evaluated on the basis of 7 Asset Groups**
- 4. Provision of carrying out maintenance at risk and cost of the contractor**

**Unforeseen damages to the road stretches and structures**

**Comprehensive insurance has been taken by RIDCOR on behalf of the contractors.**

# REVENUE RISKS

## Risk Involved

The project has viable as well as non-viable stretches

Revenue is mainly from tolling and linked to the diverted traffic on Project Road

In case of shortfall in revenue, promoters have to arrange for additional funds for repayment of Interest

## Mitigation Measures

Clubbing of Viable/non-viable projects has been done

There is an option in PDA for Securitization of Toll Revenue

Financial Security Fund by GoR to enable RIDCOR to draw from, in case of shortfall in fund requirement during initial stabilization period

# OTHER UNPRECEDENTED RISKS

## Risk Involved

Road connectivity was cut off due to unprecedented flood in PR & LJ-2

40 Km of stretch was affected with seepage of water from adjoining canals in LJ-1

DESERT/RAVINES

Road Profile was modified and many sand dunes have been leveled to provide proper sight distances and smooth/straight alignment

## Mitigation Measures

32 Km of stretch was raised to prevent water logging in future

Sand blanketing was introduced in marshy area & seepage areas of Canal

The shoulders in such area have been protected by providing hard shoulders with 150 mm thick Granular Sub Base



# OTHER UNPRECEDENT RISKS

## Risk Involved

## Mitigation Measures

### ECOLOGICAL

All possible efforts were made to cut least number of trees by realignment /changing configuration of the road

Saved almost 7000 trees – almost 36% of what we were permitted as per initial alignment (11981 trees were cut against 18817 trees)

### EXTREME WEATHER CONDITIONS

Contractors & Consultants found difficult to retain their personnel due to extreme weather conditions

Provided suitable amenities

Scarcity of water for construction activities

Developed new resources, such as tube/bore wells etc. transported water by tankers.

### LITIGATIONS

No. of LA cases pending with High Court and other various courts for which retired RAS officers have been deputed, who are regularly monitoring the matters.

Constant persuasion at local levels and follow up in Courts.



## Experiences & Lessons Learnt

# LESSONS TO BE FOLLOWED

- **DPR should include all the details required for execution and the DPR Consultants should be entrusted with supervision work**
- **Stringent technical and financial criteria to ensure only the best IIMC contractor(s) are engaged for improvement works and are also responsible for maintenance for five years thereafter**
- **Land Acquisition (LA) – The routine procedure requires lot of time hence LA should be allowed on mutual negotiations beforehand**
- **Forest Area – In bypasses the forest area should generally be avoided or the permission may be sought in advance**
- **Value Engineering & Technical Optimization**
- **Railway Clearances. Timelines to be prescribed for Railway clearances.**
- **Proactive support from concerned Government must for sorting out local issues, utility shifting, encumbrances removal etc**
- **Appraisal of performance of Supervision Consultant**

# LESSONS LEARNT

- **Aggressive efforts for statutory clearances**
- **Cost & Time Over Run Control Measures**
- **Strategy for Increase in Revenue**
- **High level of Maintenance Standards**
- **Regular monitoring with a recovery time limit of one month.**
- **Public at large feels impact of work – Quality & Features**
- **Employer should have liberty to engage nominated assignee contractors, if required**
- **Safety is paramount**

***Man was not made for Defeat***

## How to Win Over Public Interferences

- **Construction of Foot Over Bridge**
- **Development of bituminous roads near Schools**
- **Development of compound walls/public utility structures**
- **Development of junctions**
- **As per CSR Policy of IL&FS, special R&R allowances are paid beyond the LA payments**

# NATURAL CHALLENGES

## Saving Trees.....



Permitted to cut 18,817 trees  
for initial alignment

Saved almost 7000 trees by  
realignment/ changing configuration  
of the road



# BEST PRACTICES FOR FUTURE PROJECTS

- **Allocation of risk to the party best suited**
- **Detailed Project Report should contain all the parameters including identification of encumbrances and land acquisitions.**
- **Value Engineering and optimization of quantities by Employer in order to optimize the cost.**
- **Land acquisition should be considered to be done through mutual negotiation.**
- **Railway Approvals of GAD should be a time bound clearance from Railways.**
- **Actual estimation of revenues considering traffic surveys & various local effects like monthly/local/return passes is very important**

- **ITNL has successfully managed the implementation of the single largest State Highway Project within stipulated time frame.**
  - **Novel Experience**
- **IL&FS exhibited its strength that large infrastructure projects can be implemented successfully within time, cost and quality in spite of adversities.**
- **Road to the extent of 1053 Kms developed through private sector participation and successfully managing the operations.**

# ADVANTAGES TO GOR

**Road to the extent of 1053 kms developed to international standards**

**Investment of more than Rs 1500 crores in infrastructure mobilised through private sector participation**

**Major thrust to infrastructure development in 24 months period**

**High Quality service level in Road ensured**

**Huge savings of about Rs 3000 crores in maintenance of Road for 30 years**

**Government's investment fetches return on equity**

**Government's support of Rs 215 crores to be paid back**

**Surplus available in the Project to be paid to Government**

# CONCLUSION

- **Need of the time is to plan development of State Roads.**
- **RIDCOR is a successful model on Public Private Partnership (PPP), resulted in a Win-Win position for both GoR and IL&FS.**
- **The cross subsidization of viable and non-viable stretches is possible under PPP model. This is not based on commercial consideration.**
- **It has shown way to GoR to carry out more projects on similar concept. Awarded additional 6 road projects for development on same model.**



## Project Photographs

# PROJECT ROAD (PR-1)



# USER FEE TOLL PLAZAS



# GANTRY SIGN BOARD (PR-2)



# PROJECT ROAD (HK-1)



# PROJECT ROAD (HK-2)



# ROAD OVER BRIDGES



# PROJECT ROAD (LJ-2)



# NIGHT VIEW OF PROJECT ROAD



## Route Patrol & Ambulance



## Foot Over Bridge (PR-2)



**DRIVE CONFIDENTLY AWAY  
RIDCOR TOILS NIGHT AND DAY**



**Thank You**

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# MONTHLY EVALUATION OF SERVICE LEVEL

S. No.	Road Asset Group	Status (Complied/Not complied) (0 to 1 as per compliance)	Weight (%)	% Award Points (3 X 4)
(1)	(2)	(3)	(4)	(5)
1.	Pavement – Carriageway including Paved Shoulder		40%	
2.	Structures		8%	
3.	Signage and road safety items		20%	
4.	Shoulders – Unpaved and road formation		10%	
5.	Cleanliness, Drainage Systems and Traffic Management		15%	
6.	Landscaping, road-side vegetation, watering and arboriculture		5%	
7.	Road Surface Roughness Assessment		2%	
	<b>% Overall coefficient of compliance</b>		<b>100%</b>	<b>(C)</b>