

PRADHAN MANTRI GRAM SADAK YOGNA



GOVERNMENT OF JAMMU AND KASHMIR

PMGSY DEPARTMENT JAMMU

DETAILED PROJECT REPORT

UPGRADATION OF ROAD FROM KOTLI TO SHIKARI

PACKAGE NO.	: JK 14- 739
STATE	: JAMMU AND KASHMIR
PROVINCE	: JAMMU
DISTRICT	: UDHAMPUR
BLOCK	: MAHORE
LENGTH	: 7.000
ESTIMATED COST	: 1142.80 LACS + ^{910.68 Lacs} 92.56 Lacs
5 YEARS MAINTENANCE COST	: 137.14 LACS 181.60 Lacs
TOTAL COST OF PROJECT	: 1279.94 LACS 1092.56 Lacs

Chief Engineer
PMGSY(JKRRDA)
JAMMU

1. INTRODUCTION

1.1 Objectives of Pradhan Mantri Gram Sadak Yojna (PMGSY)

Rural Road connectivity is a key component of rural development by promoting access to economic and social services and thereby generating increased agricultural incomes and productive employment opportunities. It is also a key ingredient in ensuring poverty reduction.

It was against this background of poor connectivity that the Prime Minister announced in 2000, a massive rural roads program. The Prime Minister's Rural Road Program (Pradhan Mantri Gram Sadak Yojana, PMGSY) set a target of:

- 1) Achieving all-weather road access to every village/habitation with a population greater than 1000 by 2003.
- 2) Providing all-weather road access to all villages/habitations of population greater than 500 people [250 in case of hill States (North-Eastern states, Sikkim, Himachal Pradesh, Jammu & Kashmir and Uttarakhand), the desert areas and tribal areas] by the end of the Tenth Five Year Plan, i.e., 2007

1.2 All Weather Road

{Insert description of all-weather roads, duration of interruption on ODRs and VRs.}

1.3 Core Network

The rural road network required for providing the 'basic access' to all villages/ habitations is termed as the Core Network. Basic access is defined as one all-weather road access from each village/ habitation to the nearby Market Centre or Rural Business Hub (RBH) and essential social and economic services. A Core Network comprises of Through Routes and Link Routes. Through routes are the ones which collect traffic from several link roads or a long chain of habitations and lead it to a market centre or a higher category road, i.e. the District Roads or the State or National Highways. Link Routes are the roads connecting a single habitation or a group of habitations to Through Roads or District Roads leading to Market Centres. Link Routes generally have dead ends terminating on habitations, while Through Routes arise from the confluence of two or more Link Routes and emerge on to a major road or to a Market Centre. The Core Network may not represent the most convenient or economic route for all purposes. However, since studies show 85-90% of rural trips are to market centres, the Core Network is likely to be a cost-effective conceptual frame work for investment and management purposes, particularly in the context of scarce resources. The Sub-project road Kotli to Shikari, is a link road with Code L061 in Mahore block of Udhampur (Reasi) District. This road directly connects the habitation of Shikari with populations of 1775. Thus this link road serves the total population of 1775.

2. PLANNING AND BASIC DESIGN CONSIDERATION

2.1

PLANNING Key maps:

Key maps:
{insert relevant portion of the Block Map showing project road and all existing connectivity like District/block HQ, new townships, National and State highway network, hospitals, colleges, schools etc. at 1:50,000 scale. Example is given in the next page.}



Comprehensive Upgradation and Consolidation Priority List(CUCPL)												
State : Jammu and Kashmir (15)		Name of District and Code : Udhampur (562)		Name of Block and Code : Mahore(3538)								
Sl. No	Name of the Block	Name of the MP Constituency		Name of the MLA Constituency		Present surface Details	Year of construction	Year of last periodic renewal	Average PCI and year of PCI			
		Name of through route / NIRL route	NIRL No.	Route no / NIRL No.	Road code in DRIP							
						Length (in Km)						
						Year of construction						
						Start Km						
						End Km						
						Surface Type						
						PCI						

2.4 Road Design Brief

Table 2.1 Road Design Brief

Sl.	Location	Issue	Design Solutions
1	0.00	<i>The proposed road is connecting Kotli to Shikari. The road starts from Kotli.</i>	<i>All the Hindrances are being cleared</i>
2	Ch. 0.000 to 7.000	<i>Side Slopes are not adequate at places and gets eroded with rain and endanger the traffic movement and block the traffic</i>	<i>Proper protection works like 4mtr, 3mtr & 6mtr height Retaining wall/Edge wall to be provided</i>
3	Ch. 0.000 to 7.000	<i>Side Slopes are not stable at different stretches of road which endanger to the existing structures and public property</i>	<i>Breast wall & crated wall to be provided for safety of road</i>
4	Ch. 0.000 to 7.000	<i>Water collects on road which damages the road by crossing over road formation resulting in the halting of traffic during rains.</i>	<i>18 Nos Hume pipe culverts of 1000 mm dia, 1 no of 3m span RCC culvert and 3 no and 13 no 6m long scupper are proposed for the safety of road</i>

3.2 Traversing

Traverse has been done by prismatic compass.
{Fore bearing is taken by prismatic compass.}

3.3 Levelling

Levelling is done by using dumpy level/auto level (Height of Instrument method), accuracy adopted, nearest assumed bench mark, etc.

3.4 Cross Section & Detailing

Cross sections were taken at 25 m interval and at closer interval in curved portion of the existing road. All physical features of the road were recorded.

{Generally, cross section will be taken at every 25m interval. In case of any major variation in the long section cross sections have to be taken irrespective of the 25m interval. The cross section details are to be taken for a further distance of half the formation width beyond the shoulders on either side of the road.}

3.5 Data Processing

All data from topographic survey recorded by survey instruments were plotted and final alignment, plan, profile were prepared.

3.6 Reference Pillars & TBMs

{Insert List of permanent reference pillars and TBMs including northing easting and levels}

Details of Temporary Bench Mark (TBM)

Name of Road: Shikari to Kotli

S.No	R.D	R.L	TBM
1	600	120.15	On Stone
2	1875	157.4	On Stone
3	2700	254.34	On Stone
4	3325	273.9	On Stone
5	5125	160.97	On Stone
6	5.500	140.89	On Stone
7	6125	148.4	On Stone
8	7000	195.89	On Stone

soaked CBR test were conducted either for a minimum of one test per km for soil samples of same group or more tests due to variation of soil type. The following tests were conducted as detailed below:

Grain size analysis as per IS : 272 (Part 4) - 1985

Atterberg's limit as per IS : 2720 (Part 5) - 1985

Standard Proctor density test as per IS : 2720 (Part 7) - 1980

4 day soaked CBR test as per IS : 2720 (Part 16) - 1985

{The IRC Rural Roads Manual SP: 20 contain instructions on Soil Survey and materials for the road projects. Supplementary guidance on these subjects is given in Annexure 5.1. The identification of the soil type in the field and the quick determination of its properties, including CBR are the basic requirement for an economical pavement design. The grain-size (wet sieve) analysis leading to the soil classification is a simple test and must be carried out to have an idea of the CBR value with a reasonable level of accuracy; the monograph given in Annexure 5.2 can be used. This would minimise the need for CBR determination in lab. The determination of CBR by a rigorous CBR apparatus on a large number of samples may not be possible unless properly planned, and hence the nomograph given in Annexure 5.2 may be used.}

4.3 Analysis of Test Results

The laboratory soaked CBR value ranges from 4.5% to 4.8%. The soil laboratory test results will be summarized in Table 4.1.

Table 4.1 CBR values for different stretches

S. No.	Section	CBR (%)
1	1 st Km	4.6
2	3 rd KM	5.0
3	5 th KM	5.2
4	6 th KM	4.9
5	7 th KM	5.1

Traffic Survey:-
General

In the present scenario of new connectivity/upgradation road, 3 day, 24 hr traffic volume count has been conducted on the already completed. The Classified Volume Count survey has been carried out in accordance with the requirements of the TOR and relevant codes (IRC: SP: 19-2001, IRC: SP: 20, IRC: SP: 72-2007). The surveys have been carried out by trained enumerators manually under the monitoring of Engineering Supervisor.

5.2

Traffic Data and Analysis

The traffic count done was classified into different vehicle category as given below:

- Motorized vehicle comprising of light commercial vehicle, medium commercial vehicle, heavy commercial vehicle, trucks, buses, agricultural tractors with trailers, car, jeep, two wheelers etc.
- Non- motorized vehicles comprising of cycle, rickshaw, cycle van, animal drawn vehicle etc.

The number of laden and un-laden commercial vehicles was recorded during the traffic counts. Traffic volume count for this project road was done during summer season.

Average of 3 day traffic data is presented in Table 5.1.

Table 5.1 Average Daily Traffic at TOP (both ways) has been surveyed.

Sl. No.	Type of Vehicle	Day-1	Day-2	Day-3	Average
1	Car, Jeep, Van	23	17	20	20
2	Auto Rickshaw	-	-	-	
3	Scooters/Motorbikes	45	52	53	50
4	Minibus	8	9	10	9
5	Trucks/Bus	3	5	4	4
6	Tractors with trailer	8	4	6	6
7	Tractor without trailer	3	2	4	3
8	Cycles	1	2	3	2
9	Cycle Rickshaw / Hand Cart	-	-	-	
10	Horse cart / Bullock Cart	-	-	-	
11	Pedestrian	56	62	59	59
Total commercial vehicle per day (cvpd)					19
Total motorised vehicle per day					92
Total non-motorised vehicle per day					2

- Traffic volume and mix do not vary along the road
- Traffic volume and mix vary along the road
- Traffic volume and mix will vary along the road in the future
- There is a potential for through traffic using the road
- % of loaded vehicles

ESAL Calculation Sheet

Name of Road: Construction of Road from "(Kotli to Shikari)"
 Package Number JK14-

Traffic Non Peak Season :

HCV		MCV		Commercial Vehicles	Two wheelers	Bi-cycles	Cars/Van/Jeep
L	UL	L	UL				
8	2	8	4	19	20	0	20

Total vehicles= 92

$$\text{AADT} = 92 + 1.2 \times 92 \times 75 / 365 = 115$$

Add 6% growth(For Construction period of 6 months) $1.06 \times 115 = 121.57$

New AADT= 121.57

Proportioning factor= New AADT/AADT= $121.6 / 115 = 1.06$

New No. of vehicles;

HCV/MCV L/ul	HCV		MCV	
	L	UL	L	UL
Traffic x P.F	8 X 1.06	2 X 1.1	8 X 1.1	4 X 1.06
	8.48	2.12	8.48	4.24
VDF	2.86	0.31	0.34	0.02
ESAL/Day	24.25	0.66	2.88	0.08
	27.88			

Commulative ESAL= $4811 \times 27.9 = 134121$

Hence Traffic Category T4

BHARAT NIRMAN (PMGSY)
PACKAGE SUMMARY

Package No. : JK 14 -

State: J&K

District: Udhampur

S.No.	Name of Block	Name of road		Type of Proposal	Proposed Length	Cost of pavement	No. of CD works	Cost of CD works	Total estimated cost	Average cost/Km
		From	To	N/U	Km	(Rs. in Lacs)	Nos.	(Rs. in Lacs)	(Rs. in Lacs)	(Rs. in Lacs)
1	Mahore	kotli	Shikari	U	7	28.59 4 51.88 28.50 24	14	288.56 114.33	456.91	27.936
						Protection work R/wall + B/wall + Edge wall +Drain		362.45	338.68	52.450
						Road Logo, other road Furniture	2.23			0.319
						Provision for preparation of DPR etc	0.56			0.080
						Total	405.53	910.68	1301.09	27.788
						Routine Maintenance	432.44	109.28	19.591	
						Total	4492.63	126.376		

Up-gradation

(1019.96) (long it 145.70 laphu)

Prepared by :-

Signature 
 Name AEE
 Designation *Suraj Kumar*

Checked by:-

Signature 
 Name : Er. Roshan Din Choudhary
 Designation : XEN PIU Mahore

Add Revenue cost = 4260 lacs
 G.T.R. 1092.26 lacs

Scrutinized by :-

Signature 
 Name Superintending Engineer
 Designation *M. A. Z. A. R. Hossain*
 Superintending Engineer
 PMGSY Circle Udhampur/Reasi
 Reasi

Technical Scrutiny done by :-

Signature 
 Name : S. K. Gupta 09/09/2019
 Designation : Co STA
 Co. Ord STA (PMGSY),
 Udhampur, College of Engg. & Tech.,
 Jammu.

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY)

PROFORMA-C

CHECK LIST FOR P.I.U & S.T.A

For Individual Road Works

To be filled by PIU

1	Location: State: Jammu & Kashmir	District : Udhampur (Reasi)	Block: Mahore
2	Package No:- JK14- 		

3 Name of Project: Kotli to Shikari - Upgradation

4 Length of Road:- 7.00Km

5	Construction Cost = Five Years Maintenance Cost = Total Project Cost = Cost Per KM =	In Built Area Km	In Open Area Km	Cost per KM in Lacs
		910.68	72.60	
	Rs 1142.80 Lacs Rs 137.14 Lacs Rs 1279.94 Lacs Rs 182.94 Lacs/KM	910.68	72.60	87.36
		109.28		39.59
				335.34
				338.68
				286.04
				114.83
				17.81
				2.79
				Total 1142.80
				910.68

6 Types of Connectivity New Connectivity (Stage II)

If the proposed road is a new connectivity	No
Is the road a part of core network	Yes
If Yes through/link route number	L061
Name of the unconnected target habitation (to be cross checked with CN-6)	Shikari
List of habitation connected enroute	1775
Population sub served by the proposed road	
Does the proposed road lead upto the habitation for which it is supposed to provide connectivity (in other words are you sure that the road is not being made partially?)	yes/no
Does the proposed road connect the unconnected Habitation to a. Another habitation having all weather road (connected status) b. Directly to an all weather road If (b), Indicate the nature of road to which the proposed road leads	Yes/No
If the proposal is for up gradation	Yes
Is the road a part of the core network	Yes/No
Is it associated through route or not	yes/no
PCI value	
Age of road	No
Is it certified that there are no other unconnected habitations in the district	Yes

a) Whether the proposed road has the desired carriage way width, roadway width and road land width (RLW)	In the Built Area	In the open area
Indicate the actual widths adopted for the proposed road	3.75	3.75
i) Carriage way	6.00	6.00
ii) Roadway	Varies	12.0 m
iii) Road lane width		

Base year traffic volume

Bus/Truck	LCV/MINIBUS	Cars/Vans/Jeeps	Three Wheelers	Two wheelers	Cycle Rikshaw	Cycles	Bullock cart	Total	Motorized	non-motorized
4	9	20	0	50	0	3	0	92	3	

ESAL = ? 134/21

Growth rate adopted(%)	6%	Project Traffic:	CVPD 19				
Sub Grade CBR							

Sub Grade CBR					
Chainage	.400km	2.200km	4.425km	7.000km	

Design CBR	4.60%	5.00%	5.20%	5.10%	
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COST DETAILS							
A. Pavement Component							
			Thickness in (mm)	Quantity	Cost in Lacs	Total Rs in lacs	Cost/km
1	Earth Work in Cutting	Excavation in All Kinds Of Soil	Cum	26009.26	29.91		
		Excavation in Ordinary Rock	Cum	10834.8007.73	17.43		
		Excavation in Hard Rock	Cum	6502.44607.2	29.74		
		Extra for Carriages of excavated material	Cum	45000.00	2.74		
2	Protection Work	Filling in Embankment	Cum	4715.75	7.90	76.73	
		Retaining wall (4m height)	RM	400-390	105.37		
		Retaining wall (3m height)	RM	1100	128.81		
		Breast wall (2.50m height)	RM	700-440	61.09		
		Crated wall	RM	700-440	7.43		
		Parapet	Each	600	7.43		
		Pucca Drain	RM	1200-1000	10.68		
		Pucca Drain with Slab	RM	1000-2000	21.13		
3	CD Works	Hume Pipe Culvert 1000 mm dia	No	5 ←	10.08		
		3m span Culvert	No	1 ←	10.27		
		6 m long Scupper	No	17 ←	83.77		
		2m span culvert	No	1 ←	7.17		
		6m Span Culvert	No	17 ←	22.00		
		Laying of slab of Existing Scupper	No	3 ←	3.04		
		Compaction of Original Ground Supporting Sub-Grade	Cum	8773.326	3.07		
		Providing and Laying GSB 300mm thick.	Cum	8773.33	112.85		
		Providing and Laying WMM 75mm thick.	Cum	2087.64	49.33		
		Providing and Laying BM.	Cum	1391.7348	127.41		
		Providing and applying Primer Coat.	Sqm	27835.38	14.49		
		Providing and applying Tack Coat.	Cum	27835.38	5.11		
		Providing and applying Tack Coat(Over BM)	Sqm	27835.38	4.25		
		Providing and Laying OGPC.	Sqm	27835.38	50.58		
		Providing and Laying Seal Coat.	Sqm	27835.38	17.77		
		Making of Earthen Shoulders.	Cum	4902.09	13.73		
5	Others	Road logo and other road furniture	-	-	2.23		
		Provision for Preparation of DPR,CBR Tests , Painting of Boards ,Lines, Dashes, Arrows etc. as per Technical Specification Clause 1702.	-	-	0.56	2.79	

		Total For Construction Part:-		144.25	163.26	
7	Maintenance Cost	Maintenance Cost	Xage of	Cost in Lacs	Cost/Km	
		Maintenance Cost 1st year	10.92	1.20%	12.71	
		Maintenance Cost 2nd Year	16.39	4.00%	20.57	
		Maintenance Cost 3rd Year	21.85	2.40%	27.43	
		Maintenance Cost 4th Year	27.31	3.00%	34.28	
		Maintenance Cost 5th Year	32.78	3.60%	41.14	
		Total for Maintenance Part:-		12.00%	137.14	
		Grand Total Construction + Maintenance Part) :-		129.25	182.55	
In case of hill roads, the formation and cutting may be filled against Earth work and sub grade preparation.						
11	Whether the road has geometrics as per rural roads manual (RRM)	Add G th yr R-Cost		Yes/No	72.68 L	
12	Whether CD works / Protection works are provided as per RRM			Yes/No		
13	Whether the cost estimates are per standard data analysis and SSR			Yes/No	GT = 109	

In case of hill roads, the formation and cutting may be filled against Earth work and sub grade preparation.

12 Whether the road has geometries as per relevant norms

standard data analysis and SSB

Certified that information provided is true

~~Executive Engine~~
PMGSY Division

~~Executive Engine~~
PMGSY Division
Mahara

Superintending En
PMGSY Cycle

Superintending En
PMGSY Cycle
Udhampur/Reasi

Signature by Co
Ordinator S.T.A

To be filled by S.T.A
Name of the S.T.A:

ACCT 700003

WEN/No

Name of the S.T.A:	
15	Is the proposed road entered on the OMMS Yes / No
16	If the proposal is for new connectivity Have you satisfied your self that the proposed road is a part of the core network Is the unconnected habitation(s) part of list of unconnected habitation as per CN-6 Does the proposal ensure full connectivity of the larger habitation Yes / No Yes / No Yes / No
17	Are u satisfied with the following Engineering survey Soil / Material Investigation Traffic survey / Estimation Hydraulic Studies Yes / No Yes / No Yes / No Yes / No
18	In case, traffic is projected beyond 45CVPD, are you satisfied with the reason given Yes / No T-4
19	In case, sub grade CBR is less than 3, has soil stabilization etc. been proposed Yes / No N/A
20	Is the design of the following elements as per roads manual Alignment & Geometrics Pavement Designs Yes / No Yes / No