



GOVERNMENT OF KERALA

Abstract

Planning and Economic Affairs (RKI) Department- Project proposals of Local Self Government Department (LSGD) for rebuilding LSG Roads with RoW of and above 5.5m in Pathanamthitta, Idukki and Wayanad districts- Implementation- Administrative Sanction accorded- Orders issued.

PLANNING & ECONOMIC AFFAIRS (RKI) DEPARTMENT

G.O. (Rt.)No. 485/2019/P&EA

Thiruvananthapuram, Dated 15/11/2019

- Read: 1. G.O. (P) No. 16/2018/P&EA dated 09/11/2018.
2. G.O. (Rt) No. 894/2019 LSGD dated 26/04/2019.
3. G.O. (P) No. 19/2019/P&EA dated 23/05/2019.
4. Minutes of the 5th HLEC meeting held on 06/07/2019.
5. G.O. (Ms) No. 25/2019/P&EA dated 13/08/2019.
6. Minutes of the 6th HLEC meeting held on 11/10/2019.

ORDER

In the aftermath of the flood of 2018, RKI has been entrusted with the task of planning and implementing a rebuilding strategy for the state as per the G.O. read as 1st paper above. As per the G.O. read as 3rd paper above, Government had approved the Rebuild Kerala Development Programme (RKDP) which constitutes the State's strategic road map for a Green and Resilient Kerala. It encompasses cross cutting and sector based recommendations on policy, regulatory and institutional actions as well as priority investment programmes that are critical for resilient and sustainable recovery and rebuilding of the state. The G.O. read as 1st paper above, also details the operational strategy and institutional framework which deals with deployment and utilization of funds for speedy execution of projects under RKI. The Institutional Framework of RKI is as follows:

- Council of Ministers
- Advisory Council

- High Level Empowered Committee (HLEC)
- RKI Implementation Committee (RKI-IC)

2. As per the operational guidelines and framework of RKI, it has been provided that the HLEC shall approve the project profiles submitted to it by the RKI-IC for placing before the Council of Ministers.

3. The Local Self Government Department submitted project proposals for rebuilding roads with an estimated requirement of funds to the tune of ₹488 crore from the RKI. The proposal was placed before the HLEC in its meeting held on 06/07/2019. The HLEC, as per the minutes read as 4th paper above, approved the proposal and the same was placed before the Council of Ministers for consideration. As approved by the Council of Ministers, in-principle sanction was accorded for taking up of the project under RKI as per the G.O. read as 5th paper above. Consequently, the Local Self Government Department submitted the Detailed Project Report with respect to 3 districts viz. Pathanamthitta, Idukki and Wayanad with an estimated requirement of ₹266.30 crore.

4. Following are the salient features of the project.

Introduction:

High quality and durable road infrastructure is a pre-requisite for social, economic and industrial development of any state. As part of Rebuild Kerala Initiative, Government, as per G.O.(Rt) No.196/2019/P&EA dated 06/05/2019, has entrusted KIIFB with the task of providing necessary assistance to PMU in performing its tasks with respect to roads in the eight districts of Kerala. These roads are further categorised into three categories based on their available Right of Way (RoW) as :

- (i) Roads with RoW > 5.5m
- (ii) Roads with varying RoW
- (iii) Roads with RoW < 5.5 m.

In the initial phase of development, roads having RoW 5.5m and above is selected. The selected roads are grouped, based on the block boundaries to form one cluster for bidding purpose.

The LSGD-PMU selected 3 districts in the initial phase and submitted detailed project report. The details of the proposals are given below.

- Minimum width of Road – 5.5 Metres
- Method of preparation of Prioritized Project Proposal – Type design based on Site Perusal
- Mode of Procurement - By Tender using per km rate based on Type Design
- Mode of Contract - DBOT (Design Build Operate and Transfer)
- Performance Guarantee Period - 10 Years for Flexible Pavement and 15 Years for Rigid Pavement
- Districts Included - Pathanamthitta, Idukki and Wayanad
- Length and Cost - 26630.37 Lakh Rupees for 218.29 km road

Cluster-wise division of roads and cost incurred in construction are given below.

Districts	Cluster	Length in Kilometers			Cost in Lakhs		
Pathanamthitta	1	13.7	56.02	218.29	1650.22	7560.7	26630.37
	2	29.52			4370.69		
	3	12.8			1539.79		
Wayanad	1	23.5	64.81	218.29	2153.13	5839.88	26630.37
	2	41.31			3686.75		
Idukki	1	40.53	97.46	218.29	5514.21	13229.97	26630.37
	2	56.93			7715.58		

COMPONENTS PROPOSED IN THE PROJECT (All 3 districts):

Component 1 – Design Speed

Project Roads proposed for design is intended for a speed of 65 kmph in Plain/ Rolling terrain; 50/40 kmph for locations having constraint of land or structures; 35 kmph design speed in hilly areas. All roadside furniture shall be based upon the design speed.

Component 2 - Widening Proposal Consideration

Widening Proposal of existing Carriageway to PMGSY standards in advance before finalisation of geometric design of alignment, which is to be taken care of by the contractor. For this exercise, consideration should be given to existing roadside developments as well as upcoming future developments. The conceptualization of widening scheme involved an interaction between several parameters, like traffic demand, terrain, land-use, roadside developments, proximity to adjoining

properties like railway tracks, utilities, forest land, widening of major and minor bridges and KIIFB guidelines. The guidelines that should be followed while formulating the widening scheme are as under:

- Maximum use of existing roadway and available RoW.
- Economy - Avoid heavy cut and fill, acquisition of agricultural/ built-up area.
- Environment friendly - Avoid water bodies, forest areas and tribal lands and to save roadside trees wherever practical.
- Design Standards adopted - Fulfillment of requirements of road standards, especially improvement of sections identified as “Black Spots or “accident prone spots”.
- Siting of Bridges and Structures - Planning road geometry in such a way that existing roadway on bridges and structures or culverts is used to the maximum possible extent.
- Minimise relocation of utilities.
- Safety of ongoing traffic on the existing road.
- Low maintenance and operational cost during design life.
- Avoid terrain like deep valleys and swampy/ low lying grounds.
- To avoid any religious structures.

Component 3 – Drainage

Arrangements to drain off storm water as soon as possible from the pavement surface to avoid percolation into the lower layers. Routine patch work repairs and resurfacing be done at max to maintain the durability of pavement.

For available roadway width (RoW), the carriageway needs to be constructed along with drainage facility with a designed width and depth instead of earthen drains. Road drainage facilities need to be worked out in conjunction with the vertical geometrics of the road. The minimum gradient of the road shall be 0.3% with respect to drainage. At each low point along the alignment cross drainage needs to be installed after estimation of storm water from rainfall data and watershed area. Camber or cross slope needs to be provided for lateral movement of storm water from the pavement surface. As a thumb rule, the camber of a pavement shall not be less than half of gradient. For rainfall above 100cm as in the case of Kerala, a camber of 2.5% is mandatory.

Component 4 - Retaining structures

Earth retaining structures are established to maintain the pavement along a certain level for safe flow of traffic, particularly along slopes where arrangements like riprap or slope protection may not be possible.

Component 5 - Road sign Boards and Road markings

All 3 types of signs such as Mandatory, Warning and Information Boards must be placed in a consistent and uniform manner so that road-users can interpret it faster thereby reducing perception time. Difficult terrain/ black spots are given special attention, road signs with the use of retro reflective films for safe night driving, road markings should also be used in conjunction with road signs usually in the form of thermoplastic coatings to enable safe driving in low light conditions, rumble strips should be placed along with markings ahead of sharp curves and on the centerlines (undivided highway). Edge line markings should be bordered by cat eyes to alert the driver.

USE OF TECHNOLOGY

Sustainable Technologies to be carried out in road construction are Geocells & Cellular Confinement Systems, Soil Nailing Techniques, Full Depth Reclamation Confinement Systems, Segmental Block Reinforced Earthen Wall Using Geogrids and Gabion Structure for Side Wall Protection. Also Pavement Treatment Methodologies are Full Depth Reclamation (FDR), Design of Rigid Pavement by IRC method and Design of Concrete Block (IRC SP:63 – 2004)

COST ESTIMATE

1. Idukki District

Abstract of Cost Estimate			
Sl.No	Description	No/Km	Estimated Cost (in lakh)
1. Road Work			
A	Construction of Flexible Pavement (Km)	1 per Km	75.30
B	Construction of Rigid Pavement (Km)	1 per Km	115.28
C	Construction of FDR Pavement (Km)	1 per Km	70.17
D	Protection works (RCC Wall)	1 per Km	629.25
E	Lined Drains (RCC)	1 per Km	54.05

F	Paver Block Pavement	1.00(Sqm)	1164
2. CD Work			
1	1 ROW HPC 1000 MM DIA	1	2.70
2	1.0 M Span Slab Culvert	1	3.00
3	1.5 M Span Slab Culvert	1	4.76
4	1.5X1.5 M Span Slab Culvert	1	6.79
5	2 X 2 M Span Slab Culvert	1	9.79

2.Wayanad District

ABSTRACT OF COST ESTIMATE			
Sl.No	Description	No/Km	Estimated Cost (in lakh)
1. Road Work			
A	Construction of Flexible Pavement (Km)	1 per Km	78.75
B	Construction of Rigid Pavement (Km)	1 per Km	125.6
C	Construction of FDR Pavement (Km)	1 per Km	70.17
D	Protection works (DR Wall) -for 1m depth	1 per Km	95.33
E	Lined Drains (RCC)	1 per Km	54.05
F	Paver Block Pavement	1.00(Sqm)	1164
2. CD Work			
1	1 ROW HPC 1000 MM DIA	1	2.70
2	1.0 M Span Slab Culvert	1	2.21
3	1.5 M Span Slab Culvert	1	3.51
4	1.5X1.5 M Span Slab Culvert	1	5.20
5	2 X 2 M Span Slab Culvert	1	7.39
6	3 M Span Slab Culvert	1	5.24
7	5.0 M Span Slab Culvert	1	7.86

3. Pathanamthitta

ABSTRACT OF COST ESTIMATE			
Sl. No	Description	No/Km	Estimated Cost (in lakh)
1. Road Work			
A	Construction of Flexible Pavement (Km)	1 per Km	57.42

B	Construction of Rigid Pavement (Km)	1 per Km	107.59
C	Construction of FDR Pavement (Km)	1 per Km	70.17
D	Protection works (DR Wall)	1 per Km	20.70
E	Lined Drains (RCC)	1 per Km	54.05
F	Paver Block Pavement	1.00(Sqm)	1164
2. CD Work			
1	1 ROW HPC 1000 MM DIA	1	2.70
2	1.0 M Span Slab Culvert	1	2.19
3	1.5 M Span Slab Culvert	1	3.45
4	1.5X1.5 M Span Slab Culvert	1	4.79
5	2 X 2 M Span Slab Culvert	1	6.96
6	3 M Span Slab Culvert	1	5.20
7	5.0 M Span Slab Culvert	1	7.80

ENVIRONMENT MANAGEMENT PLAN

Identification of environmental impacts in the earlier stages of project preparation to incorporate necessary mitigation measures. Environmental Management Plan (EMP) must be specifically designed to capture all the impacts that take place during the entire life cycle of a project from design to operation stage. EMP incorporates various mitigation measures to avoid or minimize the impacts of the project on the environment during the pre-construction, construction and operation phases. Also EMP should ensure the consistency of Environmental Impact Assessment and appropriate environmental standards. Furthermore, it is designed to effectively meet supervision requirements and provides guidance for project owners to manage contractors and subcontractors.

Environmental Regulations Applicable To The Project (All Three Districts)

Sl. No	Type of Clearance	Statutory Authority	Applicability	Project Stage	Responsibility
1	Tree cutting	Forest department (social forestry)	All roads		

2	Consent under the Air (Prevention & Control of pollution) Act of 1981, and The Water (Prevention & Control of pollution) Act of 1974	Kerala State Pollution Control Board	All roads	Preconstruction	LSGD
3	Consent under the Air (Prevention & Control of pollution) Act of 1981, and The Water (Prevention & Control of pollution) Act of 1974		For operating, hot mix plants, crushers and construction camps	Construction (Prior to work initiation)	Contractor
4	Quarry lease deeds and license under The Mines Act, 1958	Mining and Geology Department of Kerala	All roads	Construction (Prior to work initiation)	Contractor

MAINTENANCE

Road maintenance is a routine work performed to upkeep pavement, shoulders and other facilities provided for road users, as nearly as possible in its constructed condition, and at least at an adequate level of serviceability. Maintenance helps in preserving the pavement surface, and untimely rehabilitation. As the projects are undertaken in **DBOT mode** in respect of the above mentioned roads constructed/ upgraded under Rebuild Kerala Initiative, provision shall be made in the Standard Bidding Document for routine maintenance. Routine maintenance shall be contracted out along with the construction itself to the same contractor who is constructing the road. A period of 10 years is desirable for flexible pavements and 15 years for rigid pavements.

Maintenance operations shall be based on Chapter 11 of Rural Roads Manual (IRC: SP: 20:2002).

The Contractor shall do the routine maintenance of roads, including pavement, roadside and cross drains to the required standards and keep the entire road surface and structure in defect-free condition during the entire maintenance period which begins at completion and ends 10 years for flexible pavements and 15 years for rigid pavements.

ROLE OF LSGD IN OPERATION & MAINTENANCE

The Local Self Government Department shall be the authority for managing the maintenance contract after completion of the construction of the road. The Assistant Engineer, LSGD shall inspect each Km of the road at least once in a month. The Engineer can increase the frequency of inspection in case of emergency. The Assistant Executive Engineer shall inspect the road at least once in three months, and the Executive Engineer shall inspect the road at least once in six months. One of the inspections of the Executive Engineer shall be before the monsoons and one after the monsoons. LSGD engineers should be accompanied by the Contractor's engineer. All defects such as potholes, berms needing dressing, clearing of roadside drains and weeds, cross-drainage works and repairs for Road furniture should be identified, recorded and intimated to the Contractor.

STATUTORY CLEARANCES:

All statutory clearances/ approvals that are required from relevant departments or agencies such as Kerala Forest and Wildlife Department, Kerala State Electricity Board, Kerala Water Authority, BSNL, Kerala State Pollution Control Board etc. need to be obtained prior to implementation of projects. All compliances related to labour safety also need to be addressed and listed.

5. The HLEC of RKI, in its meeting held on 11/10/2019, approved the Detailed Project Report for the 3 districts as detailed above and accorded sanction to issue Administrative Sanction for the same.

6. In the circumstances, the Government are pleased to issue Administrative Sanction for the implementation of the Project with the components, as detailed in the above mentioned paras, under the Rebuild Kerala Initiative at an estimated cost of ₹266.30 crore (Rupees Two Hundred and Sixty-six crore and Thirty lakh only) by sourcing requisite funds from the World Bank's Development Policy Loan. Expenditure in this regard will be debited to the budget provision under H/A 5475-00-115-94-Post flood Projects under Rebuild Kerala Initiative (P).

7. The Local Self Government Department shall implement the projects through the Project Management Unit created in the Department for undertaking works connected with Rebuild Kerala Initiative.

8. The Local Self Government Department shall constitute a Departmental Committee as mandated in para 76 of the G.O. read as 1st paper above, to work with the RKI-IC to coordinate, monitor and implement the approved projects.

By order of the Governor,

Dr. VENU V.

PRINCIPAL SECRETARY

To:

The Project Director, LSGD-Program Management Unit, Thiruvananthapuram

The Chief Engineer, LSGD, Thiruvananthapuram.

The Principal Accountant General (A&E/Audit), Thiruvananthapuram

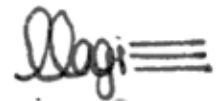
Finance Department

Local Self Government Department

Information & Public Relations (Web & New Media) Department (for publishing in Government website)

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Forwarded/ By Order,



Section Officer

Copy:

Additional Chief Secretary, Local Self Government Department.

Special Secretary to Chief Secretary.

All members of HLEC and RKI-IC.