

No. RW/NH-33044/23/2004-S&R(R)

Dated, the 23rd June, 2006

To

The Engineer-in-Chief and Chief Engineers of State PWDs and UTs (Dealing with National Highways);
The Chairman, National Highways Authority of India; The Director General (Border Roads)

Subject : Development of GIS based National Highways Information System

The Ministry has sanctioned the scheme for development of GIS based National Highways Information System (excluding the stretches covered under NHDP Phase-I & Phase-II) in August 2005 through CRRI as the implementation organization. The implementation is to be carried out by CRRI under 4 modules, viz.:-

- (i) Module-I: Preparation of a digital GIS map in 1:1 million scale based on SOI toposheets showing all National Highways network.
- (ii) Module-II: Inventorization of National Highway network (excluding NHDP Phase-I & II).
- (iii) Module-III: Conduction of Traffic Volume Survey for about 50 representative locations taken continuously for 7 days using permanent traffic classifiers; remaining traffic data is to be arranged by Ministry through PWDs and to be made available to CRRI for integrating with GIS.
- (iv) Module-IV: Long term maintenance and rehabilitation strategies for NHs based on HDM-IV tool.

The work is scheduled to be completed in February, 2009 strictly in a time bound manner.

2. Under Module-II mentioned above, CRRI would collect the primary data as a part of inventorization. These include parameters like curvature, gradient, roughness, distance measurement, junction type, pavement width type (single lane, intermediate lane, 2 lane, 4 lane, single/dual carriageway etc.), pavement surface type (cement concrete bituminous etc.). Primary data is to be collected by instrumented vehicle. An addition vehicle, following the instrumented vehicle, is to be employed for collecting data and information from secondary sources. For these, a team of 2 persons in a vehicle would move all over the NH road network and collect data on visual surface condition, details of bridges and culverts (type, length, number of spans, span length, details of piers/abutments, hume pipe/concrete pipe culverts, no. of rows etc.), details of the roadway width (formation width), height of embankment, carriageway width, pavement cross section (crust details), type and condition of shoulders, rainfall data, depth of water table, flood data etc. All these secondary data are to be collected with the help of concerned field engineers of the concerned executive agencies associated with the specific stretches of NHs including concerned ROs/ELOs of the Ministry.

3. CRRI has now forwarded the formats for collection of secondary data, mentioned above, which are enclosed herewith (Secondary data Format-I to Format-III, and list of codes for filling secondary data).

4. In view of the above, all concerned executive agencies are requested to extend the necessary help and support in providing the desired secondary data to CRRI as per the formats enclosed herewith for the NH network in the country (excluding NH stretches covered under NHDP Phase-I & II).

*(Enclosure of Ministry's of Shipping, Road Transport & Highways, (Deptt. of Road Transport & Highways)
letter No. RW/NH-33044/23/2004-S&R (R) dated the 23rd June, 2006)*

Pavement Inventory and History

km

PWD Division:
State:

[illegible]

Inventory on Cross Drainage Structures and Details of Environmental Conditions

PWD Division:
State:

[illegible]

PWD Division:
State:

Name and Category of Road: _____ **km**
Section: From Km _____ **to** _____

[illegible]

List of codes to be used for Filling Secondary Data

Types of CDs and Structures

Slab Culvert	SC
Box Culvert	BOC
Pipe Culvert (Concrete Pipe)	CP
Pipe Culvert (Hume Pipe)	HP
Major Bridge	Maj B
Minor Bridge	Min B
Others (please specify)	

Types of Foundation

Wall Foundation	WF
Pile Foundation	PF
Others (please specify)	OF

Pavement Types

Bituminous Surface	BT
Concrete Surface	CC
Unpaved Surface	UP
Others (please specify)	OP

Shoulder Types

Hard Shoulder	HS
Gravel Shoulder	GS
Bricks Shoulder	BS
Earthen Shoulder	ES
Bituminous Shoulder	BTS
Others (please specify)	OS

Surface Types

Bituminous Concrete	BC
Semi Dense Bituminous Concrete	SDBC
Mix Seal Surfacing	MSS
Premix Carpet	PMC
Surface Dressing	SD
Plain Cement Concrete	PCC
Reinforced Cement Concrete	RCC
Continuously Reinforced Concrete Pavement	CRCP

Roller Compacted Concrete Pavement	RCCP
Water Bound Macadam	WBM
Gravel	GL
Others (please specify)	OST

Base Type

Dense Bituminous Concrete	DBM
Bituminous Mecadam	BM
Wet Mix Mecadam	WMM
Cement Treated Base	CTB
Dry Lean Concrete	DLC
Water Bound Macadam	WBM
Brick Soling	BS
Others (please specify)	OSB

Sub Grade Soil Types

Sandy Soil	S
Block Cotton Soil	BS
Gravel Soil	GS
Moorum Soil	M
Clayey Soil	CS
Silty Soil	SS
