

No. RW/NH-34049/4/99-S&R (BD)

Dated, the 30th May, 2005

To

The Chief Engineer of all State PWDs/U.Ts dealing with National Highways; The Director General (Border Roads)

Subject : Condition Survey of all the Bridges on the National Highway Network

Last condition survey of bridges on National Highways had been started in the year 2000. So far, condition survey report has been received only in respect of 36.47% of bridges on National Highways. Meanwhile, additional length of 7457 km. has been added in the National Highway network in February, 2004. Condition survey report for many bridges are nearly five year old and there might have been changes in the condition.

2. In view it has become necessary that the programme should be initiated for carrying out of fresh detailed condition survey of all bridges on National Highways. Such a survey should bring out the present physical condition of these bridges and also should identify the particulars of distress which are to be attended to immediately. A copy of the **Proforma** in prescribed format for the purpose is enclosed. The complete data for all bridges may kindly be collected and forwarded to this Ministry in the prescribed format enclosed (in duplicate) as well as on a compact disc in Microsoft Excel by 30.09.2005.

3. It is requested that the above condition survey may be organized on priority basis and a responsible officer from PWD may be nominated as a nodal officer of the survey team. The Ministry will be deputing a representative from the Ministry as a member of the team.

4. It is also requested that an action plan for the purpose may be drawn up and forwarded to this office by 30.6.2005.

(Enclosure to Ministry of Shipping, Road Transport & Highways, (Department of Road Transport & Highways), letter No. RW/NH-34049/4/94-S&R (BD) dated 30.5.2005)

1.1	Characteristics of waterways, island formation, navigation gauging, etc.	Problems and its impact on flow
1.2	Flow pattern and banks	Meandering in flow and erosion of banks
1.3	Reaches	
2.1	Type	Concrete/Steel/wood/pile
2.2	Category	Major/Minor/Feeder
3.1	Condition of structure	Settlement, scour, tilting
3.2	Particulars	Settlement, scour, tilting
		Cracking, Disintegration, Decay, spalling, Rusting, Exposed reinforcement
4.1	Substructure	
4.2	Type	Well foundation, pile foundation
4.3	Condition	Cracking, Disintegration, Decay, spalling, Rusting, etc.
		Settlement, heaving, spalling, rusting, etc.

PROFORMA FOR CONDITION SURVEY OF BRIDGES

1.	NH NO.	
2.	Location of bridge in Km.	
3.	Name of River/Water Body/Bridge	
4.	Year of completion of bridge	
5.	Type of bridge (RCC/PSC, slab, timber, steel)	
6.	Total length of bridge in 'm' with span	
7.	Width of carriageway and footpaths	
8.	Whether located in back waters/chemical zone?	
	Condition of the various bridge components:	
	Name of components	Condition
9.	Approaches:	
9.1	Condition of pavement surface	Check unevenness settlement, cracking, potholes etc.
9.2	Side slopes-	Erosion embankment, damage to pitching etc.
9.3	Approach slab	Check, settlement, cracks, movement etc.
9.4	Retaining walls	Check subsidence, tilting, weepholes etc.
10.	Protection Works:	
10.1	Slope pitching, apron, floor protection, toe walls	nature of damage, if any, etc.
10.2	Scour in river bed	Check any abnormal scour noticed
11.	Waterway:	
11.1	Obstruction in waterways, island formation, Vegetation growth, etc.	Presence and its impact on flow
11.2	Flow pattern and banks	Meandering in flow and erosion of banks
12.	Foundation:	
12.1	Type	CC/RCC/Masonry/well/Pile
12.2	Material	CC/Masonry/Timber
12.3	Condition of foundation	Settlement, Scour, Tilting
12.4	Piers/Abutments	Settlement, Scour, Tilting
		Cracking, Disintegration, Decay, spalling, Rusting, Exposed reinforcement
13.	Substructure:	
13.1	Type	Well (solid/hollow), Circular/Oval
13.2	Condition	Cracking, Disintegration, Decay, spalling, Rusting, etc.
		Cavitation, honeycombing, spalling, rusting, stains

14.	Bearing:	
14.1	Type	(Sliding plate/Rocker-roller/Elastomeric/Paper/Concrete, etc.
14.2	Condition	Movement/sliding
		Loss of shape, rusting, Cleanliness, greasing, etc.
15	Superstructure:	
15.1	Structural System	Simply supported/continuous/Continuous overhang/balanced cantilever.
15.2	Type	(RCC/PSC/Steel/Timber/masonry etc.)
15.3	Arrangement	T-beam, slab/box-girder
15.4	Condition (girder)	
		Cracking/spalling/scaling/exposed reinforcement/deformation
15.5	Condition (Deck)	
		Cracking/spalling/scaling/exposed reinforcement/leakage/vibration/exposed reinforcement
15.6	In case of steel bridges	Corrosion/painting/loose rivet joints
15.7	In case of masonry bridges	Pointing/joints mortar and bulging of spandrel
16.	Expansion joint:	
16.1	Type	
16.2	Condition	
17.	Wearing coat:	
17.1	Type	(Concrete/Bituminous)
17.2	Surface condition	Cracks/potholes/riding Quality
17.3	Drainage Spouts	Clogging and damage if any
18.3	Handrails/Parapet:	
18.1	Type	
18.2	Damage/missing parts if any	
19.	Foopath:	
19.1	Damage/missing parts for precast slabs	
20.	Utilities:	
21.	Type	Water/sewer/electrical/Telephone
20.2	Leakage/Damage if any	
21.	Special Observation/Remarks if any	