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Sub: Guidelines for Quality Monitoring by National Quality Monitors.

Dear

An Interactive Workshop was held at Delhi on 9-10th February, 2009 to review the 3rd tier quality monitoring by the National Quality Monitors (NQMs). Based on the deliberations of the workshop, it has been decided to further strengthen the effectiveness of inspection by the NQMs with the following measures :-

1. Prioritisation of works by the State Quality Coordinators (SQC):-

It is noticed that at times the PIUs, either wilfully or otherwise, fail to submit the list of works indicating the status of inspections which prevents the NQMs from making appropriate selection of works for their inspection. In order to obviate this problem, it has been decided that :-

- The SQCs would be responsible for providing the list of atleast 20 works for inspection by the NQMs. This list should be finalised in consultation with the PIUs well before the scheduled inspection by the NQMs. Complete information regarding the works prioritised for inspection should also be furnished to the NQMs in the format prescribed under the guidelines.
- The NQMs should shortlist works for inspection from out of the list provided by the SQC.
- In case any NQM is of the view that the list approved by the SQC is not in accordance with the guidelines prescribed by NRRDA, he may select some other works for inspection. However, in all such cases, reasons for selecting works outside the list approved by the SQC would have to be explicitly recorded by the NQM.

2. Coordination of visits by NQMs:-

It has been brought to the notice of NRRDA that often the SQCs do not take appropriate initiative to finalise the inspection programmes of NQMs. It has also been reported that in some instances requisite staff and equipments were not available to the NQMs for carrying out the required tests. Such lapses should be strictly avoided. It would be the sole responsibility of the SQCs to coordinate and facilitate inspection of works by the NQMs.

3. Publicity of NQM inspections:-

With a view to keeping the citizens, particularly the road users, informed about the inspections by the NQMs it would be desirable to give adequate publicity about the proposed

inspection schedule in the local media. This is likely to ensure greater transparency in the process of quality monitoring.

4. **Digital records of NQM inspections:-**

In order to create a documentary record of inspections by the NQMs, it has been decided that PIUs would, henceforth, ensure digital photography of the observations on the quality of materials and workmanship of roads inspected. Photography should be of fair quality and as per the directions of NQMs. Soft copy of the digital photographs in a CD should be made available to the NQMs by the PIUs concerned which should be enclosed with their inspection reports. Detailed guidelines regarding digital photography of the NQMs inspection have been provided in the Annexure.

5. It should be ensured that NQMs are provided only Government vehicles or vehicles hired by the PIUs for inspection.

6. I would request you to advise the State Quality Coordinators to ensure enforcement of these measures with immediate effect.

Yours sincerely,

(J.K. Mohapatra)

To: **All State Secretaries**

Guidelines for Digital Photography of Observations by National Quality Monitors under Pradhan Mantri Gram Sadak Yojana

It has been felt that if the technical observations about quality of road work are substantiated through photographs, it not only helps in better understanding of the quality issues at the field level but it also helps in documenting good practices and lapses. Therefore, it has been decided that as far as possible, the observations made by National Quality Monitors (NQMs) regarding various items and sub-items of rural road construction should be documented through digital photography and included in the report of the NQM. The following guidelines should be strictly followed for digital photography and reporting.

1. Role of SQC and PIU: It would be the responsibility of the PIU to arrange for appropriate digital photography of observations on quality of material and workmanship of the road work by the NQMs. The NQM would be responsible for giving appropriate directions for the photography of critical observations during the inspection. The photographs should be of fair quality and the print on plain paper. In case of any difficulty, the NQM would contact the SQC and it would be responsibility of SQC to ensure that proper arrangements in this regard are made by the PIU.

2. Work Item/Component-wise Photography: The purpose of the photography should be to document good practices as well as defects or deficiencies with a view to provide proper understanding of the quality issue at the field level. The NQM would be free to ensure photographs of the components as per his choice, however, with a view to have systematic and structured documentation, the following procedure may be followed:

- (a) **Starting Point of the Road:** First of all, the photograph of the starting point showing signage such as informatory board, Citizen Information Board and other signage could be taken. It would also be appropriate to take photographs of the roads with actual traffic and road users. Examples of such photographs are given below:





Photographs showing starting point of the road with signage

(b) **Geometrics:** The photography for documenting the geometrics may be done in the following manner:

- ◆ Road way or carriage way width measured with tape may be photographed.
- ◆ The observation on super-elevation or camber could be measured by spreading tape and using spirit level and may be photographed.
- ◆ In case of roads in rolling or hilly terrain, longitudinal gradients and slopes of cutting can be assessed visually and by other measure and can be photographed.

Examples of such photographs are given below



Photographs showing measurements of carriage way width, camber and super-elevation.

(c) **Quality Arrangements:** Field laboratory and its equipments can be appropriately photographed. Examples of such photographs are given below.



Photographs showing a field and a mobile laboratory

- (d) **Flexible Pavement Components:** Guidelines for inspection by NQMs provide for taking appropriate observations pit in the pavement. The quality of earth work, GSB and WBM may be documented easily. The tests for gradation of material and compaction tests for earthwork/ sub grade may be photographed. There may be many ways to show the deficiencies in construction of embankment or hill cutting etc.

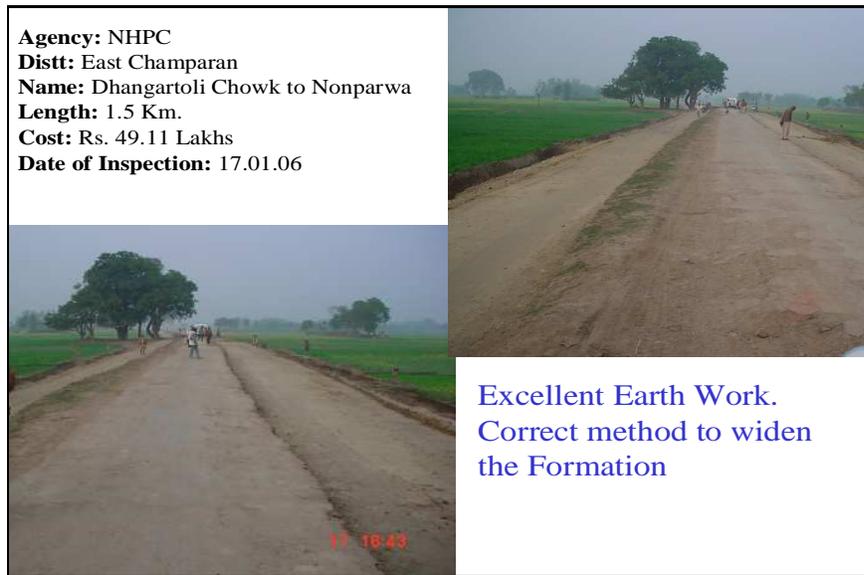
The quality of GSB material or fillers particularly with reference to plasticity may be easily documented. The volumetric analysis showing proportions of coarse and fine aggregates and grading of coarse aggregate can be photographed. An appropriate instrument such as 6" long measuring scale etc may be placed appropriately over the pit or stacked material and photograph may be taken. For showing adequacy of compaction of WBM or GSB, pit filled up with coarse aggregate may be photographed. Examples of such photographs are given below.



Photographs showing poor earth work in embankment



Photographs showing poor earth work in embankment



Photographs showing good earth work in embankment



Photographs showing plastic GSB and good WBM work

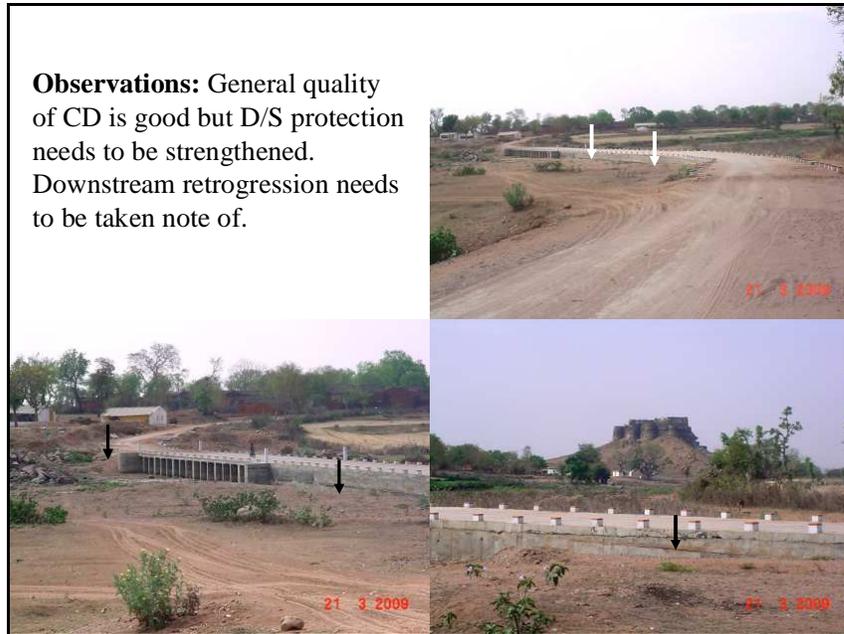


Photographs showing plastic Crushable aggregate used in WBM but good compaction



Photographs showing poor WBM and example of good WBM with good compaction

- (e) **Rigid Pavement, CD Works and Drainage:** Joints, Riding quality, cracks or various other failures of rigid payment can be photographed easily. Good or bad features of various components of cross drainage work such as Hume-pipes, cushion, slab, abutments, approaches etc can be photographed easily. Examples of such photographs are given below.



Photographs showing good vented- causeway but requiring attention in respect to downstream protection.



Photographs showing poor drainage.

- (f) **Protection Works:** In case of roads in hilly and rolling terrain, protection of road furniture is an important element. Appropriate photographs may be taken. In case of roads in plain areas also sometimes protection work is carried out in cases of high embankments or presence of water body just by the side of the road, appropriate photographs may be taken.

3. Reporting: After taking photographs, the PIU is required to get appropriate hard as well as soft copies and handover to the NQM for recording in the report. The NQM would be expected to attach photographs with the report with analysis in appropriate item of the prescribed format.

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