

For Optimization of Inspection Result Evaluation of River Structures

SUGIHARA Naoki, Research Coordinator for River Structures, River Department

MORI Hirotoishi (Dr. Eng.), Senior Researcher, SASAOKA Shingo, Researcher, River Division

(Key words) River Structure Management Research Task Force, strategic maintenance, inspection result evaluation procedure

1. River Structure Management Research Task Force

The NILIM established the River Structure Management Research Task Force ("River Structure TF") in April 2012 jointly with the Public Works Research Institute (PWRI) as a group of researchers who follow up the structure management technologies suitable for rivers, and is developing activities including (i) research and technical support aiming to upgrade (develop) river maintenance in both technology and management, and (ii) holding of technical consultation events and seminars aiming for on-site introduction and establishment of advanced technologies for effective and efficient river maintenance.

2. Activities in 2015

The River Law was revised in 2013 to specify under law the obligations to maintain and repair river management facilities and requires river administrators to inspect visually or by other means levees, revetments, sluices, sluice pipes, water gates, dams, and other facilities at least once every year. In response, the Ministry of Land, Infrastructure, Transport and Tourism worked on the formulation of criteria for determination of actions according to the conditions of facilities and formulated the inspection result evaluation procedure (draft) in 2015 for levees with many facilities, revetments (those demonstrating the function in combination with levees etc.), sluices, and sluice pipes. Accordingly, the functional conditions of river facilities are evaluated with visual inspection, so that the basic concept of evaluation is that evaluation is classified into the four stages -- (i) No abnormality, (ii) Monitoring required, (iii) Preventive maintenance, and (iv) Actions, which are determined according to the indicators of facility deterioration that appears according to functional conditions.



Photo 1: Levee inspection

We are going to accumulate technical knowledge by performing the procedure (draft), etc. on a trial basis and improve the criteria for determining evaluation classes. Findings from the study for specification of the mechanism and progression of alteration that leads to functional decline of river structures, which PWRI has been progressing for three years until fiscal 2015, are considered available for optimizing evaluation of soundness of river structures. In addition, the River Structure TF held the river structures management research seminar on March 2, 2015 with the subject of "Forefront of river structure inspection / diagnosis technologies including robot technology and standardization. The seminar was attended by a total of about 100 persons and all engaged in enthusiastic discussions.



Photo 2: Seminar hall

3. Future development

The River Structure TF will act positively for efficiency enhancement and upgrading of river maintenance, including improvement of inspection result evaluation, in close cooperation with the Ministry of Land, Infrastructure, Transport and Tourism and Regional Development Bureaus.

☞ See the following for details.

1) Homepage of River Structure TF

<http://www.nilim.go.jp/lab/fag/>