
For Efficiency Increase in Evaluating Inspection Results of River Structures

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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 engaged in management suitable for river structures, and is developing activities such as technical consultation and seminars, aiming for (i) research and technical support to upgrade (develop) river maintenance in both technology and management and (ii) on-site introduction and establishment of advanced technologies for effective and efficient river maintenance.

2. Activities in 2016

The River Law was revised in 2013 to specify 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, weirs, and other facilities at least once every year. In response, the Ministry of Land, Infrastructure, Transport and Tourism ("MLIT") 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 March 2015 for levees, revetments (those demonstrating the function in combination with levees etc.), sluices, and sluice pipes for all of which there are a lot of facilities. In March 2016, the MLIT also formulated the evaluation procedure (draft) including sheet-pile revetment, water gates, and weirs. Since the basic concept of evaluation is that the functional conditions of river facilities are evaluated with visual inspection, facility alteration that appears as reflection of the functional condition is used as indicator and evaluation is made in four stages classified according to functional conditions, i.e., (i) No abnormality, (ii) Monitoring required, (iii) Preventive maintenance, and (iv) Actions. We are going to accumulate technical knowledge by trying the procedures (draft) above, etc. and improve the criteria for determining evaluation classification as needed. The findings of the R&D concerning the occurrence mechanism of alteration that leads to malfunction of river structures and identification of deterioration process (Research topic: Research on the practical use of comprehensive inspection / diagnosis techniques for levees and river structures), which had been advanced

in the PWRI for 3 years up to fiscal 2015, are reflected in the guidelines (draft) formulated in March 2016 and reference material, etc., and are expected to be used for efficiency enhancement in soundness assessment of river structures.

In addition, River Structure TF has been holding the river structure control research seminar for the purpose of providing the current research and technical information about maintenance of river structures, and held the fourth seminar on March 1, 2016, attended by about 90 persons. In this seminar, we introduced the current activity for introduction of new technologies aiming at efficiency increase / upgrading of management, including R&D to apply ICT technologies, which have been progressing remarkably in recent years, to the site of maintenance, under the theme of "Now, new technologies bring innovation to management."



Figure: 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 MLIT HQ and Regional Development Bureaus.

☞ See the following for details.

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