Discussion on Technical Review System of Report for Soil and Water Conservation in Binzhou

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Abstract. Suffering severe soil and water loss, the Binzhou City needs efficient technical review system of report for soil and water conservation to curb erosion and improve the urban environment. In this article, the implementation, work contents, process of the current report review system are systematically summarized, and three suggestions are made to improve the system: firstly, clarify the review criteria; secondly, strengthen the management of expert database; thirdly, promote experts training.

1. Introduction
Binzhou City, Shandong Province, China, is located in the hinterland of the Yellow River Delta. There are mountainous areas, Yellow floodplain and coastal beaches in the city, with numerous crossed rivers and interlaced canals, which result in severe water and soil erosion. In the city, one of the seven counties belongs to the hilly area, four to the windy and sandy area, and two to the "other soil erosion-prone areas"[1]. According to Article 25 of the Soil and Water Conservation Law [2], all production and construction projects in the city that may cause soil and water loss should prepare a soil and water conservation plan after the project getting approved and before starting construction, and the following conservation measures shall be taken according to the approved plan. Among the projects, these with an expropriated land area of more than 5 hectares or a total excavation and filling earthwork volume of more than 50,000 cubic meters should prepare a report of soil and water conservation plan for technical review purpose [3]. As the technical support and foundation for the approval of the soil and water conservation plan, the technical review is crucial for implementing the "three simultaneous" system, curbing water and soil erosion, and improving the urban environment.

2. Technical review development, main tasks, and process
2.1. Development
From 2014 to the end of 2019, the city has approved more than 300 water and soil conservation plans for production and construction projects. The annual approval volume has shown an upward trend (see Figure 1), especially in the past two years, which indicates that the submission rate of soil and water conservation plan has increased continually, as a result of the significant improvement of social recognition and influence of the technical review system.
2.2. Main tasks
The main contents of the technical review include investigating whether the report of water and soil conservation plan declared by the construction unit meets the requirements of laws, regulations, industry policies and technical standards, and whether the scope, objectives, measurements and investments of erosion control can meet the follow-up work conservation needs. It puts forward technical review opinions as the technical basis for approving the soil and water conservation plan[4]. As the link among the construction organization, approval authority, plan preparation unit, and the water administrative department[5], the technical review produces direct influence on the legality and rationality of the administrative license, the feasibility of the project's soil and water conservation measures, the effectiveness of the following supervision, whether the conservation facilities can pass the independent acceptance. The conclusion of the technical review reflects the consensus reached by all parties on the soil and water conservation work of the production and construction project. Passing the technical review, the approved plan is the fundamental basis for the building of all conservation facilities, supervision during and after the project construction, and independent acceptance of the facilities.

2.3. Review process
The review process of the water and soil conservation plan report is generally divided into three stages (Figure 2) in Binzhou.

**Figure 1.** Data of soil and water conservation plans approved in Binzhou from 2014 to 2019.
2.3.1. Receive and accept. Related materials, mainly including the approval application and the conservation plan report (manuscript) of the production and construction project, shall be submitted through the Shandong Province Government Service Network, or the Binzhou Municipal Affairs Service Center window, or by letter. The receiver in the approval authority shall carry out a preliminary examination by comparing with the qualified conditions, and handle the applications separately based on the following situations: if the application materials are complete, according with the legal form, and fall within the power of the authority, they are accepted, with a notice of acceptance being issued; if the application information is confused or the materials are incomplete, the applicant shall be notified to make corrections; if the application is out of the service scope of the approval authority, it will be suggested to be submitted to the right department.

2.3.2. Technical review. The time limit between application acceptance and issuing administrative license is three days. It is worth noting that the time for the approval authority organizing the on-site inspection and expert technical review, as well as the time for the plan preparation unit modifying report, is not included in the approval time limit. The expert review is usually conducted in meeting form, with experts, report writers and representatives of approval department, supervision authority attending. After review, the report needs to be revised and improved on the expert opinion, and then be submitted to the chief expert for review and sign for confirmation.

2.3.3. Decide and deliver. After receiving the approval materials and the opinions signed by experts, the approval department will check, make administrative licensing decisions, draft documents, sign
approvals, and issue approval documents. In the case of disapproval, the department will make explanation. According to the requirements of the applicant, the window will deliver the administrative license decision letter directly or by mail. At last, the issued documents shall be open to the public on the Internet, and get archived.

3. Three comments

3.1. Clarify the review criteria
At present, the technical review process does not specify the review standards, which is not beneficial to the standardization and normalization of the technical review. Because of the various review criteria, projects of the same type and similar situation reviewed in different regions and by different expert groups may be drawn very different review conclusions [6]. It is recommended to classify the production and construction projects according to the characteristics of human-made erosion and the requirements of conservation measures. Based on this, it is supposed to sort out the review points of reports for various types of projects, unify the review criteria, clarify the control factors, and strictly control the bottom line of report review, which will promote the technical reviews to be carried out efficiently.

3.2. Strengthen the management of expert database
As in most prefecture-level cities in China, Binzhou City lacks professional personnel for water and soil conservation. The expert database of soil and water conservation is mainly composed of experts with expertise and experience in similar fields. The incomprehensive knowledge of the latest standards and specifications in water and soil conservation area leads to instability of expert review quality. As the review experts are the primary gatekeepers of the report technical review, it is recommended to raise the enter standards for experts, and to evaluate the review effect, focusing on enriching and updating the database based on the evaluation results. Furthermore, it is of great significance to make better use of the provincial expert database.

3.3. Promote experts training
To keep pace with the economic development and handle increasingly complicated production and construction projects, it is recommended to promote the training of experts. On one hand, it’s essential to improve the sense of responsibility of experts. On the other hand, holding lectures on new types of projects that emerged in the process of regional economic development can meet the needs of practical work. Besides, group discussion is an ideal form to share experience and strengthen the experts’ ability of study and judging typical cases.

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