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THEORETICAL BASIS OF CREATING A WATER INVENTORY MAP

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Annotation
The main directions and tasks of drawing up a map of the state water cadastre are described in order to maintain the state water cadastre system, to find ways to record, study, develop, restore, register and use water resources in order to improve life and develop society.

Keywords: cadastral maps, plan (scheme), water cadastre, Geographic information system (GIS), quality and quantity indicators.

Introduction

An in-depth study of the current state of water resources used in agriculture, industry and other purposes, with their display in the form of a separate state water cadastre or description in terms of their qualitative and quantitative indicators, costs and users, benefits and their quantity, forms the basis of cadastral maps.

A map is a state model, conventionally generalized in pictorial symbols. The cartographic model makes it possible to separately describe not only external, but also internal connections and the essence of events and phenomena.

The theoretical basis for creating maps of the state water cadastre is the creation of a cartographic model that represents the realities of geography, internal and external relations, structure, quality and quantity, price and value in a conditional generalization with graphic symbols. Cartographic models make it possible to disseminate accumulated information and data about events and incidents in a special way.

The development and compilation of maps of the state water cadastre is a complex process, because in accordance with the purpose and objectives of the maps, the qualitative and quantitative indicators of the events described in them are identified, analyzed, the cost and value are estimated, they are displayed on the map in relation to a specific geographic area.

The system of maps of the state water cadastre contains information and data on the current state of natural water resources distributed over a certain natural or administrative territory. In this regard, cadastral cartography is one of the hot topics.

The following scientists made a significant contribution to the theoretical and practical substantiation of the problems of designing and compiling large-scale cadastral maps: K.A. Salishev, I. G. Zarutskaya, A.P. Zolovsky, I. Yu. Levitsky, V.P. Razov and others.

The following scientists are involved in the formation of the cadastral cartography of Uzbekistan: T. Mirzaliev, E.Yu. Safarov; Tolipov G.A., Kurbanov B.T., Tursunov A.A. other.

Cartography of the state water cadastre is one of the new and topical areas of cartography. The formation and development of this direction is directly related to the transition to a market economy.

This requires the use of cartographic research methods for the study, analysis and assessment of variable natural phenomena, their regional differentiation, as well as qualitative and quantitative indicators. These methods make it possible to determine not only regional differences, but also the corresponding system of regional natural complexes, the patterns of their development, as well as create various scientifically based forecasts and measures.

Large-scale cadastral maps are one of the main documents of the state water cadastre system. This is reflected in the Law of the Republic of Uzbekistan "On the State Land Cadastre".

Objects of cadastral maps are natural, socio-economic resources and wealth of various organizational units of agriculture (collective farms, factories, firms, and so on).

The development of a plan for a map of the state water cadastre includes:

- check the circuit (diagram);
- draw a map with a pencil along the contour;
- check the plan drawn in pencil;
- calculate the area of an object and some of its parts;
- draw a map or plan on a computer (or in a dream) using symbols in an accepted scale;

- create an explication;
- final check of the drawing on the computer (or in a dream).

On the plan of the water cadastral map, the following are applied:
- Quantitative and qualitative indicators of rivers, lakes, reservoirs and groundwater.
- In artificial water structures (reservoirs, canals), their water capacity and degree of filtration (absorption).
- Areas of distribution of groundwater, the geographical location of artisanal and other territories, the amount of water taken from them, the quality of water.

Particular attention is paid to the amount of water used in the national economy. For example, drinking water and water for industrial and construction purposes and water for irrigation.

Groundwater (basins, aquifers), the distance between the measurement lines, taken from the depth of the length of the boundaries ..... consists of linear measurements. Rational and economical use of water resources, as well as demand for water resources and market reforms require the fulfillment of the tasks set on the basis of accurate and scientifically sound data. Today, as in all spheres, the use of modern methods of drawing up water cadastral maps is a requirement of the time.

There is an opportunity to effectively use the achievements of information technology when creating maps of the water cadastre. It is important to use world-class models, to organize them completely, accurately and at a high level, effectively using the computer programs used to process, store and transfer the datasets.

Geographic Information System (GIS) is a rapidly evolving data collection system that integrates knowledge from several disciplines. This technology can serve as a scientific basis for the management of natural and water resources, other similar regional problems and the solution of space problems. The use of GIS is a complex process that involves obtaining, processing, analyzing and describing data using computer programs and experts. It takes a lot of time and effort to analyze the spatial data that is the main source of GIS, to collect the attributes (specific symbol, feature) that they own, and to create layers of the GIS database. Representation and analysis of spatial data includes operations, measurements, and data queries from one or more layers of a GIS database. Based on this system, various related graphs can be created by analyzing geographic events and phenomena.

Geographic information systems show their effectiveness in the development of plans for the territorial organization of water networks, which, in turn, largely helps to identify timely solutions to problems that are important for managing organizations.

Conclusion

The theoretical foundations of water cadastre mapping and modern methods of water cadastre mapping were used. The importance of water cadastral maps was emphasized. The content of the cards is enriched with relevant texts, special diagrams, graphs and pivot tables. With this in mind, samples of electronic versions of special diagrams, graphs and figures created by members of the scientific community were provided. Electronic copies of all map models were prepared on the basis of special standard programs, which were published on the basis of new technology. We believe that in the future such work will serve as one of the key factors in the rational use of water resources in the republic and an increase in the standard of living.

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