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Strong Showers and Organization of Catchments Territories

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Abstract

In work problems of flooding of the territories especially urbanized) are considered, at loss of downpours. It is offered to apply in settlements system of dispersal of a runoff, similarly to up to antierosion systems organization territories of slopes.

Keywords: Rainfall; Runoff; Flooding; The Organization of Territory; Damage; Dispersal of A Drain

Climate variability is currently manifested in an increase in the number of rains with more than 10 mm of rainfall [3] or the amount of rainfall recorded [5]. This, in turn, leads to short-term flooding of territories and especially territories with weak drainage of surfaces. This is especially true of settlements, where most of the surfaces are under construction or asphalted. The consequences of intense and prolonged heavy rainfalls on compacted surfaces are manifested in flooding of streets, erosion of areas with a natural coating, transportation of sediment and other objects (cars, etc.) by water flows that come along their route. As a result, there are damage to highways, buildings, vehicles and other property, clogging of storm sewers, bridge crossings, etc., and the saddest thing is death of people [9-11].

Intensive runoff and flushing from showers can occur not only on paved surfaces, but also on ordinary agricultural land for a number of physicochemical reasons [1]. Territory organization systems are proposed for regulation and flushing on agricultural lands [2,6], which are designed to divide the forming runoff into parts along the catchment and slow down its flow into the closing river system, thereby reducing soil flushing, increasing its moisture content and providing plants water, and as a result, preventing a sharp rise in the water level in the main river. In urban areas, such systems are not used. In the settlements, storm sewers are organized taking into account the sum of the volumes of rain, melt, irrigation water from the catchment area, as well as water discharged into the drain by enterprises, focusing on the rain intensity of 20 minutes with a period of one-time excess of the calculated rain intensity of 1 year. Surface water drainage is provided, as a rule, by gravity to low places of relief, watercourses and water bodies [4,7,8]. As the practice of recent years [9-11] shows, under the conditions of climate change, the existing storm water drainage system clearly does not provide for the fulfillment of the planned functions and, with intensive sediment inflow from the catchment, can cause a complication of the situation.

Conclusion

In settlements, in addition to the system of collectors for receiving runoff from surfaces, it is necessary to organize a system for separating runoff by the catchment in order to avoid its concentration in the lower parts of the slopes. The system of "distribution" of runoff by the catchment will slow down the flow of runoff to the places of its usual concentration and thereby reduce the possible damage from heavy rainfall.

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