

HYDRAULIC MODELING FOR RISK MAPS AND IDENTIFICATION OF CRITICAL INFRASTRUCTURES IN WATER SECTOR

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Rezumat. *Procesul de identificare a infrastructurilor critice a demarat, drept pentru care în domeniul apelor se fac pași repezi în definirea și stabilirea acestora. Identificarea infrastructurilor critice în domeniul apelor se poate face având la bază hărțile de risc pe bazine hidrografice. Acest deziderat are la bază realizarea unor modele hidraulice uni- și bi-dimensionale care să genereze parametri necesari calculului pagubelor procentuale ce intră în ecuația evaluării riscului asociat unor evenimente naturale în domeniul apelor. În cuprinsul articolului este prezentată modalitatea de realizare a calculelor hidraulice din ambele perspective dimensionale. Rezultatele acestor calcule constituie datele de bază pentru etapa următoare a procesului de obținere a hărților de risc – evaluarea pagubelor.*

Abstract. *The Critical Infrastructure identification process started therefore rapid steps are made to define and set them up. Identification of critical infrastructures in water sector can be done based on risk maps for hydrographical basins. This goal has at its lowest level the achievement of some uni and two-dimensional hydraulic models that generate the required parameters necessary to calculate the damage percentage that enters in the equation of risk assessment, associated to natural events in water sector. This Article presents the way to achieve hydraulic calculations from both one- and two-dimensional perspectives. The results of these calculations are a database used for the next stage of risk maps obtaining process – damage assessment.*

Keywords: risk maps, two-dimensional flow, natural floods, hydrodynamic modeling, digital terrain model

1. Introduction

The term critical infrastructure has started to be used since 1996 when the US president Bill Clinton issued "The Executive Order on Critical Infrastructure Protection" due to the need of combat against possible attacks on critical information structures. In accordance with the Preamble of this order, "Certain national infrastructures are so vital that their incapacity or destruction would have a debilitating impact on the defense or economic security of the United States".

The family of critical infrastructures includes: telecommunications, electrical power systems, gas and oil storage and transportation, banking and finance, transportation, water supply systems, emergency services (including medical, police, fire and rescue) and continuity of government.

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