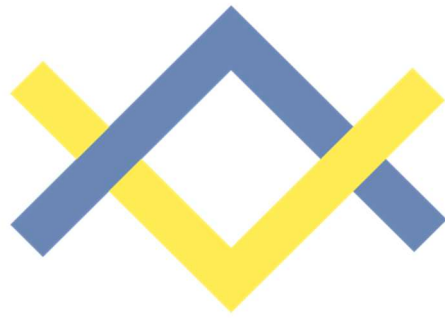




The HuT

Urban flooding in Middle Tisza

‘The HuT for Me and You’
Narrative

DEMONSTRATOR 7
Middle Tisza Region
(Hungary)

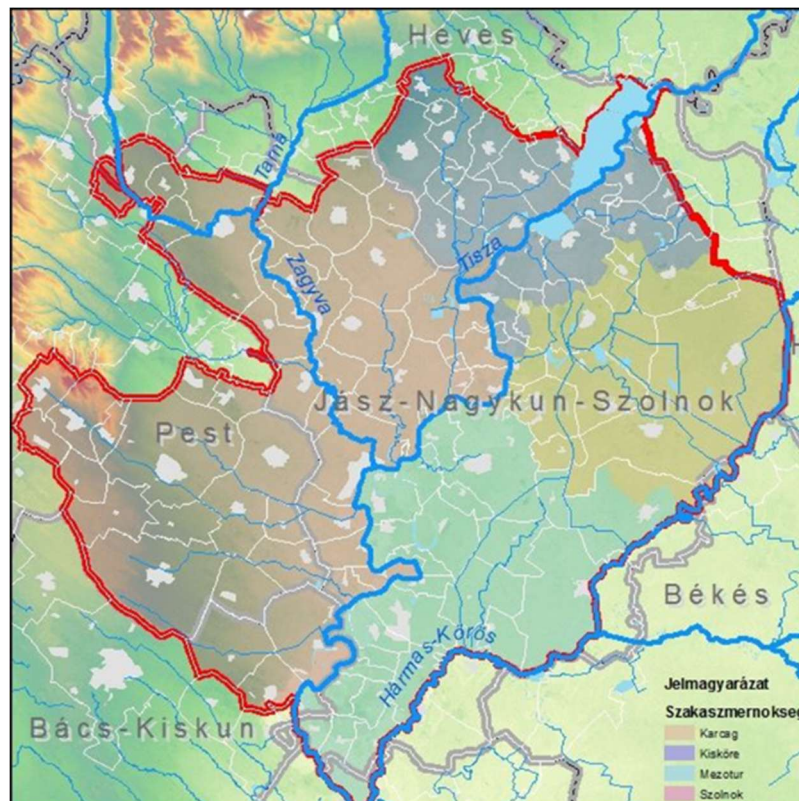
May 2026



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Short summary

A story about a municipality in the Middle Tisza Region. The municipalities are responsible for urban pluvial flood management in Hungary. The VÍZ24 mobil application can support the activities of municipalities in case of pluvial flood situation in urban area.



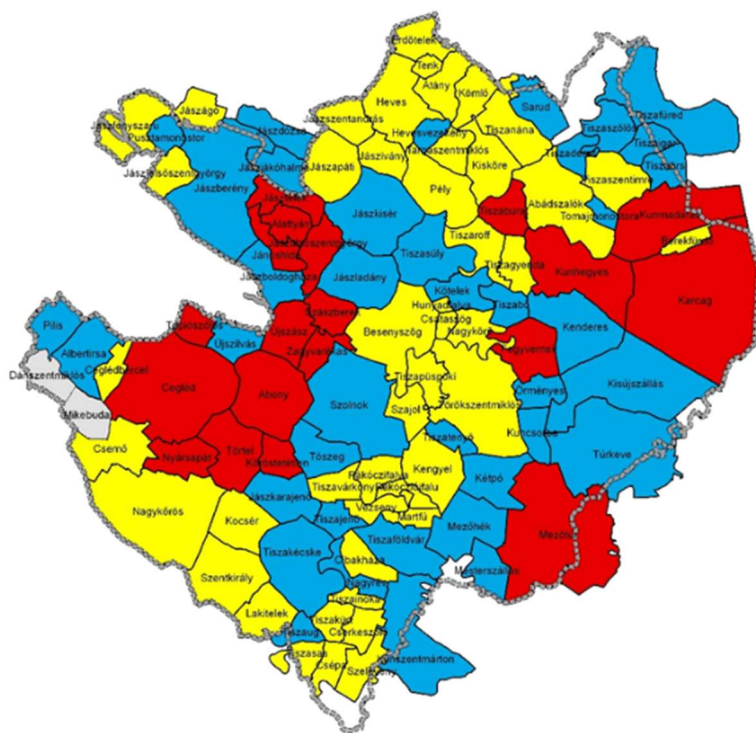
Operational area of KÖTIVIZIG

Introduction of KÖTIVIZIG (Middle Tisza District Water Directorate)

The KÖTIVIZIG is a public body with primary task to maintain and operate the water management facilities within its operational area, which covers 7180 km² in the middle of East-Hungary, including 102 municipalities. The operation of the organisation combines theoretical and practical aspects of water management. KÖTIVIZIG's operational area is almost entirely in the plains of the Great Hungarian Plain the geographical conditions are flat lands. KÖTIVIZIG is responsible the prevention of damages caused by water, such as floods, inland excess water, water shortages and water quality damage, monitoring of waters and collection of data.



János works for a local government in the Middle Tisza region (in the operational area of the Middle Tisza District Water Directorate). In Hungary, urban pluvial flood management is carried out by local governments. János deals with water management the local government. He has a lot of different kind of task next to the water management and he is not a water management expert. KÖTIVIZIG developed the VÍZ24 (WATER24) mobile application to support urban pluvial flood management.

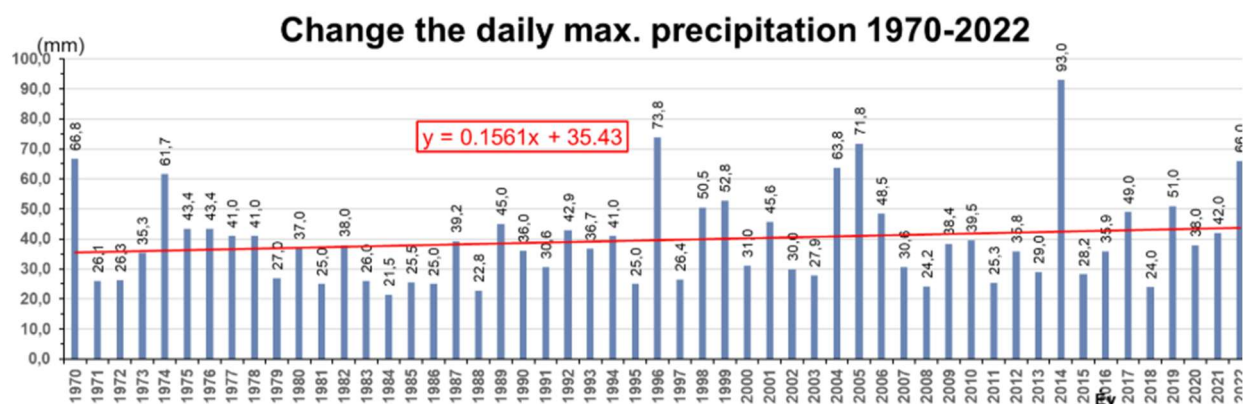


The integration of soil moisture data into the risk methodology is currently being developed.

highly vulnerable
moderately vulnerable
weakly vulnerable
not vulnerable

The Middle Tisza region is also troubled by sudden heavy rainfall, which causes flooding in the lowland areas. If, due to high groundwater levels and the fullness of the receiving watercourses, the rainwater cannot drain away by gravity or seep into the ground, flooding can persist for a longer time period, damaging buildings and infrastructure. Settlements must have a water defense plan, which includes the necessary measures and available resources in the event of an emergency. As specified in the water defense plan, local governments take the necessary measures within the framework of the water damage level.

In recent years, due to drought periods, water damage relief activities have become less necessary in settlements in the Middle Tisza region. However, the precipitation data for the past 40 years shows an increase in the amount of precipitation falling suddenly in one day.



Preparedness



The Middle Tisza District Water Directorate and the regionally competent local governments jointly carry out an review of water management system of the settlements every year, of which a report is prepared. On the occasion of the last review, the KÖTIVIZIG staff introduced the VÍZ24 application to János and installed it on his phone.

VÍZ24 mobile application

After reviewing the application, János was pleased to see that it could help in a municipal pluvial flood response. Among other things, it contains interactive maps of the sewer network, reservoirs, pumping stations and can show the current pluvial flood risk of a settlement. On the map, users can see the protection levels of the water directorate and the municipality. The application is able to show



the user's current location on the map. The mobile application can send alarms to users via push notification about predicted large amounts of precipitation. The application contains protection plans, documents, other legal, technical aids and telephone contact details in case of a pluvial flood situation.

János found the VÍZ24 mobile application very useful because the app. provides a fast, easily accessible and up-to-date database for those involved in defense. János showed the application to some of his colleagues, and they asked Middle Tisza District Water Directorate for access to use it.



Early warning

One day, while János was working in the office, he received an alarm notification on his phone that a large amount of precipitation expected to fall in a short period of time the following day could cause problems in the settlement. János, told the mayor about the incident, since the mayor is the protection leader during the settlement water damage prevention activities, so he is responsible.



The mayor and János reviewed the water defense plan, which includes what to do in the event of an emergency situation. The water defense response plan, maps, and important phone numbers are also included in the ViZ24 app. The mayor found the ViZ24 app very useful, so he also installed the app on his phone.



Protection



The next day, the predicted rainfall fell and the water level rose significantly in a vulnerable part of the city, threatening to flood the surrounding buildings. Thanks to the preparations made the previous day, the mayor was able to take quick action and ordered the immediate deployment of the pumps. The experts involved in the defense had easy access to important information using the VÍZ24 application. As a result of the measures and intervention, the water level first stopped rising, and then, after the rainfall stopped, the water level also started to decrease. Thanks to the quick action, no major damage occurred.



KÖTIVIZIG's vision:

Our goal is to fully deploy the VÍZ24 mobile application, initially in the KÖTIVIZIG area of operation, and then nationwide. The use of the application contributes to reducing the risk of water damage in settlements. By further developing the vulnerability methodology, we would like to provide even more accurate early warnings to local governments, aiming for more effective preparation and protection, and thereby increasing human safety.

