



# The effects of the performance audit

Warsaw, April 2024

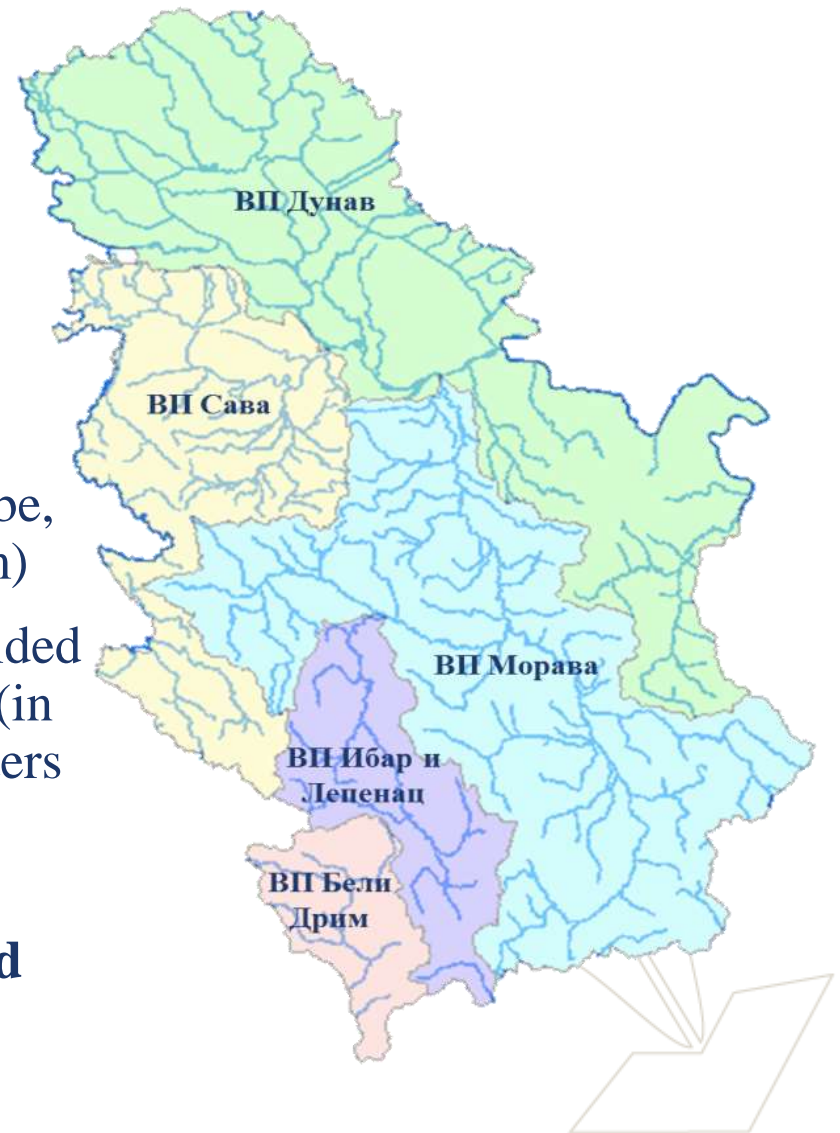


# Flood Prevention in the Republic of Serbia (RS)



# Flood protection system

- ✚ In 2019, the flood protection system in RS consisted of numerous **capital facilities**:
  - about 3,700 km of embankments
  - about 25,800 km of canal networks
  - almost 200 pumping stations
  - 58 dams
- ✚ the territory of RS is divided into **5 water areas**, named after the largest rivers (Danube, Sava, Morava, Ibar and Lepenac, Beli Drim)
- ✚ all waters on the territory of the RS are divided into **waters of the first and second order** (in the picture you can see water areas and waters of the first order)
- ✚ according to the Preliminary Flood Risk Assessment from 2011, **99 significant flood areas were identified**



# Selection of audit topic

↓ In 2019, SAI Serbia conducted a performance audit on the topic "**Prevention of the Floods in the Republic of Serbia**"

**Reasons** why SAI Serbia decided to conduct the audit:

- increasingly frequent floods, primarily torrential in nature (for example, the floods in May 2014 caused damages of around 1.5 billion euros in the 24 most affected municipalities - which you can see in the picture)
- outdated and damaged flood defense infrastructure, which requires significant investments in order to maintain functionality
- fulfillment of EU requirements related to the field of water protection, set through Chapter 27 - Environment and climate change (specifically the requirements of Directive 2000/60/EC regarding the establishment of a framework in the area of water policy and Directive 2007/60/EC regarding flood risk assessment and management)



# Scope of the audit

## ↓ **Scope of audit** was:


- preventive activities, which are undertaken in order to protect against floods, in the period when flood defense has not been declared
- waters of the first order, which include all significant watercourses in the RS (over 250 watercourses)
- dams as the most important water facilities for flood protection

## ↓ **Auditees** were:

- ↓ The Republic Directorate for Water and the Provincial Secretariat for Water Management, i.e. the holders of duties in the field of water protection in the RS, who at the same time manage the budget funds for water
- ↓ Serbian Waters and Waters of Vojvodina, two public water management companies (PWMC) that manage water facilities for flood protection and carry out flood defense on waters of first order

## ↓ **Audited period** was 2017-2018, but data from 2015 and 2016 were also used, as well as available data from 2019.






## Conclusion 1. The application of the European Union Directive, in the field of flood risk management, has not fully taken root in practice, because competent institutions are late in adopting key planning documents

↓ the first conclusion was reached based on **four findings** :

- The Republic Directorate for Water did not review and update the preliminary flood risk assessment from 2011, which is why not all **significant flood areas**, which require a special approach in flood defense, were recognized
- Public water management companies did not create and verify **flood hazard maps and flood risk maps**, which would be available to the public and state authorities and included in spatial and urban plans
- The Republic Directorate for Water and public water management companies did not prepare **flood risk management plans** for the territory of the Republic of Serbia and for water areas, even though the deadline was 2017
- The Republic Directorate for Water has been late in 3 of the last 4 years with the adoption of **an operational plan for flood defense for I order waters**, which may result in powers and responsibilities not being clearly defined during floods



## Conclusion 2. The existing method of management is not established in such a way as to ensure integral management of flood risks

↓ The second conclusion was made on the basis of **two findings** :

- The shared management of flood risks between public water management companies, in **the Danube and Sava water areas**, with the absence of a clearly established method of cooperation, carries the risk that the water areas are not managed in a unique, complete and comprehensive manner
- The Republic Directorate for Water did not undertake the necessary activities to establish **the Water Council** and **the National Water Conference**, which is why greater professional influence and public participation in water protection was not ensured





### **Conclusion 3. The fulfillment of the goals of the Water Management Strategy, in the field of water protection, is jeopardized, because funds and personnel were not provided in the required volume, in the period 2017-2018**

- ↓ The third conclusion was made on the basis of **two findings**:
- The existing **model of financing water protection**, in the period 2017-2018, did not provide enough funds and is completely dependent on the budget of the Republic of Serbia and AP Vojvodina
  - **Staffing of PWMC Serbian waters** was at the level of about 50% of the needs determined by systematization, which makes it difficult to carry out the company's work in the field of water protection





**Conclusion 4. Some dams have not been transferred to the management of public water management companies, which has the consequence that their condition is not satisfactory and may affect an increase instead of a decrease in the risk of floods**

↓ The fourth conclusion was made based on **two findings**:

- The precondition for efficient management of dams is not provided, because public water management companies have not established reliable and complete **records** about them, that is, they have not entered two thirds of the dams in the register of water facilities
- Some dams were not transferred to the management of public water companies, and some of them were not included in **the flood protection system**, although this is one of their main purposes



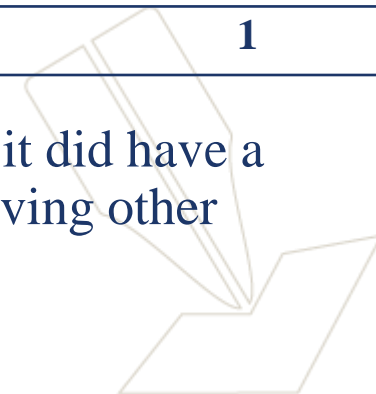


# Application of recommendations

- Of 24 recommendations issued, the auditees fully complied with 15, partially complied with eight, while one recommendation was not applied due to changed circumstances
  - all auditees showed a significant willingness to act on the issued recommendations and to remove the identified inefficiencies, therefore there were no recommendations that were not applied
  - a part of the recommendations is partially applied because their implementation is affected by taking actions that are not within the competence of the auditees
  - COVID-19 pandemics affected partial application of certain recommendations

Auditees	Recommendation applied	Partially applied	Recommendation no applied	Not applied
Republic Water Directorate	6	-	-	-
PWMC Serbian Waters	3	6	-	-
PWMC Waters of Vojvodina	6	2	-	1
<b>In total</b>	<b>15</b>	<b>8</b>	<b>-</b>	<b>1</b>

- Audit did not have direct goal of achieving financial effects, but it did have a significant impact on amendment of policies, as well as on achieving other benefits for citizens and the country



# Policy changes

in 2019



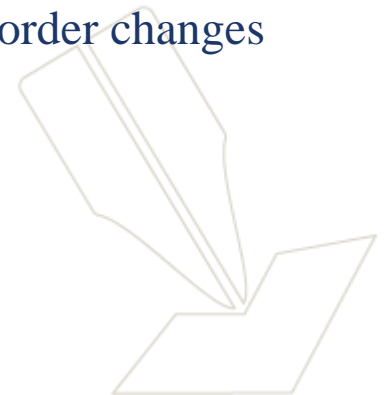
in 2023

- **The Preliminary Flood Risk Assessment from 2011** was not reviewed and amended, although it should be done every six years (it determines significant flood areas)
  - The adoption of **the operational plan for flood defence for waters of first order** was delayed by about two months for 2018 and 2019 (it determines individual authorities and responsibilities during floods, and is adopted by the end of the current year for the following year)
  - No members **of the National Water Conference were appointed** (it is an expert body that monitors the implementation of the Water Management Strategy)
- Revised and amended **the Preliminary Flood Risk Assessment from 2019**, taking into account data on floods and damages in the period 2012-2019.
  - **Operational plan for flood defence for waters of the first order** adopted in time for 2020, 2021, 2022 and 2023.
  - All 14 members of **the National Water Conference were appointed**



# Changes in significant flood areas

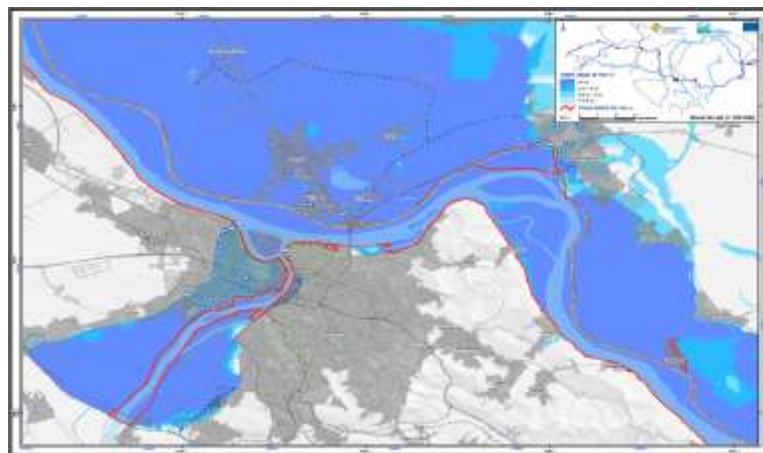
- ✚ **A significant flood area** requires a special approach in flood defense
  - represents an area where there is a high risk of flooding in the future, which would cause damage over 10% of the national income of the municipality
  - it is determined on the basis of data from the past, as well as expected projections
- ✚ The Preliminary Flood Risk Assessment from **2011 identified 99 significant flood areas**
- ✚ After reviewing and amending the Preliminary Flood Risk Assessment from **2019, 101 significant flood areas were identified**, compared to the previous
  - six new significant flood areas were identified
  - one significant flood area has ceased to have that status
  - three significant flood areas were annexed to others (reduced from six to three significant flood areas)
  - seven significant flood areas retained that status, but with certain border changes



# Creation and amendment of flood hazard maps

↓ Flood hazard maps show the reach of the flood wave for different scenarios and need to be updated every six years (you can see an example for the narrower territory of the city of Belgrade)

↓ Before the audit, flood hazard maps were not created for 58 significant flood areas, and now this is the case only for six significant flood areas, and these are new significant flood areas that were identified in 2019.

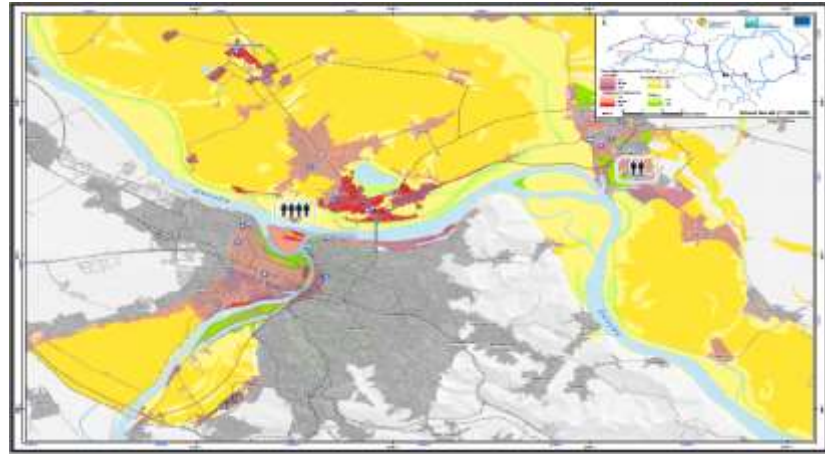


<b>Flood hazard maps</b>	<b>in 2019</b>	<b>in 2023</b>
number of significant flood areas from the preliminary flood risk assessment	99	101
prepared flood hazard maps (up to 6 years old)	15	84
prepared flood hazard maps (over 6 years old)	26	11
flood hazard maps not been prepared or are being prepared	58	6

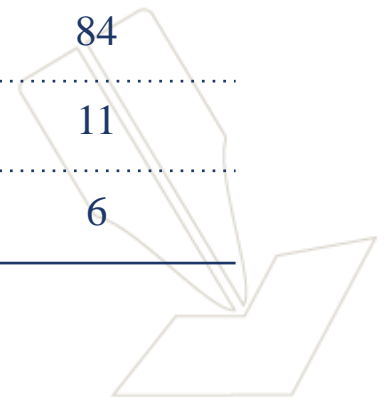
# Creation and amendment of flood risk maps

- ▼ Flood risk maps show threatened infrastructure and population, they also need to be updated every six years (you can see an example for the narrower territory of the city of Belgrade)

- ▼ Before the audit, flood risk maps were not created for 73 significant flood areas, and now this is the case only for six significant flood areas, also in the case of new significant flood areas that were identified in 2019.

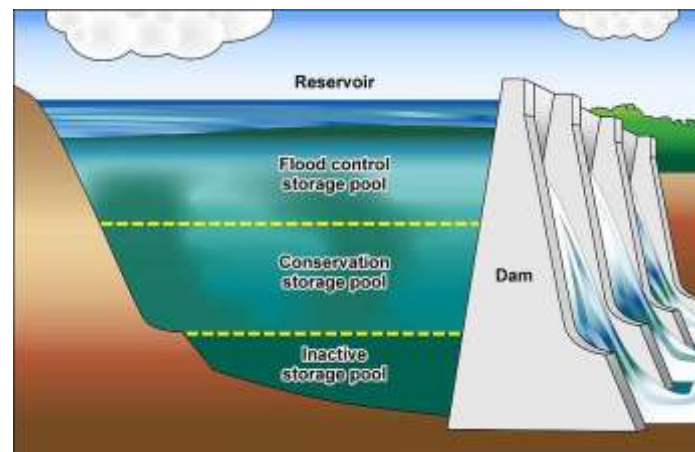


<b>Flood risk maps</b>	<b>in 2019</b>	<b>in 2023</b>
number of significant flood areas from the preliminary flood risk assessment	99	101
prepared flood risk maps (up to 6 years old)	0	84
prepared flood risk maps (over 6 years old)	26	11
flood risk maps have been prepared or are being prepared	73	6



# Inclusion of dams in the protection system

↓ Dams are very important water objects in the defense against floods, especially against torrential type, because they can absorb the flood wave (in the picture you can see a part of the reservoir that serves to absorb the flood wave)



- ↓ after the audit, 13 dams were additionally included in the flood protection system, which was not the case before, although this is one of their main purposes
- ↓ five of these 13 are high dams, which are now included in the operational flood defense plan for waters of first order, i.e. when heavy rainfall is expected, part of the reservoir is emptied in advance to accommodate the flood wave

<b>Register of water facilities - dams</b>	<b>in 2019</b>	<b>in 2023</b>
territory of PWMC Serbian Waters	48	49
territory of PWMC Waters of Vojvodina	10	22
<b>territory of the Republic of Serbia</b>	<b>58</b>	<b>71</b>



Thank you for your  
attention.

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