



## Natural Water Retention Measures

Web-based knowledge  
Community of practice  
NWRM practical guide



## Pilot Project - Atmospheric Precipitation - Protection and efficient use of Fresh Water: Integration of Natural Water Retention Measures in River basin management

Service contract n°ENV.D.1/SER/2013/0010

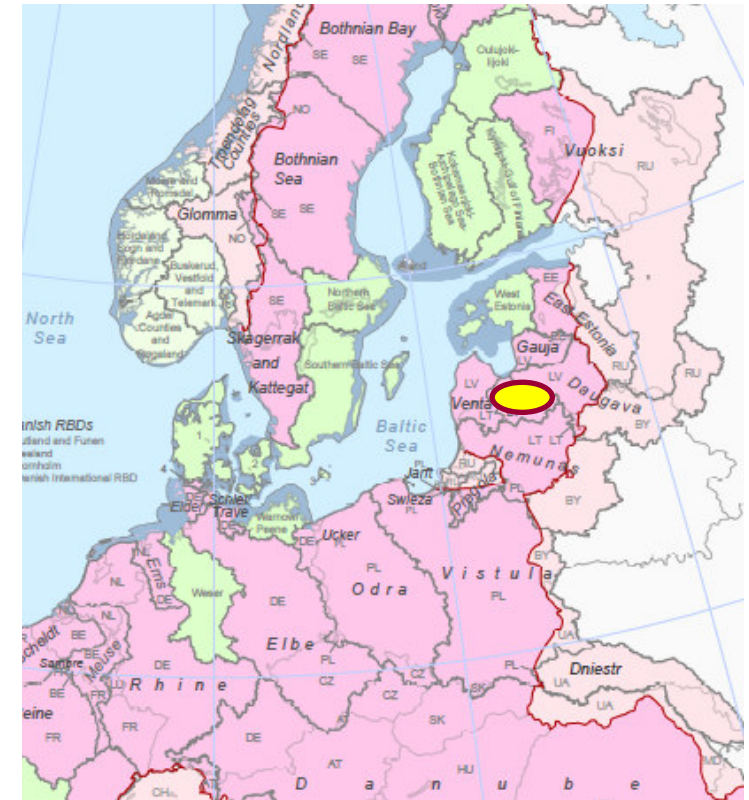
## Flood risk source apportionment and preventative programs of measures in the Lielupe river basin, Latvia

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# About the Lielupe river basin

- Among 40 international basins in Europe (5 such size basins in Europe)
- One of 4 international basin districts in Latvia and Lithuania
- Shared almost equally between two countries: LV - 8849 km<sup>2</sup>; LT - 8949 km<sup>2</sup>
- Almost 840 000 inhabitants: 58% LT, 42% LV
- **Floods** – water level increase mainly due to spring snow/ice melt







# Legal framework for planning flood risk prevention

- **Law on Water Management, 2002**
  - Regulations on initial flood risk assessment and flood risk management planning, December, 2009
- **Law on Protection Belts, 1997**
  - Concept of protection belt around water bodies;
  - Definition of floodplains
  - Requirement of the delineation in local spatial plans as water body protection belt
  - Building is not allowed in any floodplain since 2008 (but 2002-2008 the building was restricted in zone of the flood risk of <100 years)
- **Law on Spatial Development Planning**
  - Practical tool for implementing flood risk prevention
- **Nature protection legislation– flood plain as habitat**



# Flood risk prevention and management programme, 2008-2015

- **The first national programme, developed before the national regulations were adopted**

- to identify the priority flood risk areas
  - flood plains – natural areas
  - artificially managed areas such as polders or HPP
  - storm surges in coastal areas
- to plan flood protection measures

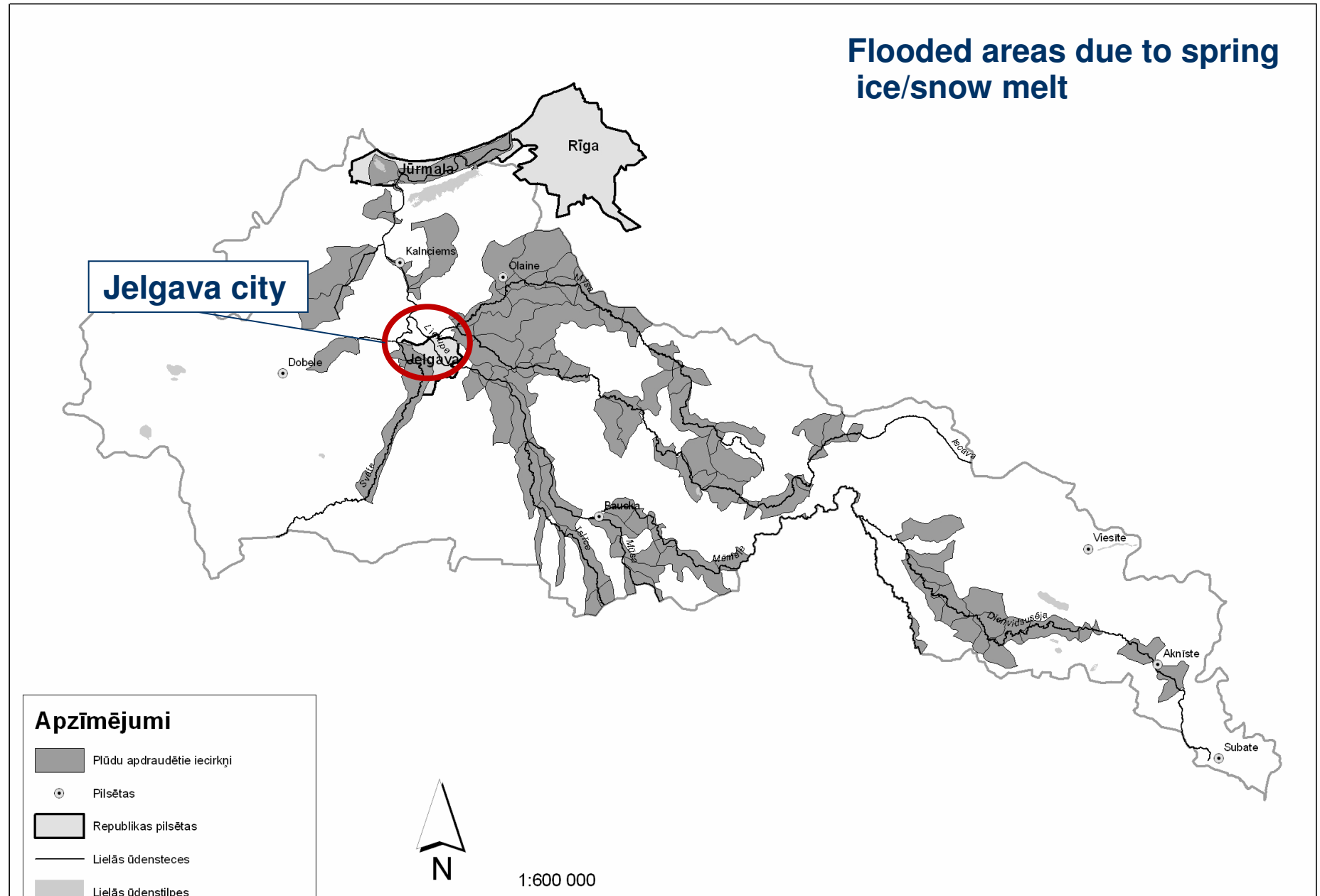
- **River basin district** – a scale for the assessment and management , very rough results

**One of the key conclusions-** need more detailed information/investigations on the flood risk areas

- **Identified needs for investment programme 2007-2013**

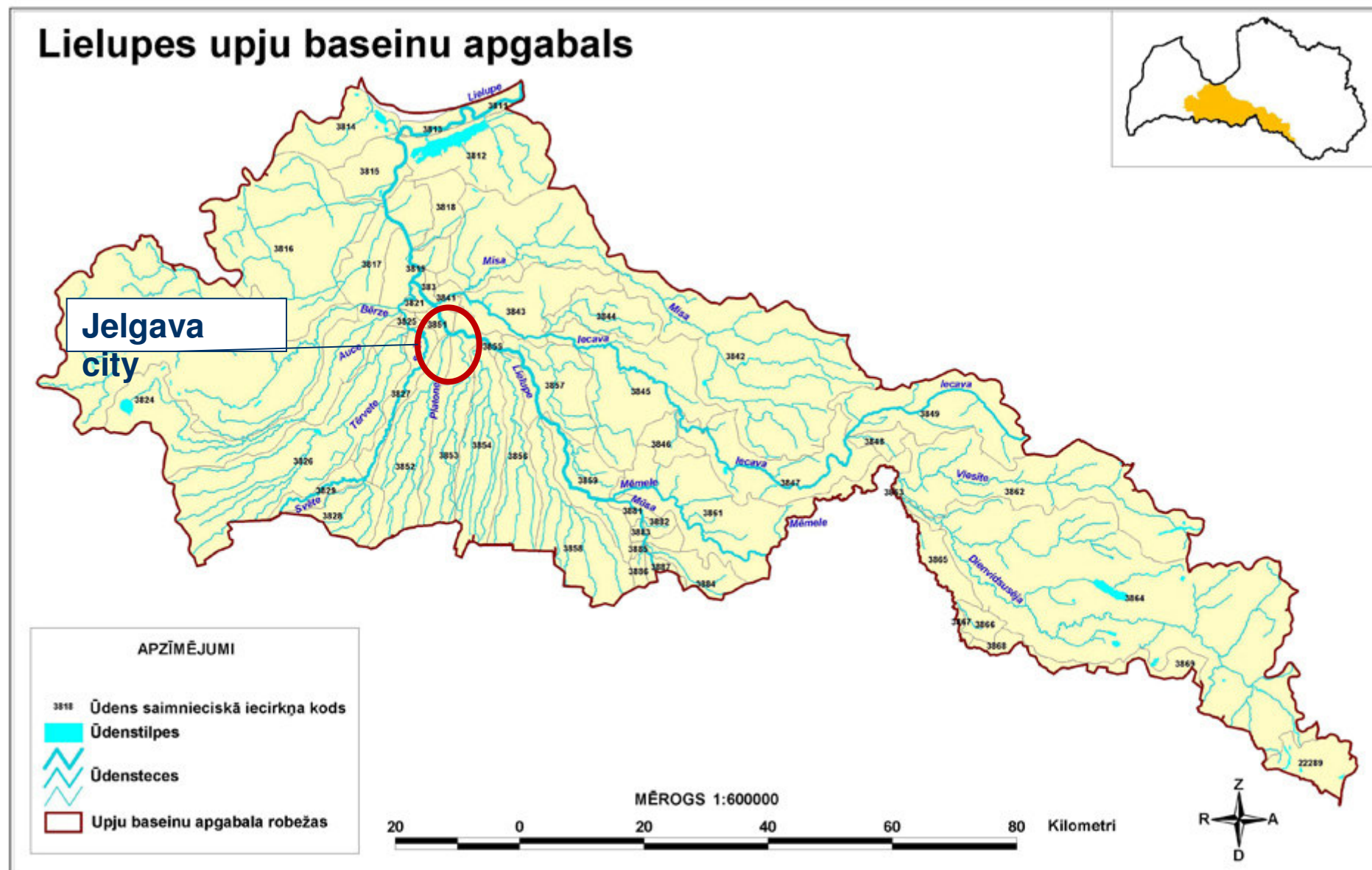
- renovation of the existing dams and flood-gates
- dredging of river beds

# Flood risk areas in the Lielupe basin due to natural character of river flow





# Dense hydrographical network - sources of flooding





## Deliniation of the water protection belt

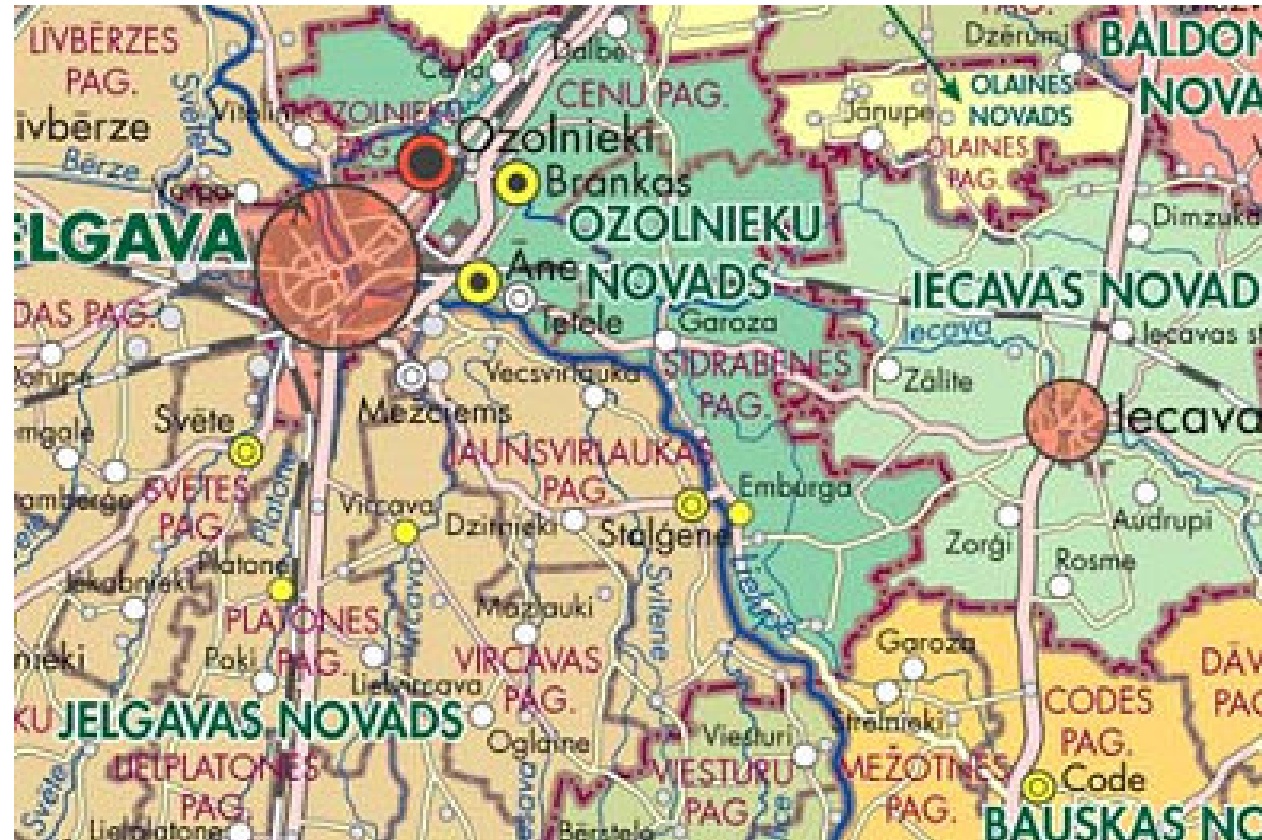
- In **rural areas** of the river Lielupe – not less than 300m;
- Smaller rivers, depending on the length:
  - 10 km – 10 m
  - 10-25 km – 50 m
  - 25-100 km – 100m
- In **urban (settlement) areas**
  - Not less than 10m;
  - **Entire floodplain area** (area which is flooded fully or partially) or up the **barrier** (dam, road) after which the area can not be flooded. Frequency of flooding events is not set.

***Areas have to be delineated in local spatial plans***



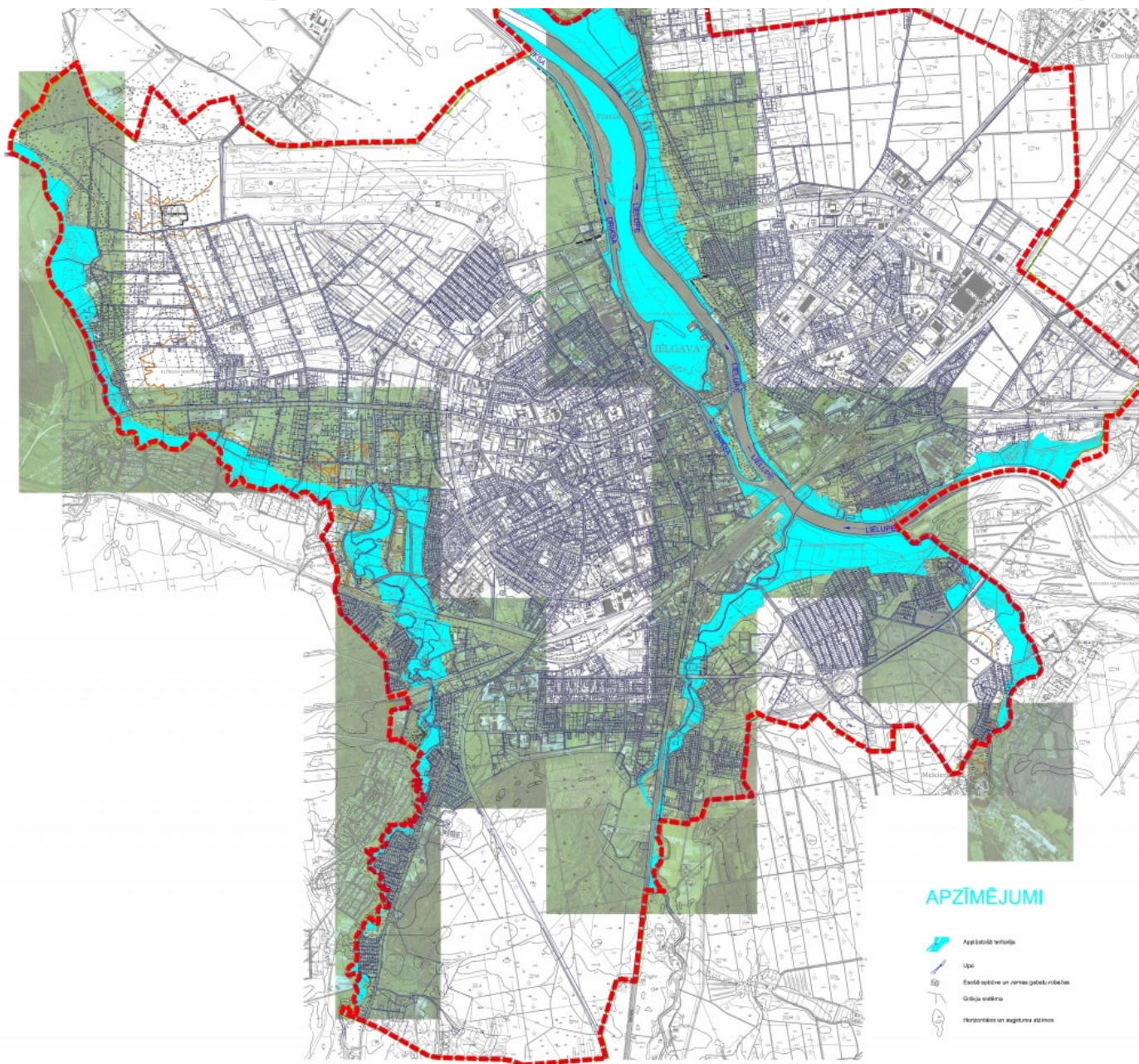
# Local spatial plans

- **Jelgava city spatial plan 2009-2021**
- Jelgava county spatial plan 2011-2023
- Ozolnieki county spatial plan 2006-2018





# Floodplain zone in Jelgava city

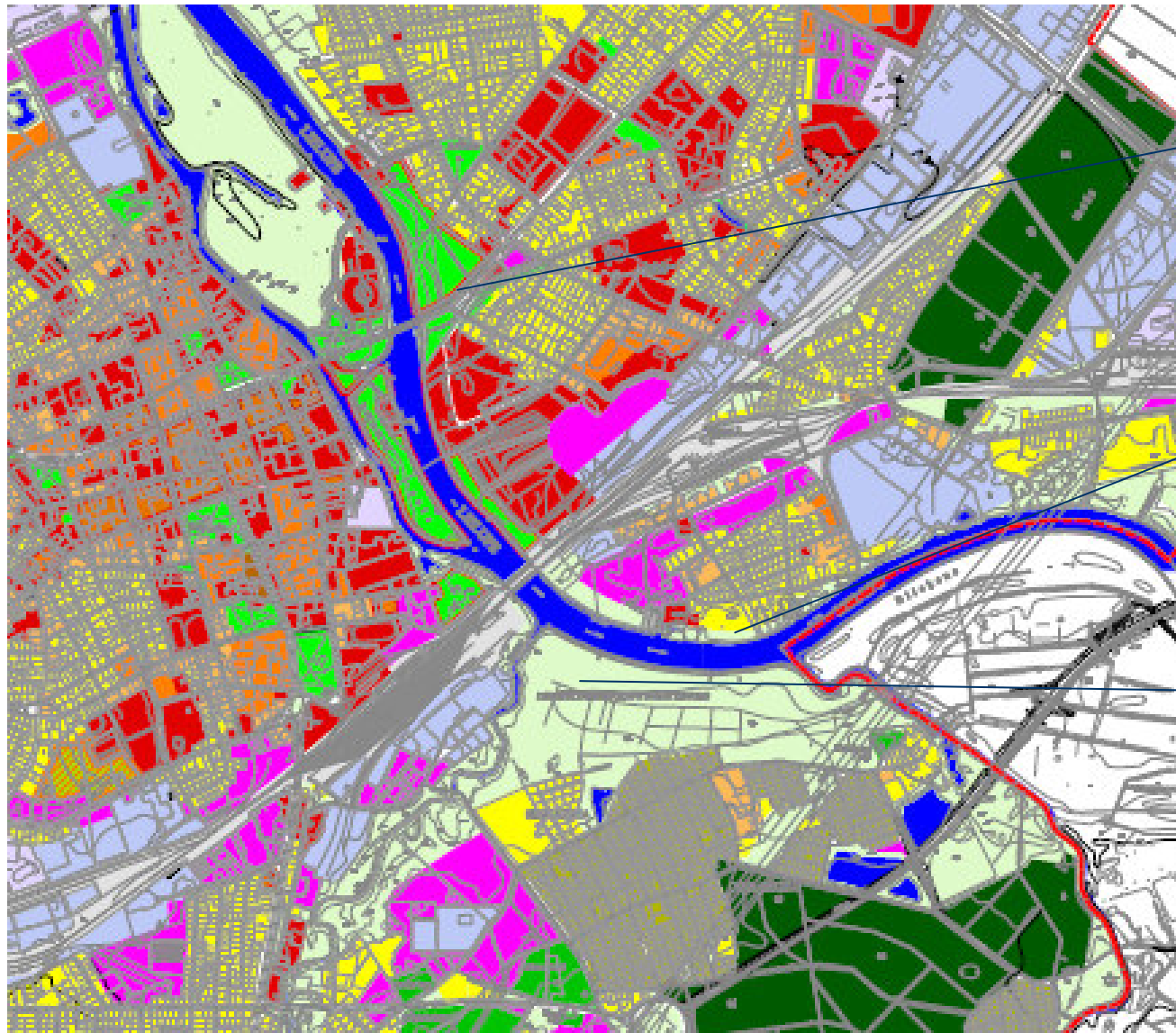


34% of territory is in flood risk zone

High groundwater levels



# Spatial zoning



**Recreational  
areas**

**Individual  
houses**

**Nature  
conservation  
areas**





## Programme of measures

- renovation and to build new infrastructure in the city, thus reducing the flood risks
- renovation of the flood-gates of polders, channels;
- dredging the river beds;
- building a new protection dam;
  
- **TOTAL budget: c.a. 10 mill. EUR (2014-2015)**