

# D.T3.3.2 FUA-LEVEL COLLABORATIVE VISIONS ON CREATING ENABLING LOCAL FRAMEWORKS OF CUW USE

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Subtitle

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## INTRODUCTION

*Summary of chapters 1-5. The description of stage of local strategies on circular urban water management preparation covering vision creation, goal and objectives setting.*

FUA Maribor is the second most densely populated area in Slovenia. Water circle in this area is covered by three companies - MBVOD, Nigrad and Aquasystems. Due to condition of water and sewerage infrastructure is created a vision of promoting sustainability, reusing of purified wastewater and recycling to protect our natural sources and to keep them in good conditions.

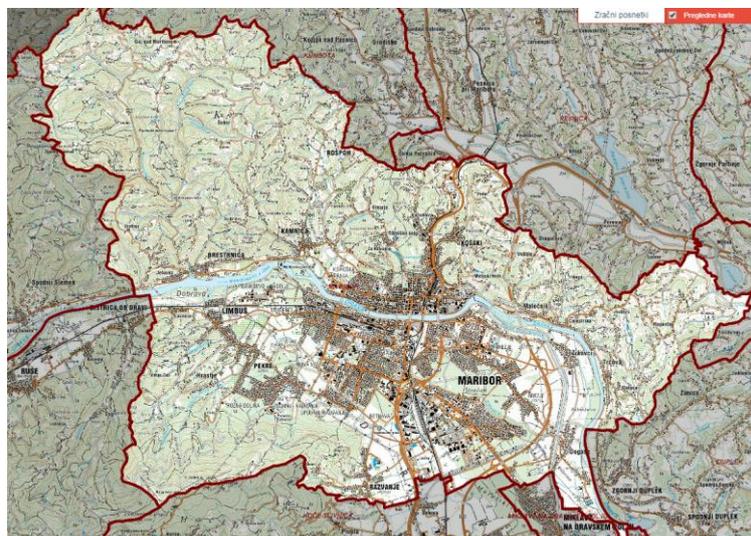


# 1. Determination of the territory covered by the strategy

## Description of FUA as territorial unit.

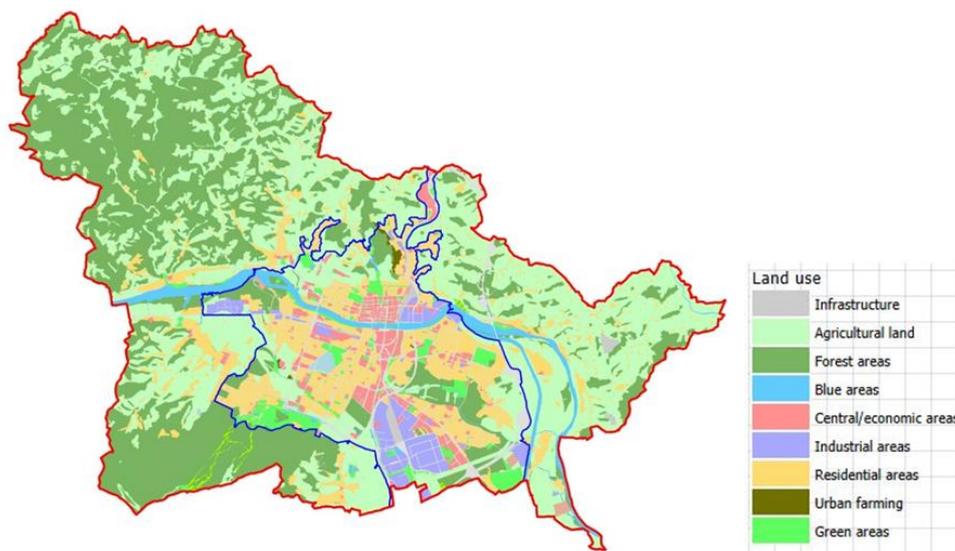
The territory of the FUA Maribor covers 147,5 km<sup>2</sup> with population of 110.871 inhabitants, measured in 2018. Main river is Drava with flow rate cca. 670 m<sup>3</sup>/s and good water quality. The average annual precipitation is 926 mm.

The core of FUA Maribor is Maribor city center. Water circle in FUA Maribor is covered by 3 companies. MBVOD (Maribor water supply) is responsible for drinking water supply, NIGRAD (stakeholder) is responsible for sewerage system and AQUASYSTEM for wastewater treatment. FUA Maribor does not have established wastewater pipeline system for reusing purified wastewater .



Source: GIS

Green area in the entire FUA is about 86,4 %, but percentage of green spaces in urbanized areas is 58,6 %.



Source: GIS



## 2. Stakeholder involvement

*The description of the stakeholders, and the way of their involvement in strategy building process.*

MBVOD provides extraction, sanitation and distribution of drinking water for the FUA TOTAL AREA. Sanitation and purification of drinking water is natural by sand filters. Water losses in FUA MARIBOR are about 31,5 % in 2018 and the percentage of population with access to the water supply network is 98,1 %. There is no dual water distribution system.

Public company Nigrad is responsible for sewerage system. The city does not face challenges with droughts, flooding or other, that are the consequence of climate change, but this still does not mean that the city is neglecting these topics. When, approx. every 5 years in the summer, is a day that brings a lot of rainfall, it could happen that the sewer system is overloaded and water can, at that moment, overflow. To address this issue the city and Nigrad are investing in the expansion of the sewerage system, but still this is not prevalent problem for the city, since the Maribor region is the area of Dravsko polje, that is mainly on gravel pebbles and the water drains into the groundwater.

Private company Aquasystem is responsible for wastewater treatment plant with capacity of 190.000 PE but for now only 136.000 PE is connected to it. Purificated water is of good quality, which is confirmed by regular testing. While MARIBOR FUA has no pipeline system for reusing of purified wastewater, there is no possibilities to reusing it - purified wastewater for now flows into the Drava river.

## 3. Baseline assessment

*The synthesis of quantitative and qualitative assessment. The data and analysis essential for creation a common vision together with stakeholders.*

Quality of drinking water in FUA Maribor is good, which is confirmed by regular testing by National laboratory for health, environment and food. Due to a fact that by the year 2000 FUA Maribor consumed approx. 30 % more water than nowadays, there are also still reserves of drinking water. Another fact is, that drinking water in FUA Maribor is relatively cheap. Water losses in FUA MARIBOR are about 31,5 % so water infrastructure is not in very good condition. There are needs to invest in some parts of water system with replacing old pipelines.

A lot of rainfall is a treat for sewerage system, which is also not in good condition so there is a need for investments. On the other hand there is still a large amount of purified wastewater, but for now there are no possibilities to reuse it. Due to a fact that investment in wastewater pipeline system would be enormous and the fact that drinking water is relatively inexpensive, the main question is the price of purified wastewater and if investment in recycled wastewater pipeline system would be economically justified. But for sure we have to find possibilities for reusing it and a pilot project in this project is first step in this way.

The greatest challenge of the city is the air quality. The city has a decree on the Air Quality Plan in the Municipality of Maribor that defines measures in three main areas: energy, transport and the support area of information and awareness.



## 4. Vision

*The concise description of FUA's desired future state with suggested time horizon for the strategy 2030. The description of outputs of vision creating process (What visions were proposed by stakeholders? How was the joint vision chosen?)*

Due to a fact, that MARIBOR FUA has no network for reusing of purified wastewater, for now there are no possibilities to reuse it. On the other hand, investment in purified wastewater pipeline system would be enormous, but for sure there are possibilities for using it. Vision is focused in certain stakeholders to promote reusing of purified wastewater, sustainability and to maintain quality of water sources.

## 5. Strategic goals and objectives

*The list of strategic goals and relevant objectives (incl. indicators, state-value and tasks).*

Conclusions of proposed strategic goals and objectives:

1. **Decrease % of water losses with investments in old parts of water supply network** - although Maribor FUA in the past years managed to reduce water losses in some parts of network, every year local communities of Maribor FUA are dedicating less investment funds to replace old parts of water supply network. Old network is not replaced according to the amortization plan and the trend of water losses is expected to be rising in the next years.
2. **Increase retaining rainwater on the site as long as possible for potential further use** - so far only new buildings are recommended to have solutions for keeping rainwater on the site. In Maribor, it would be necessary to identify locations in the city, where rainwater retainers could be installed and rainwater could be used for further use (to water city parks, ect...)
3. **Increase efficiency of water use among industry and households in Maribor with setting up water price system, which would encourage efficient water use** - initiatives for efficient water use are already in action by Maribor Water Supply (MBVOD) and 90% of citizens already use tap water, but so far policy governance approach was used to encourage efficient water use.
4. **Reuse of rainwater and wastewater for production purposes** - in Slovenia and in Maribor FUA reusing water for production purposes has not been a common practice so far. Therefore in the future, the goal is to support and encourage good practice examples, that would contribute to change of business practices.