

Enhanced real-time measuring and forecasting technologies for combined sewer systems

Rafał Ułańczyk¹, Agnieszka Batóg²

PREPARED – AIMS AND BENEFITS FOR CITIES

The city of Gliwice (Water Supply and Sanitation Company – PWiK Gliwice) in collaboration with the Institute for Ecology of Industrial Areas (IETU) participates in the project **PREPARED – Enabling Change**. The project aims at developing short and long-term adaptation strategies of urban water systems to combat the impact of climate change, being extreme rainfall events, water resource scarcity / quality changes.

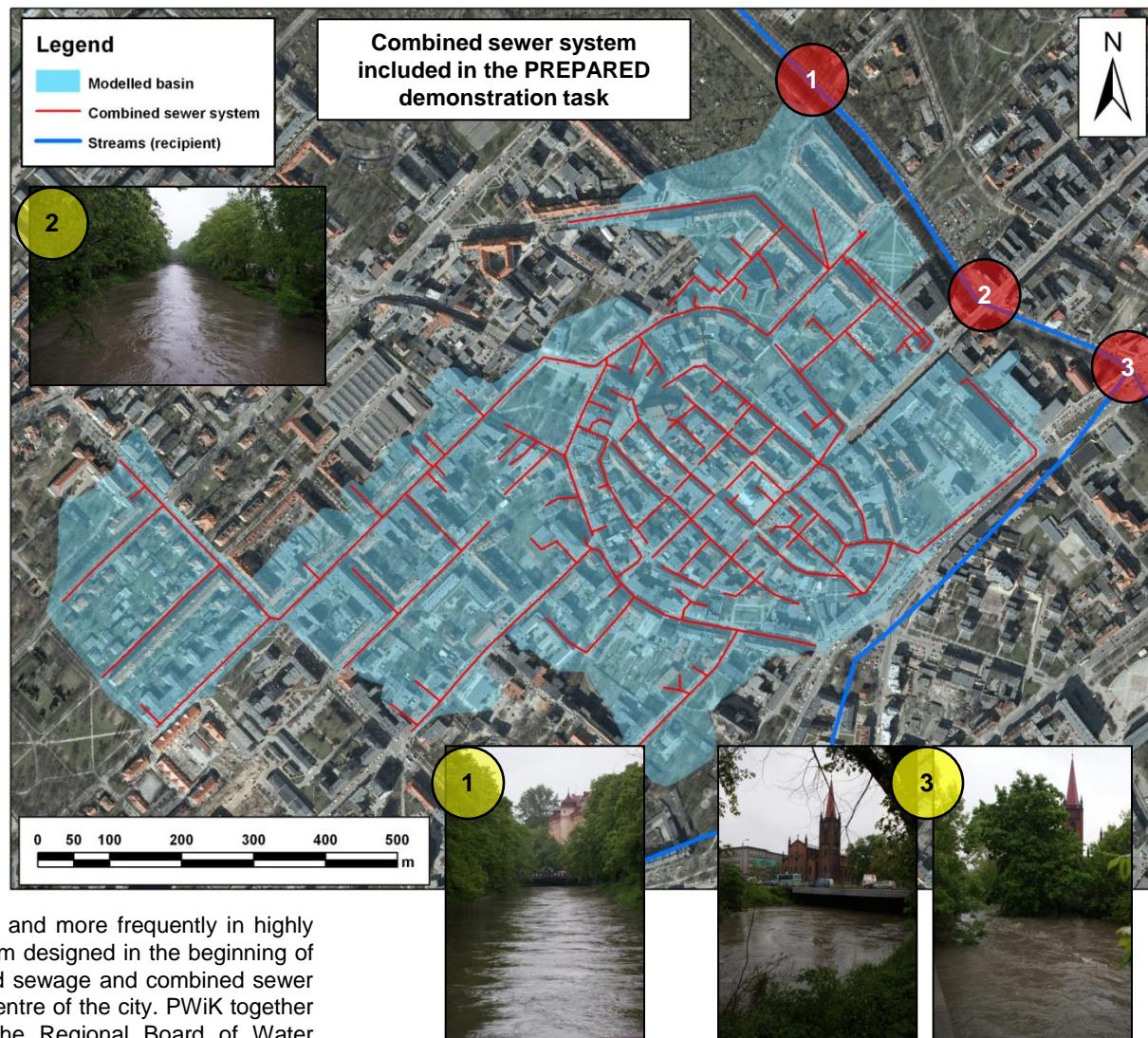
As an essential part of the project a set of adaptive solutions are demonstrated together with 12 European cities / regions and two non-European ones: Aarhus, Barcelona, Berlin, Eindhoven, Genoa, Istanbul, Gliwice, Lisbon, Lyon, Oslo, Simferopol, Wales, Melbourne, Seattle.

Some of demonstration have already started and all demonstrations will be completed by the end of 2013.

Solutions and tools developed and demonstrated in the PREPARED project are tailored to address regional problems as they are brought into the project by individual participants and end-users. In Gliwice, for instance, the problem is the management of combined sewer overflows – how to predict and control them. The solutions developed within the project are tested locally for roll-out and application at a larger scale in other European cities. In Gliwice tests will be carried out in 2013. Apart from solving regional problems, an additional advantage for end-users (as Gliwice) is the ability to have early access to the newly-developed technologies and knowledge generated around the world and to be able to implement tools and knowledge in their day-to-day practice.

CLIMATE CHANGE IMPACT AND PROBLEM TO BE SOLVED

As a consequence of short, but heavy rainfalls occurring more and more frequently in highly urbanised area of the city of Gliwice, the combined sewer system designed in the beginning of last century poses difficulties. The recipient of rainwater, treated sewage and combined sewer overflows in Gliwice is the Klodnica River passing through the centre of the city. PWiK together with IETU, the city authorities and other bodies including the Regional Board of Water Management (RZGW) are working on maintaining an acceptable quality of the Klodnica River through the storage of storm water surface run-off and combined sewers overflows. The first step to solve the problem of combined sewer overflows in Gliwice is to assess their frequency and impact on the receiving waters. Then, using a model of sewer system coupled with short-term rainfall forecasts, the system can be monitored in real-time and in the near future, also be controlled.



The city of **Gliwice will demonstrate enhanced real-time measuring and forecasting technologies for a combined sewer system**.

This demonstration will be done for the central, historical part of the city, where it is difficult to separate the combined sewer system because of the density of this built-up area.

The system tested in Gliwice will integrate:

- Rainfall monitoring, combined sewer flow and combined sewer quality;
- Real-time model of the combined sewer system;
- Short-term forecast of the precipitation.

- 1) IETU - Instytut Ekologii Terenów Przemysłowych (Institute for Ecology of Industrial Areas) E-mail: ulanczyk@ietu.katowice.pl
- 2) PWiK - Przedsiębiorstwo Wodociągów i Kanalizacji w Gliwicach (Water Supply and Sanitation Company in Gliwice) E-mail: agnieszka.batog@pwik.gliwice.pl

