

THE 2025

WATER CITY INDEX

Marcin Ćmielewski
Jakub Głowacki
Jerzy Hausner
Michał Kudłacz
Krzysztof Kutek
Szymon Marczak
Klara Ramm
Andrzej Tiukało

**EFFICIENCY RANKING
OF WATER RESOURCES
USE IN POLISH CITIES**

THE 2025 WATER CITY INDEX

EFFICIENCY RANKING OF WATER RESOURCES USE IN POLISH CITIES

RANKING AUTHORS

PROFESSOR JERZY HAUSNER

Chairman of the OEES

The Foundation of Public Economy and Administration



dr hab. MICHAŁ KUDŁACZ

Professor at the Krakow University of Economics

dr JAKUB GŁOWACKI

Department of Public Economics

Krakow University of Economics



dr inż. KLARA RAMM

Senior Water Management Specialist, Arcadis

Project manager at Polish Waterworks Chamber of Commerce

dr hab. inż. ANDRZEJ TIUKAŁO

Professor at the IMGW PIB

Senior water management consultant, Arcadis



KRZYSZTOF KUTEK

Director Water and Climate Change, Arcadis

MARCIN ĆMIELEWSKI

Chief Water Management Specialist, Arcadis

SZYMON MARCZAK

Junior Specialist, Arcadis

SCIENTIFIC EDITORIAL:

dr hab. MICHAŁ KUDŁACZ, KRZYSZTOF KUTEK

This publication represents the authors' point of view



TABLE OF CONTENTS

Introduction	4
Applied research methodology	8
The ranking results	
The 2025 Water City Index	12
Foreign cities	
The 2025 Water City Index	20
Tampere (Finland)	22
Riga (Latvia)	24
Kaunas (Lithuania)	26
Bratislava (Slovakia)	28
Budapest (Hungary)	30
Nice (France)	32
Water footprint	34
Intepretation of the 2025 Water City Index results	38
We Care for Water Coalition: A Partnership for the Water Security of the Żywiec Region	51
Authors	54

INTRODUCTION

PROF. JERZY HAUSNER



One finds it difficult to separate reflections on water from the experience of the catastrophic flood which affected numerous areas and communes of the Lower Silesian and Opole voivodeships in September 2024. In hindsight, it becomes apparent that there are no solutions capable of preventing a “great deluge” of water. At the same time, the flood prevention measures undertaken in the past were not only insufficient (for they could not be sufficient) but also largely inadequate, as they were designed to prevent floods that had already occurred in the given area. Meanwhile, the inevitably progressing climate changes and many other circumstances cause the emergence of new types of floods (for example, urban flash floods, as in the tragic case of flooding in Valencia, referred to as the “rain river”).

What we need is an institutional framework which will make it possible to overcome limitations of extrapolative managerial thinking and to develop a regenerative and transformative approach, in which preventive actions are intelligently linked with those aimed at developing the capacity for comprehensive crisis response and regenerative adaptation.

Water security may only be achieved when it is collectively and developmentally produced through active involvement. Technical and infrastructural solutions must be accompanied by social and organisational ones. Technical circularity (recycling) needs strengthening by socially embedded regeneration (developmental circularity).

Water (as well as other critical resources) should be put at the centre of social thinking and design. Yet, as proved by the experience of many flood-affected areas, it disappears from collective reflection and activity once it disappears from the media. In the case of water, this is the rule. Cut-down trees are visible, whereas the destruction of life in rivers usually is not, that is until shoals of dead fish surface. Hence, among other, the proposal to grant rivers legal personality and to establish by law the



social role of “river advocates.” May as justification serve also the fact that the natural “logic” of a catchment area does not coincide with the formal “logic” of administrative divisions. Only a healthy river is capable of regeneration.

Water and wastewater companies are no longer to be treated merely as organisations responsible for producing and delivering clean water, focused on cost reduction and fee collection, both seen as determinants of their efficiency. They must become advanced centres of knowledge on water management and providers of a range of public utility services.

The value of the water sector cannot be determined by the value of its assets, its turnover, or profit. Calculated in such way, for instance in comparison with the cosmetics or pharmaceutical industries, it fully legitimises the profitability of water pollution.

An existential good, water cannot be treated as a commodity. It must be recognised as a valuable resource, access to which conditions the production of other goods - both market-based and public utility ones. Therefore, the value of water-sector organisations should be assessed through the value and indispensability of the range of goods provided thereby.

Water-sector organisations, as public utility entities, should be regarded as key nodes of cooperation among various types of actors within a given locality, including investors from other sectors, such as energy, food, or health. This would enable joint development of a definition of the public purpose in the discussed area and an adequate investment strategy oriented towards the co-generative production of goods and maintenance of regenerative processes.



At present, more than 60% of Poland's inhabitants live in cities, with a particularly significant increase in the number of inhabitants in large cities recorded over the last decades. This dynamic growth of urban populations in recent years generates problems related to their management and to the planning of their development. One of these problems is the excessive burden on the natural environment caused by the rapid and not always properly controlled process of urban expansion, as well as by the living and professional ac-

tivity of such large masses of people. Therefore, there arises a need for the adaptation of cities to climate change, but also to changes taking place in the material and social structure of cities. This poses a number of tasks for the authorities responsible for water management, the most important of which are:

- necessity to adjust water supply and wastewater disposal systems to the rapidly increasing number of inhabitants of cities, while striving to improve their quality of life;
- shaping of the green and blue infrastructure of cities in such way as to ensure their sustainable social and economic development in harmony with environmental protection.

Within the framework of the Water City Index report, readers will find the results of assessment and ranking of selected cities according to the degree to which they cope with these most important challenges. For assessment of cities, there were employed determined values of all components of their water footprint, as well as values of the original index characterising the impact of these cities on the local hydrological water cycle. The results presented in the report will enable not only assessment of the efficiency with which individual cities make use of available surface and/or groundwater resources, but also evaluation of the challenges faced by cities and resulting from the periodic shortage or excess of precipitation water caused by disturbance of the natural hydrological water cycle.

It is my desire that you recognise the benefits brought by our elaboration of publicly available data in the process of integrated management of your city's water resources.



We hereby present to you the latest edition of the Water City INDEX report. Ours is a belief that our work makes a significant contribution to the ongoing discourse on water in urban environments. Water understood as a threat, an indispensable resource for the development of cities and economies, but also a source of inspiration for the creation of culture.

The past year has not spared us challenges and phenomena directly marked by water. Much has happened not only in Poland but also worldwide. Climate change is taking place before our eyes, and its consequences affect – directly or indirectly – each of us. In cities, we face the problem of historically low water levels, as in this year's example of the Vistula River in Warsaw. There are also catastrophic urban floods, for instance in Valencia or in Italy (Bologna, Ravenna, the Emilia-Romagna region). This speaks to the importance of reflecting on resilience of cities.

However, urban resilience cannot be limited solely to floods and droughts; it also means the necessity to secure drinking water resources as well as those required to maintain competitiveness of urban economies. Action should be taken not only during and immediately following a crisis. It is essential to seek permanent systemic solutions, to support local governments, and above all, to build awareness among residents concerning water management.

Unfortunately, the frequent lack of knowledge and inadequate use of “weather events” result in our forgetting how important protection is – protection of us, the inhabitants – which must often be implemented at our expense, yet for our own benefit. The memory of tragedy fades when we are required to sacrifice something for the protection against high water. Many losses could have been avoided and may still be possible to compensate in the future.

Particularly important is agency in the implementation of already planned actions and execution of the vision for improving the resilience of areas, which in the past were already affected by water crises. The interest among decision-makers appears also to be increasing, which raises hopes of improving water security in Poland.

Of great concern, however, is the shortage of qualified personnel in the field of urban water management. There remains much to be done for the current and future generations in this area. Yet there is hope, as the “water” community is becoming increasingly visible and stronger. Water is being discussed more and more, and with greater openness – among others, by means of events such as the City – Water – Quality Congress and by means of the Water City INDEX.



APPLIED RESEARCH METHODOLOGY

The 2025 Water City Index was developed on the basis of the same methodology as the one used in the previous ranking's editions. Similarly, great emphasis was placed on measuring the activity of local governments and on direct effects of implemented policies by means of indicators which reflect changes in their values occurring in the years 2020–2024.

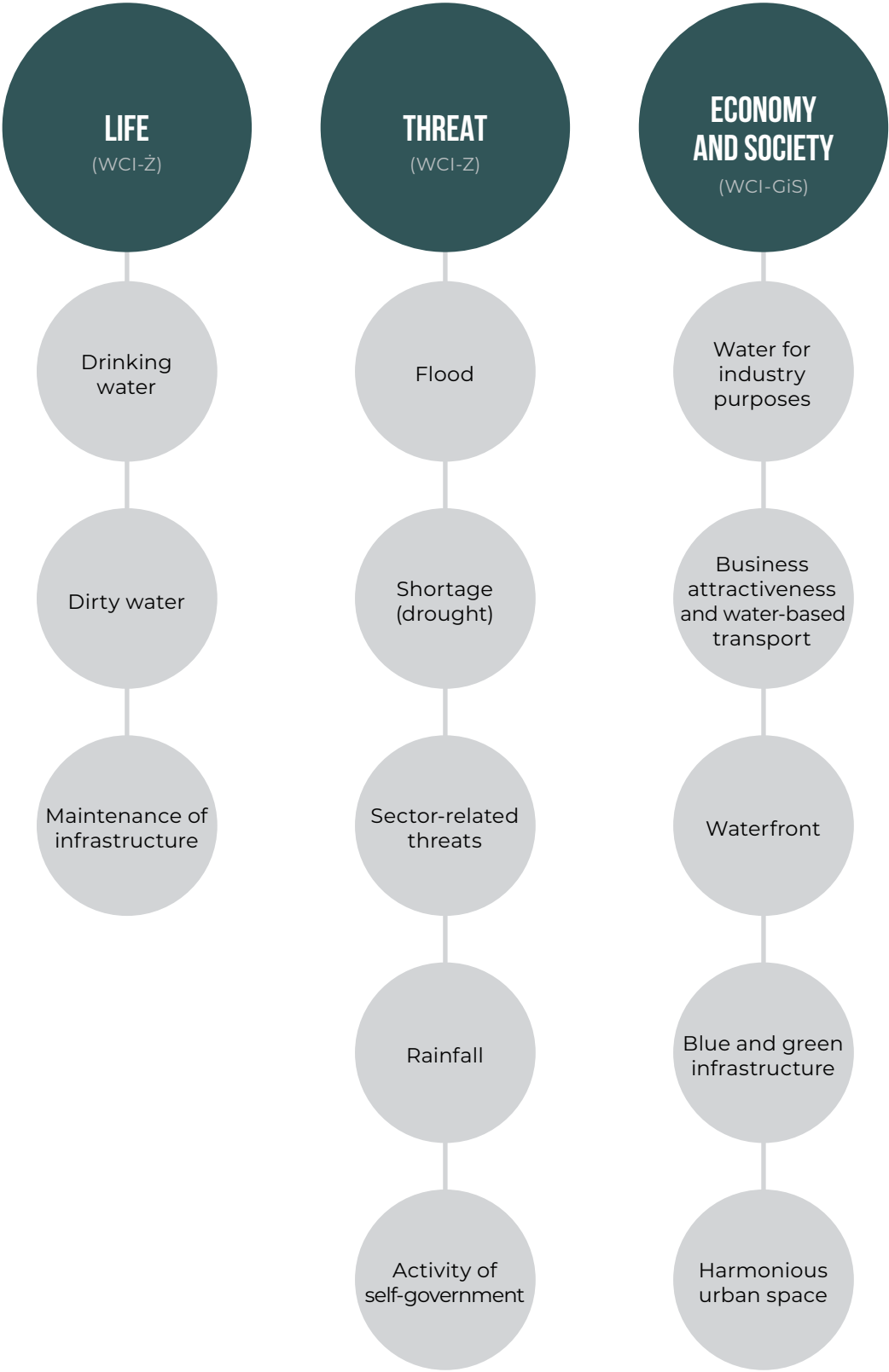
The 2025 Water City Index was traditionally drawn up for three categories of Polish cities: metropolises (8 cities), other cities with poviatic rights (58), and cities without poviatic rights which, in the year of the first WCI edition, had at least 20,000 inhabitants (152). There were distinguished 8 metropolises from the group of cities with poviatic rights on the basis of such criteria as the number of inhabitants (at least 200,000), the level of technological advancement of the water and sewage infrastructure, and the complexity of social and economic problems.

The 2025 WCI covers three categories and thirteen subcategories of assessment. The index for cities without poviatic rights was developed on the basis of a single aggregate category. Their structure is presented in the figure below.

The sequence of activities undertaken in creating the index was as follows:

- division of urban water policy into three areas;
- division of the areas into thirteen categories;
- quantification of the thirteen categories with the use of a set of over forty indicators;
- obtaining of quantitative data;
- assignment of weights to indicators and indices for individual categories;
- aggregation of results and interpretation of data.

FIGURE 1. AREAS AND CATEGORIES OF MUNICIPAL WATER POLICY ASSESSMENT



Source: own study.

In the calculations of the index for cities with poviata rights, there were used over forty different indicators, derived from the following sources:

- Local Data Bank of the Central Statistical Office of Poland (Bank Danych Lokalnych Głównego Urzędu Statystycznego, BDL GUS);
- Topographic Object Database (Baza Danych Obiektów Topograficznych, BDOT10k);
- Flood Risk Maps (Mapy Zagrożenia Powodziowego, MZP);
- Institute of Meteorology and Water Management – National Research Institute (Instytut Meteorologii i Gospodarki Wodnej – Państwowy Instytut Badawczy, IMGW – PIB);
- Polish Waterworks Chamber of Commerce (Izba Gospodarcza Wodociągi Polskie);
- authors' own survey conducted among cities with poviata rights.

The assessment in the “**Life**” category was based, among others, on the following indicators: the price and change in water consumption in the city, the price and production of wastewater, density of the water supply and sewage networks in the city, and expenditures incurred by cities on wastewater management and water protection. In the “**Threat**” category, the index was calculated on the basis of indicators such as: the share of the city's area within the flood risk zone, the length of flood embankments in relation to the area of flood risk zones within the city, annual precipitation per sealed surface, the number of water supply failures per total network length, and the percentage of biologically active areas within the city. The index for the “**Economy and Business**” category was calculated, among others, on the basis of water consumption by industry, the number of enterprises operating in the water transport sector, and the number of watercourse crossings (bridges) in relation to the total length of watercourses in the city. The last area (“**Culture and Inhabitants**”) was based on indicators such as: the length of the shoreline within the city, the percentage share of surface waters in the total city area, the share of parks, green squares, and housing estate greenery in the total area, as well as the share of municipal expenditures on green space maintenance in the city's own revenues. All indicators were standardised with the use of the following procedure:

$$t_{ij} = \frac{X_{ij} - \bar{X}_j}{S_j}$$

where:

t_{ij} – value of standardised indicator j for city i ,
 X_{ij} – value of indicator j in city i ,
 $\bar{X}_j$ – arithmetic mean of indicator j ,
 S_j – standard deviation of indicator j .

As a result of the standardisation process, there were developed four sub-indices (WCI-Ż, WCI-Z, WCI-G, WCI-K) in the respective assessment categories, which served as the basis for constructing the main index (WCI). The values achieved by metropo-

lises and other cities with poviát rights constituted the basis for developing the main and detailed rankings (separately for each category) presented in this report.

FIGURE 2. STRUCTURE OF THE WATER CITY INDEX.



Source: own study.

The authors are aware that some of the strengths and weaknesses of cities in the context of the Water City Index may result from natural conditions (determinants beyond the control of city authorities), while others arise from controllable spatial, environmental, economic, and social factors. Therefore, within the framework of the Water City Index, there were applied numerous indicators in order to illustrate the progress of cities over the past four years (the years 2024 versus 2020). However, the classification should be interpreted primarily from the perspective of changes achieved by a given city over recent years, rather than solely on the basis of its absolute score and position in the ranking.

THE RANKING RESULTS

THE 2025

WATER CITY INDEX



THE 2025 WCI RESULTS

METROPOLISES

I PLACE

ŁÓDŹ

II PLACE

KRAKÓW

III PLACE

WROCŁAW

CITIES WITH POVIAT RIGHTS

I PLACE

GDYNIA

II PLACE

TARNOBRZEG

III PLACE

**GORZÓW
WIELKOPOLSKI**

MEDIUM-SIZED CITIES

I PLACE

MRĄGOWO

II PLACE

AUGUSTÓW

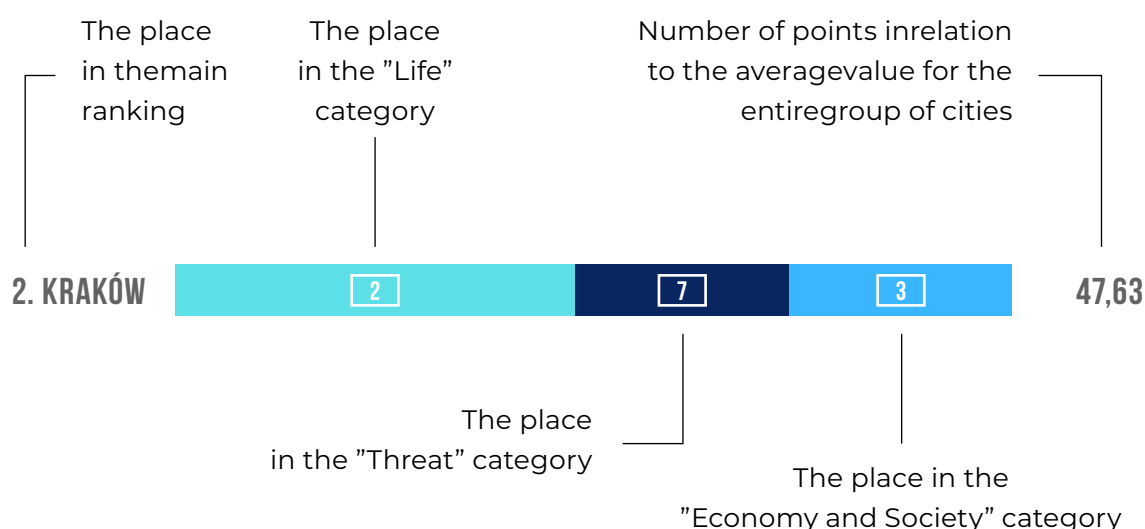
III PLACE

SWARZĘDZ

INTERPRETATION OF THE RANKING

For metropolises and cities with poviát status, the main ranking lists the results of the rankings in individual categories: The results are presented in the form of numbers indicating the position of a given city in each category, shown on the corresponding bar of the graph.

In the case of the charts prepared for the ranking of metropolises and the ranking of cities with poviát rights, the width of individual blocks in the chart reflects the share of a given category in the overall rating of the city, and since different weights were used for the three categories in the final rating, the width of these blocks is not always comparable between cities.



Rejestracja Prelegenci Program Biuro prasowe Poprzednie edycje Logowanie

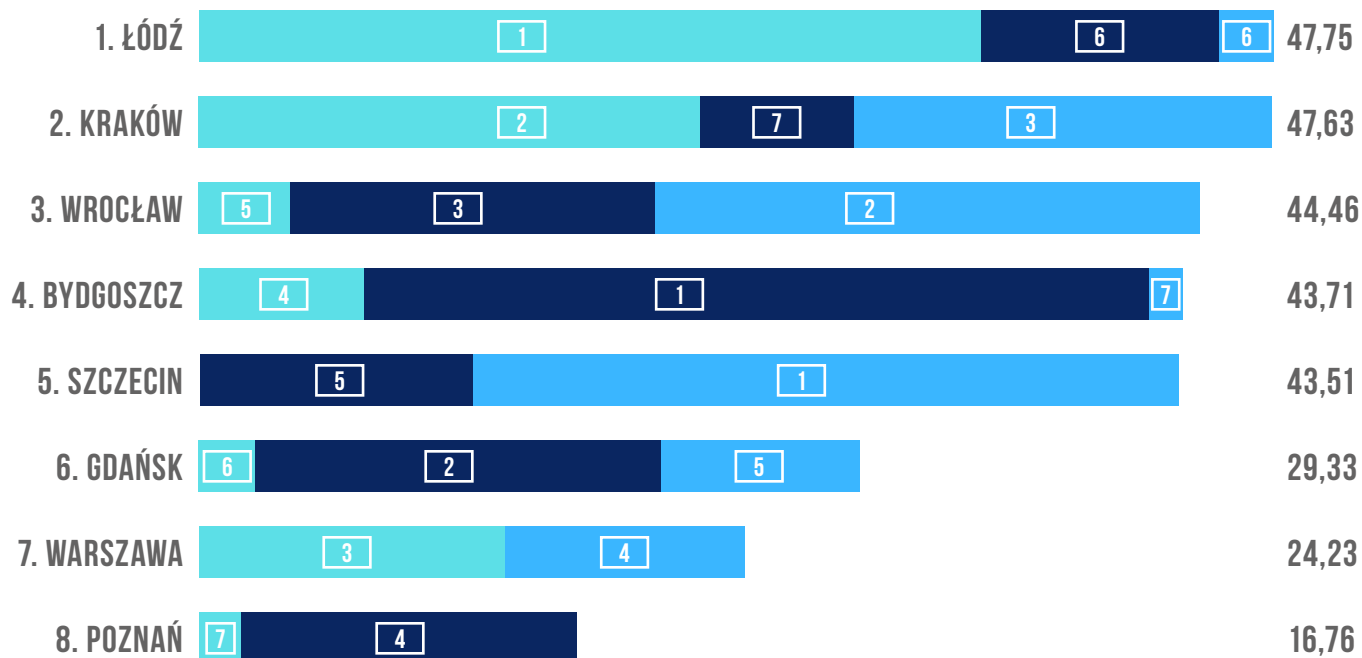
REJESTRACJA NA KONGRES [Wchodzę w to!](#)

VII Międzynarodowy Kongres
MIASTO – WODA – JAKOŚĆ ŻYCIA

21–22 października 2025
Centrum Kongresowe Politechniki Wrocławskiej

**VII MIĘDZYNARODOWY KONGRES
MIASTO – WODA – JAKOŚĆ ŻYCIA**
21–22 października 2025
Centrum Kongresowe Politechniki Wrocławskiej
ul. Janiszewskiego 8

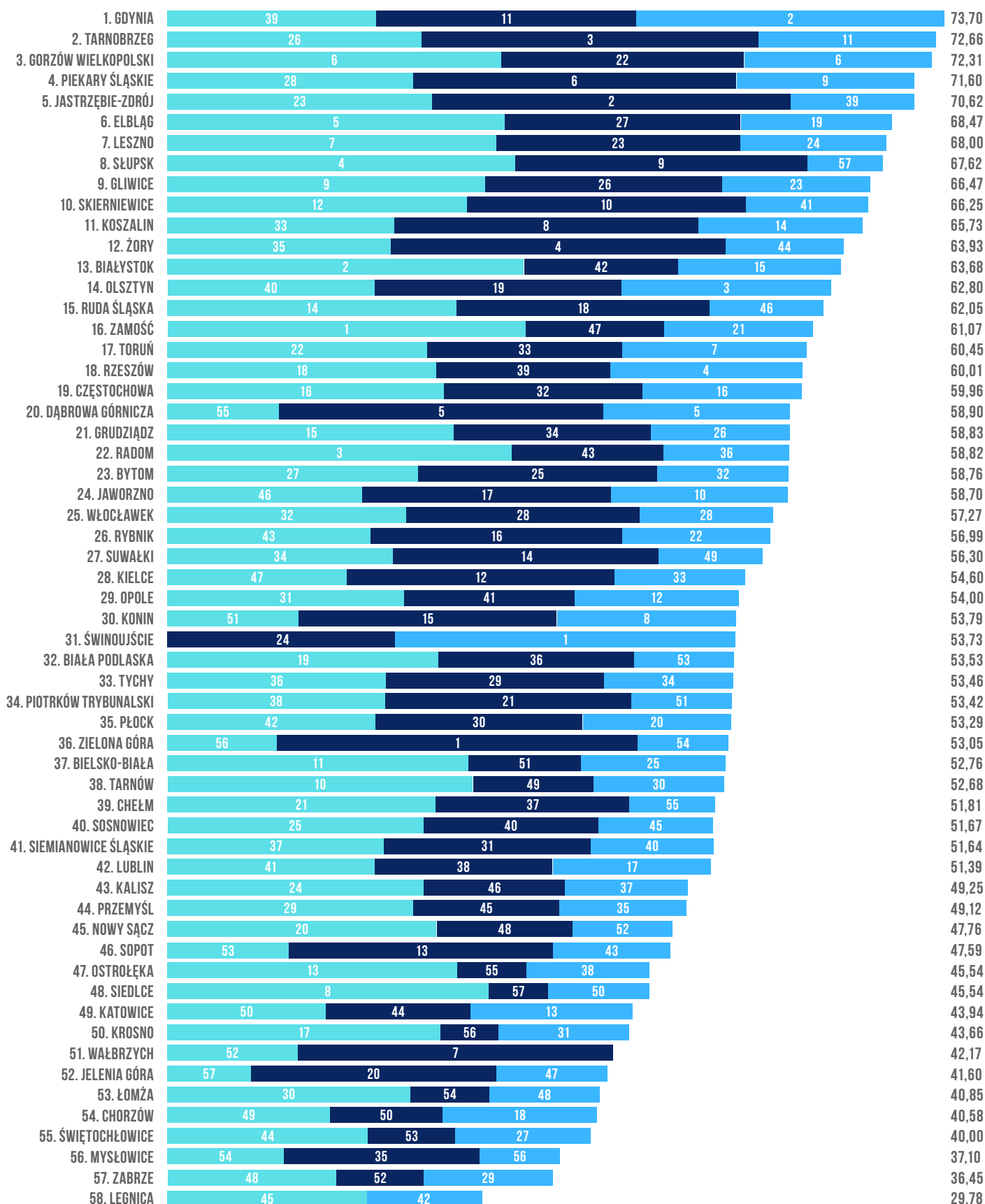
THE 2025 WCI RESULTS – METROPOLISES



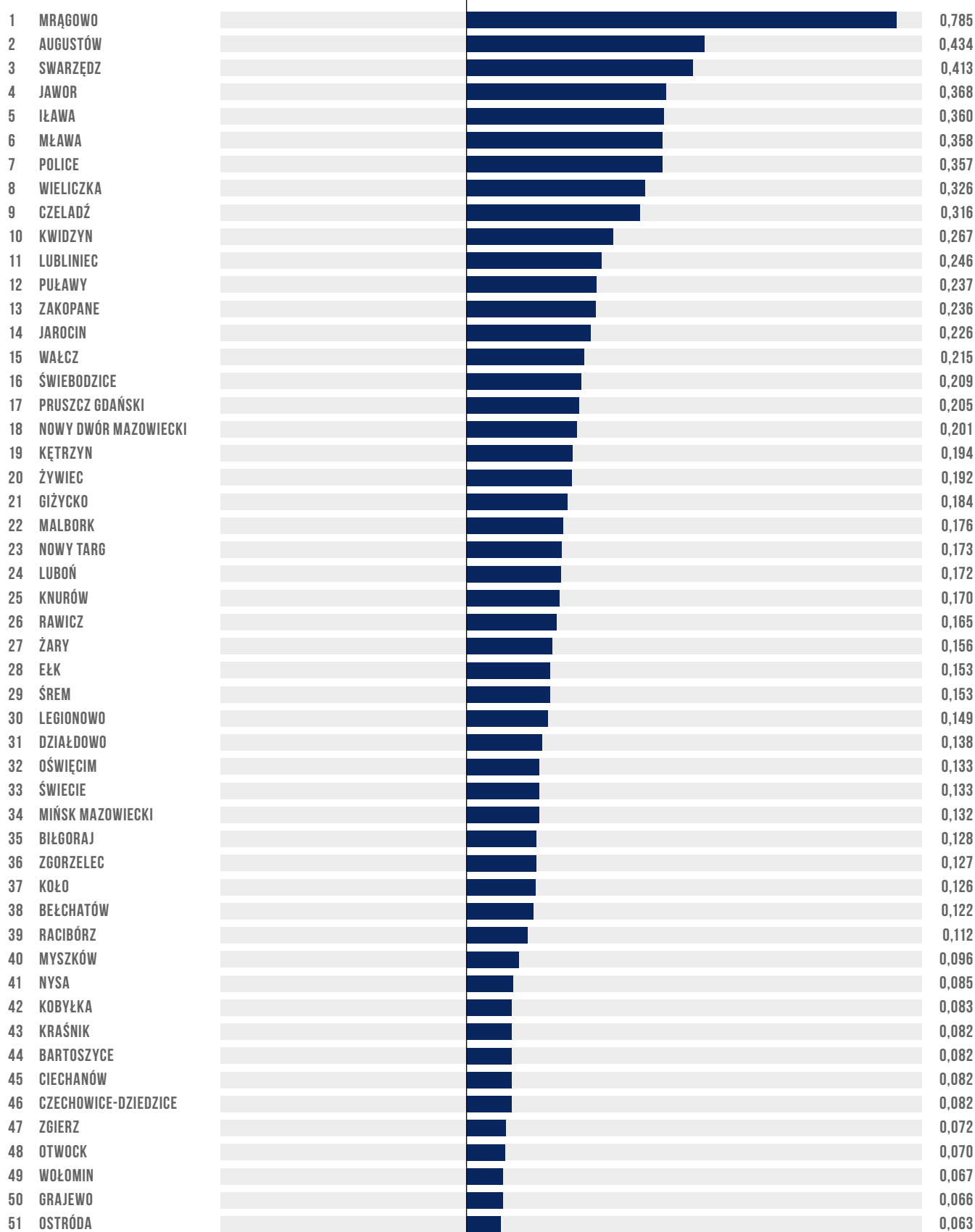
Life Threat Economy and society



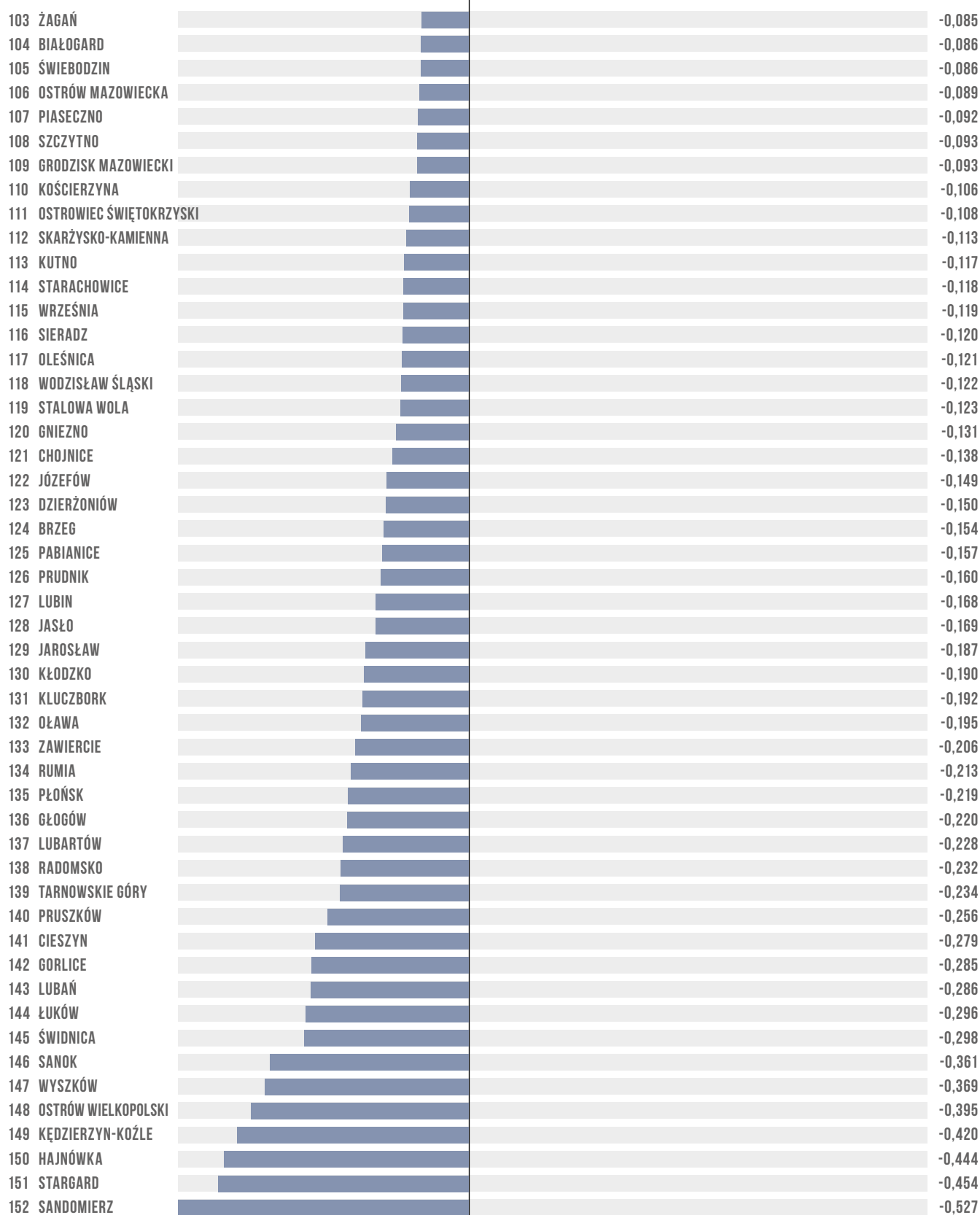
THE 2025 WCI RESULTS – CITIES WITH POWIAT RIGHTS



THE 2024 WCI — MEDIUM-SIZED CITIES



52	CHRZANÓW	0,062
53	GOLENIÓW	0,062
54	ORZESZE	0,060
55	MIELEC	0,060
56	TUREK	0,057
57	ZĄBKI	0,057
58	STAROGARD GDAŃSKI	0,056
59	INOWROCŁAW	0,056
60	KOŚCIAN	0,054
61	ŁOWICZ	0,054
62	TCZEW	0,054
63	WEJHEROWO	0,046
64	DĘBICA	0,025
65	OLKUSZ	0,022
66	BIELSK PODLASKI	0,021
67	BOLESŁAWIEC	0,017
68	MARKI	0,014
69	BĘDZIN	0,012
70	PSZCZYNA	0,010
71	RYDUŁTOWY	0,005
72	SOCHACZEW	-0,004
73	CZERWIONKA-LESZCZYNY	-0,006
74	BRODNICA	-0,007
75	BIELAWA	-0,010
76	ŻYRARDÓW	-0,010
77	SZCZECINEK	-0,010
78	PIASTÓW	-0,016
79	NOWA SÓL	-0,017
80	REDA	-0,021
81	WIELUŃ	-0,026
82	PIŁA	-0,029
83	MIKOŁÓW	-0,032
84	SKAWINA	-0,035
85	ŁAZISKA GÓRNE	-0,037
86	ALEKSANDRÓW ŁÓDZKI	-0,038
87	ZAMBRÓW	-0,041
88	ŚWIDNIK	-0,043
89	ŚRODA WIELKOPOLSKA	-0,045
90	LĘBORK	-0,049
91	OPOCZNO	-0,054
92	KROTOSZYN	-0,054
93	KOŁOBRZEG	-0,055
94	TOMASZÓW MAZOWIECKI	-0,057
95	ANDRYCHÓW	-0,065
96	WĄGROWIEC	-0,065
97	GOSTYŃ	-0,067
98	GRYFINO	-0,071
99	POLKOWICE	-0,072
100	NOWA RUDA	-0,080
101	ZDUŃSKA WOLA	-0,080
102	BOCHNIA	-0,081



FOREIGN CITIES THE 2025 WATER CITY INDEX



In the 2025 WCI edition, we undertook a new challenge related to the collection of data from foreign cities. Participating in the survey were six European cities (Figure). Despite their location on the same continent, climate and hydrological conditions of these cities are highly diverse.

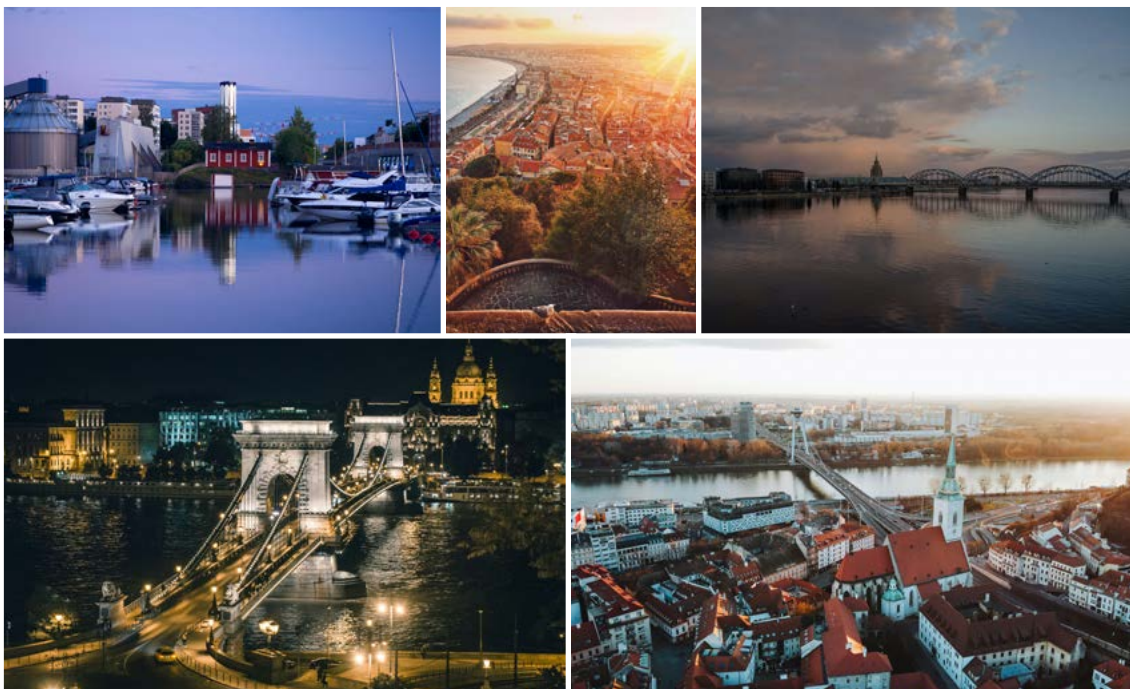


FIGURE. CITIES INCLUDED IN THE 2025 WCI SURVEY.

Situated by the sea, Riga and Nice are important centres of maritime transport and recreation, whereas Budapest and Bratislava lie on the Danube River, Kaunas on the Neman River, and Tampere sits between lakes. Such near-river and water reservoir location determines directions of water management, shaping both water supply systems and flood protection as well as retention infrastructure.

While significantly different from one another, the analysed cities share certain common elements. According to their declarations, the cities all undertake significant actions for development of coastal areas. All are oriented toward water, which determines their functioning and the well-being of their inhabitants. As far as possible, the cities in question invest in blue-green and grey infrastructure. Adaptation to climate change is implemented, among others, through programmes for stormwater management, drought response, and development of coastal areas.

The lack of funds is undoubtedly an important factor limiting investments in modernity and sustainable development. Water and wastewater infrastructure is mostly financed from fees for water supply and wastewater disposal services. Water tariffs in European cities are gradually levelling out. The cost of water supply ranges between 1 and 2 euros. Slightly higher tariffs apply to wastewater. However, it should be remembered that the household income in the analysed cities differs, and some cities have introduced a fixed (subscription) fee. In addition, the value of the VAT on water and wastewater services is diversified. In Finland, VAT for both water and wastewater amounts to 25.5%, and in Hungary to 27%. Some countries, however, have introduced reduced rates for water supply; it is 9% in Lithuania and 5.5% in France. This significantly affects the total value of the bill for water services.



TAMPERE (Finland)

The Tampere inhabitants are supplied with water by the Tampereen Vesi company, which delivers approximately 20 million m³ of water annually, of which 75% originates from surface sources and 25% from groundwater.

The new Central Wastewater Treatment Plant in Sulkavuori is an underground facility serving six municipalities and boasting to be one of the most modern installations in Finland to date. Its underground location minimises its impact on the land-



Photo: unsplash.com

scape and environment, reduces effects of low temperatures, and limits emission of unpleasant odours.

Thanks to producing energy from biogas generated from sewage sludge fermentation, the plant covers approximately 50% of its own energy demand. A significant improvement of the system was the construction of the new Viinikanlahti pumping station, commissioned in 2024, which takes over sewage from the old treatment plant and transfers it to Sulkavuori.

Simultaneously, the city implemented the Stormwater Management Programme, whose 2023 update for the first time covered the entire area of Tampere. The document in question includes flood threat maps and guidelines for natural stormwater management through blue-green infrastructure. The programme objective is to improve water quality and the efficiency of its use by infiltrating stormwater into the ground, delaying runoff, and using urban greenery for natural retention. Blue-green infrastructure integrates wetlands, ponds, and parks, both for the purposes of flood control and recreation.

Tampere monitors the risk of flooding from two lakes (Näsijärvi and Pyhäjärvi) and adjusts shorelines by creating retention reservoirs and natural buffer zones. The lakes constitute both a strong asset and a distinctive feature of the city, while the waterfront plays a crucial role in recreation, swimming, and water sports.



Photo: unsplash.com

RIGA (Latvia)

The capital of Latvia, Riga draws water from two main sources: surface water from the Daugava River, supplying the left-bank part of the city, and groundwater intakes at Baltezers–Zaķumuiža for the right-bank part. The country's largest wastewater treatment plant, Daugavgrīva, serves over one million inhabitants. Between the years 2021 and 2024, the city modernised its key sewage pumping station, thus eliminating consumption of 300,000 m³ of drinking water annually for pump



Photo: unsplash.com

cooling. Electricity expenditures were reduced by 55%, which translated into a decrease in energy demand by 2.5 million kWh. In 2023, the new facility pumped nearly 25 million m³ of wastewater. This is an example of an investment combining energy efficiency with protection of water resources. Worth 13.4 million euros, the facility replaced an outdated pumping station that had been in operation for thirty years.

The city invests in information systems, modernises treatment processes, and develops biogas production from sewage sludge. All these measures bring the wastewater treatment plant closer to achieving energy neutrality.

An important element of activities benefiting the city inhabitants was the introduction of free drinking water access points in public spaces.

Through continuous improvement of its infrastructure, Riga has become a model for other cities which respond to contemporary challenges of water management in a sustainable and innovative manner while caring for the environment and comfort of their inhabitants. Riga has developed a master plan for a new district, Andrejsala, in a post-industrial area on the Daugava River. The master plan integrates the industrial heritage of the waterfront with the charming UNESCO-listed historic centre of Riga. In addition to new housing, the plans include commercial, hotel, and entertainment functions, a cruise terminal, cultural facilities, schools, community spaces, and green areas. The Daugava River waterfront is being transformed through the development of public spaces, pedestrian zones, and multifunctional projects, thus linking water management with urban life quality.

The coastal and riverine location made Riga invest in flood embankments, pumping stations, and monitoring systems protecting against Baltic storms and Daugava River floods.

The Daugava waterfront and canals are integrated with tourism, where boat cruises, recreational areas, and seasonal attractions are offered.

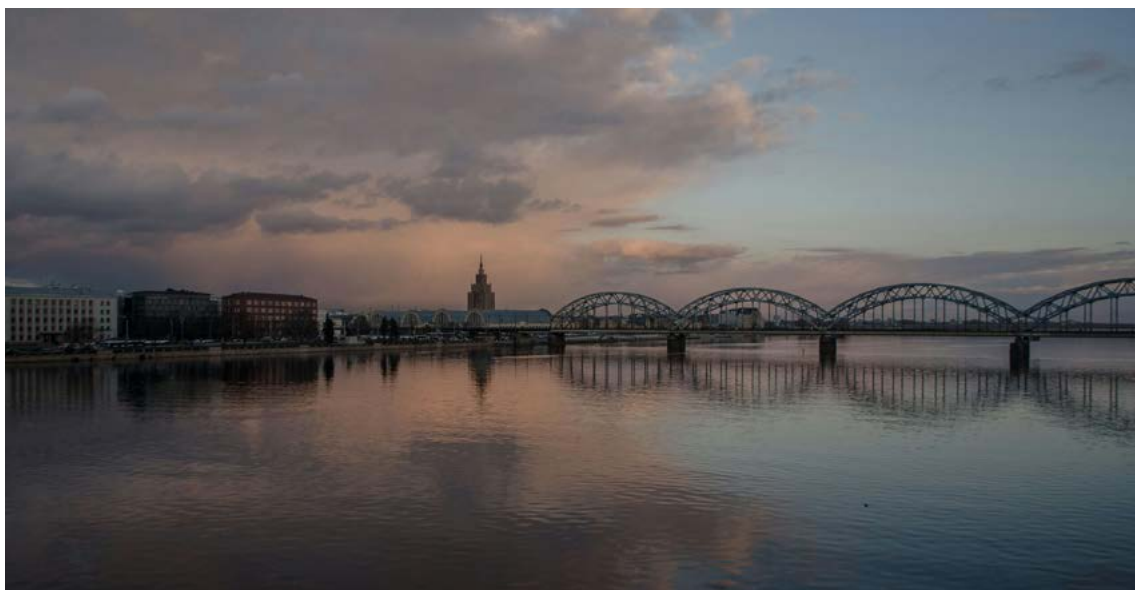


Photo: unsplash.com

KAUNAS (Lithuania)

UAB Kauno vandenys is the municipal water and wastewater company which bases its water supply on groundwater and its wastewater management on the central wastewater treatment plant in Marvelė (Kauno nuotekų valykla). The company treats the vast majority of wastewater generated in the city and plays an important role in protecting the waters of the Neman River - the longest river in Lithuania. In order to



Photo: unsplash.com

comply with the European Union's environment protection requirements, the facility has recently undergone a thorough modernisation. In recent years, Kaunas has also undertaken investments in the digitisation of water and wastewater management systems, improving water quality monitoring, and technologies enabling recovery of energy and raw materials from wastewater.

Kaunas actively develops the banks of the Neman and Neris rivers, combining flood protection with public space, parks, and cycling paths. Considerable emphasis is put on river cruises, kayaking, and urban beaches along the Neman River.

The city, located at the confluence of two rivers, has flood embankments and spillways coordinated with energy production at nearby hydropower plants.



Photo: unsplash.com

BRATISLAVA (Slovakia)

The capital of Slovakia, Bratislava provides access to clean water and sanitation services daily for over 800,000 inhabitants through the Bratislava Water Company (BVS/BWC). The city's water supply system requires numerous investments, as most pipelines are over 70 years old. As a result, the water loss index reaches 27%, corresponding to leaks of approximately 17 million m³ of water annually. In order to address these issues, the European Investment Bank granted BVS financing of 50 million



Photo: unsplash.com

euros for the modernisation and expansion of water and wastewater infrastructure. The modernisation programme includes replacement of networks and equipment with modern, technologically efficient systems to minimise water losses, improve distribution quality, and enhance reliability of water supply.

The project also includes expansion of the water supply network, aimed at improving protection of surface and groundwater in the metropolitan region and strengthening safety of the Danube River itself. An important element of the investment is also the use of energy from biomass, which will significantly reduce the company's carbon footprint and support the city's climate action strategy. At the same time, BVS operates three wastewater treatment plants: the Vrakuňa Central Wastewater Treatment Plant, the largest wastewater treatment plant in Slovakia with a capacity of 172,800 m³/day, as well as facilities in Petržalka and Devínska Nová Ves, responsible for effective wastewater treatment and protection of water resources in the region.

Flood protection of the Danube River is of key importance, the reinforced embankments and adaptation projects having been co-financed by the European Union. Redevelopment of the Danube waterfront (Eurovea, River Park) integrates promenades, business, and recreation with the aquatic landscape. The proximity of the Danube's floodplains (areas protected under the Ramsar Convention) supports ecotourism and recreation in the nature.



Photo: unsplash.com

BUDAPEST (Hungary)

Budapest supplies drinking water to approximately two million consumers, drawing mainly from infiltration water from the Danube River - one of Europe's longest rivers. This is a natural, low-energy purification method protected by the EU environment legislation. Water from the Danube is naturally filtered through gravel-sand bottom and bank layers. Development research is being conducted on modern water treatment and quality monitoring methods, including elimination of micro-pollutants.



Photo: unsplash.com

In the Hungarian capital, the responsibility for water supply and wastewater collection is divided between two entities. Water supply is managed by Fővárosi Vízművek, while the sewage system is operated by Fővárosi Csatornázási Művek Zrt.

The city operates three main treatment plants: two on the Pest side and the largest -central one - on the Buda side. Under dry weather conditions, the plants treat approximately 230,000 m³ of wastewater per day.

Budapest faces a serious problem of an ageing water network. In 2023, there were reported 93,969 pipeline failures (an average of 257 per day). According to analyses, at the current repair rate, complete replacement of the network would take as long as 280 years. Despite its well-developed water and wastewater infrastructure, Budapest faces a significant modernisation challenge. Unfortunately, the politically motivated freezing of water and wastewater service tariffs has led to a sectoral crisis due to a lack of investment funds.

Flood embankments along the Danube River and mobile barriers protect central districts; ongoing modernisations counteract the increasing flood threat.

The city makes use of its iconic riverbanks (UNESCO World Heritage sites) for tourism, events, and cultural life. Budapest is renowned worldwide for its geothermal baths - a key element of the city's identity and tourism economy. Cruises on the Danube, boat tours, and riverside festivals make water a driving force of culture and economy.



Photo: unsplash.com

NICE (France)

Water management in Nice is the responsibility of Eau d'Azur, which serves fifty-one municipalities within the Nice Côte d'Azur Metropolis. The largest water and wastewater management undertaking in the city's history is the Haliotis 2 project, the construction of which is envisaged for the years 2024–2031, with an estimated total cost of 700 million euros. Located in Nice, the complex is looking at becoming a modern centre for treatment and resource recovery, created to protect the Mediterranean Sea and to comply with future environmental and health standards. The new wastewater treatment plant will be capable of receiving and processing sewage from twenty-six municipalities across the region, corresponding to the needs of approximately 680,000 inhabitants. The technological efficiency of the facility will enable removal of nearly 90% of microplastics.

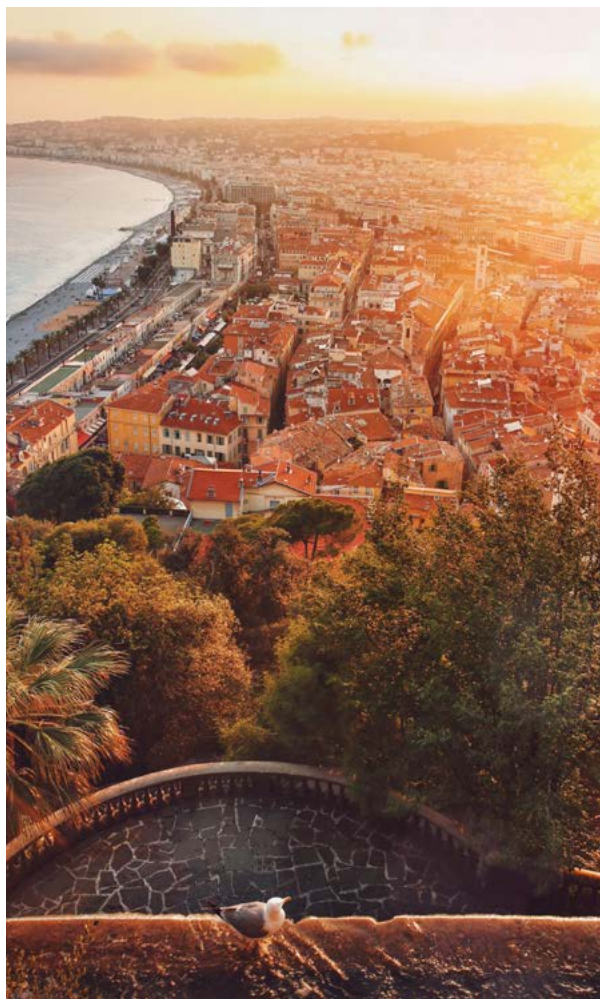


Photo: unsplash.com

Furthermore, the complex has been designed as a resource recovery and reuse centre, capable of reclaiming 5 million m³ of water for irrigating urban greenery and street cleaning. The reuse of treated wastewater directly addresses the problem of water shortages for the irrigation of biologically active areas.

Biogas from sludge will be used to produce 43 GWh of energy annually, meeting the needs of approximately eleven thousand households or serving as biofuel for nearly three hundred buses. The installation will produce four times more energy than the treatment plant currently consumes. This will contribute to reducing carbon dioxide emissions by fifteen thousand tonnes per year. An innovative element of the system will also be the recycling of sand from the sewer network, which will be reused in construction and public works. As part of the complex, there will be built a pilot fourth-stage treatment unit with a capacity of 150 m³/h, responsible for removing pharmaceutical residues and other chemical micro-pollutants.

Another investment, crucial for the environment and local community, involves creation of a 4.5-hectare biodiversity island, which will include nearly six hundred trees and shrubs, species characteristic of the region and resistant to the local climate, such as olive, thyme, and rosemary. The island will become a green zone and a natural air filter, and provide cool refuge during increasingly hot days, thus creating a new source of biodiversity and a relaxation space for inhabitants.

Severe floods in the region are frequent; therefore, modernisation projects include stormwater retention, coastal protection, and infrastructure supporting biodiversity.

Nice relies heavily on its coastal location - sailing, bathing areas, and seaside promenades. The new “biodiversity island” will simultaneously serve as an adaptive buffer to climate change and as a public amenity.



Photo: unsplash.com

WATER FOOTPRINT



The water footprint of a city is a multidimensional indicator of the city's annual "consumption" of water, conventionally referred to as green, blue, and grey water. The green water footprint represents the part of the annual volume of precipitation which has evaporated from surfaces, soil (evaporation), and vegetated areas (transpiration), as well as the portion of rainfall which has been used by vegetation located within the city area. The blue water footprint refers to the annual use of surface or groundwater for the needs of the city's inhabitants and other purposes related to the functioning of the city, as well as the portion of annual precipitation which evaporates from sealed surfaces. Finally, the grey water footprint is the annual volume of clean water required to dilute pollutant loads discharged by the city into the receiving water body to such a degree that the quality of water in the receiving body does not exceed the applicable water quality standards.

As part of the analysis of the water footprint of voivodeship cities in Poland, presented at the Conference in 2024, there were determined values of all components of the water footprint for each city, and on the basis of these data, the city that was distinguished by the lowest combined value of the blue and grey water footprint per inhabitant was identified. Such an approach resulted from an attempt to focus on assessing the efficiency of cities' use of available surface and/or groundwater resources.

In this year's assessment of urban water footprints, it was decided to also include the green water footprint, in order to raise public awareness of how an urbanised area affects the local hydrological water cycle. For this purpose, the value of the "natural" green water footprint of the area occupied by the city, that is the water footprint of an area covered with forests, was compared with the value of the green water foot-

print of the city in its current form. Analogous analyses were conducted for the purpose of determining the scale of the city's lost retention capacity.

It should be noted that the urbanised part of the city area also participates in the hydrological water cycle through evaporation from built-up areas and the loss of the soil's natural retention capacity. Therefore, the difference between the above-mentioned water footprints, including the blue water footprint component (related to the annual volume of precipitation evaporating from sealed surfaces) and the component accounting for retention loss, allows us to determine how a city, through its infrastructure, has distorted the natural hydrological water cycle, thus resulting in cities alternately struggling with water shortages or surpluses. In our study, this disturbance of the "natural" hydrological water cycle is referred to as the environmental and hydrological cost of city functioning.

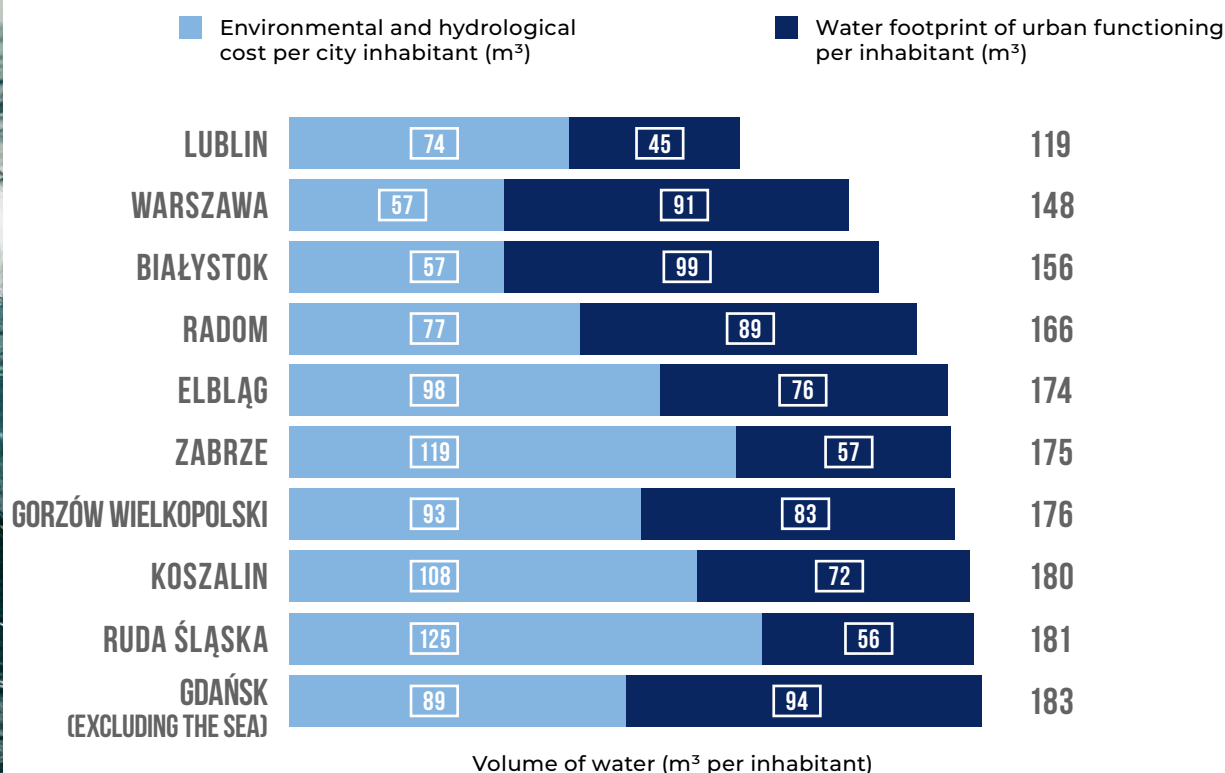
This year, we have decided to include the city's green water footprint in the ranking process, so as to allow not only for assessment of efficiency of cities' use of available surface and/or groundwater resources but also evaluation of challenges faced by cities due to periodic shortage or excess of precipitation resulting from disturbance of the natural hydrological water cycle.

Subject to analysis have been a total of 100 of the largest cities in Poland, for which there have been obtained appropriate data, broken down into groups according to their size. The data for calculations have been collected from the following sources: Statistics Poland (Główny Urząd Statystyczny) – Local Data Bank

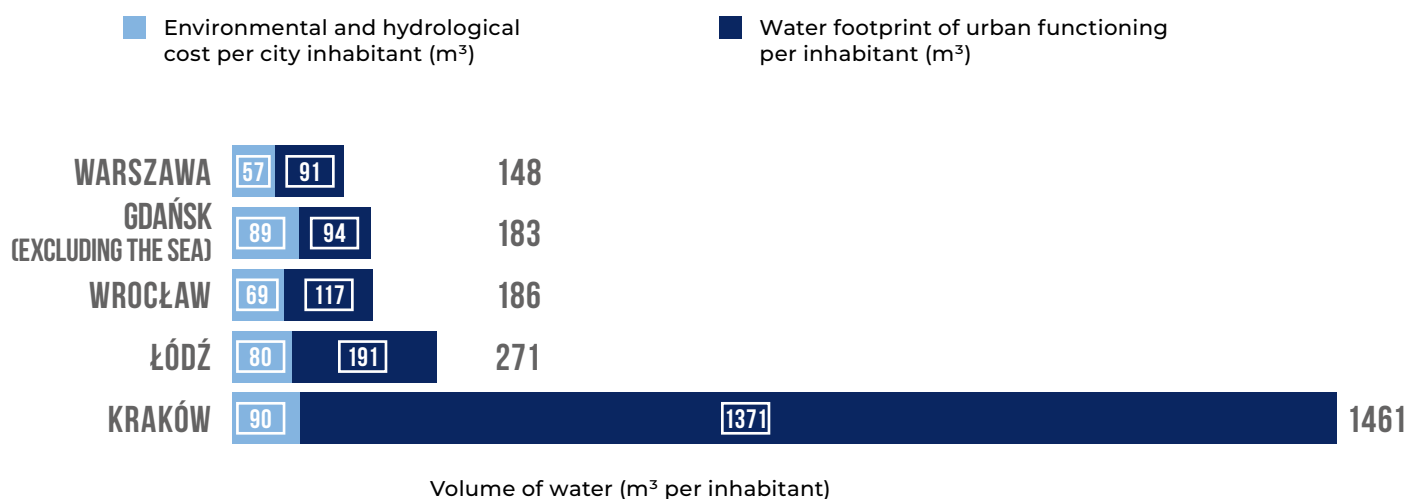
- Institute of Meteorology and Water Management – National Research Institute (IMGW-PIB): Meteorological Yearbook 2024
- Institute of Meteorology and Water Management – National Research Institute (IMGW-PIB): – Characteristics of Selected Climate Elements in Poland in 2024 – Summary
- State Water Holding Polish Waters – Review and Generation of Data Sheets
- The Official Journal of Laws of the Republic of Poland – Substances Particularly Harmful to the Aquatic Environment and Conditions to be Met for the Discharge of Wastewater into Water or Soil, as well as for the Discharge of Rainwater or Meltwater into Water or Water Facilities
- Topographic Object Database (Baza Danych Obiektów Topograficznych , BDOT10k)
- Institute of Meteorology and Water Management – Hydroportal: Hydrological Map Platform
- Hoekstra, et al. (2011) The Water Footprint Assessment Manual: Setting the Global Standard. Earthscan, London.
- Małecki, Piotr & Bergier, Tomasz & Wojciechowska, Ewa & Burszta-Adamiak, Ewa & Fialkiewicz, Wiesław & Owsiany, Małgorzata & Rosiek, Ksymena & Rybicki, Stanisław. (2019). Racjonalizacja wykorzystania zasobów wodnych na terenach zurbanizowanych.
- This chapter presents results for the largest of these cities, i.e., those whose population exceeds 100,000 inhabitants. The ranking results were broken down into groups: the capital city and metropolises (population > 485,000) and large cities

(population > 100,000 and < 485,000). The obtained results are illustrated in the following figures.

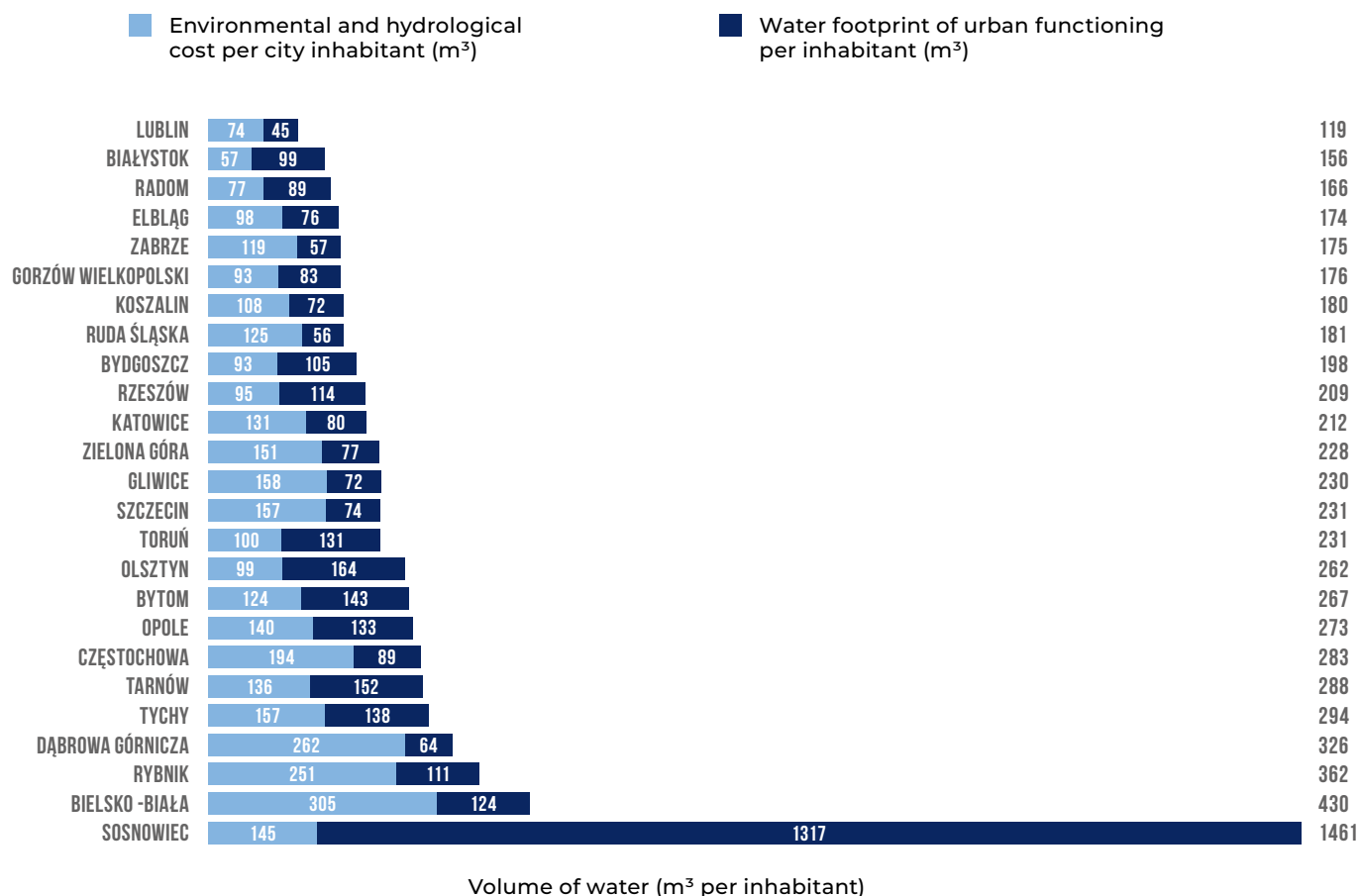
ENVIRONMENTAL AND HYDROLOGICAL COST OF POLISH CITIES INCREASED BY THE WATER FOOTPRINT RESULTING FROM HUMAN ACTIVITY IN THE CITY – 10 BEST-PERFORMING CITIES



ENVIRONMENTAL AND HYDROLOGICAL COST OF POLISH CITIES INCREASED BY THE WATER FOOTPRINT RESULTING FROM HUMAN ACTIVITY IN THE CITY – THE CAPITAL CITY AND METROPOLISES



ENVIRONMENTAL AND HYDROLOGICAL COST OF POLISH CITIES INCREASED BY THE WATER FOOTPRINT RESULTING FROM HUMAN ACTIVITY IN THE CITY – BIG CITIES



Volume of water (m³ per inhabitant)

Particular attention should be paid to the very high index values in cities such as Sosnowiec and Kraków. The obtained results are not the consequence of low wastewater treatment efficiency but rather the effect of poor condition of rivers used as receiving bodies. Assimilative capacity of these watercourses has been exceeded due to their unfavourable physicochemical parameters and low characteristic flows. Consequently, the volume of treated wastewater discharged into the receiving bodies cannot be fully assimilated: the available water flow is too small, and the condition of the rivers is already degraded, among others, due to similar impacts in previous years.

INTERPRETATION OF THE 2025 WATER CITY INDEX RESULTS



The triumph of Łódź can be interpreted as the outcome of long-term investments and consistent water management policy. Historically, the city has struggled with limited surface water resources; however, through retention projects and modernisation of the water supply network, it has managed to strengthen its water resilience and improve the quality of life of its inhabitants. This is now confirmed by the highest result among metropolises achieved by Łódź in the “Life” sub-index, which evaluates the everyday use of water by inhabitants – from supply reliability and network failure rate to consumption and costs. Kraków, which ranked immediately after Łódź, also achieved a high result in the “Life” category and a solid third position in “Economy and Society.” This points to the city’s potential for development in terms of using water to shape competitive economy and the quality of life of its inhabitants. At the same time, however, Kraków – similarly to Łódź – still has room for improvement in terms of resilience to water-related threats (scoring only as the seventh in the “Threat” subcategory), which signals the need to further strengthen flood protection infrastructure and adaptation to extreme weather events.

The analysis of sub-indices reveals interesting discrepancies between subcategories across individual metropolises. For instance, Szczecin, having achieved only the fifth place in the overall classification, clearly leads in the “Economy and Society” area – the city effectively converts its water resources into economic development (including through its port and maritime projects) and social initiatives. At the same time, however, Szczecin achieved a mediocre result in the “Life” category, which means that the daily use of water by inhabitants (e.g., the quality of water and sewage networks or water consumption levels) leaves much to be desired in comparison with other metropolises. Bydgoszcz, on the other hand, presents quite the opposite profile – the



Photo: unsplash.com

Łódź

leader in the “Threat” sub-index – which speaks to the effective and coherent adaptation policy and protection against droughts and floods, yet recorded very low values in “Economy and Society” field (the seventh position). Intersected by a network of canals and rivers, Bydgoszcz has for years invested in flood protection – this ambitious and multifaceted adaptation programme has resulted in the highest water resilience among metropolises, although at the expense of lesser use of water’s potential for the city’s economic growth.

Attention should also be drawn to Wrocław, which, while it has not retained its 2024 leader title, still boasts a high result in the “Economy and Society” category (ranked second). This is the effect of the city’s consistent strategy developed in the aftermath of the 1997 flood – the ambitious transformation of Wrocław has included both expansion of polders and flood protection systems, and economic initiatives (such as water and wastewater clusters and investments in blue-green infrastructure). Warsaw, on the other hand – ranking only seventh among metropolises – represents

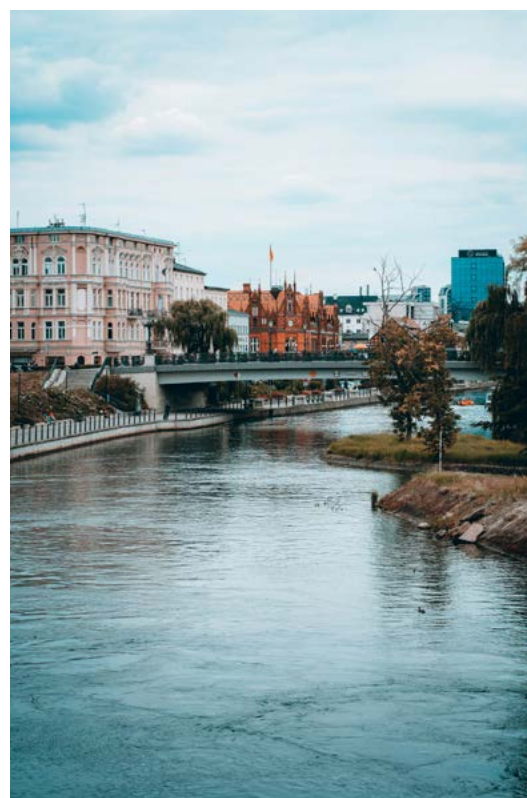


Photo: unsplash.com

Bydgoszcz



Photo: Janusz Maniak

Kraków

a case of a city with relatively good parameters of everyday water use and management (the third position in “Life”, fourth in “Economy and Society”), but at the same time one with a very high vulnerability to climate- and water-related threats (having taken the ultimate, that is the eight position in “Threat”). The capital city struggles with, among others, flood risk on the Vistula River and with torrential rainfall combined with dense urban development – factors which make strengthening the city’s water resilience a key challenge for the coming years.

The results in the metropolises category show that even the largest cities may differ significantly in their water management profiles. Łódź and Kraków took the lead owing to improvements in the quality of inhabitants’ lives related to water and effective use of water investments, yet, both cities must continue their efforts in the area of protection against extreme phenomena. Wrocław remains one of the top performers thanks to coherent adaptation policy and economic use of water resources, while Bydgoszcz and Szczecin constitute two contrasting examples of one-sided advantages in particular areas. Overall, these results are



Photo: unsplash.com

Szczecin

the outcome of long-term investments and strategies – from network modernization to adaptation programmes – implemented by metropolises in recent years. The dynamic changes on the podium (the advancement of Łódź and Kraków, the decline of Wrocław) show that ambitious transformations and continuous improvement of water policy translate into rapid improvement in ranking position. At the same time, the persistently low position of Warsaw or Poznań flags that neither the size nor the wealth of a city guarantees success – consistency and holistic approach to water management are essential.

In the category of cities with powiat rights (large cities which are not metropolises), the 2025 Water City Index revealed an exceptionally balanced top tier and several surprising shifts. Gdynia has emerged as the new ranking leader, while last year's number one – Słupsk – fell to eighth position. The second place was taken by Tarnobrzeg, which represents a surprising advancement for this medium-sized city, surpassing many larger urban centres. The podium is completed by Gorzów Wielkopolski, which maintained its position among the leaders for the second year in a row. The subsequent positions were taken by, among others, Piekary Śląskie and Jastrzębie-Zdrój. The high rankings of such diverse cities stand to confirm that effective water management is not reserved solely for the largest agglomerations – smaller centres just as able to also pursue ambitious transformations and water policies which deliver tangible results.

Gdynia's leading position in this category results from a long-term strategy of a port city focused on strengthening water resilience and using access to the sea as a developmental advantage. Gdynia has an excellent result in the "Economy and Society" sub-index (2nd place) – second only to Świnoujście – which speaks to effective conversion of water resources into economic development (e.g. through investments in port infrastructure, navigation, and maritime tourism) as well as social policies relat-



Szczecin

Photo: unsplash.com



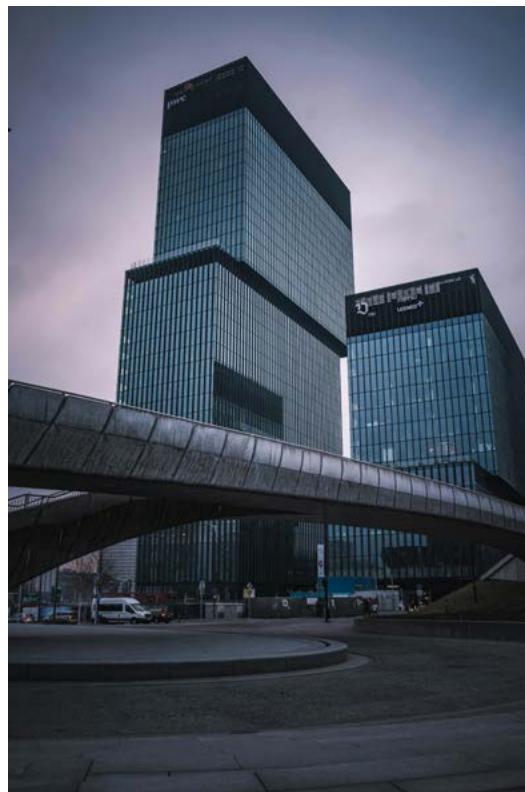
Photo: Janusz Maniak

Gdańsk

ed to water. Importantly, Gdynia also improved its position compared to 2024, when it ranked second right after Słupsk – its current victory is the result of long-term investments in stormwater management systems (including new retention reservoirs and green infrastructure within the city). Yet, the advancement of Tarnobrzeg to the second position is even more impressive. The city has carried out ambitious transformation of post-mining areas into a vast water body (Lake Tarnobrzieskie), which has contributed both to the development of water recreation and to improvement of inhabitants' quality of life, as well as to enhanced flood protection for the region. Tarnobrzeg achieved very high scores in the "Threat" sub-index (third position), reflecting coherent adaptation policy in response to climate change – from flood protection to drought prevention. It also ranked among the top cities in "Economy and Society" (eleventh position), demonstrating the city's ability to manage its new water resources for the benefit of its inhabitants and the local economy. Gorzów Wielkopolski, the third-place finisher, presents a coherent and balanced profile: this city has for years invested in water and sewage management and flood protection on the Warta River, which earned it a solid sixth position in "Economy and Society" and consistently good results in other categories (including the sixth position in "Life"). Piekary Śląskie and Jastrzębie-Zdrój – both ranking just below the podium – are examples of industrial cities which have managed to improve their water situation. Despite its environment degraded by mining activities, Piekary achieved an excellent result in the "Threat" category (sixth position) thanks to investments in storm drainage systems and land reclamation, while Jastrzębie distinguished itself through very high water crisis resilience (ranked second in the "Threat" category, right after Zielona Góra) – likely due to

the city's experience in combating flooding in post-mining areas – and also maintains satisfactory results in other areas. These examples demonstrate that the potential for development in water management exists both in coastal and inland cities as well as in industrial centres, provided that they implement well-considered strategies.

The middle and lower parts of the table of poviat cities also include interesting cases. For example, Białystok (thirteenth position overall) can boast nearly the highest result in the “Life” category (ranking second, immediately after Zamosć), which indicates excellent indicators of water supply, water quality, and accessibility for inhabitants. Nevertheless, its overall result was lowered by weaker scores in “Threat” and “Economy”, which places the capital of Podlasie in the middle of the second tier – this speaks to the importance of maintaining balance across all areas. The opposite situation can be observed in Olsztyn (ranked fourteenth), which performs moderately in everyday water use, yet has distinguished itself by ranking third



Katowice

Photo: unsplash.com



Gdynia

Photo: unsplash.com



Photo: unsplash.com

Wrocław

in the “Economy and Society” sub-index – most likely owing to its unique location among lakes, used for tourism and development purposes (e.g. inland sailing, promotion of a “green” lifestyle).

Worth noting is also the relatively weak performance of some larger cities in this category. For instance, despite their considerable infrastructural potential, Lublin (42nd position) and Katowice (49th position) ranked only in the lower half of the poviats list. Katowice, the centre of the largest Silesian metropolis, has obtained a low position primarily due to its weak result in “Life” (50th place), which reflects the difficult environmental legacy of the region (water pollution and limited access to clean resources for inhabitants).

Ranked last among poviats is Legnica (58th place). Its case demonstrates the dramatic impact of a single weakness – the city scored very few points in the “Threat” subcategory (last place, ex aequo), which points to very high vulnerability to extreme events (perhaps due to insufficient flood protection on the Kaczawa River). Although Legnica recorded moderate results in “Life” and “Economy”, the extremely low level of water resilience pushed it to the bottom of the ranking.

Such striking discrepancies between subcategories are also visible in other cities. For example, Świnoujście – the leader in the “Economy and Society” category due to large

port and tourism investments – simultaneously ranked last in the “Life” category. This suggests that its strong water-based economy has not yet translated into the everyday comfort of inhabitants. Such contrasts offer valuable guidance for municipal authorities: sustainable development requires simultaneous attention paid to water supply infrastructure, climate resilience, and the use of water as a developmental asset.

Gdynia and Tarnobrzeg stood out owing to their own unique initiatives (ranging from maritime projects to the redevelopment of post-mining reservoirs) and dethroned last year’s leader, Słupsk. Gorzów Wielkopolski maintained a high position thanks to stable, comprehensive policy. At the same time, development potential can be seen in cities dominating individual categories – they are now faced with the challenge of filling gaps in other areas.

Overall, the ranking reflects ambitious transformations undertaken in numerous Polish cities: from the industrial centres of Silesia, through the ports of the Tri-City area, to smaller powiat capitals. The dynamic changes – such as Tarnobrzeg’s rise or Słupsk’s decline – speak to the strengthening of a city’s water resilience and adopting innovative approaches to water resource management which promptly bring measurable benefits in the form of improved ranking positions. For this year’s less successful cities, such as Legnica or Katowice, this serves as an impulse to intensify activities in adaptation and water management, so as to join the leader’s group in the forthcoming index editions.

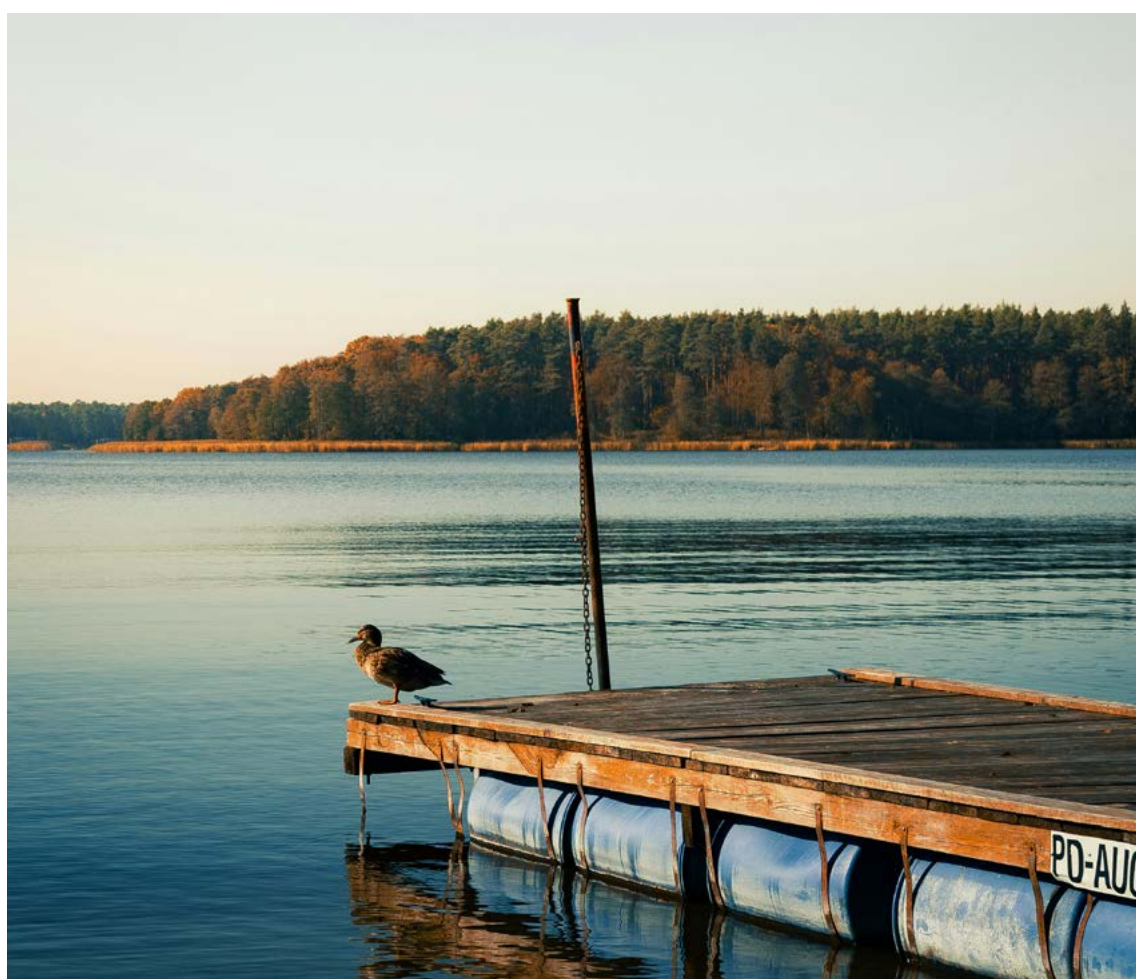


Photo: unsplash.com

Augustów

The category of medium-sized cities in the 2025 Water City Index includes over one hundred urban centres from all over Poland, thus providing an exceptionally diverse picture of the effectiveness of water management. Mrągowo once again proved to be the ranking's leader, confirming its position as a model "water city." Its result – the highest in this group – indicates that this Masurian city consistently capitalises on the potential of its local lakes and invests in water infrastructure. Once again, Mrągowo has been followed by Augustów, thereby consolidating dominance of regions rich in water resources (lakes and canals) at the top of the ranking.

The most significant novelty of this year's edition is the advancement of Swarzędz to the third position on the podium – a marked change in comparison with 2024, when Swarzędz was not ranked among the leading cities. A medium-sized satellite city within the Poznań agglomeration, Swarzędz owes its success, among other factors, to the expansion of retention reservoirs and improvement of the stormwater network executed in recent years. Its ambitious infrastructural transformation shows that even cities without remarkable natural water bodies can rapidly improve their water situation thanks to the determination of local authorities and inhabitants.

The remaining cities in the top ten include Jawor (fourth position), Ława (fifth), Mława (sixth), Police (seventh), Wieliczka (eighth), Czeladź (ninth), and Kwidzyn (tenth). This leading group combines both tourist and recreational cities (such as Ława or Wieliczka) and industrial or satellite ones (such as Swarzędz, Police, and Czeladź), thus emphasising the universality of water challenges and solutions regardless of the urban profile.

Mrągowo and Augustów, which continue to occupy the top positions, confirm the importance of conscious management of natural wealth. Located on the picturesque Lake Czos, Mrągowo has for years invested in ecological infrastructure (wastewater treatment plants protecting water quality, lakeside promenades, and small retention systems), which translates into excellent results in both the quality of inhabitants' lives and tourism attractiveness. Augustów, with its network of lakes and the famous Augustów Canal, also achieves high results by combining spa and tourism traditions with a modern approach to water management



Augustów

Photo: unsplash.com

(e.g. investments in ecological marinas and flood protection on the Netta River). Both cities serve as model examples of how local environmental conditions – treated not as obstacles but as assets – can drive development for the benefit of both inhabitants and the environment.

Swarzędz, Jawor, and Mława – new or higher-ranked members of the top ten – demonstrate that even cities without remarkable lakes or rivers can achieve high positions through determination in improving infrastructure. Swarzędz has developed a modern stormwater management system for rapidly urbanising suburban areas of Poznań, thus reducing the risk of flooding and increasing water retention in the urban landscape. Jawor in Lower Silesia, although not located near a large reservoir, has used EU funds to modernise its water and sewage networks, which resulted in significant reduction of water losses and network failure rates – thus marking an improvement in drinking water supply quality.

A city neighbouring Szczecin, Police, with its industrial background, surprised observers with its high 7th position, which can be linked to the efforts of local chemical plants to protect nearby waters (including investments in closed water circulation within industrial processes) and improvements in municipal infrastructure supported by regional self-government funds.



Photo: unsplash.com

Poznań

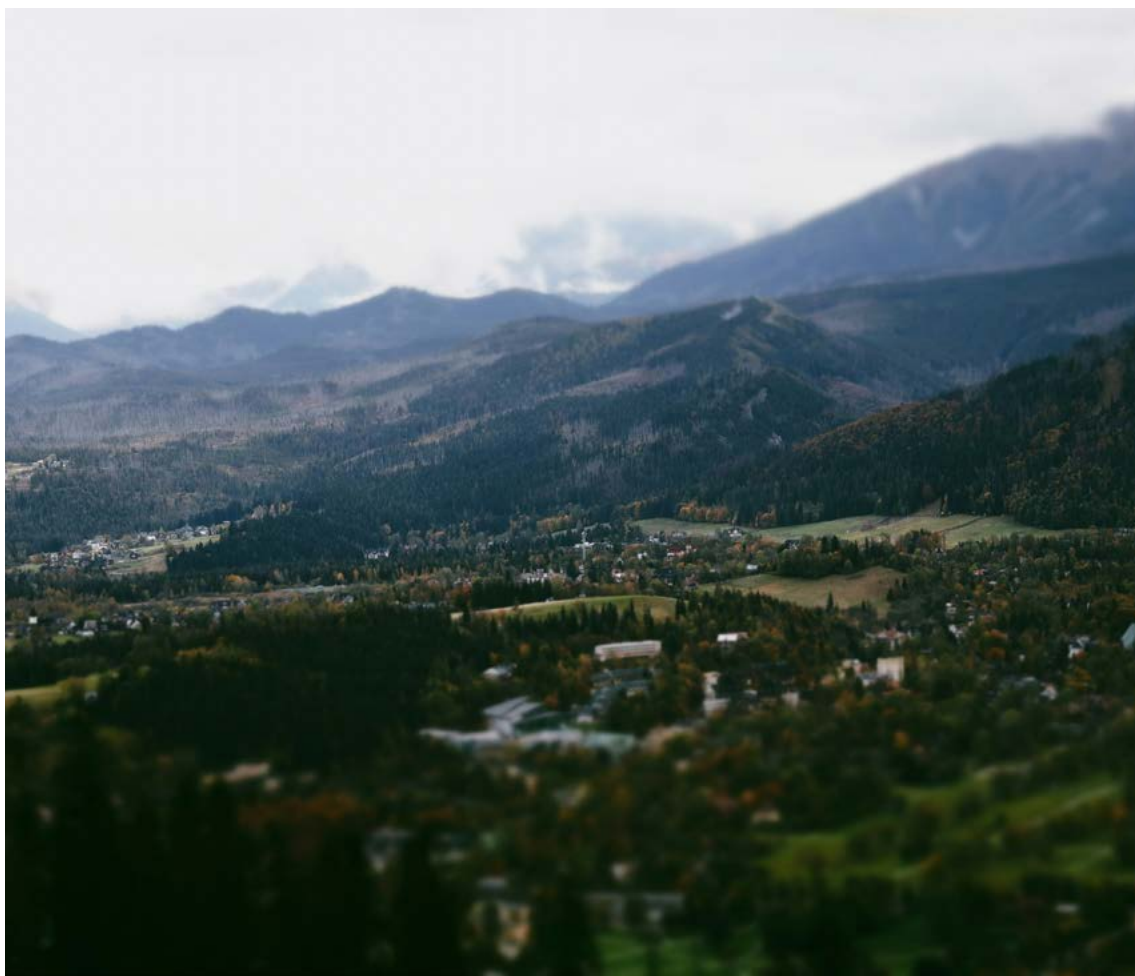


Photo: unsplash.com

Zakopane

In the middle range of the medium-sized cities, there are numerous localities whose results are close to the average, which speaks to a moderate level of implementation of good water management practices. Many demonstrate development potential – for instance, cities with valuable mineral or geothermal water sources (such as Zakopane, ranked 13th, down from the fourth position in 2024) could make better use thereof both for economic purposes and for improving the quality of life of inhabitants.

Conversely, several centres recorded noticeable declines compared to the previous ranking's edition. For example, Żywiec – located amidst mountain water reservoirs and famous for its brewing tradition – ranked third in 2024, whereas in 2025 it fell to the third tier. This may stem from the emergence of new leaders, but it also serves as a reminder that maintaining a high position requires continuous improvement of infrastructure and adaptation to changing climate conditions (such as increasingly frequent periods of drought in mountain regions, affecting replenishment of surface waters).

At the very bottom of the ranking there are several cities facing pronounced difficulties. This year's last position has been taken by Gniezno – the historic first capital of Poland. Despite its heritage and moderate size, Gniezno has achieved one of the weak-

est results, most likely as a consequence of outdated water and sewage infrastructure and insufficient adaptation investments. It is worth noting, however, that the point differences at the bottom of the table are significant – this suggests that even small improvements (for instance, reducing water losses, building retention reservoirs, or improving the quality of wastewater discharged into receiving bodies) could to a great degree enhance these cities' positions in the future.

At the same time, environmental constraints have not prevented several cities located in regions traditionally considered less water-abundant from achieving strong results. For example, Luboń and Knurów (both in the second tier) are located in areas of dense development and limited natural watercourses, yet through targeted actions (such as the modernisation of water treatment plants and development of green areas which absorb water) both managed to rank higher than many cities boasting theoretically better hydrological conditions.

The 2025 Water City Index ranking for medium-sized cities paints a highly diverse picture, yet it also provides clear guidance. At the top, there remain those cities which have been consistently investing in water management, making use of their natural advantages (Masurian cities such as Mrągowo and Augustów) or compensating for deficiencies through innovation (Swarzędz, Jawor). Successes of these leaders are the



Photo: Janusz Maniak

Kraków



result of long-term investments and creative approaches to water governance, which translate into tangible benefits: from improved living comfort, through enhanced ecological safety, to new development impulses (tourism, environmentally friendly industry). On the other hand, rotations in the leading positions – such as the advancement of Swarzędz or decline of Żywiec – show that development potential is never permanent. Every city must continuously work on its weaknesses: modernising networks, implementing coherent adaptation policies to climate change, and ensuring that it does not lag behind.

For many medium-sized cities positioned in the middle or lower parts of the ranking, this year's results may serve as a stimulus for more intensive efforts. The example of medium-sized centres advancing to the top demonstrates that ambitious transformation in water management is achievable within a relatively short timeframe – what is required, however, are vision, cooperation between local authorities and inhabitants, and adoption of best practices from national leaders.

In the era of increasing climate challenges, care for water becomes both a necessity and an opportunity for development – the 2025 Water City Index clearly shows which cities are already taking advantage of this opportunity, and which should join them by intensifying their efforts toward sustainable management of the most valuable resource.



Koalicja
Dbamy o wodę

WE CARE FOR WATER COALITION: A PARTNERSHIP FOR THE WATER SECURITY OF THE ŻYWIEC REGION

CLIMATE AND WATER

In recent years, the hydrological landscape of Poland has undergone significant changes. Prolonged rainless periods, more frequent and violent weather phenomena, a decline in groundwater levels as well as decreasing retention capacity are only some of the challenges. Water shortages are no longer a forecast but a reality faced by inhabitants, enterprises, and local authorities. The flood threat is also on the increase, and it is capable of destroying infrastructure and endangering lives within moments. Coordinated actions of institutions are among the key methods of counteracting these changes and of building the hydrological safety of our country.

WE CARE FOR WATER COALITION – INTERSECTORAL PARTNERSHIP

The *We Care for Water* Coalition is an initiative of Żywiec Zdrój and the Żywiec Group, aimed at building partnerships among public, private, and non-government entities in order to protect the water resources of the Beskid Żywiecki region and to strengthen hydrological security. It also carries out educational and research activities which serve as a foundation for long-term actions. According to the research conducted by the *We Care For Water* Coalition,



60 percent of the Żywiec region inhabitants are familiar with the Coalition, and 92 percent believe that such initiatives are necessary in their area.

In addition to its Founders, the Coalition includes Partner Members: the UNEP/GRID-Warsaw Centre, the Żywiec Development Foundation, and the “Żywiecki Raj” Local Action Group. As part of the initiative, there operates Scientific Council, which ensures substantive support. The cooperation enables exchanging knowledge and creating a model of action which, although rooted in the Żywiec region, can be applied in other regions of Poland.



Every third Pole and every second inhabitant of the Żywiec region

believes that flood or its consequences may directly affect them



Over half

of the inhabitants of the Żywiec poviat declare that counteracting both droughts and floods should be treated as a priority



7/10

respondents from the Żywiec region declare that changes in water resources may influence the future of the region



8/10

respondents from the Żywiec poviat have applied at least one solution for the retention of precipitation water



6/10

respondents have personally experienced the effects of summer drought and absence of snow cover



Over 90 percent

of respondents assess that initiatives such as the “We Care for Water” Coalition are necessary in the region



KEY AREAS OF ACTIVITY

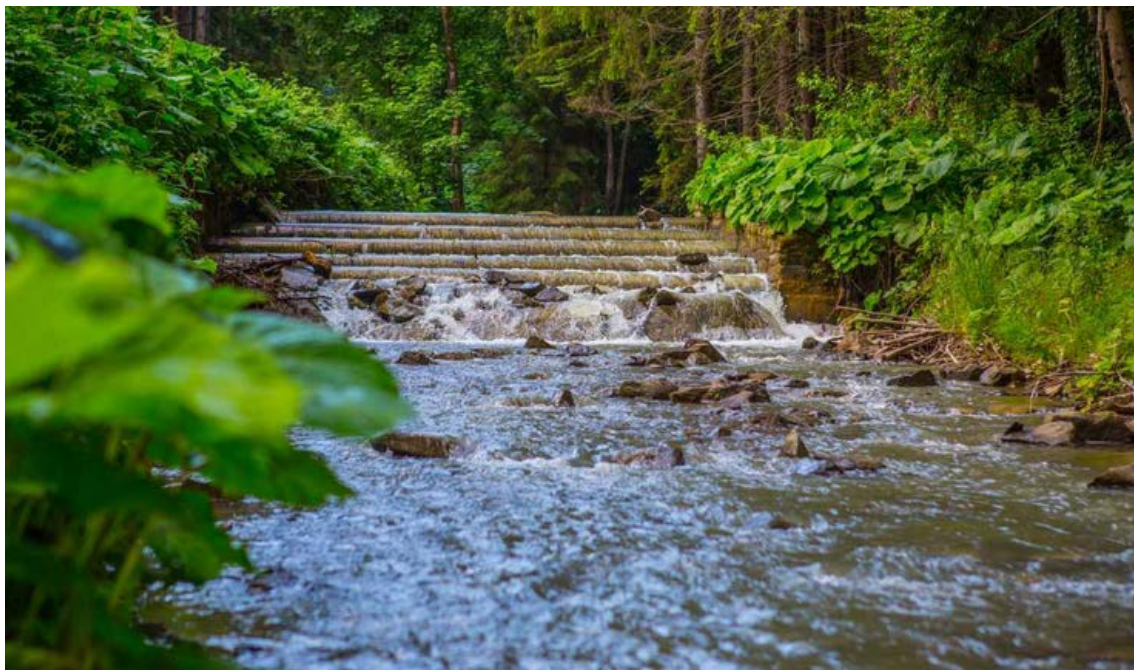
- Building partnerships for the development of small retention solutions.
- Conducting educational and research activities concerning hydrological and climate issues and providing inhabitants with reliable knowledge on retention and methods of water conservation.
- Promoting good practices and informing about benefits of retention solutions.
- Fostering understanding among local communities, self-governments, and institutions.

SCALABLE SOLUTIONS AND RESULTS

As part of its activities, the Coalition has demonstrated benefits resulting from implementation of retention solutions at both the local and national levels. There have been carried out a series of systemic projects, including support for authorities in the field of knowledge and tools for obtaining funding for water projects. Launched was hydrological monitoring of surface waters in the catchments of the Soła and Koszarawa rivers, and developed was a catchment model - a tool for planning optimal water resource management, scalable to regions throughout Poland.

SHARED RESPONSIBILITY FOR WATER

The hydrological situation in Poland requires joint action. The care for water resources is a matter of security, quality of life, and development. Through community engagement and cross-sectoral cooperation, it is possible to influence the improvement of water conditions – both locally and systemically. *We Care for Water* Coalition invites interested entities to contact and cooperate with us: dbamyowode@247.com.pl.



AUTHORS



prof. JERZY HAUSNER

Chairman of the Program Council of the Open Eyes Economy Summit, Chairman of the Council of the GAP Foundation, Honorary Professor of the Krakow University of Economics, former member of the Monetary Policy Council, holding important positions in the governments of successive terms in 1994-2005. Author of about 300 publications, including in the field of political economy and public management. Awarded, among others, with the Knight's Cross of the Order of Polonia Restituta; winner of the Kisiel Prize (2004).



mgr inż. KRZYSZTOF KUTEK

Arcadis, Director Water and Climate Change. More than 15 years of professional experience. Expert in the field of climate change, water management and sustainable development. He participated in numerous projects in the area of water management and climate change adaptation. Co-author of the methodology for the project Urban Adaptation Plans for 44 of Poland's largest cities. Originator and co-author of the Water City INDEX report.

e-mail: krzysztof.kutek@arcadis.com



dr JAKUB GŁOWACKI

Economist, researcher in the Department of Public Economics at the Cracow University of Economics, Member of the Board of the Malopolska Social Economy Fund; author and co-author of more than 70 publications related mainly to the issues of new technologies in public administration, sustainable economy and local and regional development. Adres e-mail: jakub.glowacki@uek.krakow.pl



dr hab. MICHAŁ KUDŁACZ, prof. UEK

Economist, with doctoral degree in the discipline of political science and administration, researcher in the Department of Public Policy at the Cracow University of Economics, consultant of the Malopolska Centre for Regional Surveys of the Statistical Office in Krakow constantly cooperating with local governments; author and co-author of dozens of publications as well as research and implementation projects related mainly to the issues of local and regional development.

Adres e-mail: mkudlacz@uek.krakow.pl

AUTHORS



mgr MARCIN ĆMIELEWSKI

He is a geographer specializing in water management issues. He has experience in management and implementation of scientific research projects, gained during his doctoral studies. He is the author of expert reports on river ice hydrology. Marcin Ćmielewski has participated in a number of projects related to flood risk and climate change, including the creation of Flood Risk Management Plans and their updates, updates of Flood Hazard and Flood Risk Maps and Urban Adaptation Plans. In his work he uses statistical methods, spatial data analysis (GIS), hydraulic modeling and multi-criteria analysis.



dr hab. inż. ANDRZEJ TIUKAŁO, prof. IMGW PIB

A retired professor at the Institute of Meteorology and Water Management, specialist in risk management related to adverse meteorological phenomena. He is the author and co-author of numerous publications on planning and evaluation of investment and organizational projects related to water management. He led interdisciplinary teams that prepared meteorological hazard maps for Poland, as well as flood hazard and risk maps. He also led a team responsible for developing Flood Risk Management Plans (first and second edition) and Urban Adaptation Plans for 44 cities in Poland.

e-mail: andrzej.tiukalo@arcadis.com



dr inż. KLARA RAMM

Research and teaching staff member at the Faculty of Building Services, Hydro and Environmental Engineering at the Warsaw University of Technology, expert at the Polish Waterworks Chamber of Commerce, representative of the Polish water and sewage sector in the European federation EurEau. Author of publications and studies, project manager in the field of water management, particularly focused on water supply and sewage services.

e-mail: klara.ramm@arcadis.com

AUTORZY



mgr inż. SZYMON MARCZAK

Geoinformatician, 2nd degree student of Geoinformatics at the Faculty of Geology, Geophysics and Environmental Protection at the AGH University of Science and Technology in Krakow, Arcadis employee as Junior GIS Specialist.

e-mail: szymon.marczak@arcadis.com



THE FOUNDATION
OF PUBLIC
ECONOMY AND
ADMINISTRATION

FUNDACJA GOSPODARKI I ADMINISTRACJI PUBLICZNEJ

ul. ks. I. J. Skorupki 22
31-519 Kraków
tel.: 12 423 76 05
fundacjagap.pl



OPEN EYES ECONOMY SUMMIT

ul. ks. I. J. Skorupki 22
31-519 Kraków
tel.: 12 423 76 05
kongres.oees.pl



ARCADIS SP. Z O.O.

Aleje Jerozolimskie 142B
02-305 Warszawa
tel.: 22 203 20 00
arcadis.com

PATRONAGE



FEDERACJA
PRZEDSIĘBIORCÓW
POLSKICH



FPP CEE WATER
COMMITTEE

WODN  SPRAWY



Izba Gospodarcza
WODOCIĄGI POLSKIE



THE 2025 WATER CITY INDEX

