

## Environmental changes in Kecskemét between 2008-2018

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### Results

Kecskemét, as the most environmentally exposed city on the Danube-Tisza Interfluve, faces numerous challenges. The most important are the deterioration of air quality, the urban heat island effect, and the issues of sustainable green areas and water management.

According to the data, between 2011 and 2017, 150 measurement points show approximately 4% annual increase in road traffic (Magyar Közút). Parallel to this, parking difficulties have increased. The process creates a growing conflict between transport and the need to expand green areas.

Stopping the unfavorable processes is vital for Kecskemét. Emission of pollutants from road traffic and non-environmentally friendly heating of households have become more frequent ([www.levogominoseg.hu](http://www.levogominoseg.hu)). Expected, that various air pollutants (eg. PM<sub>10</sub>; PM<sub>2,5</sub>; NO<sub>2</sub>; NO<sub>x</sub>; SO<sub>2</sub>; O<sub>3</sub>) more often exceed limit values in the near future.

There are significant differences between various coverings and built-up areas of the city, especially in daytime surface temperatures (Hook – Hulley, 2019; Running et al., 2011). The southern industrial area, as well as the giant paved surfaces of the airport, are the warmest parts of the city. The downtown and densely built-up housing estates are among the warmest areas also. The temperature-reducing role of green surfaces can be detected in larger contiguous areas, such as the Zoltán Benkó Leisure Center (so called city's „green wedge”) or cemeteries.

The extent of all municipally owned green areas decreased by more than 30% between 2009 and 2017. The decline primarily affects the southern industrial area, where Mercedes-Benz and its suppliers' production facilities are located.

As the green areas decrease, the amount of airborne dust increases. At the same time, green areas play a key role not only in reducing airborne dust, but also in absorbing CO<sub>2</sub> and other pollutants, venting the city, increasing evaporation and producing oxygen.

In addition to the issue of green areas, water management has also great importance. Due to the intensification of weather extremes, the increase in rainfall-free periods and heat wave days, irrigation is essential for maintaining green infrastructure, which makes the development of the Urban Rainwater Management System indispensable.

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