



NICE
CÔTE D'AZUR

Urban environmental monitoring

With a network of more than 2,000 sensors spread over 160 hectares, the Nice Côte d'Azur métropole has a one of a kind environmental monitoring network. This action at the crossroads of sustainable development, of urban ecological management is resulting in new services rendered to inhabitants.

Discreet, incorporated in waste bins or street lighting, located on billboards or on facades, buried under lawns, submerged in drinking water networks, anchored off beaches, on board vehicles or placed inside schools or nurseries, sensors of all sizes and shapes measure, among other things:

- noise,
- air quality (pollution rate, pollen),
- local weather and UV level,
- energy and water consumption in different buildings,
- road traffic via connected vehicles,
- the filling rate for waste bins,
- monitoring the watering of green spaces,
- monitoring biodiversity,
- the functioning of the marine ecosystem.

The information collected is transmitted, in real time, to a metropolitan "data warehouse", from which it is sent out to various specialised platforms: urban security, transport management, natural hazard, or even the IMREDD showroom, in the Ecovallée, a real smart city demonstrator. This data is also made available, by agreement, to research centres. Finally, it makes it possible to offer new urban services:

KEY DATA

- > **2,000** sensors
- > **160** hectares
- > **€612,500** support from the City of Tomorrow Investment for the Future Program

- improvement of the urban environment, quality of life and health (noise, air, pollen, green spaces, biodiversity, weather);
- optimisation of public services: transport, water, waste, energy;
- new services based on the added value of urban data;
- mobile app for the prevention of hazards linked to sun exposure.

The "urban environmental monitoring" program was jointly established by the Nice Côte d'Azur métropole and a private consortium made up of Veolia, Orange, Birdz and IBM. The system makes it possible to compare indicators in order to improve quality of life for city dwellers, but also to optimise existing infrastructure and, more generally, to meet the challenges of sustainable development for the community.

To be precise, sound sensors are, for example, used to map noise in cities and visualise how far the thresholds recommended by Europe are exceeded. The experiment conducted in the dining rooms of two schools made it possible to make the pupils aware of this and to reduce the noise level there. The measurement of pollen in the air, in conjunction with a smartphone app, enables alerting



people with allergies about peak levels, with a personalised report and prevention advice. Another app, connected up with other sensors, is dedicated to the beaches and provides information on water quality, the UV index, the possible presence of jellyfish...

HOME SUPPORT FOR OLD PEOPLE

Sensors measuring soil moisture have reduced the frequency of watering and therefore water consumption. Those in the waste bins tell the lorries when to make collections, which has resulted in a 20% reduction in the CO₂ emissions linked to this service. In two Côte d'Azur Habitat buildings volunteer residents access their energy

KEY FIGURES

- > **30%** savings on watering
- > **20%** lower CO₂ emissions for rubbish collection
- > **30%** savings for street lighting
- > **10%** savings on heating, electricity and water bills for volunteer tenants

DIRECT

“ The Nice Côte d'Azur metropolitan area has placed its bet on innovation and new technologies. The smart city, a smart, sustainable and interconnected city creates new services for residents and makes it easier to manage the city by saving money and creating jobs. Urban environmental monitoring is fully integrated in this approach and also contributes to connecting local start-ups, large industrial groups and players in the world of research and higher education. ”

Véronique Paquis,
metropolitan councilor, assistant to the mayor of Nice in charge of Ecology, University and Research with responsibility for Regional Cohesion



consumption data, which helps them to get lower bills. A decrease of 10% was observed in the consumption of water, domestic hot water, electricity and heating for the tenants involved in the experiments. The system even contributes to keeping elderly people in their homes: monitoring their water and electricity consumption data makes it possible to track their lifestyle, a use of monitoring which had not been anticipated but which will certainly lead to the deployment of sensors in other independent homes in the Nice metropolitan area.