ANTALYA 2026 UN CLIMATE SUMMIT

ÇANKAYA MUNICIPALITY: TECHNICAL AND DIGITAL PROJECTS



ENERGY MONITORING AND MANAGEMENT SYSTEM



GEOGRAPHIC INFORMATION SYSTEMS (GIS)



ONLINE APPLICATION AND PROCESS MANAGEMENT SYSTEM

COP31 TÜRKİYE ANTALYA

Çankaya BELEDİYESİ

WEBSITE | WWW.CANKAYA.BEL.TR

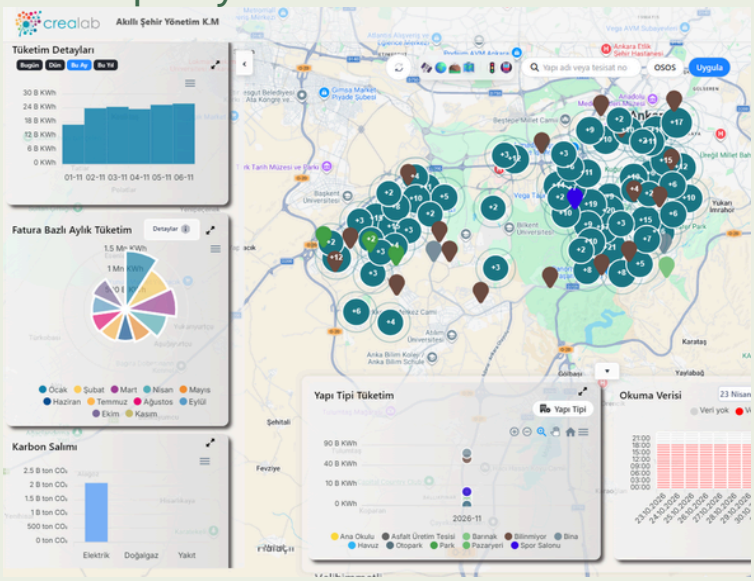
SOCIAL MEDIA | @CANKAYABELEDIYE

Çankaya BELEDİYESİ

EYS.CANKAYA.BEL.TR

Energy Monitoring and Management System (EMMS)

The Energy Monitoring and Management System (EMMS) is an integrated management platform that enables the centralized monitoring, analysis, and reporting of electricity, water, and fuel consumption across Çankaya Municipality.



Electricity, Water and Fuel

By consolidating consumption, billing, meter, and subscription data within a unified infrastructure, the system aims to ensure efficient resource management, detect abnormal consumption patterns, and identify opportunities for savings.

Consumption Data



Electricity

Water

Fuel

Through integration with the Automatic Meter Reading System (AMR), hourly consumption data can be analysed, while carbon emission levels associated with electricity and fuel consumption can be monitored.

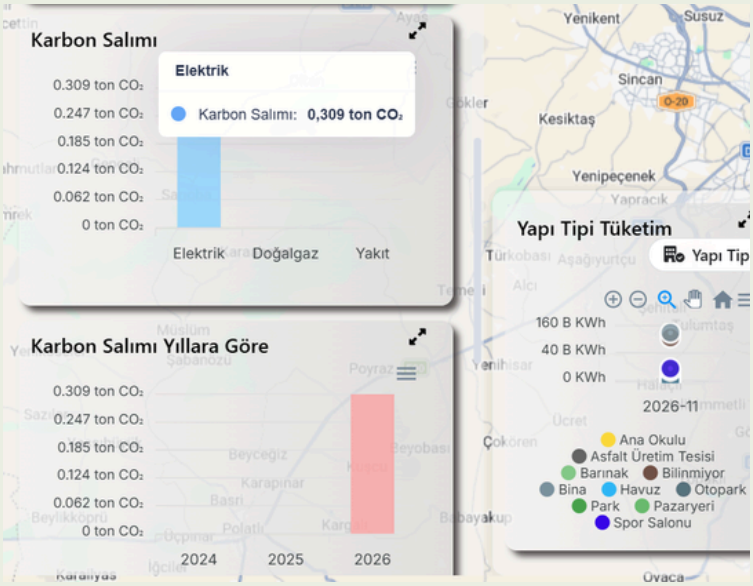
Çankaya BELEDİYESİ

EYS.CANKAYA.BEL.TR

Carbon Emissions Monitoring: A data infrastructure is being established to calculate carbon emissions resulting from electricity and fuel consumption, supporting the identification of opportunities for emission reduction.

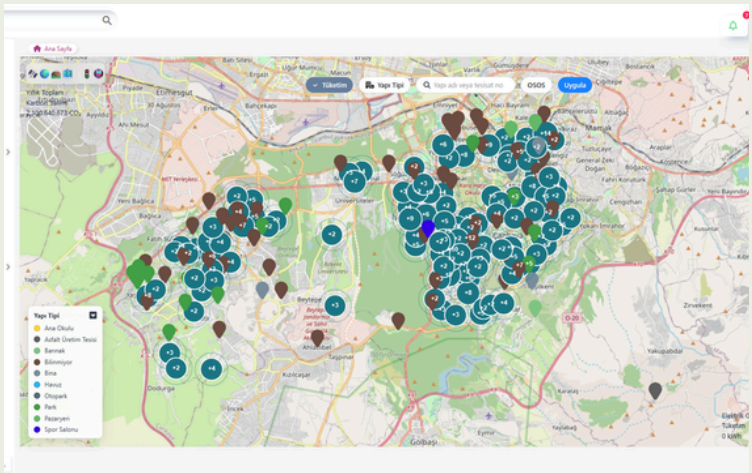
Data-Driven Sustainable Urban Management: The system aims to support the establishment of institutional sustainability targets and the monitoring of progress through consumption data and environmental performance indicators.

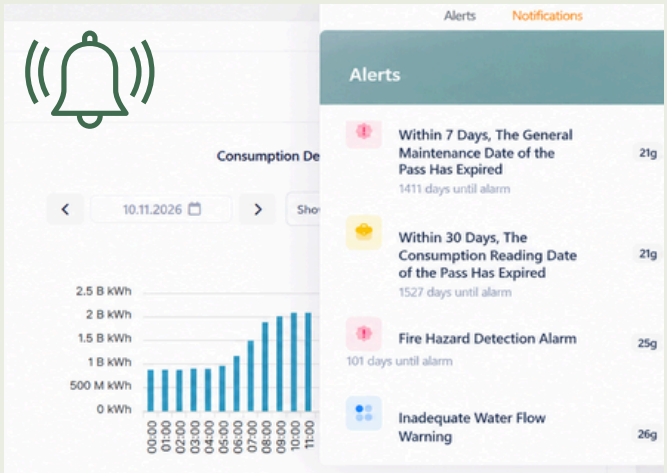
Water Consumption: The system aims to monitor water consumption, identify high-consumption points, and develop water efficiency indicators.

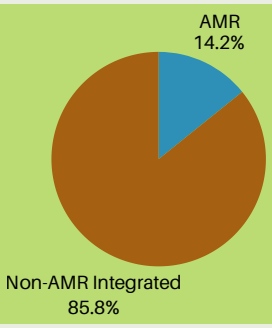


Energy Efficiency and Savings: Consumption analyses support the identification of unnecessary usage, the planning of technical improvements, and the reduction of energy costs.

Reactive Power Penalty Prevention: Alerts help prevent penalties through continuous consumption monitoring.







Electricity Service Points: Information and consumption data from a total of 591 electricity meters are monitored and analysed through EMMS, including 84 AMR-integrated meters and 507 non-integrated meters.

Çankaya BELEDİYESİ

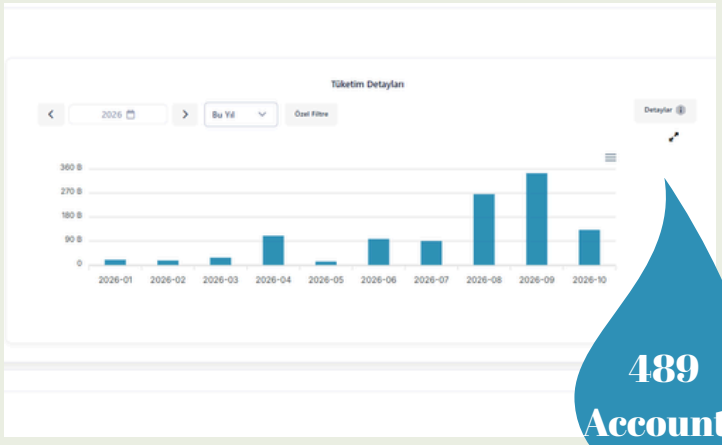
EYS.CANKAYA.BEL.TR

Electricity Consumption Management

- Monitoring hourly and daily electricity consumption through AMR integration.
- Managing AMR-integrated and non-integrated subscriptions on a single platform.
- Conducting consumption, billing, and cost analyses.
- Comparing consumption during non-working hours, weekends, and public holidays.

Water and Fuel Management

- Centralised monitoring of water subscriptions and consumption data.
- Tracking fuel consumption and costs by vehicle, licence plate, and fuel type.
- Monitoring fuel levels at storage facilities and filling stations.
- Monitoring and managing meters through an IoT-based approach.

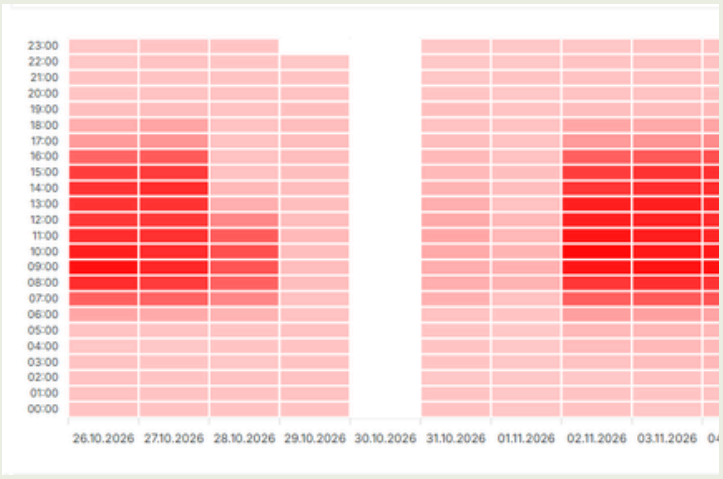


489 Accounts

Analytics and Decision Support

- Identifying abnormal consumption patterns.
- Detecting reactive power penalties.
- Monitoring carbon emissions.
- Supporting the identification of technical inspection and improvement needs.





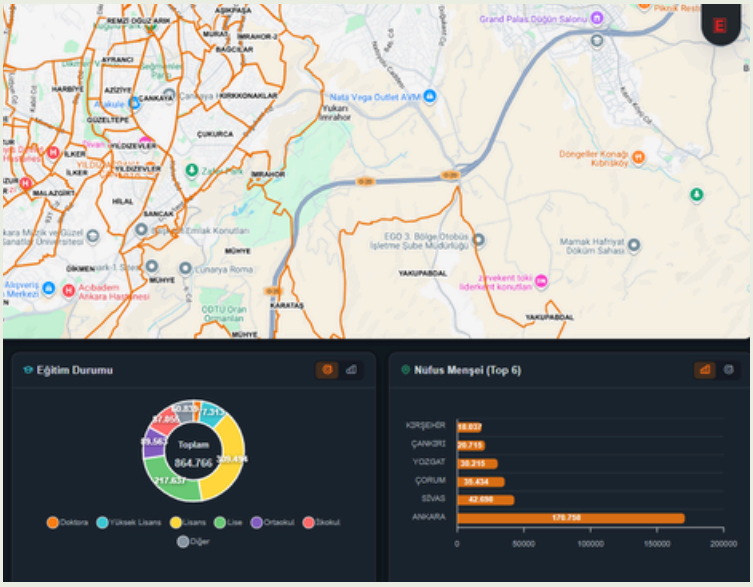
The Energy Monitoring and Management System (EMMS) centrally monitors and analyses electricity, water, and fuel consumption to promote resource efficiency, energy savings, and carbon emission reduction. It contributes to data-driven and sustainable urban management.

Çankaya BELEDİYESİ

CBS.CANKAYA.BEL.TR

Geographic Information System (GIS)

The Geographic Information System (GIS) is a digital infrastructure that integrates city-related data into a unified spatial platform, enables more effective management of municipal services, and facilitates the sharing of public information with citizens.



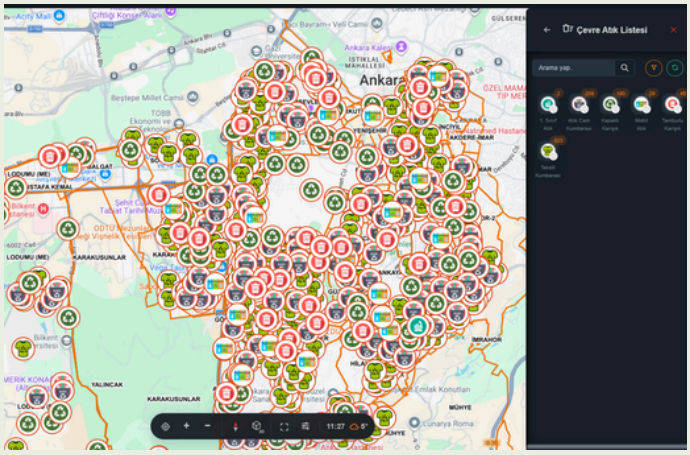
Spatial Data

By integrating building, property ownership, zoning, social infrastructure, and environmental data into a unified platform, the system supports data-driven decision-making in municipal services, efficient management of internal processes, and easy public access to urban information.

Waste and Environmental Data

998 Waste Collection Points

1.309 Cleaning Points



GIS enables the management of Çankaya's spatial data, coordination of municipal services, and delivery of information to citizens through digital applications.

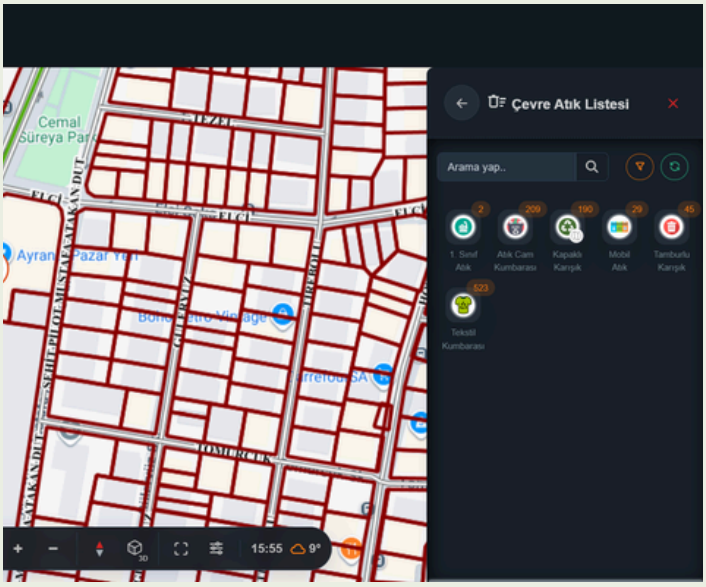
Çankaya BELEDİYESİ

CBS.CANKAYA.BEL.TR

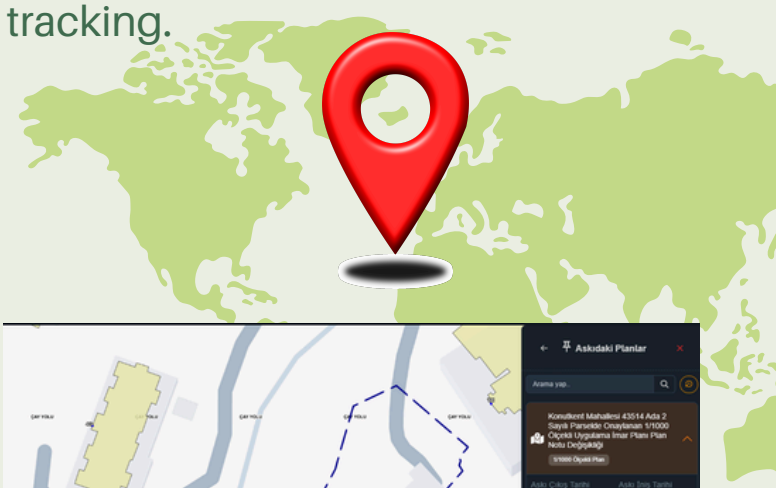
Waste Collection Points: Glass, textile, and mobile waste collection points are mapped to help citizens easily locate and access their nearest collection facilities.

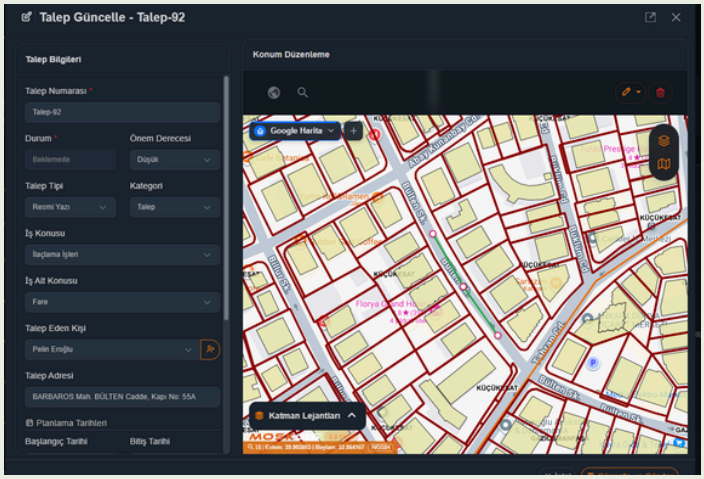
Zoning Plans and E-Zoning: Pending zoning plans are published digitally, enabling citizens to access zoning status information online.

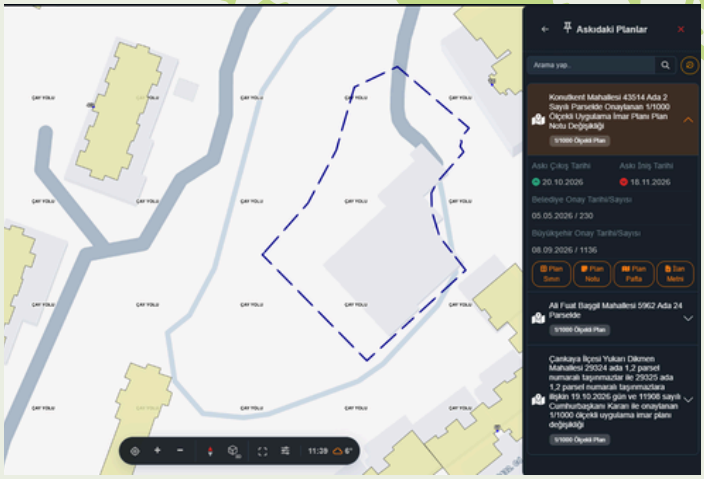
City Guide: Urban data generated by the Municipality is made accessible through the City Guide, enabling citizens to easily find information about municipal services and key locations.



Field Operations and Workflow Management: Pest control and cleaning activities are managed through GIS, while real-time field team locations are tracked using GPS tracking.







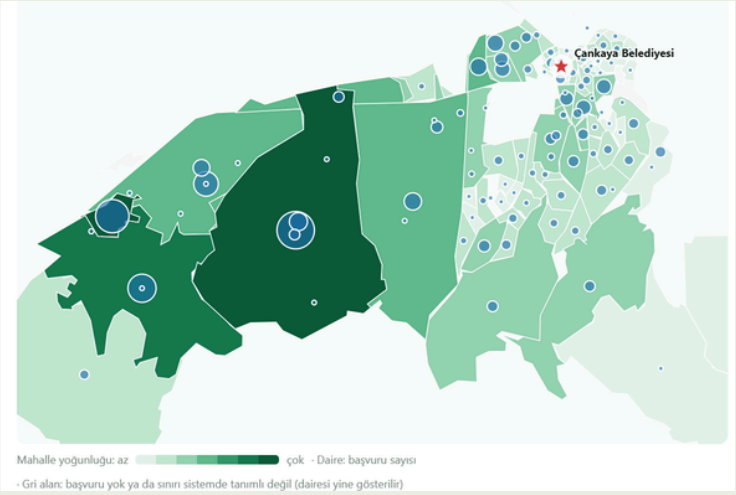
GIS provides citizens with easy online access to municipal services and key locations, such as waste collection points, helping reduce unnecessary travel, traffic congestion, and carbon emissions.

Çankaya BELEDİYESİ

DIJITAL.CANKAYA.BEL.TR

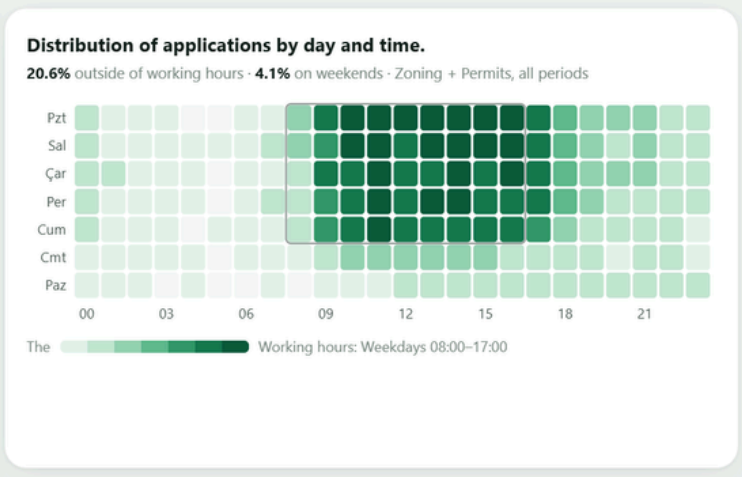
ONLINE APPLICATION AND PROCESS MANAGEMENT SYSTEM

The Digital Application System is a digital infrastructure that enables all stages of zoning and licensing services, from application submission to completion, to be managed through a single platform. By reducing the need for paper-based processes and physical archives, it promotes efficiency, transparency, and sustainable resource management in municipal services.



Online Applications

Through electronic signatures, online CAD, and system integrations, all stages of the application process are digitally monitored and managed in a controlled manner. This reduces paper consumption, the need for physical archives, and the necessity for citizens to visit municipal offices in person.





Statistical Reporting: Statistical reports are generated for management by analysing staff performance and application data, including application types and statuses.

Çankaya BELEDİYESİ

DIJITAL.CANKAYA.BEL.TR

Department of Zoning and Urban Planning

- Zoning Status Applications
- Road Elevation Applications
- Architectural Project Applications
- Structural and Mechanical Installation Applications
- Building Permit Applications
- Occupancy Permit Applications
- Archive and Automation (Valuation) Applications

Department of Licensing and Inspection

- Workplace Licence Applications
- Distance Compliance Report Applications
- Responsible Manager Certificate Applications
- Public Holiday Operating Licence Applications
- Business Name Change Applications

Paper · Zero Waste

A4 equivalent paper Project drawings were converted to A4 size based on area.	≈ 4.2 million
Unprinted paper 80 g/m² A4 ≈ 5 g	≈ 20,8 ton
The rescued tree 90% range: ≈ 267 – 456 trees	≈ 354
Water/energy saving Zero Waste coefficients: 1 ton = 17 trees, 28 m³ of water, 4,100 kWh	≈ 583 m³ · 85,4 MWh

Transportation · Carbon

The municipal visit was prevented. Round trip; 2 per application + 1 per revision round.	≈ 58.011
The road that wasn't built Average one-way distance ≈ 11.6 km	≈ 1.3 million km
Fuel saved Private vehicle share: 60%, 7 L/100 km	≈ 56.186 L
Prevented CO_2 emissions Equivalent to the annual carbon sequestration of approximately 7,601 trees.	≈ 167,2 ton

Time

Time saved Travel + waiting/processing at the municipality (45 min)	≈ 91,285 seconds
Working day equivalent 8-hour workday	≈ 11,411 days
Application outside of working hours Weekdays outside 08:00–17:00 and weekends	%20,6
Weekend application Applications made while the municipality is closed.	%4,1

CARBON EMISSIONS

≈ 167,2

tons of CO_2

≈ 13 million km of road saved
56.186 liters of fuel saved

TOTAL AREA

≈ 354

decares

≈ 20,8 tons of waste were collected
4.2 million m² of green space

CO_2

The use of the Digital Application System has prevented approximately **167,2 tonnes of CO_2 emissions.**