Smart Traffic Management in the City of Stockholm

An innovation project in the Stockholm Programme for the Smart and Connected city

The Capital of Scandinavia

Stockholms stad

Multifunction sensors collect data and control traffic

The city's traffic signal control systems need to be modernized. Today, traffic signals are largely controlled by inductive-loop traffic detectors buried in the road. Maintenance of these detectors requires great resources and interferes with traffic, as streets have to be closed.

Intelligent cameras (sensors) are now tested to replace these detectors to improve traffic flow, increase traffic safety and save costs as disturbing maintenance work is reduced.

Overall traffic control is improved as the sensors can recognize vehicles as well as pedestrians and cyclists. Collected traffic data can be used for traffic planning and shared with other traffic agencies and authorities utside the city.


Stockholms stad
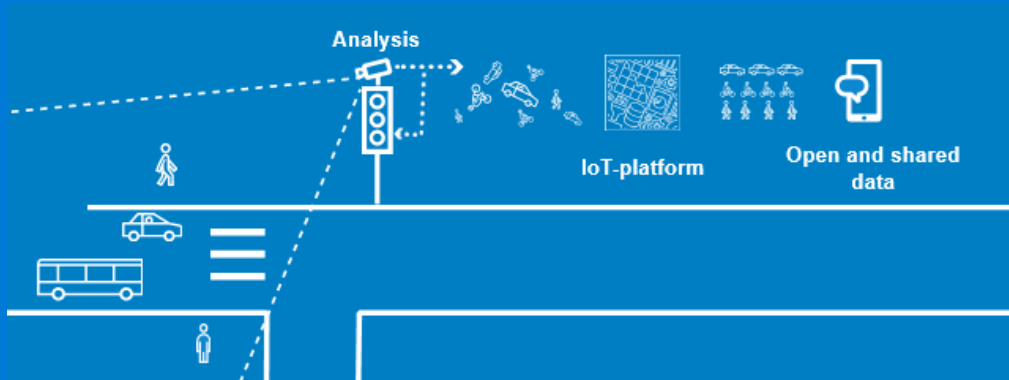
Dynamic control reduces queues and can improve air quality

Stockholm is growing. As the traffic space is limited, the increased volume of travellers poses a major challenge for traffic management with more queues and increased emissions. The need for efficient travel flow and public transport in the inner city is increasing.

A smart traffic planning algorithm is being tested to improve the traffic flow of public transport vehicles, cyclists and pedestrians in the inner city. It can dynamically adapt traffic signalling to the inflow of traffic to the current traffic situation.

The method is expected to contribute to shorter queues and reduced travel times. It can also enable traffic control based on to current emission levels to improve the air quality in the inner city.
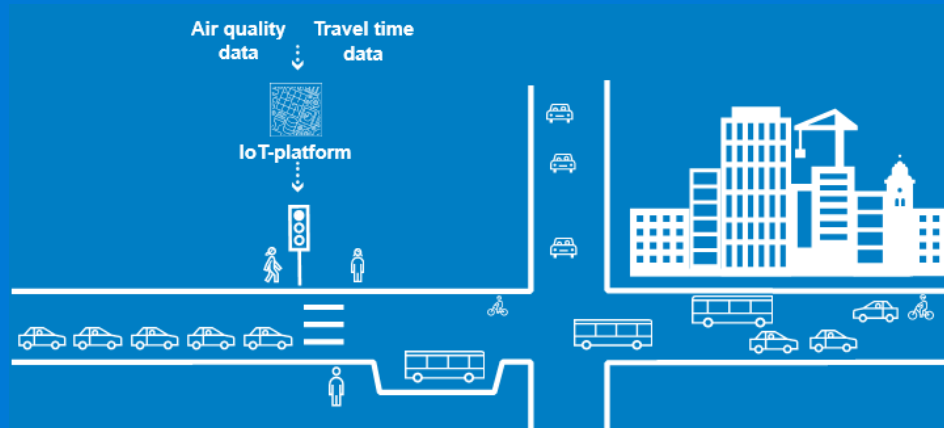
Real-time data increases mobility and security

Nobody wants to have to wait by a red signal when there are no cars around. With cameras that measure traffic flow real time, waiting times at crossings can be reduced.

Today green signals at crosswalks are controlled by planning schedules based on historical traffic flow data. This means that traffic signals turn red at fixed times even if the traffic situation does not require it. The result is unnecessarily long waiting times for pedestrians and cyclists which risks reducing the public's respect for traffic signals and increase risks of accidents.

With smart traffic management based on real time data, the green signals are adapted to variations in traffic flow. Both queues and waiting times can be shortened and traffic security will be increased for everyone.

Stockholms stad
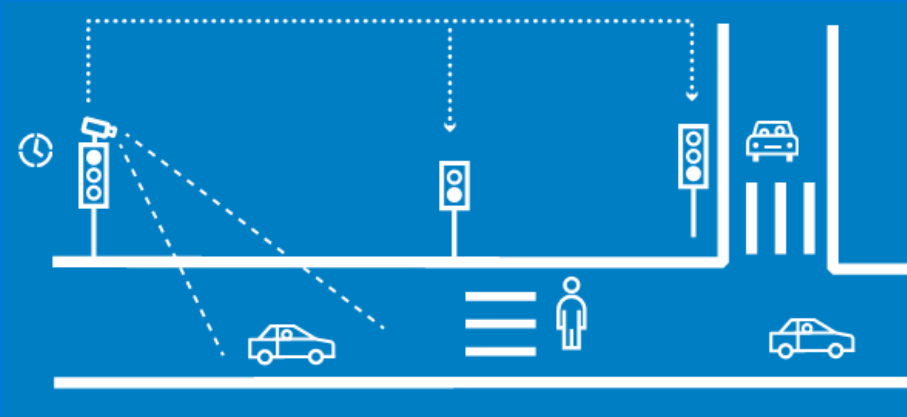
Smart pedestrian push-button boxes gives safer crossings

Maintenance of push-button boxes at crosswalks is time-consuming. There is currently no effective way of determining maintenance needs. Broken boxes are detected too late which increases risks for all road users at pedestrian crosswalks.

Smart push-button boxes with a new feature for automatic malfunction-reporting can now signal when something is broken. Repairs are made faster and more cost-effective and the cross walks become safer.

The push-button boxes already today have features that give school and preschool classes priority with extended green signals. The new function ensures even better safety.

Stockholms stad
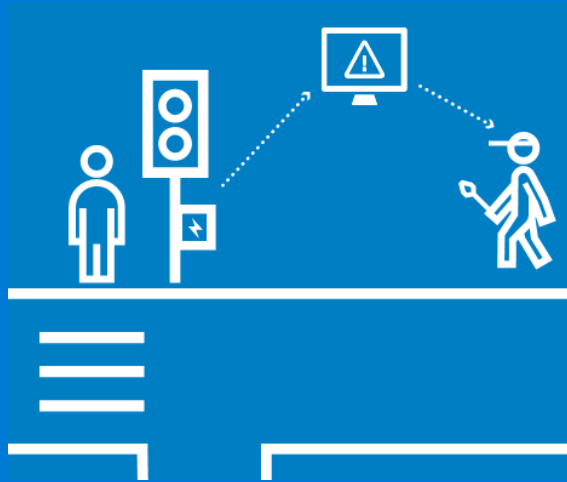
Increased innovation opportunities with real-time data

When traffic data is shared within the city and opened up for others to use freely, that creates good conditions to develop new innovative products and services. Collecting, using and sharing data in real time provides additional opportunities to develop smart solutions that contribute to better flow of traffic, increased traffic safety and sustainable travel in the smart city.

However, in order for the city to be able to handle data in real time, new smart technology, new systems and new working methods where several different businesse and agencies work together are needed.

The goal is to create an even better transport system and a more efficient flow of data that includes all road users.

Stockholms stad

Open standards lay the foundation for the smart city

Stockholm is working towards becoming the world's smartest city and smarter traffic management and control is part of this.

In order to find better solutions for traffic management, the city will switch to new control and monitoring systems with open standards for communication between control systems, traffic signals and other road equipment.

This means that the city will become less supplier dependent and will have greater opportunities to develop more smart solutions and traffic functions, together with state or regional actors such as the Swedish Transport Administration and the Region Stockholm Traffic Administration.

In the longer term there are also opportunities to develop common smart traffic management solutions in the Nordic and European region.

Stockholms stad