INTELLIGENT TRAFFIC SYSTEM in CHORZÓW (POLAND)

Błażej Buja - Traffic Managment Systems Specialist

Street Administration in Chorzów

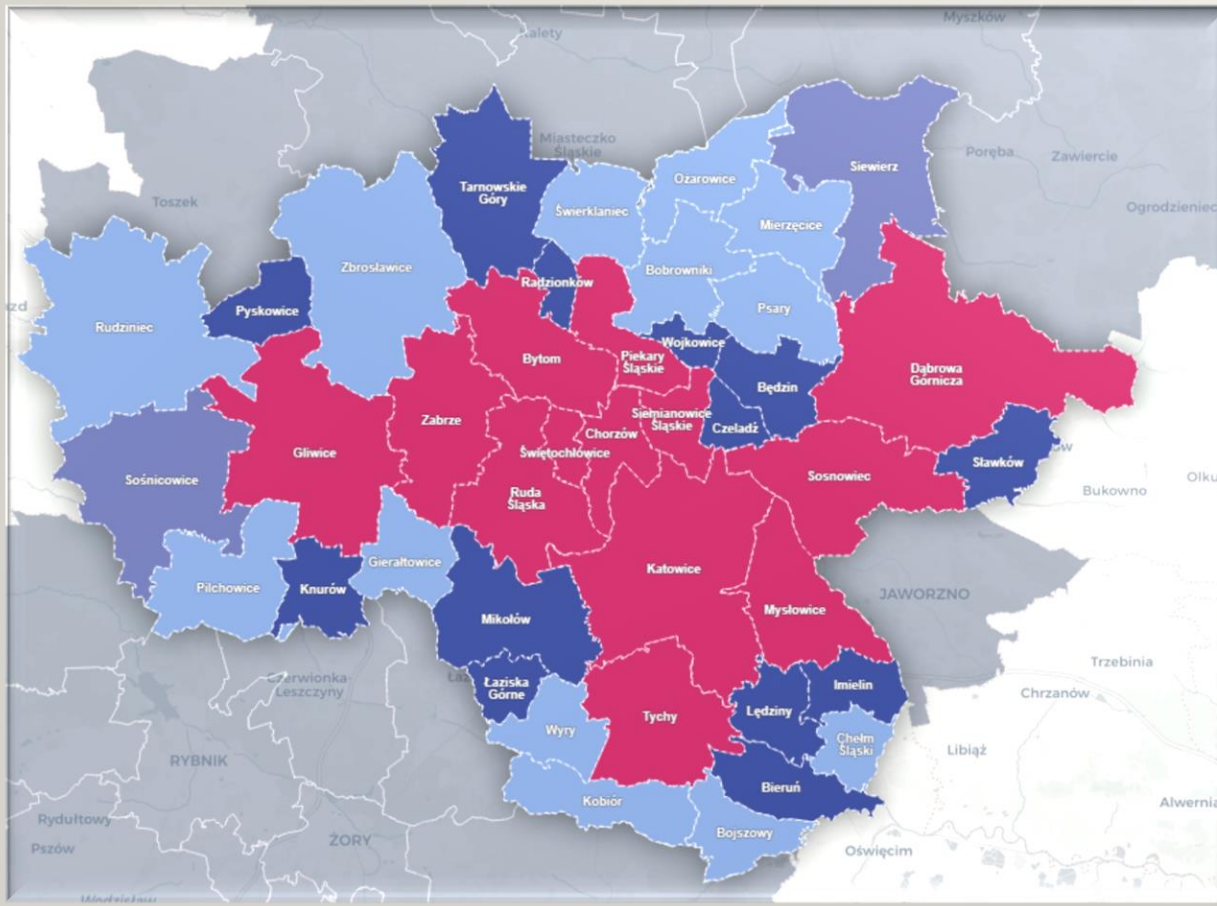Fundusze Europejskie
Program Regionalny

Śląskie.

Unia Europejska
Europejski Fundusz
Rozwoju Regionalnego

MZUiM CHORZÓW

WHERE ARE WE?

Chorzów (Southern Poland)

Population 107 807 (2019)

Area of city 33.24 km^2

Population density – 4th place in Poland (over than 3.000 people per km^2)

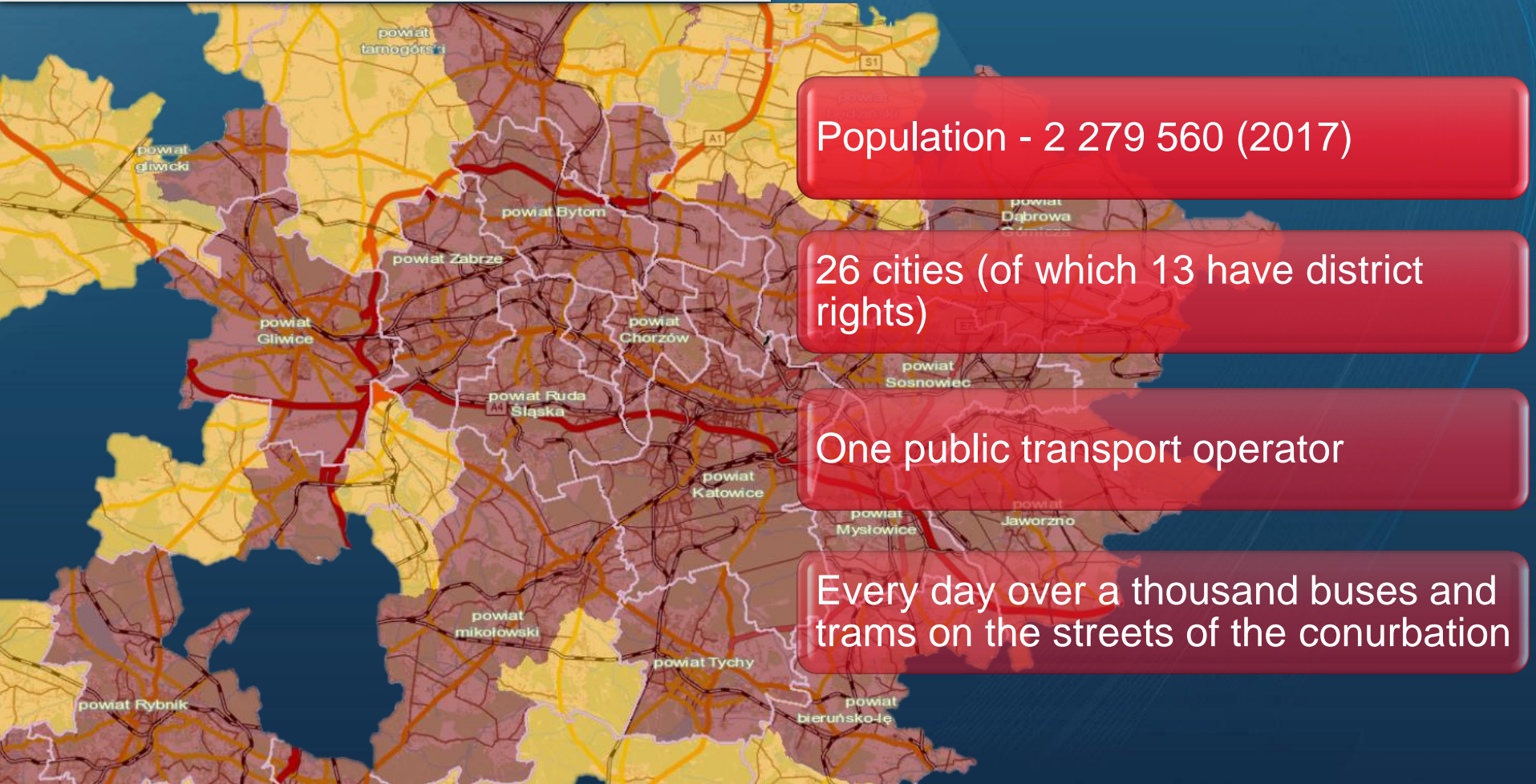Chorzów is located in the center of the Silesia conurbation

SILESIAN CONURBATION

Population - 2 279 560 (2017)

26 cities (of which 13 have district rights)

One public transport operator

Every day over a thousand buses and trams on the streets of the conurbation

SILESIAN CONURBATION

Chorzów – city with district rights

Over 200,000 vehicles per day
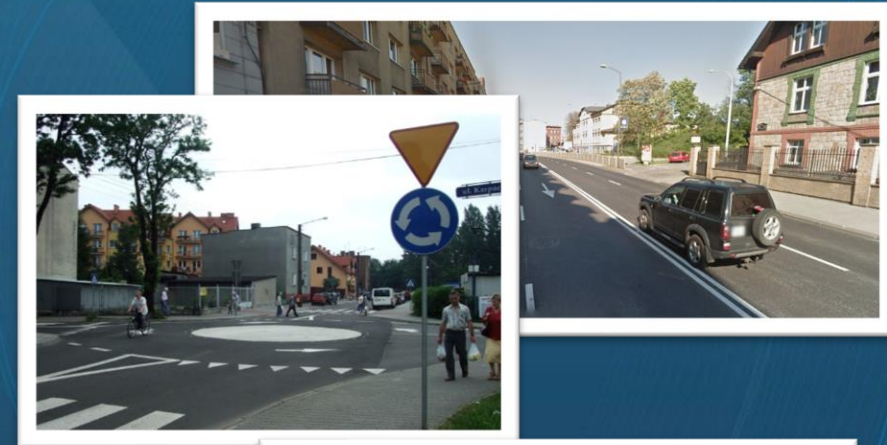
Terribly large communication problems

WHAT WE DID BEFORE ITS?

- Almost all traffic lights were rebuilt for accommodative signals;
- The collision and heavy junctions on roundabouts were rebuilt (28 junctions);
- Intersections were channeled (if possible);
- Street geometry has been improved.

The moment has come when the engineering tools available to us have run out.

- Each of the 13 cities with district rights has its own street administration;
- Plans to establish a metropolitan organization (which was only established in 2018);
- Taking an engineering initiative to implement a transport system in Chorzów;
- The most important condition - the system is to be open and ready to cooperate with neighbouring cities;

OUR MAIN ASSUMPTIONS

Implementation of a transport system that can function both on a coordinated route, on a network of intersections, managing them in area and locally, increasing the dynamics of isolated intersections

Increasing the level of informing drivers passing through the city - encouraging drivers to choose less busy roads

Introducing a priority system, that will realistically accelerate the travel time of public transport vehicles through our city

TIMELINE

"Design, delivery, execution and commissioning of the Linear Traffic Management System in the city of Chorzów"

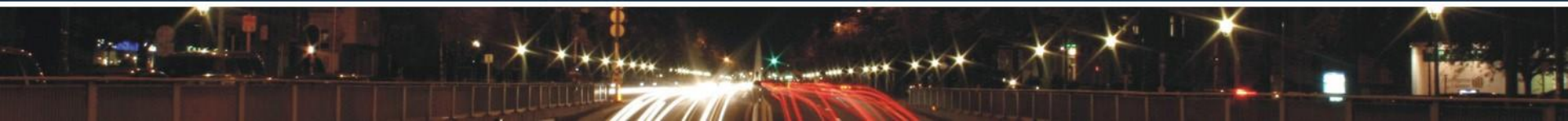June-July 2016   August 2017   February 2018   December 2019

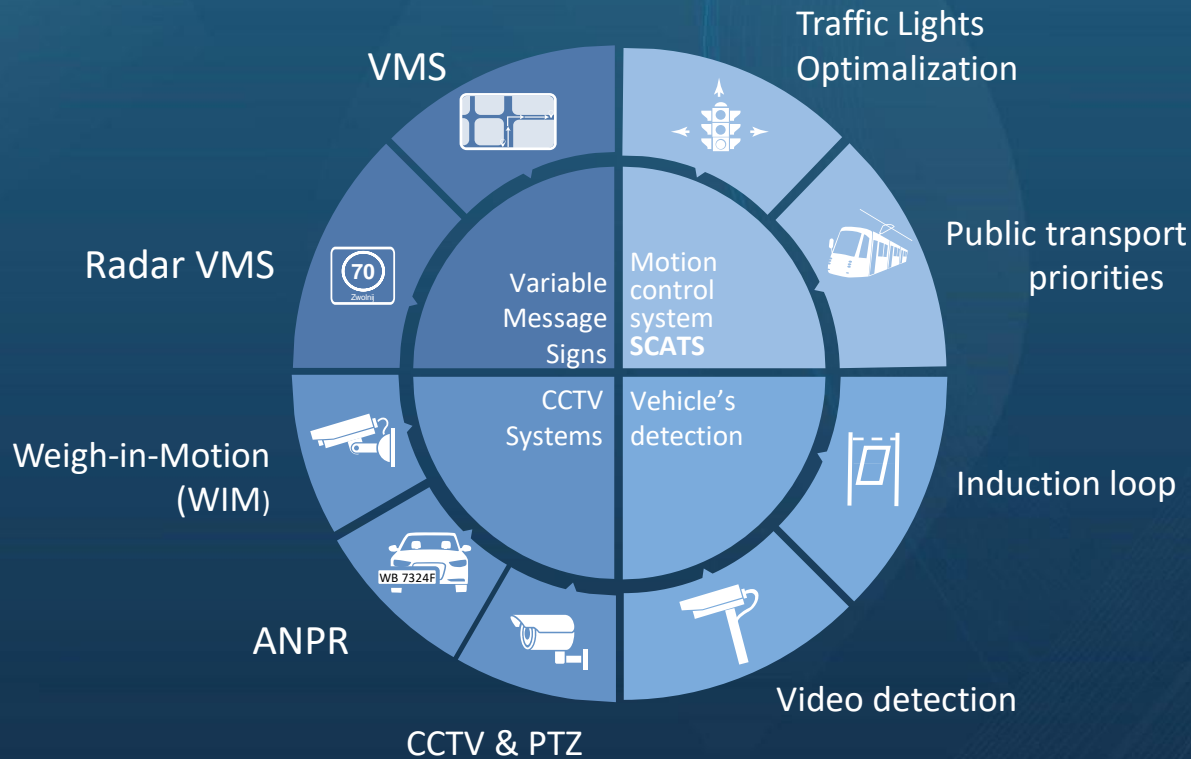The birth of an idea   Writing Functional-utility program   Signing a contract   Complete the task

SYSTEM ARCHITEKTURE

PROJECT SCALE

32 Junction managed by SCATS

2 Meteorological station

30 km Fiber optic cable

1 Weigh-in-Motion (WIM)

18 8 - VMS
10 - radar VMS

1 Mobile traffic management center

104 Wideo detection cameras

78 37 - ANPR cameras
26 - PTZ cameras
15 - 4-directional cameras

VARIABLE MESSAGE SIGNS

Intersection of Kościuszki - Parkowa

Katowicka street – entrance from Bytom

ANPR – TRAVEL TIME & NUMBER PLATE RECOGNITION

High intensity, 0-9 km/h

Medium intensity, 10-29 km/h

Low intensity, 30+ km/h

Plate	:	SW249 -POL
Date	:	2019/11/26
Time	:	14:17:42:200
Brand	:	VW
Model	:	NA

SW·249

SCATS SYSTEM

The heart of our ITS System.

SCATS is an adaptive system to control traffic lights in given area.

The system works in real time, optimalizing and adjusting signaling control parameters in the area to current road traffic.
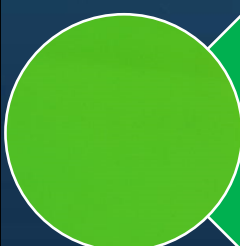
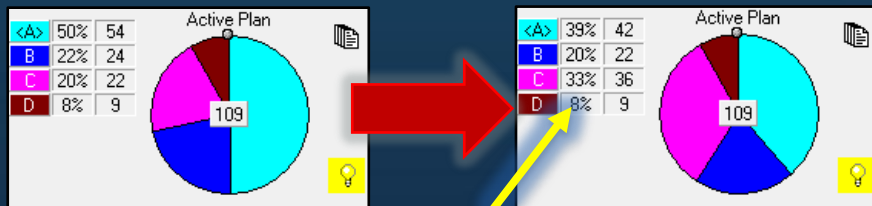SCATS allows analysts to make any changes.
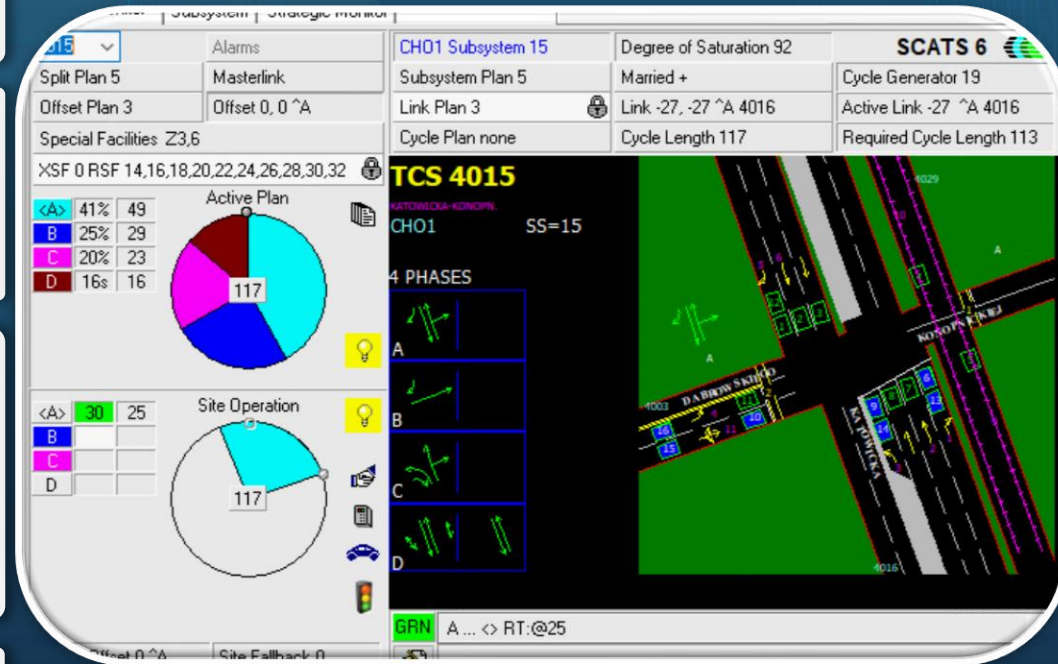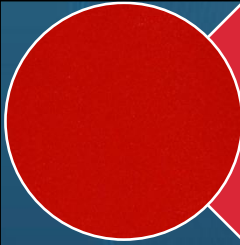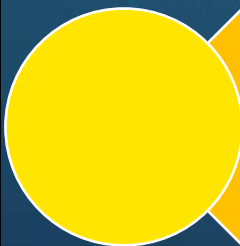
SCATS SYSTEM – WHAT CAN WE DO?
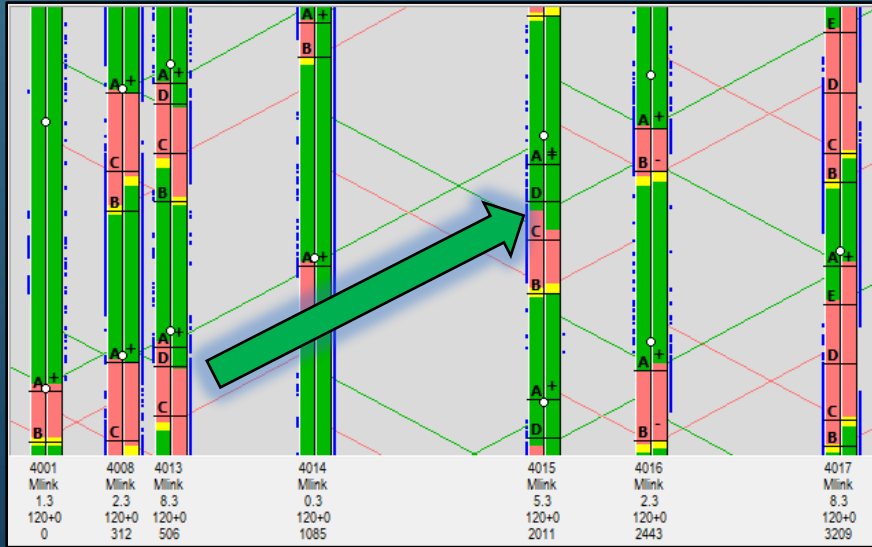
Coordination of main road

Extension of the green signal for the side inlet

Change signaling program for street renovation

Modified group

PRIORITY SYSTEM FOR PUBLIC TRANSPORT

GPS – position information
ŚKUP/SDIP – sending data to
Traffic Management Center

Public Transport
Management Center

Traffic Management Center -
receiving information about
vehicles and sending
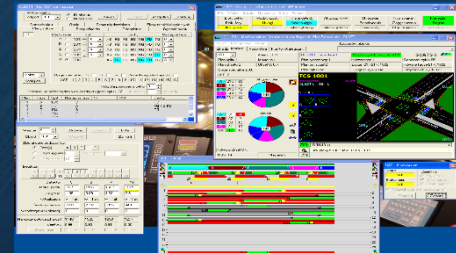priorities

Virtual reporting
point

Changing lights

Defined check-out
point

Traffic control
system

Prioritization strategy

Traffic light controller

MAIN APPLICATION

PROJECT PURPOSE:

Travel time reduction

Tests were performed during workdays which did not collaborate with non-working days

There were 3 time periods: Morning rush (6:30 – 8:30), Middle peak period (10:30 – 12:30), Afternoon period (14:30 – 16:30)

Each time period included 5 tram and 5 bus rides

Sector „T"

17.7%
Result

Target: 12%

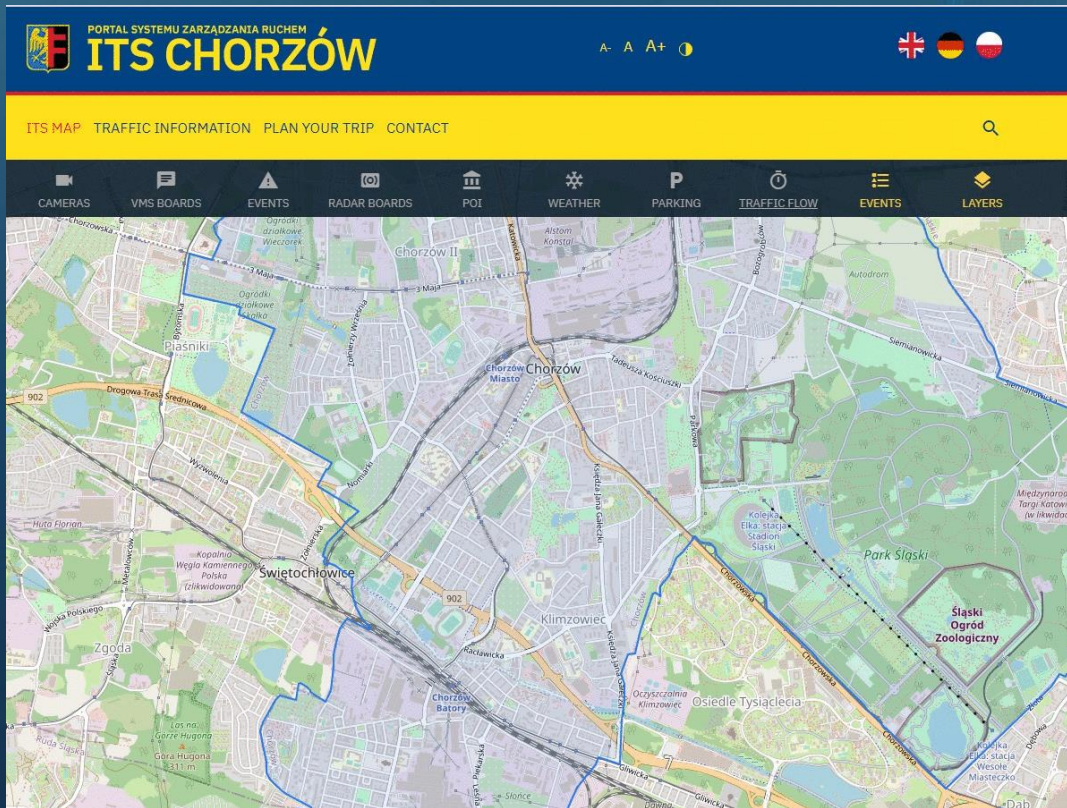Sector „A"

18.9%
Result

Target: 12%

PORTAL FOR RESIDENTS

Webside: its.chorzow.eu