



European Union
European Regional
Development Fund

**Improving sustainability and attractiveness of local
public transportation services in Miskolc through
GREEN ARROW PROJECT**

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7 October, 2016 | TRAM KoM, Ancona



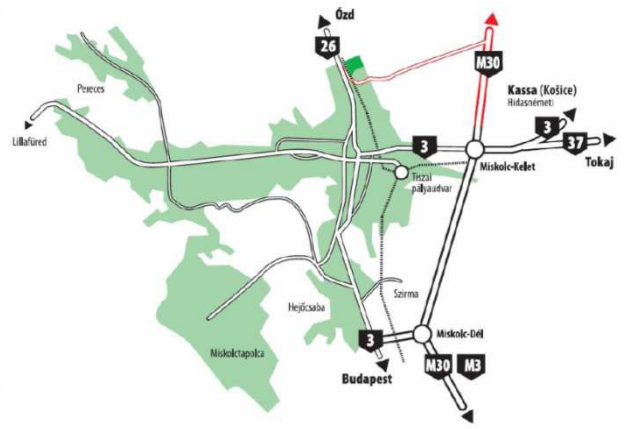
MISKOLC







TRAM
Interreg Europe



Overview

City mobility - current status

Green Arrow project

- Renewal of tramline
- Extension of tramline
- Real-time passenger information system
 - # Touch info screens
 - # Digital boards in stops
 - # City PT APP (Trans-IT)
- Smart crossroads
- on-board Wi-fi

CNG and forthcoming steps





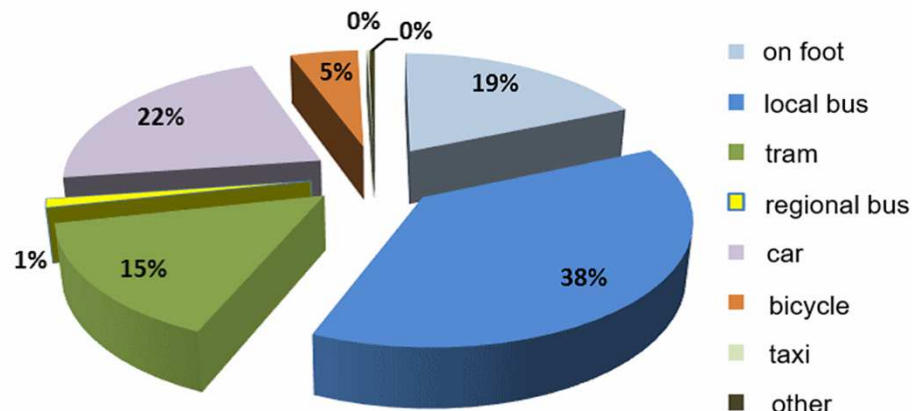
in a nutshell:

CITY MOBILITY STATUS

City mobility - current status

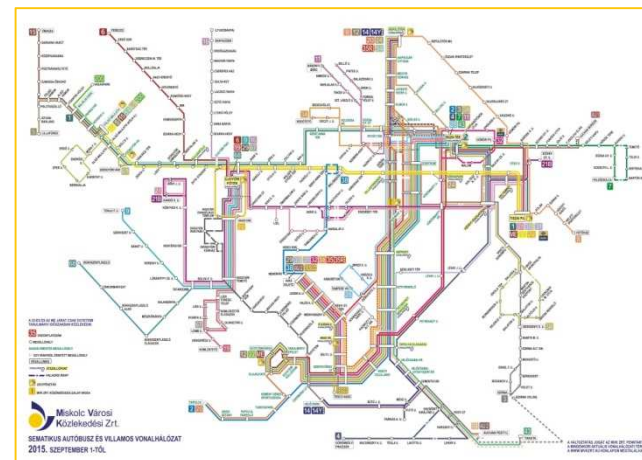
Main relevant features

- 50+% of PT share in modal split
- 156 buses, 31 trams (public, local)
- growing pedestrian zones
- lack of e-mobility (vehicles, chargers)
- sufficient parking zones
- 17km bike paths and lanes
- 1 dedicated low emission zone



Distribution of mobility modes in urban transportation (June 2015)

Indicator	Value
Total number of vehicles	59,012
Total number of private cars	49,008
Total number of taxis	420
Total number of motorbikes	1,930
Total number of trucks	7,040
Number of personal automobiles per capita	0.366
Kilometres of bicycle paths and lanes per 100,000 population	10,6
Total annual number of public transport trips	76,320,747
Total annual number of trips by bike	7,066,736





A flagship project for improved sustainability and attractiveness of trams (*early bird project connected to Smart&Green Miskolc Programme*)

GREEN ARROW PROJECT

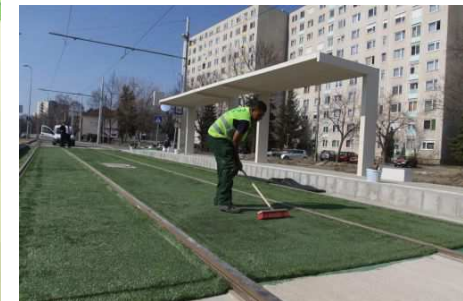
Tramline infrastructure and trams #1

Green Arrow project – some features

- aimed at achieving environment-friendly public transportation with the reduction of travel time
- 120 M € total investment
- 10,6 km line renewed
- 1,6 km new line built
- 22 stops modernized
- 31 trams procured

design decided by citizens!

- smart passenger information system
- smart crossings
- free Wi-fi



Tramline infrastructure and trams #2



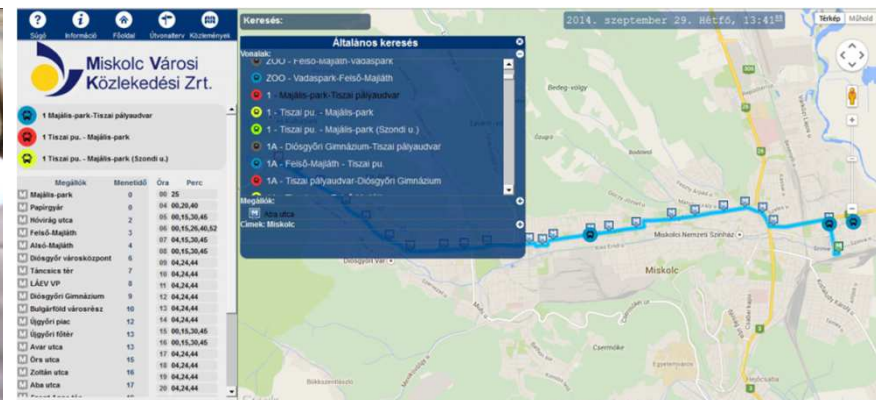
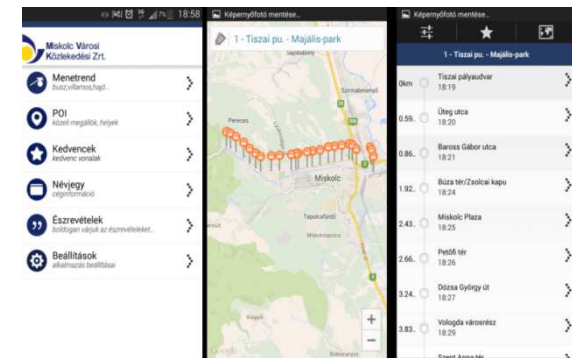
Real-time passenger information system



- on-board units (GPS)
- touch-info screens
- digital boards in each stop
- digital information screens in multimodal hubs

Android APP

- 10 000+ downloads
- rating: 3.7



Smart crossroads

Operation in 16 junctions

Green lights for trams behind the schedule

Improved reliability of road planning



On-board Wi-fi

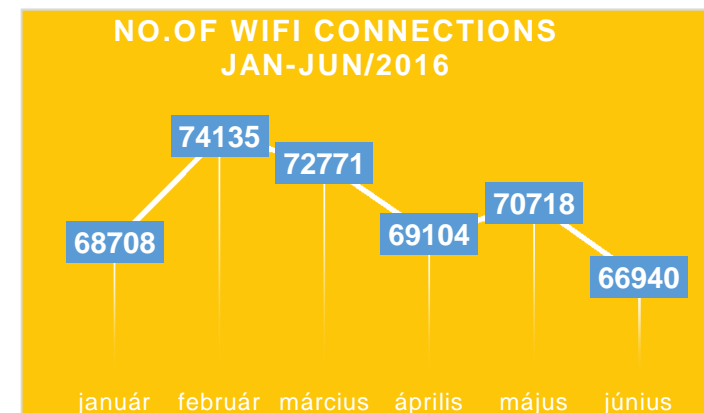


on-board free Wi-fi available on the whole fleet

- max 3hs per device per day for free
- ideal for
 - mailing
 - responsive city information sites
 - social media
- 3G
- continuous increment of users

received well

- Av. No. of users: 70k
- data traffic \approx 1Tb/week
- satisfaction rate 25%+ in 4 ys – *proof of evidence*





Improvement of urban PT services goes on

CNG BUSES, FORTHCOMING STEPS AHEAD



CNG and forthcoming steps

75 new CNG buses

- Co-funded through Green Investment Sceme
- to be fuelled by BNG (sewage plant)
- low-floor, air-conditioned
- 99% of PM10 emission avioded, lower CO2 emission
- silent operation
- EURO 6
- operation costs (LCC) decreased by 25-40%

Wi-fi to come for each (4G)

Free Wi-fi in all tram/bus stops







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Thank you for your attention!

Questions welcome



Project smedia