

City of Koprivnica,
Nebosja Kalanji

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020

RESTART
EUROPE
Together

#EURegionsWeek



European Committee
of the Regions



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020



Smart bus station in Koprivnica

Key features

- Improve the capacity and the quality of the service of public transport in Koprivnica
- Test an innovative way of using renewable energy sources and local energy production in powering electric based public transport operations
- Set up the basis for the expansion of the services to the Functional urban area of Koprivnica
- Implement the above mentioned solutions in a financially limited environment



European Committee
of the Regions



European
Commission

Public transport in a small city

City of Koprivnica

- Small city located in the northwestern part of Croatia
- 31000 inhabitants
- Located away from large transport hubs (like Zagreb)
- No public transport history (implementation of PT since 2016/2017 – Civitas Dyn@mo project)
- SUMP developed in 2015 – 2nd generation in development



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



Public transport in a small city

PT based on:

Two electric buses (3 lines) – using publicly available charging points

Bike sharing system of 60 conventional and 10 ebikes

Slow acceptance of PT usage from general population – enhanced with the COVID situation

Good acceptance of public bike system

All the infrastructure is owned by the City of Koprivnica

Public transport (ebuses, bikes, ebikes) – free of charge



European Committee
of the Regions



Why Smart bus station in Koprivnica?

Build in house charging facilities

Develop a model of expanding the public bike system to the rest of FUA Koprivnica – laid out in the FUA Koprivnica Action plan developed in the low carb project

Increase the usage of ebikes

Lower the operational costs of the public transport system



Smart bus station in Koprivnica

Located in the former military base that is being transformed into a knowledge – entrepreneurial hub of Koprivnica

- University facilities, entrepreneurial incubators, seat of many NGOs

Primary focus – starting point of all the public transport system operations of Koprivnica

Future sustainable mobility centre



Smart bus station in Koprivnica

Smart station specifications:

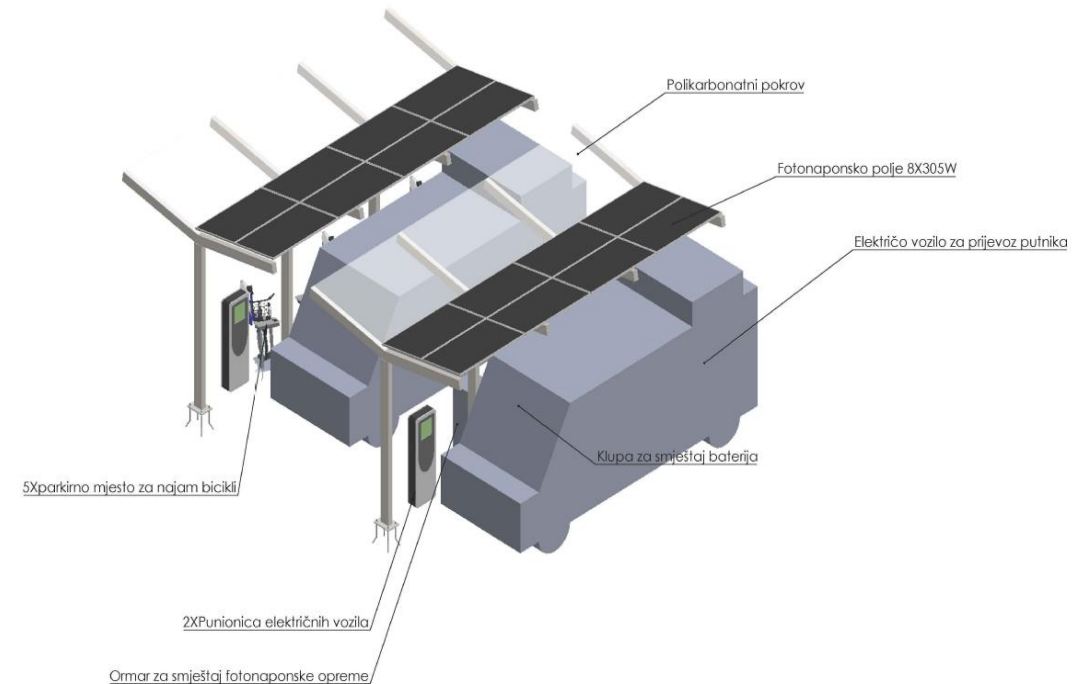
10 kw PV system

Battery storage system

5 terminals for ebikes

Two 7 kw AC charges (overnight charging)

Info system for passangers



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020



Smart bus station in Koprivnica

Smart station specifications:

Total cost of investment 58.000,00 €

Projected on-site usage of renewable energy up to 10 %

Rest from grid

Set-up for further expansion in PV and battery capacity (according to the financial situation and the requirements of the public transport in the future



European Committee
of the Regions



European
Commission

Smart bus station in Koprivnica future plans

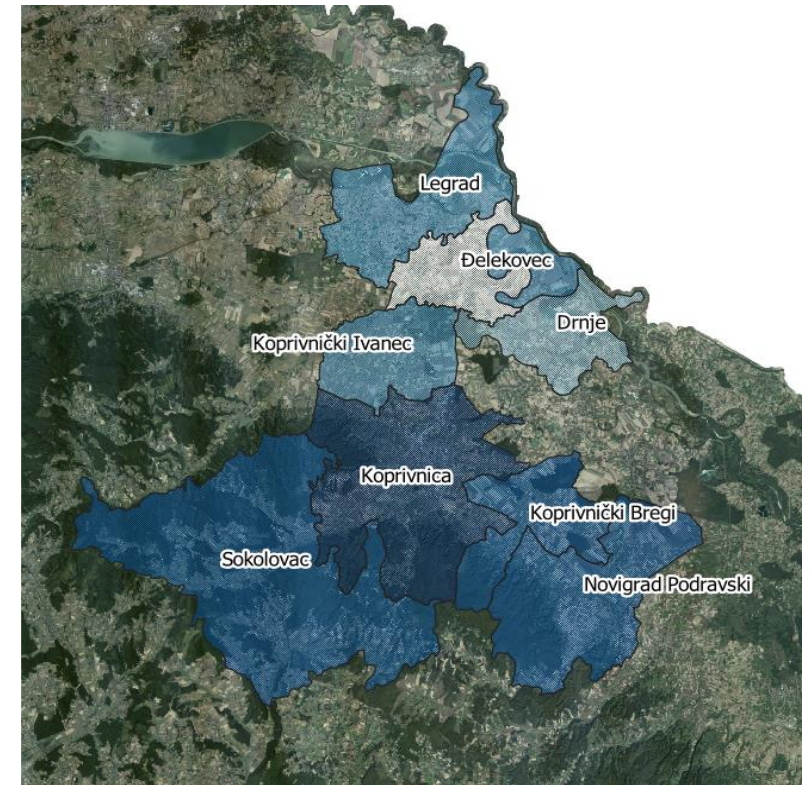
Further evaluation of the RE impact in the summer months

Developing small scale models for the expansion on the FUA Koprivnica area

Increasing the battery storage capacity

Upgrade with DC chargers

Disseminate the concept in comparable public transport systems (smaller-mid sized cities with existing PT operations and PT operations in development).



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



Thank you for your attention!

Nebojša Kalanj

Expert associate for sustainable development and European affairs

City of Koprivnica

nebojsa.kalanj@koprivnica.hr

00385 91 444 6669



European Committee
of the Regions



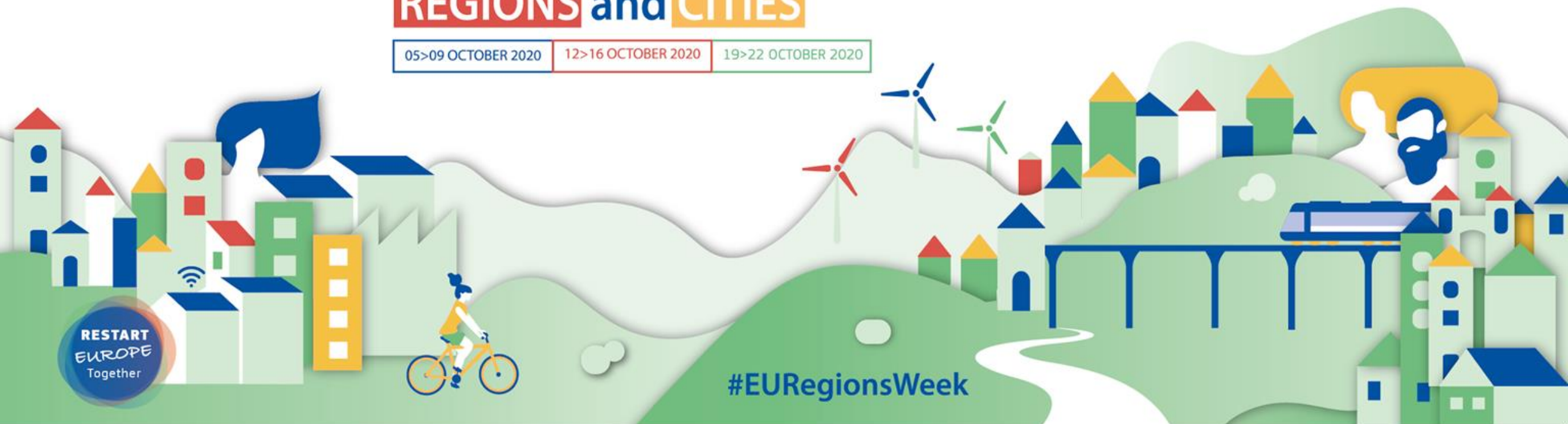
Skawina Commune,
Maciej Zacher

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020



#EURegionsWeek

RESTART
EUROPE
Together

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



LOW EMISSION BUS LINE PILOT

SKAWINA, POLAND

Maciej Zacher, mobility urbanist, Skawina Oct.2020

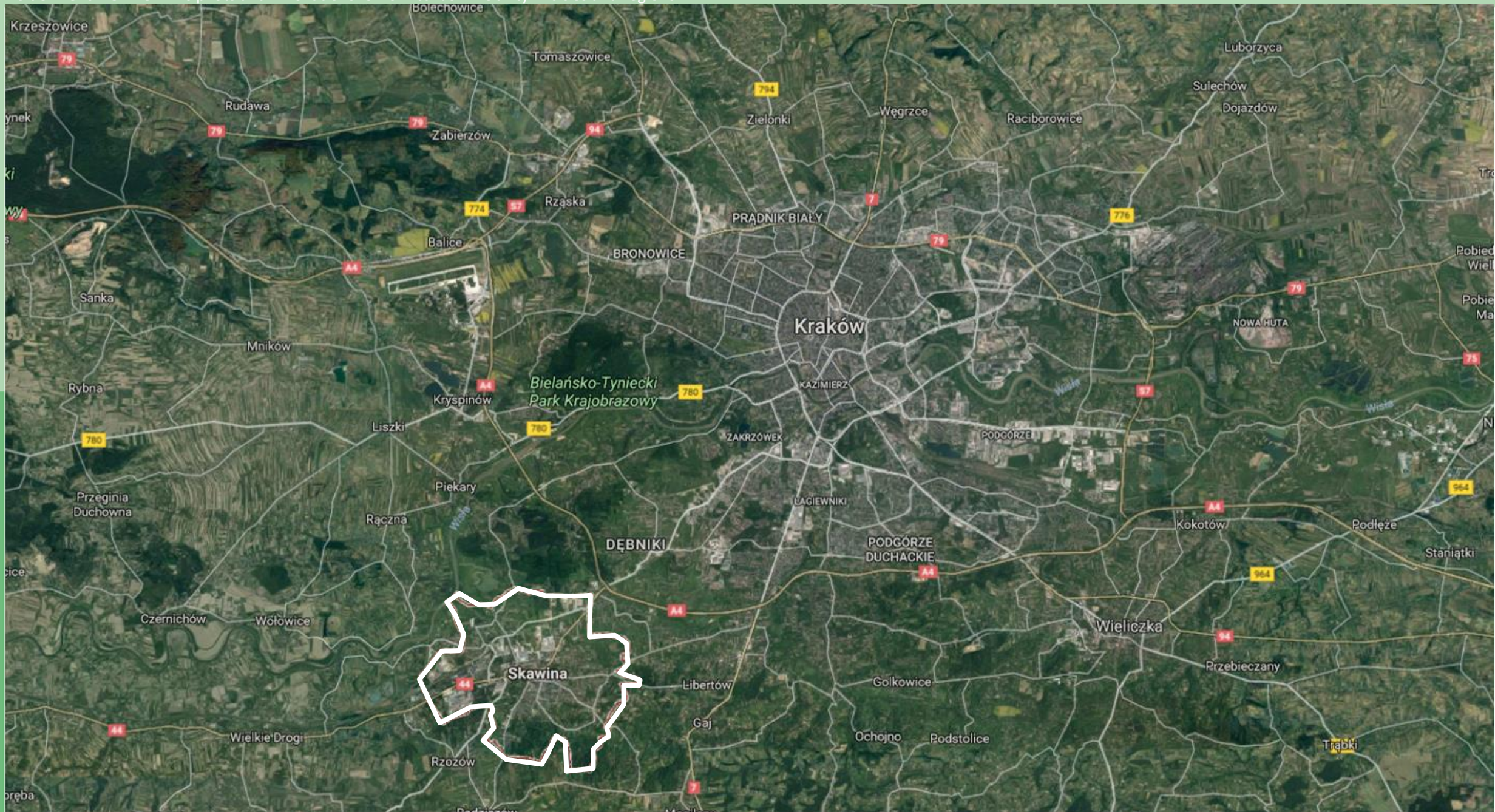


European Committee
of the Regions





SKAWINA



18th EUROPEAN WEEK of REGIONS and CITIES

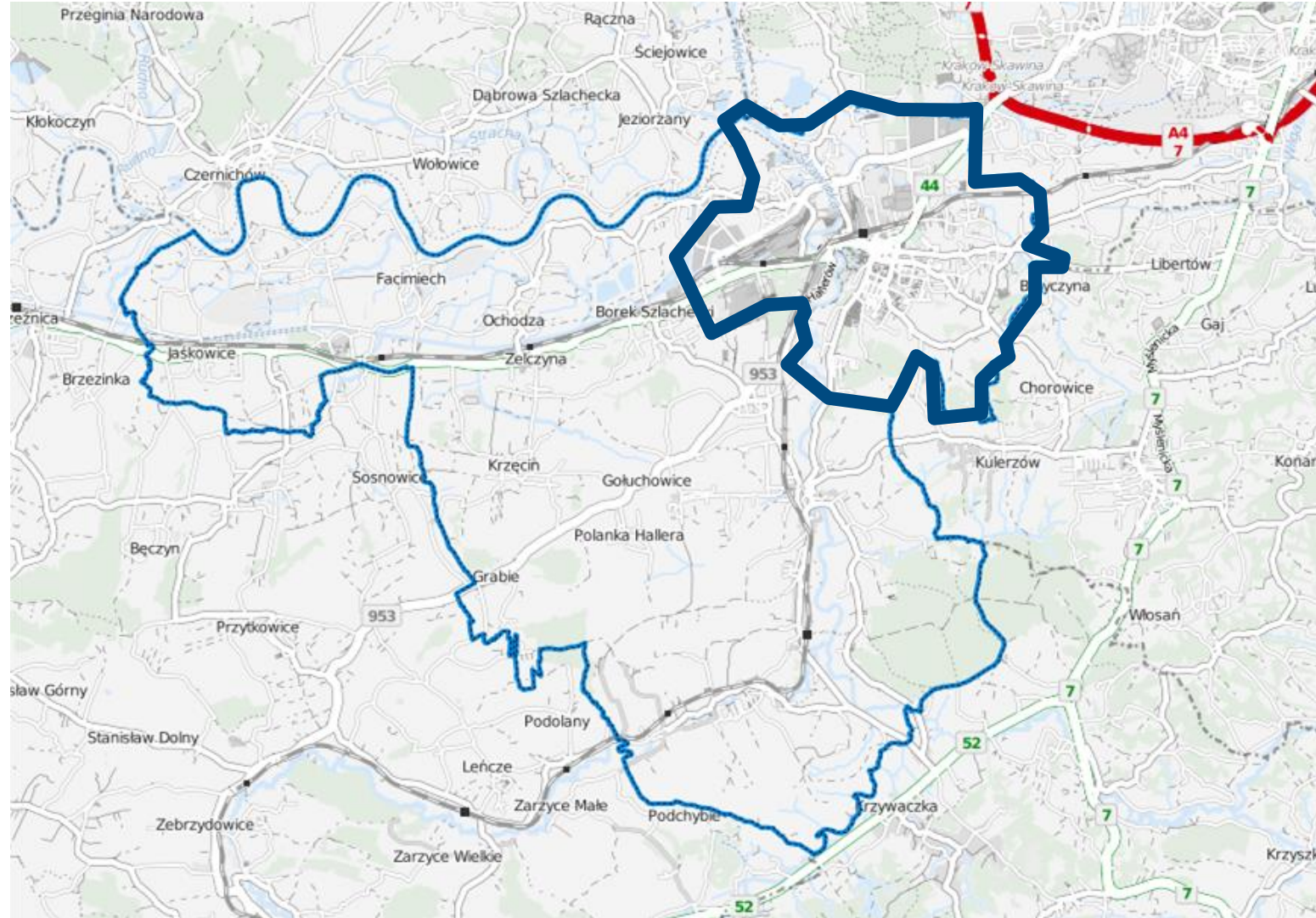
05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

A: 100,15km²

P: 43 235

PD: 433p/km²

CI: 1,1car/p





THE PILOT LINE



THE IDEA

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



the **FIRST**

LOW EMISSION FREE INTERNAL

FEEDER BUS LINE

in **SKAWINA**



European Committee
of the Regions







Volvo 7900 Hybrid 12,1m (2014)



Solaris 12.9 Hybrid 12,9m (2014)

18th EUROPEAN WEEK of REGIONS and CITIES

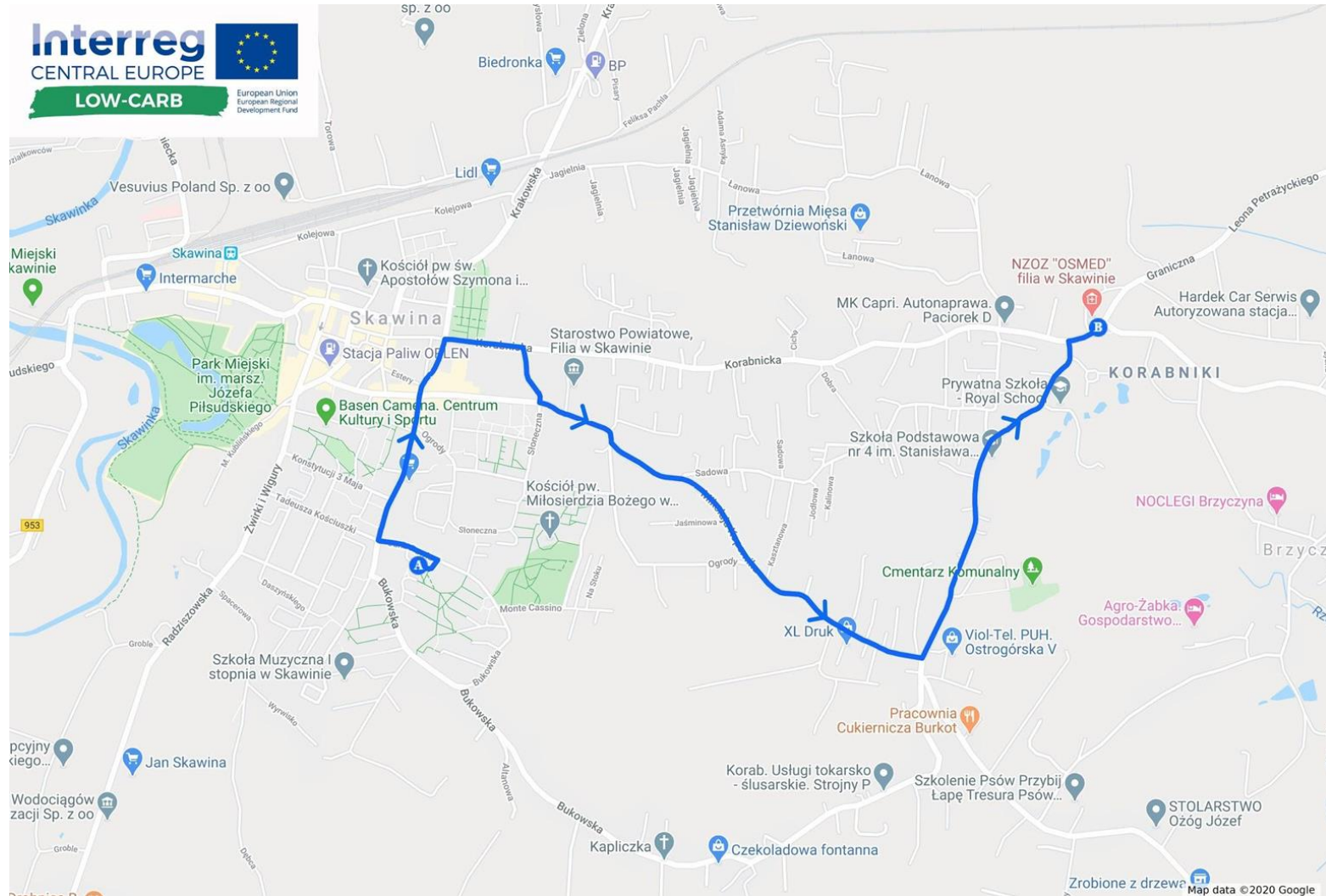
05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

Length – 9,25 km

Daily courses – 22*

VKT – 74 277,5

*42 on the workdays and 22 on the weekends for first two months



European Committee
of the Regions



European
Commission

18th EUROPEAN WEEK of REGIONS and CITIES

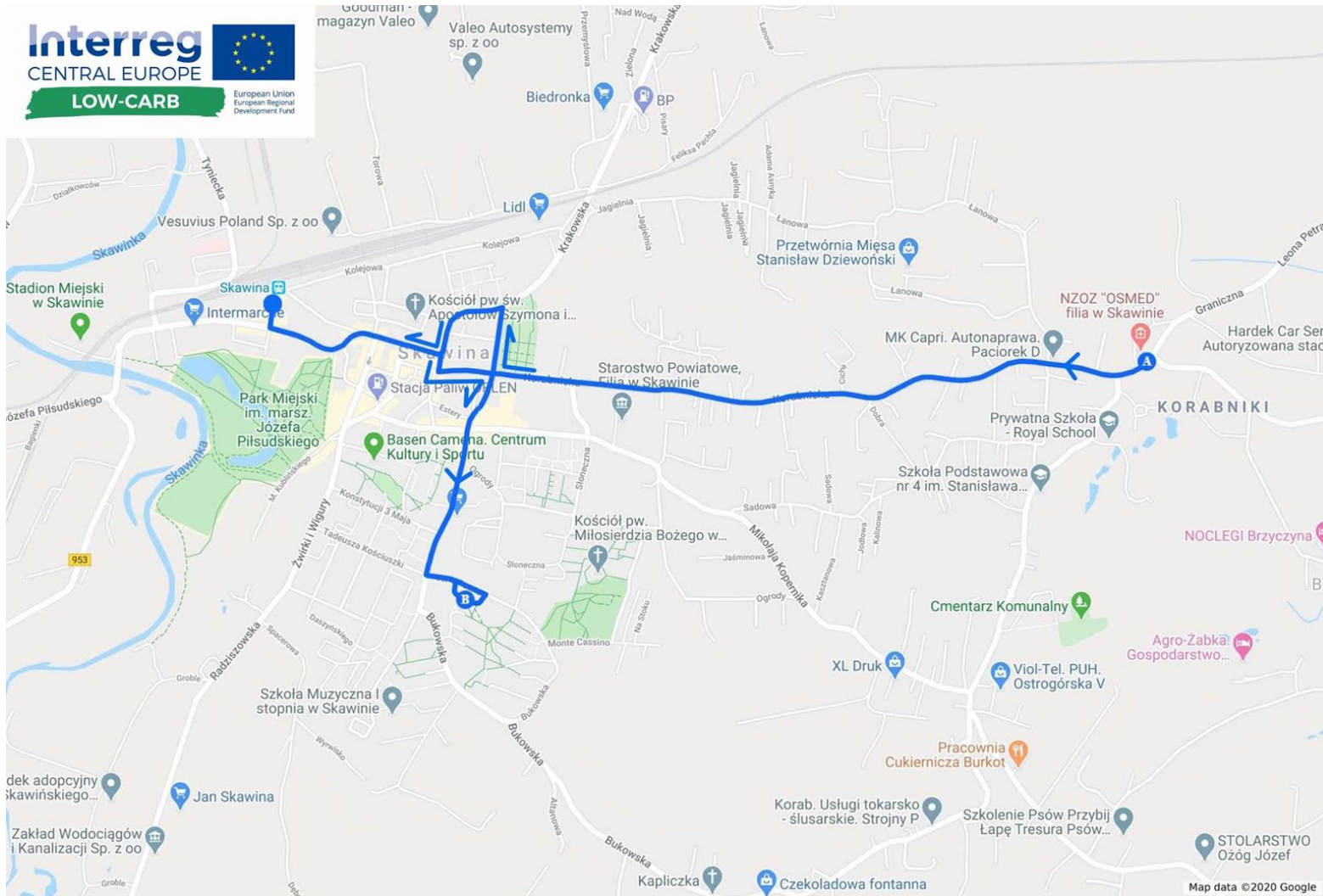
05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

Length – 9,25 km

Daily courses – 22*

VKT – 74 277,5

*42 on the workdays and 22 on the weekends for first two months



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

Length – 9,25 km
Daily courses – 22*
VKT – 74 277,5

*42 on the workdays and 22 on the weekends for first two months



European Committee
of the Regions

773		Skawina Korabniki		
LINIA AGLOMERACYJNA		2248-95		
TRASA: SKAWINA KORABNIKI - Skawina Korabnicka, Skawina Popieluszki, Skawina Pokoju, Skawina Mickiewicza, Skawina Niepodległości, Skawina Skawina Jana Pawła II - SKAWINA				
0) Skawina Korabniki		Dzień powszedni	Soboty	Święta
1) Skawina Wyspiańskiego	5	25	5	25
2) Skawina Korabnicka NŻ	6	15	6	15
3) Skawina Korabnicka Szkoła NŻ	7	05 55	7	05 55
4) Skawina Cmentarz	8	45	8	45
5) Skawina Rynek	9	35	9	35
6) Skawina Szkoła	10	25	10	25
7) Skawina SCK	11	15	11	15
8) Skawina Szkoła	12	05 55	12	05 55
9) Skawina Rynek	13	45	13	45
10) Skawina Popieluszki	14	35	14	35
11) Skawina Ajka	15	25	15	25
12) Skawina	16	15	16	15
(NŻ) - na żądanie	17	05 55	17	05 55
	18	45	18	45
	19	35	19	35
	20	25	20	25
	21	15	21	15
	22	05 55	22	05 55
Zakłócenia w ruchu powodują zmiany czasów odjazdów.				
MPK S.A. w Krakowie				

773		Skawina Rynek		
LINIA AGLOMERACYJNA		2009-1		
TRASA: SKAWINA KORABNIKI - Skawina Korabnicka, Skawina Popieluszki, Skawina Pokoju, Skawina Mickiewicza, Skawina Niepodległości, Skawina Skawina Jana Pawła II - SKAWINA				
- Skawina Korabniki		Dzień powszedni	Soboty	Święta
- ...				
0) Skawina Rynek	5	33	5	33
1) Skawina Szkoła	6	23	6	23
2) Skawina SCK	7	13	7	13
3) Skawina Szkoła	8	03 53	8	03 53
4) Skawina Rynek	9	43	9	43
5) Skawina Popieluszki	10	33	10	33
6) Skawina Ajka	11	23	11	23
7) Skawina	12	13	12	13
	13	03 53	13	03 53
	14	43	14	43
	15	33	15	33
	16	23	16	23
	17	13	17	13
	18	03 53	18	03 53
	19	43	19	43
	20	33	20	33
	21	23	21	23
	22	13	22	13
	23	03	23	03
Zakłócenia w ruchu powodują zmiany czasów odjazdów.				
MPK S.A. w Krakowie				



European
Commission



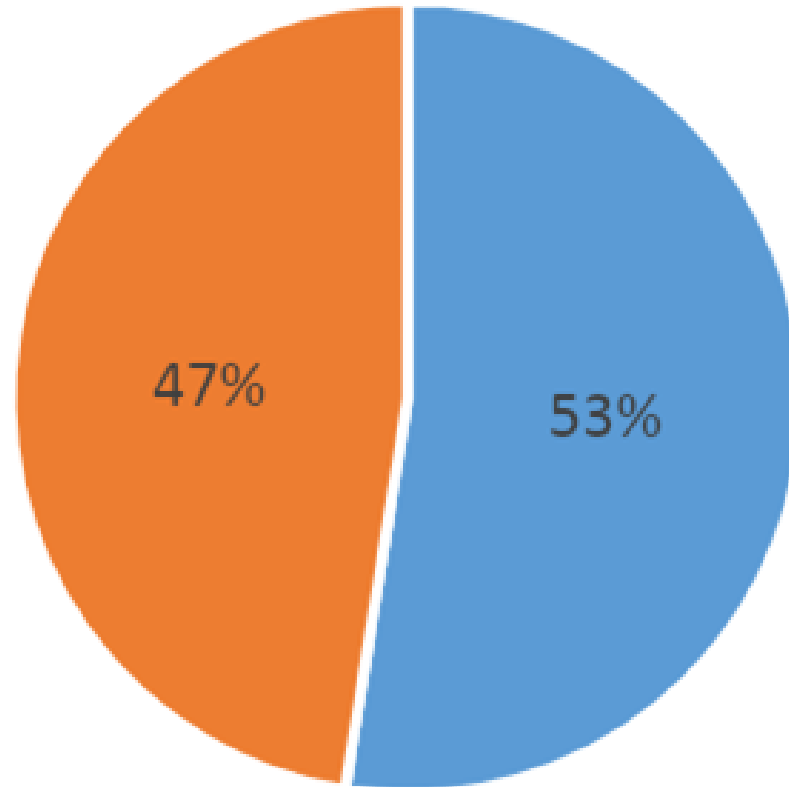
EVALUATION

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

PASSENGERS SURVEYED **198**
ONLINE SURVEY **239**

USERS GENDER



Female
Male



European Committee
of the Regions



18th EUROPEAN WEEK of REGIONS and CITIES

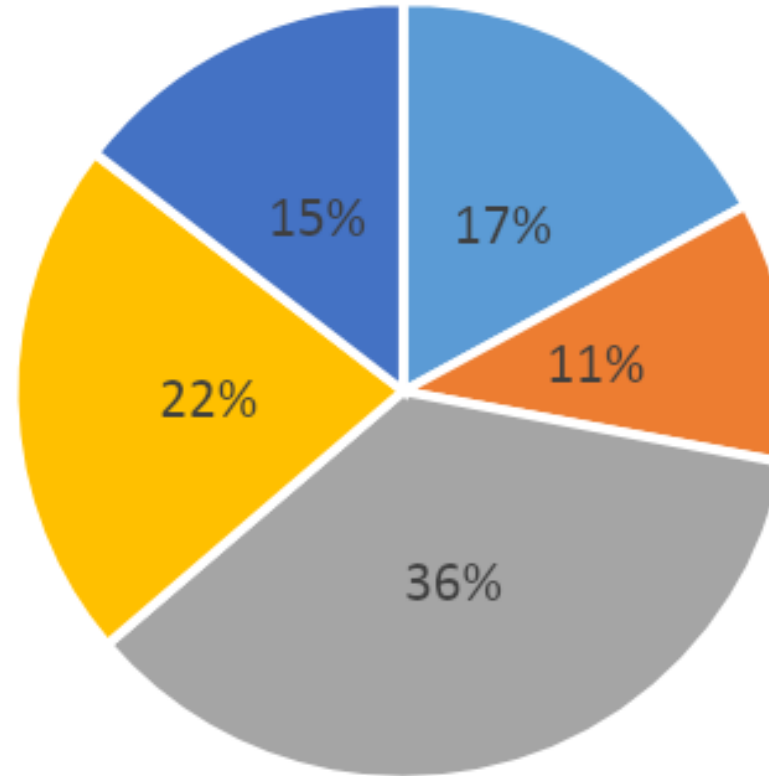
05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

PASSENGERS SURVEYED **198**
ONLINE SURVEY **239**

USERS AGE



European Committee
of the Regions



- < 19
- 20 - 25
- 26 - 45
- 46 - 60
- 61 <



18th EUROPEAN WEEK of REGIONS and CITIES

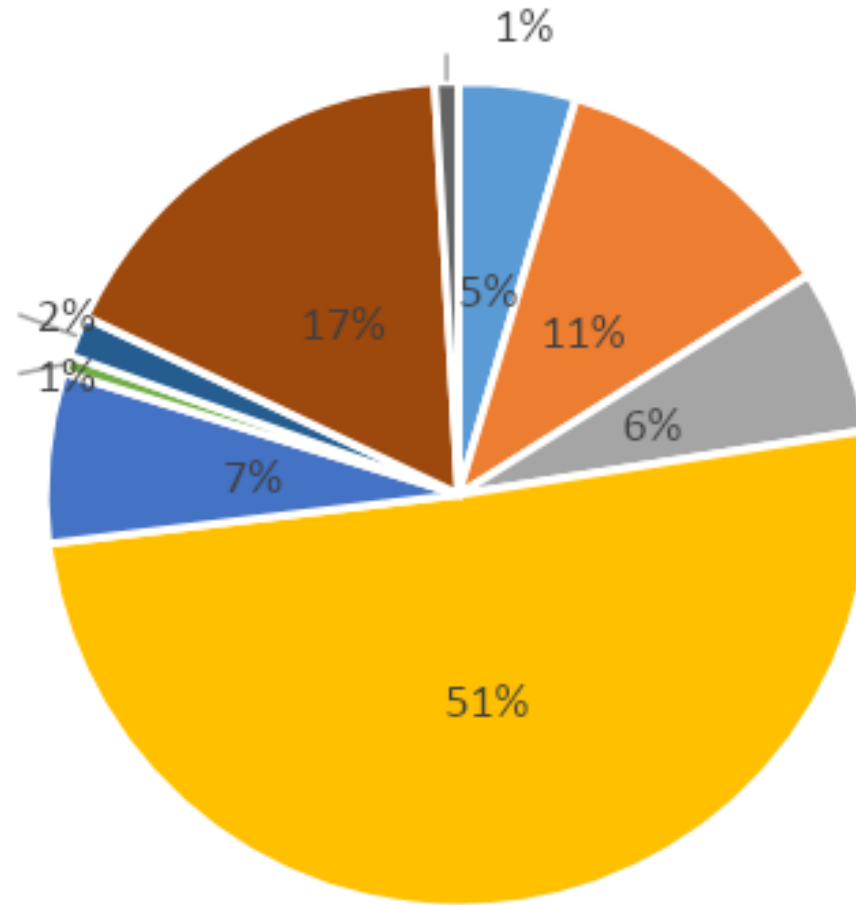
05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

PASSENGERS SURVEYED **198**
ONLINE SURVEY **239**

USERS OCCUPATION



- Primary school student
- Secondary school student
- Academic student
- Working
- Working from home
- Layed-off
- Pensioner (health)
- Pensioner (age)
- No data

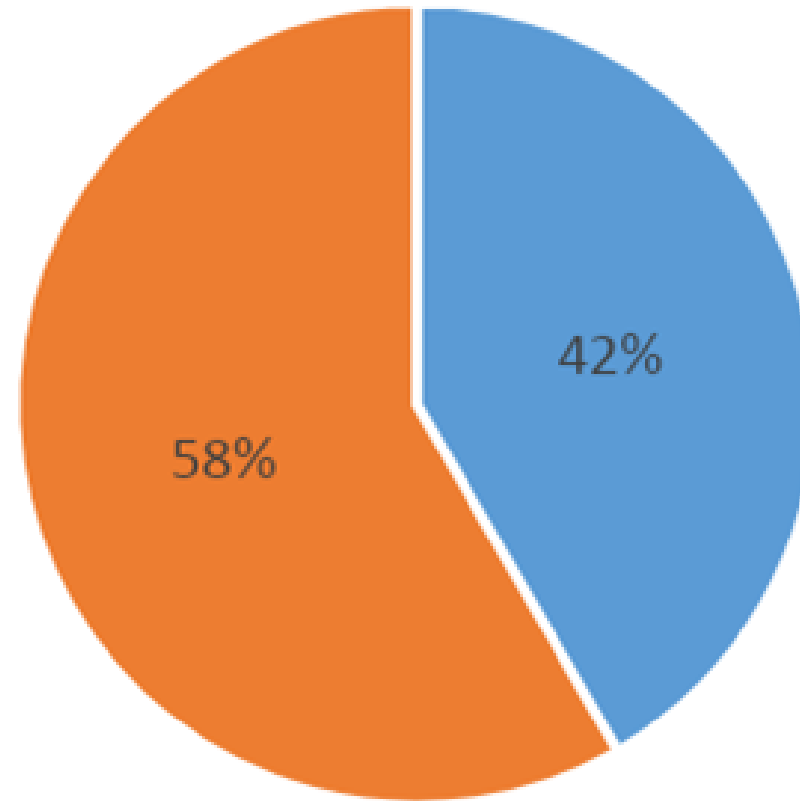


18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

PASSENGERS SURVEYED **198**
ONLINE SURVEY **239**

DRIVERS' LICENCE



■ YES
■ NO



European Committee
of the Regions

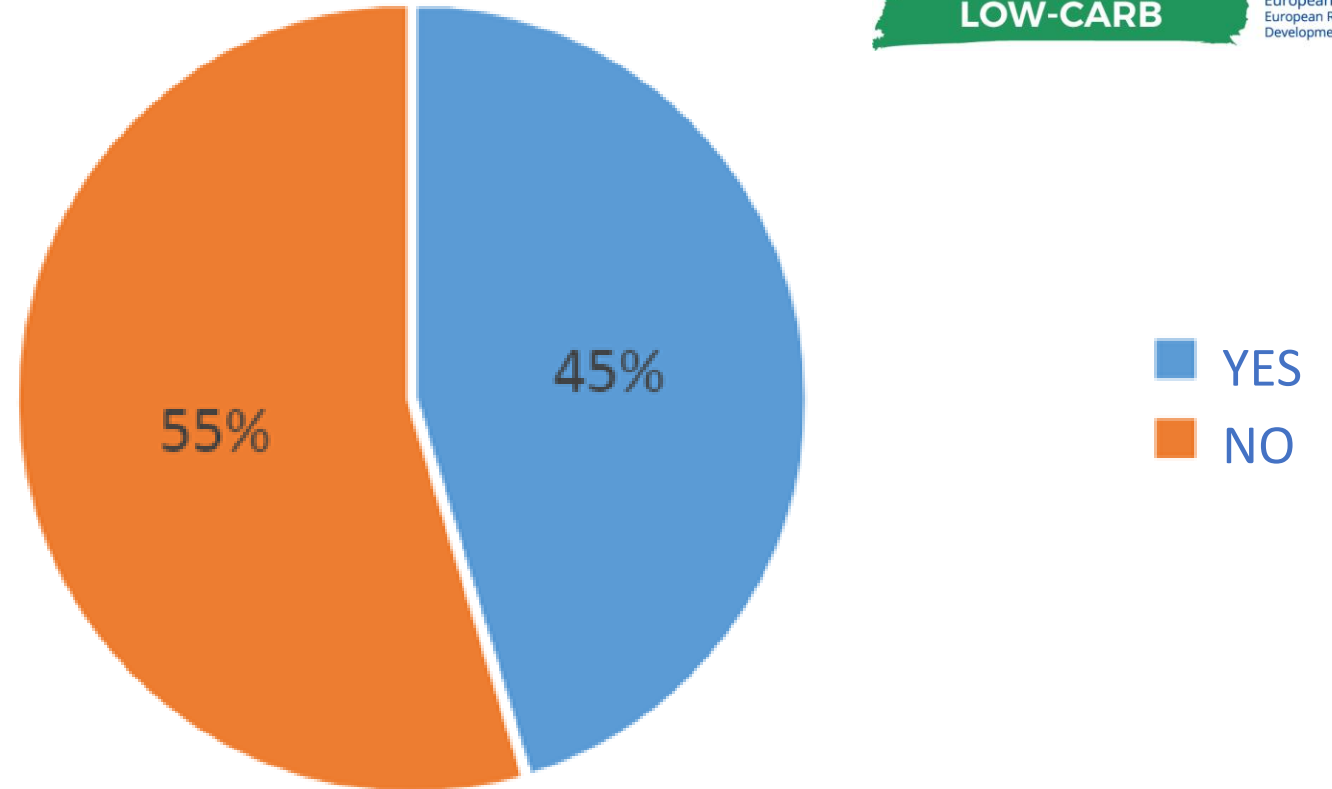


18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

PASSENGERS SURVEYED **198**
ONLINE SURVEY **239**

BICYCLE OWNERSHIP



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



JOURNEY MOTIVATIONS/ FINAL DESTINATIONS

Home	88	20,5%
Work	105	24,5%
School	39	9,1%
Shopping	50	11,7%
Leisure	107	24,9%
Other	40	9,3%
Sum	429	100,0%



European Committee
of the Regions



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



JOURNEY FREQUENCY

Daily	167	39,4%
Cpl times a week	170	40,1%
Once a week	24	5,7%
Cpl times a month	35	8,3%
Cpl times a year	15	3,5%
Once	13	3,1%
Sum	424	100,0%



European Committee
of the Regions



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



REASONS FOR CHOOSING THE LINE

Free of charge	268	41,2%
Convenient route	235	36,2%
Comfort	85	13,1%
Safety	23	3,5%
Cheaper than a car	21	3,2%
No parking fees	8	1,2%
Faster than a car	7	1,1%
Ability to carry shopping	3	0,5%
Sum	650	100,0%



European Committee
of the Regions



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



**COVID-19 PILOT LINE
SAFETY PERCEPTION**

It's clean, I feel safe	382	89,9%
More frequent disinfection needed	9	2,1%
I feel endangered because of other passengers' behaviour	31	7,3%
I don't feel safe	3	0,7%
Sum	425	100,0%



European Committee of the Regions



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

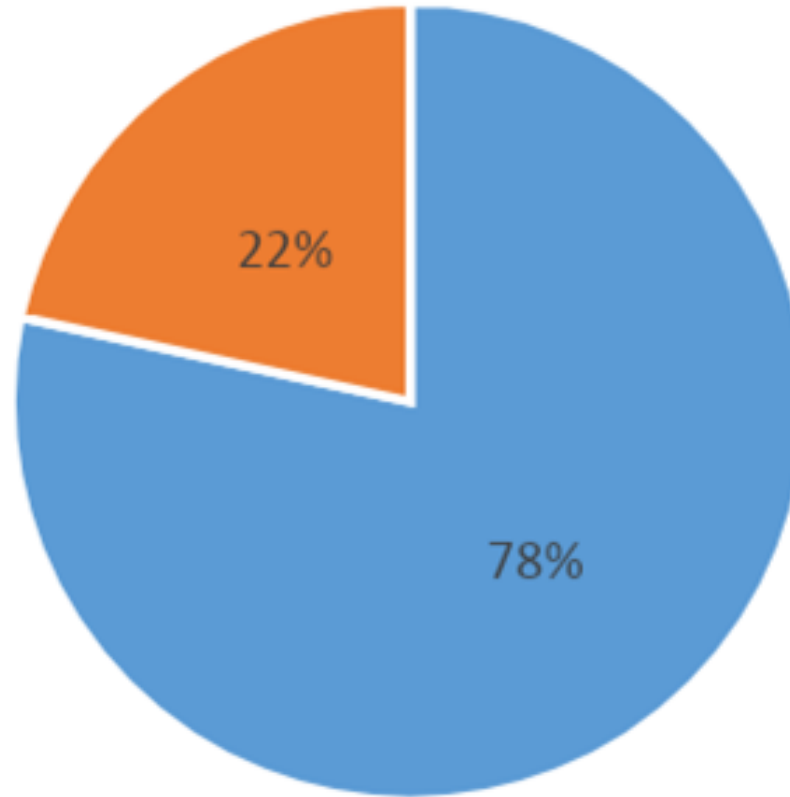
PASSENGERS SURVEYED 198
ONLINE SURVEY 239

DID THE LINE CHANGE YOUR
MOBILITY BEHAVIOUR?*

*permanent change



European Committee
of the Regions



Interreg
CENTRAL EUROPE



LOW-CARB

European Union
European Regional
Development Fund

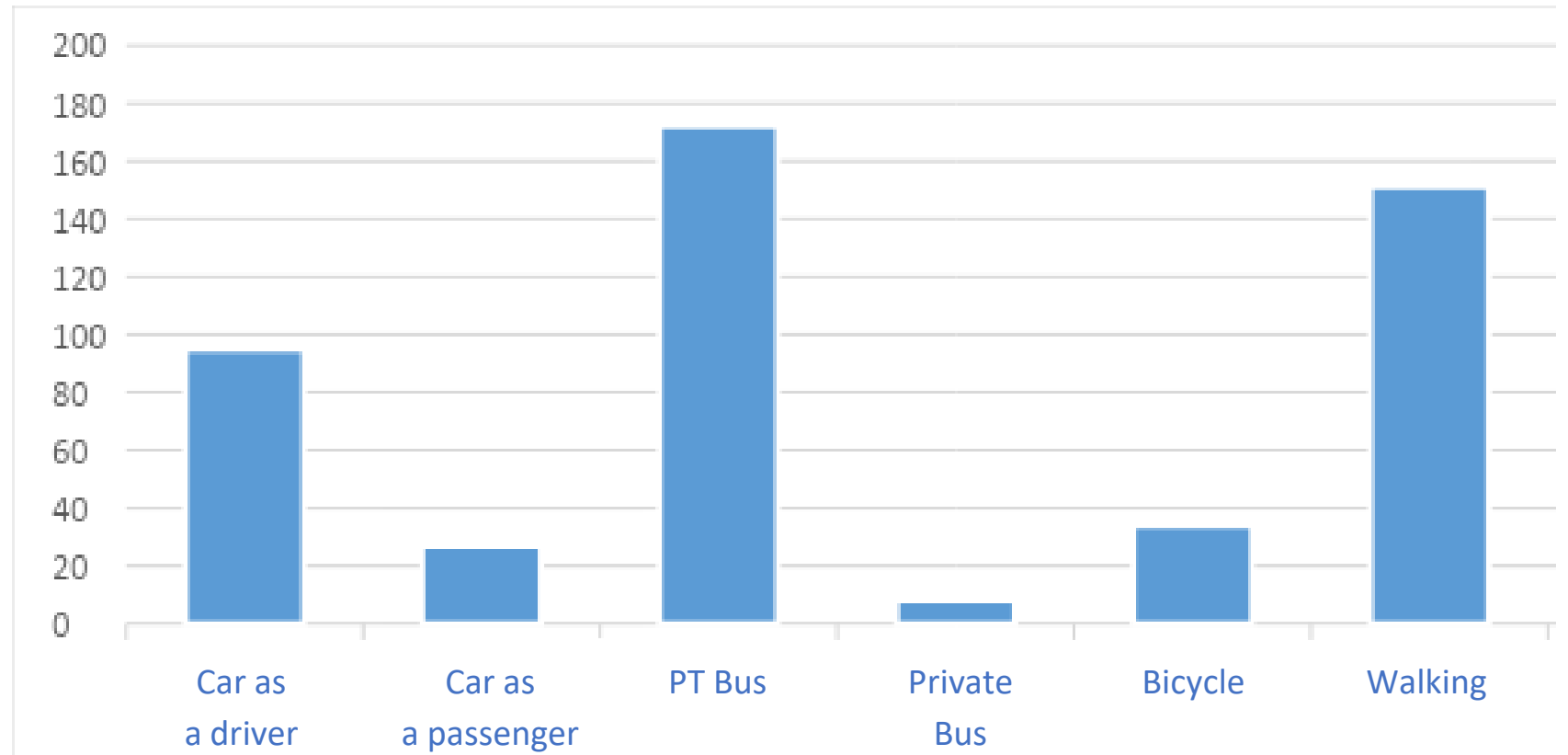
■ YES
■ NO



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

MODES OF
TRANSPORTATION
USED BEFORE THE
PILOT LAUNCH



European Committee
of the Regions



TIME SAVINGS COST

EUR 42824,62

PASSENGER TIME COST (Tc)			
	Tc cars	Tc buses	Tc sum
BEFORE PILOT INTRODUCTION	18 205 784,87 zł	2 147 486,73 zł	20 353 271,60 zł
AFTER PILOT INTRODUCTION	18 011 186,22 zł	2 147 486,73 zł	20 158 672,95 zł
	SAVINGS		194 598,65 zł



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



CO2 SAVINGS

Forecast of the CO2 emission reduction index and the number of kilometers traveled by the vehicles "taken over" by the bus

106 236,58 kg

YEAR	2020	2025	2030	2020-2030	2020	2020	2025	2025	2030	2030
Indicator	No. of cars 2020	No. of cars 2025	No. of cars 2030	Average distance traveled by vehicles	The total annual distance traveled by vehicles	CO2 emission [kg]	The total annual distance traveled by vehicles	CO2 emission [kg]	The total annual distance traveled by vehicles	CO2 emission [kg]
Workday	18 009	20 595	23 388	30,47	548 752,52	93 287,93	627 552,79	106 683,97	712 654,37	121 151,24
Saturday	2 912	3 330	3 782	22,03	64 148,96	10 905,32	73 360,69	12 471,32	83 309,03	14 162,54
Sunday	1 196	1 368	1 553	10,05	12 019,57	2 043,33	13 745,57	2 336,75	15 609,58	2 653,63
Sum	22 117	25 293	28 723	62,55	624 921,05	106 236,58	714 659,04	121 492,04	811 572,99	137 967,41



European Committee
of the Regions





RECOMMENDATIONS

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



- Promotional activities
- Later stage service
- Ticket tariff
- Tariff and ticket integration
- Time and space integration



European Committee
of the Regions



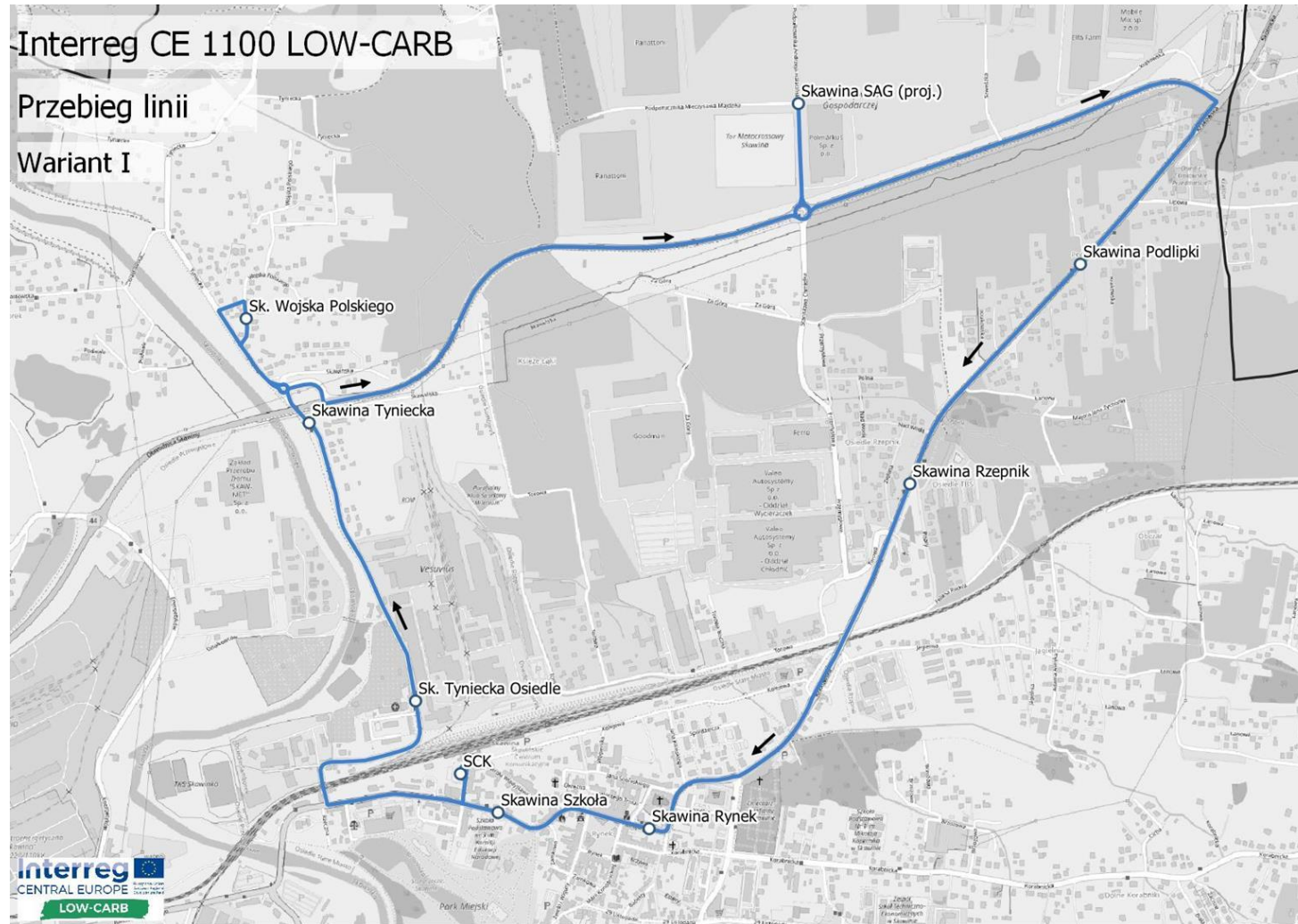
European
Commission

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

SUGGESTED
NEW ADDITIONAL
ROUTE

Option I



European Committee
of the Regions

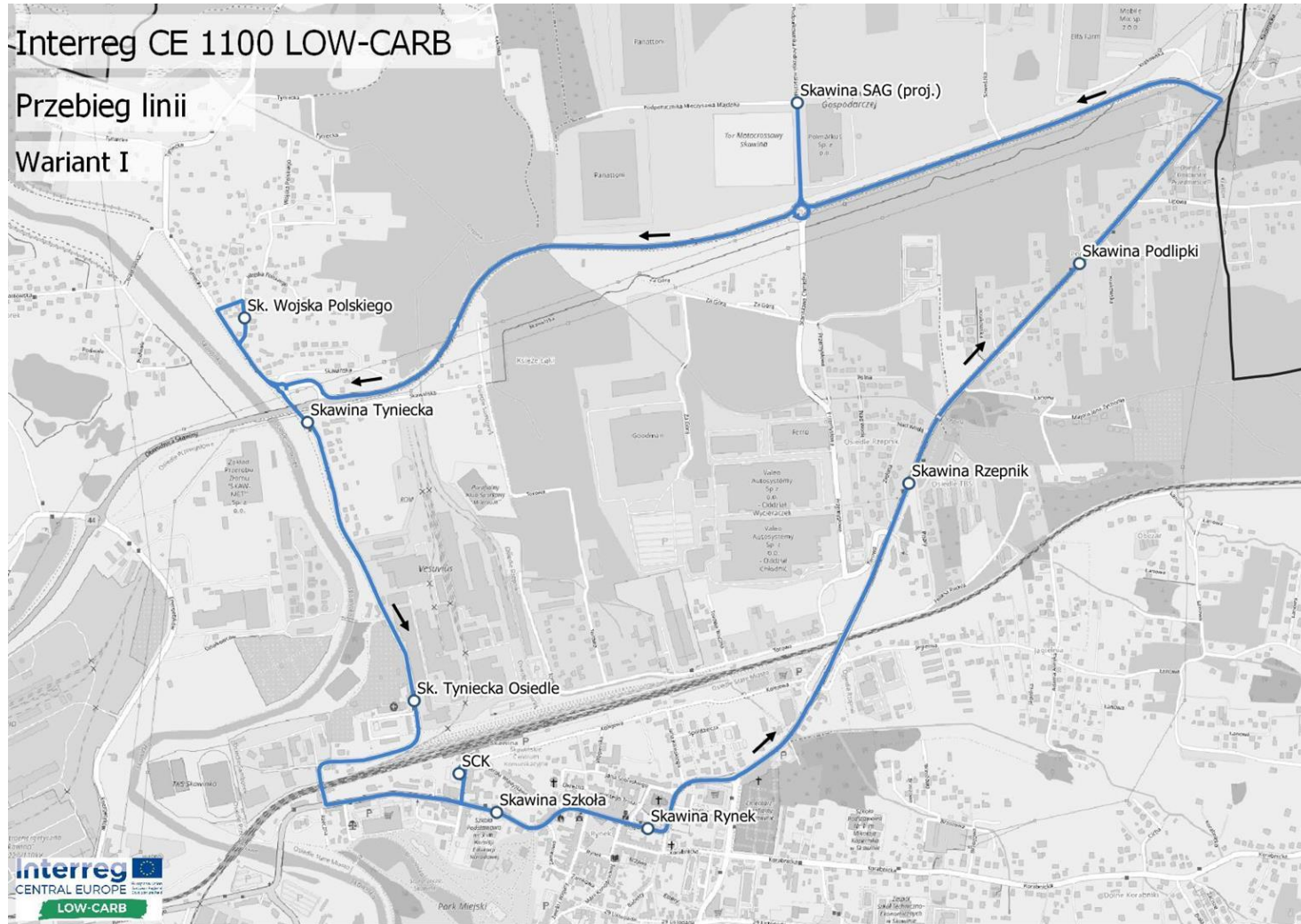


18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

SUGGESTED
NEW ADDITIONAL
ROUTE

Option I
reversed



European Committee
of the Regions



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

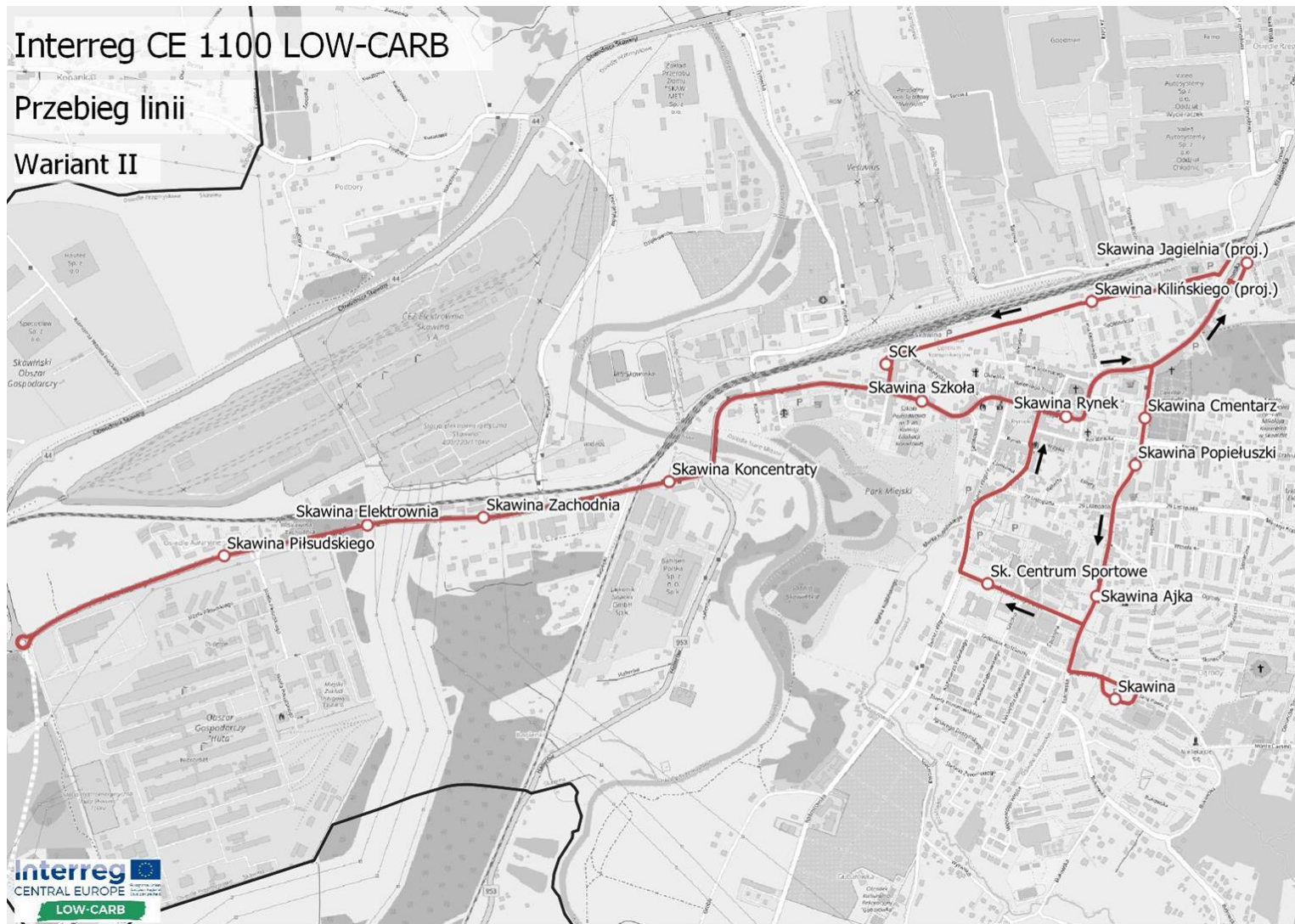
SUGGESTED
NEW ADDITIONAL
ROUTE

Option II

Interreg CE 1100 LOW-CARB

Przebieg linii

Wariant II



European Committee
of the Regions



European
Commission

THANK YOU!



maciej.zacher@gminaskawina.pl

City of Leipzig,
Carsten Schuldt

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020

#EURegionsWeek

RESTART
EUROPE
Together



European Committee
of the Regions



Leipziger
Verkehrsbetriebe



Interreg
CENTRAL EUROPE

Interreg
CENTRAL EUROPE



European Union
European Regional
Development Fund

LOW-CARB

TAKING
COOPERATION
FORWARD



EU Week of Regions & Cities: LOW-CARB's pilots and innovations for low-carbon mobility in cities and regions



The Accessibility Map mdv.de/REACHIE



Carsten Schuldt (LVB)

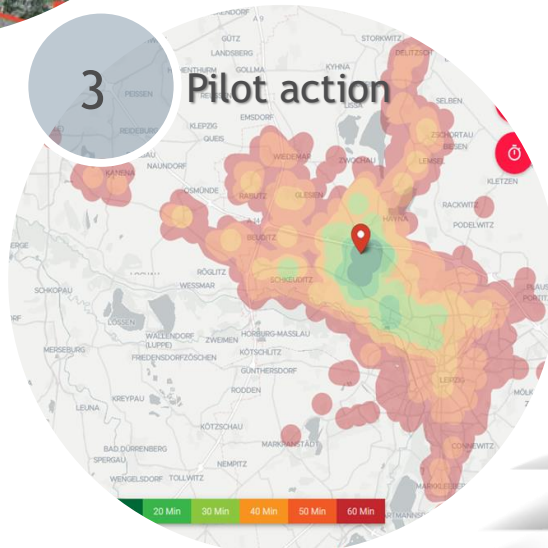
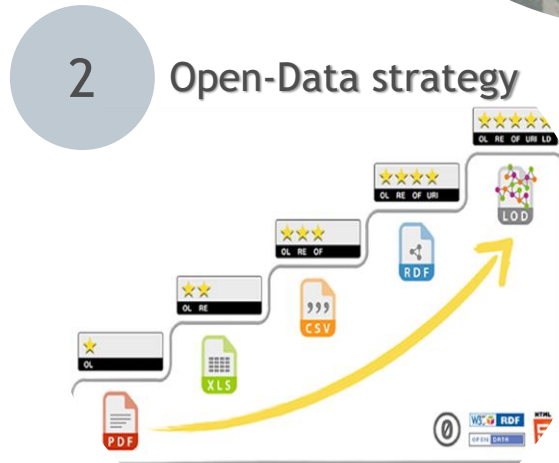
PROJECT OUTPUTS LEIPZIG PARTNERS

Clever mobil im Leipziger Nordraum

Leipziger Partners:



*assoziierter Partner



RATIONAL: INFORM & ATTRACT

- Disrupt established mobility habits on changing moments in life:
 - Move
 - Job change
 - ...
- Provide Information
 - On time
 - On site
 - Easy and beautiful



@ home



Job interview



Amtec Photos

On-Site Information



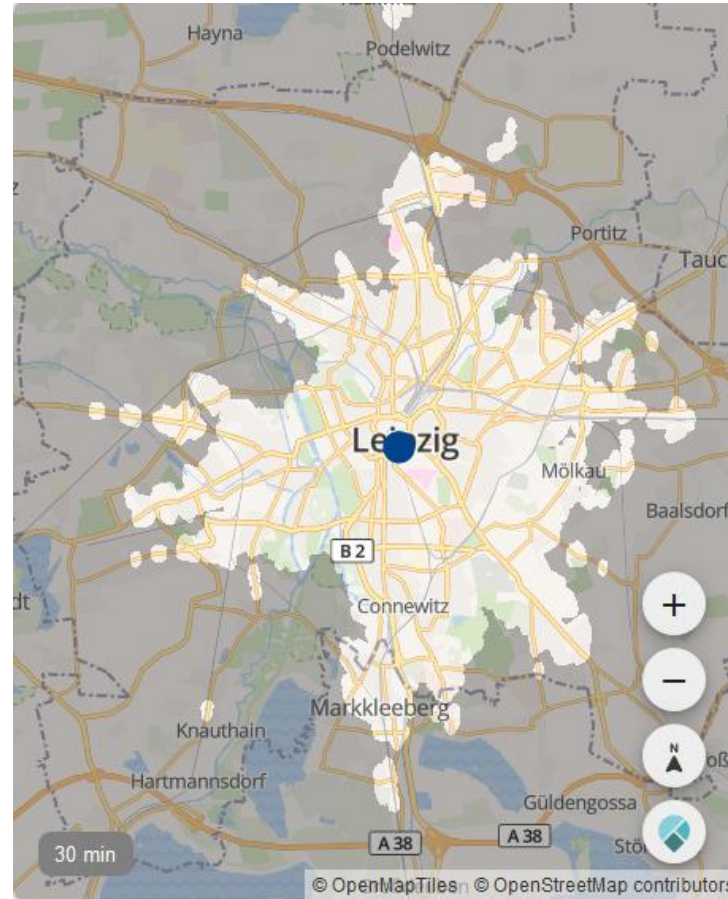
ACCESSIBILITY MAP: „REACHIE“

Features

- Travel range by time budget across different travel modes
- Cross-platform (mobile)
- Multi- & Intermodal
 - Pedestrian
 - Bike
 - PT + pedestrian
 - PT + bike
 - Car
- Itinerary
- CO2-calculator
- Coloured mode
- Print Export



www.mdv.de/reachie



Input

- Routing Graph based on OpenStreetMap
- Schedule Data based on weekly updated static GTFS data
- Benefits from the open data strategy



„REACHIE“: YOUR JOURNEY TO WORK

Clever mobil im Leipziger Nordraum

The screenshot displays the REACHIE mobile application interface. On the left, the 'Travel settings' menu is circled in red, showing icons for Walk, Bike, Transit, Transit + bike, and Car. The 'Transit' option is selected. Below this, the departure date is set to 'Mo, 9/16/2019' at '04:40'. The start and target locations are 'Sellerhäuser Straße 1, 04318, Leipzig, Anger-Crottendorf, Sachsen' and 'Werkstraße F, 04349, Leipzig, Sachsen'. The 'Results' section shows a bar chart comparing emissions per trip for 'Car' (approx. 1400g) and 'Transit' (approx. 1000g), with a note for a 'Potential annual saving 375 kg CO₂'. The route is shown on a map with a purple line, starting in Leipzig and ending in Taucha. The map includes a legend for travel time (5 min to 30 min) and a bottom navigation bar with a green leaf icon.

Travel settings

- Walk
- Bike
- Transit
- Transit + bike
- Car

Departure date/time
Transit date
Mo, 9/16/2019 04:40

Show range for: Start Target

Search addresses and locations...

Sellerhäuser Straße 1, 04318, Leipzig, Anger-Crottendorf, Sachsen

Werkstraße F, 04349, Leipzig, Sachsen

Results

Export as PDF

Emissions per trip

Mode	Emissions [g]
Car	~1400
Transit	~1000

Potential annual saving 375 kg CO₂

13.1 km 1 Change 54 minutes

Walk 7 minutes

Tram 4 Leipzig, Gohlis, Landsberger Str.

Dep. 04:52 Leipzig, Breite Str.
Arr. 05:02 Leipzig, Hauptbahnhof (Tram/Bus)

5 min 10 min 15 min 20 min 25 min 30 min

© OpenMapTiles © OpenStreetMap contributors



„REACHIE“: YOUR JOURNEY TO WORK

Search addresses and locations...

Sellerhäuser Straße 1, 04318, Leipzig, Anger-Crottendorf, Sachsen

Werkstraße F, 04349, Leipzig, Sachsen

Results

Export as PDF

Emissions per trip

Mode	Emissions [g]
Car	~1,400
Transit	~1,000

Potential annual saving 375 kg CO₂

13.1 km 1 Change 54 minutes

Walk 7 minutes

Transit 4 Leipzig, Gohlis, Landsberger Str.

Dep. 04:52 Leipzig, Breite Str.
Arr. 05:02 Leipzig, Hauptbahnhof (Tram/Bus)

Change 11 minutes

Bus 86 Leipzig, BMW/Tor 1

Dep. 05:13 Leipzig, Hauptbahnhof/Ostseite
Arr. 05:39 Leipzig, BMW Zentralgebäude

Walk 0 minutes

5 min 10 min 15 min 20 min 25 min 30 min



Mixed Feedback

- End customer – often too complex
- Experts – High interest
- But no complaints about bad service

Open Questions

- More explanatory text targeted at the end customer

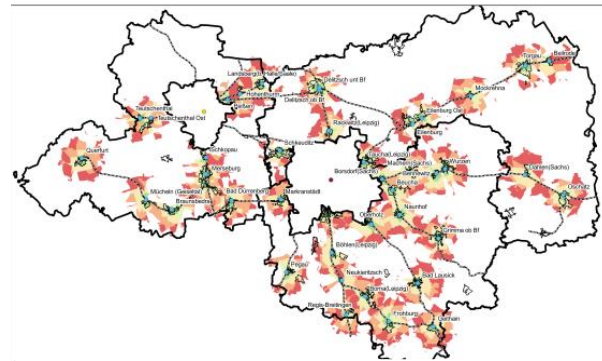
Recommendations

- Keep it Public
- Use as a tool in consultation
- Promote across experts (multipliers)
 - Your mobility managers
 - Multipliers (HR, mobility managers) at the local companies

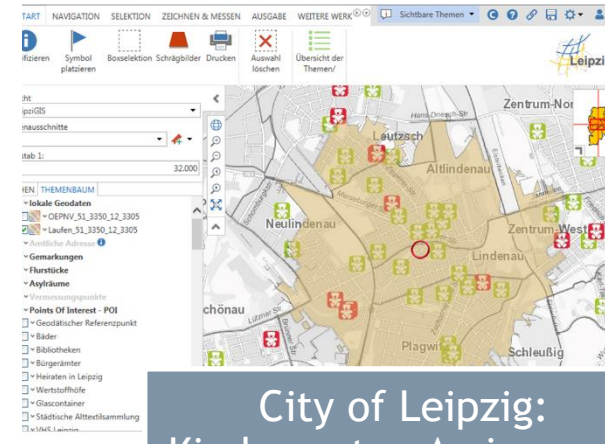


FURTHER EXPLOITATION & OUTLOOK

Clever mobil im Leipziger Nordraum



MDV for IfL: Commuter friendly residential areas



City of Leipzig: Kindergarten Assignment



LVB:
KPIs for Controlling



...



**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020

Thank you



mdv.de/reachie



Christian Jummrich
Leipziger Verkehrsbetriebe (LVB) GmbH



Christian.Jummrich@L.de



Robert Schillke
Mitteldeutscher Verkehrsverbund (MDV) GmbH



Robert.Schillke@MDV.de



Dr. Carsten Schuldt
Leipziger Verkehrsbetriebe (LVB) GmbH



Carsten.Schuldt@L.de



European Committee
of the Regions



European
Commission

City of Szeged

Adam Zoltan Nemeth

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020

RESTART
EUROPE
Together

#EURegionsWeek

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



SZKT data sources

Public transport

- Timetable
- Planned timetable compliance
- Passenger counting
- Vehicle telemetry data
- Ticket validation
- Ticket and passes sale

Parking

- Ticket and passes sale



European Committee
of the Regions



European
Commission

Wi-Fi based passenger counting system

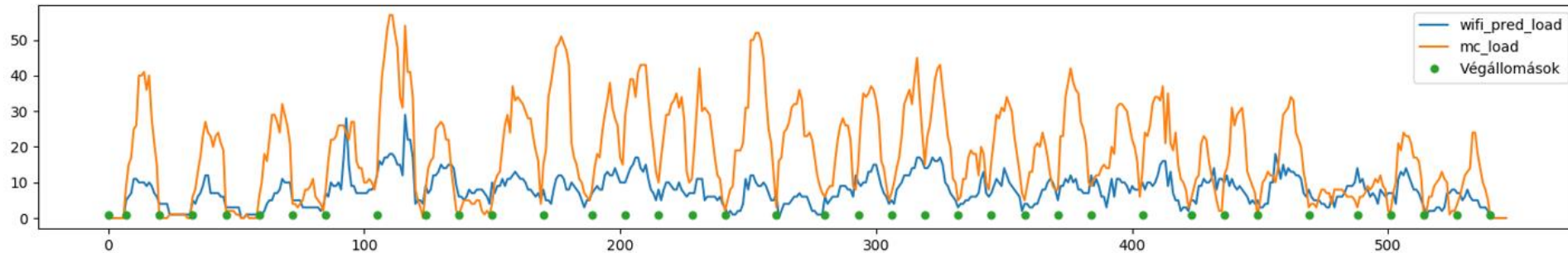
- In relation with Low-Carb project
- Counting based on MAC ID
- Ensure a wide range of options for improved planning, optimisation and evaluation of the entire traffic network.

Other counting options:

- Manual passenger counting: not generalizable, shows only the current situation
- Check in - check out system: expensive infrastructure
- Cameras: resource requirements, GDPR



Wi-Fi device appearance data validated by axle load dataset



Launched by Low-Carb project

Development steps:

- Supplies researchers by valuable data
- Pilot equipment installed during the period of manual counting
- Development of algorithm
- Research report completed
- Software development
- Final test on 15 vehicles
- Now the equipment is able to correctly record data



Wi-Fi based passenger counting platform

Home > SZKT > WifiScanReports > WifiScanReport

DateFrom: 2020. 04. 10. DateTo: 2020. 05. 10.

GetOn: True False NULL

TaskRef: NULL

SeenCounter >=: NULL

ClientMacAddress: NULL

VehicleJourneyPrivateCode: NULL

VehicleRegNumber: NULL

TaskItemRef: NULL

LineName: NULL

1 of 1352

Task Ref	Task Item Ref	Stop Point Name	Line Name	Route Name	Vehicle Journey Private Code	Vehicle Reg Number	Estimated Departure Time	Estimated Arrival Time	Observed Departure Time	Observed Arrival Time	Get On	Event Time	Seen Counter
5346101	3	Fecske u.	10	Tarján, Víztorony tér - Klinikák	2274729	T452	4/12/2020 3:48:00 PM	4/12/2020 3:48:00 PM	4/12/2020 3:47:51 PM	4/12/2020 3:47:31 PM	True	4/12/2020 3:48:26 PM	9
5345624	6	Attila u. (Mars tér)	7A	Bakay Nándor u. - Széchenyi tér	2277928	T812	4/12/2020 11:23:00 AM	4/12/2020 11:23:00 AM		4/12/2020 11:24:07 AM	True	4/12/2020 11:24:59 AM	3
5345624	7	Bartók tér	7A	Bakay Nándor u. - Széchenyi tér	2277928	T812	4/12/2020 11:24:00 AM	4/12/2020 11:24:00 AM		4/12/2020 11:28:43 AM	False	4/12/2020 11:27:00 AM	3
5345498	2	Csanádi utca	5	Újszeged, Gyermekórház - Körtöltés utca	2278000	T706	4/12/2020 2:09:00 PM	4/12/2020 2:09:00 PM	4/12/2020 2:09:25 PM	4/12/2020 2:08:55 PM	True	4/12/2020 2:09:06 PM	9
5345498	6	Mars tér (Aut. áll.)	5	Újszeged, Gyermekórház - Körtöltés utca	2278000	T706	4/12/2020 2:14:00 PM	4/12/2020 2:14:00 PM	4/12/2020 2:18:12 PM	4/12/2020 2:17:15 PM	False	4/12/2020 2:17:05 PM	9
5345498	5	Tisza Lajos krt. (Mikszáth K. u.)	5	Újszeged, Gyermekórház - Körtöltés utca	2278000	T706	4/12/2020 2:12:00 PM	4/12/2020 2:12:00 PM	4/12/2020 2:15:15 PM	4/12/2020 2:15:03 PM	True	4/12/2020 2:15:12 PM	2
5345498	7	Hétvezér utca	5	Újszeged, Gyermekórház - Körtöltés utca	2278000	T706	4/12/2020 2:15:00 PM	4/12/2020 2:15:00 PM	4/12/2020 2:18:47 PM	4/12/2020 2:18:40 PM	False	4/12/2020 2:18:12 PM	2
5345498	5	Tisza Lajos krt. (Mikszáth K. u.)	5	Újszeged, Gyermekórház - Körtöltés utca	2278000	T706	4/12/2020 2:12:00 PM	4/12/2020 2:12:00 PM	4/12/2020 2:15:15 PM	4/12/2020 2:15:03 PM	True	4/12/2020 2:15:06 PM	2



18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020



Cameras:

- On vehicle – passenger counting
- On the bridge – traffic counting
- Connection with SASMob project

Wi-Fi + cameras + axle load data → generate accurate passenger data

Validation by:

- manual passenger counting
- cameras in stops



European Committee
of the Regions



18th

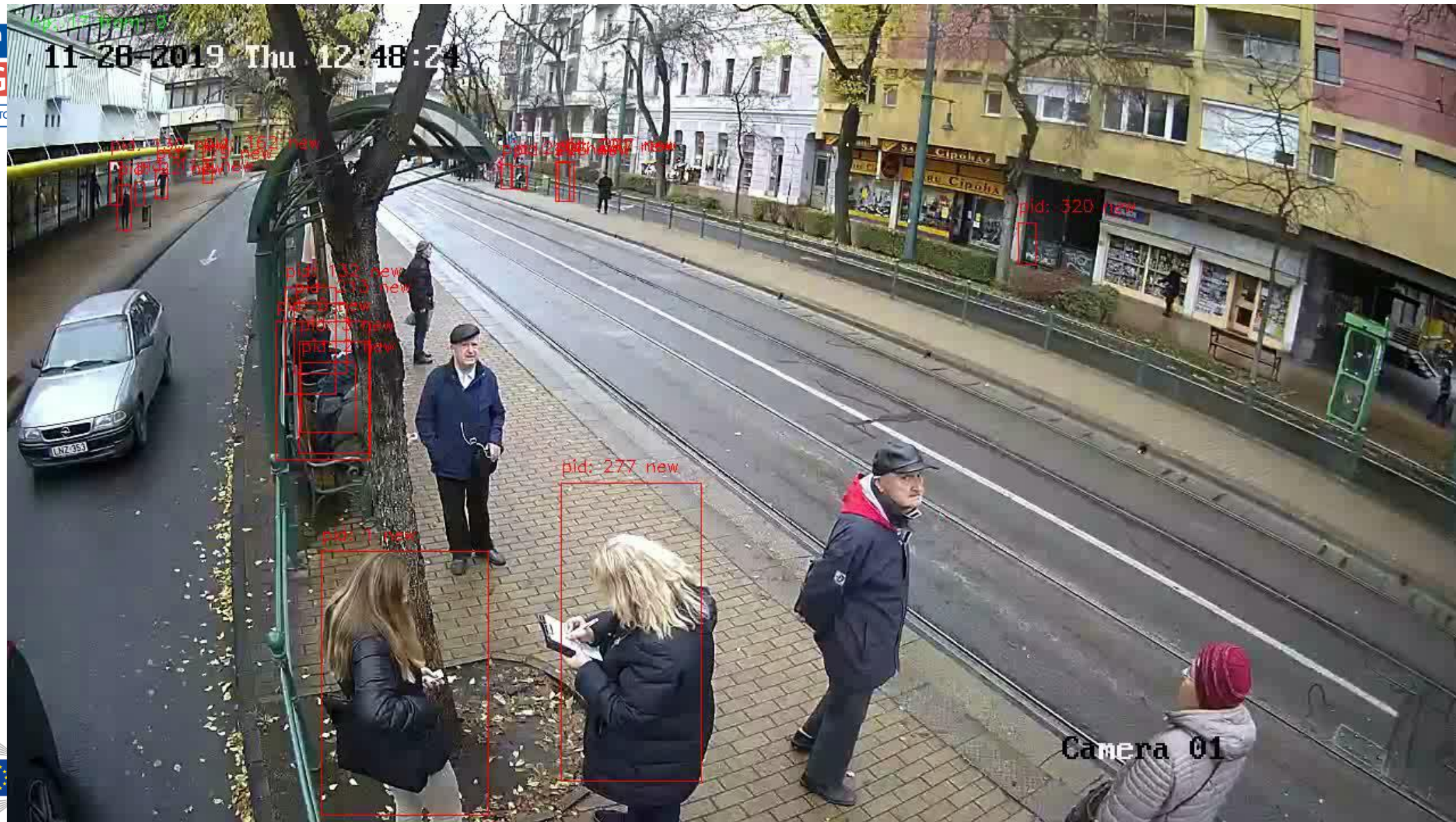
REG

05>09 OCT

11-28-2019 Thu 12:48:24



European Union
European Regional
Development Fund



Camera 01



European Committee
of the Regions

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



Szeged Open Data Platform (OVAK)

Database with municipal companies data:

- SZETÁV - long-distance heating data
- Vízmű - water consumption data
- University - air pollution sensor data
- SZKT - public transport and parking data

Goals:

- Research
- Urban development - city level intervention
- Useful in special situations - eg. road or bridge closures



European Committee
of the Regions



European
Commission

**18th EUROPEAN WEEK of
REGIONS and CITIES**

05>09 OCTOBER 2020 12>16 OCTOBER 2020 19>22 OCTOBER 2020



Thank you for your attention!



European Committee
of the Regions



European
Commission