



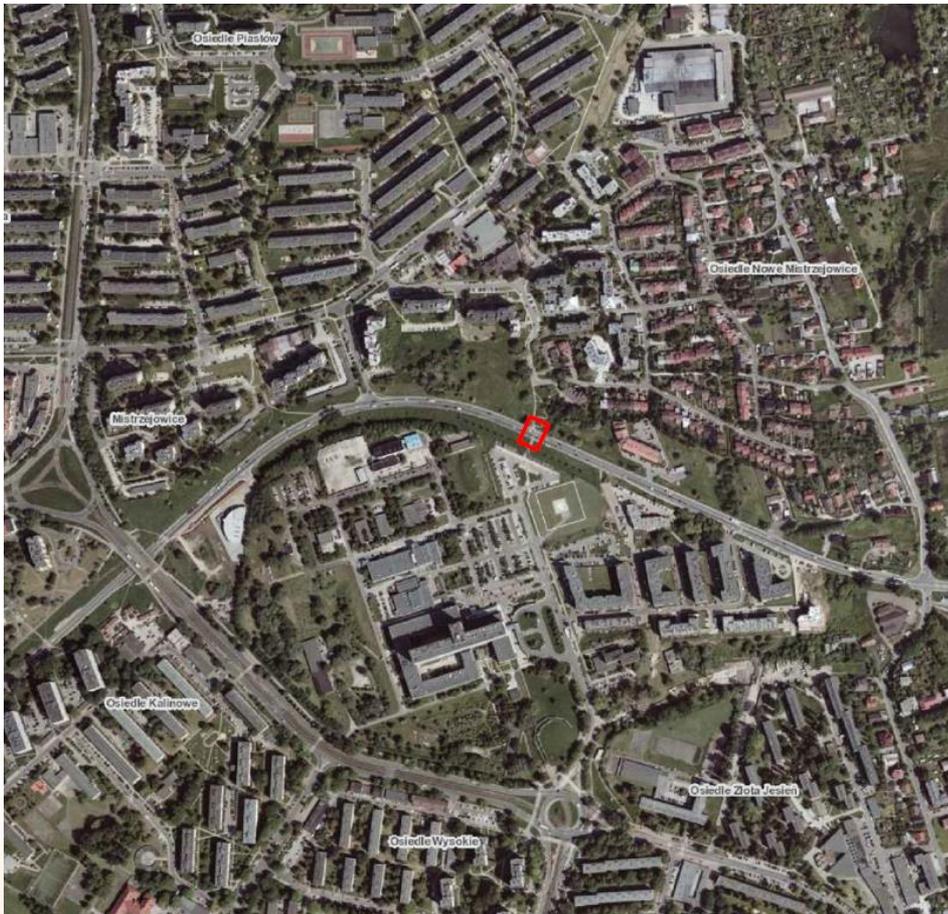
Improving safety at pedestrian crossing - Okulickiego street in Cracow

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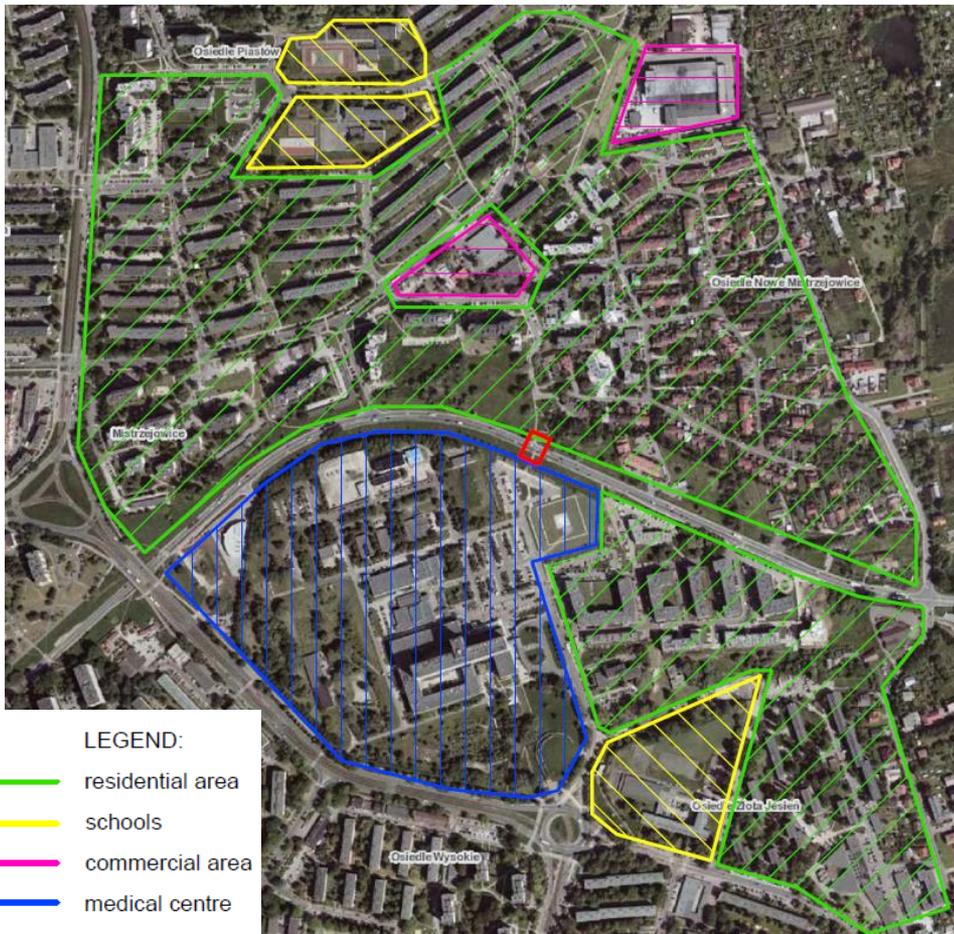
Brussels, 24-28th October 2016

Crosswalk localization



- Located in Cracow (urban area)
- On two lane collector road
- Between two signalized intersections

Crosswalk vicinity



The crosswalk ensures connection mainly between residential and school areas, it is located next to bus stops



**high pedestrian volume
(including young road users)**

Crosswalk characteristics



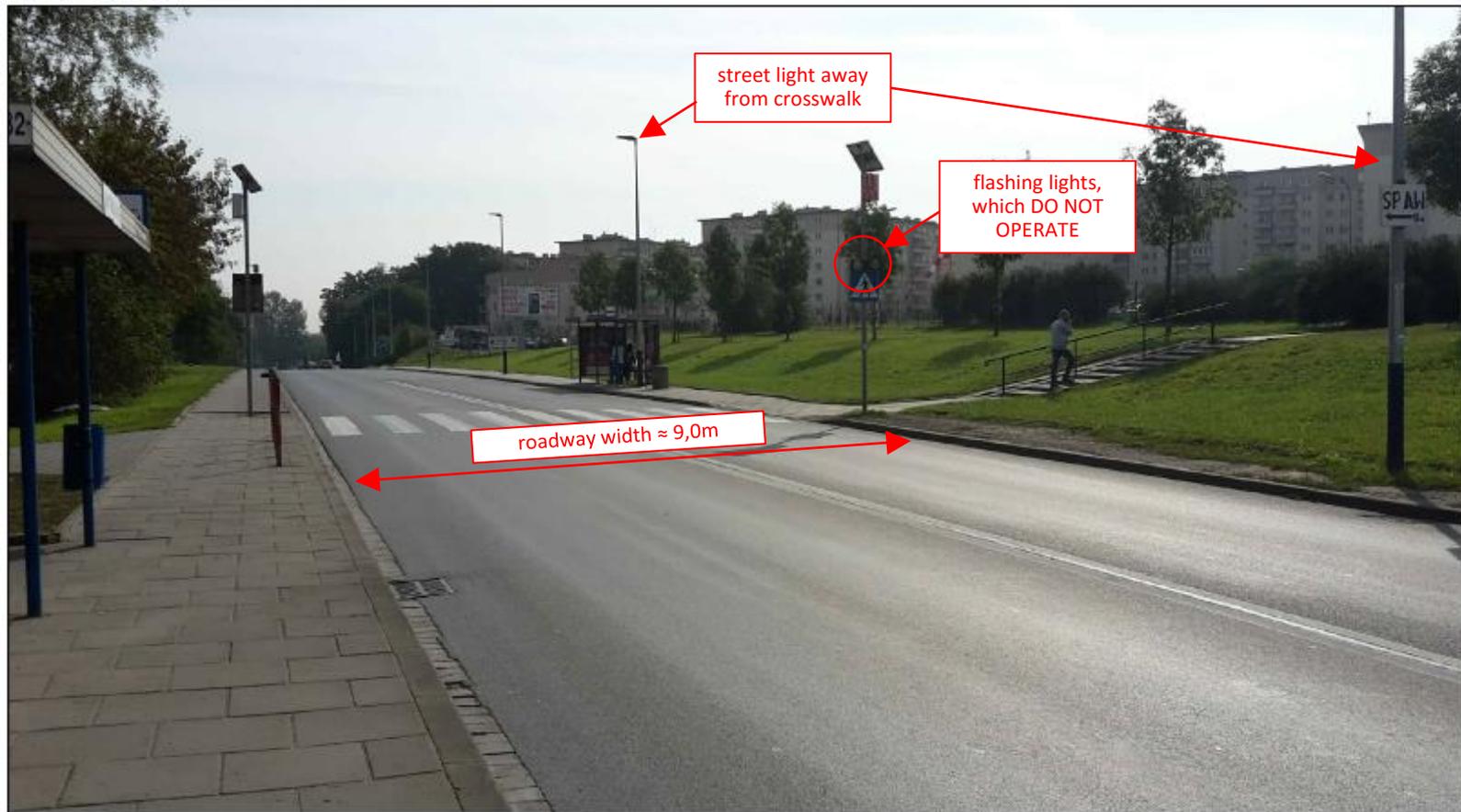
Crosswalk characteristics



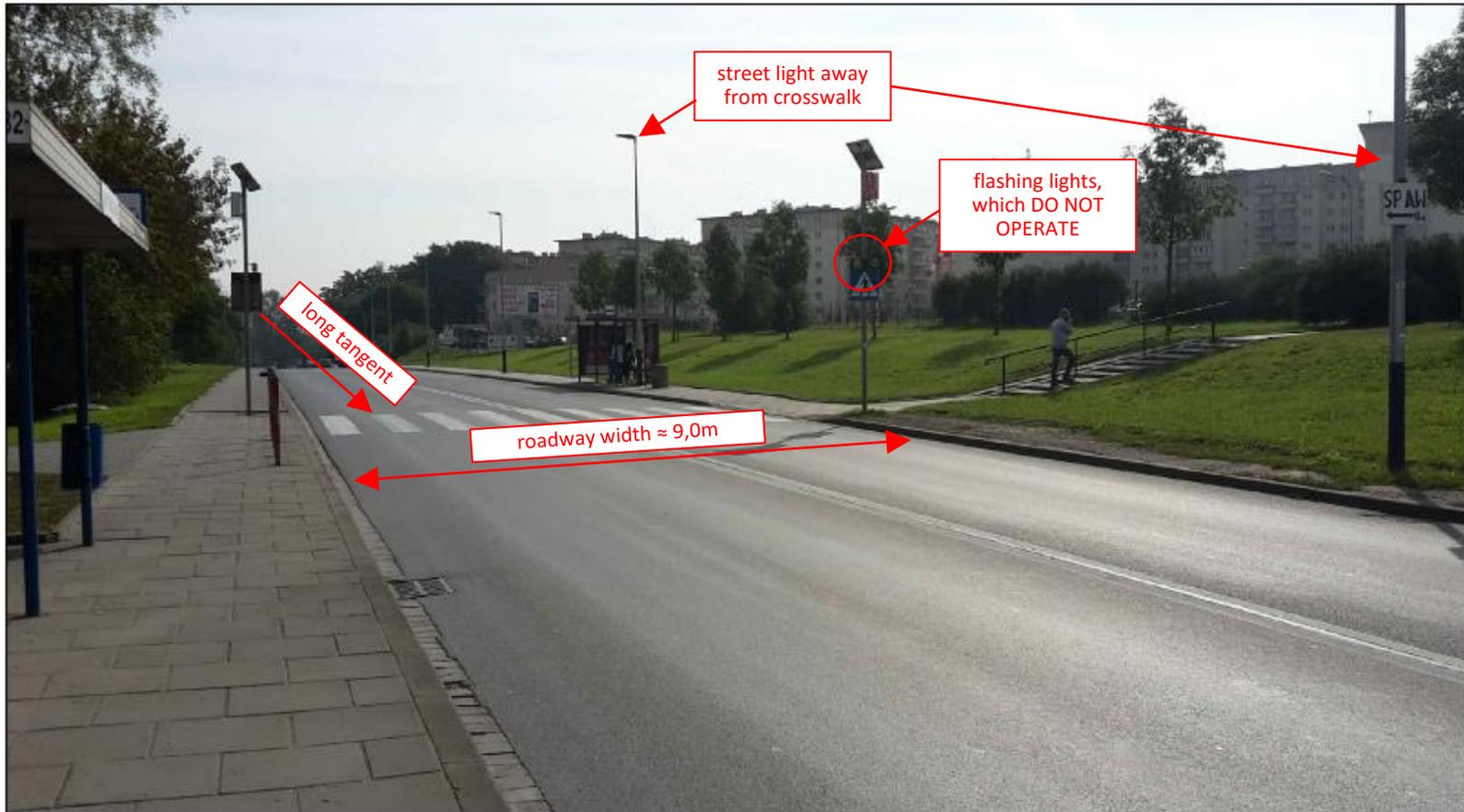
Crosswalk characteristics



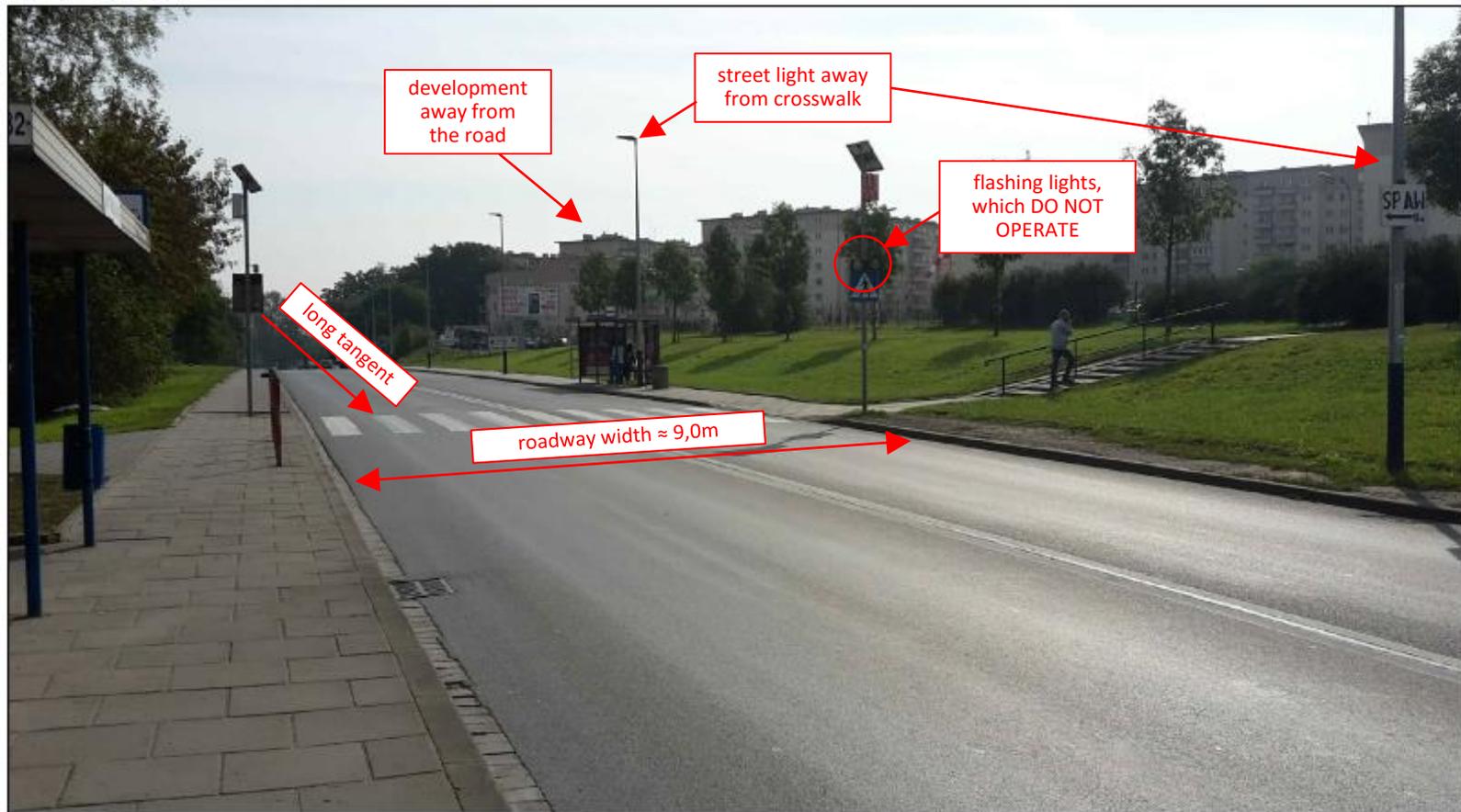
Crosswalk characteristics



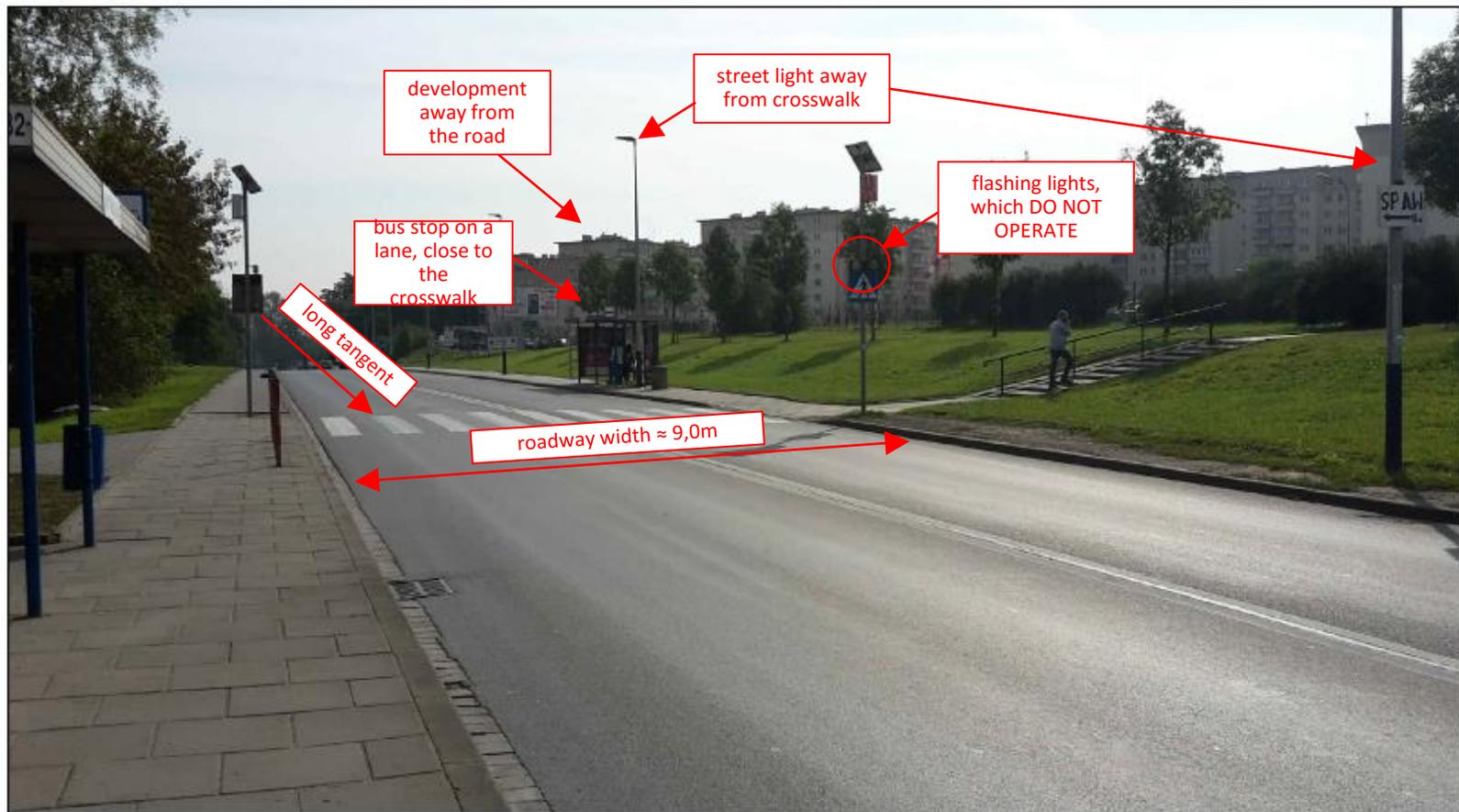
Crosswalk characteristics



Crosswalk characteristics



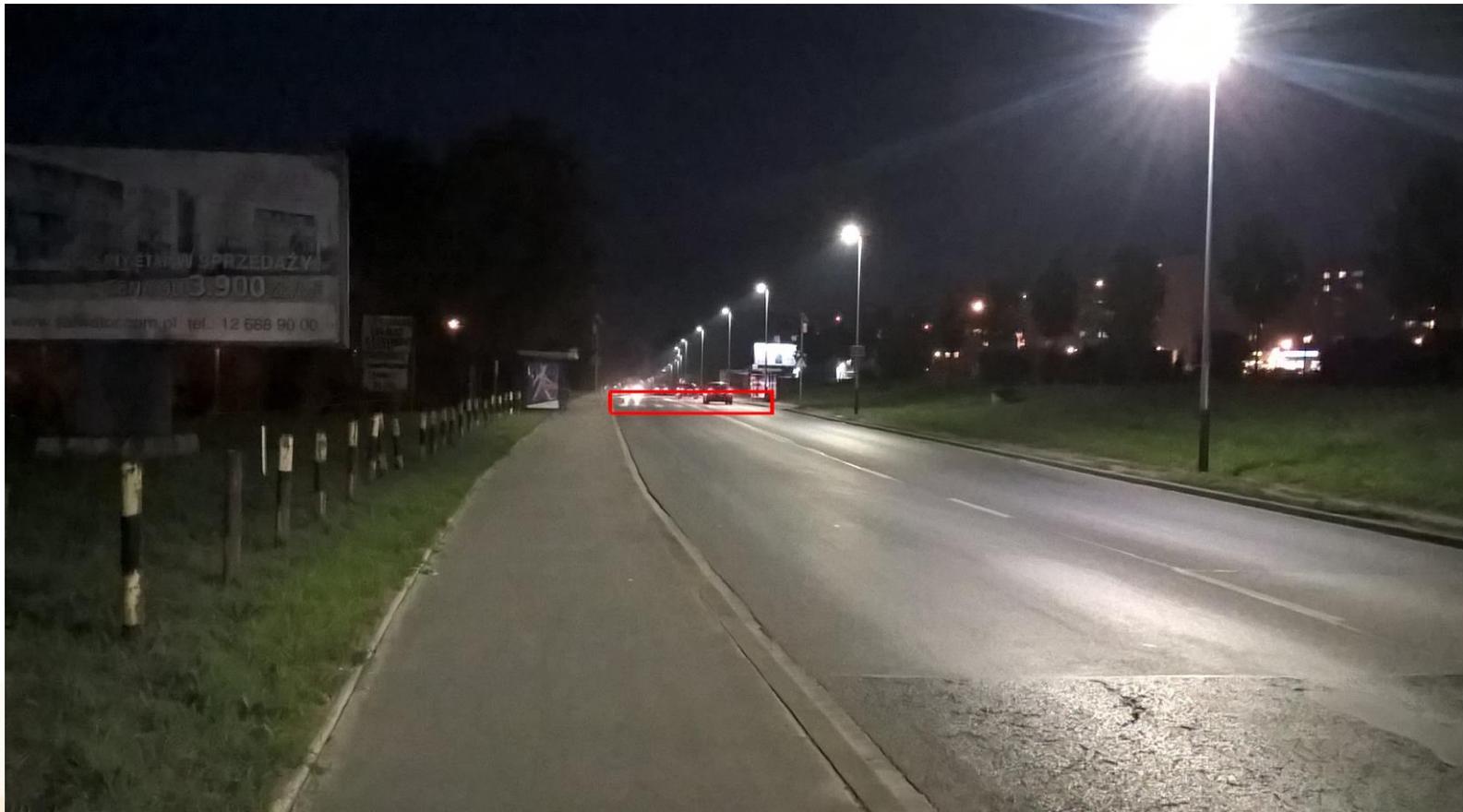
Crosswalk characteristics



Elements, which can affect pedestrian safety

- Wide roadway, long tangent, development away from the road → **high vehicles speed**
- Street light away from crosswalk, flashing lights, which don't operate → **poor crosswalk visibility at evening and night**
- Bus stops on a lane, close to the crosswalk → **visibility obstruction caused by buses**

Poor crosswalk visibility at evening and night



Poor crosswalk visibility



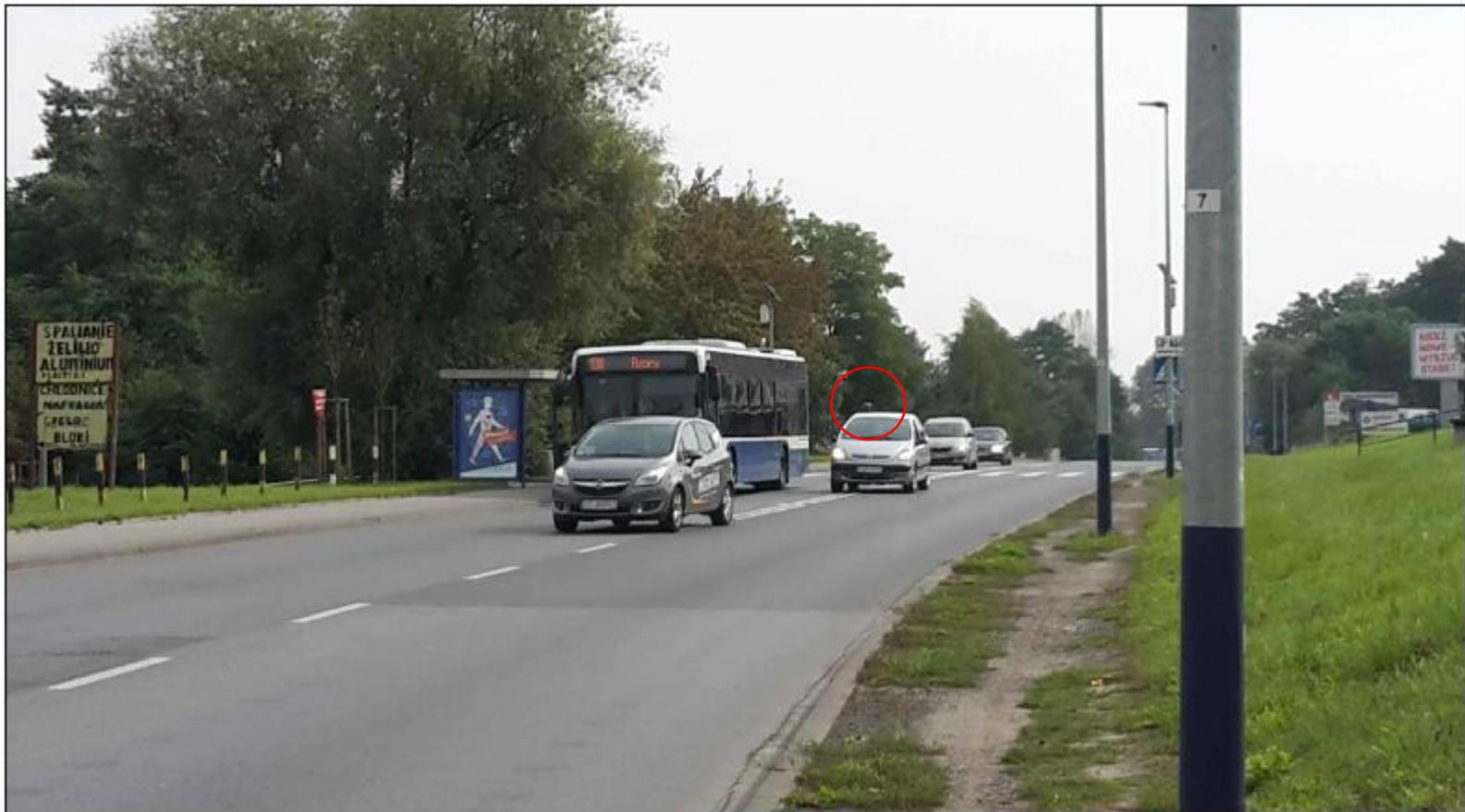
Visibility obstruction caused by buses



Visibility obstruction caused by buses



Visibility obstruction caused by buses



Assumptions for proposed treatments

The aim is to:

- improve crosswalk visibility,
- improve visibility for pedestrians,
- decrease vehicles speed,
- easy to implement, low cost but effective treatment.

Proposed treatment

a) now



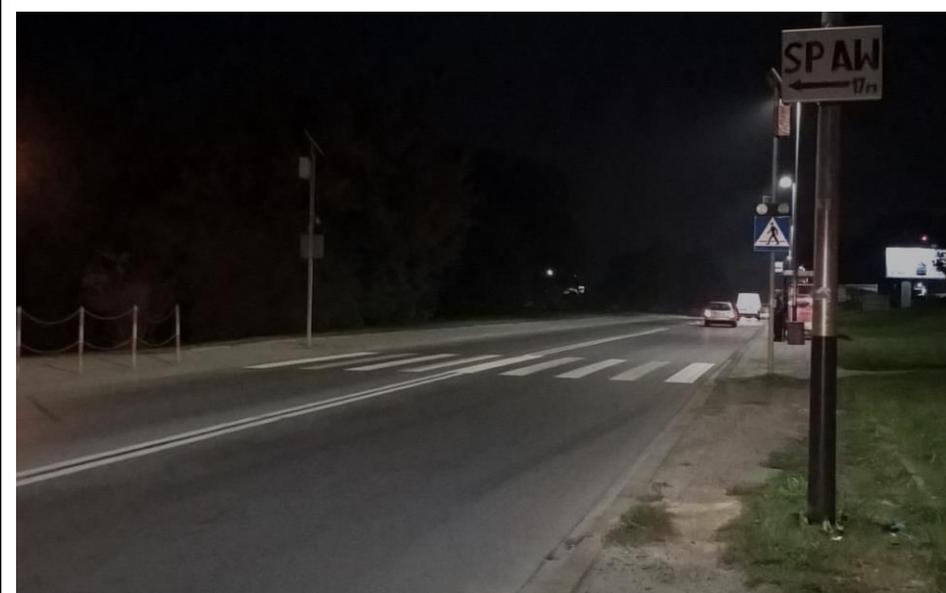
b) proposed



Proposed treatment

a) now

b) proposed



Strategy

- Collect accident data (up to december 2016)
- Make speed measurements (up to december 2016)
- Project consultations with specialists from our department (up to the end of 2016)
- Contact with local residents (up to the end of 2016)
- Organize meeting with children at local schools in cooperation with police officers (up to march 2017)
- Contact with road administration (up to may 2017)



Politechnika Krakowska
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Strategy

POTENTIAL PARTNERS:



CENTRUM
BEZPIECZEŃSTWA
RUCHU DROGOWEGO



Krajowa Rada
BEZPIECZEŃSTWA
RUCHU DROGOWEGO



Małopolski Ośrodek
Ruchu Drogowego



roadsafe.pl
CENTRUM BEZPIECZEŃSTWA
RUCHU DROGOWEGO I RATOWNICTWA

aium6st
SŁUPY OŚWIETLENIOWE

FUNDACJA
PRODRIVER

mysle
nadrodze.pl

Possible difficulties

- Money – road administration won't spend money on single pedestrian crossing, where there weren't fatal accidents
- Meeting with residents – Polish mentality
- Drivers can object to this change

Alternative treatment



Alternative treatment



Effectiveness of refuge marked crosswalk (compared with ordinary marked crosswalk)

Type of crashes	Crash reduction	Reference
Pedestrian crashes	- 56	[1]
	- 46	[2]
Crashes with injured pedestrians	- 43	[3]
Crashes with injured drivers and/or passengers	+ 19	
All crashes with injured	- 25	

- [1] Lindley J.: *Guidance Memorandum on Consideration and Implementation of Proven Safety Countermeasures*, FHWA, Washington, DC, 2008.
- [2] MetroPlan Orlando: *Orlando Urban Area Arterial Pedestrian Crash Study*, Orlando: MetroPlan Orlando, July 12, 2000.
- [3] Elvik R., Høye A., Vaa T., Sørensen M.: *The handbook of road safety measures. Second edition*, Emerald Group Publishing, 2009.



Thank you for your attention!