

Support for Implementing Measures for the South East Core Regional Transport Network Multi Annual Plan (EuropeAid/125783/C/SER/MULTI)

Improvement of the road safety in through road section- More safety for Pedestrians and Bicyclists

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Consortium:
WYG Engineering as Leading Partner
TRADEMCO S.A.
VIENNA Consult
TRL Ltd

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Overview about content

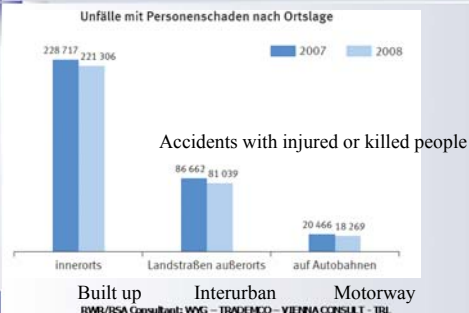
1. Why is action necessary?
2. Typical problems of cross-town links
3. Best practise for a better
4. road safety

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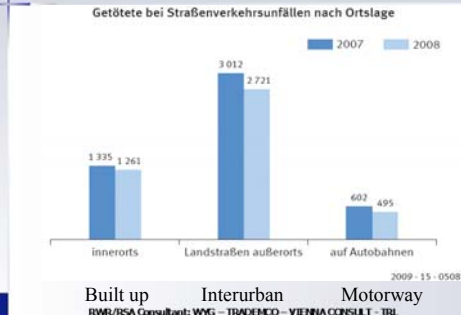
1. Why is action necessary?

Example accident statistic from Germany

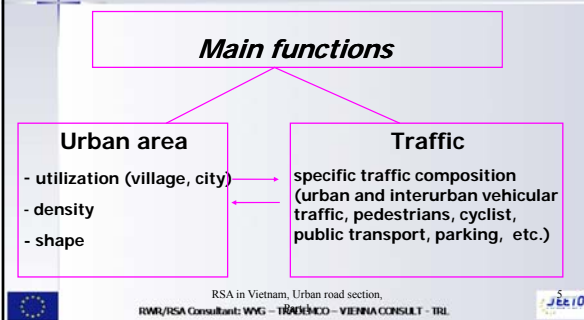


Why is action necessary?

Accidents with fatalities



Special quality of Urban roads



Definitions of "Vulnerable Road Users (VRU)"


- Unprotected by a cabin of a vehicle
 - Low speed
 - Low traffic education
 - Impatient
 - Overwhelmed by fast going traffic when calculating speed and time gaps
- Pedestrian, bicycles, mopeds/mofas (light motorcycles)

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2. TYPICAL PROBLEMS OF CROSS-TOWN LINKS


1. Problem: Excessive speed at the entry of the village




- V > 60 km/h
- V > 50-60 km/h
- V > 30-50 km/h
- Town sign
- Speed limit 30 km/h
- Temporary bottleneck
- Temporary offset
- Overdimensioned carriageway

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2. Problem: Lack of pedestrian crossings, constricted sidewalks and sight



- Public utility
- Shops, restaurants
- Bus stop
- Pedestrian crossing
- Linear need to cross the street
- Undersized sidewalks
- Constricted sidewalks
- Separate sidewalk

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Focus on road safety...





1. City limits
2. Cross section
3. Bottlenecks
4. Pedestrian crossings
5. Bus stops
6. Intersections

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3. Best practise for a better road safety in cross-town links

1. City limits: change between in town and out of town?



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Vegetation helps tighten the road section



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City limit: effective decrease in speed?



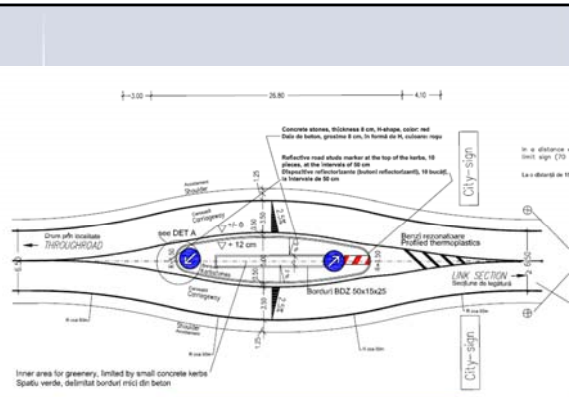
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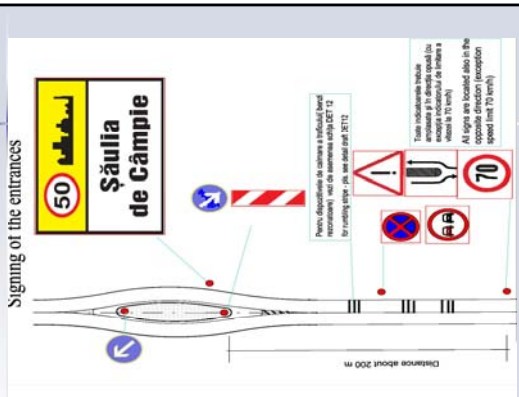
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2. Cross section: adequate carriage width?

Carriageway not too narrow or too wide,
Needs of vulnerable road users...



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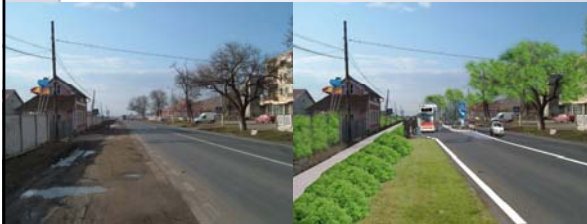
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Sidewalk and “green barrier”

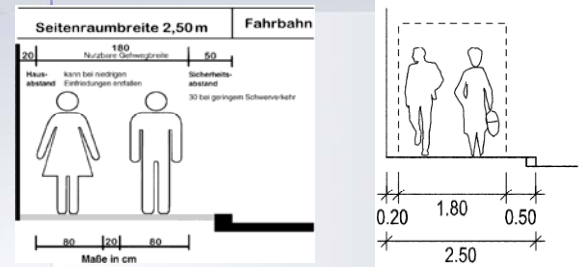


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Minimum Width for VRU

Width of Pedestrian Facilities (geometric design)



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Cross section: asymmetrical utilisation?



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3. Bottlenecks



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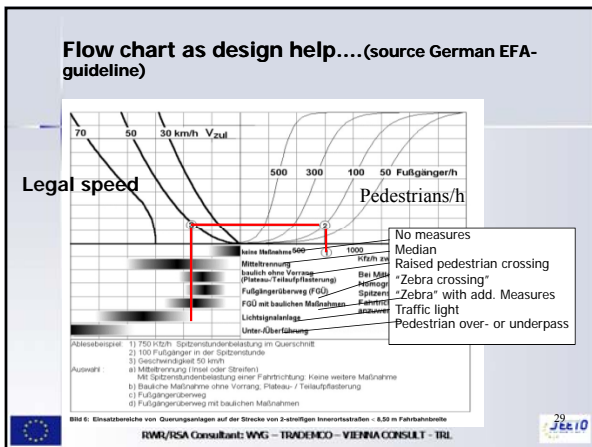


4. Pedestrian Crossings

Example of a median solution...but in bad condition...

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Pedestrian Crossings Ensure sufficient sight conditions...

Kfz-Geschwindigkeit	V_{zul} (km/h)	30	40	50
Sichtweite S_{q1}	S_{q1} in m	30	35	50
Mittelsichtweite S_{q2}	S_{q2} in m	15	25	35
Freisichtweiten ohne vorgezogene Seitenräume	F_{an} in m	10	15	20
	F_{ab} in m	5	10	15
Freisichtweiten mit vorgezogenen Seitenräumen ¹⁾	F_{an} in m	5	8	12
	F_{ab} in m	5	4	6
	Mindestwert: $F_{an} > BVZ$			

¹⁾ Bei Vorstößen von mehr als 30 cm (max. 70 cm) vor die Begrenzungslinie der Sichtdistanzen ist der Mindestwert von F_{an} an Fußgängerüberwegen der SWD von 5 m zu verwenden.

Bild 7: Definition von Sichtweite und freizuhaltenden Bereichen an Querungsanlagen

Bild 8: Querungsstelle mit Mittelinsel

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Raised pedestrian crossing...



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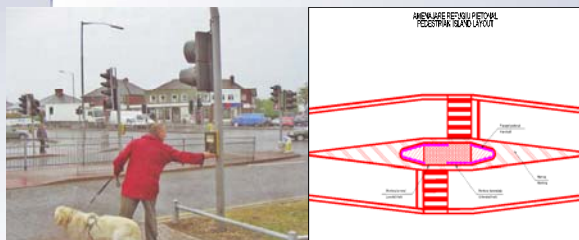
Standard "Zebra"



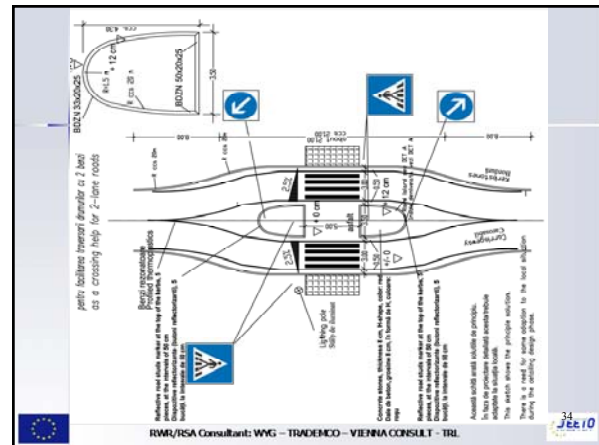
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"Zebra" combined with additional measures...



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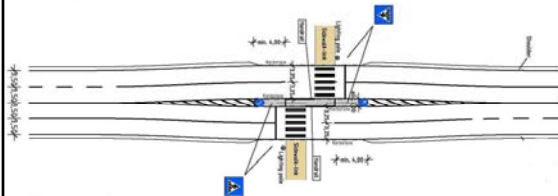


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Pedestrian Crossing with staggered island

A preferable element: Middle Island (min. 2,00-2,50m)



Staggered refuge island (4-lane roads)
in 250 – 500 m distances along linear settlements

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Pedestrian crossing with traffic signals

- Maximum time of circulation (max. 120 sec.)
- Running times for each direction
- Separate signals for pedestrian crossing
- Separate signals for the right turner

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Example 4-lane/2 carriageway highway road-section in a village, low volume of pedestrian traffic

Pedestrian crossing facility



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Green light for pedestrians on demand!
(Pedestrian user-friendly intelligent crossing)




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Pedestrian Crossing

Dropped crossing – different needs for different user groups



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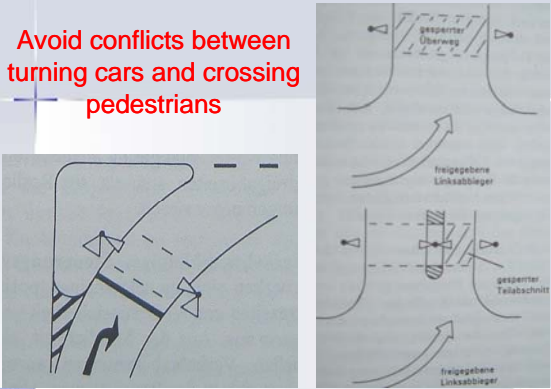
Tactile pavement...



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Avoid conflicts between turning cars and crossing pedestrians



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Another solution
Example from New Zealand

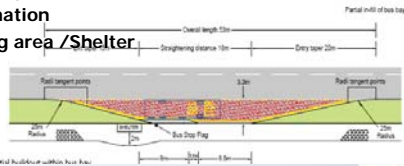
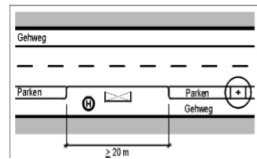


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5. Bus stops

- Decision about type (stop at the carriageway or bus bay)
- Crossing help
- Sight and Illumination
- Waiting area / Shelter



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Example from Germany



Before



After

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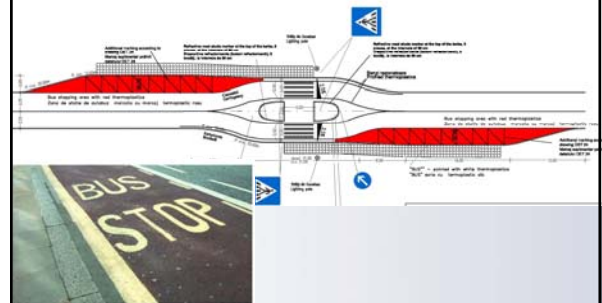
Example from Germany



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Combination of bus bays with crossing help – proposed standard solution in Romania



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Sufficient space – Requirements of road safety + comfort



* das Abstandsmass kann bei beschränkten Verhältnissen auf 0,30 m reduziert werden

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5. Intersection

- Please see separate presentation

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