

FLOW – Making active modes count in transport planning

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Bernard Gyergyay – Rupprecht Consult



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FEHRL Forever Open Roads

FEHRL

The Forever Open Road

- ▣ We propose a new model → concept for intelligent roads that are developed for urban environment
(Roads + Cars)
- ◆ adaptable 
- ◆ automated 
- ◆ climate change resilient 



Concept: Multimodal congestion reduction



FLOW story

Transport Models

Active Modes are invisible





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FLOW objectives

- Define the role of walking and cycling in congestion reduction
- Develop and apply tools (modelling and impact assessment) for assessing the congestion-reducing potential of walking and cycling measures
- Increase awareness of the congestion reduction potential of walking and cycling
- Foster the market uptake of FLOW tools in cities and transport planning consultancies



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FLOW partnership

Support partners

- Rupprecht Consult (coordinator)
- Gdansk University of Technology
- Budapest U of Tech and Economics.
- Wuppertal Institute
- Traject
- Polis

Technical

- PTV
- Forum of European National Highway Research Laboratories



Cycling and walking

- Walk21
- European Cyclists' Federation



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FLOW Outputs

- FLOW multimodal definition of congestion
- Multimodal assessment methodology
- Micro- and Macroscopic Modelling Software
- Portfolio of congestion reducing walking and cycling measures
- Learning opportunities



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FLOW multimodal definition of congestion

“Congestion is a state of traffic affecting all modes on a multimodal transport network (e.g. road, cycle facilities, pavements, bus lane) characterised by high densities and overused infrastructure compared to an acceptable state across all modes against previously-agreed targets and thereby leads to (perceived or actual) delay.”

Key aspects

- Motorised and non-motorised modes
- Demand and capacity
- Adaptability to local circumstances
- User perspective





FLOW – Multimodal Analysis Methodology of Urban Road Transport Network Performance

Multimodal Level of Service (LOS) at a signalised junction
 One or more junctions can be assessed to determine a measure's impact on congestion (in this case, prioritising pedestrians at 2 crossings.)

LOS at a junction (P&T with flow 10)		Input			Result of LOS calculation	Result of transformation		Result of aggregation	
transport mode	priority factor (x)	vehicle occupancy rate (vehicles)	ratio of (walkers/cyclists)	LOS	utility points (UP (-))	traffic volume (persons)	new utility (-)	new LOS	
junction 1	right	1	-	100	B	90	130	85	B
	left	1	1,2	75	C	70	18		
	through	1	-	100	C	70	58		
	public transport	1	-	-	-	-	-		
	through	1	40	-	-	-	-		
	PRAC	1	-	-	-	-	-		
	left	1	-	-	-	-	-		
	right	1	-	28	A	110	28		
	through	1	1	262	C	70	262		
	left	1	-	34	C	70	34		
pedestrian crossing 1*	3	-	-	B	60	112			
pedestrian crossing 2*	3	1	-	B	90	179			



FLOW – Conceptual Framework & Portfolio of Measures

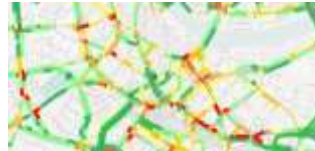




FLOW Improved macroscopic simulation

1. Bike assignment

Path-level attributes in stochastic assignment (e.g. slope or attractiveness attributes)



2. Park & Ride modelling

Modelling platform for combination of two path legs - can also be used e.g. for Walk/Cycle & Ride

3. Bike sharing

Enhanced mobility sharing in assignment



Example: Congestion impact of bike sharing

Launched in September 2014:

- Budapest downtown area 15 km²
- 76 docking stations (1500 stands)
- 1100 bicycles
- 1 000 000 trips since opening (2 rents/bike/day, 2200 rents/day)



Application of FLOW Assessment tools:

- Macroscopic Analysis
- Include bike sharing in assignment model
- Congestion impact
- Impact on traffic flow





FLOW Improved microscopic simulation

VISSIM – Urban Mobility Package

1. Enhanced modelling of conflict zones between cars & pedestrians
2. Behavioural parameters for cyclists (“1 bike not ½ car!”)
3. Interaction of bikes and pedestrians
4. Shared Space

PTV VISSIM PTV VISWALK



Example: Pedestrian Improvements

Lisbon

- Pedestrian overpass hardly used
- Fear of congestion



Application of FLOW Assessment tools:

- Microscopic analysis of level crossing
- Congestion impact



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flow

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Video available at <https://youtu.be/lpaNLxrtHOs>

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Conclusion

- Walking and cycling can play an important role in reducing congestion and improving the overall traffic performance.
- Investments should address multimodal congestion reduction.
- Assessment tools are becoming available.
- Stakeholders can learn from participating in FLOW e-learning.

(Roads  Cars)



FLOW eLearning

Congestion and Your City: The FLOW Approach

Webinar: January 2017

Course: January – February 2017

FLOW and transport modelling: Looking at the tools

Webinar: May 2017

Course: May – June 2017

Putting it all together: The policy context of applying the FLOW tools

Webinar: November 2017

Course: November – December 2017



Thank you! Danke! Köszönöm! Obrigado! Dziękuję!
благодаря! Go raibh maith agat!



Bernard Gyergyay, Rupprecht Consult
b.gyergyay@rupprecht-consult.eu
+49 (0)221 60 60 55 22