RUPPRECHT CONSULT
Forschung & Beratung GmbH

VELO-CITY
GLOBAL 2016
EVOLUTION OF CYCLING
FEB 27-MAR 1 TAIPEI, TAIWAN
www.velo-city2016.com

FLOW: Cycling Measures – A Cause of Congestion or a Solution to It?

Velo-city Global – 27 February 2016 – Taipei, Taiwan
27PM8 Co-benefits of Cycling

Bernard Gyergyay, Rupprecht Consult

flow

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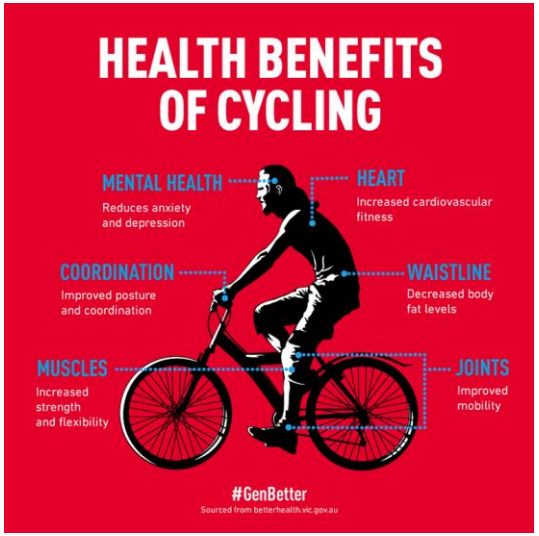
Velo-city presents many co-benefits of cycling…



HEAT
Health economic assessment tool

AActive Access

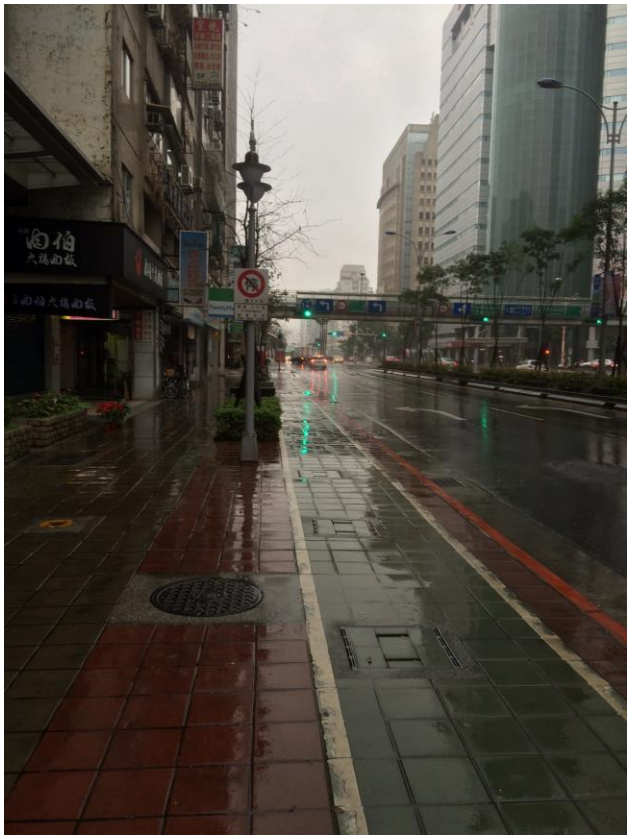
carbonrally
Small actions. Big impact.

Co-benefits of cycling…?

- How much do these **co-benefits actually matter** to urban transport planning departments around the world?
- The core focus of transport planning is:
  - Safety
  - Traffic efficiency (commonly defined by ‘delay’ and ‘level of service)
- **Conflict between co-benefits and key performance indicators for traffic efficiency**
- Safety concerns and **FEAR OF CONGESTION** used as an argument against cycling measures!

Example: Fear of Congestion Taipei

- Why is the cycle lane on the pedestrian footpath?
- Because the transport model considers taking away road space or mixing cycling as a cause of delay to the cars and reduces the level of service…
- Looking at it from a multi-modal perspective: doesn't this solution reduce the level of service and increases delay to cyclists and pedestrians?
- If so, how would you assess it?



Xinyi Road

FLOW objectives

- **Define the role** of cycling in congestion reduction
- Develop and apply tools (mainly modelling) for **assessing the congestion-reducing potential** of cycling measures
- **Increase awareness** of the congestion reduction potential of cycling
- **Foster the market up take** of FLOW tools in cities and transport planning consultancies

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

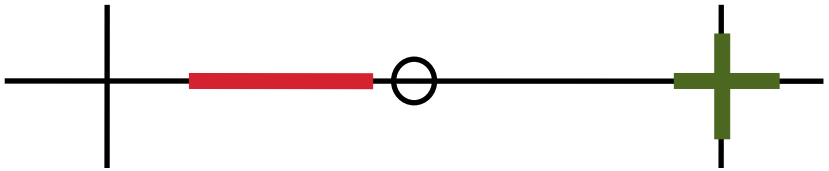
Cities

Cycling and walking

- Walk21
- European Cyclists' Federation

The FLOW story – What is multimodal-congestion?

How do you operationalise a multimodal defintion of congestion?



Road segment
(between two intersections)

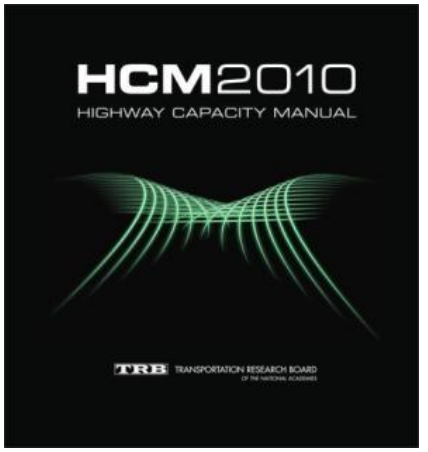
Intersection
(signalised, unsignalised, roundabout)

density (disturbance rate)

delay

Density is defined as the number of vehicles / pedestrians /cyclists occupying a length of roadway, usually specified as one km.

Delay is defined as the additional time experienced by a driver / cyclist / pedestrian beyond what would reasonably be desired



German highway capacity manual 2015 (HBS)

edure' for all transport modes

- Multimodal input data for calculation (e.g. traffic volume, speed, traffic control)

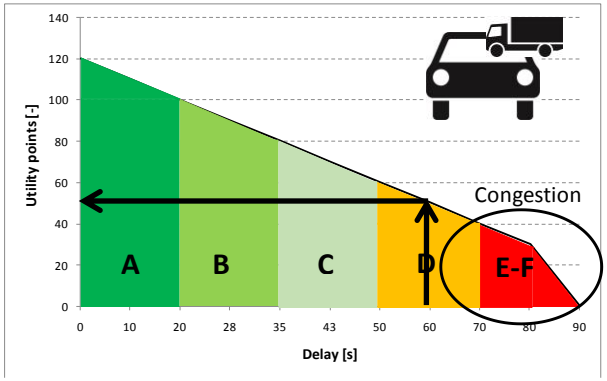
Theoretical demonstration of procedure: Level of Service at road segment

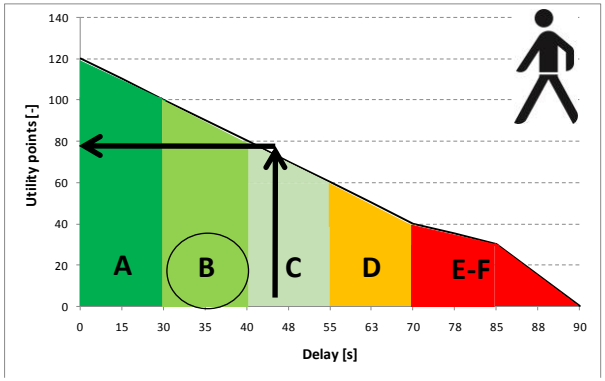
Multimodal traffic quality calculation

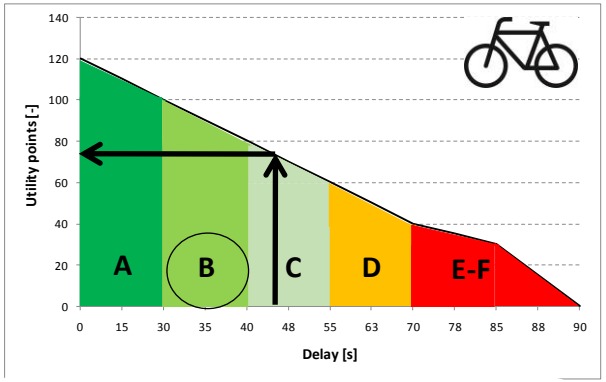
Example!

Road segment
(between two intersections)

Level of Service







Target: Combining different transport modes to have one aggregate multimodal level of service

Reduced vehicle LOS + Improve Pedestrian LOS + Improve Cyclists LOS

= **IMPROVED MULTIMODAL LOS**

Practical tools for assessment: transport models

1. Marcroscopic modelling

Network level assessment of congestion impact of cycling measures (e.g. bicycle sharing)

PTV VISUM

2. Mircroscopic modelling

Local congestion impact of cycling measures on road segments and intersections

PTV VISSIM

PTV VISWALK

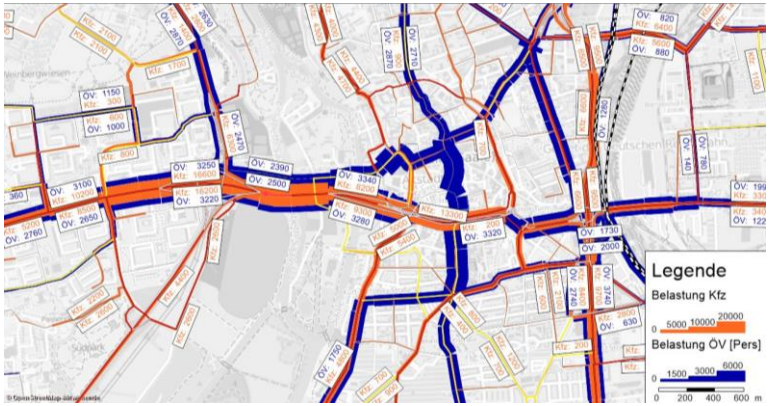
Operation and extension of the MOL Bubi system

Launched in September 2014:

- Budapest downtown area 15 km^2
- 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 for extention of MOL Bubi system:

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



Congestion impact evaluation of U-Bike Taipei?

Conclusion

Overall more cycling measures

Applied modelling tools

Arguments against the FEAR OF CONGESTION for decision makers and traffic engineers

6 case studies

Definition of multimodal congestion

Methodology for assessmnet

Involvement opportunities

- h2020-flow.eu
- FLOW newsletter
- Twitter feed

Cities:

- 25 Follower Cities

Marketplace:

- 10 Transport Planning Consultancies

Learning and exchange:

- face-to-face workshops and site visits
- online courses
- webinars

Questions for Group discussions

Is the ‘Fear of Congestion‘ used as an argument against cycling in your city?

How do you define congestion in our city?

How can you prove that cycling can reduce congestion? Or not make congestion any worse?

How would you assess it?

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Thank you for your attention.

flow

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