



<https://www.ratedpeople.com/blog/front-door-colours-and-what-they-might-say-about-you>

Vision Zero  
Everybody has a right to  
come home

Safe streets for all road users

May 29, 2019  
Calgary, CANADA

# HOW MANY PEOPLE HAVE BEEN TO NL?



# HOW MANY PEOPLE HAVE BEEN TO NL?



# HAPPIEST KIDS IN THE WORLD

## 20 Countries Where Kids Are the Happiest

By Madeline Holler Dec 07, 2018

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### 1. NETHERLANDS

The United Nations International Children's Emergency Fund (UNICEF) advocates for children in every country around the world. They regularly issue reports on the state of childhood, children's education, [education equality](#), and children's health and welfare to help understand where there is need. A few years ago, they ranked countries in order of how happy its children are. [At the top?](#) The [Netherlands](#).

According to the rankings, [Dutch kids'](#) [education](#), their material well-being and



# "WALKING" THE DOG



# KORFBALL



# WE HELP THE WORLD BE LESS DEPENDENT ON THE CAR



# PEOPLE & TRAFFIC SAFETY

Statistic	Canada	NL
Inhabitants	37 million	17,3 million
Fatalities 2017	1.841	613
Fatalities per million (pop.)	49	35
Fatalities in urban areas	44%	37%
< 19 years	10%	4%
> 65 years	19%	41%
Single vehicle collision fatalitites	??	30% (3/4 car)

# THE MEANING OF MOBILITY FOR ME



PARTICIPATE IN SOCIETY  
THE RIGHT TO COME HOME  
INDEPENDENCE  
SUSTAINABLE

# INDEPENDENCE AND FORGIVINGNESS



# VISION ZERO: EVERYBODY HAS A RIGHT TO COME HOME



About the Netherlands



How the Netherlands Became a Safer Country



Future Challenges

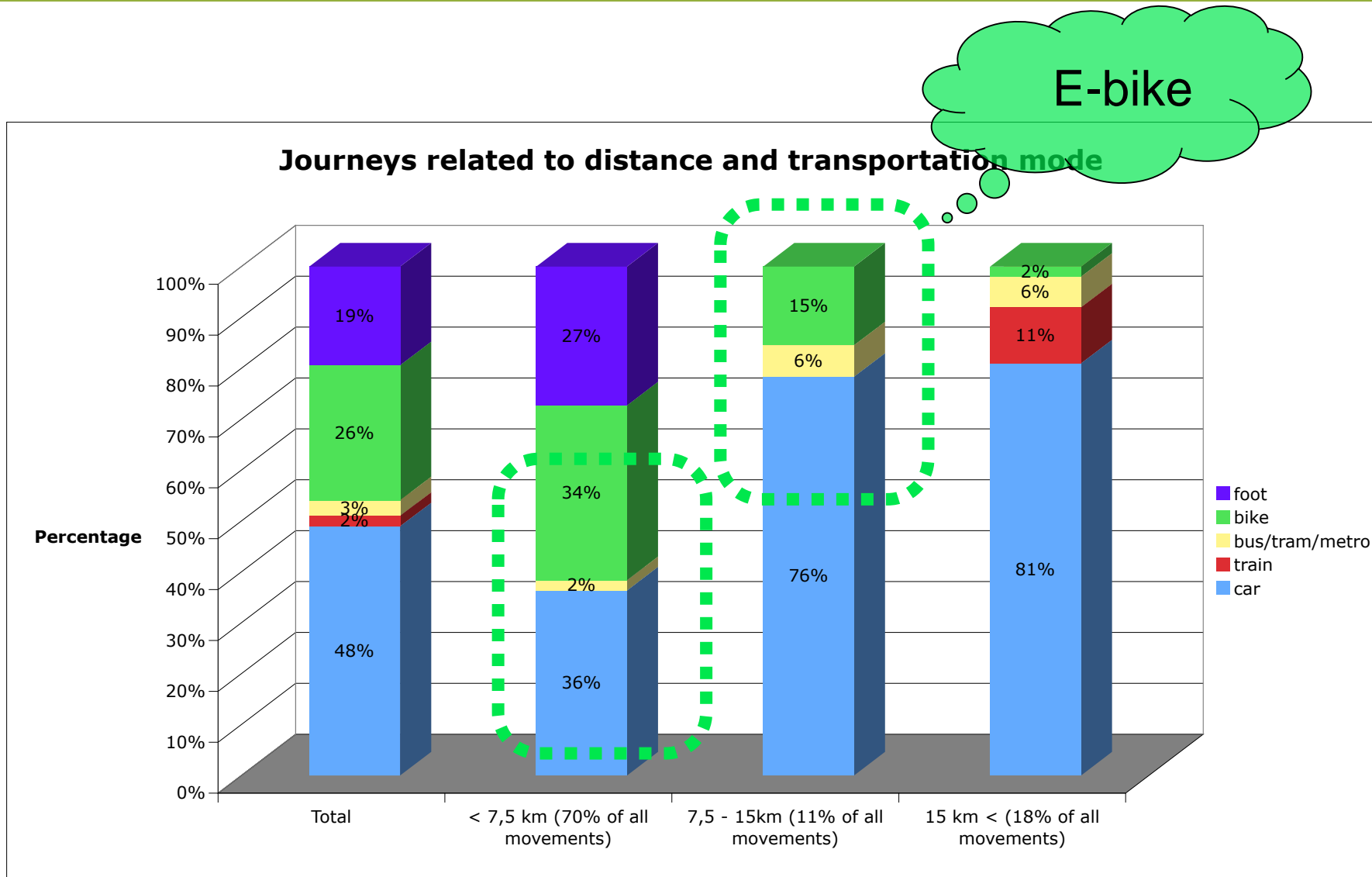


Adapting to Change

# A TYPICAL COMMUTE



# A SHIFT IN TRAVEL PATTERNS



# BORN ON THE BIKE



# ON OUR WAY TO SCHOOL



# YOUR FIRST SERIOUS TEST



# CYCLING IS NOT ABOUT STATUS



'I WILL LOVE YOU ALL THE DAYS OF MY LIFE...'



'...UNTIL DEATH DO US PART'



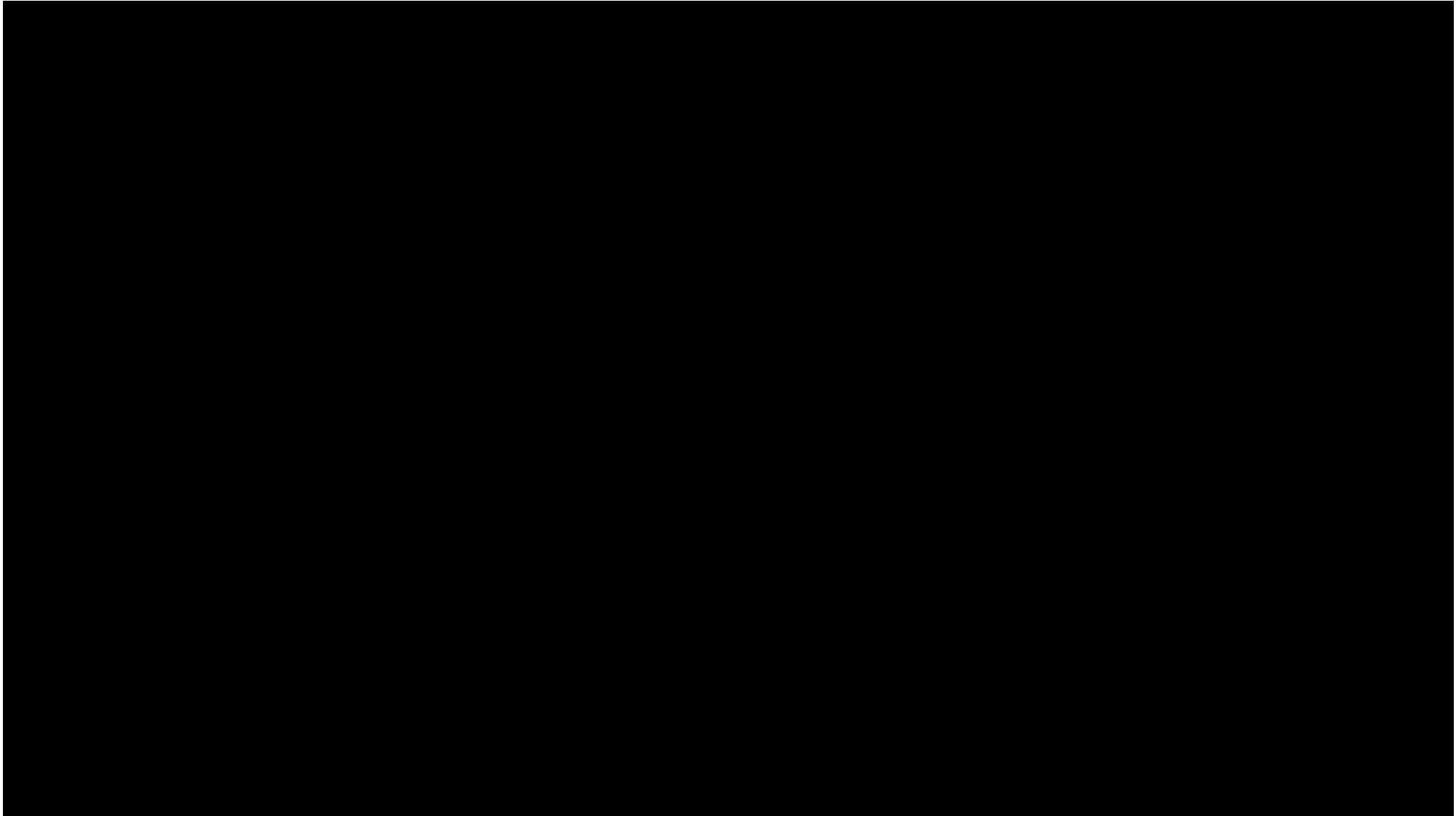
# ORGANIZING TRAFFIC



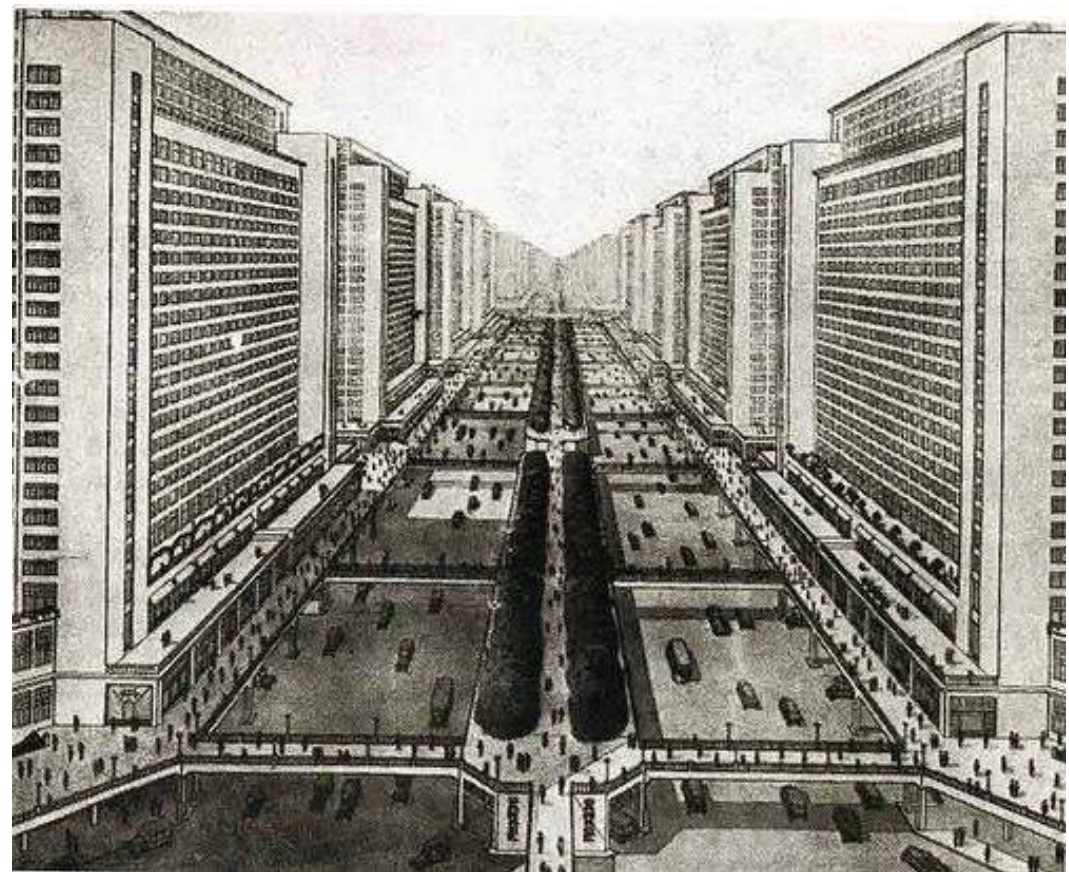
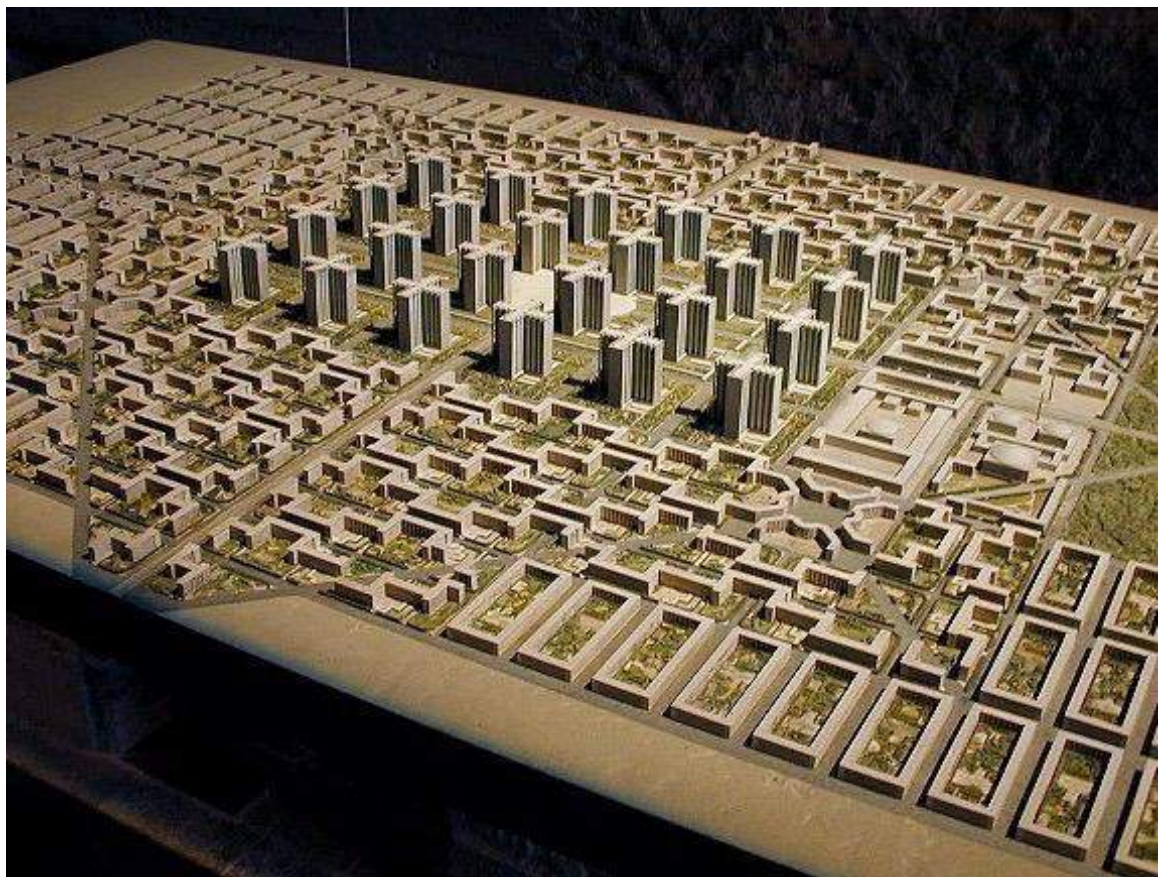
# ORGANIZING TRAFFIC



# 1950's



# MODERNISM



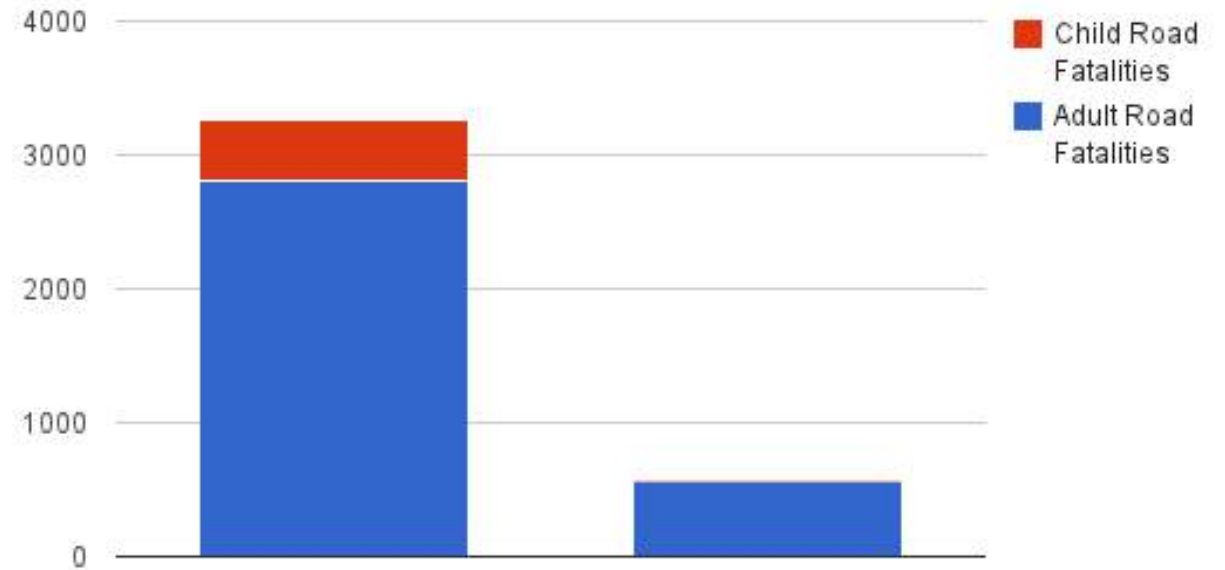
# OIL CRISIS (70'S)



# 'STOP THE CHILDREN MURDERS'



Road fatalities in the Netherlands

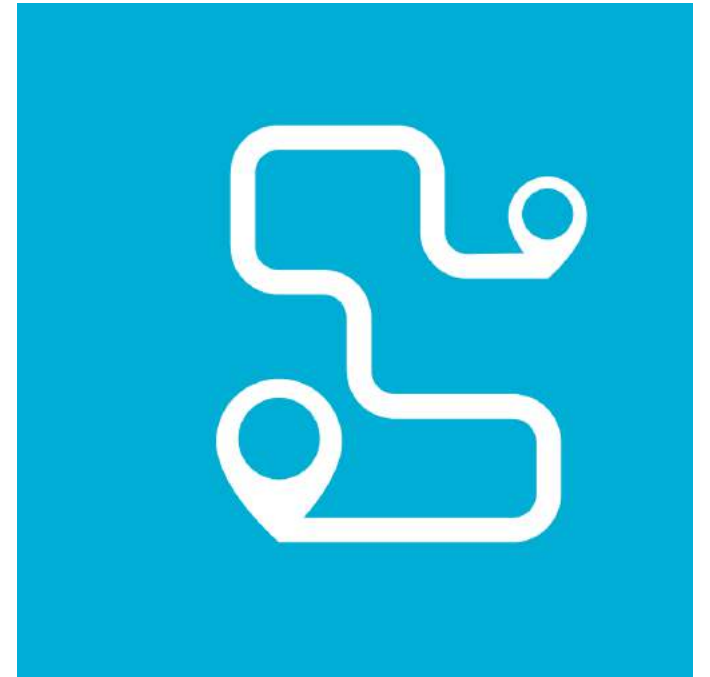
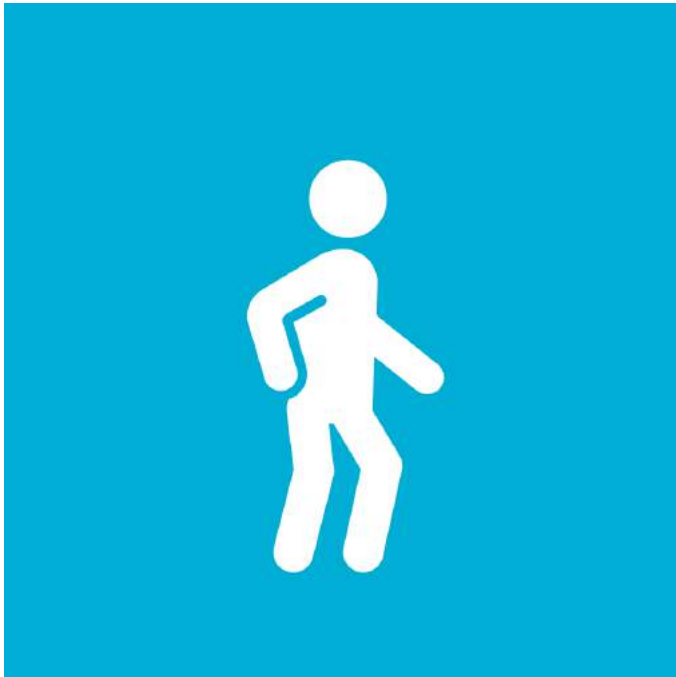


1972 vs. 2013 [www.aviewfromthecyclepath.com](http://www.aviewfromthecyclepath.com)

# SUSTAINABLE SAFETY

Principles	Description
<b>Functionality</b>	Monofunctionality of roads, as either through-roads, distributor roads, access roads, in a hierarchically structured road network
<b>Homogeneity</b>	Equality in speed, direction and masses at medium and high speeds
<b>Predictability</b>	Road environment and road user behaviour that support road user expectations via consistency and continuity in road design
<b>Forgivingness</b>	Injury limitation through a forgiving road environment and anticipation of road user behaviour
<b>State awareness</b>	Ability to assess one's own task capability

# SUSTAINABLE SAFETY



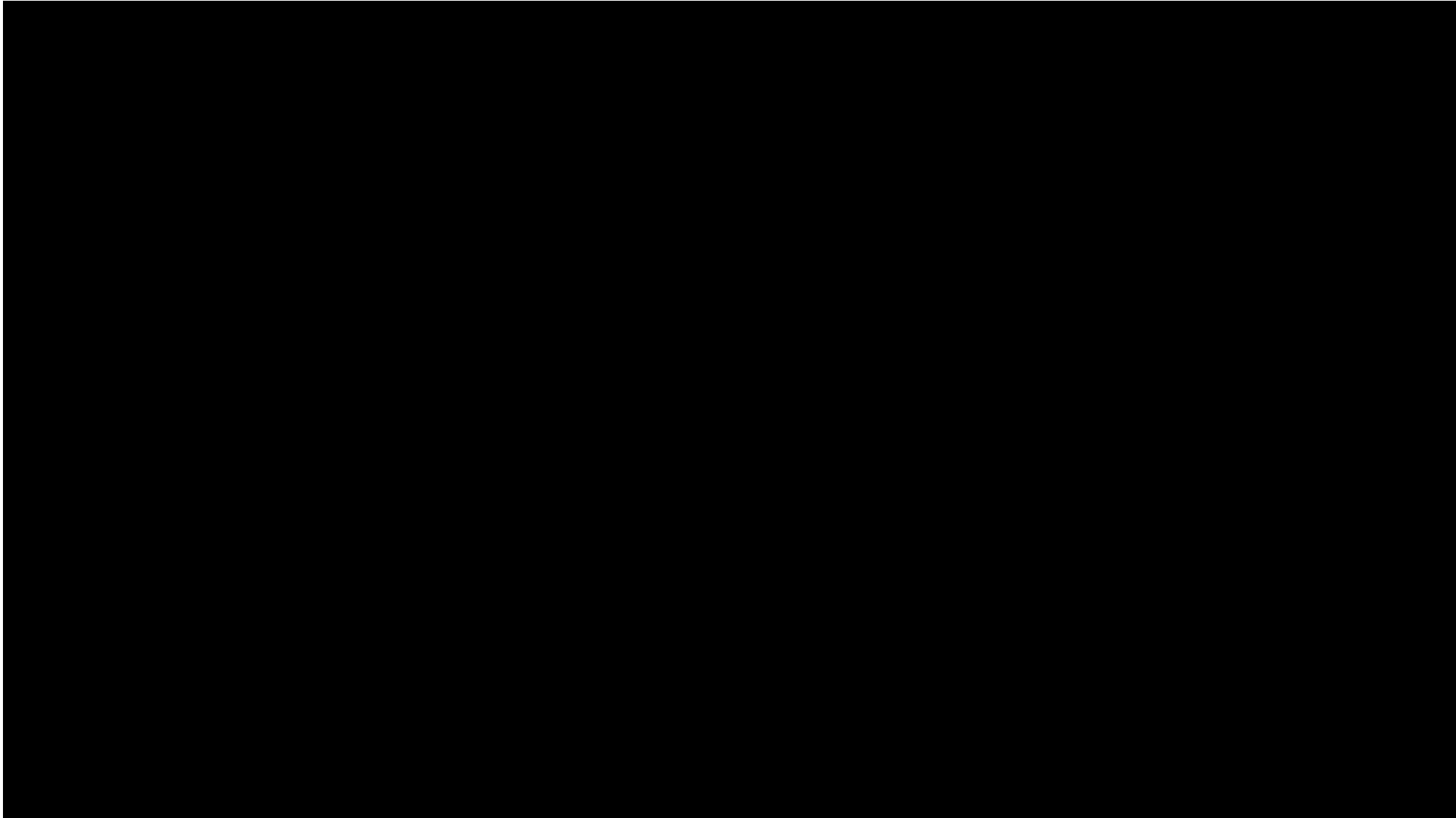


# EDUCATION





# EDUCATION





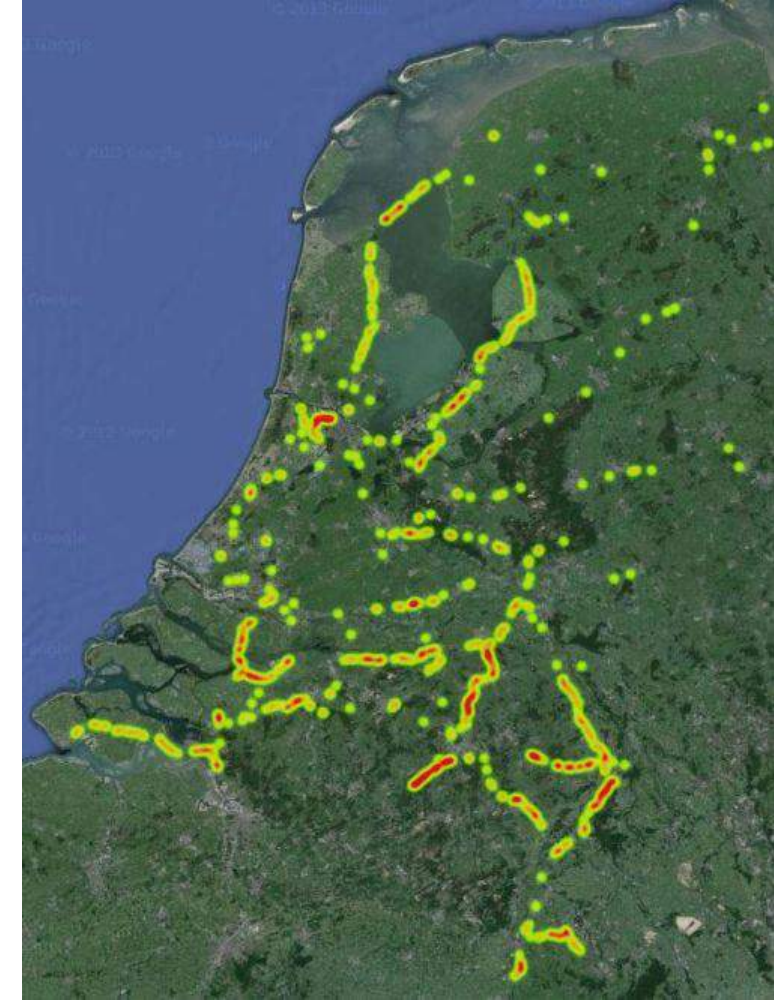
# LICENSE



- Ave. 38 hrs of lessons
- Start at 16.5yr. old
- Until 18yr. always with guidance (two specific people)
- Theoretical and practical exams
- License/insurance needed from a moped 25 km/h to truck



# ENFORCEMENT





# VEHICLES





# WHAT MODES GO TOGETHER?





# TRAFFIC SAFETY BASICS

*minimize  $\Delta$  in mass and speed*

*separate modes with large  $\Delta$   
mass / speed*

$$E = \frac{1}{2} m \cdot v^2$$



*minimize conflict points*

*separate modes at conflict  
points in time or space*



# SLOW IS GOOD

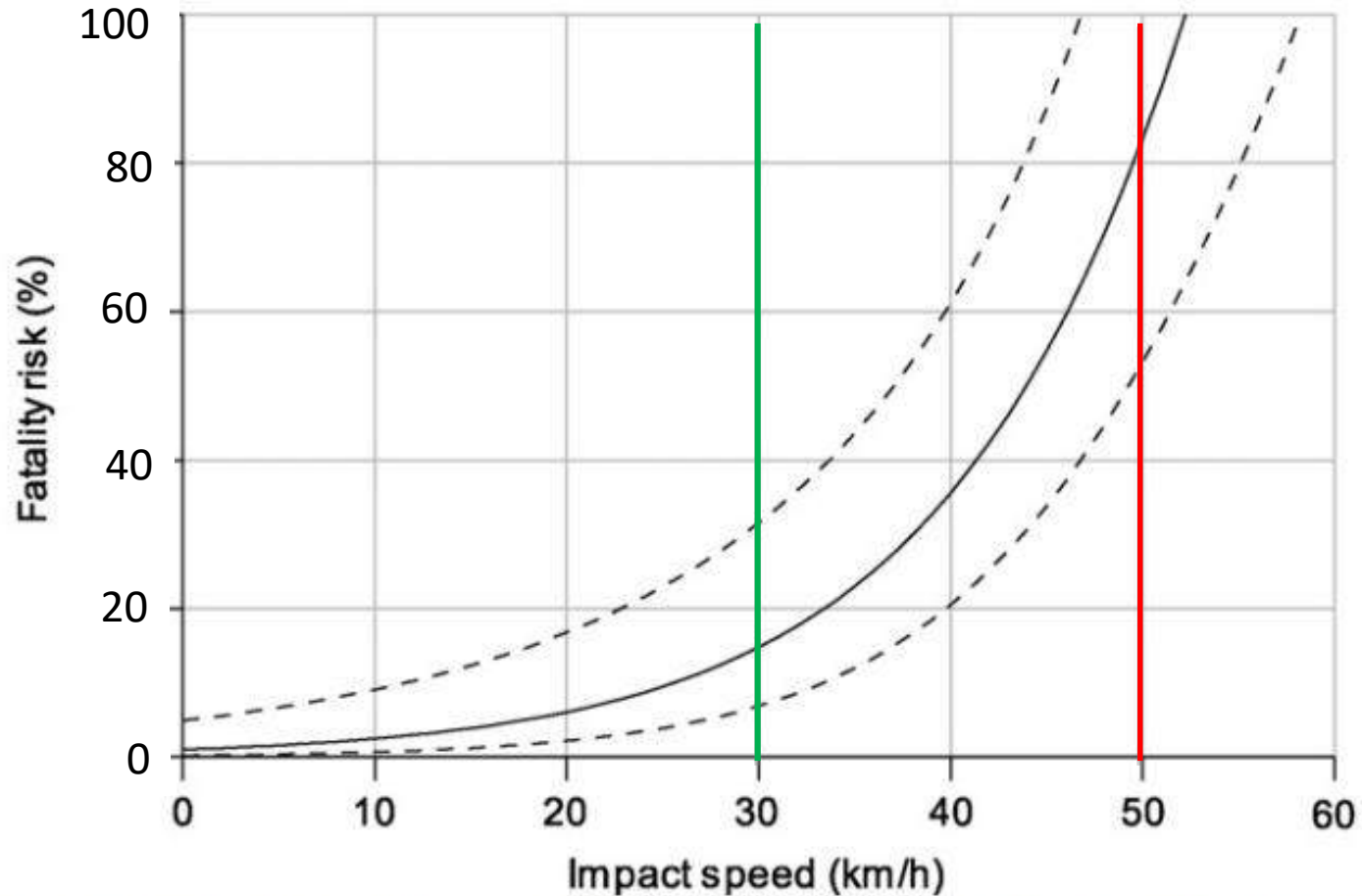


Figure 1: Showing the relationship between the risk of fatal injury to adult pedestrians and vehicle impact speed<sup>2</sup>. The solid line is the most likely estimate and the dotted lines show the 95% confidence limits.



# WHY SPEED MATTERS



Ar 50 km/h ir septiņas reizes lielāka iespējamība, ka tu mani nogalināsi.

**Tu vari izglābt dzīvību.**

**Nepārsniedz atļauto ātrumu!**

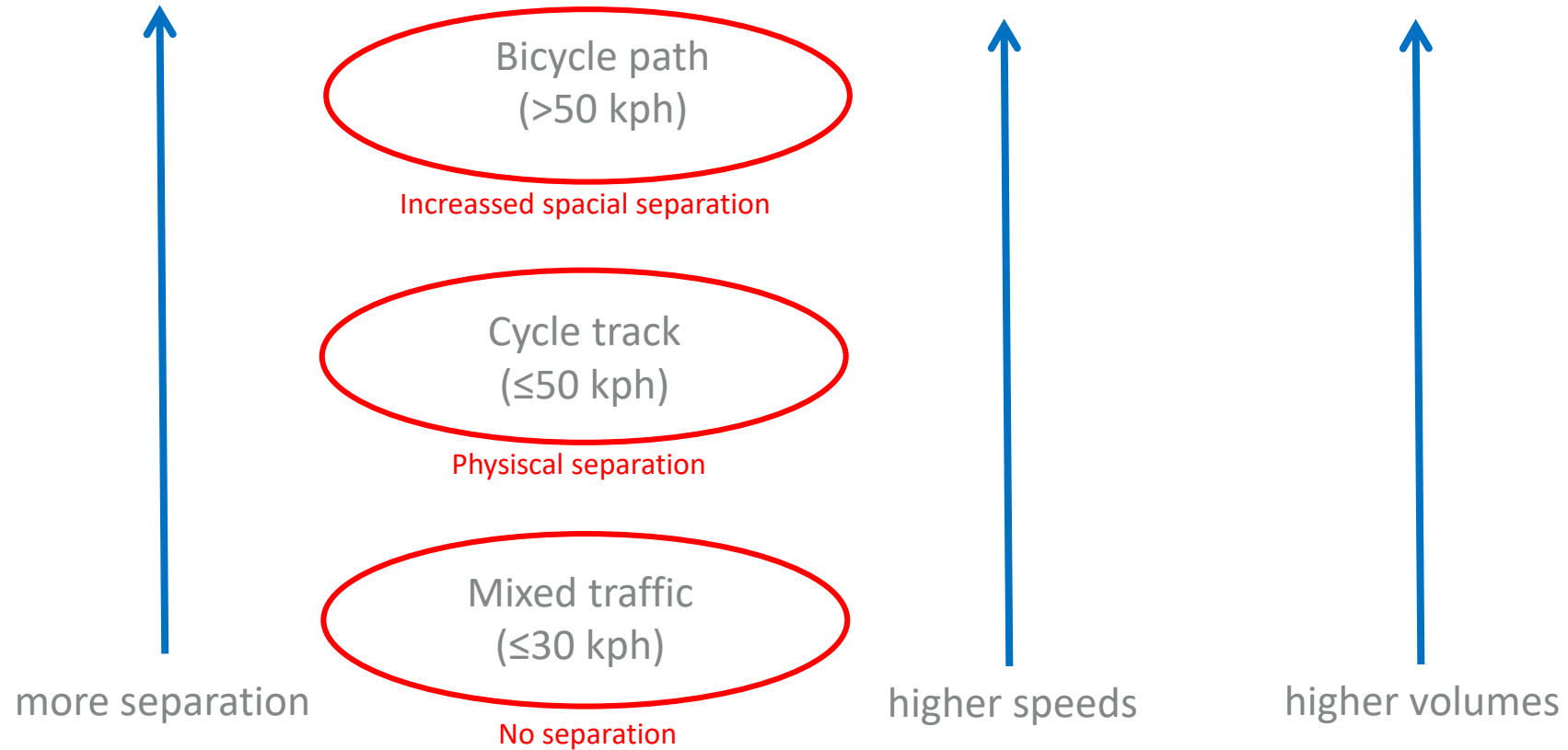
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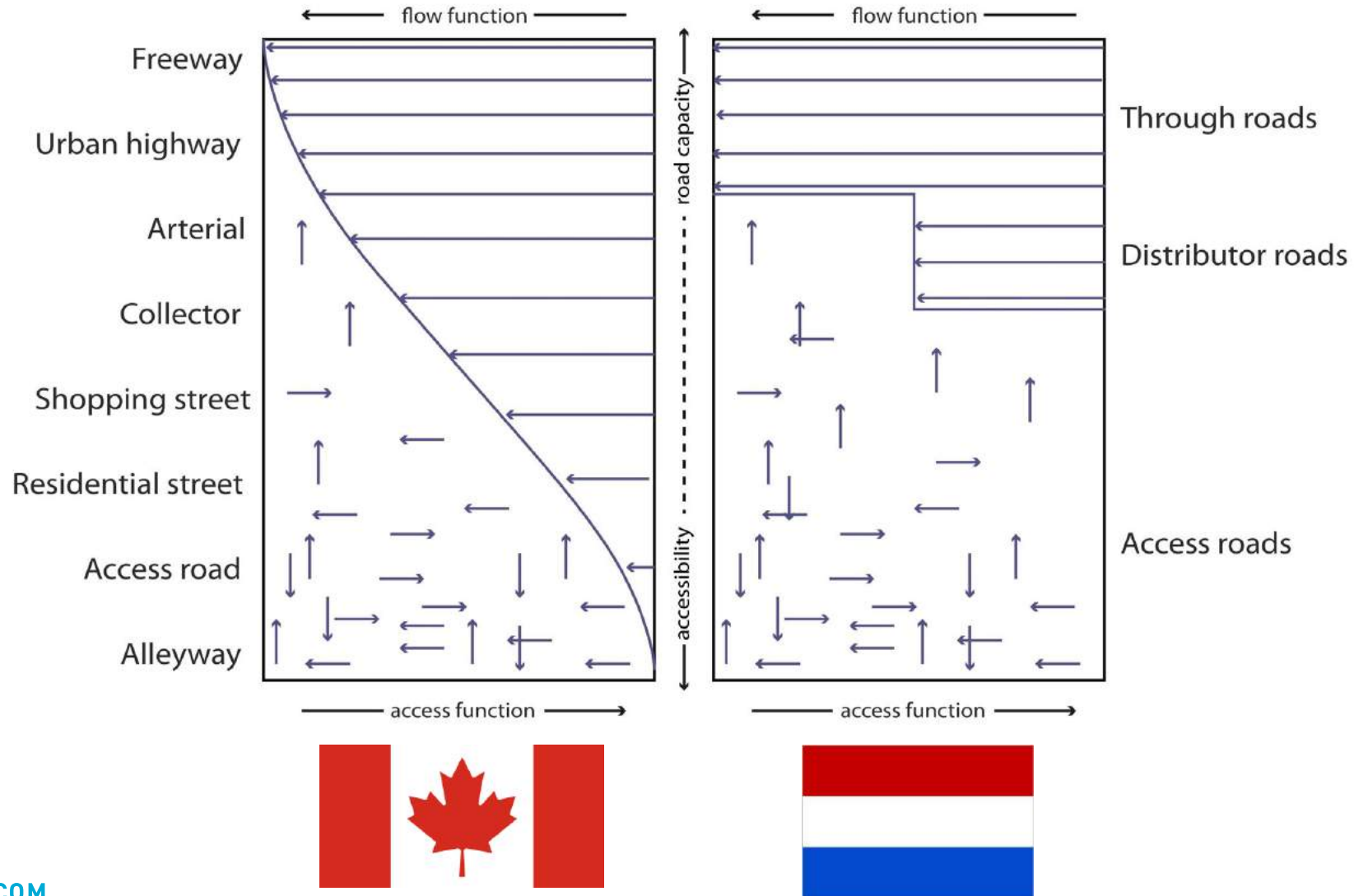


# MORE SPEED = MORE SEPERATION











# SUSTAINABLE SAFETY: FUNCTIONALITY



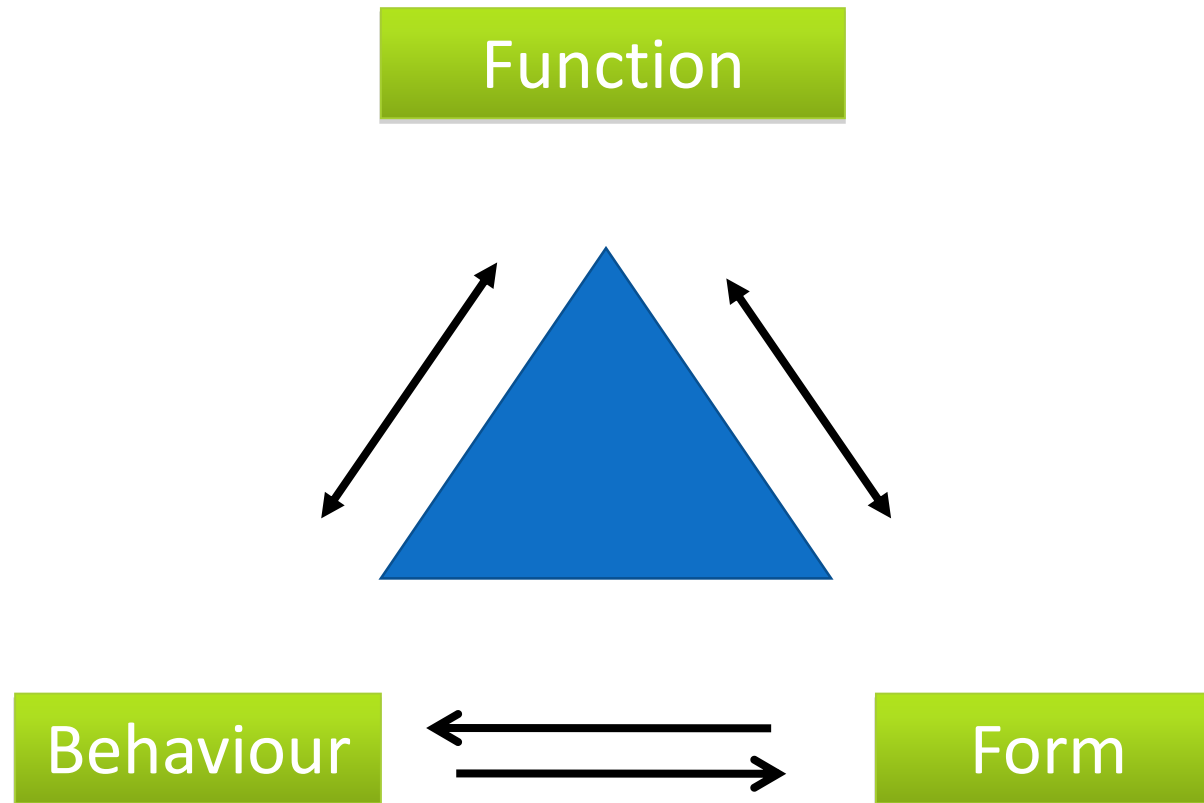


# VISION ZERO+

	<i>Flow</i>	<i>Distributor</i>	<i>Access</i>
<i>Rural</i>	<p>highway</p>  <p>130</p>	<p>arterial road</p>  <p>80</p>	<p>rural road</p>  <p>60</p>
<i>Urban</i>	<p>urban highway</p>  <p>100 80</p>	<p>collector road</p>  <p>50</p>	<p>local street</p>  <p>30</p>
	<b>Seperate cycling network</b>	<b>Cycle track/ bike path</b>	<b>Mixed traffic</b>



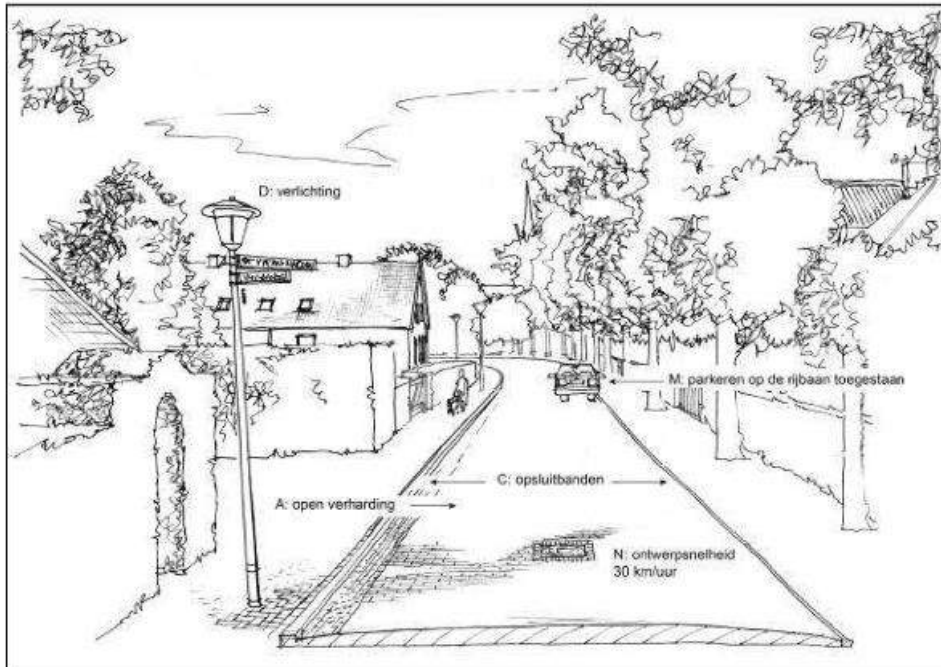
# SUSTAINABLE SAFETY



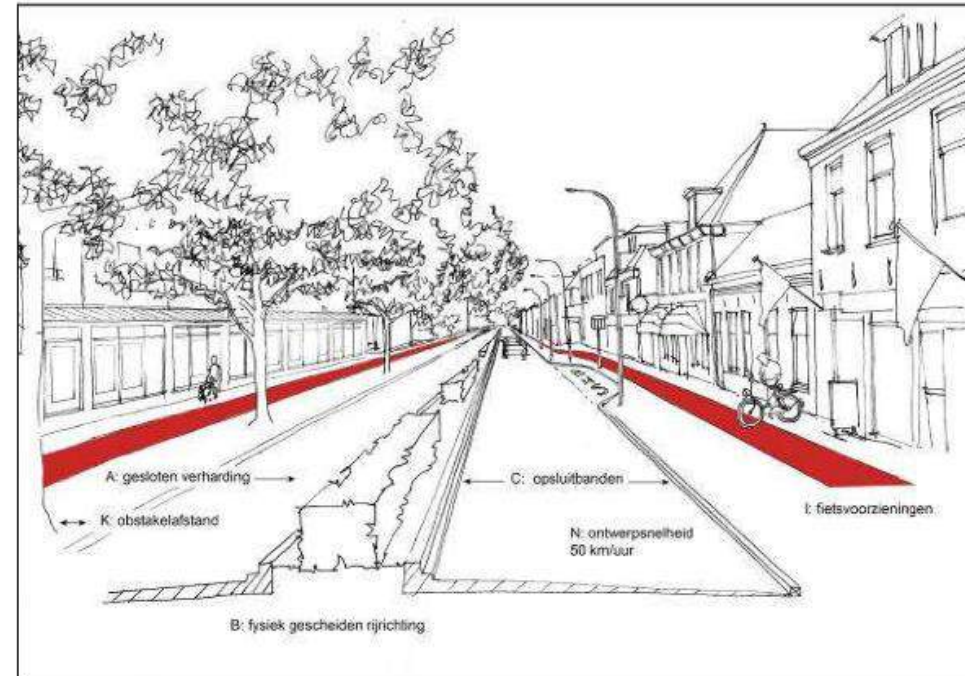


# SUSTAINABLE SAFETY: PREDICTABILITY

## 30km/h Access









## 50km/h Distributor



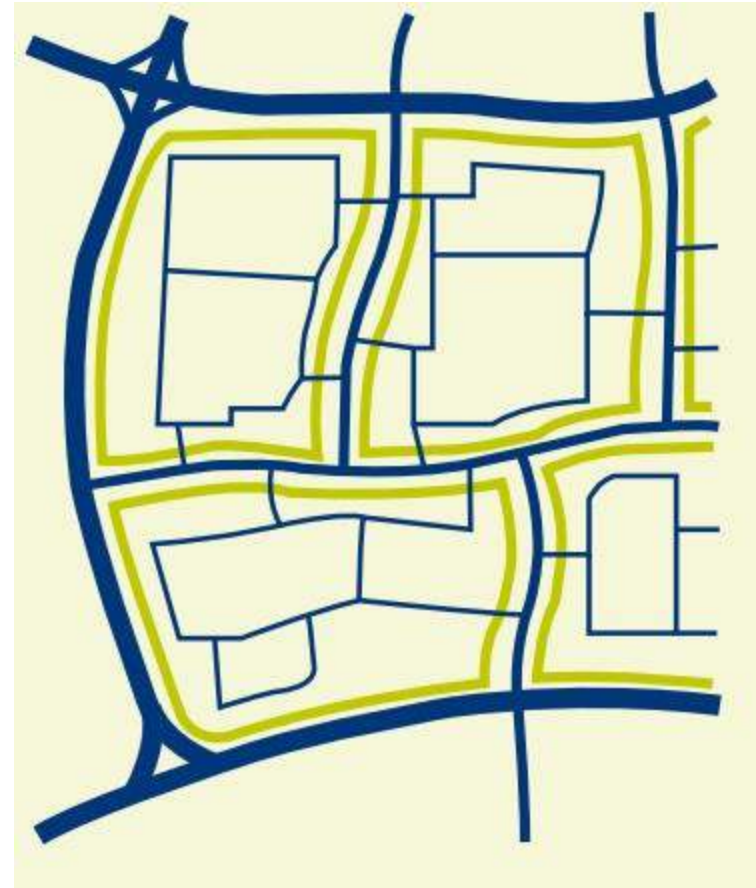
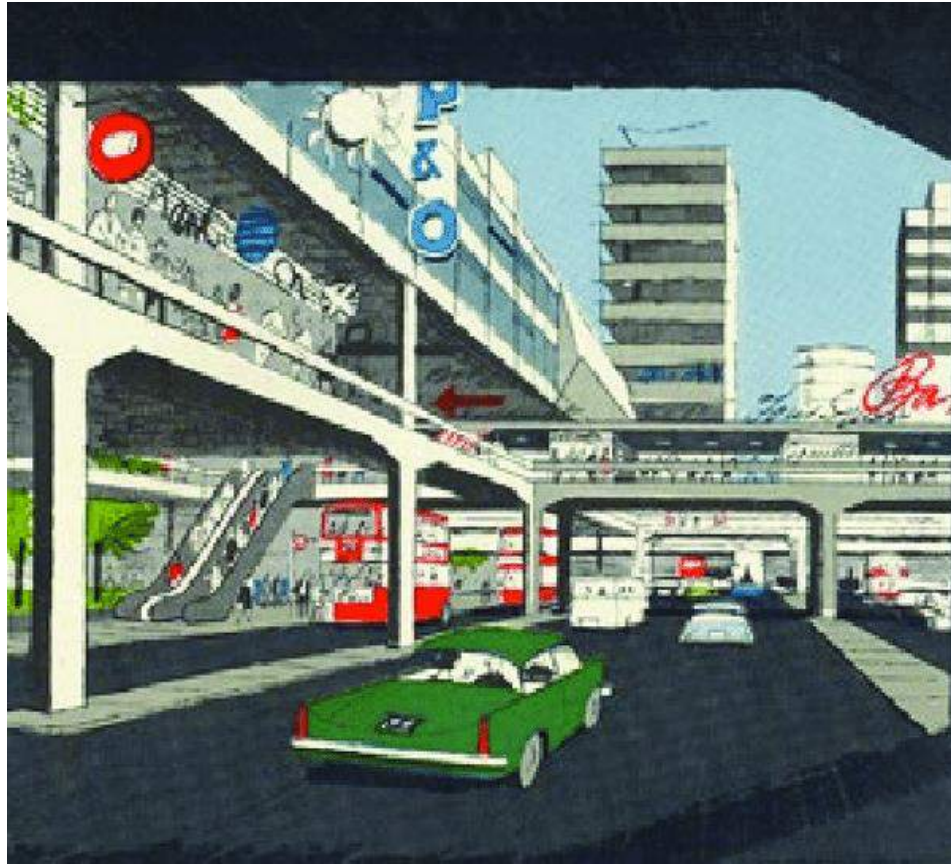


# SUSTAINABLE SAFETY: FUNCTIONALITY

	<i>Flow</i>	<i>Distributor</i>	<i>Access</i>
<i>Rural</i>	highway 	arterial road 	rural road 
<i>Urban</i>	urban highway 	collector road 	local street 
	<b>Seperate cycling network</b>	<b>Cycle track/ bike path</b>	<b>Mixed traffic</b>

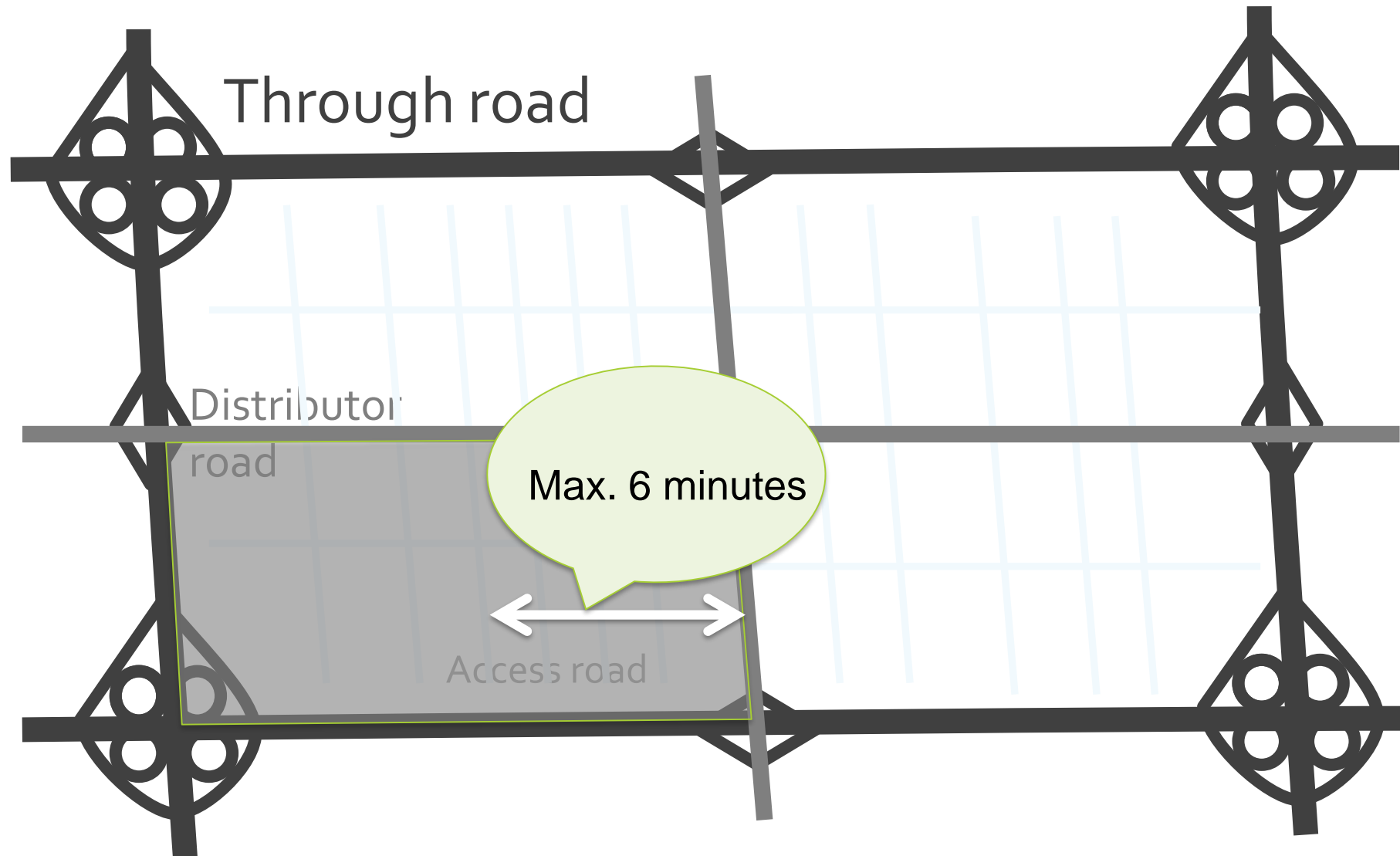


# Traffic in Towns (1963)



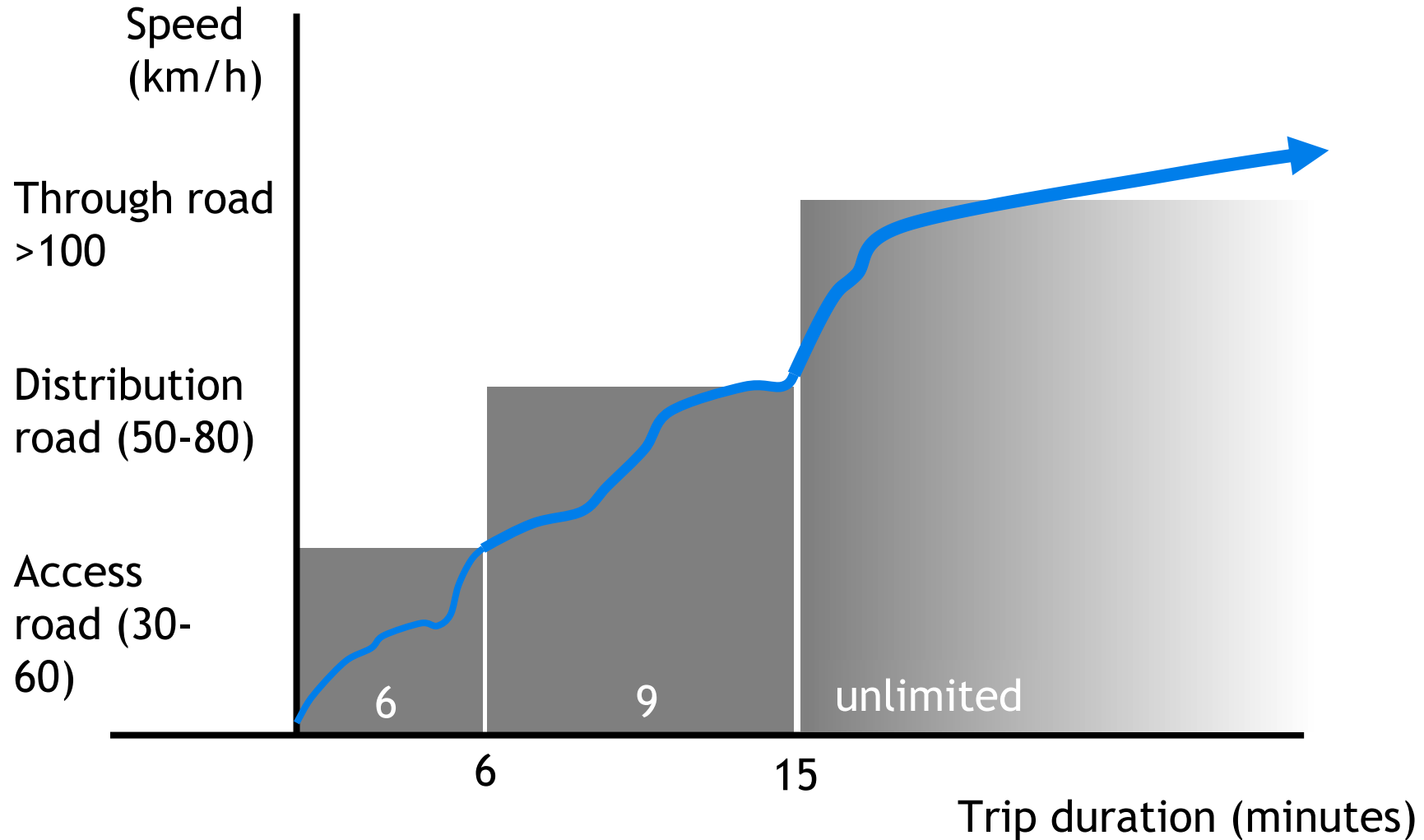


# HIERARCHICAL NETWORK





# GRID SPACING



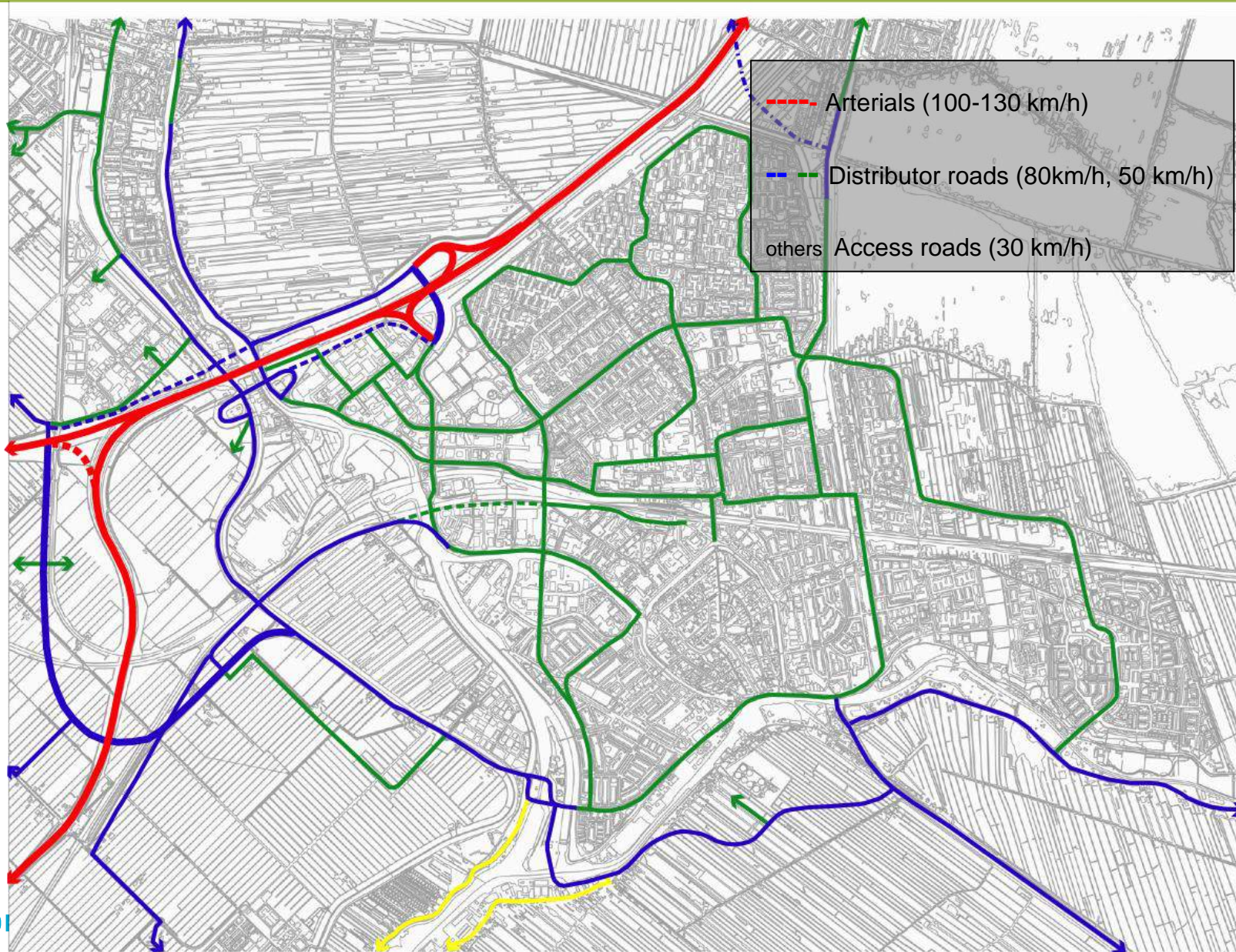


# GOUDA



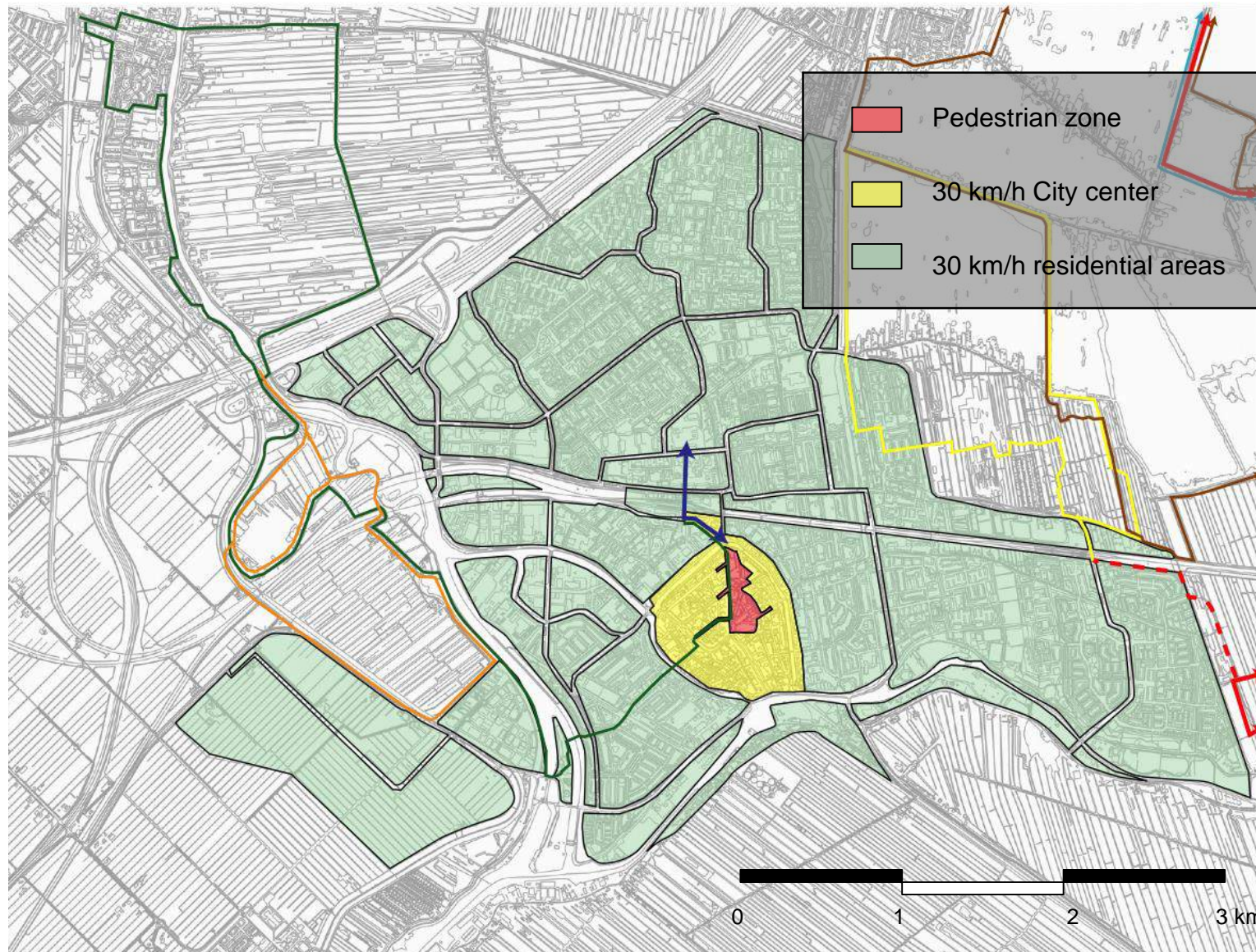


# THE CAR NETWORK



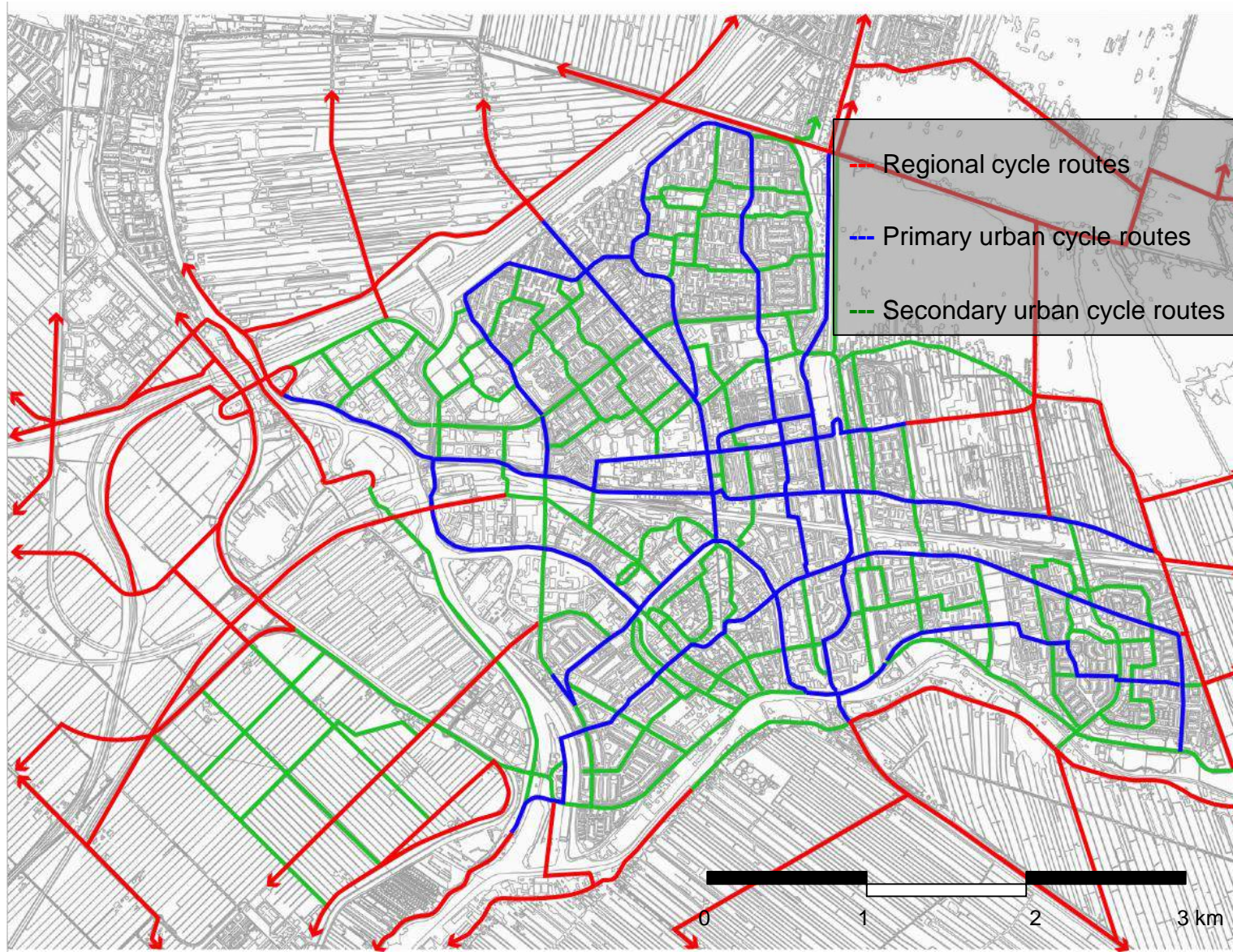


# NEIGHBOURHOOD ZONES





# THE BICYCLE NETWORK





# USES WE WANT?





# STREETS FOR PEOPLE





# GATEWAYS (30 km/h)





# GATEWAYS (30 km/h)





# INTERSECTIONS: THE WEAKEST LINK (30 km/h)





# ORGANIZING TRAFFIC (50 km/h)





# CYCLE NETWORK CONCEPTS—REGIONAL



Figure 8: Ideal city region network

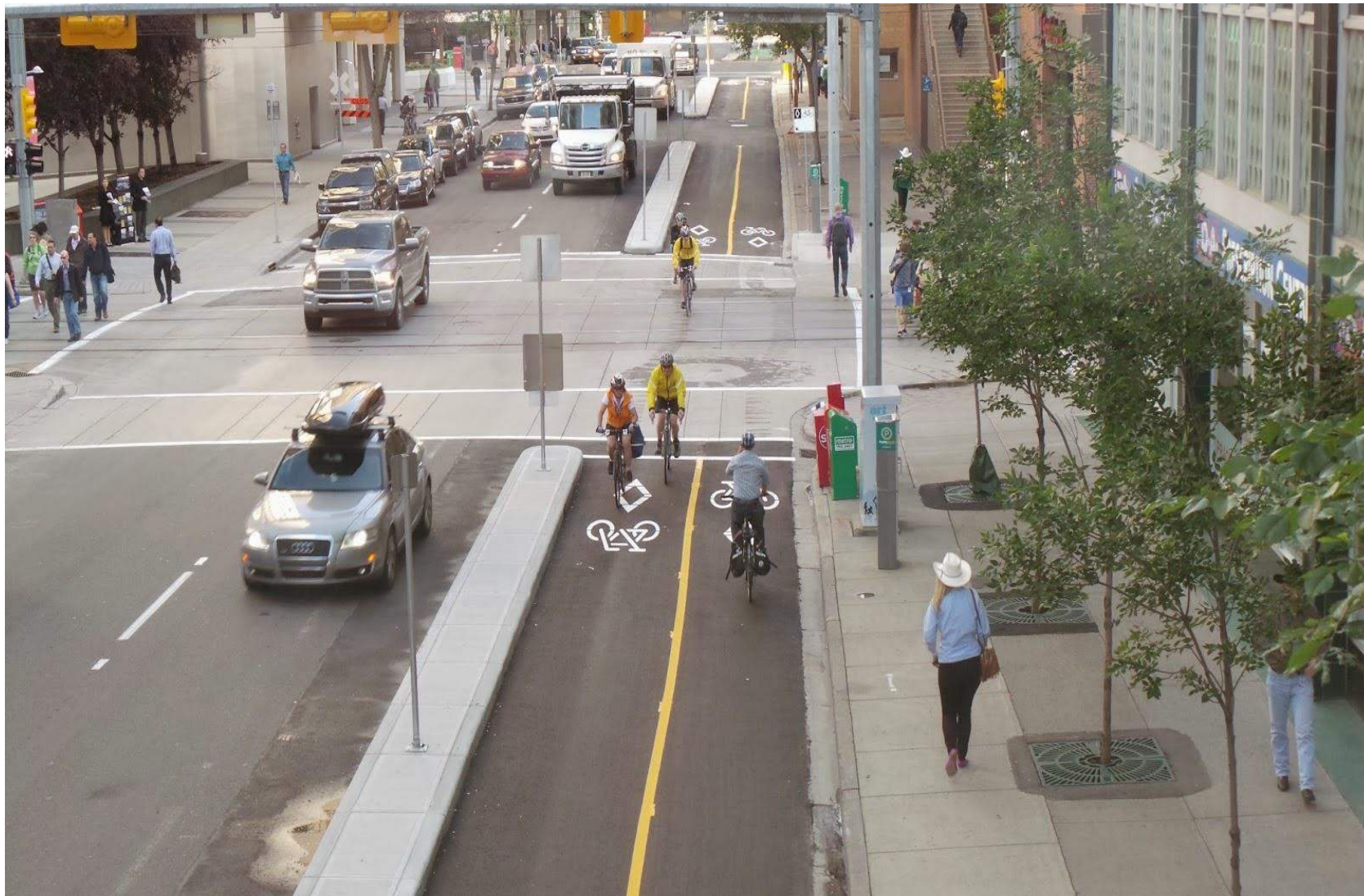


# CYCLE NETWORK CONCEPTS—DOWNTOWN





# Cycle track, Calgary





# Main St. Ottawa





# Canmore





# INTERSECTIONS: THE WEAKEST LINK (50 km/h)





# Davis, CA





# ORGANIZING TRAFFIC (50 km/h)





# DRACHTEN (NL) BEFORE





# DRACHTEN (NL) AFTER





# TRANSITIONS (RURAL-URBAN)

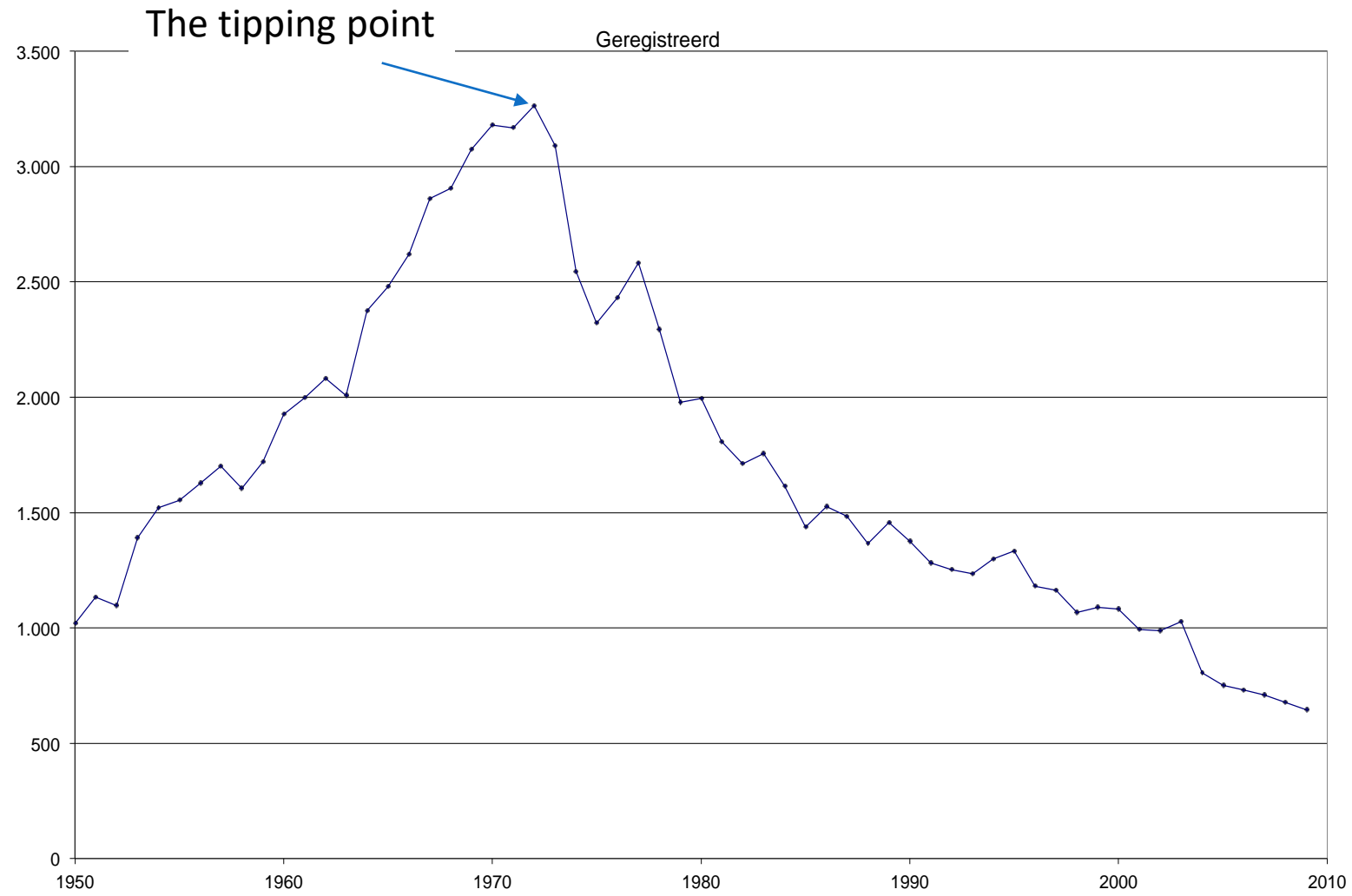




80 km/h

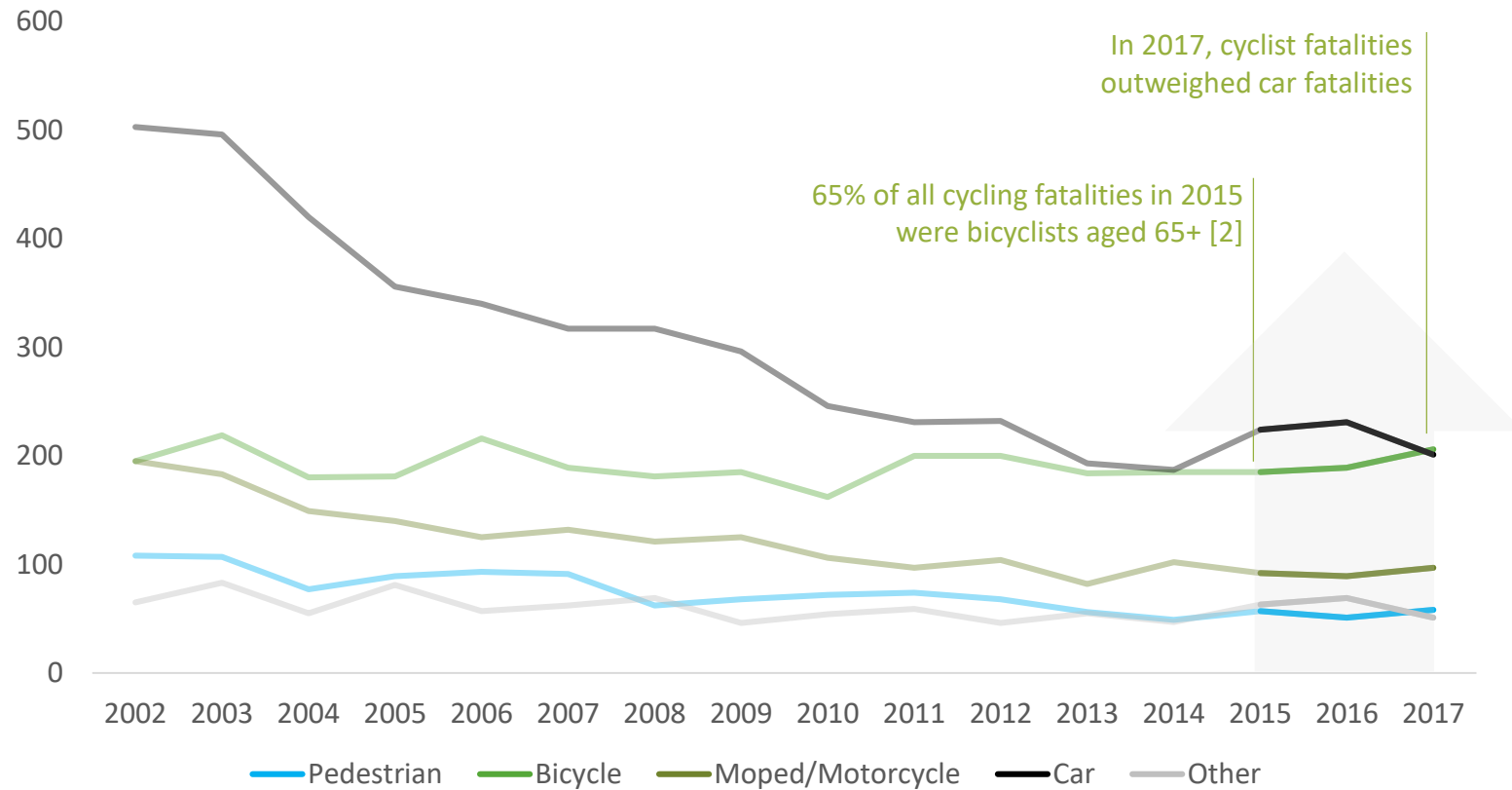


# The outcome improved safety



# ITS NOT ALL POSITIVE

Cyclist, pedestrian and moped/motorcycle fatalities are increasing [1]



What more can be done to protect vulnerable road users?

# NATIONAL TRAFFIC SAFETY PLAN 2030 (NL)



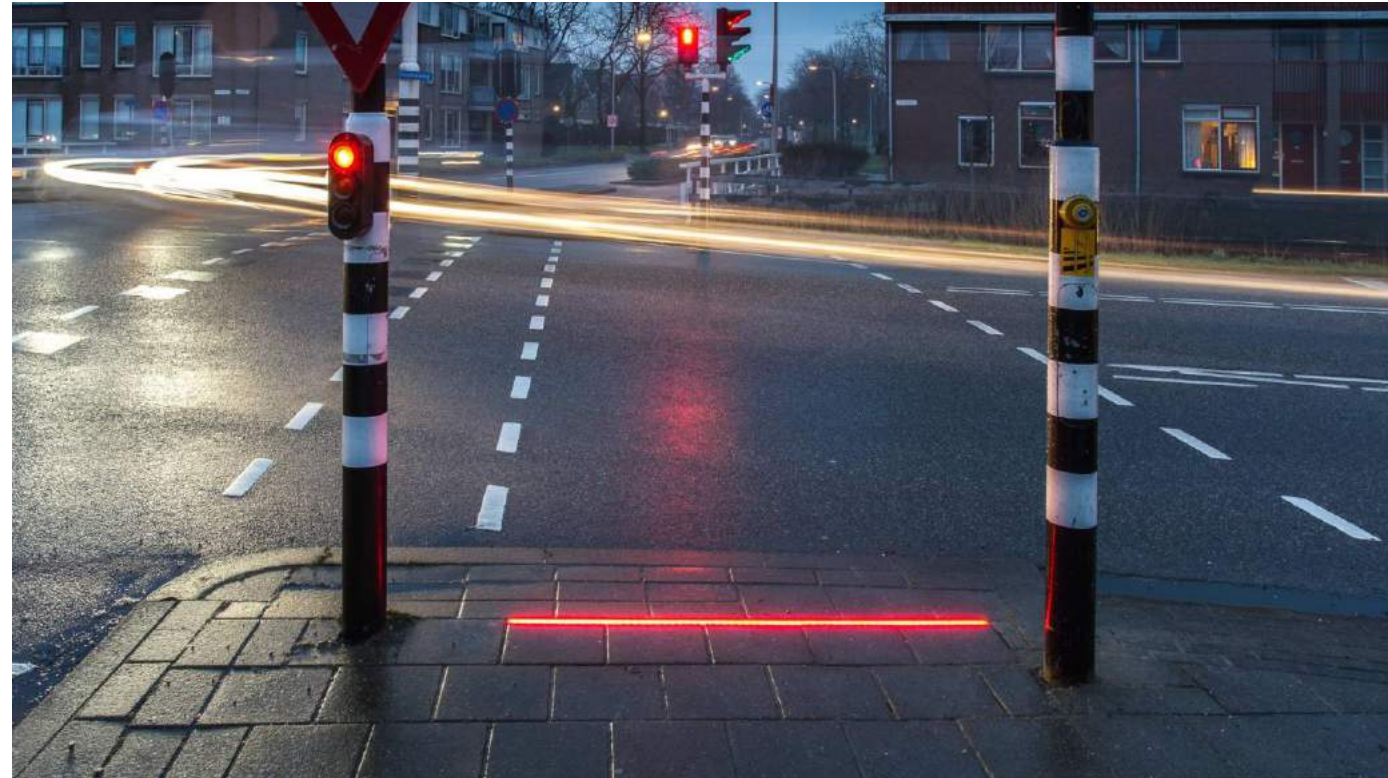
## Risk-based approach

- Most important risk indicators:
  - Speed
  - Alcohol/drugs
  - Use of safety devices
  - Visibility of users
  - Quality score of roads
  - Quality score of vehicles
  - Collision response



# 9 KEY POLICY THEMES

- Safe infrastructure
- Heterogeneity in traffic
- Technological developments
- Vulnerable road users
- Inexperienced road users
- Driving under the influence
- Speed in traffic
- Distraction in traffic
- Traffic offenders



# A CHANGING ENVIRONMENT



# HOW SPACES FUNCTION (NL)



# HOW SPACES FUNCTION (CAN)



# NEW TECHNOLOGY





# THE "TRADITIONAL" MODES



# INCREASING OPTIONS




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# COMPETING WITH NEW MODES





## Menu

- WALKING
- ROLLERBLADES
- SCOOTER
- SKATEBOARD
- BIKE
- MOPED
- PUBLIC TRANSPORTATION
- CAR



# SAME AVAILABLE PUBLIC SPACE





**Menu**

WALKING

ROLLERBLADES

SCOOTER


SKATEBOARD

BIKE

MOPED

PUBLIC TRANSPORTATION

CAR



**Menu**

WALKING

PUBLIC TRANSPORTATION

CAR

# CHALLENGES ARE COMPLEX



A NEW APPROACH



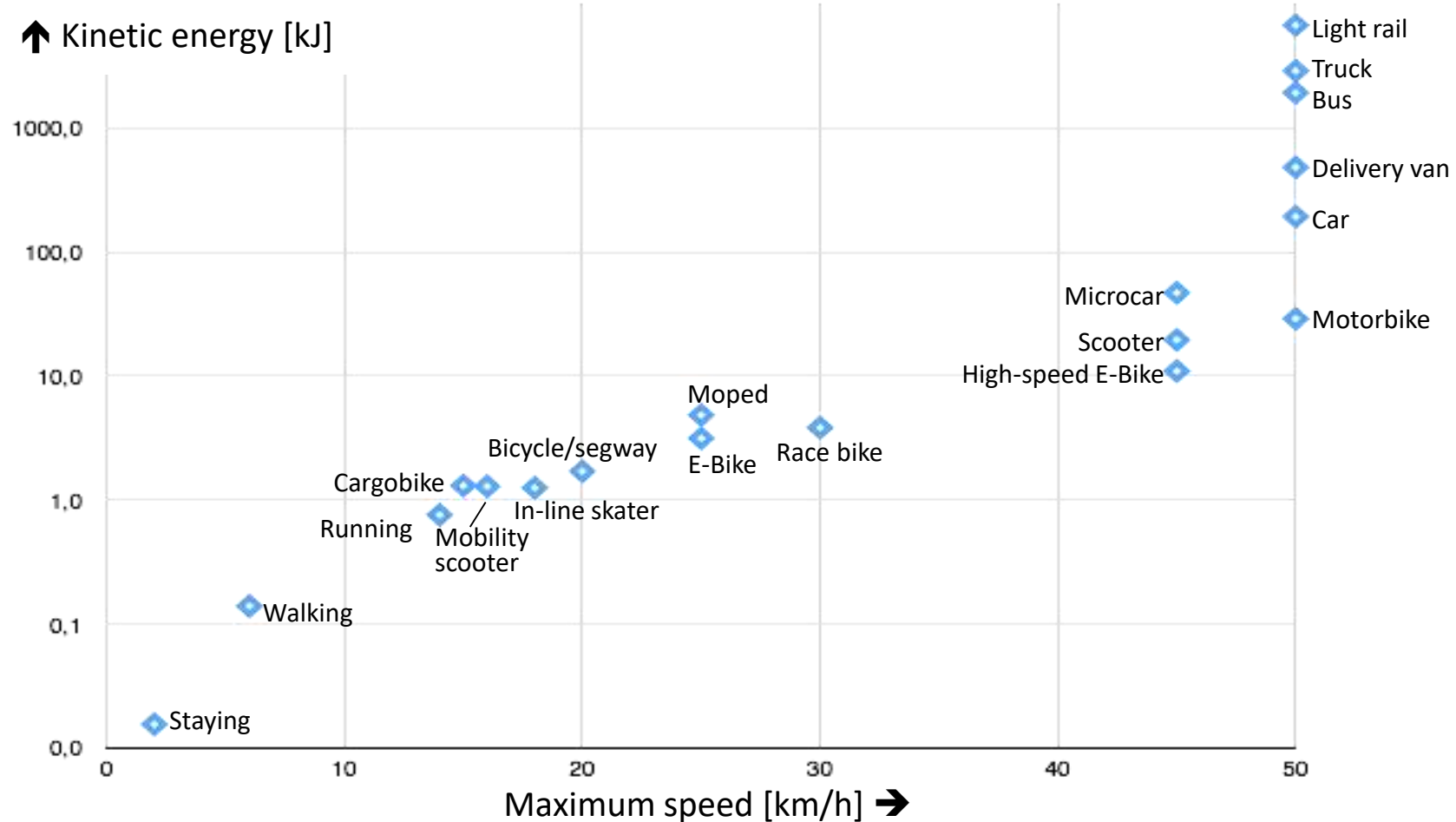
# URBAN MOBILITY

MOBYCON.COM

A NEW DESIGN APPROACH FOR URBAN PUBLIC SPACE

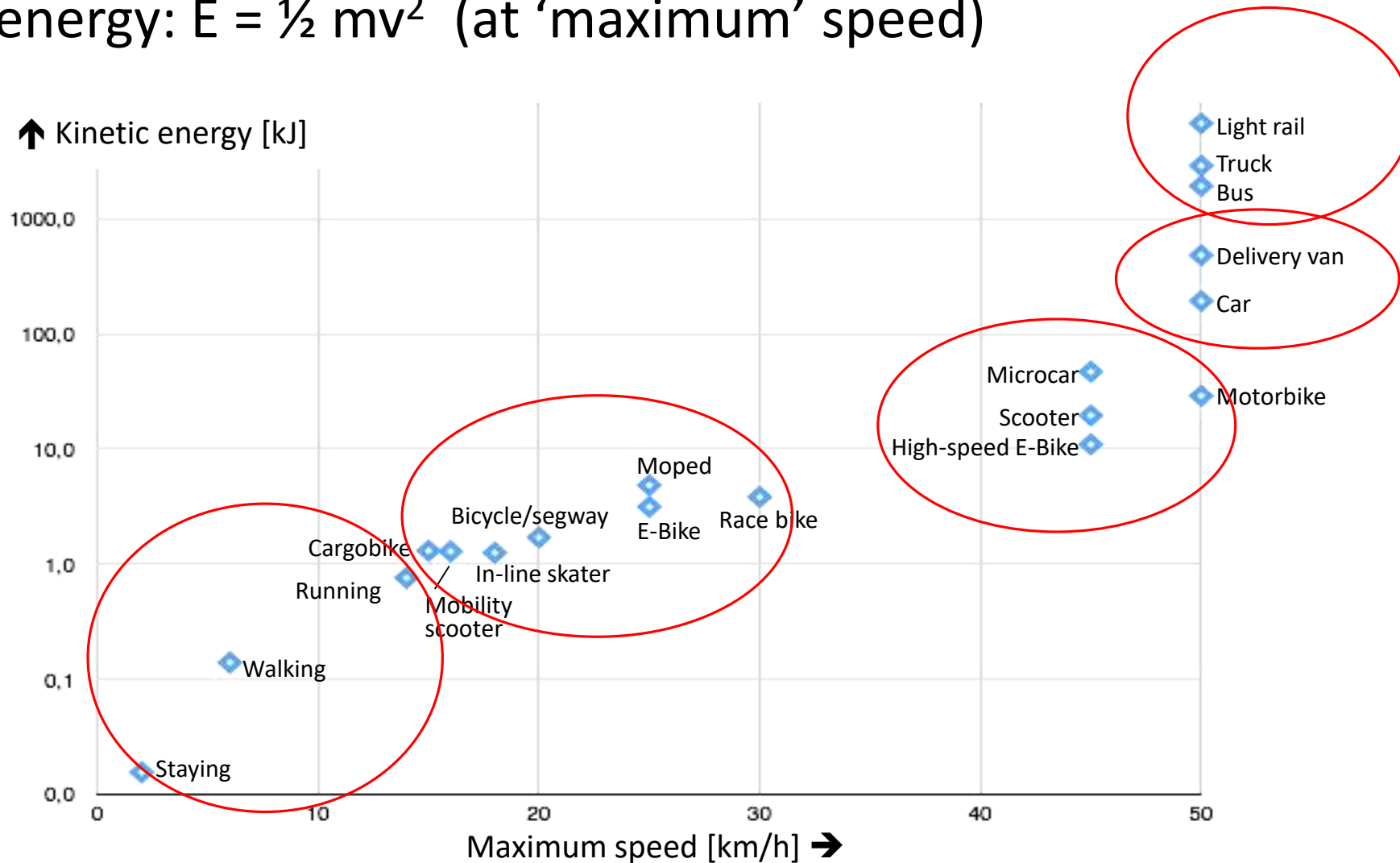
# BACK TO BASICS

Kinetic energy:  $E = \frac{1}{2} mv^2$  (at 'maximum' speed)



# GROUPS EMERGE

Kinetic energy:  $E = \frac{1}{2} mv^2$  (at 'maximum' speed)



# VEHICLE CATEGORISATION

- Differences in mass
  - leads to unsafety
- Differences in width
  - leads to (im)possibilities to share space
- Differences in speed
  - Leads to unsafety
  - Posted speed is not a valid criterium
  - (people/vehicles can move at different speeds)

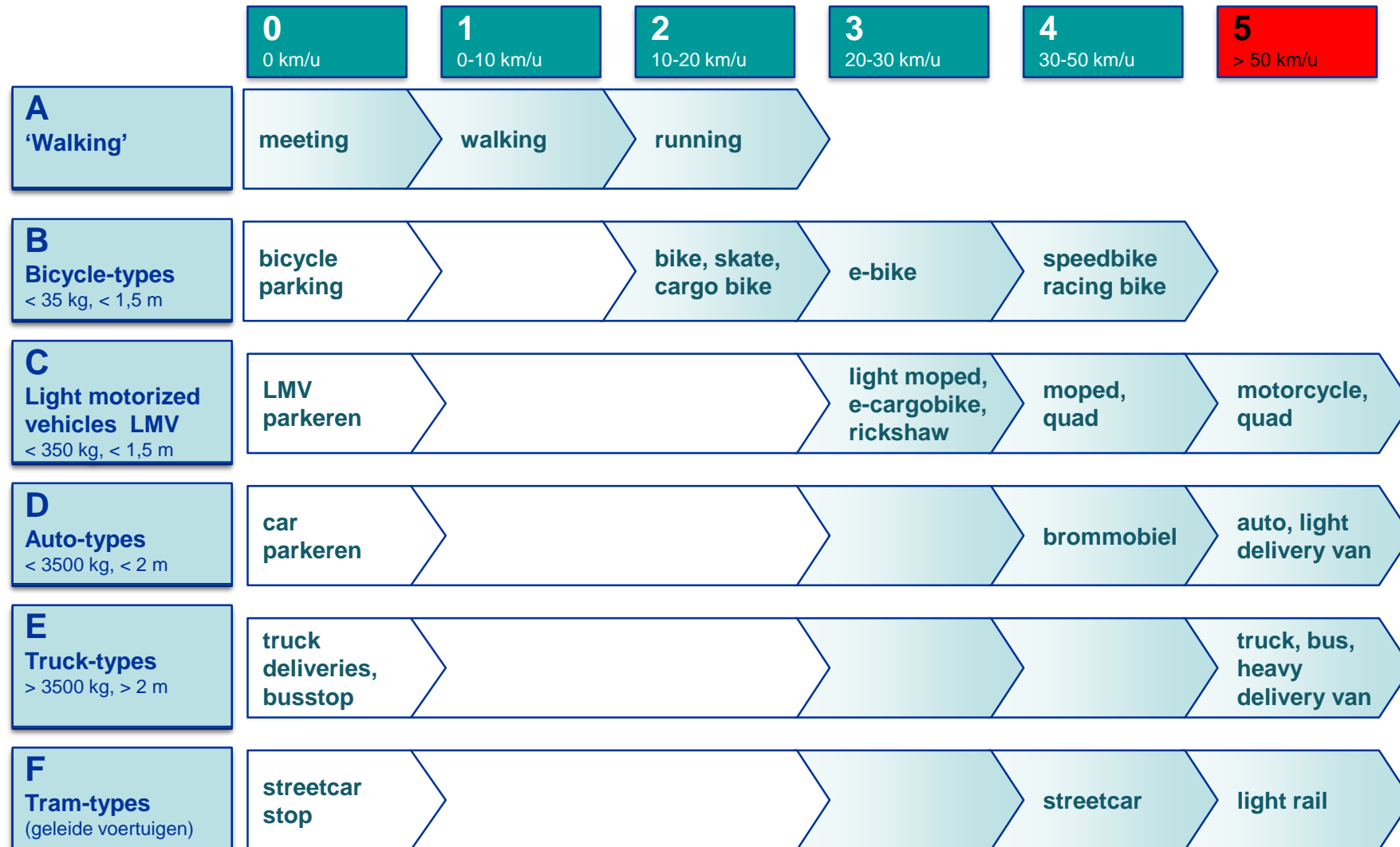


MEANS FOR CATEGORISATION

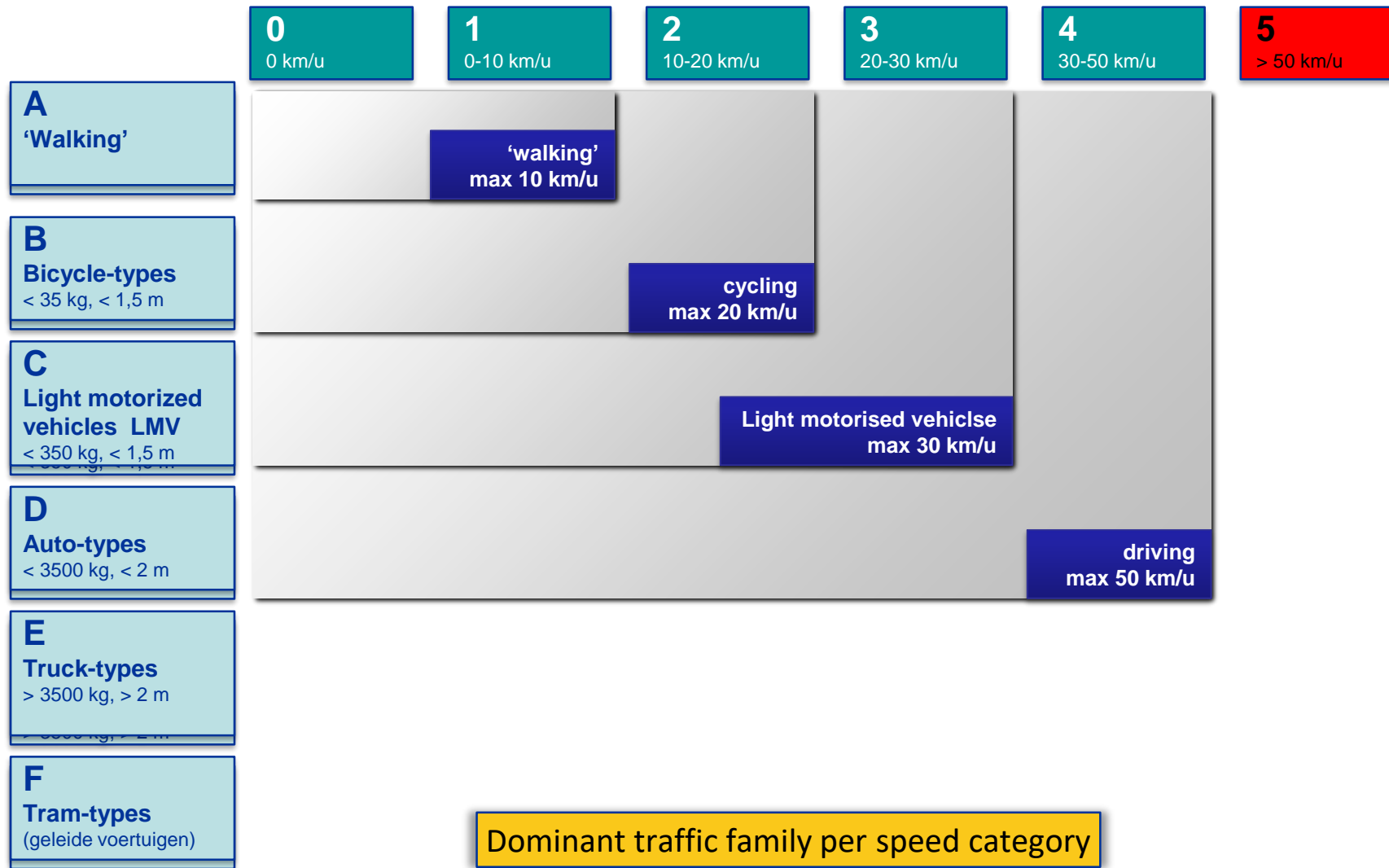


INFLUENCED BY DESIGN

# VEHICLE'S BELONG IN *FAMILIES*



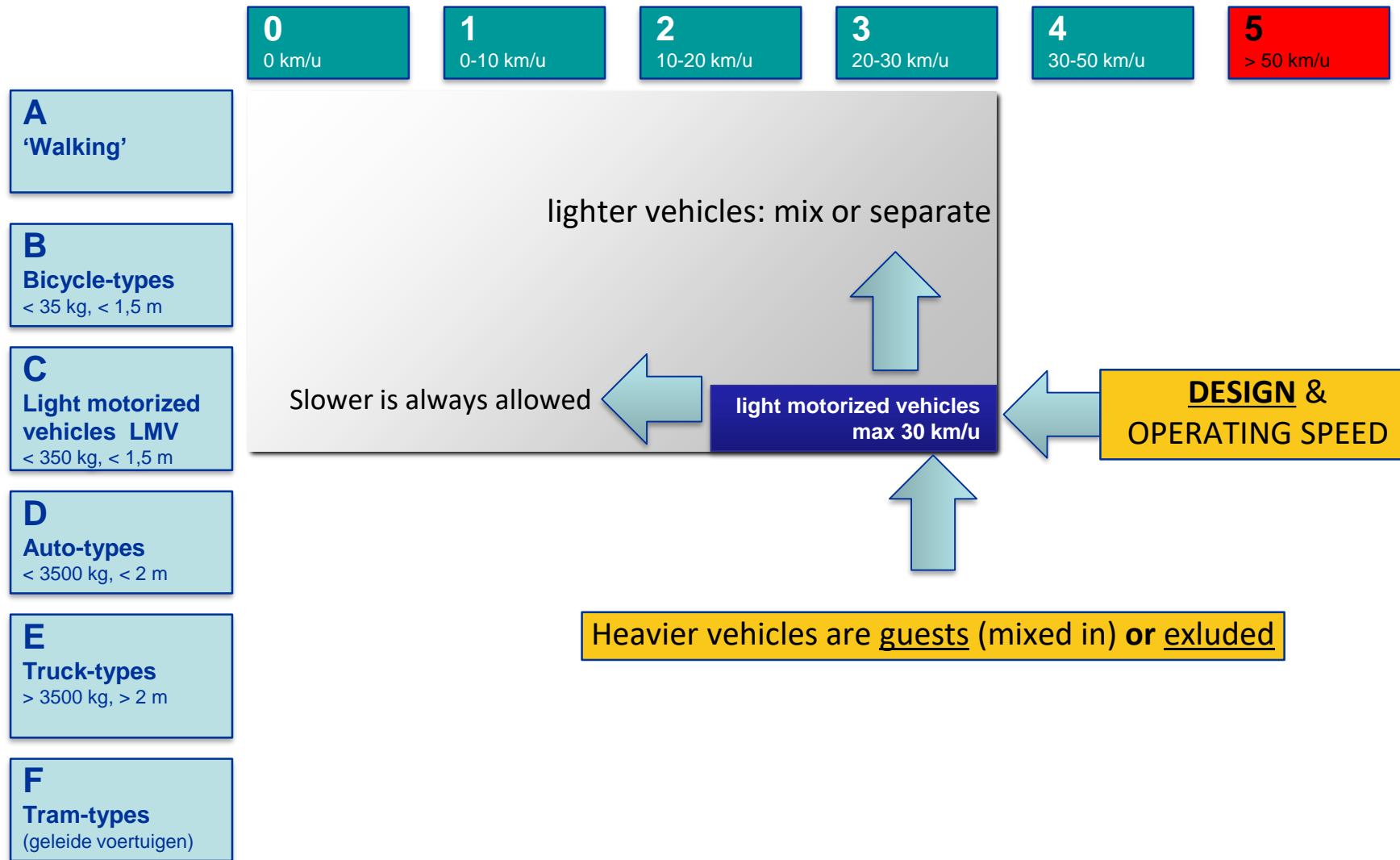
# STREETS SHOULD REFLECT FAMILIES



# TRAFFIC ENVIRONMENTS DEFINED BY SPEED



# STREETS DEFINED BY FAMILY



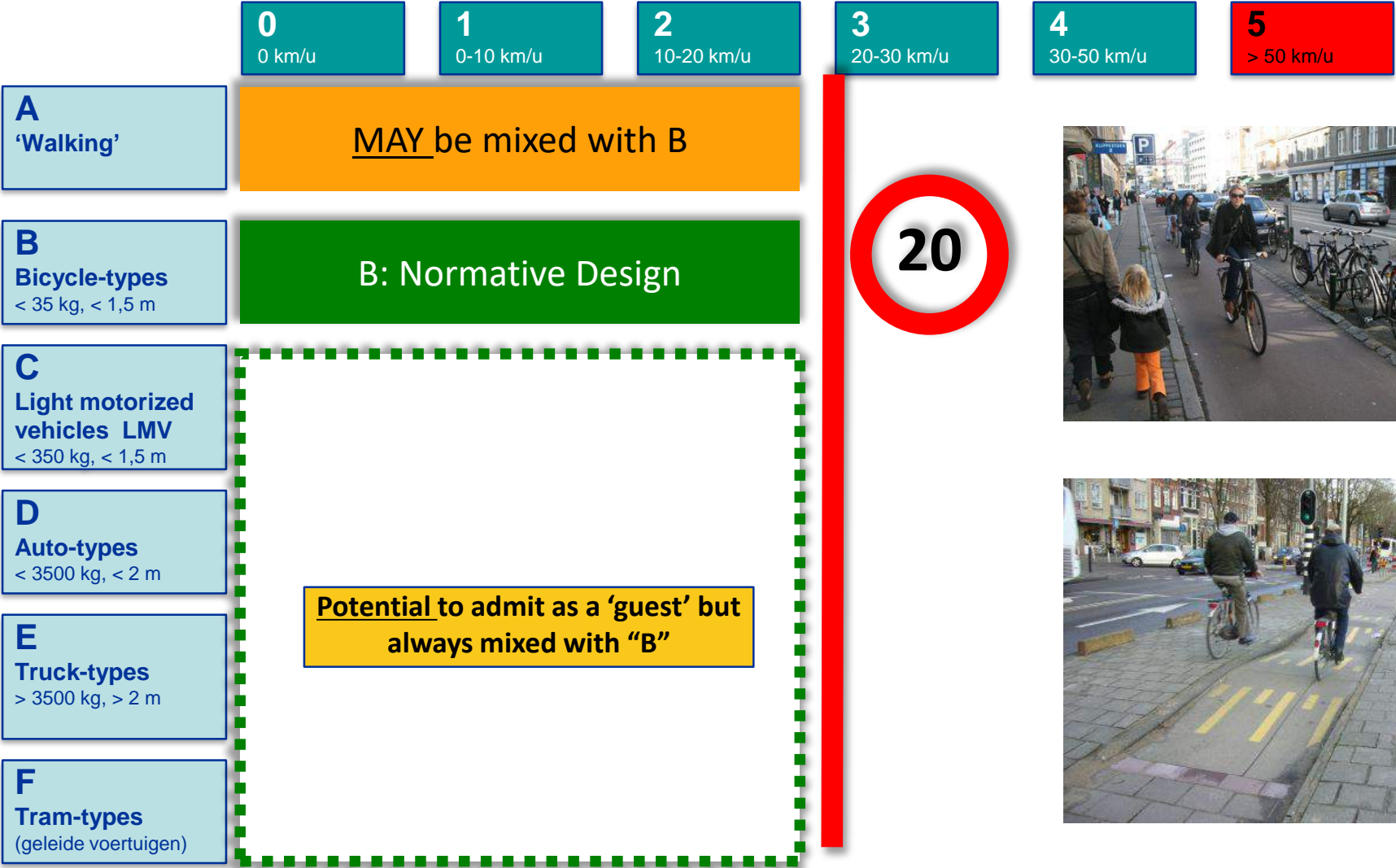
# PEDESTRIAN STREETS



# BIKES AS GUESTS



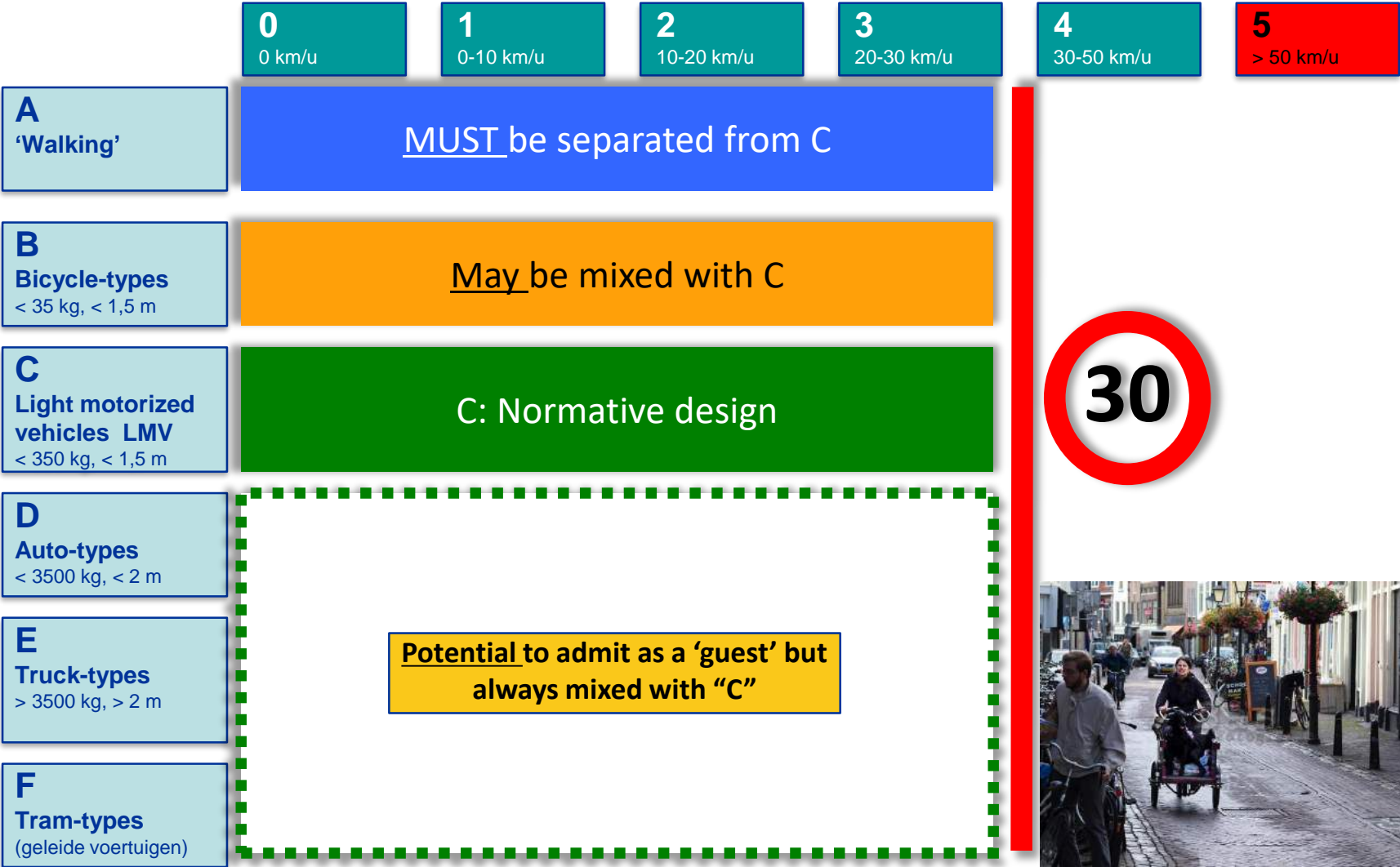
# BICYCLE STREETS



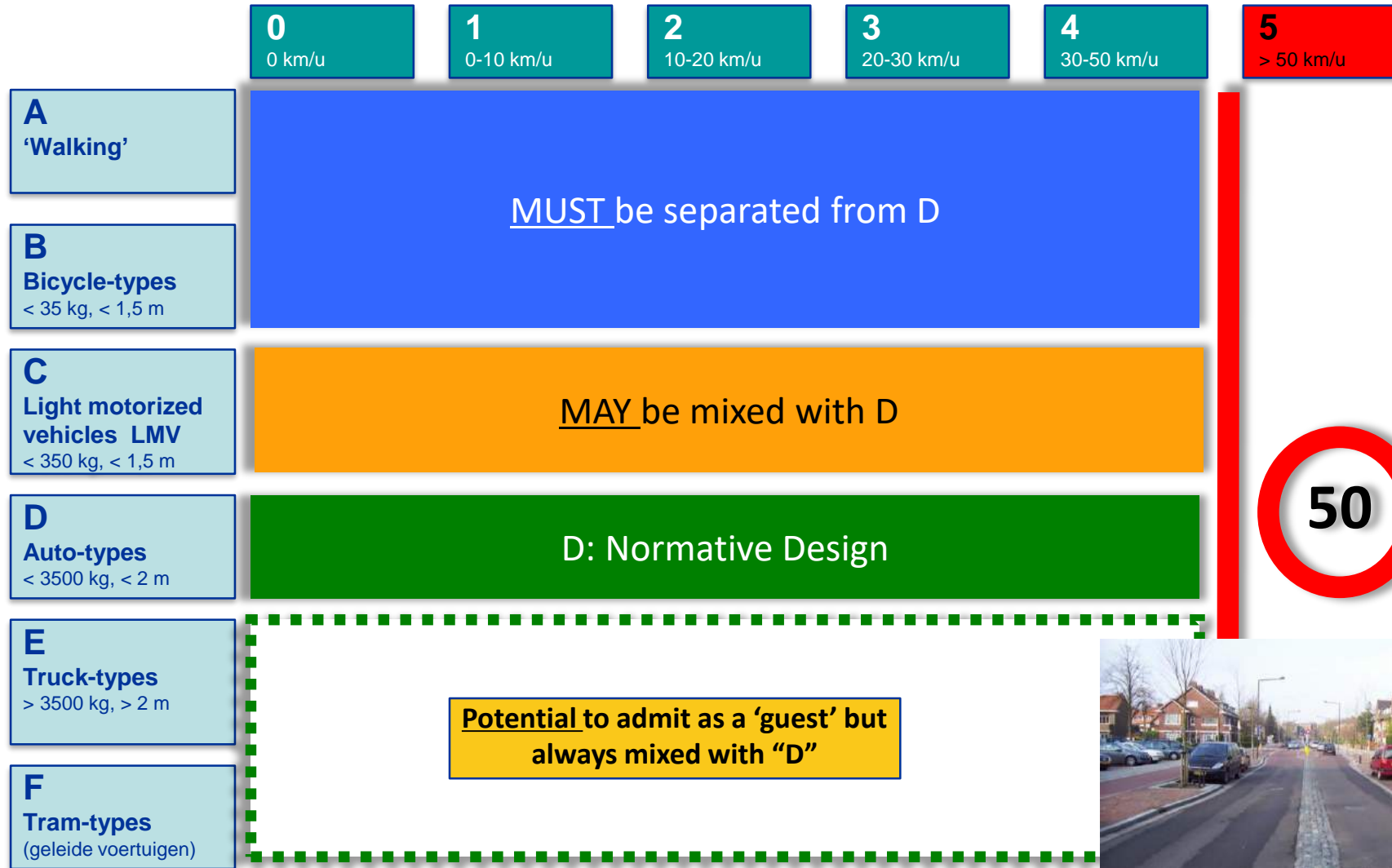
# CAR IS GUEST



# LIGHT VEHICLE STREETS



# CAR STREETS



# INTEGRATED APPROACH FOR MOBILITY



# TAKEAWAYS FOR SAFETY

- ✓ PUT PLACES FIRST
- ✓ CREATE MOBILISTS
- ✓ SEPARATE CLEARLY AND CONSISTENTLY
- ✓ INTERSECTIONS FOR EVERYONE

# THE RIGHT TO COME HOME





**MOBYCON**

**Thank you!**

Johan Diepens

Founder/CEO

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TRAFFIC • MOBILITY • TRANSPORT

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