

Safe and Sustainable Street Design: Role of Street Design

A workshop for the City of Ljubljana, Slovenia

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Global Designing Cities Initiative

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Role of Street Design

January 2025, Ljubljana, Slovenia

Bloomberg
Philanthropies

Initiative for Global
Road Safety





Streets



Largest network of continuous public space



Largest network of continuous public space
One of our biggest assets in cities!



**We must make better, more efficient
use of this valuable space**



Streets

are the platform to...



Play



Learn to ride



Dine



Celebrate



Have fun



Perform



Dance



Places to make money...



...and spend it! 😊



To spend time with old friends...



...or meet new ones



Enjoy some nature



Spaces to relax



The front door to our homes and businesses!



Streets

serve many functions...

- **Mobility and Access**
- **Environmental Sustainability**
- **Economic Sustainability**
- **Livability and Quality of Life**
- **Public Health and Safety**



Public Health and Safety



4.5 million people die prematurely from urban air pollution each year – primary source of which comes from vehicles

Public Health and Safety




Public Health and Safety



38 million people die from **chronic disease** each year – a primary source of which comes from lack of physical activity

Public Health and Safety

An aerial view of a road traffic accident. A white sedan is involved in a crash, with its front end crumpled and its left side door open. Debris is scattered on the asphalt. Three emergency responders are present: one in a dark uniform stands by the open door, while two others in high-visibility yellow vests stand near the rear of the vehicle. A red plastic crate is on the ground to the right. A white text box with a green border is in the top right corner.

1.35 million people die in road traffic crashes each year – a number 1 killers in ages 5-29

Public Health and Safety













You don't matter...

...as much as these guys!

What to do

Innovative **street designs** that reduce speed

+

Strategic enforcement against traffic violations,

+

Legislative ordinances that lower speed limits,

+

Public **awareness campaigns**

=

Proven to be impactful strategies adopted by these programs to save lives.

What to do

Innovative **street designs** that
reduce speed

Innovative Street Designs



What to do

Innovative street designs that
reduce speed

+

Strategic enforcement against
traffic violations,

Support Through Enforcement



What to do

Innovative street designs that
reduce speed

+

Strategic enforcement against
traffic violations,

+

Legislative ordinances that **lower
speed limits**,

Lowering Speed Limits



What to do

Innovative street designs that
reduce speed

+

Strategic enforcement against
traffic violations,

+

Legislative ordinances that lower
speed limits,

+

Public awareness campaigns

Support through Improved Communication Campaigns





ALCALDIA MAYOR
DE BOGOTÁ D.C.



BOGOTÁ
MEJOR
PARA TODOS



Bloomberg
Philanthropies
INITIATIVE FOR GLOBAL ROAD SAFETY



Vital
Strategies

Bogota Speeding Campaign

What to do

Innovative **street designs** that reduce speed

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Proven to be impactful strategies adopted by these programs to save lives.

Taking Action

Taking Action

1. Lower speeds
2. Design streets that prioritize people
3. Prioritizing sustainable mobility choices
4. Working together

We know that **speed kills!**



Taking Action

1. Lower speeds



UN flies the flag for 20mph limits worldwide

Chris Ames
24 September 2020



The United Nations has backed the use of 30km/h (approx 20mph) limits as part of a worldwide drive to cut road deaths and injuries by half.

Stockholm Declaration

Third Global Ministerial Conference on Road Safety: Achieving Global Goals 2030
Stockholm, 19–20 February 2020

Stockholm Declaration (2020)

Seventy-fourth session
Agenda item 12
Improving global road safety

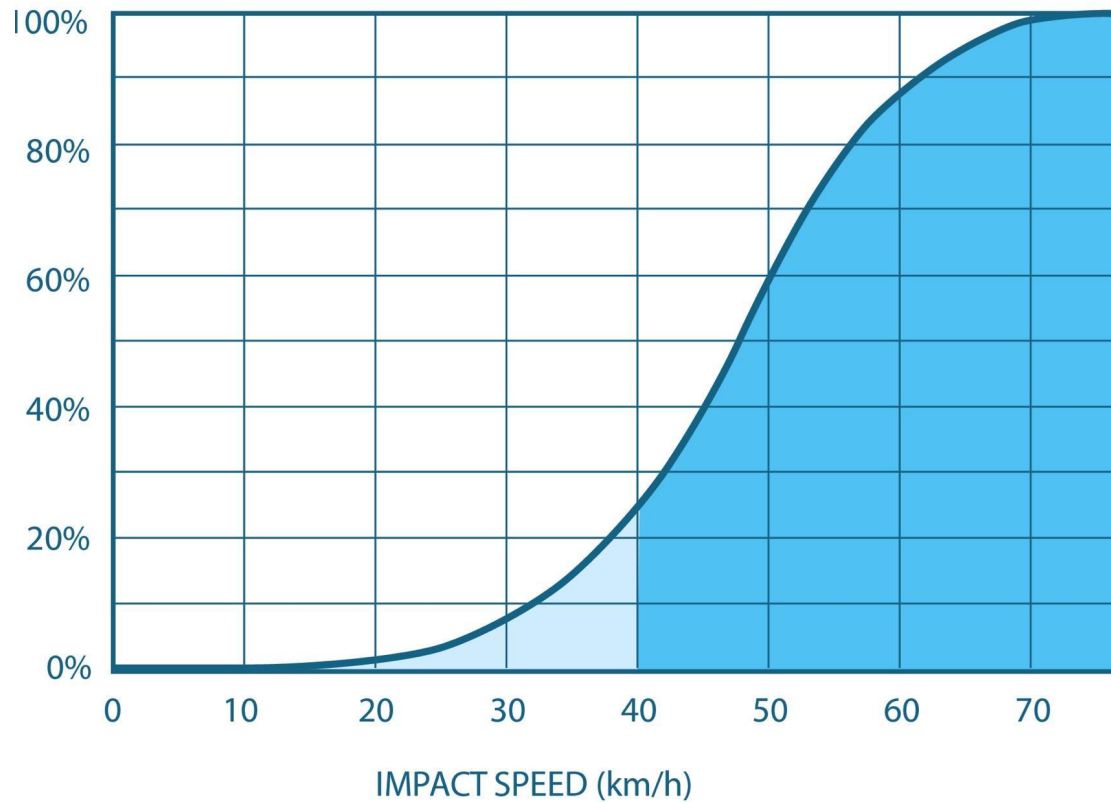
**Resolution adopted by the General Assembly on
31 August 2020**

[without reference to a Main Committee (A/74/L.86 and A/74/L.86/Add.1)]

74/299. Improving global road safety

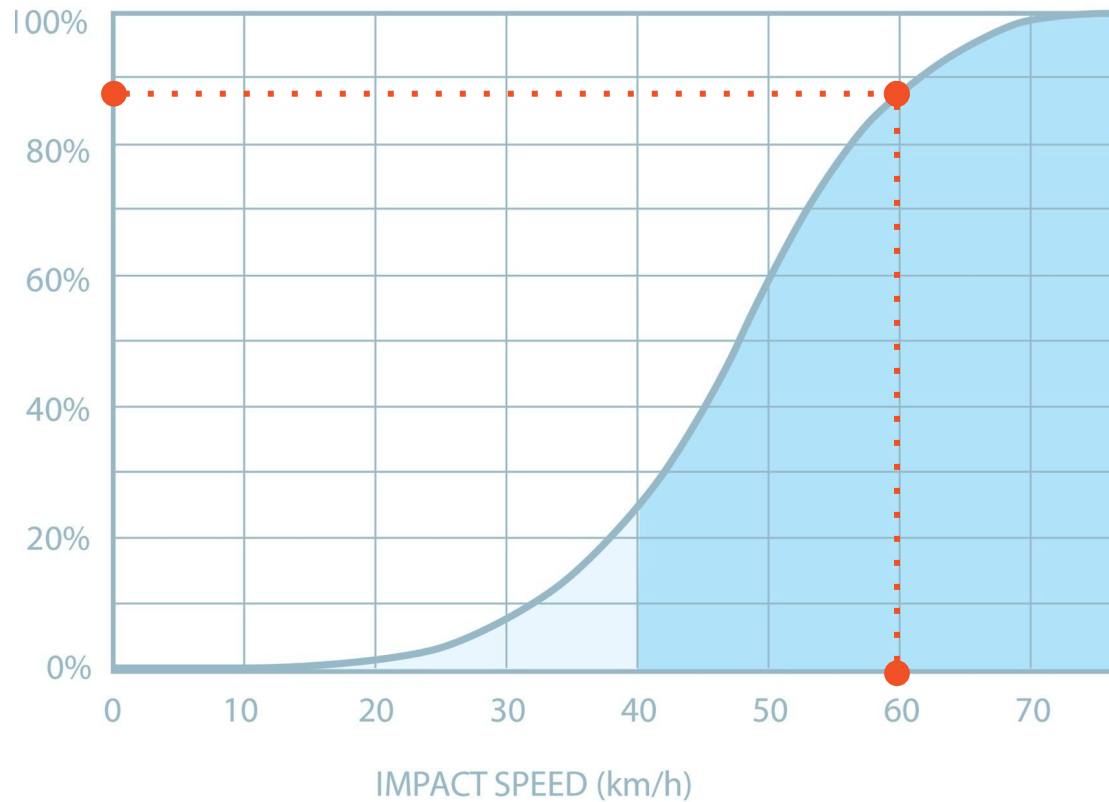
UN's declaration of the second Decade of Action for Road Safety

Risk of Pedestrian Death and Impact Speed



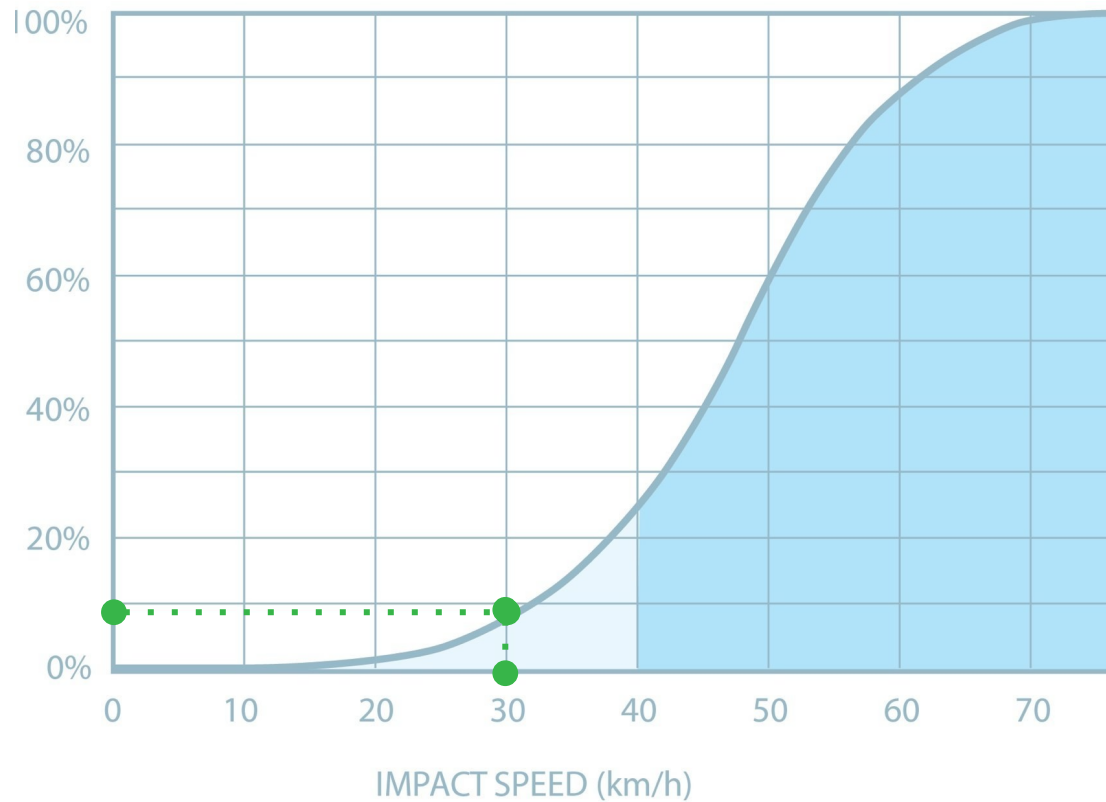
(Figure adapted from WRI Safer Cities by Design)

Risk of Pedestrian Death and Impact Speed



60 km/h
= **90%** chance of **DEATH**

Risk of Pedestrian Death and Impact Speed



30 km/h
= **90%** chance of **SURVIVAL**

The faster one drives... the less they see



30-40 km/h

The faster one drives... the less they see



45-55 km/h

The faster one drives... the less they see



65+ km/h

The faster one drives... the higher the risk of a crash

+1 km/h

average speed

=

+3%

risk of a crash

=

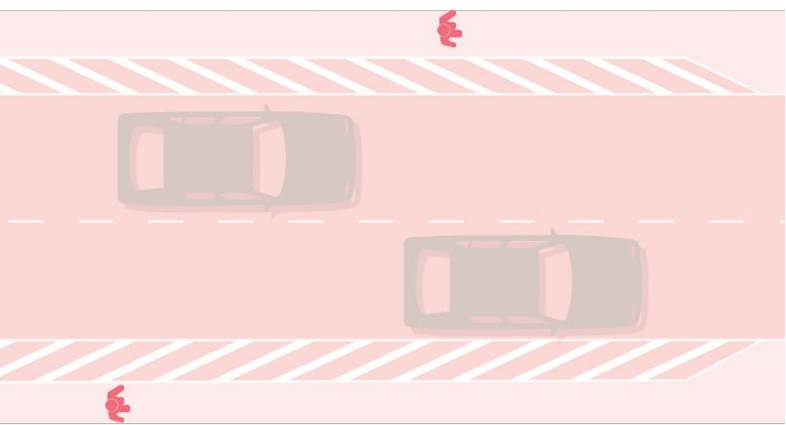
+4-5%

fatalities

A shift in design approach

From passive to proactive

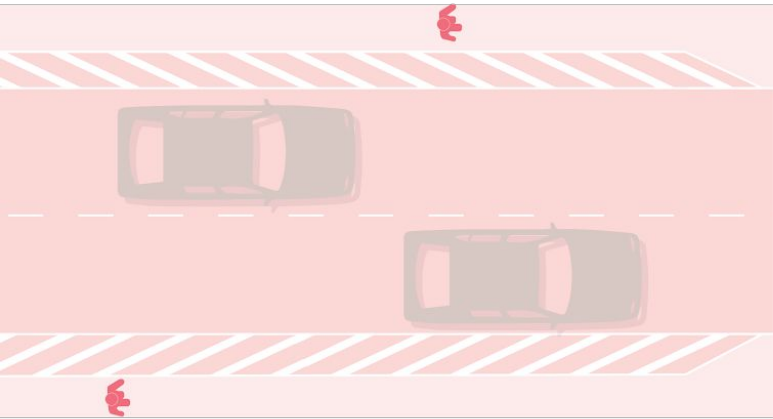
A shift in design approach



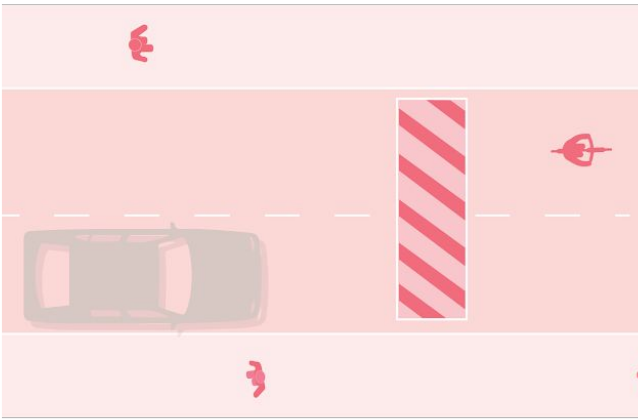
Passive Approach

— — — — —

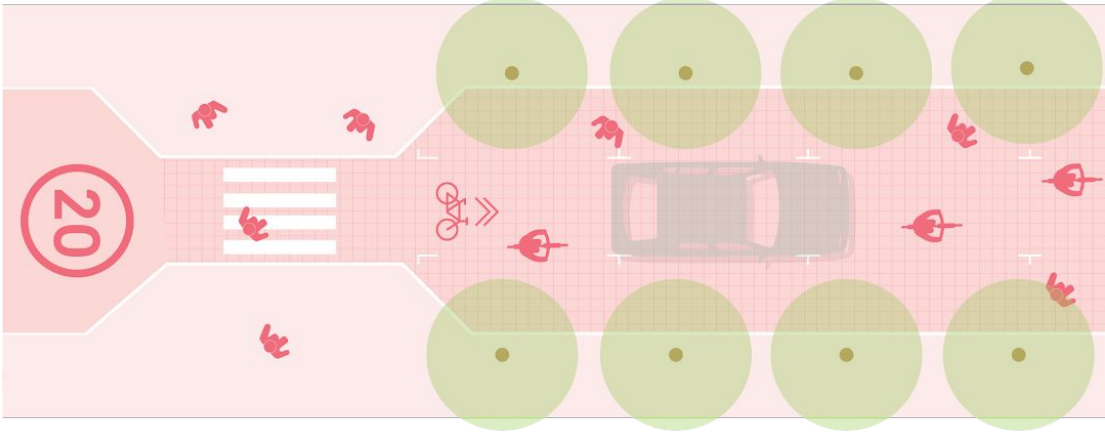
A shift in design approach



Passive Approach



Reactive Approach

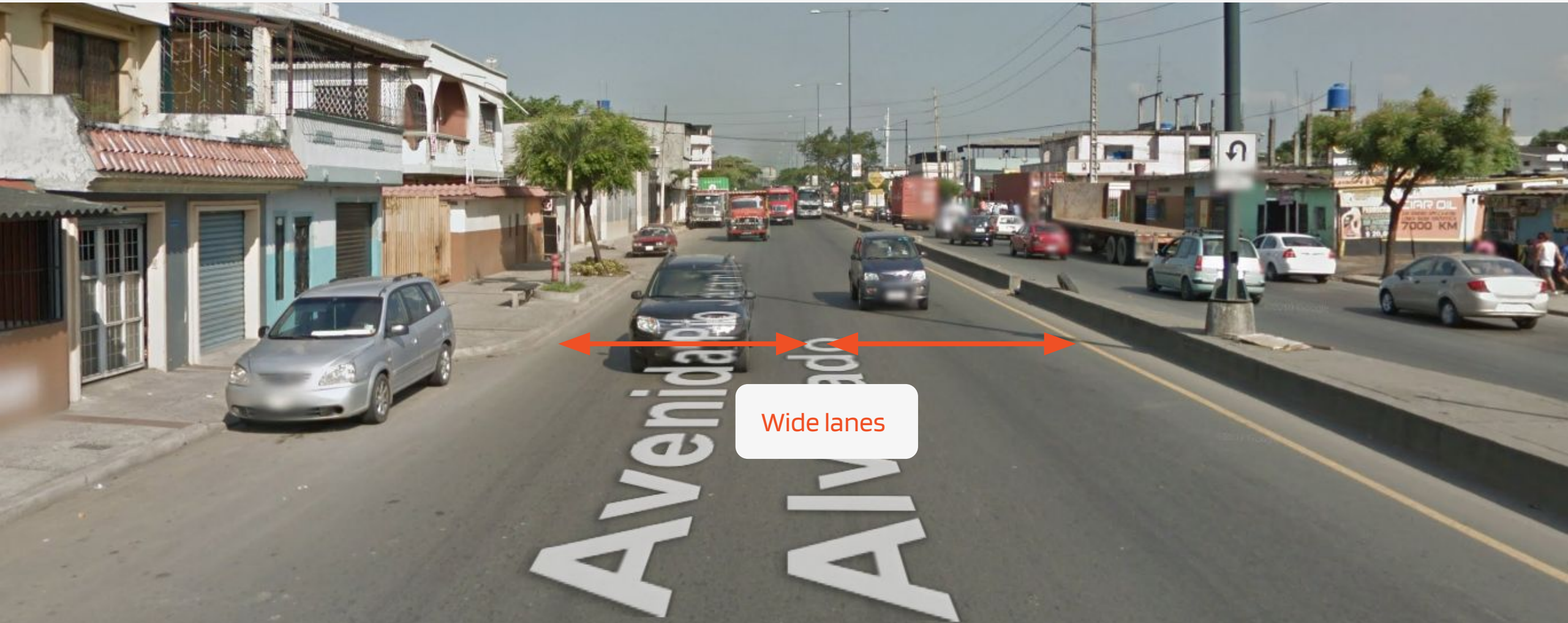


Proactive Approach

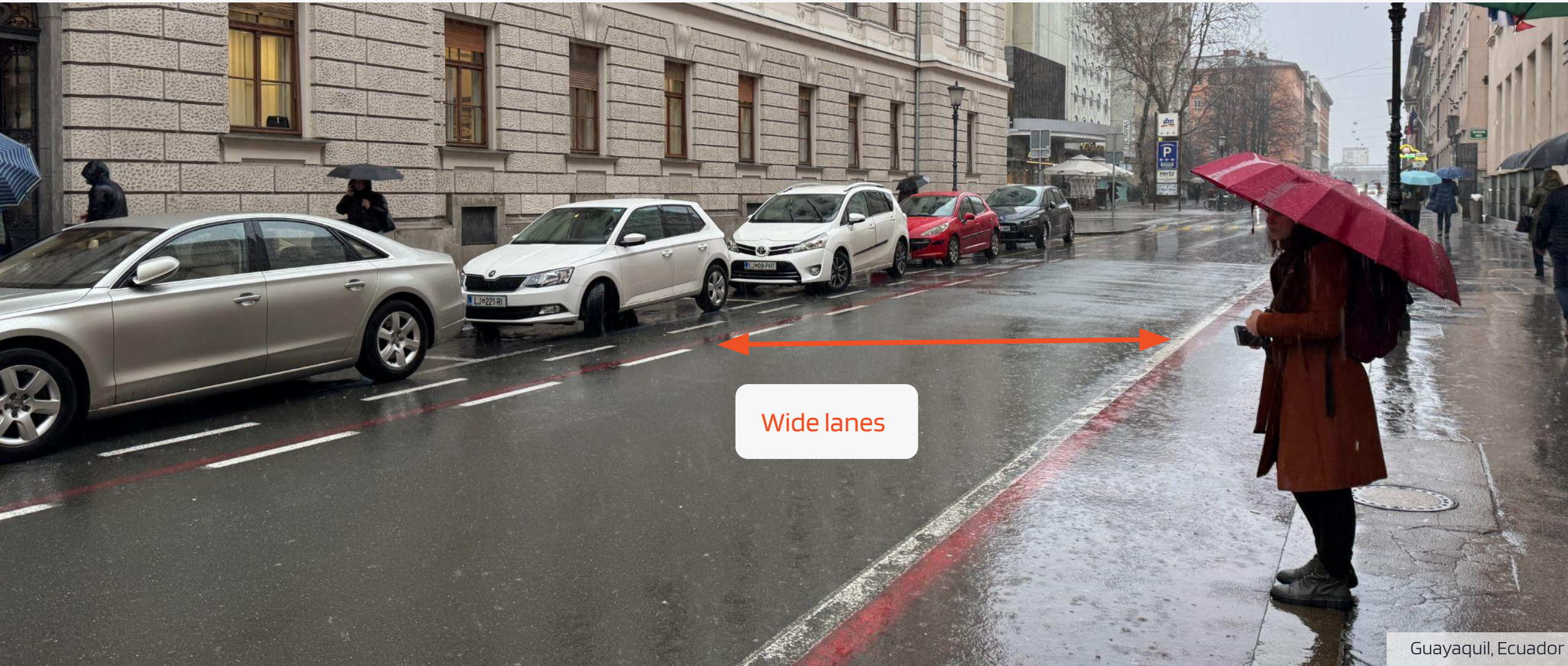
— — — — —

Which **street design factors**
contribute to speeding?

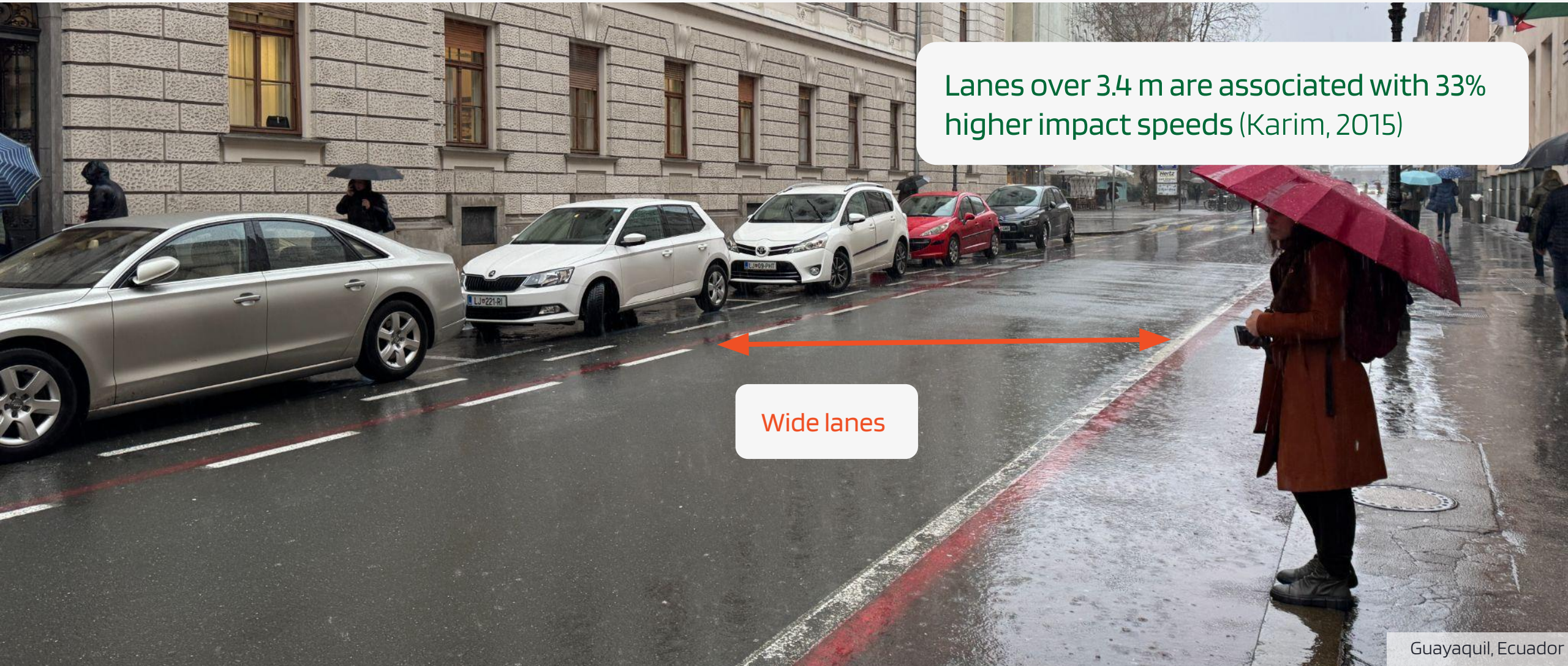
Wide travel lanes/lack of markings



Wide travel lanes/lack of markings



Wide travel lanes/lack of markings



Lanes over 3.4 m are associated with 33% higher impact speeds (Karim, 2015)

Wide lanes

Wide travel lanes/lack of markings



Wide turning radii



Turn Radius x Speeds

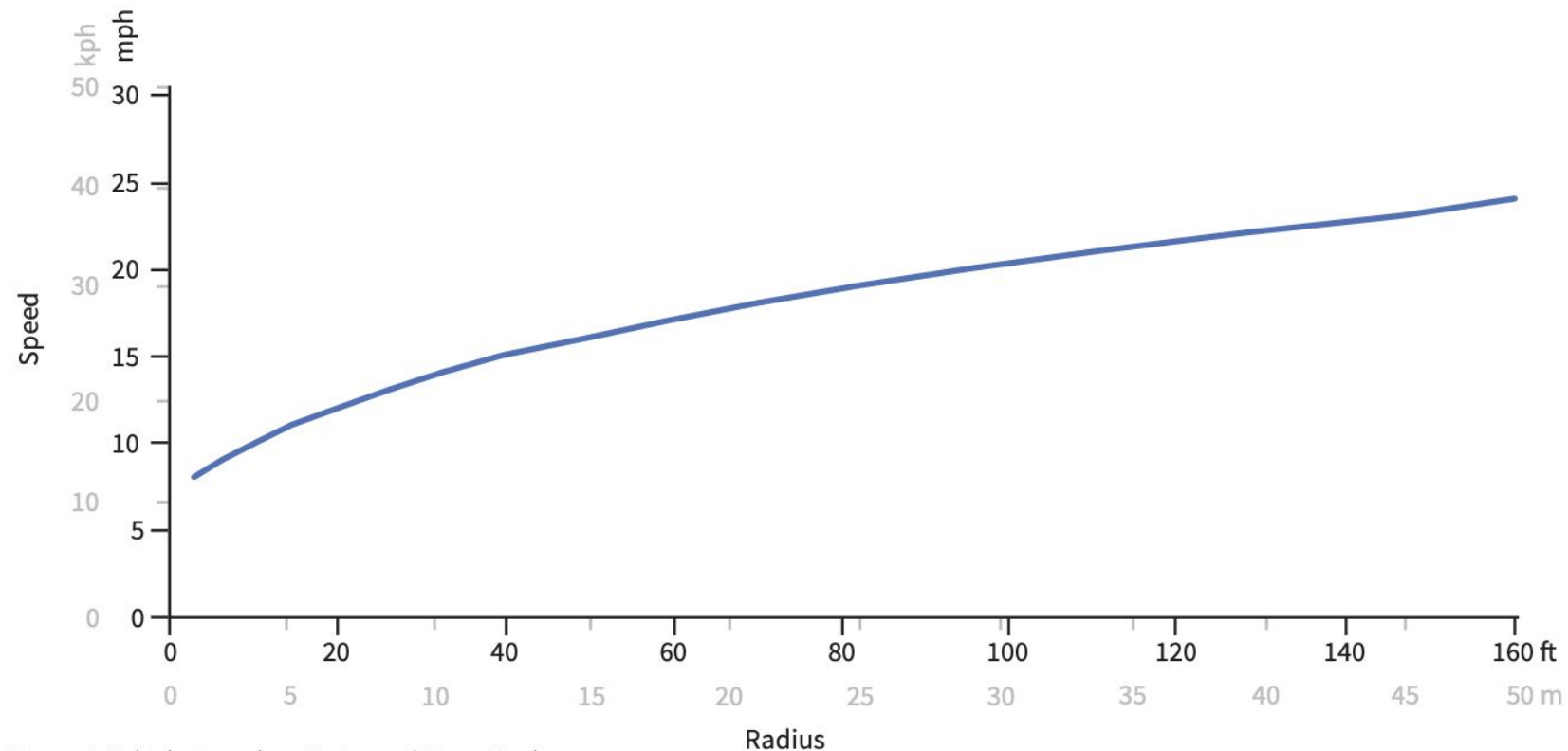


Figure 1: Vehicle Speed vs. Horizontal Curve Radius



Speed turns crashes into fatalities

Taking Action

2. Design streets that prioritize people

Can design help reduce speeds?



Yes, the way streets are designed impact how they are used!



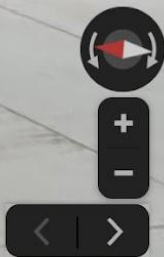
Yes, the way streets are designed impact how they are used!



Yes, the way streets are designed impact how they are used!



At what speed would you drive?



At what speed would you drive?

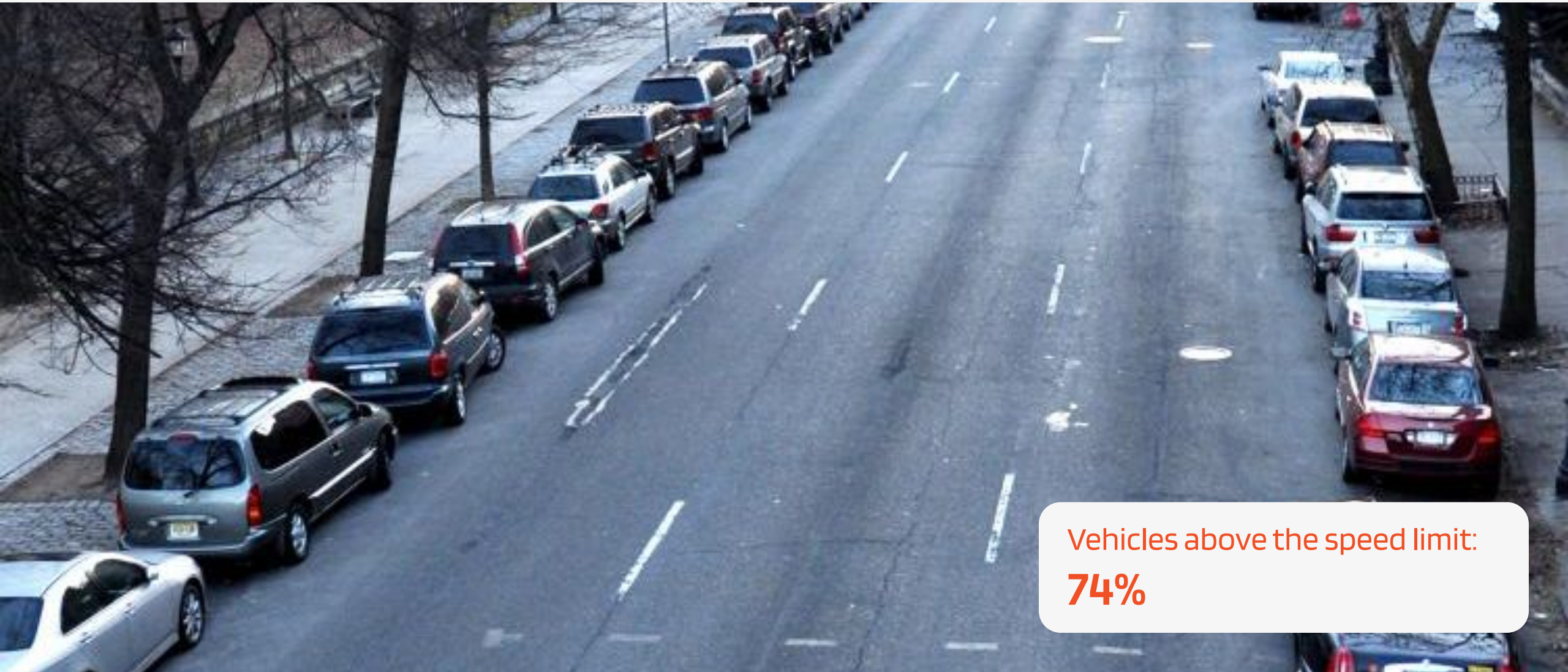


At what speed would you drive?



Our environment tell us HOW to behave

Prospect Park West Ave, NYC



Vehicles above the speed limit:
74%

Prospect Park West Ave, NYC



Vehicles above the speed limit:
20%



So, we can't blame the users!



So, we can't blame the users!

The problem is the infrastructure



So, we can't blame the users!

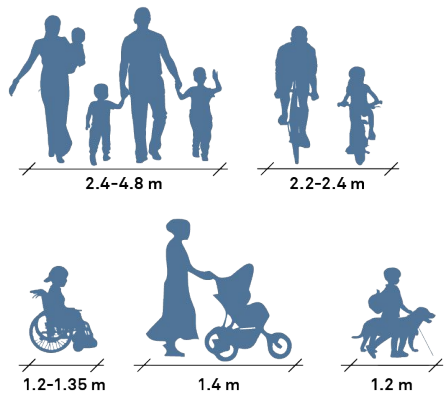
The problem is the infrastructure

The responsibility is of the ones that design the system...

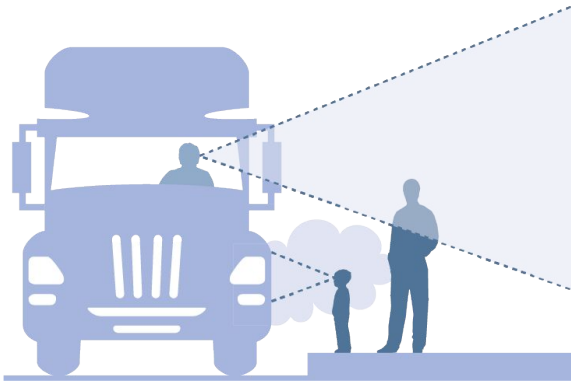
Children's Needs from Streets



Reliable mobility choices



Space



Visibility



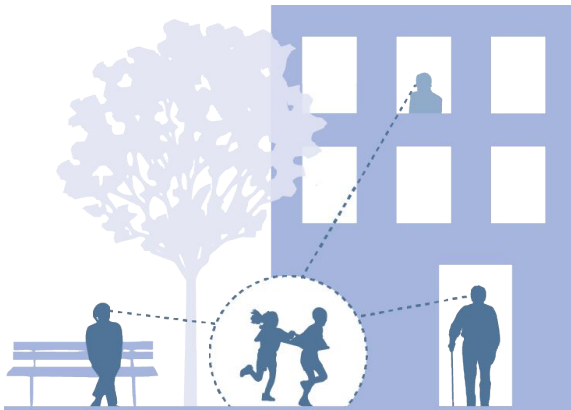
Play and learning



Places to pause and stay



Social interaction



Security



A safe environment

From surviving....

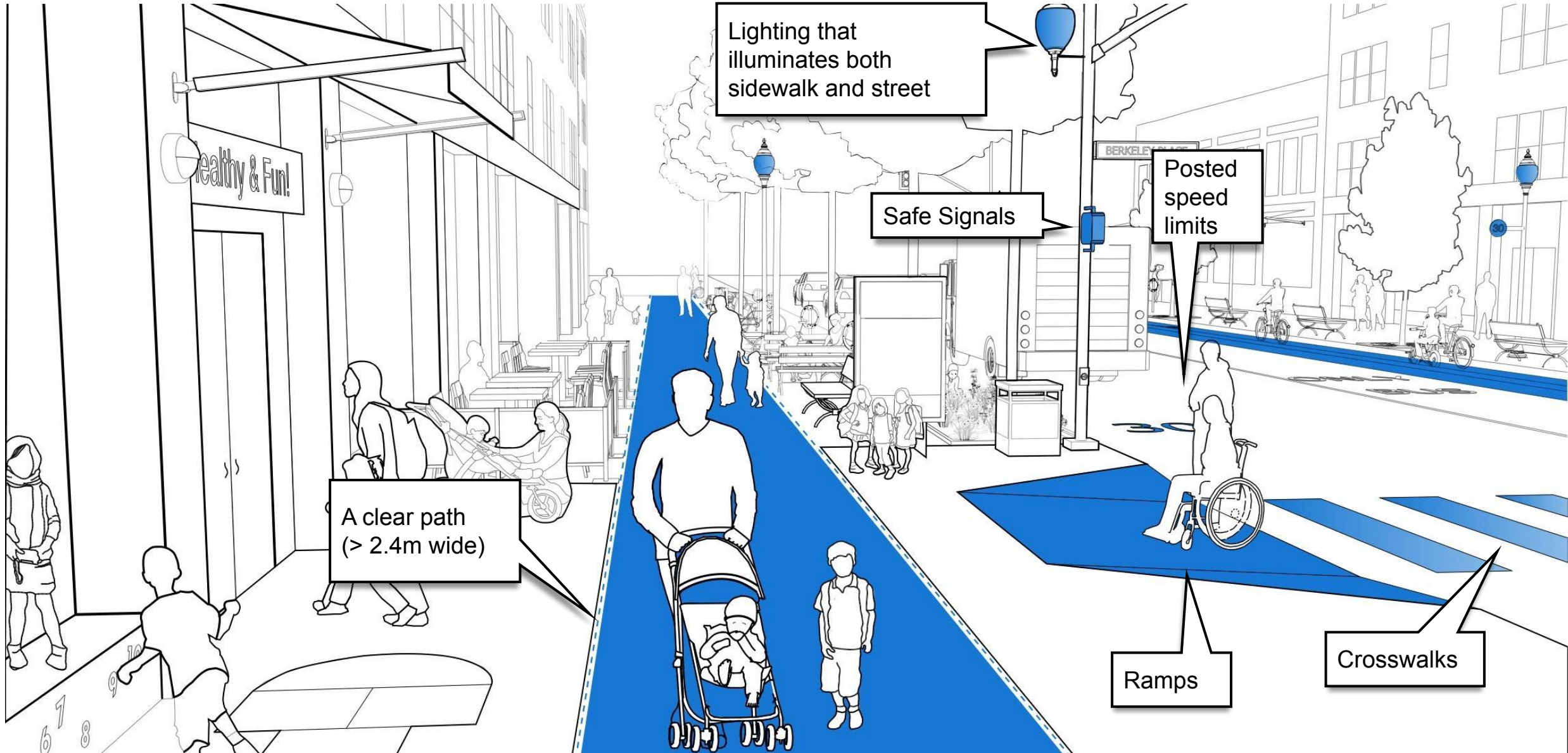




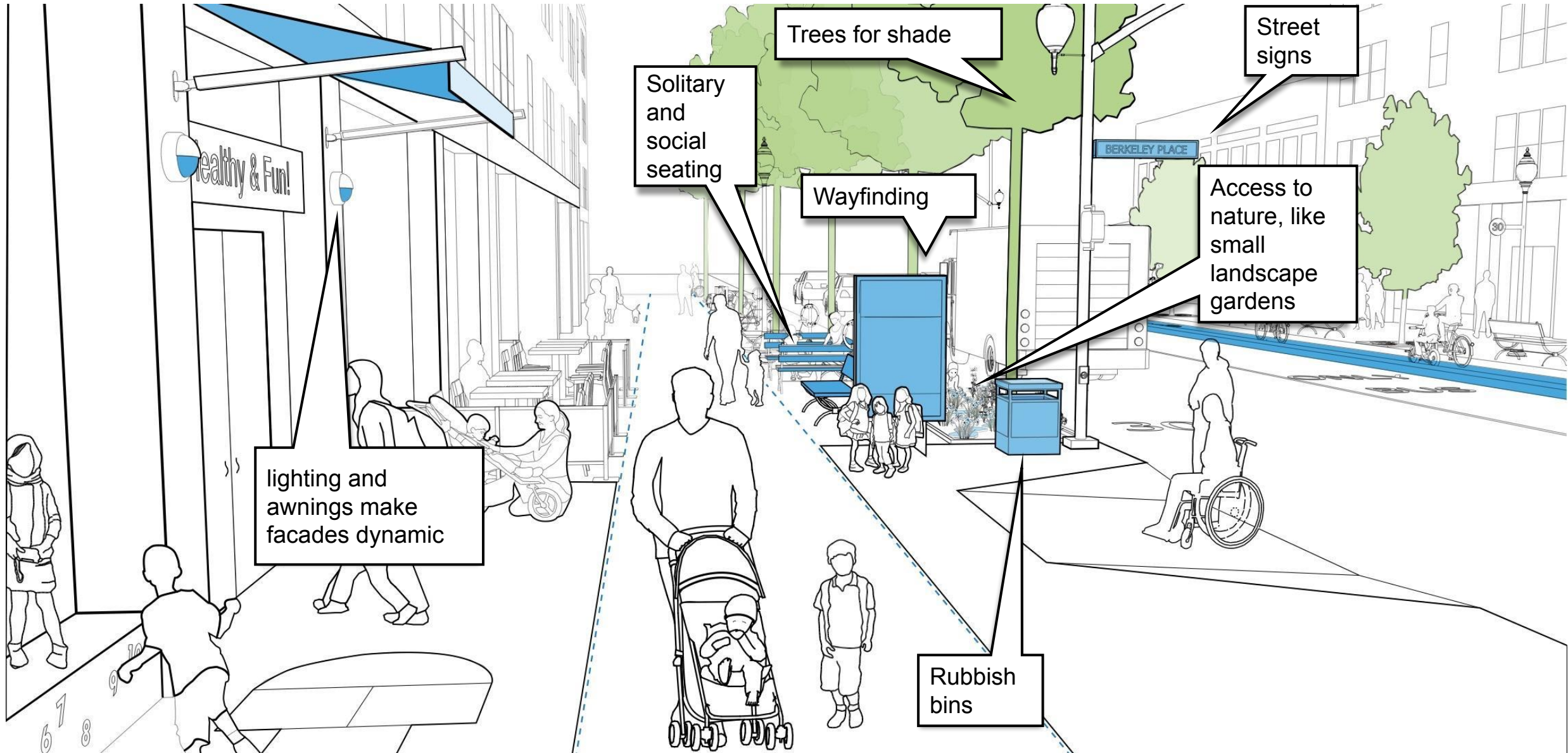
to thriving...



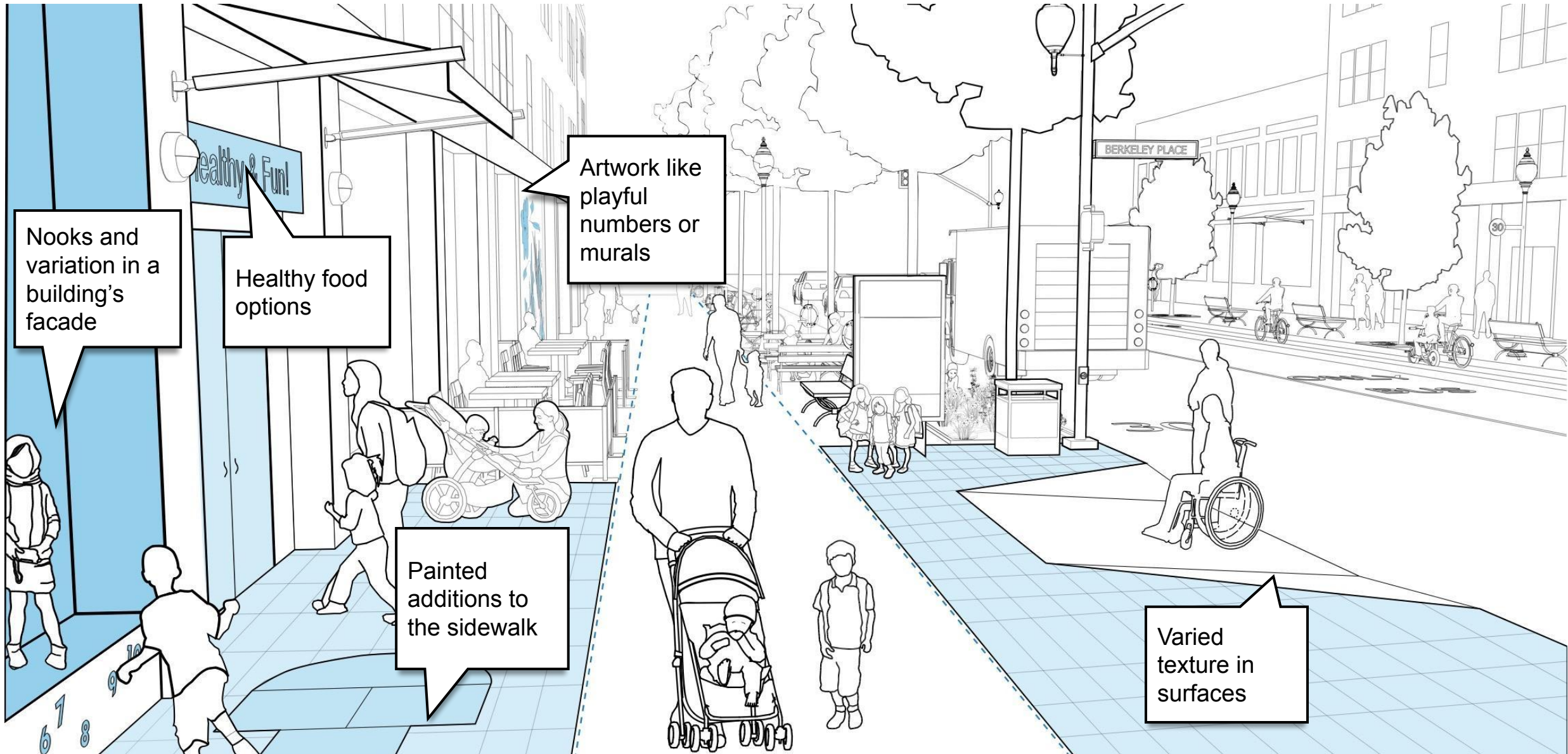
Safe and healthy



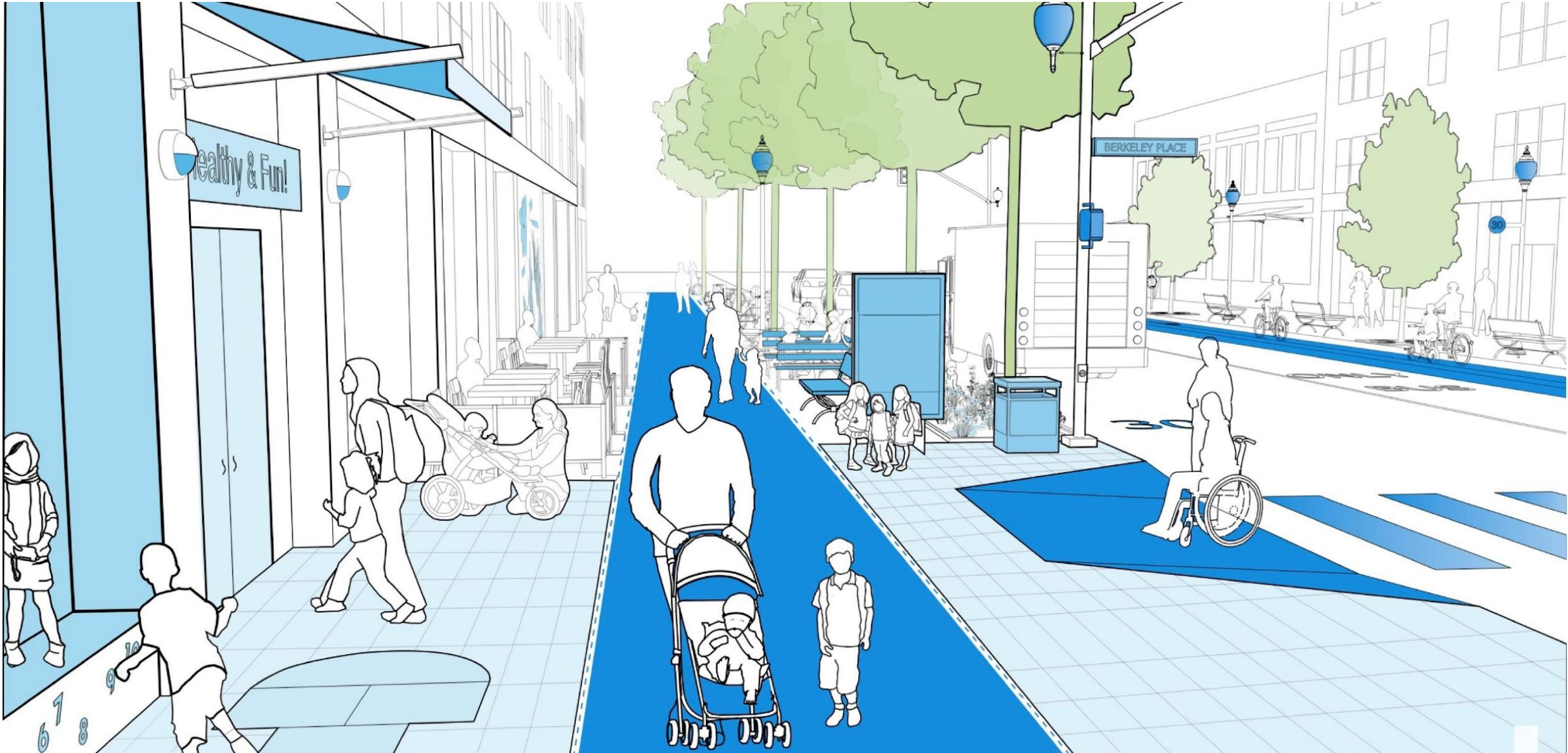
Comfortable and convenient



Inspirational and educational



Pedestrian experience



**Bad 'Design' can self-enforce
unsafe behaviors**

**Good 'Design' can self-enforce
safe behaviors**

Taking Action

3. Prioritize sustainable mobility choices

**Stop prioritizing
and subsidizing
individual
motorized
vehicles**



**Stop prioritizing
and subsidizing
individual
motorized
vehicles**



**Make sustainable
transportation
options
safe, convenient,
affordable, and
comfortable**



Stop prioritizing and subsidizing individual motorized vehicles



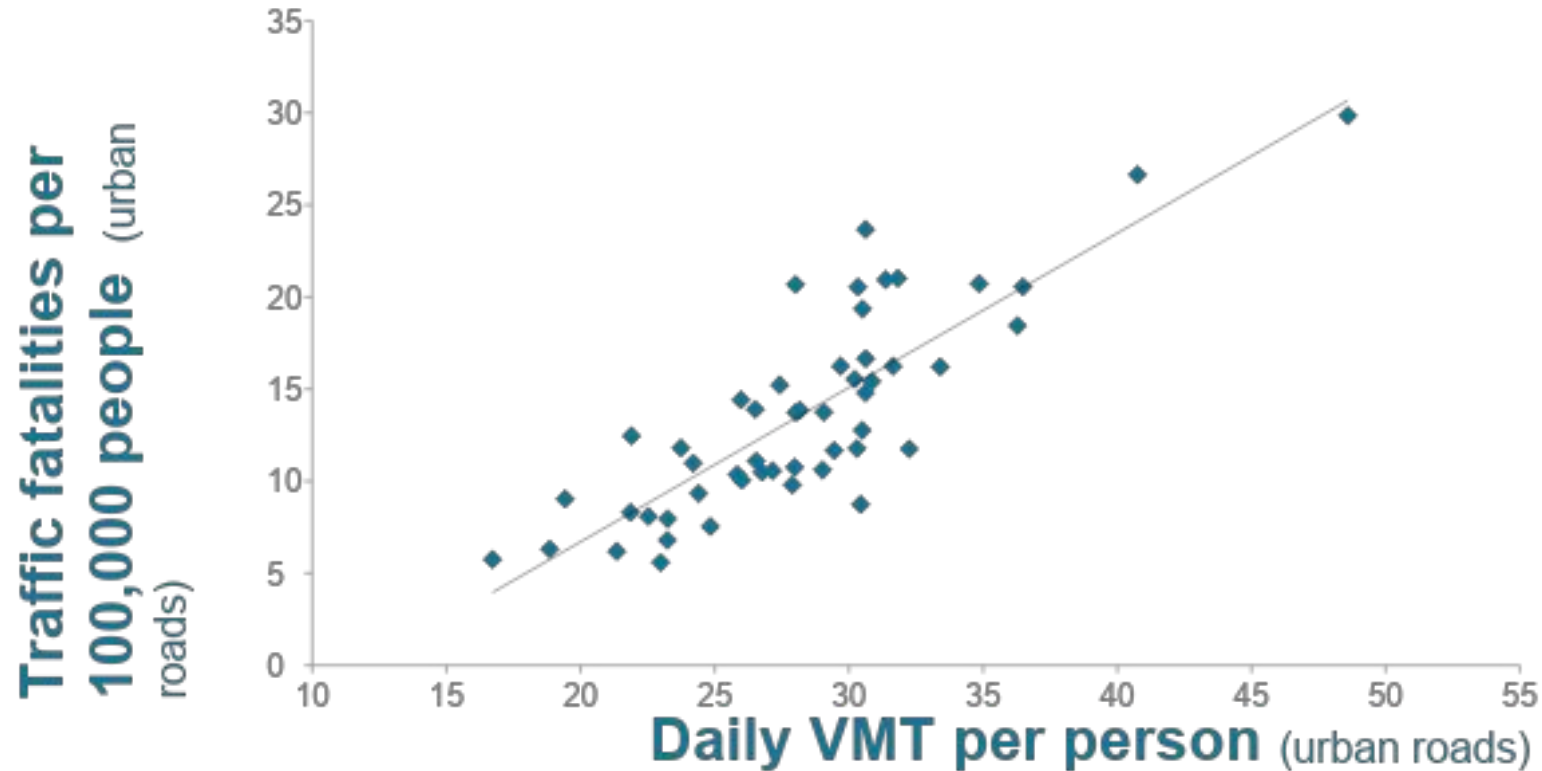
=

Make it easier NOT TO DRIVE

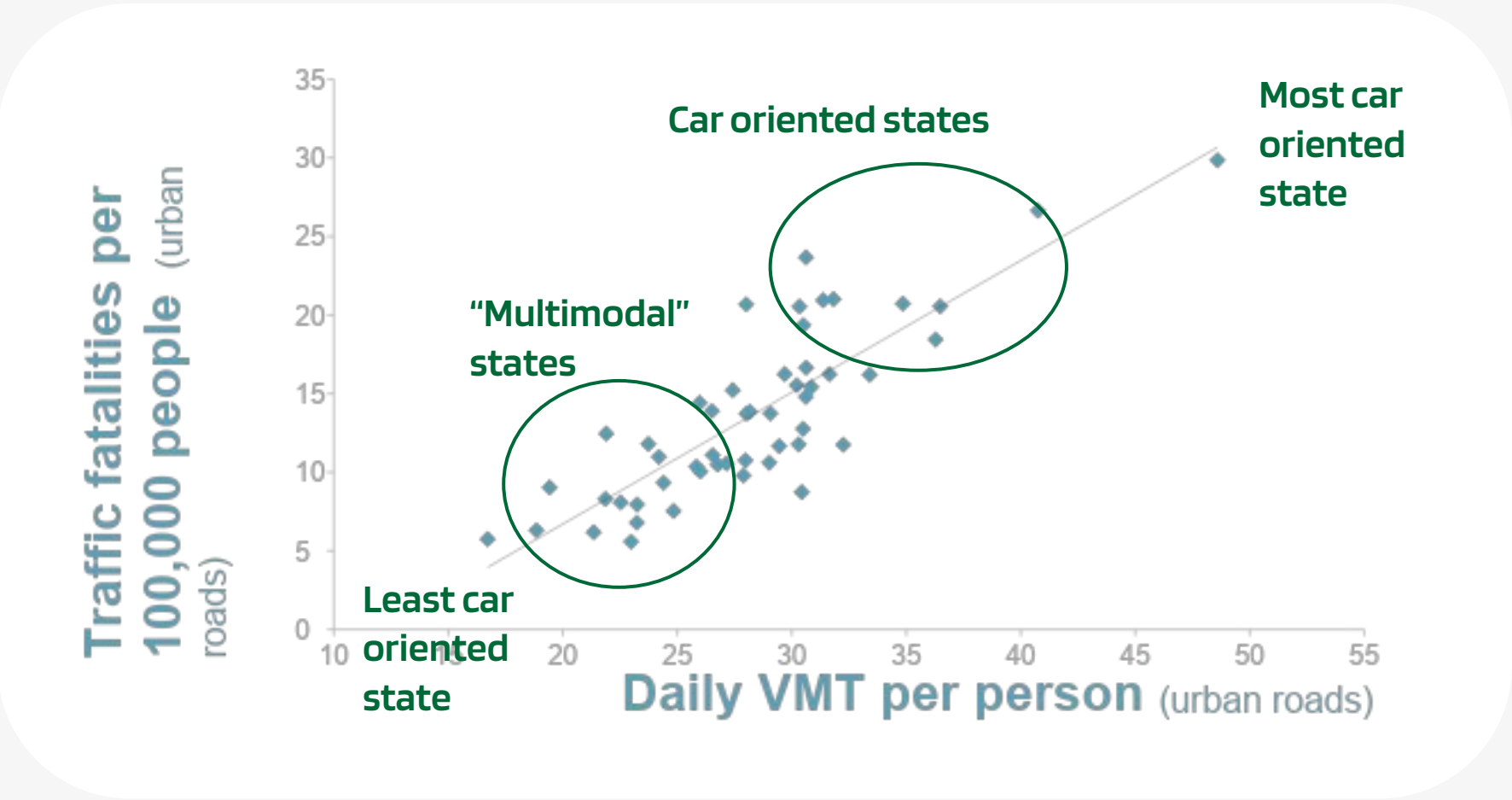


Sustainable
transportation options
are safer

More personal driving is associated with more traffic fatalities

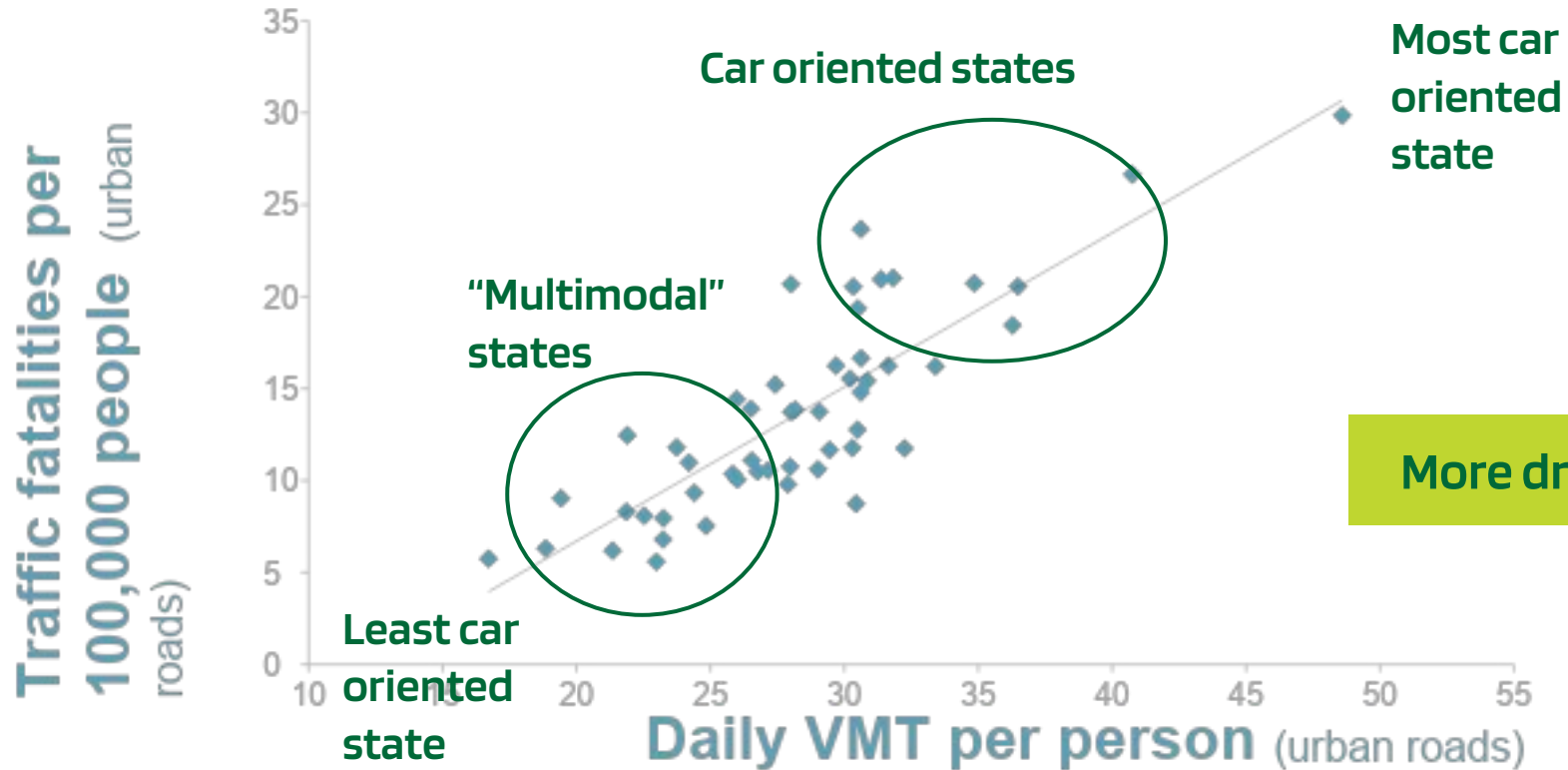


More personal driving is associated with more traffic fatalities



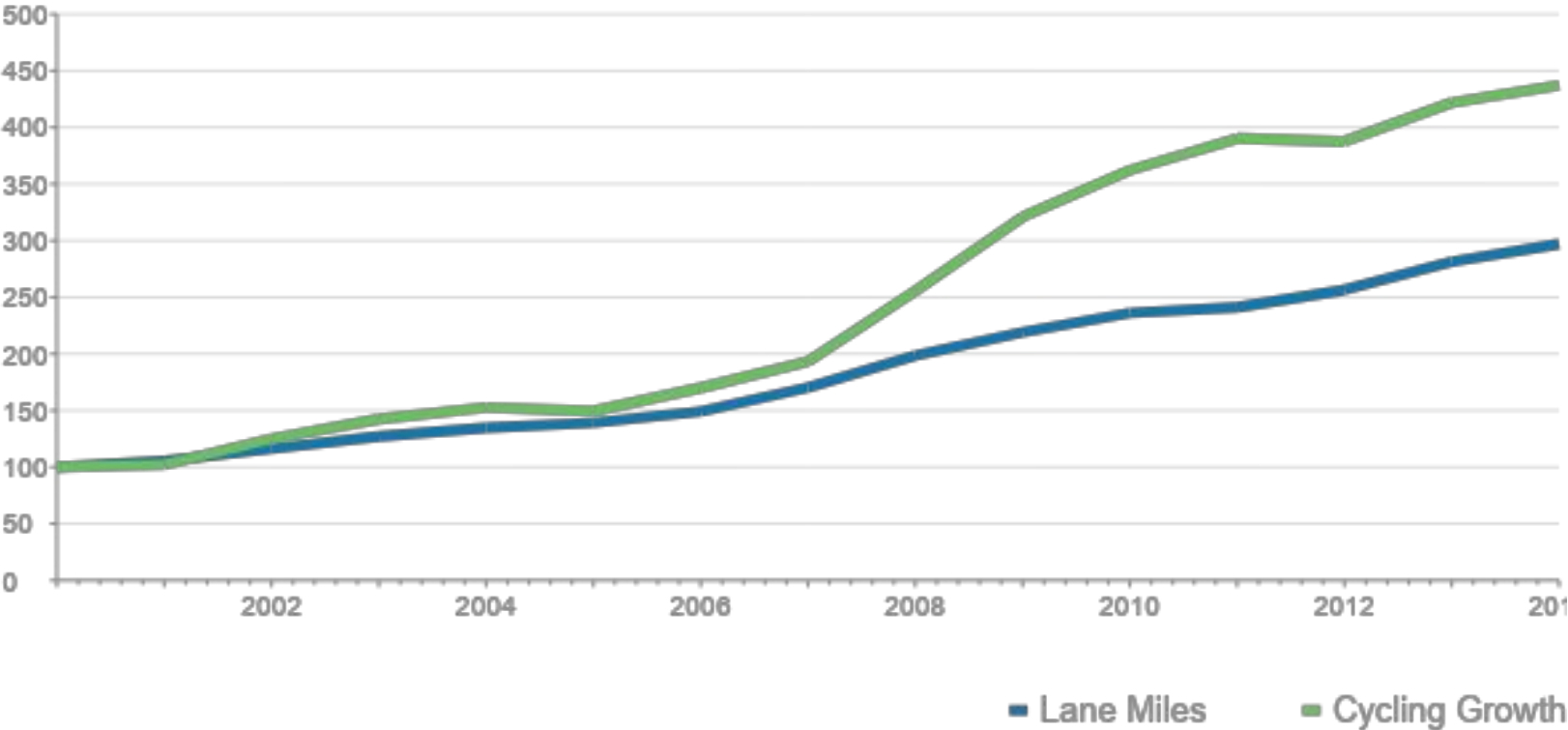
Source: FHWA Highway Statistics, 2008

More personal driving is associated with more traffic fatalities

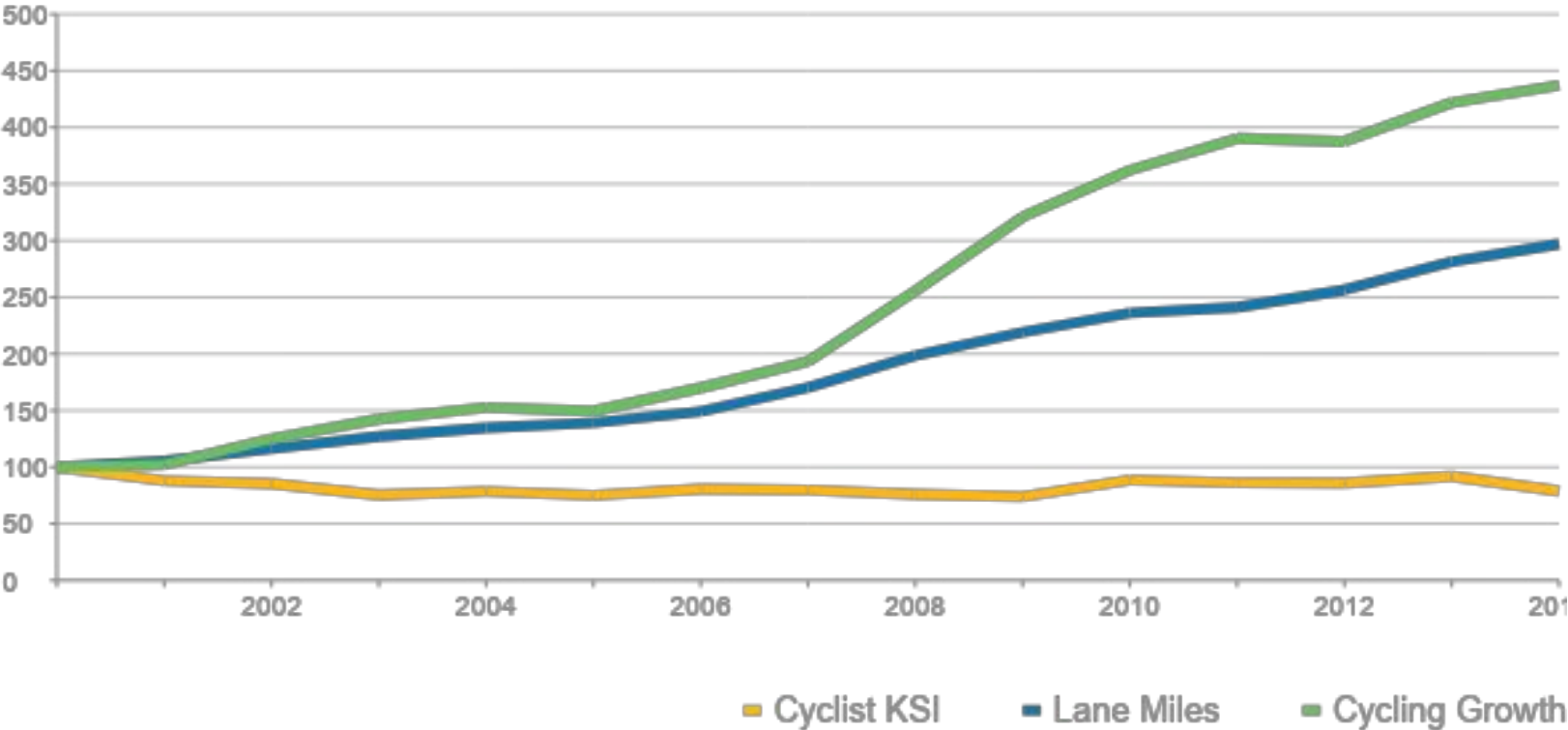


More driving >> More fatalities

More Lanes = More Cyclists

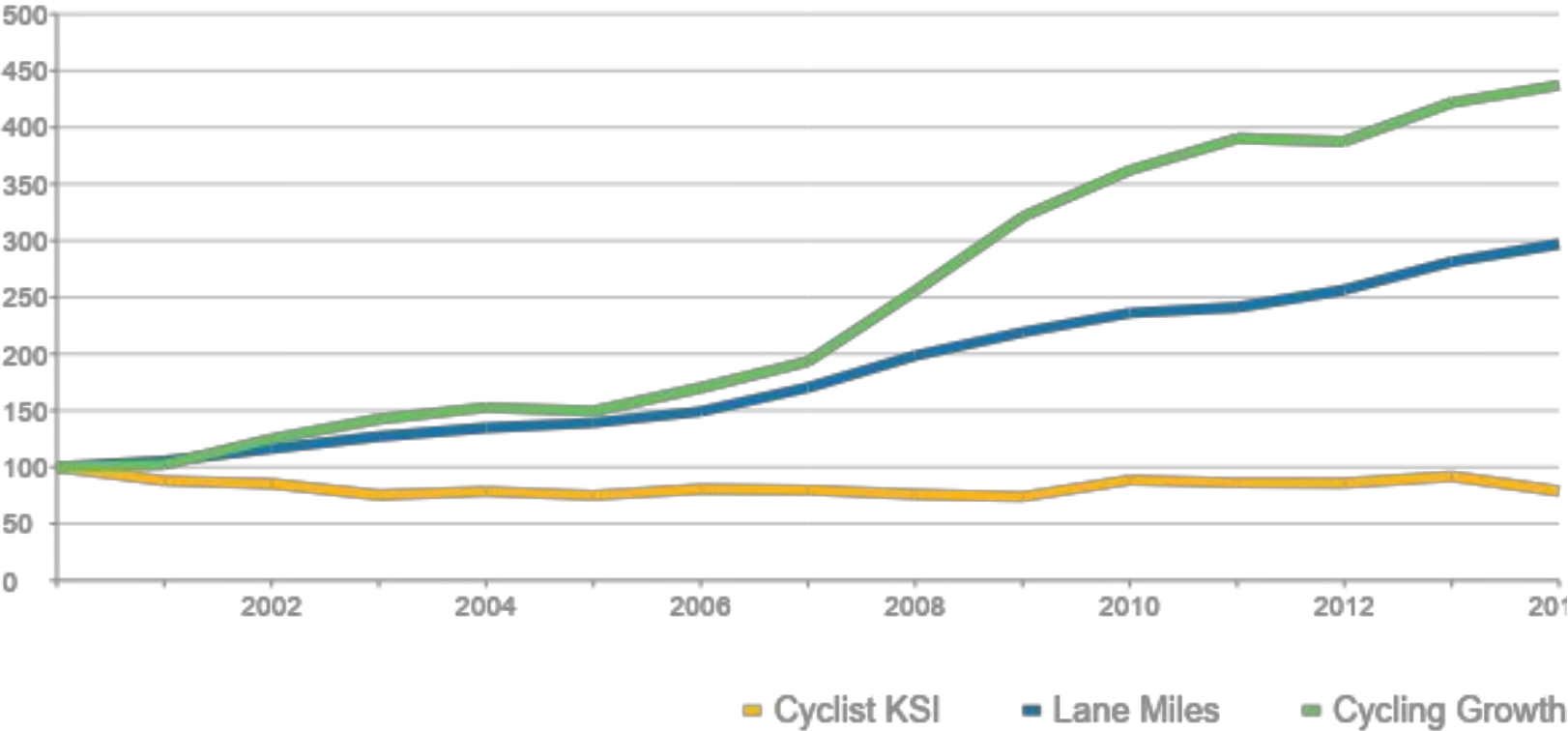


More Lanes = More Cyclists = Reduced Risk (for all users)

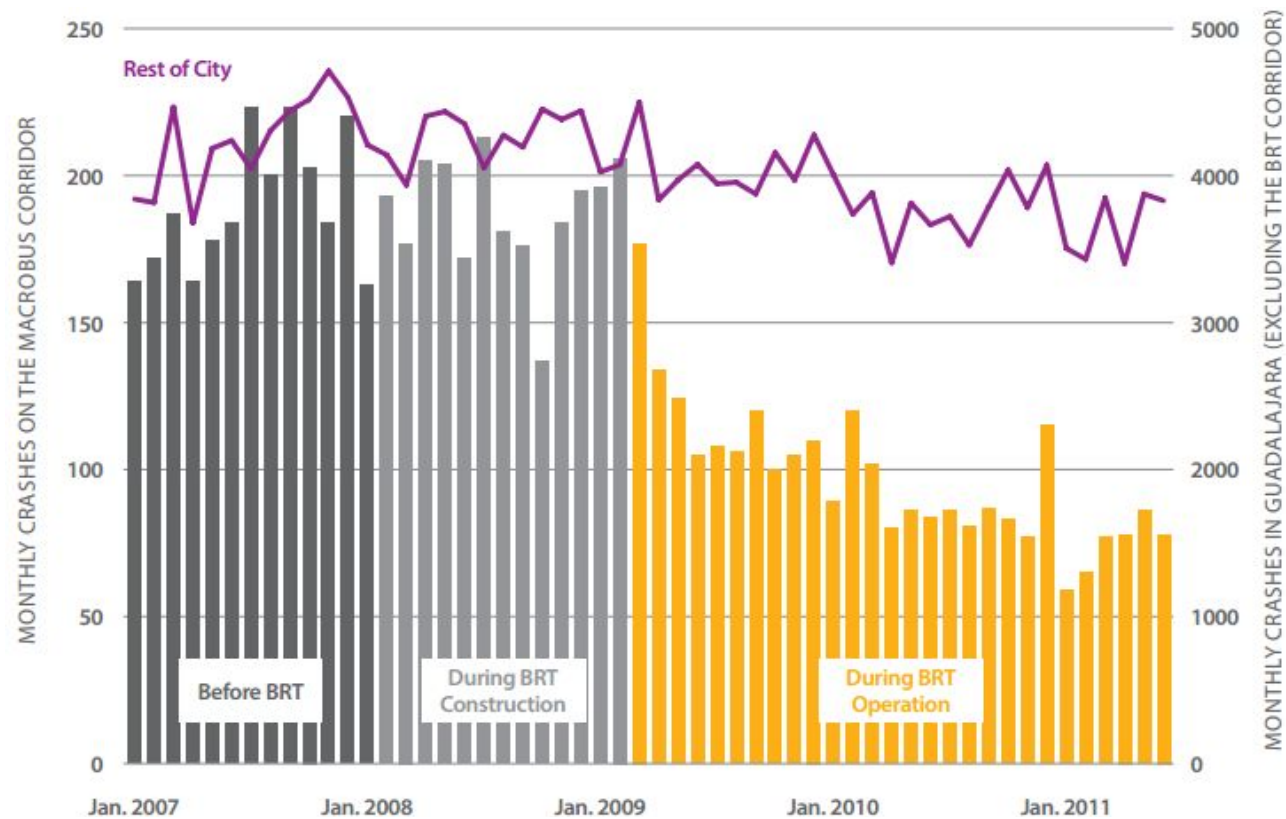


More Lanes = More Cyclists = Reduced Risk (for all users)

More cycling >> Fewer fatalities

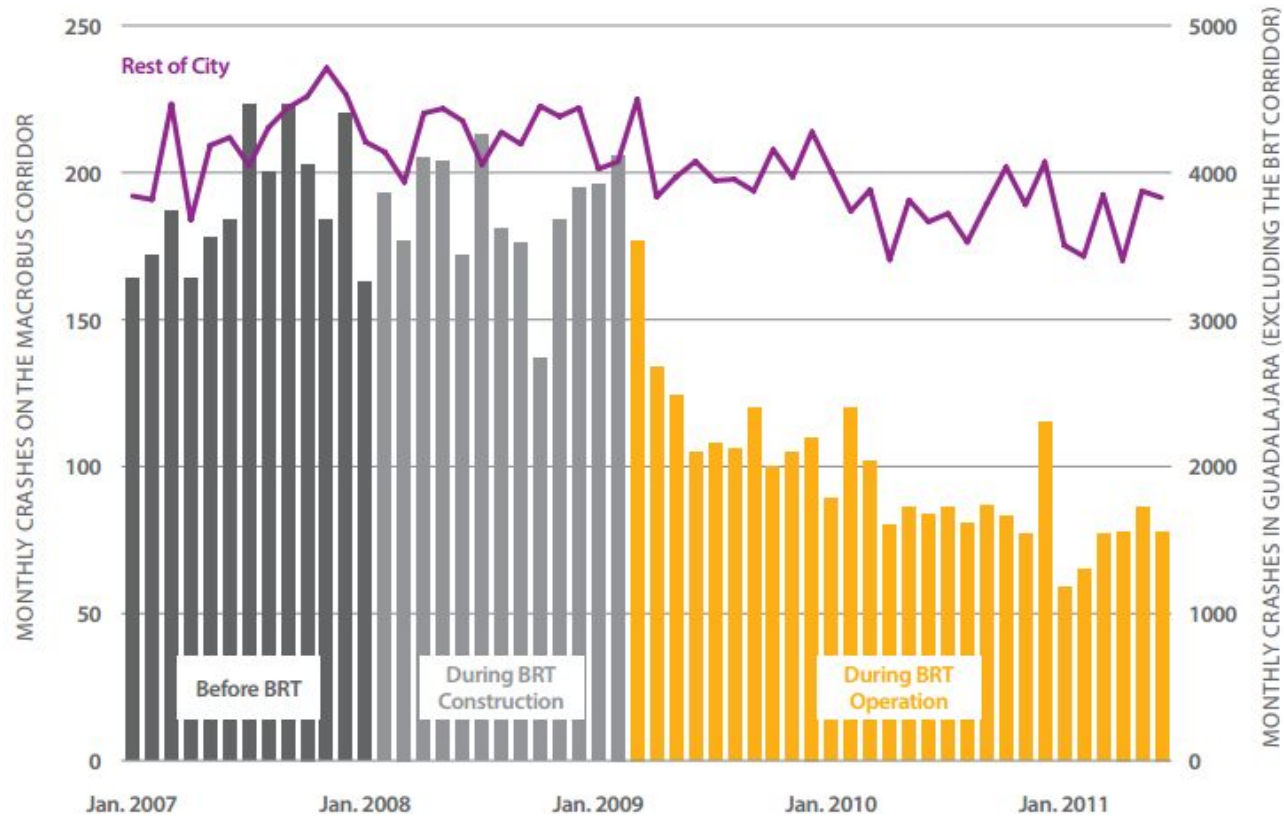


Guadalajara, Mexico



Crashes before and after the implementation of the Macrobús BRT in Guadalajara

Guadalajara, Mexico



More transit >> Fewer fatalities

Crashes before and after the implementation of the Macrobus BRT in Guadalajara

Sustainable
transportation options
are more efficient

We have been stuck in a self-fulfilling prophecy:

Congestion

**More Lanes/
Wide Lanes**

More Cars

Congestion

**= making our streets wider to cross,
less humane, and more dangerous!**



"Adding highway lanes to deal with traffic congestion is like loosening your belt to cure obesity." (Lewis Mumford)

It's time to solve a different problem...

An aerial, grayscale photograph of a multi-lane city street. Several cars are visible, some blurred to indicate motion. White lane markings, including arrows and crosswalks, are clearly visible on the asphalt. A yellow rectangular text box is centered over the middle of the road.

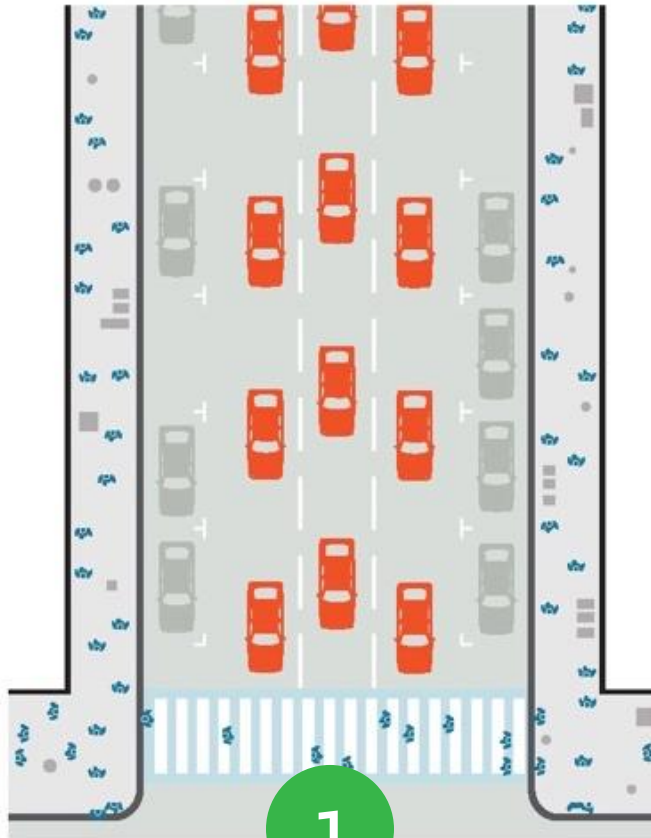
From moving cars...

It's time to solve a different problem...

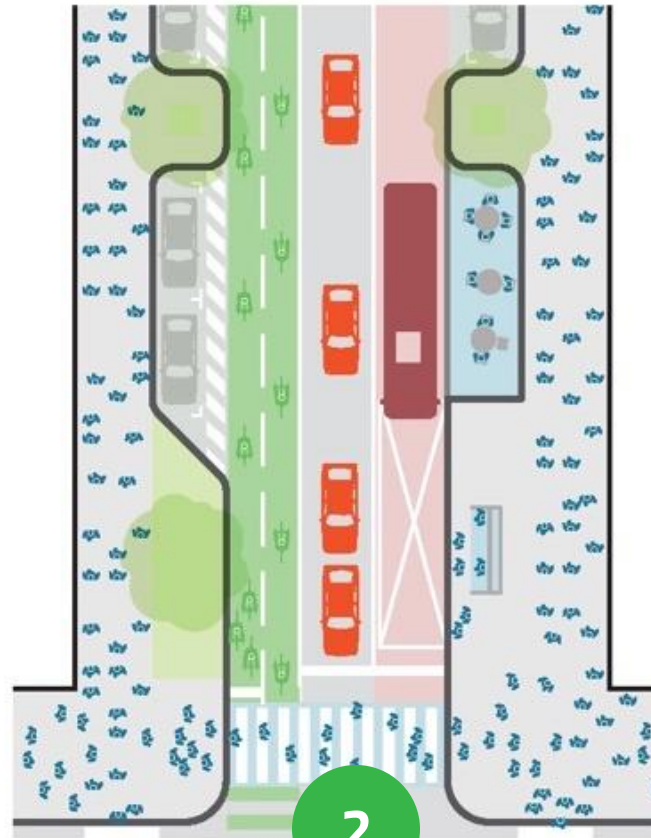


Which street has the highest capacity?

Car-Oriented Street

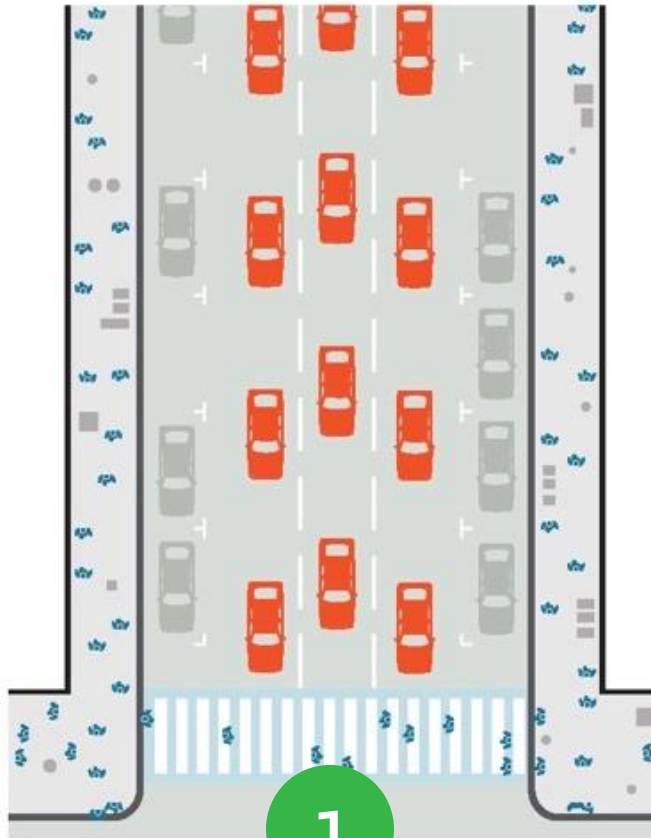


Multimodal Street



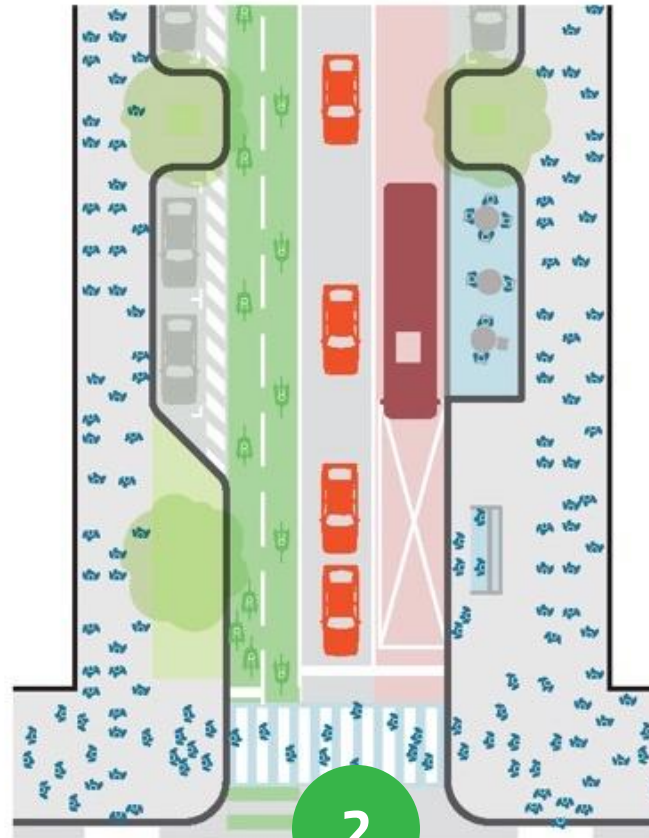
Which street has the highest capacity?

Car-Oriented Street



1

Multimodal Street

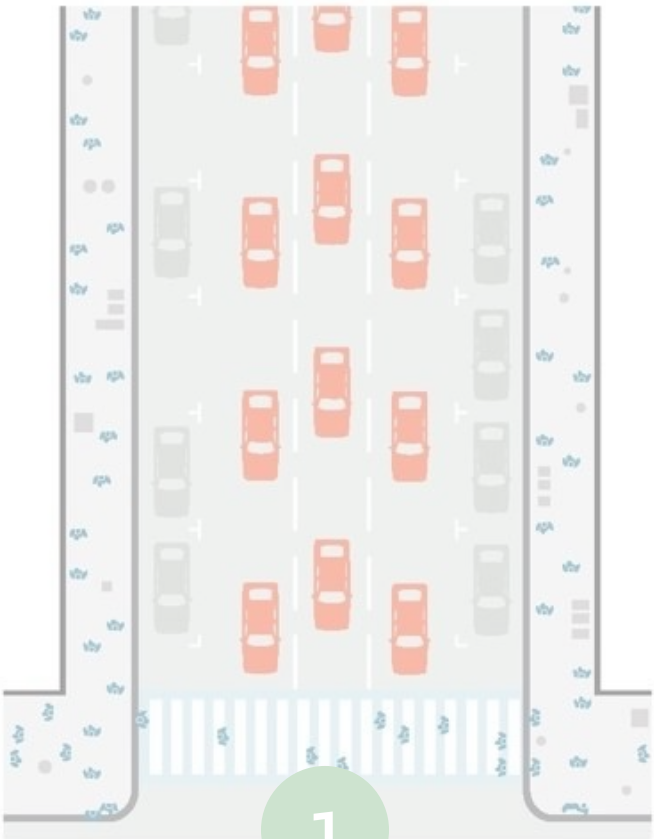


2

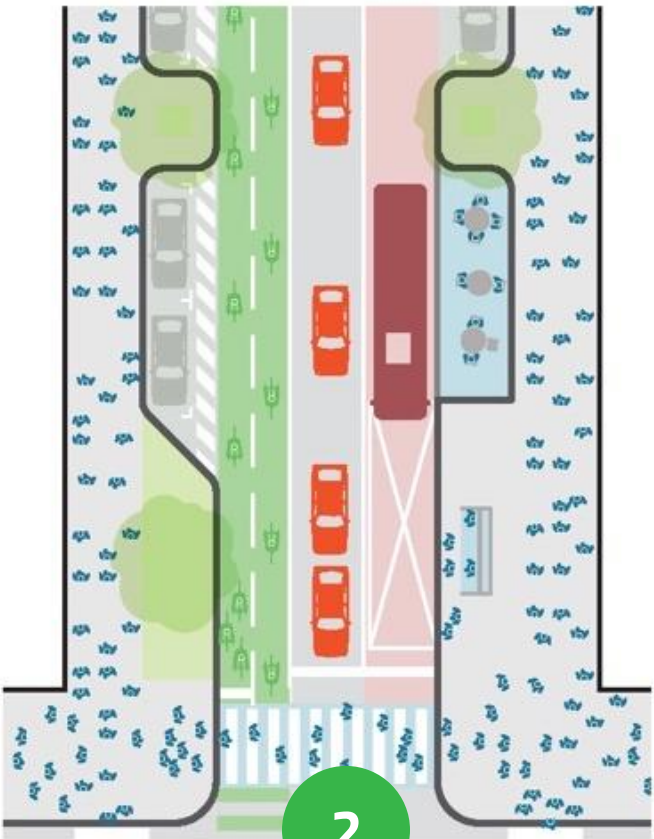


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Car-Oriented Street

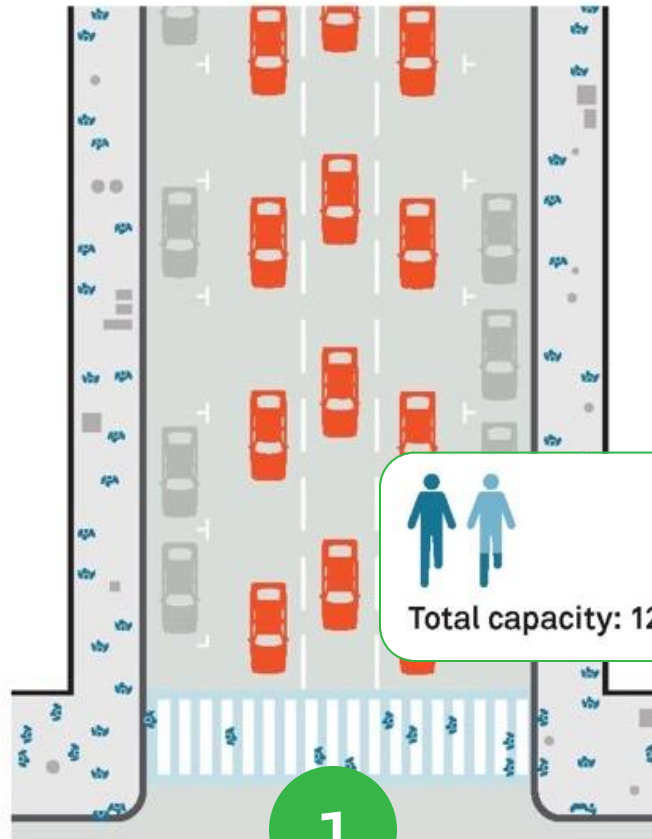


Multimodal Street



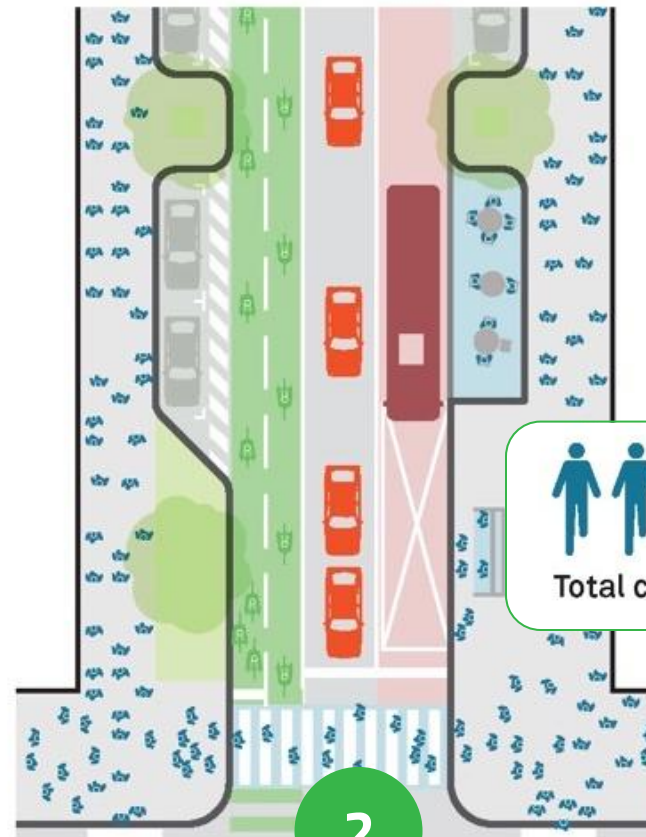
Multimodal streets are more efficient

Car-Oriented Street



Total capacity: 12,300 people/h

Multimodal Street



Total capacity: 30,100 people/h²⁹

Multimodal streets are more efficient

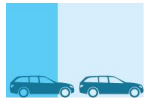


Private Motor Vehicles
600–1,600/hour



Mixed Traffic With Frequent Buses
1,000–2,800/hour

Multimodal streets are more efficient



Private Motor Vehicles
600–1,600/hour



Mixed Traffic With Frequent Buses
1,000–2,800/hour



Two-way Protected Bikeway
6,500–7,500/hour



Dedicated Transit Lanes
4,000–8,000/hour



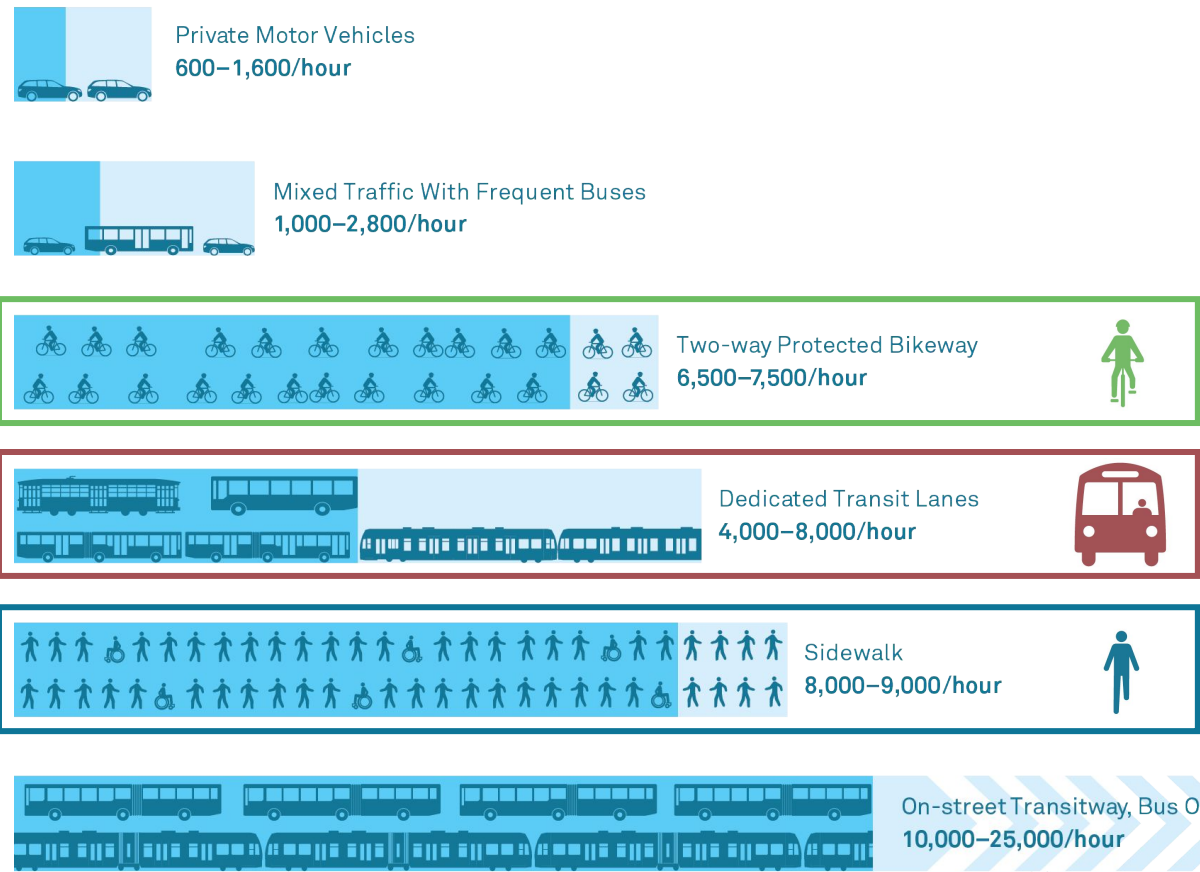
Sidewalk
8,000–9,000/hour



On-street Transitway, Bus Or Rail
10,000–25,000/hour

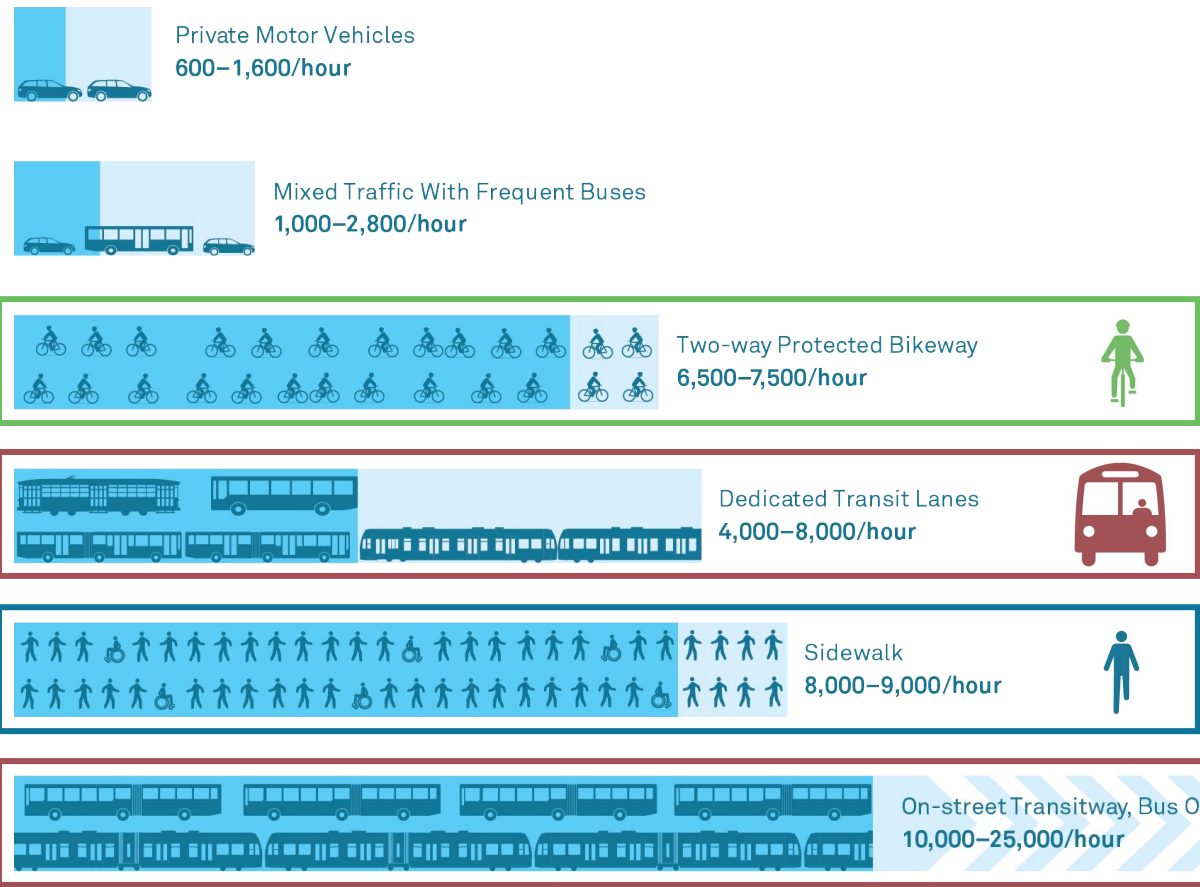
Sustainable modes
MANY TIMES more efficient

Multimodal streets are more efficient



Sustainable modes
MANY TIMES more efficient

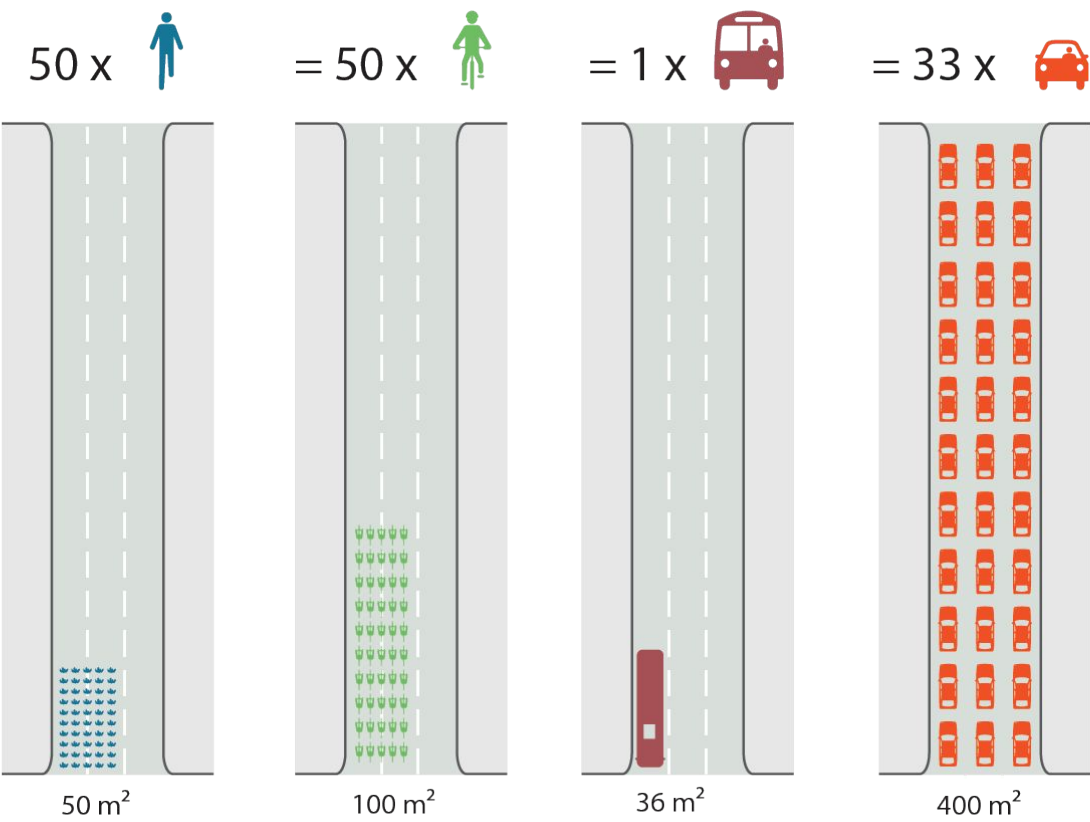
Multimodal streets are more efficient



Sustainable modes
MANY TIMES more efficient

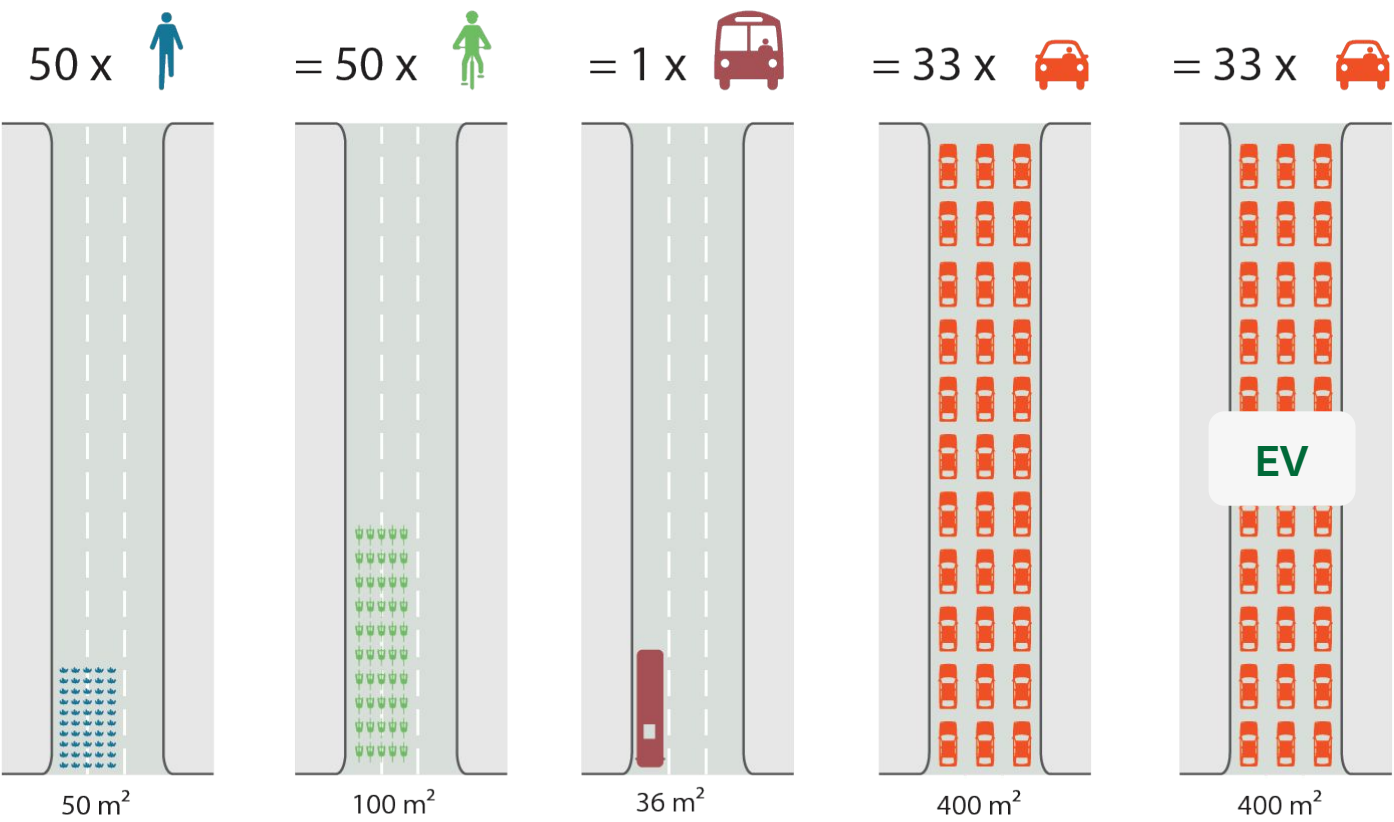
Multimodal streets are more efficient

Space needed to move 50 people



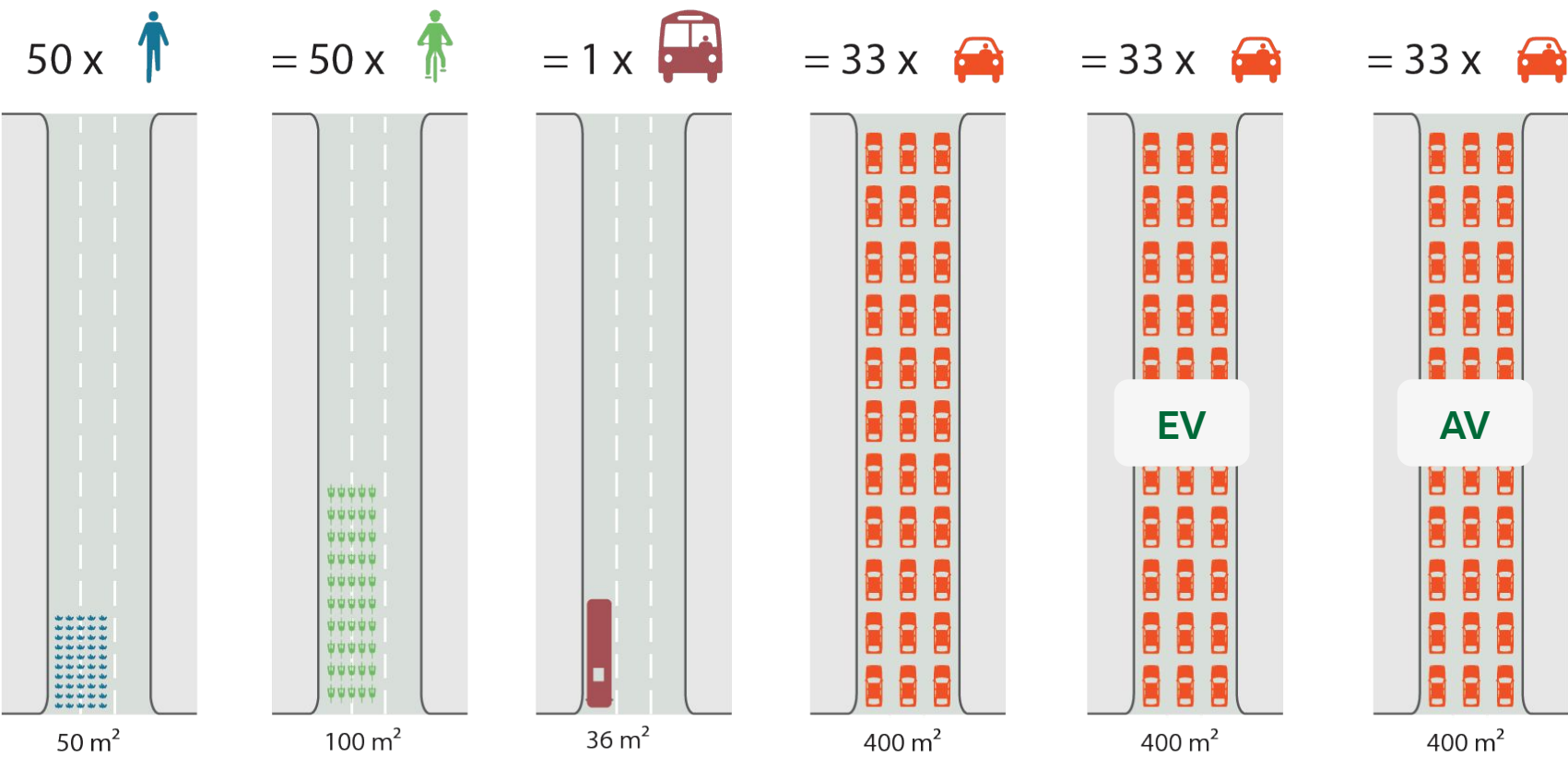
Multimodal streets are more efficient

Space needed to move 50 people



Multimodal streets are more efficient

Space needed to move 50 people

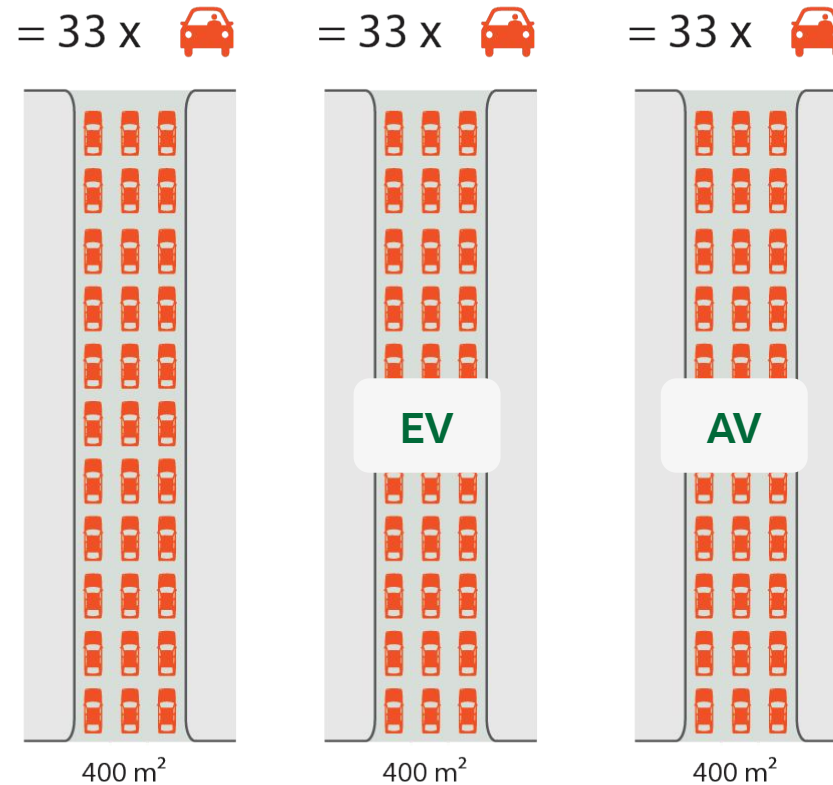


Multimodal streets are more efficient

Space needed to move 50 people

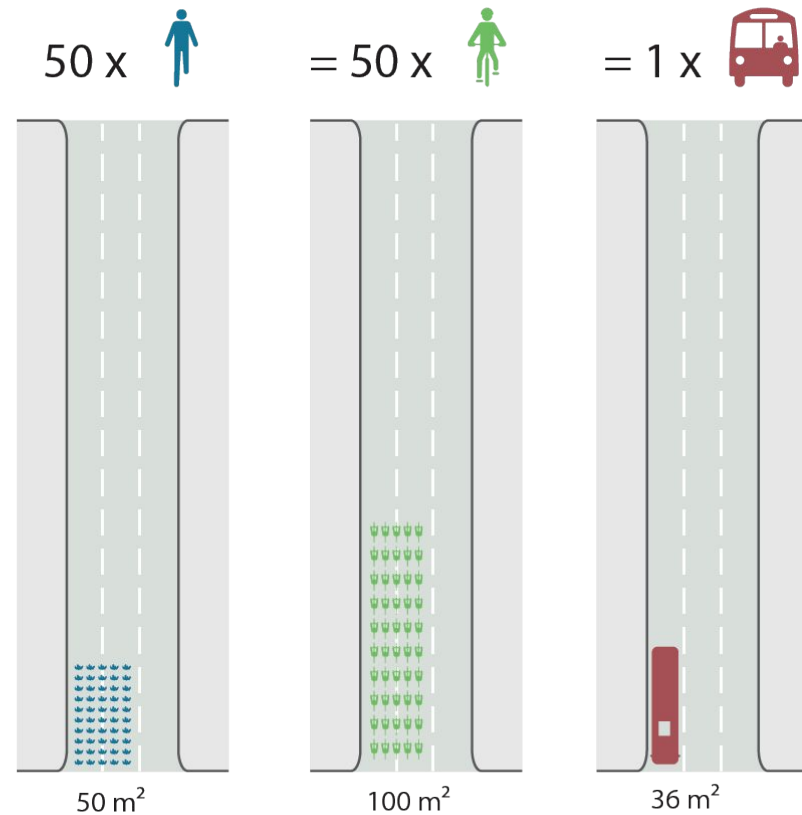
As our cities grow...

...Do we want to continue moving people like this?



Multimodal streets are more efficient

Space needed to move 50 people

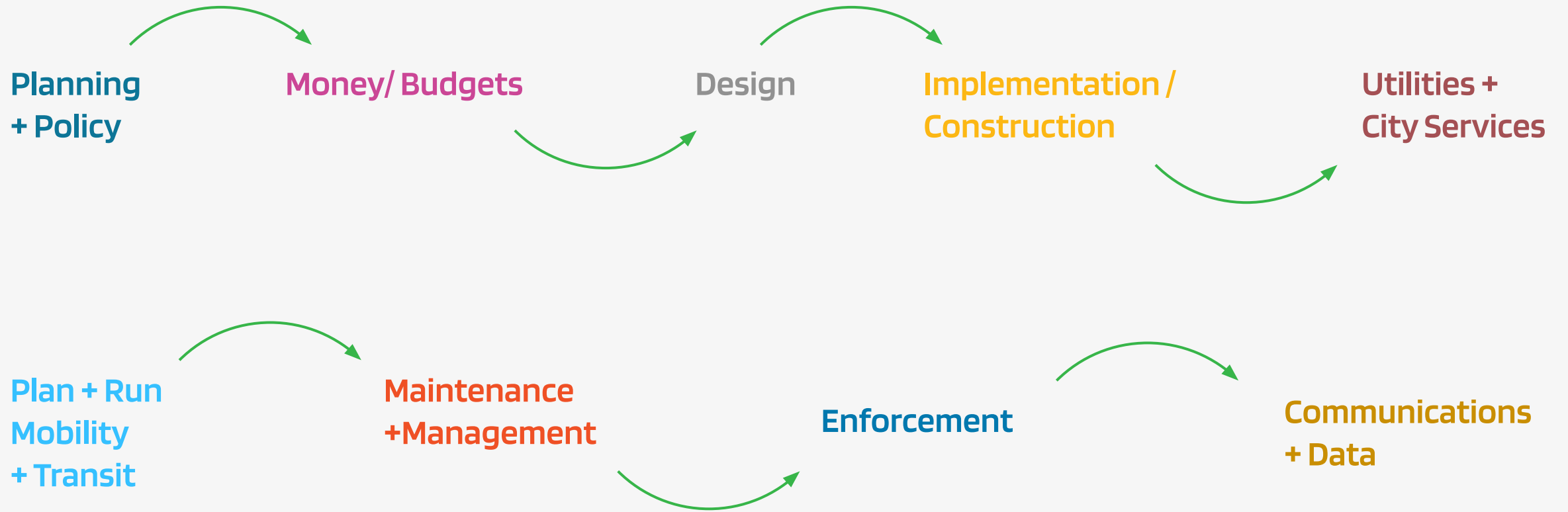


...Or rather like this?

Taking Action

4. Work together

Identify who's involved in Shaping Safe Streets + Sustainable Transportation Options?



...etc.

Who's involved in changing a street?



- Transportation departments and engineers
- Consumer affairs organizations
- Transit authorities and operators
- Park departments
- Construction and public works
- Sanitation and waste management
- Environmental protection
- Departments and organizations supporting people with disabilities
- Planning departments
- Building departments
- Utility companies
- Urban designers, landscape architects, and architects
- Health professionals
- Historic preservation organizations
- Advocacy groups and neighborhood associations
- Private property owners and tenants
- Local businesses, vendors, and kiosk owners
- Street operators
- Local media
- Developers and development banks
- Academic institutions
- Enforcement entities

Who's involved in changing a street?

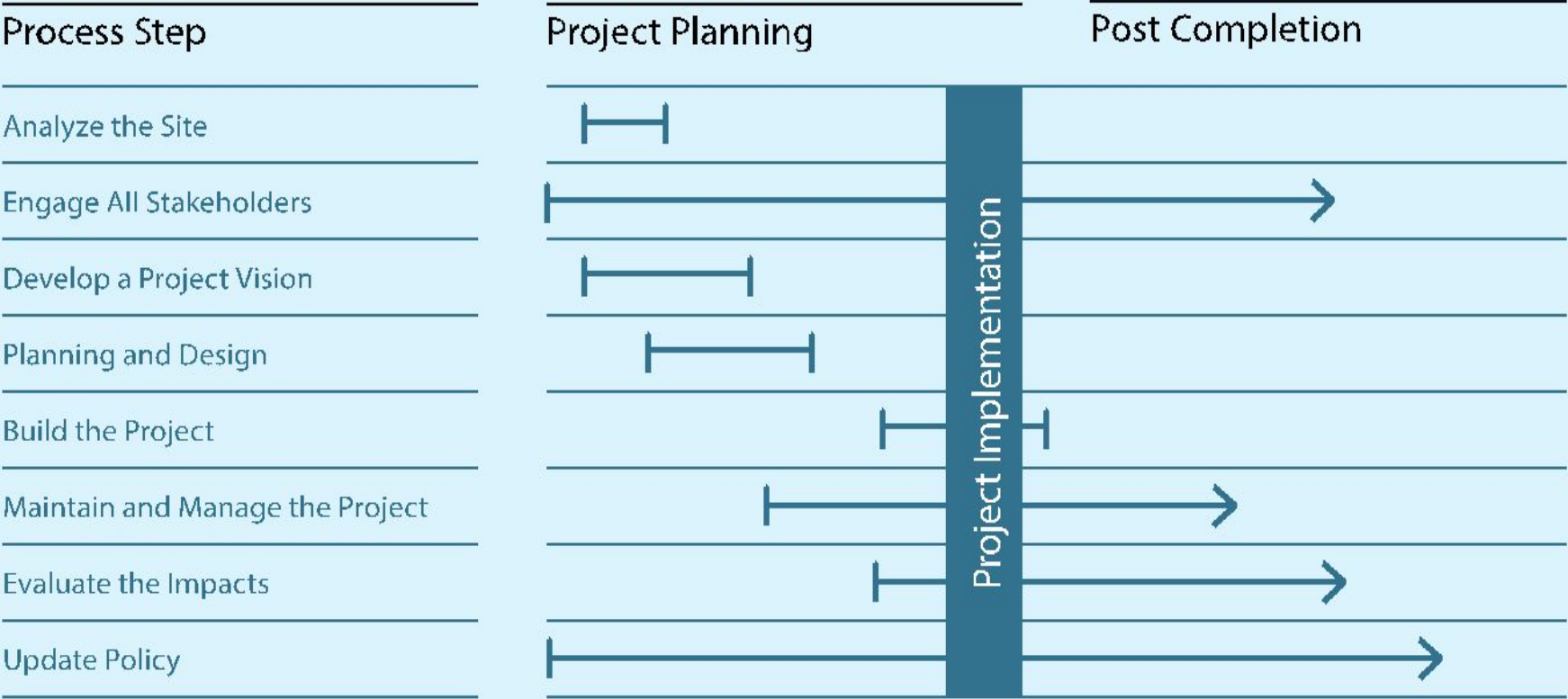


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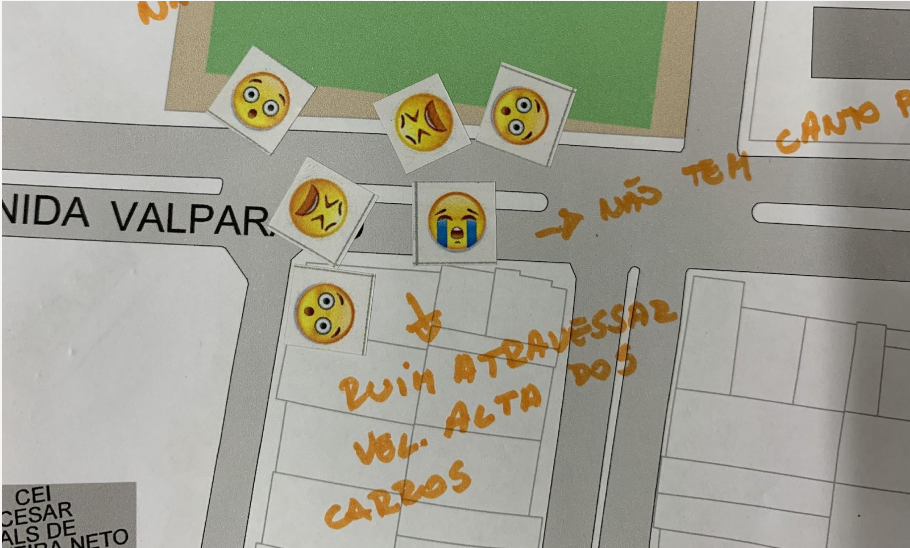
Process for Shaping Streets

A TYPICAL PROCESS FOR SHAPING STREETS

While local processes vary in each context, use the typical steps in the diagram below to define and guide the process for each project before it begins. Street design is an iterative process. Processes should remain flexible and relevant, evolving and adapting over time as best practices, specific challenges, and contexts change. Use the following steps to guide the process of shaping streets.



Community engagement



Media trainings



Workshops with traffic police



Help them enforce
Safe movement for all
vs
Traffic management

Broaden how we communicate about the importance and vulnerability of pedestrians



Broaden how we communicate about the importance and vulnerability of pedestrians

As pedestrians we have the right to:



The grid contains 10 illustrations with the following captions:

- Cross the street calmly and safely.
- A city that fits my needs.
- Adequate public transportation services.
- Organized urban centers.
- Socialize in public spaces.
- Play in the streets.
- Suitable street furniture.
- Spacious sidewalks.
- A healthy environment and enjoyment of the space.
- Walk calmly on the street.

 **edgarseis**
illustration & design

As pedestrians we have the right to:



Cross the street calmly and safely.

 **edgarseis**
illustration & design

Check out the complete Illustrated Charter of Pedestrian Rights at bit.ly/DerechosPeatonMx



Melbourne, Australia



Dar es Salaam, Tanzania

São Paulo, Brazil









DeHaPe Foodcou
Tang Kaca, 100m Tangah, Bangi Mh.

COMMUNAL DEVELOPMENT & COMMUNITY
Commemoration
Indonesia 2015
BELANJA DI TEMPAT YANG TELAH DITENTUKAN,
MERUPAKAN CERMIN MASYARAKAT IBU KOTA ASIA AFRIKA YANG TAAT HUKUM.
"SHOPPING IN THE PLACE WHICH HAS BEEN DETERMINED,
CONSTITUTE SHINING OF ASIAN AFRICAN CAPITAL CITY WHO OBEY THE LAW"
POLSEK REGOL PDKB

50 30 20 30 50















Tirana, Albania



São Paulo, Brazil



Working with City of León &
Colectivo Tomate

León, Mexico



450 m²

Reclaimed for
pedestrians

Before

Working with City of León &
Colectivo Tomate

León, Mexico

Photo credit: Colectivo Tomate



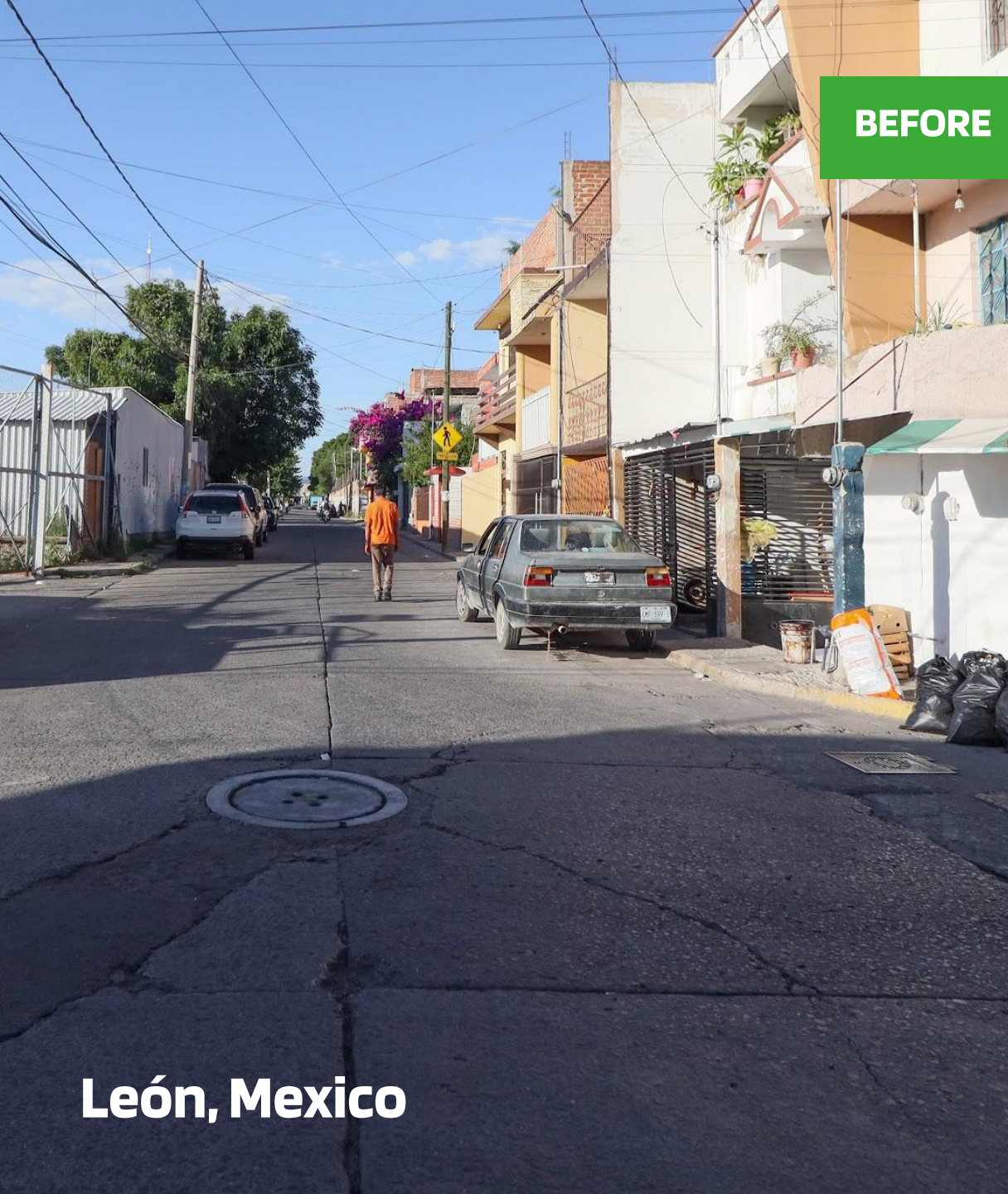
After

Working with City of León &
Colectivo Tomate

León, Mexico

Photo credit: Colectivo Tomate





BEFORE

In a survey before the transformation, **only 1% of caregivers felt it was safe** for their child to ride or play on the street.

León, Mexico



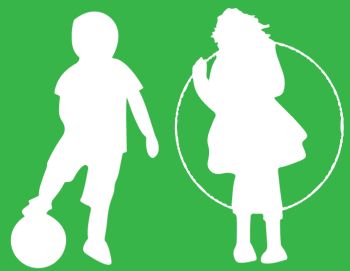
AFTER



León, Mexico

After the transformation, **75% of caregivers felt it was safe** for their child to ride or play on the street.





Observed **play**
activities
tripled on
weekdays

León, Mexico





89%

would like to see
more street
transformed in
their city

León, Mexico



Photo credit: Colectivo Tomate

Streets Near Key Destinations

Case Study – Milan, Italy



Working with City of Milan

Streets Near Key Destinations

Case Study – Milan, Italy



Working with City of Milan



Working with City of Milan



Working with City of Milan

Streets Near Key Destinations

Case Study – Milan, Italy



Streets Near Key Destinations

Case Study – Milan, Italy



Streets Near Key Destinations

Case Study – Milan, Italy



Streets Near Key Destinations

Case Study – Milan, Italy



200 fewer vehicles
passing in the area in the peak periods
(7AM-9AM and 5PM-7PM) during weekdays.



In terms of emissions, this is equivalent to
eliminating 35 trucks passing by that street in
that time window.

less traffic in the street



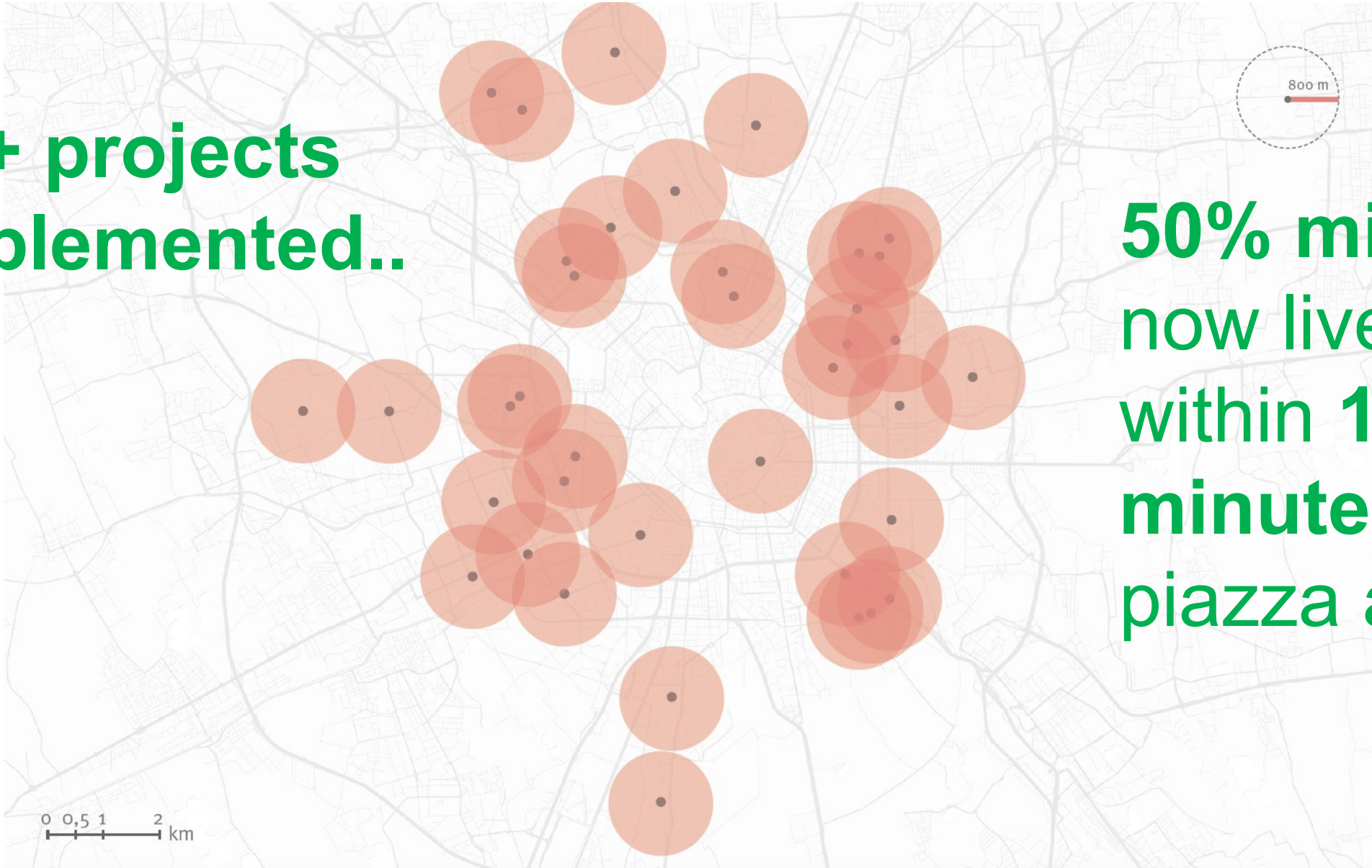
less pollution near children

Streets Near Key Destinations

Case Study – Milan, Italy

**40+ projects
Implemented..**

**50% milanese
now lives
within 15
minutes of a
piazza aperta**



We need
your bold visions,
your technical support,
your advocacy,
and **your** local action
to get us there!



**How do we ever
make these changes
(or MORE of these changes)
in MY city?**

- + Road Safety Plans....
- + New Bike Facilities...
- + Investing in Public Transport....
- + Improved Enforcement....
- + Reducing Speed limits....
- + Media campaigns....
- +

(pause)

What are
1-3 immediate actions
you can take?

write them down & tell the person sitting next to you