Changing Global Streets for Smart Urban Futures

Victoria Walks | Smart Urban Futures | Melbourne | March 2017

Skye Duncan
NACTO | National Association of City Transportation Officials
GDCI | Global Designing Cities Initiative

skye@nacto.org
@GlobalStreets
Smart Urban Futures
Our first, most sustainable, and most affordable form of mobility
Our fundamental infrastructure for supporting walkable environments....

SIDEWALKS / FOOTPATHS!
STREETS
Seeing the potential for transformation of our streets.
Restore the role of the street as the lifeblood of our communities
Largest continuous network of public space
we must make better, more efficient use of this valuable space
Move
Play

Bronx
Learn to Ride

Bogota
Dine

Paris
Celebrate New York
Places to make money....

New York
...and spend it 😊

Edinburgh
To spend time with old friends

Madrid
...or meet new ones
Enjoy some nature
To get creative

Kuala Lumpur

Melbourne
Experience the city at night

Melbourne
To be delighted or surprised

London
Spaces to relax

New Delhi
The front doors to our homes and businesses!

New York
Mobility and Access
Environmental Sustainability
Economic Sustainability
Livability and Quality of Life
Public Health and Safety
Mobility and Access
Environmental Sustainability
Economic Sustainability
Livability and Quality of Life
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Public Health and Safety
Public Health and Safety
1.34 million people die prematurely from urban air pollution each year – primary source of which comes from vehicles.
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
Bloomberg Initiative for Global Road Safety

September 2014 announced:

2015-2019

$125 Million
1.25 million traffic fatalities annually
1 person every 30 seconds
240
## Global Leading Causes of Death

<table>
<thead>
<tr>
<th>Today Rank</th>
<th>Disease/Injury</th>
<th>2030 Rank</th>
<th>Disease/Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heart Disease</td>
<td>1</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>2</td>
<td>Stroke</td>
<td>2</td>
<td>Stroke</td>
</tr>
<tr>
<td>3</td>
<td>Respiratory Infection</td>
<td>3</td>
<td>Pulmonary Disease</td>
</tr>
<tr>
<td>4</td>
<td>Pulmonary Disease</td>
<td>4</td>
<td>Respiratory Infection</td>
</tr>
<tr>
<td>5</td>
<td>Diarrhoeal Disease</td>
<td>5</td>
<td>Diabetes</td>
</tr>
<tr>
<td>6</td>
<td>HIV/AIDS</td>
<td>6</td>
<td>Throat/Lung Cancer</td>
</tr>
<tr>
<td>7</td>
<td>Throat/Lung Cancer</td>
<td>7</td>
<td>Traffic Injuries</td>
</tr>
<tr>
<td>8</td>
<td>Diabetes</td>
<td>8</td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>9</td>
<td>Traffic Injuries</td>
<td>9</td>
<td>Diarrhoeal Disease</td>
</tr>
<tr>
<td>10</td>
<td>Hypertension</td>
<td>10</td>
<td>Hypertension</td>
</tr>
</tbody>
</table>

Source: WHO Global Road Safety Report
These deaths are preventable!
These deaths are preventable!

We know what to do ☺️
1

Speed Kills!

Lower Speeds

(Legislation + Street Design)
Risk of Pedestrian Death and Impact Speed

Note: The above figure shows the relationship between pedestrian fatalities and vehicle impact speed published by the OECD (2006). Some recent studies show a similar relationship, but account for sample bias to find slightly lower risks in the 40 to 50 km/hr range. (Rosen & Sander 2009, Tefft 2011, Richards 2010, Hannawald and Kauer 2004) There are not, however, studies from low- and middle-income countries where things like vehicle type, emergency response time and other characteristics may influence this relationship. In any case, there is clear evidence to support policies and practices that lower vehicle speeds to 30 km/hr where pedestrians are commonly present, and no more than 50 km/hr on non-grade separated streets.

Adapted from WRI Safer Cities by Design
Risk of Pedestrian Death and Impact Speed

30km/h = 90% chance of survival

Note: The above figure shows the relationship between pedestrian fatalities and vehicle impact speed published by the OECD (2006). Some recent studies show a similar relationship, but account for sample bias to find slightly lower risks in the 40 to 50 km/hr range. (Rosen & Sander 2009, Tefft 2011, Richards 2010, Hannawald and Kauer 2004) There are not, however, studies from low- and middle-income countries where things like vehicle type, emergency response time and other characteristics may influence this relationship. In any case, there is clear evidence to support policies and practices that lower vehicle speeds to 30 km/hr in areas that pedestrians are commonly present, and no more than 50 km/hr on non-grade separated streets.
Risk of Pedestrian Death and Impact Speed

Note: The above figure shows the relationship between pedestrian fatalities and vehicle impact speed published by the OECD (2006). Some recent studies show a similar relationship, but account for sample bias to find slightly lower risks in the 40 to 50 km/hr range. (Rosen & Sander 2009, Tefft 2011, Richards 2010, Hannawald and Kauer 2004) There are, however, studies from low- and middle-income countries where things like vehicle type, emergency response time and other characteristics may influence this relationship. In any case, there is clear evidence to support policies and practices that lower vehicle speeds to 30 km/hr where pedestrians are commonly present, and no more than 50 km/hr on non-grade separated streets.

Adapted from WRI Safer Cities by Design
Speed Limits + Reduced Speed Zones

20
20 is plenty

30

40

United Kingdom (mph)

Christchurch, New Zealand
Geometric Design
(Vertical + Horizontal Deflection)

Speed Humps

Pinchpoints

Speed Cushions

Chicanes and Lane Shifts
Design streets that put people first
Stop prioritizing people driving individual motorized vehicles.

Make sustainable transportation options safe, convenient, affordable, and comfortable.
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, 1955)
“An advanced city is not a place where the poor move about in cars, rather it’s where even the rich use public transportation.”

Enrique Peñalosa, Mayor of Bogotá
Shaping the Sidewalk Experience | The Sidewalk Room

Source: NYCDCP (Shaping the Sidewalk Experience)
Asks designers and policy makers to share the responsibility of shaping the sidewalk experience, and positively impact the walkability of neighborhood.
The Sidewalk Room

Ground plane

Source: NYCDCP (Shaping the Sidewalk Experience)
The Sidewalk Room

Roadside plane

Source: NYCDCP (Shaping the Sidewalk Experience)

* These elements are affected by zoning regulations
The Sidewalk Room

Source: NYCDCP (Shaping the Sidewalk Experience)
The Sidewalk Room

Building edge

- Fire escapes and balconies*
- Building height and setback*
- Lighting
- Shading devices*
- Signage*
- Canopies/awnings*
- Entrances*
- Security gates*
- Transparency*
- Architectural articulation*
- Outdoor uses*
- Land use*
- Length of lots/frontages*
- Front yard planting*
- Off-street parking*
- Ground floor setback*

* These elements are affected by zoning regulations

Source: NYCDCP (Shaping the Sidewalk Experience)
Departments of planning are often responsible for the overall allowable building heights, setback dimensions, ground-floor uses, curb cut locations, entrances, levels of transparency, and outdoor uses.

Departments of building often regulate what can project beyond a building or private property line into the public right-of-way.

Designers and architects are responsible for how interesting and engaging the building wall plane is to walk past.

Landmark agencies identify and designate city landmarks.

Departments of transportation regulate sidewalks widths and clear paths in conjunction with the overall distribution of the right-of-way.

Departments of consumer affairs regulate sidewalk cafes by issuing licenses and enforcing compliance.

Transit authorities might require transportation infrastructure within the sidewalk room.

Departments of sanitation organize trash collection and recycling, impacting the overall cleanliness of the sidewalk room.

Departments of environmental protection manage the storm water that runs onto sidewalks through curbside drains.

Departments of people with disabilities work to ensure safe and accessible sidewalks for people with diminished abilities.

Private property owners and tenants are responsible for front yards, entrance spaces, and are also frequently required to build and maintain the sidewalk in front of their property.

Source: NYCDCP (Shaping the Sidewalk Experience)
The ground floor counts the most!

Source: NYCDCP (Shaping the Sidewalk Experience)
Bandung, Indonesia
A 500% (350 km) increase in about 3 years (now over 400km)
2016

Auckland, New Zealand

Addis Ababa, Ethiopia
“Changing the Chip”
Pedestrian Only Areas (Siene)
Car-Free Days

Sao Paulo
Car-Free Days

Car-Free Hours?

Bogota

Car-Free City Center by 2017!

Dublin
Carbon Neutral by 2025
Van Beuningenstraat and Van Boetzelaerstraat in 1962 and 2015
Van Beuningenstraat and Van Boetzelaerstraat in 1962 and 2015
These transformations didn’t happen by accident.....

People **made decisions to design their cities differently and to invest in multi-modal transportation options**.
So we have the precedents, we know what’s possible, and we are realizing the urgency,.....
Cities are growing, climates are changing, and people are dying.....

and there’s still a lot to do and a long way to go!
We need your bold visions, your technical support, your advocacy, and your local action to get us there!
BLOOMBERG INITIATIVE FOR GLOBAL ROAD SAFETY
1. ENFORCEMENT
2. DATA
3. MEDIA
4. SAFE STREETS & SAFE MOBILITY

PARTNERS:
EMBARQ/ WRI
WB/ Global Road Safety Facility
NACTO/ GDCI
Global Road Safety Partnership
Johns Hopkins Bloomberg School of Public Health
Vital Strategies
World Health Organization
NACTO / Year 2-5

1. São Paulo, Brazil
2. Bogota, Colombia
3. Addis Ababa, Ethiopia
4. Mumbai, India
5. Fortaleza, Brazil

6. Accra, Ghana
7. Bangkok, Thailand
8. Ho Chi Minh City, Vietnam
9. Shanghai, China
10. Bandung, Indonesia
Peer-to-peer mentoring
Annual Conference
Designing Cities 2017: Chicago

NACTO Annual Conference

Oct 30th – Nov 2\textsuperscript{nd}, 2017, Chicago, United States
Design Guidance
Design Guidance

Endorsement from 48 cities, 9 states, and USDOT
= Permission Slip
A - ABOUT STREETS
1. Defining Streets
2. Shaping Streets
3. Measuring and Evaluating Streets

B - STREET DESIGN GUIDANCE
4. Designing Streets for Great Cities
5. Designing Streets for Place
6. Designing Streets for People
7. Utilities and Infrastructure
8. Operational and Management Strategies
9. Design Controls

C - STREET TRANSFORMATION
10. Streets + Case Studies
11. Intersections
   Resources
Improving walkability
Good practice guidance on improving pedestrian conditions as part of development opportunities
September 2005

Transport for London
From Global Agenda to Local Action

Inspire Leaders

Inform Practitioners

Empower Communities
Global Network

40+ countries
70+ cities
What Is Possible
A New Approach to Street Design

People → Street Design → Place

Desired Outcomes

- Health and Safety
- Livability and Quality of Life
  - Multi-modal Access
- Environmental Sustainability
- Economic Sustainability
  - Equity
DESIGN PRINCIPLES
10 x Street Design Principles

- Streets for the Most Vulnerable
- Streets for Safety
- Streets for Health
- Streets are Public Space
- Streets are Ecosystems
- Streets are Multimodal
- Streets are Contextual
- Streets are Great for Business
- Streets are Multidimensional
- Streets Can Change! Act now!
DESIGNING FOR PEOPLE
Streets Users
Streets Users - Pedestrians
Streets Users - Cyclists
Streets Users – Collective Transport
Streets Users – Personal Motor Vehicles
Streets Users – Moving Goods & City Services
Streets Users - Business
Streets Users - Comparison

- Pedestrians: 5-7 km/h
- Bicyclists: 15-20 km/h
- Cars: 25-30 km/h
- Public Transport: 20-25 km/h
Streets Users - Comparison

10 minutes

- Car: 4.2 km
- Bus: 3.3 km
- Bicycle: 2.4 km
- Walking: 0.8 km
Network Scale

- Pedestrians
- Cyclists
- Transit Riders
- Motorists
- Freight Operators and Service Providers
- People Doing Business
Facility Geometries and Dimensions
Toolkit of Elements:


- Cyclists: Cycle parking structures, Cycle Corrals, Cycle Rack.

- Transit Riders: Corner Refuge Islands, Cycle Bridges and Underpasses, Ticket Vending Machines, Transit Shelters.

- Motorists: Segmented Concrete Dividers, Corner Refuge Islands, Parking Meters, Speed Cushions and Tables, Dedicated Parking, Traffic Cones, Retractable or Removable Bollards, Time Restrictions, Dedicated Spaces, Storage, Hours of Operation.


- People Doing Business: Dedicated Parking, Speed Cushions and Tables, Retractable or Removable Bollards, Time Restrictions, Dedicated Spaces, Storage.
Streets Users - Comparison

Space to move
50 people

50 x

= 50 x

= 1 x

= 33 x

50 m²

100 m²

36 m²

400 m²
As our cities grow.....

Space to move
50 people

= 33 x

Move people like this..........?
As our cities grow.....

Space to move
50 people

50 x

50 m²

= 50 x

100 m²

= 1 x

36 m²

MULTI-MODAL APPROACH...?
People capacity of different modes

- **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

The illustration shows the **hourly capacity of a 3 m-wide lane** (or equivalent width) by different modes at peak conditions with normal operations. Ranges relate to the type of vehicles, traffic signal timing, operation, and average occupancy.
Efficient Use of Space

<table>
<thead>
<tr>
<th>Car-Oriented Street</th>
<th>Multimodal Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total capacity:</strong></td>
<td><strong>Total capacity:</strong></td>
</tr>
<tr>
<td>12,300 people/h</td>
<td>30,100 people/h</td>
</tr>
</tbody>
</table>

x 2.4 people
Pedestrians

Speed, Variations and Dimensions

0 km/h
0 m/s

5 km/h
1.4 m/s

6–7 km/h
1.6–1.9 m/s

10 km/h
2.7 m/s

15+ km/h
4+ m/s
Pedestrians

Speed, Variations and Dimensions
Pedestrians

Key Network Considerations

- Connected and Permeable
- Accessible and Comfortable
- Safe
- Relevant to Context
Pedestrians

Sidewalks

Frontage Zone

Clear Path

Street Furniture Zone

Buffer Zone
Pedestrians

Geometry

Residential Sidewalk
Residential Ribbon Sidewalks
Residential Sidewalk with Trees
Neighborhood Main Street 1
Neighborhood Main Street 2
Medium Commercial Sidewalks
Large Commercial Sidewalks
Pedestrians

Elements

- Sidewalks
- Pedestrian Crossings
- Pedestrian Refuge Islands
- Curb Extensions
- Accessibility Ramps
- Vision-Impaired Guidance
- Signage and Wayfinding
- Pedestrian Countdown Signals + Clocks
- Lighting
- Seating
- Water Fountains
- Weather Protection
- Curbs
- Waste Receptacles
- Active Building Edges
- Trees and Landscaping
# Pedestrians

## Pedestrian Crossings

<table>
<thead>
<tr>
<th>Conventional Crossing</th>
<th>Diagonal Crossings</th>
<th>Raised Crossings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pedestrian Volumes</strong></td>
<td>Low to High</td>
<td>Medium to High</td>
</tr>
<tr>
<td>Signalized</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>At Intersection</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mid-Block</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Vehicular Speed</td>
<td>Any Speed</td>
<td>Below 30 km/h</td>
</tr>
<tr>
<td>Vehicular Volumes</td>
<td>Low to High</td>
<td>Medium to High</td>
</tr>
</tbody>
</table>
### Pedestrians

#### Pedestrian Crossings

<table>
<thead>
<tr>
<th>Traffic Calmed Crossings</th>
<th>Staggered Crossings</th>
<th>Pinchpoint/Yield Crossings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pedestrian Volumes</strong></td>
<td>Low to Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Signalized</td>
<td>No/Actuated</td>
<td>No</td>
</tr>
<tr>
<td>At Intersection</td>
<td>No (prefer raised)</td>
<td>No</td>
</tr>
<tr>
<td>Mid-Block</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Vehicular Speed</td>
<td>Above 30 km/h</td>
<td>Above 30 km/h</td>
</tr>
<tr>
<td>Vehicular Volumes</td>
<td>Medium</td>
<td>Low</td>
</tr>
</tbody>
</table>

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![Traffic Calmed Crossings Diagram](image1)

![Staggered Crossings Diagram](image2)

![Pinchpoint/Yield Crossings Diagram](image3)
Pedestrians
Pedestrian Refuge Islands

Pedestrian Refuge Islands
Median Tips
Median Cut-Throughs
Pedestrians
Sidewalk Extensions

Corner Alignments

Bulb-Outs

Slip Lane Removal
Toolkit of Traffic Calming Measures

Speed Humps

Speed Cushions

Speed Tables

Pavement Material and Appearance
Toolkit of Traffic Calming Measures

Lane Narrowing

Buildings and Trees

Chicanes and Lane Shifts

Mini Roundabouts
DESIGNING FOR PLACE
DESIGNING FOR PLACE

Built Environment  Natural Environment  Social & Cultural Environment  Economic Environment
Context Changes!

Context 1:
Neighborhood Main Street
Context Changes!

Context 2: Central Two-way Street
Context Changes!

Context 3:
Transit Mall
STREET TRANSFORMATIONS
Street Typologies

- Pedestrian Priority Streets
- Shared Streets
- Neighborhood Streets
- Large Streets
- Special Conditions
Neighborhood Main Street
Neighborhood Main Street
New York, USA

- 58% decrease in injuries to all users
- 67% decrease in pedestrian crashes
- 29% decrease in speeding
+ 49% increase in retail sales
Shared Streets in Commercial Areas
Shared Streets in Commercial Areas
Auckland, New Zealand

+ 54% pedestrian volumes
+ 47% consumer spending
+ 80% felt safer
- 25% decrease vehicle volumes
Grand Streets
Grand Streets
Buenos Aires, Argentina

98% reduction in crashes
63% reduction in bus travel times
5619% reduction CO2 levels
Elevated Structure Removal
Elevated Structure Removal
Seoul, Korea

+ 76% pedestrian activity  
+ 15% bus ridership  
- 45% decrease in vehicle volume  
- 10% decrease in air pollution
Streets - to - Streams
Streets - to - Streams
- 30% decrease in average speed
- 20% reduction in space for vehicles
+ 44 new trees
+ 15,000 L water treated for every mm of rain

Paso Robles, USA
Pedestrian Priority Streets
Pedestrian Priority Streets
Copenhagen, Denmark

+ 600% increase in pedestrian space
+ 35% increase in pedestrian volumes (year 1)
+ 81% increase in outdoor café seating
+ 400% increase in stopping and staying activities

Credit: Gehl Architects
Public Plazas
Public Plazas
New York

+ 11% pedestrian volume
+ 1.5% bus ridership
+ 74% user preference

- 63% reduction in overall crashes
- 40% decrease in particulate matter
Interim Street Transformations

New York
Interim Street Transformations

Buenos Aires, Argentina

Credit: Transportation Secretariat, Buenos Aires City Government
Raised Intersections
Raised Intersections
Motorists

Traffic Calming Measures

Credit: City of Fortaleza
Slip lanes to Protected Intersection
Slip lanes to Protected Intersection
Slip lanes redesigned
Over 20 case studies from around the world!
“IF YOU DON’T MEASURE IT, YOU CAN’T MANAGE IT”

MICHAEL R. BLOOMBERG
HEJ CYKLIST!
Du er nummer 3807
I DAG
og nummer 2766554
I ÅR
der cyklar forbi her
GOD TUR
og tak fordi du cyklar i byen!

PROCESS + METRICS
Measuring and Evaluating the Street

**Physical & Operational Changes**

- Length and width of new and improved *sidewalk*
- Added length of *cycle facilities*
- Added length of *dedicated transit facilities*
- Improved *signal timing* for pedestrian crossing length
- Number of additional *trees* planted
Measuring and Evaluating the Street

**Physical & Operational Changes**
- Length and width of new and improved **sidewalk**
- Added length of **cycle facilities**
- Added length of **dedicated transit facilities**
- Improved **signal timing** for pedestrian crossing length
- Number of additional **trees** planted

**Changes in Use & Activity**
- **Shift in mode share** and user counts
- New or changed non-mobility **activities**
- Change in average **vehicular speeds**
- User **preferences**
- Volume of **water treated**
Measuring and Evaluating the Street

Physical & Operational Changes

- Length and width of new and improved sidewalk
- Added length of cycle facilities
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Changes in Use & Activity

- Shift in mode share and user counts
- New or changed non-mobility activities
- Change in average vehicular speeds
- User preferences
- Volume of water treated

Resulting Impact

- Road safety (KSI/ fatalities and injuries by location)
- Respiratory and chronic disease rates
- Air Quality
- Total CO2 from Transportation
- Water volumes diverted from city system.
## Measuring and Evaluating the Street

### What

<table>
<thead>
<tr>
<th>Measuring Physical and Operational Changes</th>
<th>When to Measure</th>
<th>Why It’s Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>The physical and operational changes resulting from a specific project.</td>
<td>Before: Measure and document existing site conditions. After: Measure immediately after construction completion.</td>
<td>- For benchmarking against prior conditions or control areas. - To build an inventory and database of the city’s infrastructure. - To demonstrate and communicate short-term achievements and progress to stakeholders. - To measure perceived quality of conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measuring Shifts in Use and Function</th>
<th>When to Measure</th>
<th>Why It’s Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>The change in behavior and use of the street; identify how and why the street functions differently, and measure the level of satisfaction with the changes.</td>
<td>Before: Observe and document existing use and function. Note locations on site plans. After: Measure periodically after 1, 3, 6, and 12 months. Measure during different seasons and at varying times of the day and week.</td>
<td>- To evaluate success of intended change in behavior and function. - To measure user satisfaction and user perception. - For benchmarking against prior conditions and other projects. - To build an evidence base for sustainable streets. - To learn lessons and inform future street designs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measuring Resulting Impacts</th>
<th>When to Measure</th>
<th>Why It’s Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>The extent to which the project contributes to larger local and regional goals and principles of - Public Health and Safety - Quality of Life - Environmental Sustainability - Equity</td>
<td>Before: Identify existing metrics or collect new data relevant to project goals and priorities. After: Measure matching metrics periodically after multiple months, and after 1, 2, and 3 years.</td>
<td>- To evaluate long-term impacts and benefits. - To benchmark against larger citywide goals and priorities. - To build an evidence base for sustainable streets. - To measure return on investment and evaluate cost effectiveness. - To communicate and build support for sustainable streets.</td>
</tr>
</tbody>
</table>

### When

- Implementation

### Why

- Transportation
- Public Health and Safety
- Quality of Life
- Environmental Sustainability
- Equity

### How

<table>
<thead>
<tr>
<th>How to Measure</th>
<th>Where to Measure</th>
<th>Example Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before-and-after photos and videos</td>
<td>Project site and immediate surroundings. Maintain consistency with locations measured.</td>
<td>- Length and width of new and improved sidewalks. - Added length of cycle tracks. - Added length of dedicated transit lanes. - Improved signal timing for pedestrian crossing length. - Number of additional trees planted. - Percentage of residents happy with specific facilities or conditions.</td>
</tr>
<tr>
<td>Before-and-after plans and sections</td>
<td>Qualitative surveys of infrastructure quality</td>
<td>- Shift in mode share and user counts. - New or changed non-mobility activities. - Change in average vehicular speeds. - User preferences. - Volume of water treated or infiltrated.</td>
</tr>
<tr>
<td>On-site counts and observations Note locations</td>
<td>Quantitative analysis</td>
<td>- Road safety (KSI/fatalities and injuries by location). - Respiratory and chronic disease rates. - Air quality. - Total CO2 from transportation. - Water volumes diverted from city system. - Property values. - Percentage of population with access to public transportation. - Perceived quality of life.</td>
</tr>
<tr>
<td>Before-and-after photos and videos</td>
<td>Project site, connecting networks, and surrounding neighborhood. Maintain consistency with locations measured.</td>
<td>- Length and width of new and improved sidewalks. - Added length of cycle tracks. - Added length of dedicated transit lanes. - Improved signal timing for pedestrian crossing length. - Number of additional trees planted. - Percentage of residents happy with specific facilities or conditions.</td>
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### Where

- Project site and immediate surroundings.
- Maintain consistency with locations measured.
- Project site, connecting networks, and surrounding neighborhood.
- Maintain consistency with locations measured.
- Project, neighborhood, network, and citywide scale.
- Choose scales relevant to specific metrics.
Capacity Building + Training

Over 120 professionals trained in Addis Ababa
Community Workshops + Engagement
One-day Transformations

Before

50m

After

6m

9m

Before

After
Interim Transformations
ADDIS ABABABA
(3.3 Million People)

70% pedestrians
26% transit riders
Only 4% motorists

Yet the streets are designed for cars!!
One-day Transformations
Interim Street Transformations

Sao Paulo, Brazil

Credit: NACTO GDCI
How safe do you feel on the sidewalks?

BEFORE

AFTER
How safe do you feel on the crosswalks?
57 Gallons of Paint

40 Traffic Cones

75 Planters

40 Beach Chairs

10 Umbrellas

24 SqMt of Grass

1,600 SqMt of Area Transformed

850 SqMt of Additional Pedestrian Space

68% Increase in usable public space
One-day/ Interim Transformations

August 2016

September 2016

November 2016
Metrics + Evaluation

¿Qué se puede mejorar en este espacio?

- Posibilidad de sentarse: 68.8%
- Sombra: 40%
- Juegos: 20%
- Vegetación: 56%
- Iluminación: 34%
- Aseo: 22%

¿Te gustaría tener una plaza en este lugar?

- Sí: 94%
- No: 6%

¿Crees que una plaza permanente haría más seguro este espacio?

- Sí: 86.7%
- No: 13.3%

¿Te gustaría tener cruces peatonales seguros para llegar a esta plaza?

- Sí: 97%
- No: 3%

NACTO
Global Designing Cities Initiative
Provide the tools to reimagine, reinvent, and redesign safer, more sustainable streets!
Official Launch: Habitat III, Quito 2016

Endorsement campaign for the GSDG

For city, regional, and national governments, academic institutions, and organizations

May 16th Michael Bloomberg will announce the first list of leading cities!
Growing the Global Network to continue to share, borrow, steal and adapt best practices from each other (webinars, case studies, resources, policies, templates etc)

Continue the dialogue....
Welcome you to participate

Sign up: Globaldesigningcities.org
ASK FOR IT
DEMAND IT
DESIGN IT
FUND IT
DO IT
DESIGN STREETS THAT PUT PEOPLE FIRST!
SHIFT HOW WE MEASURE SUCCESS

Mobility-Automobile Safety

Mobility-Automobile Safety

Mobility-Automobile Safety

Mobility-Automobile Safety

Mobility-Automobile Safety

Mobility-Automobile Safety

THEN
SHIFT HOW WE MEASURE SUCCESS

Access/Mobility (Multi-modal)  Public Health + Safety  Economic Sustainability

Environmental Quality  Livability/ Quality of Life  Equity

NOW
Change Streets, Change the World

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