Global Cities’ Cycling Initiatives
Emerging & Progressive Practices from the Global South

NACTO-Global Designing Cities Initiative
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@GlobalStreet
www.globaldesigningcities.org

NACTO National Association of City Transportation Officials
GDCI Global Design Cities Initiative
Janette Sadik-Khan
Streets can be catalysts for urban transformation. The Global Street Design Guide presents techniques and strategies being pioneered by the world's foremost urban engineers and designers.

Based on the principle that streets are public spaces for people as well as corridors for movement, this Guide marks a shift away from a functional classification of streets categorized only according to their ability to move traffic. Instead, it embraces an approach based on local context, the needs of multiple users, and larger social, economic, and environmental goals.

The following pages illustrate three different streets that vary in size, function, and context. Based on real streets and conditions common in cities around the world, each category demonstrates possible transformations of existing streets into great urban places.

**Desired Outcomes**

- Health and Safety
- Livability and Quality of Life
- Multi-modal Access
- Environmental Sustainability
- Economic Sustainability
- Equity
Design for ALL street users
What is possible?
Geometries and dimensions
Elements and features

- Pedestrians
- Cyclists
- Transit Riders
- Motorists
- Freight Operators and Service Providers
- People Doing Business

Cyclists Elements

- Cycle Facilities
- Marked Buffers
- Constructed Buffers
- Segmented Concrete Dividers
- Transit Shelters
- Advanced Stop Bars or Cycle Boxes
- Two-Stage Turn Queue Boxes
- Corner Refuge Islands
- Ticket Vending Machines
- Wayfinding, Signages, and Markings
- Cycle Share Stations
- Cycle Bridges and Underpasses
- Surface and pavement Markings
- Parking Meters
- Electric Vehicle Charging Stations
- Dedicated Parking
- Speed Cushions and Tables
- Retractable or Removable Bollards
- Water and Wastes
- Hours of Operation
- Dedicated Spaces
- Time Restrictions
- Storage
How to approach at the network scale
Cyclists
Redefine the Cyclist
Cyclists
Designing for All Ages and Ability
Cyclists
Types: Speed, Variations and Dimensions

- Children and families
- Commuter
- Recreational cyclists

0 km/h 10 km/h 20 km/h > 30 km/h

Interested but concerned
Confident Fearless
Bicycle Networks

Key Network Considerations

- Safe
- Connected
- Comfortable

- Cycle street
- Cycle lane
- Contraflow cycle lane
- Buffered cycle track
- One-way cycle lane
- Two-way cycle track
- Cycle share station
Central Two-Way Streets
Central Two-Way Streets

After

Redesign | 30 m | 40 km/h
Residential Streets

Before

Existing | 18 m | 50 km/h
Local Streets

After
Protected Intersections
Policy and Design Guidance

Capacity Building and Community Engagement

Interventions and Transformations

Metric Collection and Evaluation
Addis Ababa
Ethiopia

Fortaleza
Brazil

Bogotá
Colombia

Emerging Cycling Movement

Progressing Cycling Momentum
Addis Ababa
Ethiopia

Fortaleza
Brazil

Bogotá
Colombia

Emerging Cycling Movement
Progressing Cycling Momentum
Reinforcing Cycling Culture
Addis Ababa
(Ethiopia)
Objective: **60%** of total trips through NMT by **2021**
Addis Ababa | Ethiopia

Objective: 200 kms of cycling facilities by 2028
Addis Ababa | Ethiopia
Development of Policies and Framework

Visions and Goals
Addis Ababa | Ethiopia
Development of Policies and Framework

Action Items and Strategies
Open Streets Days as a Catalyst for Cycling

Addis Ababa | Ethiopia

Date: 4th April 2011
Time: 9.00 AM to 6.00 PM

Organized by: Addis Ababa City Food Safety Management Office
Support by: ITDP, Addis Ababa City Roads Traffic Management Agency
Addis Ababa | Ethiopia
Open Streets Day – Bike Training for Kids
Addis Ababa | Ethiopia
Open Streets Day – Cycle Safety for All Ages
Addis Ababa | Ethiopia
Development of Policies and Framework

Phasing
2020: 10km
2021: 20km
2022: 30km

2028: 200km
Difficult to fit in a successful bike lane on many of Addis Ababa’s streets, since all-round improvements to sidewalks, road surface, and parking are needed.

Implementation of a cycle network requires complete street transformations on many roads or sections thereof.
Addis Ababa | Ethiopia
Identified Street Typologies

1. THROUGH ROAD
   • Separation of traffic modes
   • Reduce conflicts
   • Safe provisions at intersections

2. CONNECTOR ROAD
   • Some separation of traffic modes
   • Traffic calming at intersections
   • Lower speed limits

3. LOCAL STREET
   • Mixing of traffic modes
   • Traffic calming
   • On-street parking
   • Very low speed limits
Addis Ababa | Ethiopia
Cycle corridors on Through Roads (~30-40m)

EXISTING:

PROPOSED:
Addis Ababa | Ethiopia
Cycle corridors on Connector Streets (~18-30m)

EXISTING:

PROPOSED:
Connector Streets | Vision | After
Addis Ababa | Ethiopia
Cycle corridors on Local Streets (<18m)

EXISTING:

PROPOSED:
Addis Ababa | Ethiopia
Additional Considerations

- Construction quality and maintenance
- Curbside management and enforcement
- Adequate pedestrian facilities to ensure safety for all
Vision: By 2028 5% mode share by cycling
Fortaleza
(Brazil)
Objective: 400 km of cycling infrastructure by 2020
Comprehensive approach

Fortaleza | Brazil

INSTITUTIONAL AND POLITICAL WILL

INFRASTRUCTURE

BIKE SHARING

EDUCATION, COMMUNICATION, AND DATA
Fortaleza | Brazil
Bike infrastructure

Municipality of Fortaleza

INFRAESTRUTURA CICLOVIÁRIA
Municipality of Fortaleza

2013
68 KM
Increase of 222% in 4 years
Fortaleza | Brazil
Bike infrastructure
Fortaleza | Brazil
Bike infrastructure
Fortaleza | Brazil
Bike infrastructure

NARROWING TRAFFIC LANES HAS THE POTENTIAL TO REDUCE UP TO 30% ROAD CRASHES WITH VICTIMS
**Safety Perception**

Comparison - Three Scenarios

- **Unprotected Cycle Lane**
- **Buffered Cycle Lane**
- **Buffered Cycle Lane + Flex Posts**
Intercept Surveys with Cyclists
How safe did you feel riding within the last block?

Source: Fortaleza City Hall + BIGRS + NACTO
Buffered Cycle Lane

How safe did you feel riding within the last block?

Source: Fortaleza City Hall + BIGRS + NACTO
Buffered Cycle Lane + Flex Posts

How safe did you feel riding within the last block?

Av. Luiz Vieira

Source: Fortaleza City Hall + BIGRS + NACTO
Fortaleza | Brazil
Bike sharing | Bicicletar

Dec 2014 – Apr 2015
40 stations

Municipality of Fortaleza
Bicicletar

O SISTEMA MAIS USADO DO BRASIL

Municipality of Fortaleza
Integrated bike system
Fortaleza | Brazil
Bike sharing | Bicicleta integrada

14 hours

01 Integrated public transit ticket
02 Register
03 Pick a bike
04 Drop the bike

Municipality of Fortaleza
In 2017, more than 6,000 trips
Contagem dos Ciclistas
AV. DOMINGOS OLÍMPIO

CONTAGEM DOS CICLISTAS

ANTES DA CICLOFAIXA
08 de março de 2016
3,4 CICLISTAS POR MINUTO
4,3% ERAM CICLISTAS MULHERES

AUMENTO DE 55%
DO NÚMERO DE CICLISTAS
APÓS IMPLANTAÇÃO DA CICLOFAIXA

DEPOIS DA CICLOFAIXA
22 de setembro de 2016
5,2 CICLISTAS POR MINUTO
8,6% ERAM CICLISTAS MULHERES

AUMENTO DE 208%
NO NÚMERO TOTAL DE MULHERES

Contagem realizada no cruzamento da Av. Domingos Olímpio com Av. da Universidade nos horários de 8h às 8h e de 17h às 19h.

Municipality of Fortaleza
From 2011 to 2016

39.5% reduction of crashes involving cyclists
Vision:
The most cyclable city in Brazil
Objective: 10% of total trips by bicycle by 2020
Bogotá | Colombia

Evolution of the cycling network

448 km
of cycling infrastructure
Evolution of the cycling network

Bogotá | Colombia

~600 km of cycling infrastructure

581 km
+ 49 km en Implementación
532 km de CicloRutas actualmente

+ 84 km

448 km de CicloRutas (Línea Base)
Evolution of the cycling network

Bogotá | Colombia

~900 km of cycling infrastructure

448 km de CicloRutas (Línea Base)
532 km de CicloRutas actualmente
+ 49 km en Implementación
+ 84 km
+ 130 km
772 km
902 km

+ 191 km Financiados
Bogotá | Colombia
Evolution of the cycling network
Bogotá | Colombia
Ciclovía

Ciclovía
up to 2 million people
125 km of open streets

Mobility Department of Bogotá
Bike-to-school

4,000 children
90 schools
70+ routes
Bogotá | Colombia

Education and awareness | “Juego de rol”

Role playing

Mobility Department of Bogotá
Bogotá | Colombia
Education

Bike nursery
Bogotá | Colombia

Events

Bike week
26,000 attendees
59 events
69 organizations involved
Bogotá | Colombia
Increase of number of trips by bike

800,000 trips a day
6% of total ridership

Mobility Department of Bogotá
Bogotá | Colombia
Increase of number of trips by bike

In 2019
900,000
Trips per day by bike

Mobility Department of Bogotá
Increase of number of trips by bike

Long term vision:

Bogotá | Colombia

Mobility Department of Bogotá

Capital Mundial de la Bici
Addis Ababa Ethiopia
Fortaleza Brazil
Bogotá Colombia

Emerging Cycling Movement
Progressing Cycling Momentum
Reinforcing Cycling Culture
THANK YOU!

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