



Designing Safe and Sustainable Streets

Featuring road safety-focused projects by the
National Association of City Transportation Officials'
Global Designing Cities Initiative (NACTO-GDCI)

EDITION 1, SPRING 2021

National Association of City Transportation Officials (NACTO)



The National Association of City Transportation Officials (NACTO) is an association of 81 major North American cities and transit agencies formed to exchange transportation ideas, insights, and practices and cooperatively approach national transportation issues. NACTO's mission is to build cities as places for people, with safe, sustainable, accessible, and equitable transportation choices that support a strong economy and vibrant quality

of life. We do this by: communicating a bold vision for 21st-century urban mobility and building strong leadership capacity among city transportation officials; empowering a coalition of cities to lead the way on transportation policy at the local, state, and national levels; and raising the state of the practice for street design that prioritizes people walking, biking, and taking transit.

Global Designing Cities Initiative (NACTO-GDCI)



The Global Designing Cities Initiative (GDCI) is a program of NACTO. Our mission is to inspire a shift toward safe, sustainable, and healthy cities by transforming streets around the world. We are a team of designers, planners, and urban strategists committed to working in support of city practitioners

to get projects on the ground. We focus on empowering local officials and communities to become changemakers, equipping them with knowledge, tools, and tactics to improve urban mobility and fundamentally change the role of streets in our cities.

Our mission is
to inspire a shift
toward safe,
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by transforming
streets around
the world

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Special thanks to our funders for making this work possible



CONTENT OVERVIEW

Where We Work



Highlighted text indicates city work that is elaborated on further in this edition of this document

<div><div></div><div>BIGRS Program</div><div>Trainings and Technical Assistance</div><div>2015-2019</div></div>
Addis Ababa, Ethiopia
Bogotá, Colombia
Fortaleza, Brazil
Mumbai, India
São Paulo, Brazil

<div><div></div><div>BIGRS Program</div><div>Trainings and Technical Assistance</div><div>2020-2025</div></div>
Bogotá, Colombia
Bangalore, India
Cali, Colombia
Delhi, India
Guayaquil, Ecuador

<div><div></div><div></div><div></div></div>
Maharashtra, India
Mumbai, India
Quito, Ecuador
Recife, Brazil
Salvador, Brazil

<div><div></div><div>National-Level Collaborations</div><div>2020-2025</div></div>
Brazil
Colombia
Ecuador
India

<div><div></div><div>Collaboration with Bloomberg Associates</div><div>Technical Assistance</div><div>2018-present</div></div>
Bogotá, Colombia
Milan, Italy

<div><div></div><div>Early Childhood Development Program</div><div>Technical Assistance</div><div>2019-present</div></div>
Istanbul, Turkey

<div><div></div><div>Streets for Kids Program</div><div>Trainings</div><div>2019-present</div></div>
Cape Town, South Africa
Kazan, Russia
Lima, Peru
Manila, Philippines
State of Colima, Mexico
Tbilisi, Georgia
Tulsa, USA
Udaipur, India

<div><div></div><div>Streets for Kids Program</div><div>Technical Assistance</div><div>2019-present</div></div>
Fortaleza, Brazil
Kigali, Rwanda
Santiago, Chile
Tirana, Albania

HOW WE WORK

Change streets, change the world

At NACTO-GDCI we promote a shift towards safety and sustainability on streets around the world, working closely with partner organizations in order to:

Inspire leaders by sharing global best practices and evidence-based strategies to show them what's possible on their streets.

Inform practitioners by offering technical guidance, helping them to adapt and integrate global best practices into local contexts and everyday city policies, processes, and practices.

Empower communities by ensuring our resources are visual and accessible, inviting communities to demand safer, healthier, and more sustainable streets in their neighborhoods.

WE STRIVE TO ACCOMPLISH THIS BY INVESTING IN THE FOLLOWING PILLARS OF WORK:



- 1 Share:**
Build capacity amongst diverse sets of stakeholders to translate global best practices to their local context.



- 2 Implement:**
Support the transformation of streets—through design reviews, community engagement, and on-site implementation—to show what's possible when designs put people first.



- 3 Measure:**
Support data collection, evaluation, and communication to demonstrate the impact of street transformation projects.



- 4 Scale:**
Elevate the impact of projects locally, nationally, and globally to ensure permanence of pop-up and/or interim projects, creation and maintenance of city-wide programs, and long-lasting policy change.



- 5 Embed:**
Identify where best practices from the Global Street Design Guide (GSDG) can be incorporated into everyday city policies, processes, design guides, and practices.



ABOUT THE *GLOBAL STREET DESIGN GUIDE*

Design guidance that puts people first

In 2016, Bloomberg Philanthropies, funded the production of the *Global Street Design Guide* (GSDG), with a contributing network of experts from 42 countries. Since launching the GSDGs, our team has presented the guide's people-focused street designs in 36 cities around the world—and in the process, received over 100 endorsements for the GSDG from cities, regions, countries, and organizations that are now committed to street designs that put place and people first. Using that momentum, our team has put those best

practices to work in many cities around the world, including São Paulo, Fortaleza, Addis Ababa, Mumbai, and Bogotá through the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS). To download of the GSDG for free, visit [www.https://globaldesigningcities.org/publication/global-street-design-guide](https://globaldesigningcities.org/publication/global-street-design-guide).

100+
endorsements of
the GSDG worldwide

by cities, regions, countries, and organizations

THE *GLOBAL STREET DESIGN GUIDE* IN NUMBERS

1 *Global Street Design Guide* (GSDG) published in 2016

100+ endorsements of the GSDG

~ 30,000 downloads of the GSDG

5 available languages for the GSDG: English, Mandarin, Portuguese, Spanish, and Italian

~ 2 billion people have access to the GSDG in their local language

3 more translations are underway in Japanese, Russian, and Turkish

ABOUT THE STREETS FOR KIDS PROGRAM

When you design streets for kids, you design streets for everyone

The Streets for Kids program aims to inspire leaders, inform practitioners, and empower communities to make cities around the world better for children and their caregivers. This program looks at cities through the lens of infants, children, and their caregivers, and it applies

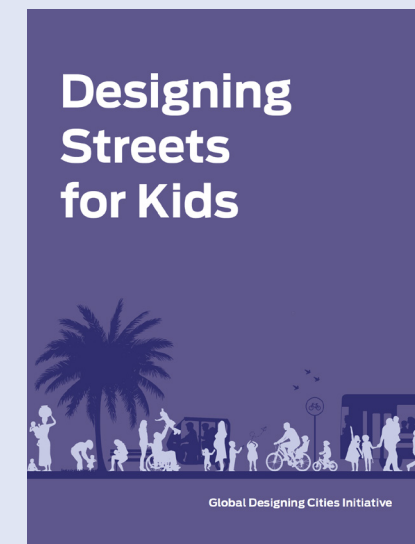
child-focused strategies to streets through transformation projects, workshops, and trainings. Four cities have been awarded technical assistance by NACTO-GDCI staff for street redesigns, and an additional eight cities have been awarded trainings on best practices for child-focused street designs.



The Streets for Kids program is supported by the following funders

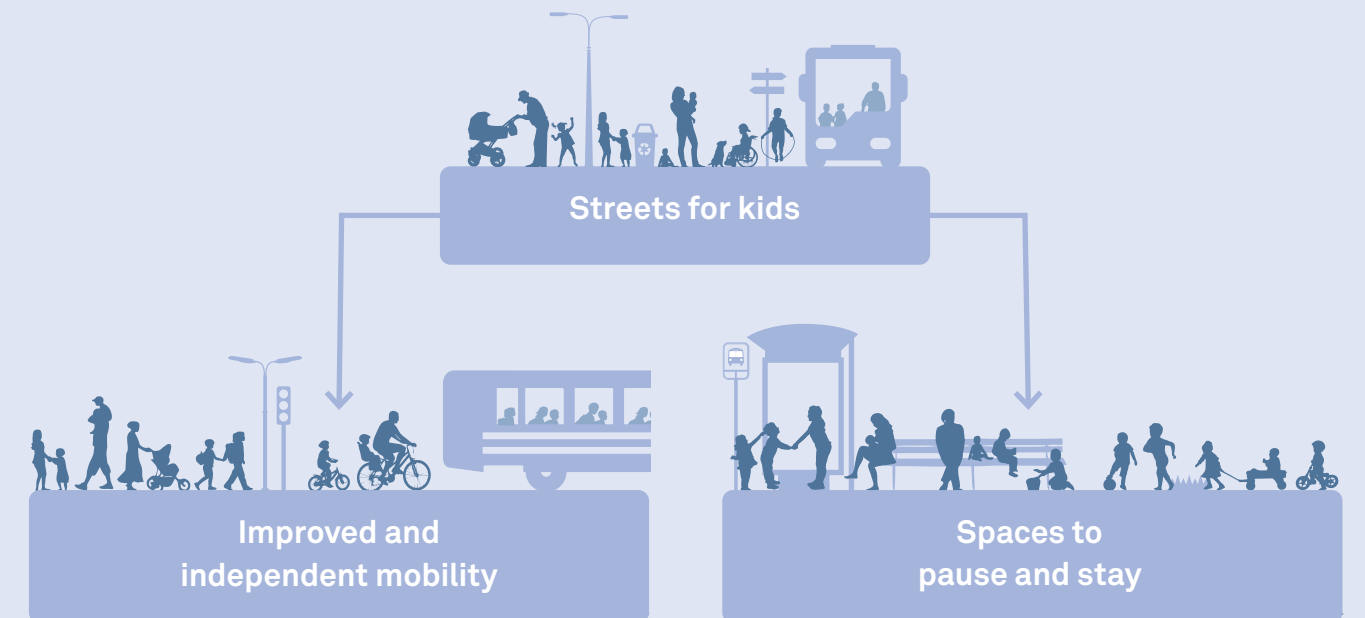


ABOUT *DESIGNING STREETS FOR KIDS*



Building on the success of the *Global Street Design Guide*, the guidance in *Designing Streets for Kids* captures international best practices, strategies, programs, and policies that cities around the world have used to design spaces that enable children of all ages and abilities to utilize cities' most abundant asset—streets. The guide includes design recommendations and case studies that highlight streets **that are safe, enjoyable, and inspirational for children and caregivers.** *Designing Streets for Kids* is available both as a hard copy and a free download at www.globaldesigningcities.org/designing-streets-for-kids.

FOCUS OF THE STREETS FOR KIDS PROGRAM



Children, caregivers, and others should have efficient and sustainable choices to move around their cities more reliably and predictably, with less waiting time.

Children and young adults benefit from independent mobility, with autonomy to walk, cycle, and take transit, and they should feel safe using streets. Caregivers should be able to be independent when moving with young children.

Acknowledging streets as public spaces can ensure they are not only places to move through, but spaces to pause and spend time. For children and caregivers, streets can provide opportunities for outdoor play, inspiration, personal development, and interpersonal connections.

BIGRS Program

Trainings and Technical Assistance

2015-2019

~ 17,000

people exposed to the content
of the *Global Street Design Guide*

2,000+

city staff trained on GSDG
best practices during

63

trainings and workshops in

31

cities, within

36

countries

78

webinars and presentations
have influenced engineers,
planners, designers, city
officials, journalists, and
community leaders around
the world

~ 50,000

m² of space reclaimed
temporarily and

~ 125,000

m² of space reclaimed
permanently through

76

road safety-focused street
transformations

64

intersection design reviews
conducted

1,647

rounds of data collected
on-site, on GDCI street
transformations

Addis Ababa, Ethiopia



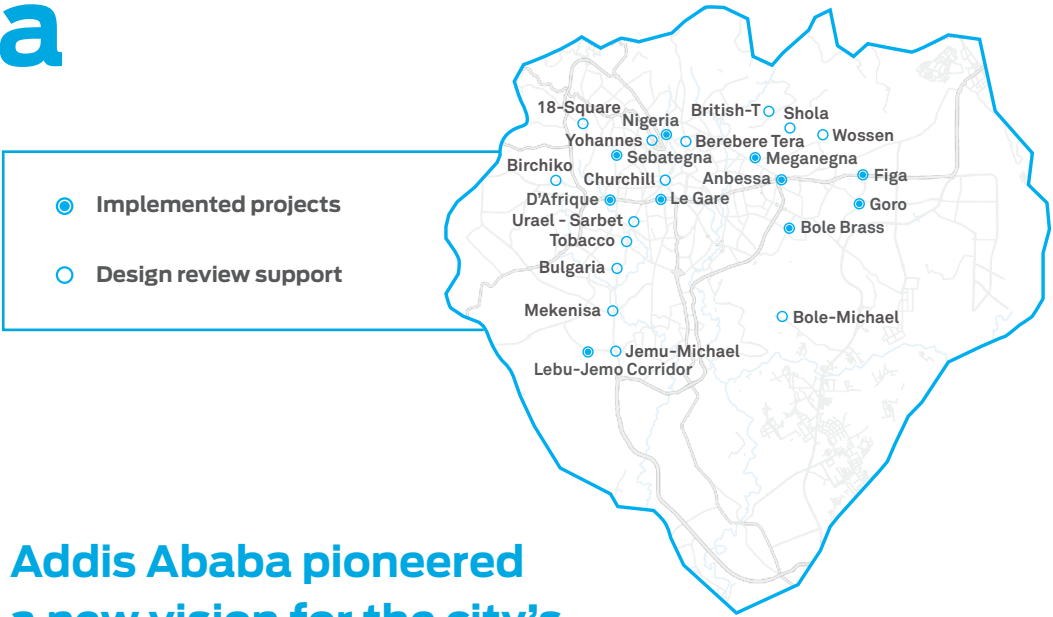
SUPPORT
Bloomberg Philanthropies
Initiative for Global Road Safety

TIMEFRAME
2017-2020


ROAD FATALITIES (PER 100,000 INHABITANTS)
2014: 13.5
2019: 13.6
Variation 2014-2019: 0.7%


OVERVIEW
NACTO-GDCI supported the city to launch the Safe Intersections Program in 2017, to focus infrastructure efforts on crash hotspots across the city. The city is now using the program to plan several intersection redesigns, most of which are being constructed permanently through review and feedback from NACTO-GDCI.


Pedestrians are the victim of 80% of the fatal crashes on the streets of Addis Ababa



Addis Ababa pioneered a new vision for the city's streets through the Safe Intersection Program, which included projects such as Le Gare, Sebategna, and the Lebu-Jemu cycling corridor

 **Facilitating interagency collaboration** among city road agencies, academic institutions, traffic police, and other stakeholders to shift the street design practice in Addis Ababa

 **Supporting standardized data collection** practices, and institutionalizing them

 **Exposing over 750 people to GSDG learnings** through trainings, hands-on workshops and presentations

Reviewing policies and designs, including the city-wide implementation plans, first safe cycling corridors, and designs for new dedicated bus lanes

PROJECTS AND PROGRAMS

LAUNCHING THE SAFE INTERSECTIONS PROGRAM (SIP)

The success of the first interim project led to the city investing in a city-wide Safe Intersections Program, launched by the then deputy mayor. This initiative is embedded within the city's Road Safety Implementation Plan and is committed to redesigning 10 intersections each year across the various sub-cities of Addis Ababa.

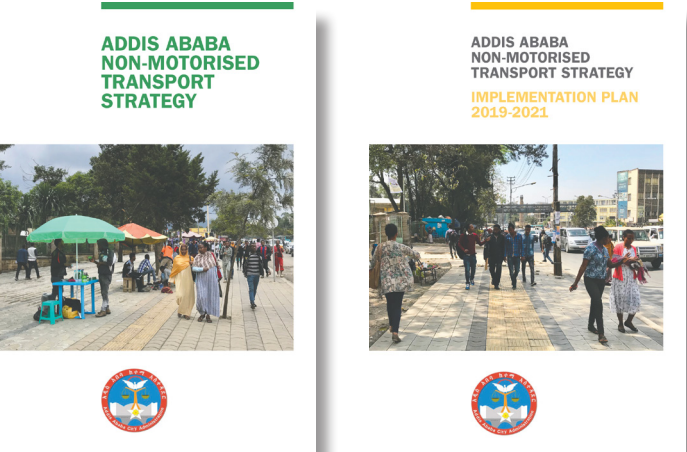
8,000+ m² of pedestrian space reclaimed temporarily

7,400+ m² of pedestrian space reclaimed permanently

30+ street transformation projects supported

SUPPORTING LASTING POLICY CHANGE

Right from the start, the city agencies have emphasized policy-level changes. NACTO-GDCI has supported the refinement and development of several documents such as the master plan, the road safety strategy and action plans, and the non-motorized transit strategy and implementation plans.



WORKING WITH ENFORCEMENT OFFICIALS

Breaking the silos, NACTO-GDCI worked with the traffic police in Addis Ababa through several initiatives across the years. These efforts included capacity-building sessions, informational briefings, and requested participation in street transformation projects like the Lebu-Jemo cycling corridor.



Le Gare intersection

Le Gare intersection, which began as a pop-up transformation in 2016 as part of a capacity-building workshop, soon grew into a six-month interim project, and was made permanent by 2017 after data reflected the design’s success. This also resulted in the city committing investments to scale up with the creation of the Safe Intersections Program (SIP).

PROJECT PARTNERS

- Traffic Programs Management Office (TPMO)
- Addis Ababa City Roads Authority (AACRA)
- Traffic Management Agency (TMA)
- Traffic police
- Ethiopian Institute of Architecture and Building Construction (EIABC)
- Addis Ababa University (AAU)

TRANSFORMATION TYPE AND DURATION

Pop-up (March 2016) — One day
Interim (November 2016) — Six months
Capital (October 2017) — Permanent

DESIGN STRATEGIES

- The number of existing travel lanes was maintained, but were aligned so that under-utilized space could be reallocated. This helped slow vehicular speeds, encourage lane discipline, and promote safe driving practices
- Pedestrian crossings with stop lines were designed to accommodate pedestrian desire lines
- Added curb extensions shortened crossing distances reduced pedestrian exposure to risk
- Reclaimed road bed space adorned with art provided designated areas for vendors
- The right-turn lane (from Le Gare to Behrawi) was tightened to slow traffic turning speeds and protect pedestrians



The curb radii at Le Gare intersection were reduced from 16 m to less than 7 m to slow vehicle speeds while still allowing buses and other large vehicles the space they need to turn. This design decision reduced average turning speeds from an average of 30 km/hr before the intervention, to an average of 18.5 km/hr after the intervention. When vehicular speeds are below 20 km/h, a pedestrian’s risk of death is below 5%.

Mar.
2016

Nov.
2016

Oct.
2017



BEFORE



POP-UP



INTERIM



CAPITAL



LE GARE INTERSECTION



Over **100 people** from five city agencies and three academic institutions were involved in transforming the intersection



using **750 liters of paint**



and **120 planters and bollards**, to reclaim over



2,000 m² of underutilized space for pedestrians.



After the street transformation, there was a **33% reduction in vehicular speeds** on weekends.

Lebu-Jemo cycling corridor

The 3-km-long Lebu-Jemo cycling corridor was the inaugural first step in Addis Ababa’s three-year commitment to a 100-km bicycle network. This project is part of a citywide goal to prioritize safer street design.

PROJECT PARTNERS

- Traffic Management Agency (TMA)
- Addis Ababa Road and Transport Bureau (AARTB)

PROJECT GOAL

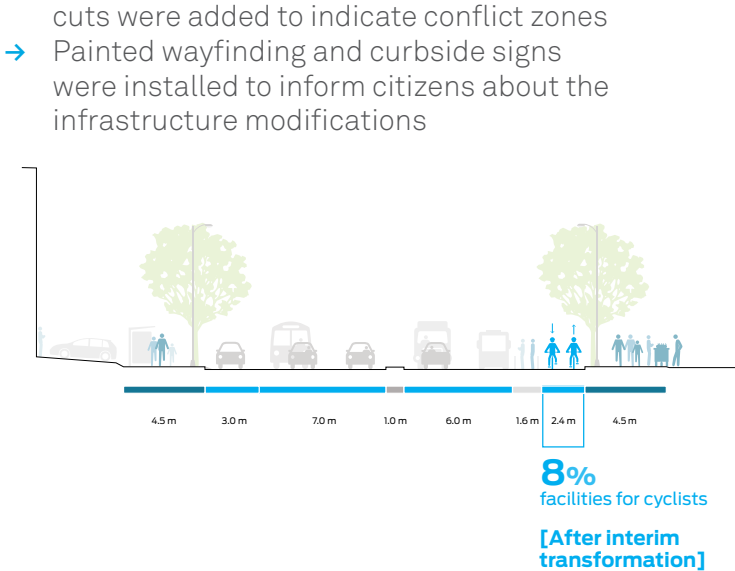
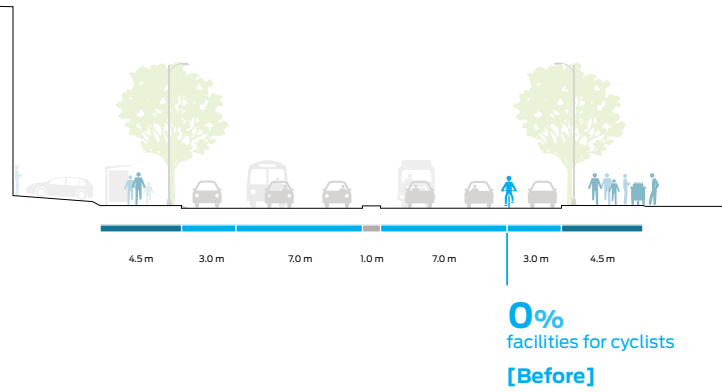
The Lebu-Jemo cycle corridor was designed as a demonstration project to kickstart investments in safer and more sustainable transportation in Addis Ababa. The location of the corridor builds on the learning from past attempts in the city and connects many trip origins and destinations. This site selection process has incentivized future investments in the cycling network, which will promote an even stronger cycling culture in Addis Ababa, and enable this cycle lane to have an even larger, safer impact on the population of cyclists.

TRANSFORMATION TYPE AND DURATION

Interim (Spring 2020) — Undetermined

DESIGN STRATEGIES

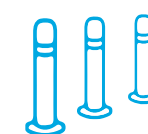
- Added curb-side bidirectional cycle facility on one side, limiting on-street parking to the other side
- Thermoplastic lane markings were complemented with green markings at all intersections, and curb



LEBU-JEMO CYCLING CORRIDOR



Over **100 people** were involved in transforming the corridor,



using **1,400 delineators** to protect cyclists from vehicular traffic, to reclaim



10,000 m² of underutilized space for cyclists.



After the transformation, survey results conveyed that **96% of cyclists felt some degree of safety on the new infrastructure,** and **95% of respondents want the cycling corridor to become permanent.**

Bogotá, Colombia



SUPPORT
Bloomberg Philanthropies
Initiative for Global Road
Safety

TIMEFRAME
2016-present

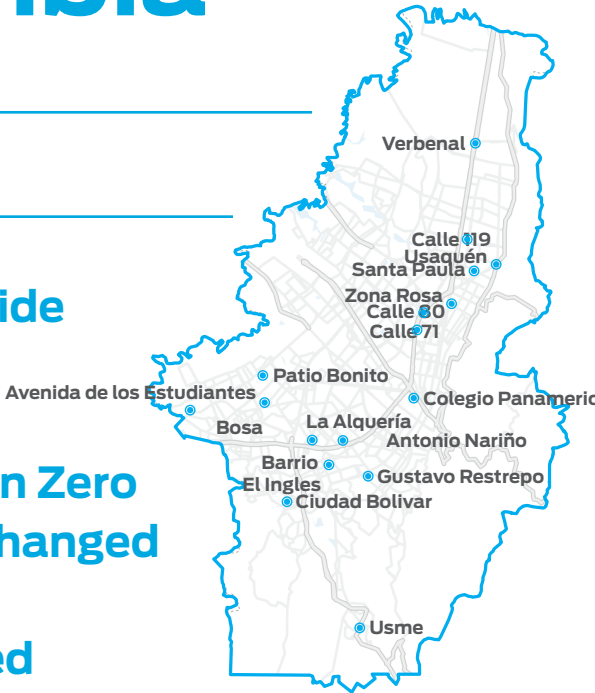
**ROAD FATALITIES (PER
100,000 INHABITANTS)**
2014: 7.8
2019: 6.2
Variation (2014-2019): -20.5%

**-20.5%
reduction in
road fatalities**

OVERVIEW
In 2016, NACTO-GDCI started a collaboration with the City of Bogotá to improve road safety through a comprehensive strategy. This included supporting on the production of long-term policy documents, capacity-building training sessions, design reviews, street transformations, and innovative metric collection strategies. These components resulted in a series of programs and projects that focus on people first, such as the Vision Zero Zones and the Plazoletas Bogotá program.

Implemented projects

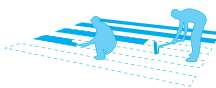
In Bogotá, city-wide programs like Plazoletas Bogotá and Vision Zero Zones radically changed neighborhoods, creating protected spaces for people to safely walk, play, shop, and socialize



Hosting **capacity-building workshops** to train over 500 people and expose over 2,500 people to GSDG best practices.



Supporting the **Bogotá Street Design Guide, Pedestrian Strategic Plan, the street design regulations of the City's master plan, and the Road Safety Plan** in Bogotá



Transforming over 27,000 m² of Bogotá's streets temporarily, and 93,700 m² permanently—through **33 pop-up, 30 interim and 13 capital construction projects** at crash hotspots

PROJECTS AND PROGRAMS

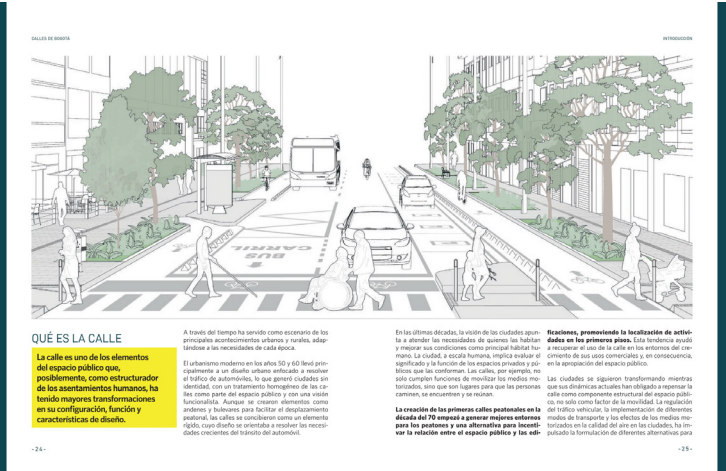
VISION ZERO ZONES
The objective of this program is to design infrastructure that prioritizes vulnerable users by allowing only safe speeds up to 30 km/h around schools. These zones are designed to benefit students, teachers, local communities, and commuters by protecting pedestrians, cyclists, and motorcyclists.



PLAZOLETA PROGRAM
The Plazoleta Program aims to convert underutilized spaces into new plazas and public spaces. The main objective is to enhance the pedestrian environment in Bogotá by improving pedestrian mobility, road safety, and public space quality. The program follows a three-step transformation process starting with a pop-up event that allows practitioners to first test the design of the new space. Counts and surveys are conducted to help the City better understand the challenges and opportunities for project permanent.



BOGOTÁ STREET DESIGN GUIDE
With this long-term policy document Bogotá created a new set of parameters to reimagine streets that prioritize vulnerable users, and to inspire safer ways to design streets.



El Inglés Vision Zero Zone

The El Inglés Vision Zero Zone was launched in 2019 after the mobility secretariat of Bogotá counted 10 road traffic deaths and 123 injuries in the neighborhood over the previous eight years. At this roundabout intersection, vehicular speeds dropped from 60 km/h to 32 km/h after the design transformation, and it now has 2,250 m² of reclaimed space for people to safely move, stay, and play.

PROJECT PARTNERS

→ Mobility secretariat of Bogotá

PROJECT GOAL

Prior to the transformation of Plazoleta Barrio El Inglés, this roundabout intersection experienced high volumes of vehicles at exceptionally unsafe speeds. The project's goal was primarily to reduce deaths and serious injuries by designing for speed reduction and protecting vulnerable road users with designated pedestrian infrastructure.

TRANSFORMATION TYPE AND DURATION

Pop-up (July 2019) — Three days

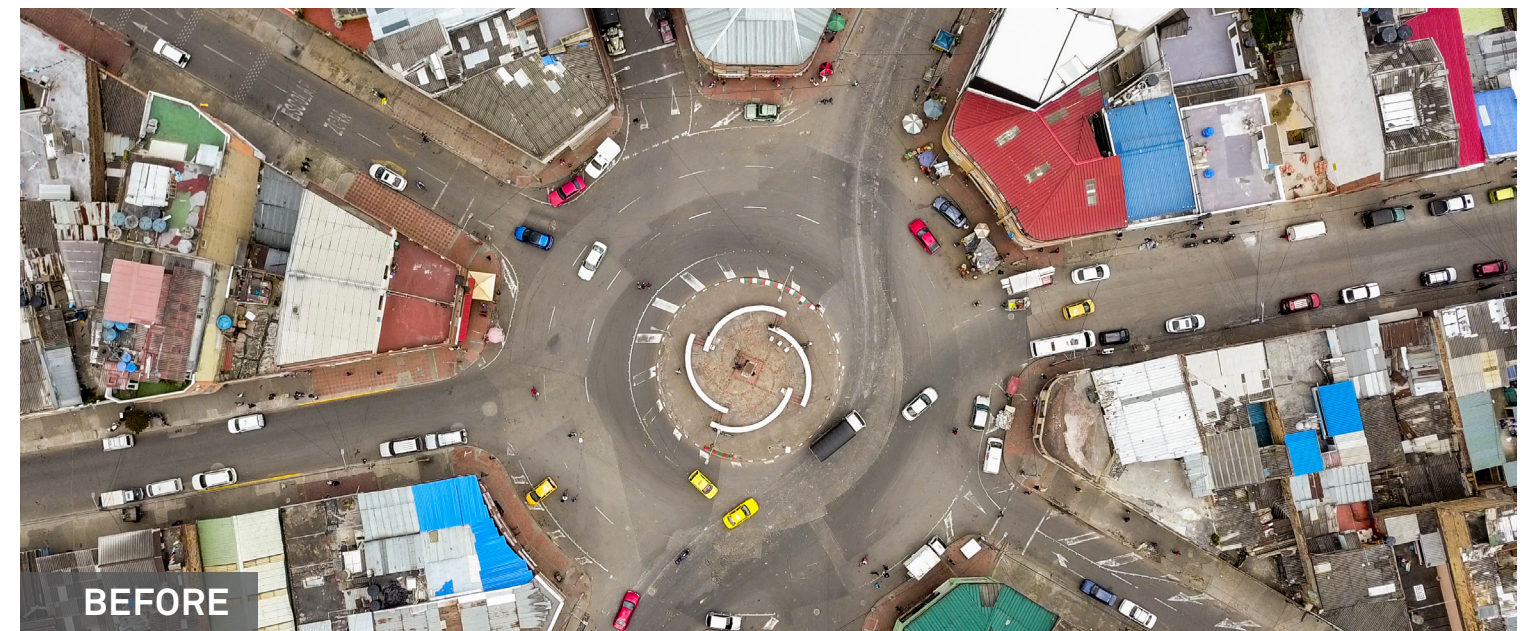
Interim (October 2020) — Undetermined

DESIGN STRATEGIES

- Tightened turning radii to slow vehicular speeds
- Added protected space for pedestrians and cyclists
- Added 32 pedestrian crossings at 19 intersections
- Shortened crossing distances

PROJECT EVALUATION

The mobility secretariat of Bogotá is continuing to collect data on the interim design to plan for the capital construction of this project.

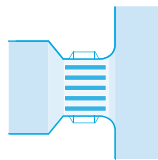




EL INGLÉS VISION ZERO ZONE



This transformation resulted in a **46% reduction in maximum speed**, from 60 km/h (before) to 32 km/h (after),



a **reduction in maximum crossing distances** from 32 m to 7 m,



and a **52% reduction in collisions between pedestrians and vehicles** at peak hours during the pop-up.



Of the 721 people surveyed during the pop-up, **88% think the project improved road safety**

Plazoleta Antonio José de Sucre

Plazoleta Antonio José de Sucre, located in the Usme district turned over 1,300 m² of space, formerly used for parking, into a public plaza. The area was cleared of parked cars and reconnected to the commercial strip on the other side of the street through shorter, more visible pedestrian crossings with reduced speeds along the corridor. Clearing the space also recovered the view of the mountains—an iconic feature of Bogotá—for children and their caregivers, commuters, and the community at large.

PROJECT PARTNERS

- Secretaría Distrital de Movilidad
- Alcaldía Local de Usme

PROJECT GOAL

Protect vulnerable users by reducing crossing distances and increasing the protected space to safely walk, bike, and ride public transit.

TRANSFORMATION TYPE AND DURATION

Pop-up (March 2019) — One day
Interim (January 2020) — Undetermined

DESIGN STRATEGIES

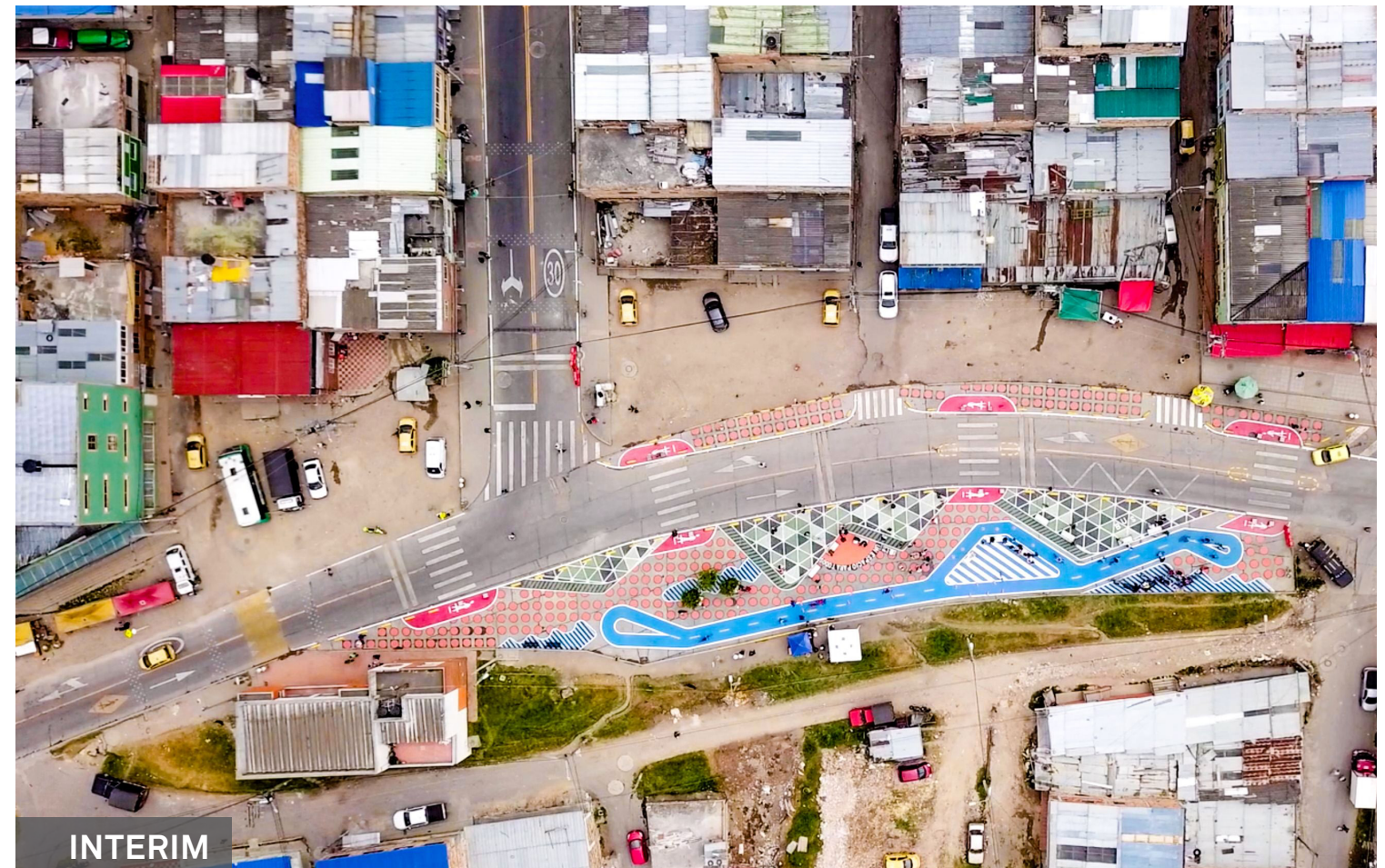
- Reducing travel lane width
- Shortening crossing distances and distances between safe crossings
- Slowing speeds by adding vertical control elements

PROJECT EVALUATION

The interim transformation of this project started in January 2020. The mobility aecretariat of Bogotá will continue collecting data to plan for capital construction.



BEFORE



INTERIM

**PLAZOLETA ANTONIO JOSÉ DE SUCRE**

To better understand how the community perceived the pop-up, **140 people were surveyed**, responding that



81% perceived speed as a risk in the area before the transformation.



Since the transformation, **75% feel safer** from motorized traffic, and



73% immediately preferred the new street design

Fortaleza, Brazil



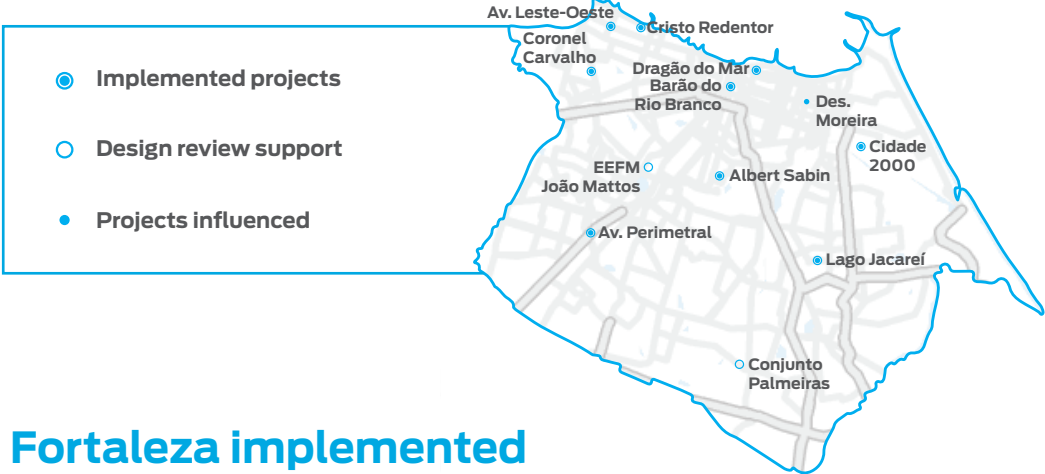
SUPPORT
Bloomberg Philanthropies
Initiative for Global Road
Safety

TIMEFRAME
2017-2019

**ROAD FATALITIES (PER
100,000 INHABITANTS)**
2014: 14.7
2019: 7.4
Variation (2014-2019): -50%

-50%
**reduction in
road fatalities**

OVERVIEW
NACTO-GDCI partnered
with the city to implement
14 street transformation
projects, repurposing nearly
15,000 m² of underutilized
roadspace into safe facilities
for vulnerable street users. Our
team trained over 700 local
practitioners—including city
staff, consultants, academics,
advocacy groups, and
journalists—to inspire a shift
towards a safer, healthier, and
more sustainable approach to
urban mobility.



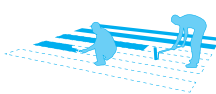
Fortaleza implemented multiple low-cost, high-impact interventions and became one of the few cities in the world to reduce its road traffic fatalities by half— saving over 575 lives and meeting the goal set forth by the UN’s Decade of Action for Road Safety



Updating local street design practices to include road safety strategies through GSDG workshops and design reviews



Inspiring the creation of a city-wide program to reduce traffic fatalities around public schools through better street design



Accelerating street design innovation by **introducing community-centered interim interventions** to build support for road safety projects. This work included influencing the local bike team to **adopt safer cycleway design standards** through workshops, design reviews, and demonstration projects

PROJECTS AND PROGRAMS

STREET TRANSFORMATIONS
Quick and inexpensive demonstration projects helped accelerate and scale up street transformation initiatives. These had a high impact on reducing speeds and promoting safety for vulnerable road users. Paired with data-driven impact evaluation, projects like Cidade da Gente (City of People) and Caminhos da Escola (Paths to School) helped foster support for road safety-focused projects.



DESIGN-ORIENTED SPEED MANAGEMENT
Our team supported the city to invest in a proactive, design-oriented approach to speed management. In conjunction with speed limit reductions and strategic enforcement, Fortaleza applied proven design techniques to promote safer speeds in city streets, from neighborhood-scale low-speed zones to the redesign of high-speed urban arterials.



SAFE CYCLING INFRASTRUCTURE
Fortaleza adopted an evidence-based approach to level up its cycling infrastructure design standards. International best practices from the GSDG, paired with a thorough evaluation of local street transformations, inspired the city to design more protected facilities for cyclists of all ages and abilities.



Albert Sabin Low-Speed Zone

In late 2017, the NACTO-GDCI team partnered with Fortaleza to improve safety on the streets surrounding the Albert Sabin Children's Hospital. The area was equipped with safe pedestrian infrastructure that reduced the number of people walking on the road bed by 86% and significantly improved accessibility to the hospital.

PROJECT PARTNERS

- City of Fortaleza (SCSP/PAITT, AMC, URBFOR)
- Albert Sabin Children's Hospital
- World Resources Institute (WRI)
- Vital Strategies

PROJECT GOAL

Reduce vehicle speeds and improve safety and accessibility to Albert Sabin Children's Hospital and its surroundings. Interventions also aimed to rebalance the allocation of public space to serve hospital patients and workers better.

TRANSFORMATION TYPE AND DURATION

Capital construction (October, 2017) — Permanent

DESIGN STRATEGIES

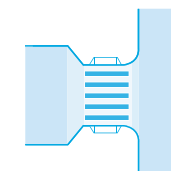
- Traffic-calming strategies such as lane narrowing, curb extensions, raised crossings, gateway treatment, and speed limit reduction
- Introduction of benches in added waiting areas





ALBERT SABIN LOW-SPEED ZONE

On Tertuliano Sales St., the city **reclaimed over 1,000 m² of underutilized space** in front of a hospital to create safe and accessible pedestrian infrastructure that led to a **67% reduction in crossing distances**



87% fewer vehicles speeding,



and **86% fewer pedestrians walking on the road bed.**



As a result, **all children observed** after the street transformation were using safe pedestrian facilities.

Barão do Rio Branco Street

Pedestrians outnumber motor vehicles by four to one in Barão do Rio Branco St., a busy commercial street in downtown Fortaleza. However, before the city’s intervention, cars had two-thirds of the available public space to move and park. To fix this and improve pedestrian safety and walkability, NACTO-GDCI partnered with local officials to radically redistribute the street space among different users.

PROJECT PARTNERS

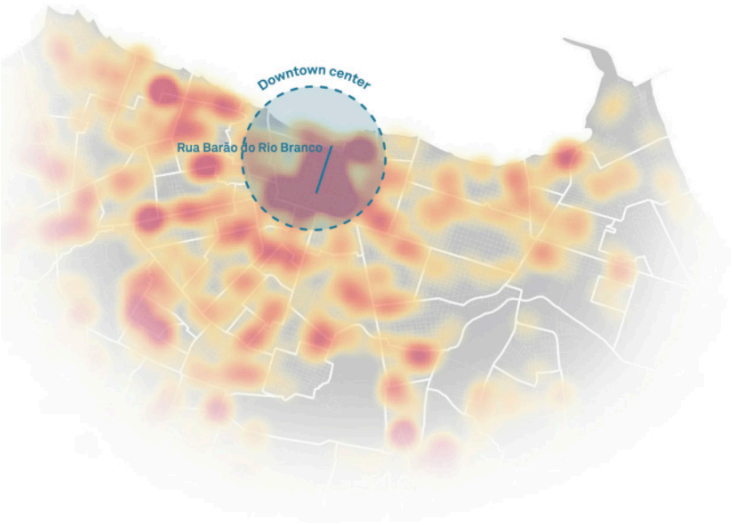
- City of Fortaleza (SCSP/PAITT, AMC, URBFOR, Central Borough)
- Local businesses
- Vital Strategies

PROJECT GOAL

To reduce crashes involving pedestrians in downtown Fortaleza and improve walkability in the area. Chances of pedestrians being struck by vehicles in this area were 70% higher than in the rest of the city.

TRANSFORMATION TYPE AND DURATION

Interim (December, 2019) — Undetermined



DESIGN STRATEGIES

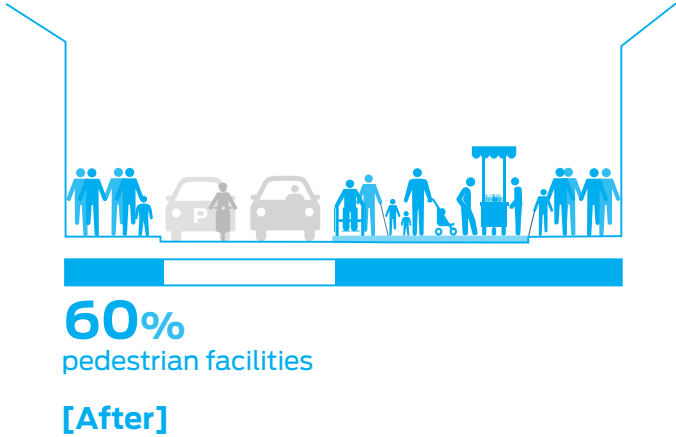
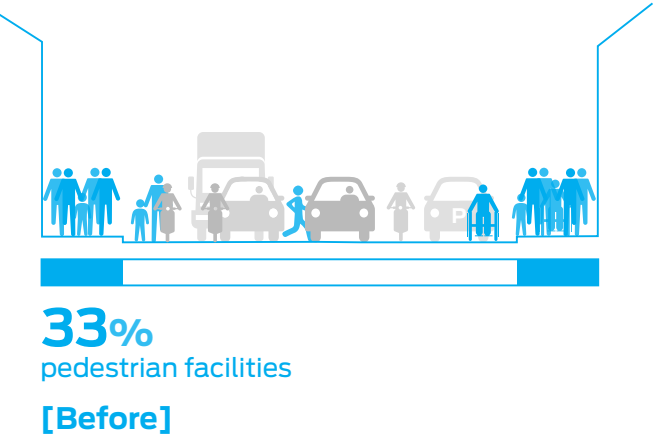
- One travel lane was repurposed as a curb extension
- Curb extensions help reduce vehicle turn speeds and pedestrian crossing distances
- Added pedestrian ramps to improve accessibility
- Vendor kiosks form an extended furniture zone on the sidewalk, freeing up the pedestrian clear paths



BEFORE



INTERIM



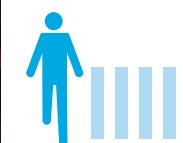
BARÃO DO RIO BRANCO STREET



Our team partnered with Fortaleza to transform eight blocks of one of the busiest commercial streets in the city center, repurposing a travel lane into a widened curb extension. This resulted in a



64% reduction in the number of vehicles moving over 30 km/h,



92% fewer pedestrians walking outside designated facilities, and



3x more children using the street



Dragão do Mar cultural district

The projects under the Cidade da Gente (City of People) program aim to transform areas with high conflict density between motorized traffic and vulnerable road users into safer and more vibrant places for people. Using low-cost and easy-to-implement materials such as paint, planters, and furniture, city officials managed to adopt bold street designs and demonstrate their effectiveness. This approach, first piloted in the Cidade 2000 neighborhood and in the Dragão do Mar cultural district, inspired several other interventions and helped advance safer street design practices in Fortaleza.

PROJECT PARTNERS

- City of Fortaleza (SCSP/PAITT, AMC, URBFOR)
- Iracema Institute
- Porto Iracema Arts School
- Vital Strategies

PROJECT GOAL

Prioritize pedestrian safety and reduce vehicle speeds in the busy cultural district of Dragão do Mar. Originally, the area functioned as a logistics district, linked to one of the city's harbors. Despite the change in land use in recent years, the street design was kept the same, with oversized travel lanes and road beds. The redesign aims to update the spatial configuration to match the current uses.

TRANSFORMATION TYPE AND DURATION

Interim (August, 2018) — Undetermined

DESIGN STRATEGIES

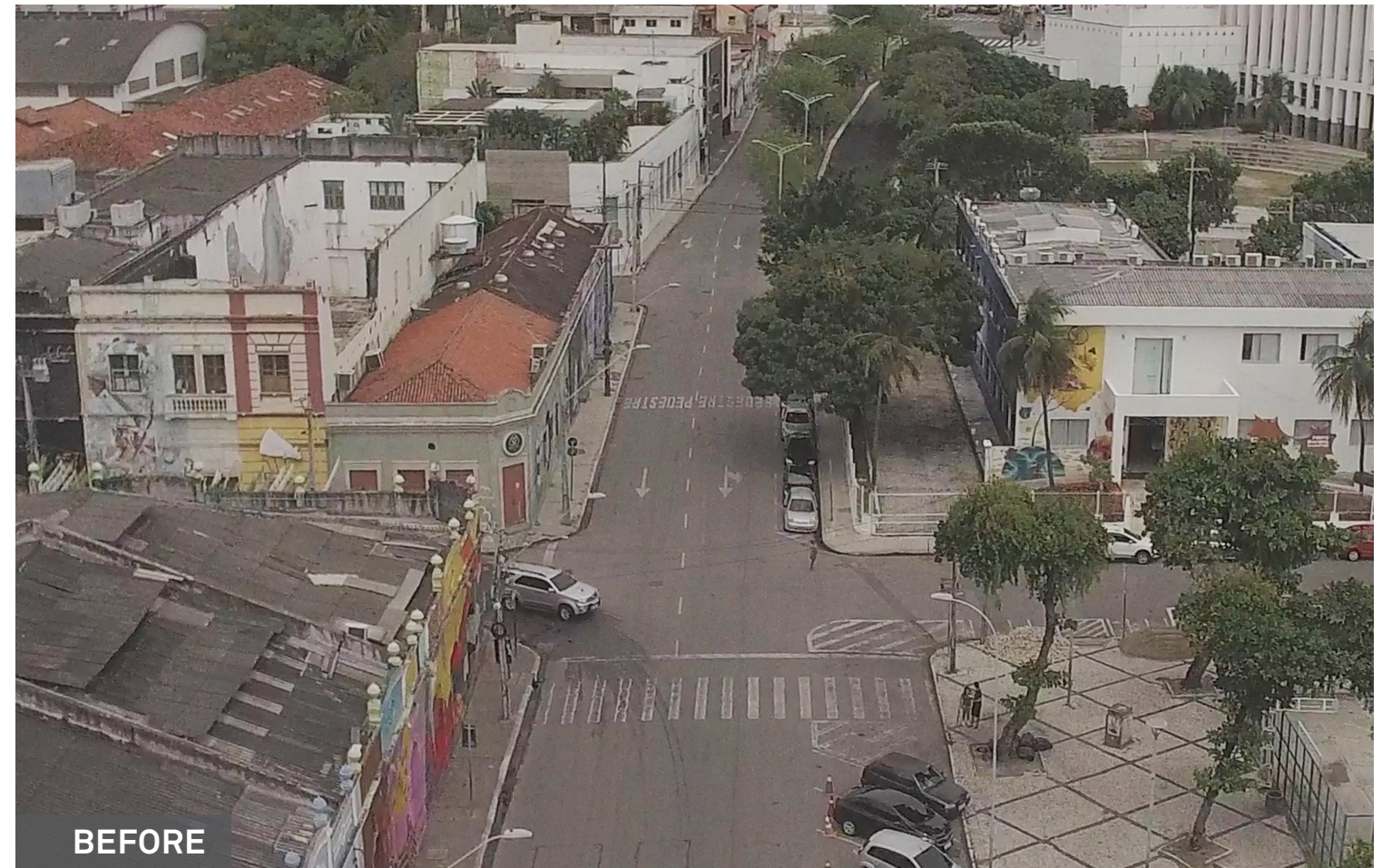
- The street with the highest pedestrian activity became car-free (in front of the Porto Iracema Arts School)



- The segments with the highest vehicle speeds (Alm. Jaceguai St.) were narrowed to a single-lane scheme
- The remaining road space was reclaimed as curb extensions
- Curb extensions shortened pedestrian crossing distances even more

PROJECT EVALUATION

The city repainted the same scheme with more durable markings materials and will evaluate if it will implement the redesign permanently as a capital construction project.





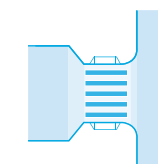
DRAGÃO DO MAR CULTURAL DISTRICT



Over **80 people** used low-cost materials such as paint, planters, and street furniture to



reclaim nearly 5,000 m² of public space.



The widened pedestrian facilities **reduced crossing distances by 80%,**



led to **91% fewer people walking on the road bed**



and **reduced vehicles exceeding 40 km/h by 79%.**



As a result, **90% of people approved** of the transformation!

Mumbai, India



SUPPORT
Bloomberg Philanthropies
Initiative for Global Road
Safety

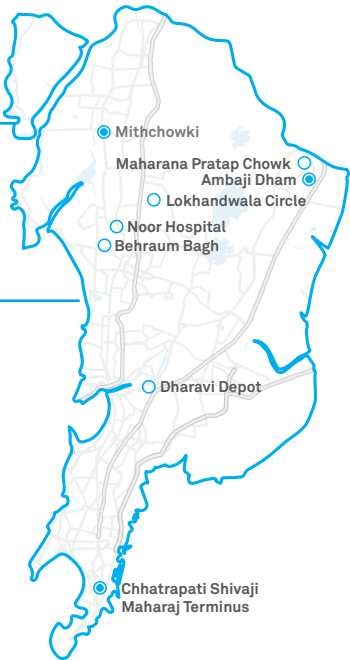
TIMEFRAME
2017-2019

**ROAD FATALITIES (PER
100,000 INHABITANTS)**
2014: 4.7
2019: 3.7
Variation (2014-2019): -21.3%

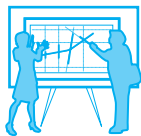
-21.3%
reduction in
road fatalities

OVERVIEW
Since 2017, NACTO-GDCI
has supported the city's
efforts towards crash hotspot
reduction through aligning
design review and technical
assistance with the city's
investment plans. NACTO-
GDCI has introduced data
collection templates and
metrics for the city to better
evaluate infrastructure
projects.

- Implemented projects
- Design review support



Mumbai's focus on reducing crash hotspots has enabled temporary transformations at major intersections throughout the city to demonstrate the value of reducing speeds and monitoring physical infrastructure projects. Effective media campaigns and data collection on these projects has also led to more effective and supportive surveillance



Training 75 people at the CTIRC. Plans are in progress to train another 300 engineers across MCGM and its wards



Reclaiming over 1,600 m² of roadspace for pedestrians at the Mithchowki intersection, with four shorter, more direct crosswalks added. Data revealed a 42% improvement in pedestrians using safe crossing facilities



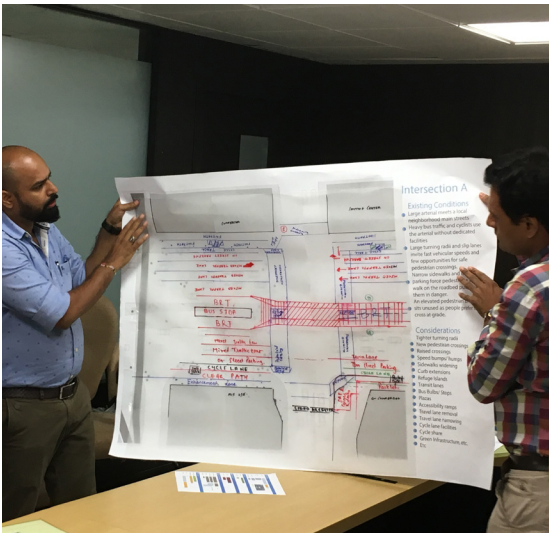
Completing the redesign of Ambaji Dham in capital construction. Intersection redesigns have been submitted for Maharana Pratap Chow, Dharavi Depot, Lokhandwala Circle, and other locations

PROJECTS AND PROGRAMS

CSMT
Through travel lane alignments and spacemaking, NACTO-GDCI led the transformation of over 5,000 m² of pedestrian space at the intersection of major north-south corridors in front of CSMT, a UNESCO World Heritage site. Due to displacement of physical delineators to allow for greater vehicular flow, the street transformation was not completed and the trial period was cut short. However, with great interest from the media, and the public, who voiced a 93% approval rating of the redesign, the project proved successful to reimagine the spatial distribution of streets in Mumbai to better address the needs of the masses who traverse the city on foot and public transit.



CAPACITY-BUILDING AND DESIGN REVIEWS
Multiple full-day trainings were held with MCGM engineers to disseminate the GSDG to all 24 ward offices. Redesigns were submitted for seven additional crash hotspots in the city for permanent construction.



Mithchowki intersection

This intersection transformation was the first project implemented with NACTO-GDCI's support in Mumbai. Strokes of bright blue, green, and yellow paint filled in the new refuge islands; wide, direct crosswalks, and medians—which all contributed to a shorter, safer pedestrian crossing experience.

PROJECT PARTNERS

- Municipal Corporation of Greater Mumbai (MCGM)
- Mumbai Traffic Control Branch (MTCB)
- Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies (KRVA)

PROJECT GOAL

This project was a crucial pilot for the city to trial and evaluate design strategies that address road safety risks at major intersections. A new metro line is in development, and the projected station near this site will increase vehicular volumes and pedestrian movements even more. The lessons learned from this pop-up have been used to refine longer-term design strategies at this intersection and inform future projects around Mumbai.

INTERVENTION TYPE AND DURATION

Pop-up (June, 2017) — Two weeks

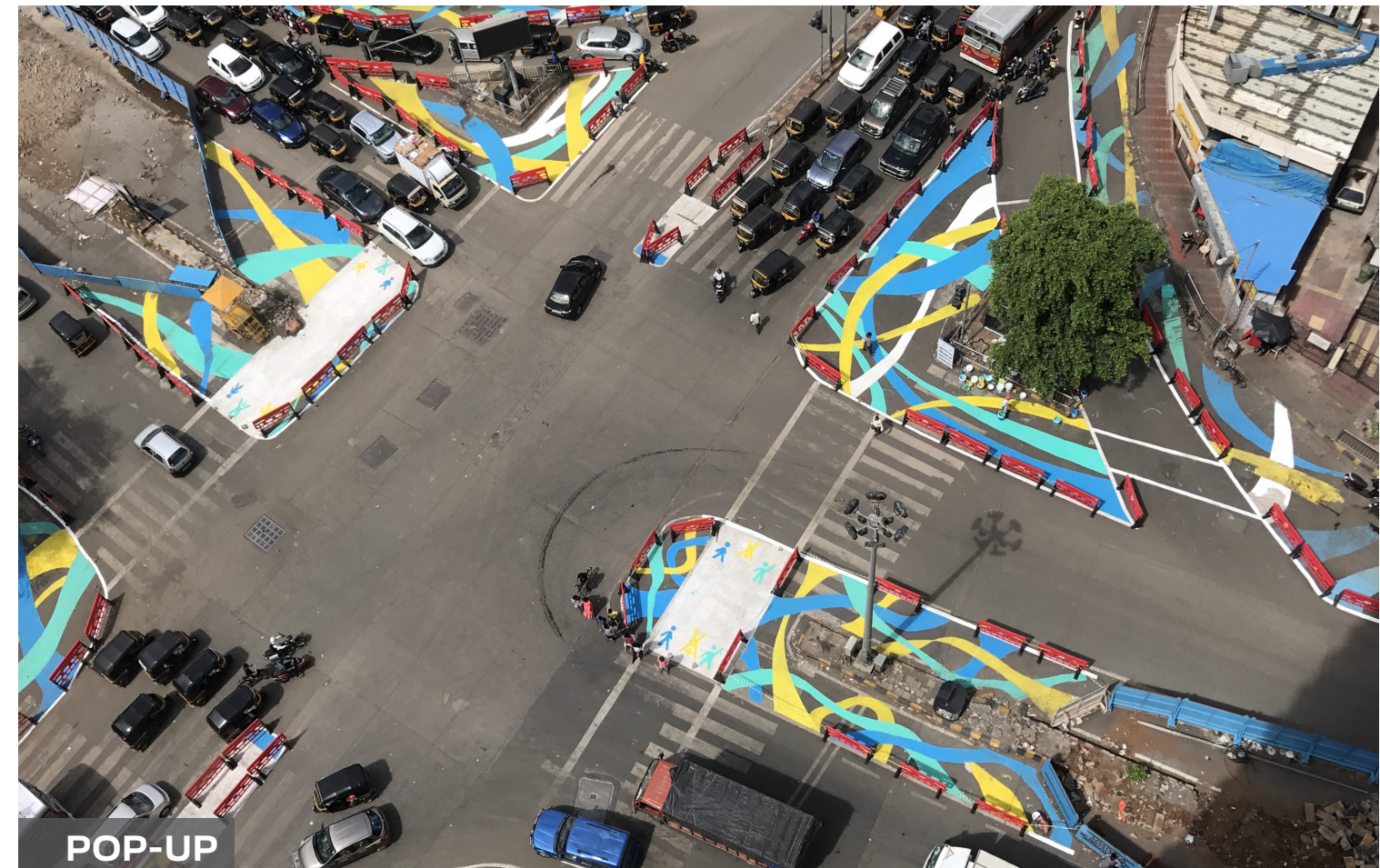
DESIGN STRATEGIES

- Aligned travel lanes and reclaimed the underutilized road bed as space for pedestrians
- Removed dedicated vehicle turn lanes to ease the navigation of pedestrians crossing the street
- Reduced crossing distances, and pedestrians' exposure to vehicular traffic
- Added four refuge islands and medians



PROJECT EVALUATION

The project instilled confidence in the city authorities to permit more trials to test bold ideas and explore possibilities at critical intersections. This was followed by interventions by various partners across multiple locations.

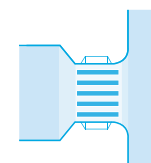




MITHCHOWKI INTERSECTION



At the Mithchowki intersection, **1,650 m² of underutilized space was reclaimed for pedestrians.** After narrowing vehicular turning lanes and tightening corner radii, **81% of survey respondents felt safer crossing the street.**



Curb extensions and medians also shortened crossing distances for pedestrians, **redistributing 27% of the intersection's road bed for vulnerable road users' safety.**

São Paulo, Brazil



SUPPORT

Bloomberg Philanthropies
Initiative for Global Road
Safety

TIMEFRAME

2016-2020

ROAD FATALITIES (PER 100,000 INHABITANTS)

2014: 10.5

2018: 6.95

Variation (2014-2018): -33.8%

-33.8%
reduction in
road fatalities

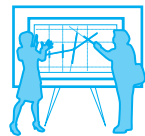
OVERVIEW

NACTO-GDCI collaborated with the City of São Paulo to reduce traffic fatalities and embed safe street design principles within everyday practices.

- Implemented projects
- Design review support
- Projects influenced



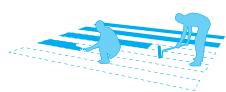
In São Paulo, close collaborations between road safety agencies and local grassroots organizations enabled street transformation projects to shape nearly 5,000 m²



Hosting **capacity-building workshops** to train over 517 people and expose over 1,788 people to the *Global Street Design Guide's* (GSDG) best practices. **Translating the GSDG** into Portuguese in 2018 has facilitated access to the guide for 1.6 billion people in 18 countries



Supporting the **development of the Street Design Manual** in São Paulo with technical review



Transforming 4,500 m² of São Paulo's streets temporarily, and 615 m² permanently, through **four pop-up, two interim and three capital construction projects** at crash hotspots

PROJECTS AND PROGRAMS

SAFE ROUTES TO SCHOOL

The street transformation project at José Bonifácio piloted scalable solutions for schools' surroundings using traffic-calming tools combined with games and play opportunities. Its process influenced the development of the Safe Routes to Schools program in São Paulo, while building capacity around temporary interventions, metrics collection and community engagement workshops, as resources to inform the final transformation.



BIKE PLAN

NACTO-GDCI collaborated with the city to structure a plan proposal, providing technical support on safe infrastructure and city-wide policies. The plan was consolidated after various public hearings and community workshops, and it aims to recognize the bicycle as a mode of transportation. The main objectives are to guarantee safety, connectivity, intermodality and functionality.



STREET DESIGN MANUAL

NACTO-GDCI supported the city in the development of its first Street Design Manual, particularly through technical review, *Global Street Design Guide* trainings, and a knowledge exchange webinar among the Street Design Manual teams of São Paulo, Seattle, NYC and Bogotá.



Dr. Campos Moura Corridor

In early 2019, boroughs across São Paulo were invited to submit design concepts that transformed a chosen crash hotspot site into a safe and vibrant space that encourages walking, bicycling, and use of public transportation. Out of 15 borough applications, Penha was awarded the technical support to redesign this multi-modal commercial corridor with unmarked intersections despite high existing pedestrian volumes, and vending activities.

PROJECT PARTNERS

- Prefeitura de São Paulo
- ITDP Brazil
- Metropole 1:1
- Cidade Ativa

PROJECT GOAL

This commercial corridor along Dr. Campos Moura Street, in front of the busy Artur Alvim Station has high volumes of pedestrians, buses, taxis, and other motor vehicles, which were competing for space before the transformation. Using quick-build materials and a participatory process, this corridor was transformed into a safer transit and pedestrian-focused street.

TRANSFORMATION TYPE AND DURATION

Interim (August 2020) — Two months
Partial capital construction (January 2020) — Permanent

DESIGN STRATEGIES

- Removed parking to expand pedestrian infrastructure
- Consolidated drop-off and pick-up locations for freight and passengers
- Added curb extensions and crossings to simplify intersection geometry and make it safer for pedestrians



BEFORE



INTERIM



PENHA BOROUGH CORRIDOR



This transformation reclaimed over **2,000 m²** of **underutilized road bed into pedestrian space,**



and it added **nine new crosswalks** on the corridor.

This design shift enabled a **42% decrease in people walking outside protected facilities,**



and incentivized a **9x increase in pedestrian activity.**



As a result, **100% of survey respondents preferred the plaza transformation!**

José Bonifacio School Zone

This residential neighborhood on the outskirts of São Paulo was chosen to pilot the city's Safe Routes to School program due to its history of road fatalities involving children and its high concentration of schools. Based on a survey that revealed 70% of the students in the area walk to school, the project transformed the most used routes into safe and vibrant streets.

PROJECT PARTNERS

- CET-SP
- ITDP Brazil

PROJECT GOAL

The pop-up transformation of two intersections that give access to schools, bus stops, a public library and a local commercial area that attracts many residents daily, gave the city the opportunity to test new and scalable solutions that put pedestrians first, while engaging the community in the process. Traffic-calming tools were used to increase pedestrian safety and comfort, improve access to transit and add play opportunities near schools

TRANSFORMATION TYPE AND DURATION

Pop-up (May 2018) — Three days
Interim (Sept 2018) — Undetermined

DESIGN STRATEGIES

- New pedestrian crossings respecting the desire lines of school kids and transit users
- Chicanes to slow down through-traffic
- A mini roundabout to organize traffic at the intersection
- Two plazas in front of the school to increase public space near pick-up and drop-off zones
- Pedestrian refuge islands and accessibility ramps (added in the interim design)



BEFORE



POP-UP



INTERIM

After the interim street transformation, twice as many vehicles yielded to pedestrians

**without traffic-calming officials present on site*

JOSÉ BONIFACIO SCHOOL ZONE



More than **30 people** from eight city agencies and two non-profits were involved in transforming the two intersections on this site,



using **23 liters of paint**



and **150 planters and cones**

to reclaim over **1,250 m²** of underutilized road bed into space for kids and caregivers.



After the street transformation, there was a **22% reduction** in vehicular speeds.



Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS)



In 2014, Bloomberg Philanthropies launched the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS), committing \$125 million over five years (2015-2019) to 10 cities around the world. To date, these initiatives have saved over 300,000 lives and prevented up to 11.5 million injuries. The program has since grown into its third phase in 2020, with a goal to save 6 million more lives and prevent up to 22 million injuries on streets around the world.

Each city within the BIGRS program receives technical assistance and resources to pursue policies and projects that reduce fatalities and injuries due to road traffic crashes. BIGRS works at the national level to strengthen road safety legislation, the city level to implement evidence-based road safety interventions, and at the regional level to advocate for safer vehicles. The focus is on proven interventions, such as the following:



Partners within the BIGRS program

- Global Health Advocacy Incubator (GHA)

→ Global New Car Assessment Programme (Global NCAP)

→ Global Road Safety Partnership (GRSP)

→ International Association of Chiefs of Police (IACP)

→ Johns Hopkins International Injury Research Unit (JH-IIRU)

→ National Association of City Transportation Officials' Global Designing Cities Initiative (NACTO-GDCI)

→ Vital Strategies

→ World Bank Global Road Safety Facility (GRSF)

→ World Health Organization (WHO)

→ World Resources Institute (WRI) EMBARQ

Special thanks to the following organizations and partners for making this work possible:

INTERNATIONAL ORGANIZATIONS

- Global Health Advocacy Incubator
- Global New Car Assessment Programme
- Global Road Safety Partnership
- International Association of Chiefs of Police
- iRAP
- Johns Hopkins University
- Vital Strategies
- World Bank - Global Road Safety Facility
- World Health Organization
- World Resources Institute

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- Kejela Mekonen
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- Takele Umma
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- Julián González
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- María Andrea Forero
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- Dante Rosado
- Emiliana Gifoni
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- Gustavo Pinheiro
- Hannah lally
- Hermânia Furtado
- Hugo Holanda
- João Pupo
- Luiz Saboia
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- Omar Jacob
- Patricia Macedo
- Rejane Noronha
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- Tais Costa
- Thais Paiva
- Victor Macedo

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- Shri. Mistry
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- Shri. Rajendra S. Gandhi
- Shri. Ram Dotonde
- Shri. Sanjay P. Darade
- Shri. Vaibhav R. Bhagwat
- Shri. Vijay Singhal
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- Shri. Vivek D. Kalyankar
- Smt. Chanda R. Jadhav
- Smt. Sujata A. Mhaskar
- Swati Shinde
- Vedant Goyal
- Yogesh Ambe

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- Pedro de Paula
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- Viviane Tiezzi

Stay tuned for more updates and editions to this booklet.

For a free download of the *Global Street Design Guide*, visit
[www.https://globaldesigningcities.org/publication/global-street-design-guide](https://globaldesigningcities.org/publication/global-street-design-guide).

