How to

Evaluate Street Transformations Near Schools

Metrics to evaluate impact, communicate, and scale up projects

Global Designing Cities Initiative

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Global Designing Cities Initiative
Van Leer FOUNDATION
FIA FOUNDATION
fondation BOTNAR

About our funders

Van Leer Foundation
The Van Leer Foundation is an independent Dutch organization working worldwide to ensure that all babies and toddlers have a good start in life. The foundation inspires and informs large-scale action that improves the health and well-being of young children—especially the most vulnerable—and the people who care for them.

FIA Foundation
The FIA Foundation is an independent UK-registered charity that supports an international program of activities promoting safe roads, clean air, and climate action.

Fondation Botnar
Fondation Botnar is a Swiss philanthropic foundation working to improve the health and well-being of young people living in cities around the world. Advocating for the inclusion of youth voices and the equitable use of AI and digital technology, the foundation invests in and supports innovative programs and research, and it brings together actors from across sectors to create dialogue and partnerships.


León, Mexico

About GDCI

Global Designing Cities Initiative (GDCI)

The mission of the Global Designing Cities Initiative (GDCI) is to inspire a shift toward safe, sustainable, and healthy cities through 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 the knowledge, tools, and tactics needed to improve urban mobility and fundamentally change the role of streets in our cities.

GDCI publications referenced

Global Street Design Guide

Designing Streets for Kids

How to Implement Street Transformations

How to Evaluate Street Transformations

How to Engage Kids in Street Design

About this handbook

As cities grow and challenges affecting children become more pressing, redesigning streets, especially around schools, has become crucial. **Transforming streets near schools not only protects the health of the youngest and most vulnerable but also leverages the central role of schools within communities, and it can be strategic for decision-makers due to potential community support and widespread acceptance by children themselves.** Beginning with these streets can be key to testing and expanding similar types of interventions across a city.

Globally, cities have been reimagining streets to create safer, healthier, and more joyful spaces outside of schools through initiatives like "school streets" during school hours and permanent "school zones." These efforts promote walking, cycling, and taking transit safely to schools, alongside creating inviting and accessible spaces for play and physical activity. However, in order to achieve long-term outcomes, cities must go beyond isolated transformations to integrate these improvements into broader city programs and policies. Although the lack of data on children's and caregivers' mobility often leaves their needs unnoticed, **measuring the impact of street transformations can support evidence-based decision-making, amplify key issues, build support, secure funding, and advocate for longer-term change.**

This handbook builds on the guidance of the Global Designing Cities Initiative's *Global Street Design Guide* and *Designing Streets for Kids* publications, and it complements the *How to Evaluate Street Transformations* handbook. Recognizing that **evaluating street transformations near schools requires a specialized approach that acknowledges the unique needs, vulnerabilities, and dynamics of school environments, this handbook offers a focused lens through which these environments can be assessed and improved.**

Developed as a resource for a broad audience of designers, planners, engineers, city officials, decision-makers, and communities, it provides guidance on how to plan the evaluation process, define project goals, and choose metrics to measure what matters the most. It outlines specific recommendations for how to plan for on-site data collection near schools, select appropriate methods and tools, gather insights, and communicate findings and take future action. **This handbook emphasizes the importance of capturing how street transformations impact children and caregivers, enabling stakeholders to advocate for and implement long-term changes that prioritize the well-being and safety of younger populations.**

The success of street transformations near schools depends on many factors. It requires site and network analysis, a vision, and long-term approach. Selecting the right site is also crucial. This ensures that interventions are successfully implemented and can generate the most significant impact. However, this handbook intentionally focuses on evaluating street transformations and does not provide guidance on other planning and design aspects such as street network design, behavior change programs, or site analyses and selection.

With this handbook, the hope is to enable cities worldwide to measure impact, gather stories, and champion safer, healthier, and more joyful streets around schools, inspiring a global movement towards child-friendly urban environments.

Istanbul, Turkey

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These boxes indicate key tips and important things to keep in mind

Case studies and snapshots
These boxes show inspiration from cities, showing how they've applied the methods and tools covered in this handbook

Kuala Lumpur, Malaysia

Introduction

Starting with streets near schools

Although cities should strive to reimagine and transform their streets, they can't change them all at once. **Transforming streets around schools first prioritizes the health of children and youth (who are the most vulnerable), leverages the central role of schools within communities, and can be strategic for decision-makers due to potential community support and widespread acceptance by children themselves.** It can create a foundation for broader positive change and inspire a culture of active transportation and sustainable urban development, offering a powerful starting point to scale up similar interventions across a city.

Streets near schools are critical spaces for promoting equity and supporting children's health and well-being

The journey to school is a critical daily routine for children and young people, but the absence of proper infrastructure poses risks to their safety, health, and access to education, especially for those with disabilities. External environmental factors such as noise pollution, air quality, and temperature also significantly affect students' experiences and learning abilities inside classrooms.

Hanoi, Vietnam

Traffic crashes are the leading cause of death among young people around the globe[1]

ROAD SAFETY

These crashes usually happen near schools. **In Chile, a staggering 90% of child pedestrian fatalities occur within 500 meters of an educational institution, with 70% within just 250 meters.**[2] Similar trends have also been seen in Canada and France.[3] In some African cities, a high percentage of children walk to school, but high proportions of streets lack adequate sidewalks.[4] Not only does this prevent some children from accessing schools, but it makes the journey to school unpleasant, stressful, and unsafe. Improving road safety around schools is key to reducing traffic injuries and fatalities among children.

Globally, nearly **240 million** children live with disabilities

constituting **1 in 10** of all children

ACCESSIBILITY

Regrettably, children with disabilities face significant educational disparities, **with 25% lower likelihood of attending early childhood education, 49% higher likelihood of never attending school, and elevated risks of not attending primary and secondary school.**[5] Improving streets near schools can enhance accessibility and increase school attendance, ensuring equal access to education for all children.

More than **90% of the world's children** breathe **toxic air** every day[6]

AIR AND NOISE POLLUTION

Air pollution significantly harms children's health, impacting lung and organ development similar to cigarette smoke exposure.[7] School commutes, which often coincide with peak traffic hours, increase children's exposure to harmful pollutants. Schools in high-traffic streets or with heavy-polluting vehicles also face indoor air pollution risks. **Studies have associated increased exposure to fine particulate matter with behavioral issues such as hyperactivity and anxiety, plus changes in brain regions related to language and cognition.**[8] Additionally, research underscores how **excessive noise from vehicular traffic can impair children's concentration and academic performance.**[9] A 2022 study conducted in Barcelona suggest that exposure to road traffic noise at school, but not at home, was associated with slower development of working memory, complex working memory, and attention over one year in schoolchildren.[10]

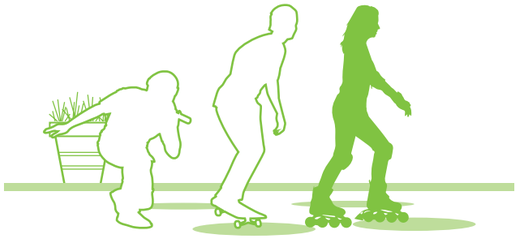
81% of children aged 11 to 17 worldwide are **insufficiently physically active,** and this lack of physical activity starts at a young age

PHYSICAL ACTIVITY

Streets near schools that are hostile to pedestrians, cyclists, and transit users may encourage caregivers to drive children to school, depriving children of independent mobility and physical activity on their way to school. On the other hand, **transforming streets near schools can encourage children to walk or cycle to school, by which they can meet the WHO recommended 60 minutes of daily physical activity.**

Streets near schools play a vital role for youth, families, and communities

Schools serve as focal points of education, personal growth, and community connections. Moreover, schools often serve as hubs for resources, support services, and opportunities that benefit students, families, and the overall community.



SOCIAL ISOLATION

Rising social isolation and loneliness among youth heighten depression and mental health risks.[11] **In the United States, the suicide rate among people aged 10 to 24 increased 56% between 2007 and 2017.[12] In 2021, suicide was the fourth-leading cause of death for people ages 15 to 29 globally.[13]** A 2019 study found that increased feelings of loneliness were correlated with a decrease in social interaction as digital media use increased.[14] Improving streets near schools, where a large concentration of students, parents, and staff members gather daily, can facilitate social interactions that build social cohesion.

OPPORTUNITIES FOR SOCIAL CONNECTION

School commutes and start/end times offer key interactions for children and families. Creating comfortable and relaxed spaces that support meaningful caregiving and connection results in more frequent, longer, and positive interactions between caregivers and infants and toddlers, which is crucial for cognitive development necessary for long-term success in life and valuable for the well-being of families.[15]

EQUITABLE MOBILITY

Investing in accessibility and safety around schools supports more equitable mobility. School surroundings are important for children and their caregivers, especially women, who are still usually the main caregivers and may drop off and pick up multiple children at different schools.

LOCAL EMPOWERMENT

In some cases, schools are centers for local leadership and decision-making. Focusing on streets near schools **empowers and builds the capacity of local leadership to participate in decision-making around mobility and public spaces.**

COMMUNITY WELL-BEING

Schools often play an important role as community spaces during non-school times, providing opportunities for recreational activities and social interactions, especially in communities that lack other social and cultural services and public spaces. **By creating inviting and well-designed streets around schools, cities can enhance the overall quality of life for residents of all ages.**

Introduction | Starting with streets near schools

Transforming streets near schools can be a strategic starting point for long-term change for cities

Transforming streets near schools catalyzes citywide change by improving safety, encouraging sustainable transportation, garnering strong support, and promoting social equity; it's a strategic initiative for long-term urban improvements.

EFFECTIVE MOBILITY

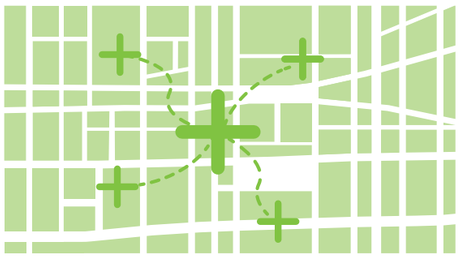
In some cities, family services such as clinics, schools, and daycare tend to group together, which means that **one project can involve multiple facilities and address mobility challenges of families with children for different ages.**

BEHAVIOR SHIFT

Transforming streets around schools sets a powerful example and can catalyze larger-scale changes. Schools serve as influential institutions that shape the behavior and attitudes of students and their families. **By showcasing safe and pedestrian-friendly streets in these areas, cities can inspire broader cultural shifts towards sustainable and active transportation choices.**

COMMUNITY SUPPORT

Intervening in streets near schools typically receives easier political and community support due to schools' central roles as community institutions and concern for children's safety. Their proximity to residential areas fosters personal connections among parents and neighbors, and school administrations and parent-teacher associations can be effective advocates. The tangible benefits and positive impact also encourage further engagement and investment from political leaders.



SCALABILITY

Transforming streets near schools offers a strategic starting point. Since schools are typically geographically distributed in cities, they are logical choices for creating safe and playable streets while offering benefits to a wide range of residents throughout a city. **The scalability and clear next steps can make it easier to expand the initiative to other areas.**

EQUITY

Low-income children and caregivers often rely on walking and public transit to get to and from school. As street transformations near schools aim to create better street environments for all students, regardless of their socio-economic background or physical abilities, these projects can ensure that every child has the opportunity to get to and from school safety. In doing so, they can **help bridge disparities in access to education, support children with disabilities, and promote social inclusion, fostering a more equitable and inclusive city.**

CASE STUDY

SCHOOL STREETS PROGRAM

Location: London, England
Time period: 2017-present
Stakeholders: Transport for London, London boroughs, Breath London Network, FIA Foundation, Bloomberg Philanthropies, and participating schools

Description

As of March 2022, London has launched over 500 street transformations near schools across 31 boroughs as part of the mayor's commitment to tackle air pollution, poor health, and risk of traffic deaths. It is estimated that almost half of London's air pollution results from traffic emissions, leading to premature deaths and severe respiratory illnesses.

Transforming streets near schools has been one way to induce a mode shift, encouraging more families to walk or cycle to schools and reducing children's direct exposure to pollutants.

London's street transformations typically include one or more streets near schools that restrict vehicle access during school start and end times. To achieve this, the city installs physical elements such as collapsible bollards or uses operational aids such as enforcement cameras.

Commenting on the program's success to reduce air pollution, London's mayor, Sadiq Khan, issued a statement that "too many lives are already lost each year as a result of our city's toxic air and the results of our monitoring study show just how much of a difference reducing car journeys through School Streets makes."

Results

- The air quality benefits from 18 School Street projects were assessed and showed that children were exposed to 23% less nitrogen dioxide during peak school hours.
- At schools with School Streets, parents and caregivers reported driving to school less as a result of both the COVID-19 pandemic and the School Street. However, the School Street had a greater impact (-18%) on reducing car travel to school compared to the impact of COVID-19 (-12%).
- The School Streets program is ongoing in London. The city is continuing to monitor their impact and make permanent changes where appropriate.


School street in London Borough of Hounslow


Street trial in Walworth, Southwark

School street in London Borough of Hackney

CASE STUDY

RUE AUX ÉCOLES PROGRAM

Location: Paris, France
Time period: 2020-present
Stakeholders: City of Paris' Direction de la Voirie et des Déplacements

Description

The Rue aux Écoles program is dedicated to creating safer pedestrian-oriented environments around schools and enhancing student safety and well-being by reducing or eliminating vehicular traffic on nearby streets. Initiated shortly before the COVID-19 pandemic, the program demonstrated how temporary street closures improved school commutes during lockdown.

Driven by the goals of better air quality, reduced noise pollution, cooler urban microclimates, and healthier school communities, Paris has seen a significant increase in such projects. Streets have been fully or partially closed to traffic to meet local needs while prioritizing pedestrian access and green spaces.

With plans to calm 300 streets by 2026, including comprehensive redesign and capital construction for 100 of them, Paris is on track to substantially improve streets for its youngest residents and their families.

Results

- By November 2023, **201 streets had been calmed, impacting nearly half of the city's daycares and elementary schools.**
- **Fifty-six streets have been transformed into pedestrian streets**, featuring light-permeable surfaces and, where feasible, expansive green areas with trees.


Rue de l'Arbalète, Paris


Avenue Lamoricière, Paris

What is possible?

Streets near schools present unique challenges distinct from other urban areas, primarily because of the diverse and intense flow of young pedestrians arriving by different means. This mix of users—including students, caregivers, staff, and school bus drivers, among others—has specific needs that distinguish them from typical street users. Additionally, the range and intensity of activities around these areas are notably condensed into short periods, usually aligning with the start and end of the school day. **These dynamic environments lead to complex curb-use patterns that require specialized attention to ensure safety and accessibility for all.**

Although these streets might vary across different regions and countries, cities around the world have been implementing various street design projects around schools. Despite contextual differences in how children arrive at schools and who they are accompanied by, many cities have adopted similar strategies, albeit under different names and tailored to fit local contexts.


Lima, Peru


New York, United States

SCHOOL STREETS

Streets around a school temporarily close to through-traffic during school start and end times. While there has been an increasing formalization of the concept, it is used in slightly different ways depending on the context.


Hanoi, Vietnam


Cali, Colombia

SCHOOL ZONES

School zones are primarily aimed at ensuring road safety and safe routes to school, and have low vehicular speeds, restricted vehicular traffic, and added safety measures on all streets, typically within a 200-meter radius around schools.


Seattle, United States


São Paulo, Brazil

SAFE ROUTES TO SCHOOL

Safe routes to school is an approach that promotes walking and cycling to school through infrastructure improvements, enforcement, tools, safety education, and sometimes incentives.

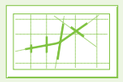
Street transformations near schools

Street design projects around schools can vary in scale, spatial distribution and design, implementation duration, and degree of permanence. Acknowledging the diverse approaches being implemented globally, this handbook defines **"street transformations near schools" as the redesign of streets directly in front of and adjacent to schools.**

See below for examples of the variability in project approaches, offering examples projects might adopt. Regardless of the chosen approach, evaluating these projects can help shape the project's next steps. **Evaluation insights can inform more ambitious designs, help expand project scope or length, or lead to permanent transformations and expansions to other sites.**

Key variables

Scale
See p. 10

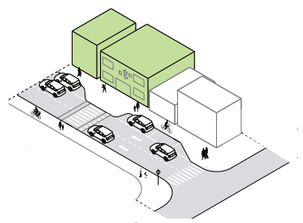


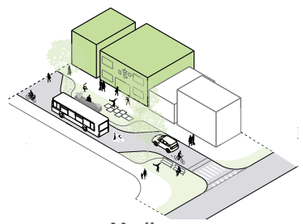

Streets in front of schools

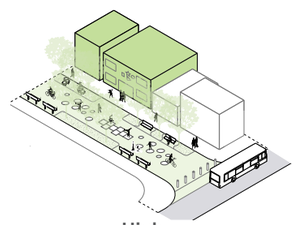
Area-wide: Streets in front of and adjacent to schools

Area-wide: Multiple streets in a neighborhood

Space redistribution and design
See p. 10


Low


Medium


High

Duration
See p. 10


School start and end times


School hours or weekends


Every day

Permanence
See p. 11

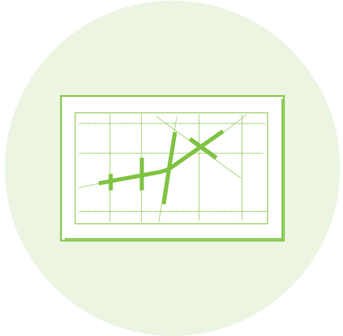

Pop-up


Interim


Permanent

SCALE

Cities often focus on transforming streets directly in front of or surrounding a school. Adopting an area-wide approach enhances safety for children to walk, cycle, and play not just in front of the school but also on adjacent streets and throughout their journeys to school. Streets near school entrances should be designed to minimize traffic conflicts and create spaces conducive to pausing, socializing, and playing. The design of surrounding streets should support access to schools via public transit, cycles, and walking, with improved intersections to bolster the safety and experience for families. As cities consider larger-scale projects, engaging stakeholders such as local communities, schools, and authorities is essential. Exploring diverse funding sources and building partnerships are key to realizing and sustaining these impactful, wide-ranging transformations.



SPACE REDISTRIBUTION AND DESIGN

When redesigning streets near schools, children's safety and well-being should be the priority. With that in mind, streets can take different shapes depending on the various modes of transportation, available space, budgets, and political will. Projects that prioritize kids as pedestrians, cyclists, and transit users slow down and reduce vehicle volumes while creating more space to incorporate street furniture, play areas, and greenery (see more guidance on GDCI's *Designing Streets for Kids* guide). These designs not only enhance safety but also foster vibrant, enjoyable pedestrian experiences. Although final designs might differ, they should be tailored to meet the unique needs of each community, with a primary focus on children.

DURATION

The duration of interventions near schools varies, influenced by the unique dynamics of the street, school, and community. Some projects opt for time-restricted changes during school start and end times, balancing improved safety with minimal street alterations. Others extend transformations throughout the school day or on weekends, fostering vibrant public spaces with reduced vehicular activity. These temporary measures require active planning, stakeholder collaboration, and operational support, like posting signage and assigning volunteers or staff as needed. In contrast, permanent transformations close streets or limit access to vehicles continuously, creating a pedestrian-focused environment with less operational demand. Temporary measures can serve as incremental steps towards the ultimate goal of permanent interventions, demonstrating potential benefits and building a case for long-term change.

PERMANENCE

The permanence of street transformations near schools can also vary. Short-term transformations could be pop-ups or interim projects that last a few hours, weeks, or months using light, removable elements. Long-term transformations could be permanent projects involving capital construction (see GDCI's *How to Implement Street Transformations* handbook). To successfully evaluate and communicate the impact of street transformations near schools, each project type should be considered when determining the indicators that best capture changes in the way the streets are designed and used for children and caregivers.

Pop-up in Yali, Turkey

Pop-up project

Lasting a few hours up to a few days, a pop-up project is a quick way to generate excitement, demonstrate the immediate impacts of a design on a project site, test a new design, and make the case for an interim or permanent project. A pop-up project or event can roll out temporary design tools such as chalk, cones, movable street furniture, stands, flexible play elements, and more, and it can use music and activities to engage the school community. When evaluating pop-up projects, choose simple and straightforward metrics that can be collected in a matter of hours given the short project duration.

Interim intervention in Yali, Turkey

Interim project

Lasting a few weeks, months, or years, an interim project can include street markings, paint, signs, freestanding delineators, plants, movable street furniture and play equipment, barriers, and shade structures. It gives the opportunity to experience the project and collect data over a longer time frame, before, during, and after the project, and with more depth. Temporary materials can reduce people's fear of change, allowing a site to be returned to its original state relatively easily if needed. Seeing how the space is used over time allows designs to be refined and adjusted before being made permanent.

Permanent project in Yali, Turkey

Permanent project

Often, the ultimate goal of pop-up and interim projects is to lead to a permanent project and scaled impact through capital construction. This type of project allows for evaluating long-term impacts over several years. Although this handbook's methodology can be applied to capital construction projects, the focus is on using data effectively during pop-up and interim street transformation projects to enable capital construction and permanent change. Ideally, these best practice projects are not one-off efforts but become embedded into everyday processes throughout the city, helping to shape safer streets for all children outside all schools in a city.

SNAPSHOT

ELENA GJIKA SCHOOL

Prishtina, Kosovo

The transformation of the street near the Elena Gjika School began in early 2022, when the street was closed for vehicles for one day and transformed into a pedestrian-only space. During the pop-up street party, children and neighborhood residents expressed further interest and shared ideas for the future implementation of the project. Permanent construction took place in March 2023. The area in front of the school was pedestrianized to provide safety for students, and bollards were placed along sidewalks to widen pedestrian space and reduce vehicle speeds. Street furniture, play elements, and greenery were added to create a more inviting environment for children and neighborhood residents.

Time period: 2022-2023
Municipality of Prishtina, Qendra Marrëdhënie

Elena Gjika School, Prishtina

SNAPSHOT

PLANALTO AYRTON SENNA

Fortaleza, Brazil

In 2019, Fortaleza established the Caminhos da Escola (Pathways to School) program with the goal of reducing the number of children killed and injured in road crashes. Under GDCI's Streets for Kids program, the local team transformed two adjacent streets near a school, Rua Antônio Pereira and Avenida Chico Mendes. The project repurposed motor vehicle areas into shared spaces with new pavement, a play area, added greenery, and street furniture like planters and benches. This transformation resulted in 1,900 square meters of pedestrian space, 120 square meters of play areas, and 22 new seating spots. The initiative had a great response, significantly enhancing the safety and comfort of students and the community.

Time period: 2020-2021
Stakeholders: Fortaleza Traffic Authority, Municipal Office of Regional Management (SEGER), the Science, Technology, and Innovation Foundation of Fortaleza (CITINOVA), the Secretary of Education (SME), and GDCI

Streets for Kids "Planalto Ayrton Senna," Fortaleza

SNAPSHOT

"A LUTA CONTINUA" PRIMARY SCHOOL

Maputo, Mozambique

A Luta Continua Primary School, along with several other schools, is located near a major intersection in Maputo, Mozambique, where vehicles travel at high speeds. Many children from these schools have been injured in traffic in recent years. After engaging with the school community—including children, educators, and staff—and the Maputo Municipal Council, several road safety measures were designed and installed, including sidewalks, speed humps, and pedestrian crossings, among others. The speed limit was reduced to 30 km/h around the schools, and there was a 24% reduction in average speeds post implementation.

Time period: 2021
Stakeholders: Maputo Municipal Council, the Services of Social Affairs, Maputo City, Maputo City Government, ANE (National Road Administration), INATRO (National Institute of Road Transport), the Mozambique Road Fund, the World Bank Mozambique, the FIA Foundation, ATCM (Automovel Touring Clube de Mozambique), Amend, iRAP, A Luta Continua Primary School, and other local schools

"A Luta Continua" Primary School, Maputo

SNAPSHOT

MOQUEWAWA

Lima, Peru

The Moquewawa project was an initiative of the Municipality of Lima, in partnership with GDCI's Streets for Kids program, which aimed to improve safety and accessibility for students walking to Andres Rosales Valencia School. Located at the corner of a busy unsignalized intersection in the city's historic center, access to school was unsafe, noisy, and stressful. In order to simplify the intersection, the project pedestrianized one of the streets, Moquegua, and added benches and play elements, reclaiming 850 square meters of space for students and residents to pause and play. The project resulted in a 42% reduction in drivers exceeding the speed limit and a 107% increase in caregivers' feeling of safety. Noise on Moquegua also reduced by 95%, and the city is working to make the transformation permanent by proposing that Moquegua be included in the historic center's pedestrian network plan.

Time period: 2023
Stakeholders: Municipality of Lima, Gerencia de Movilidad Urbana, Prolima, Anidare, and GDCI

"Moquewawa", Lima

SNAPSHOT

SUKARIA

Solo, Indonesia

The Reclaiming Streets for Kids initiative, or SUKARIA, is a neighborhood pilot aimed at creating safer streets for the children of SMP Muhammadiyah 1 Surakarta School. Located near the city center and Surakarta City Hall, it was chosen for its strategic potential to inspire broader changes. The project tackled the issue of narrow, overcrowded streets causing congestion and safety concerns for students. Involving students and neighborhood children in co-design workshops, a child-friendly street design was developed. This included temporary street paintings on Flores Street to establish a shared space for pedestrians and vehicles, a seating area with a green canopy in front of the school, and vibrant mural paintings. These changes transformed the street into a safe, interactive space for children after school.

Time period: 2023
Stakeholders: Solo Department of Transportation, SMP Muhammadiyah 1 Surakarta School, Young Surakarta, Kelurahan Kampung Baru, community leaders and residents of Kampung Baru, Kota Kita, and GDCI

Streets for Kids "Sukaria", Solo

SNAPSHOT

34TH AVENUE OPEN STREET

New York City, United States

The Open Streets program was established during the COVID-19 pandemic in response to the need for open space and social distancing for city residents. Throughout the years, the program has further grown to transform over 380 streets into public spaces chosen through community-based applications. Near schools, over 70 streets are temporarily closed to vehicles to support school drop-off and pick-up, recess, and outdoor learning. The largest, Queens' 34th Avenue Open Street, spans 26 blocks (1.8 km) and, after extensive community engagement, features low-vehicle-volume shared spaces and plazas that prioritize pedestrian and cyclist movement. This well-received initiative significantly benefits students, ensuring safe walking and cycling routes to seven nearby schools.

Time period: 2021-present
Stakeholders: NYC Department of Transportation, 34th Ave Open Streets Coalition

34th Avenue, New York City

Why evaluate streets?

Changing the measure of success

Measuring the success of each street project requires a comprehensive, interdisciplinary approach and methodology so that the many benefits of street transformations near schools can be captured. For decades, streets have been evaluated based on vehicle movement and driver safety, but the true mobility function of a street can only be measured when the safety and movement of all users are considered, particularly of children and their caregivers on streets near schools.

Cities should also evaluate street transformations within the broader context of public health, safety, quality of life, environmental and economic sustainability, and equity goals and policies. **Measuring and monitoring project outcomes is important for amplifying key issues or needs, making a compelling case for future projects, understanding effective strategies, building support, and securing funding for longer-term change, such as making projects permanent and scaling them to other parts of the city.**

Making children's needs and journeys visible

Data plays a crucial role in highlighting key issues affecting children and their needs, as well as facilitating evidence-based decision-making. Furthermore, by measuring the impact of streets near schools, projects can provide new indicators of success while creating healthy spaces for children.


Maltepe/Istanbul, Turkey

- The lack of data on children's and caregivers' mobility within cities makes their movement largely invisible. By collecting information on the number of children and families, and their travel modes, origins, and school commute patterns, data makes this somewhat invisible population and their needs visible.
- Mapping traffic crashes involving children, high levels of air pollution, health statistics such as asthma and obesity rates, and other demographic data helps identify areas of high risk and can inform targeted interventions.
- The data collected also enables a deeper understanding of who is being harmed by current conditions and who is benefiting from street transformations, helping designers create spaces that cater specifically to children's needs and desires.

SNAPSHOT

COUNTING CHILDREN CYCLING FOR INFRASTRUCTURE IMPROVEMENTS

Location: Niterói, Brazil
Time period: 2013-present
Stakeholders: Niterói Department of Urbanism and Mobility

Description

"Niterói de Bicicleta" is responsible for promoting cycling in Niterói. Since joining the Urban95 network in 2020, the agency also integrates an early childhood perspective. Its strategies for safer and healthier commutes for children and caregivers include expanding the cycling network, installing cycle parking near schools, updating cycle lane design standards, and offering educational activities. The city has seen a 400% increase in cyclist numbers since it started tracking them on key cycle paths in 2016, and it has continued to improve and expand monitoring and evaluation efforts. It currently employs automated cycle counting sensors on three main avenues and manual counts using existing cameras on other streets, categorizing cyclists by cycle type and gender. In 2023, they began counting cycles with child seats to better assess infrastructure use through an early childhood lens.


Niterói, Brazil

SNAPSHOT

COUNTING SCHOOLCHILDREN AND VEHICLE SPEEDS TO PRIORITIZE SAFETY

Location: Lusaka, Zambia
Time period: 2023
Stakeholders: Zambia Road Safety Trust (ZRST), Lusaka City Council (LCC), Road Development Agency (RDA), and Global Designing Cities Initiative

Description

The Safer Street Routes project aimed to transform streets in Chilenje that were essential routes for 1,250 students aged 3-5 and 12-15 attending Chilenje Primary School and My Smart Kids Academy. Collecting baseline data was crucial for the project and demonstrated that 95% of drivers were exceeding 30 km/h, and 3.5% were surpassing 80 km/h on the busy arterial, Burma Road. Additionally, pedestrian counts showed that 255 students per hour were walking along the route during school start and end times. This data underscored the need to redesign the Burma Road and Monument Road intersection, and it convinced local authorities of the urgent need for speed reduction measures to safeguard students. The response included redesigning Burma Road, Monument Road, and Luwembu Streets with safer infrastructure, including sidewalks, pedestrian crossings, speed humps, and clear street markings and signage. Seating and resting areas were also added, creating a welcoming space for students and enhancing pedestrian safety.


Students from Chilenje Primary School in Lusaka

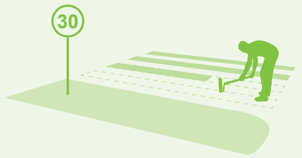

Transformed Burma Rd and Monument Rd intersection

Using short-term outcomes to support long-term change

Recognizing the scarcity of evidence on how street transformations affect people's health, especially that of children, metrics become essential for generating the necessary data to build that evidence. **Data can be crucial for policy makers to make informed decisions and allocate political and financial resources towards street transformations near schools.** By showcasing the positive outcomes of these projects, stakeholders can effectively communicate the benefits and encourage continued support for creating safer, healthier, and more comfortable and joyful streets for kids.

Measuring the physical and operational changes of a street project and documenting the shifts in use and function of the space allow the larger impacts of a project to be tracked over time. The evaluation of completed projects informs the design of future streets and is therefore vital to building public and political support for change.

What to measure:



PHYSICAL AND OPERATIONAL CHANGES

Document new or improved facilities, technologies, and infrastructure

Examples

- Length of added or improved sidewalks
- Vehicle-free area or other new public spaces
- Length of new protected cycle facilities

CHANGES IN USE AND FUNCTION

Measure how a street is used differently as a result of the project

- Number of kids walking in safe facilities
- Number of kids and caregivers visiting, spending time, and playing in the space
- Number and percentage of kids and caregivers using cycle facilities

RESULTING IMPACTS

Evaluate the long-term impacts of design changes, assessing if they meet goals related to public health, safety, quality of life, environmental and economic sustainability, and equity

- Number of children killed or seriously injured on streets
- Reduced rates of kids exposed to noise levels above the WHO standard of 53 decibels
- Percentage of kids meeting recommended daily minimum for physical activity

Project evaluation should encompass both quantitative and qualitative indicators and incorporate data collected before, during, and after project implementation. This approach allows for an overall understanding of the achievements of street transformations and supports ongoing improvement and adaptation.

CASE STUDY

CAMINHOS DA ESCOLA PROGRAM

Location: Fortaleza, Brazil
Time period: 2019-present
Stakeholders: Municipal Office of Regional Management, Fortaleza Traffic Authority, the Secretary of Education, Science, Technology, and Innovation Foundation of Fortaleza, Global Designing Cities Initiative, and local partners such as school communities

Description

In 2019, Fortaleza created the Caminhos da Escola (Pathways to School) program with the goal of reducing the number of children killed and injured in traffic crashes. Between 2015 and 2018, 1,153 children under the age of 14 were injured or killed as a result of car crashes. Most schools' surroundings in the city lack adequate mobility infrastructure. Nonetheless, around 55% of municipal school students walk to school in Fortaleza, and the city wanted to encourage and safeguard active mobility.

The program focused on priority zones, which were selected based on four main indicators: (i) areas with the highest concentration of car crashes near schools (200-meter radius), (ii) schools with the highest number of students, (iii) availability of underutilized public properties near the school, and (iv) percentage of low-income households in the school area.

A site in the Cristo Redentor neighborhood was chosen to pilot the program. Effective traffic-calming measure were adopted, such as widened sidewalks, compact intersections with shorter crossings, and narrower traffic lanes. Additionally, a vast underutilized asphalt area was converted into a safe public space for children to play and socialize with other children in the neighborhood, while also maintaining access to the municipal and school bus systems.

Results

Physical and operational changes

- 355 m of transformed street
- Over 1,000 square meters of space reclaimed for pedestrians
- 13 improved crosswalks
- 6 improved intersections

Resulting impacts

- As of 2023, the program has implemented five projects. So far, it has transformed the surroundings of nine schools, impacting over 3,000 students.
- Initial assessments of five interventions showed a 15% reduction in traffic injuries and fatalities. One of the sites, Conjunto Palmeiras, showed a significant decrease in the number of people injured after the intervention, from 23 to 14 (-64%) in a three-year period. In another location, Barra do Ceará, this number went from six to zero.
- The program was recently formalized as part of the city's Early Childhood Municipal Plan and the goal is to benefit 50 schools in the coming years.

Introduction | Why evaluate streets?

Evaluation process

Map out your evaluation process from start to finish and consider all of the components that are part of a successful project as shown in the diagram below. Understanding each step, including the time and resources they require, will lead to more accurate and efficient planning.

For the purposes of this handbook, the evaluation process is broken down into steps and organized into three phases. Note that the activities outlined here can occur in many different sequences, not necessarily in this order, and often occur simultaneously. Depending on the context or project, some steps might not be possible and might need to be adjusted. Each topic listed below will be explained in more depth later in the handbook.

Understand and prioritize issues at hand

Determine the purpose of the evaluation

Identify goals and key metrics

Plan the data collection

Select appropriate methods and tools

Collect and analyze "before" data

Communicate preliminary results

Plan and design

A1 p. 22

Once a site is selected, **collect preliminary data** through existing databases, observation, and engaging with local stakeholders **to understand existing challenges and opportunities.** Examine current policy directions, city planning documents, and strategic plans to **align the project with city goals** and identify data gaps and potential impediments.

Outline the evaluation's aim early on to strategically guide decisions on **design refinement, advocacy, funding, stakeholder engagement, policy influence, and impact measurement**, and to ensure alignment with intended objectives.

Define project goals to help **prioritize design strategies and choose the most important metrics** to measure expected outcomes and project success.

B1 p. 46

Plan what data to collect, who to engage, and when, where, and how to carry out data collection around schools, taking into account the ethical considerations and logistical preparations for fieldwork.

B2 p. 54

Create a plan for the methods used to gather data and insights. Use **observation tools** to record site conditions, user counts and behaviors, activities, and environmental quality. Use **interactive tools** to capture travel patterns, students' profiles and habits, and perception and support rates in the community.

B3 p. 70

Go on-site to understand behavior, activities, and characteristics of the project site, as well as needs, mobility patterns, priorities, and insights and feedback from children and young people, caregivers, school staff, community members, and other stakeholders. **Take photos of "before" conditions and document community testimonials. Organize and consolidate "before" data you've collected** and summarize findings, which can inform project design or shift goals.

Implement

Implement project

Plan to **communicate** back to the community, project team, and other stakeholders on initial findings to **build project support.**

Collect "during" data

B3 p. 70

If doing a pop-up or interim project, **collect data during project launch** and programming activities to gather initial feedback.

Evaluate

B4 p. 74

Review project goals and identify outcomes. Study the standardized datasets and extract meaningful information that relates to your project goals, comparing activities, behaviors, and perceptions before and after.

Collect the same data and photos before and after the project was implemented. Observe how people use the street on different days, and their perception of the transformed street. Organize and standardize all collected data from different sources into spreadsheets, and make sure results are comparable and use the same methodologies.

Gather insights: compare before and after data

Collect, organize, and standardize data

Take further action

After assessing the street transformation project, **make recommendations on how this project can advance in the long term.** Identify changes needed to make it permanent, opportunities for expanding to citywide programs/policies, and opportunities to make practices mainstream.

Share results with the community, caregivers, school officials, designers, policy makers, and media outlets so that they can access information about the **project's impact, methodologies, and outcomes.**

C2 p. 92

Move towards long-term impact

C1 p. 84

Communicate findings

Milan, Italy

A

Measuring what matters the most

Measuring what matters the most | Identify goals and key metrics

A1 | Identify goals and key metrics

Identifying goals will help teams prioritize design strategies and choose the most important metrics to measure expected outcomes and project success. Considering the often fast-paced timelines of projects and the limited financial and human resources of cities, it is essential to prioritize what data to collect, measure, and analyze. Depending on the local challenges and specific needs and interests of decision-makers and communities, metrics can be selected to align with their priorities and concerns, as well as with current policy directions, planning documents, and strategic plans. This ensures a focused approach to data collection while still gathering the necessary information for a comprehensive evaluation of the project's success. See p. 106 for the ***Goal-setting worksheet*** to help you prioritize your efforts.

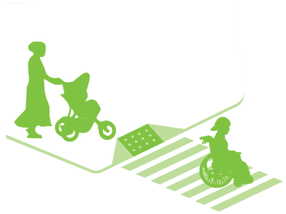
The following pages illustrate different examples of goals that projects have set to achieve by transforming streets near schools and the metrics used to evaluate them. While there can and should be multiple benefits to a street transformation near a school, **it is helpful to identify one to three priority goals and the corresponding metrics that will define project success and help frame the purpose of the project to key audiences.**

Salvador, Brazil

PROJECT GOALS:

Page 28

ROAD SAFETY



Page 30

UNIVERSAL ACCESSIBILITY

Page 32

ACTIVE TRANSPORTATION

Page 34

AIR QUALITY

Page 36

CLIMATE RESILIENCE

Page 38

SOCIAL CONNECTION

Page 40

NOISE POLLUTION

Page 41

OUTDOOR PLAY AND LEARNING

Design strategies to achieve each goal can be found on pages 24-27. Luckily, most strategies that prioritize kids over vehicles support multiple goals simultaneously.

Measuring what matters the most | Identify goals and key metrics

Streets for Kids design strategies

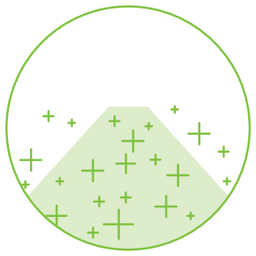
Design complements broader initiatives like updating policies, changing behavior, building local capacity, and refining processes to foster long-term change. Effective street redesign not only enhances infrastructure but also prioritizes the safety and mobility of children and their caregivers, whether they are walking, cycling, or using public transit. This involves multiple design strategies, which can vary in intensity and investment, ranging from low-cost measures to large-scale capital projects or systemic changes.

However, it's important to recognize that some design strategies can be controversial, potentially receiving community pushback. They may require thorough community engagement and feasibility studies to ensure that the interventions are appropriate and acceptable for the specific context. Not every design idea listed will be applicable or effective on every street, highlighting the need for careful consideration and adaptability.

Evaluation is crucial for linking design to successful outcomes. By assessing the impacts of street redesign, stakeholders can refine their approaches, ensuring that the design continues to meet evolving needs and priorities. For a comprehensive understanding of effective street design strategies for all ages and abilities, see Chapter 3 of GDCI's *Designing Streets for Kids* guide. The table below provides entry points for redesigning streets near schools and associated goals and benefits.

		GOALS							
Streets for Kids Design Strategies		**Road safety**	**Universal accessibility**	**Active transportation**	**Air quality**	**Climate resilience**	**Social connection**	**Noise pollution**	**Outdoor play and learning**
 **Upgrade** Meet Basic Needs	Ensure **pedestrian crossings** are clearly marked, closely spaced, and at grade	●	●	●					
	Ensure **sidewalks** are usable, continuous, safe, and accessible, with a minimum 1.8-meter clear path	●	●	●					
	Ensure safety for cyclists by adding **protected cycle facilities** to higher-volume streets or by turning lower-volume and lower-speed streets into shared streets	●		●	●	●		●	
	Clean and maintain the street		●	●					
	Implement or improve **basic utilities** such as street lighting and stormwater management. Consider adding amenities like **water fountains, public toilets, and trash cans.**	●	●	●		●			
 **Protect** Design for Appropriate Speeds	**Reduce speed limits** and match them to design speeds of 30 km/h. Smaller streets, including shared streets and pedestrian-priority streets, should have maximum speed limits of 10 to 20 km/h.	●	●	●	●			●	●
	Reduce vehicle speeds by minimizing the number of traffic lanes and adding horizontal and vertical deflection elements such as chicanes and speed tables where needed	●		●				●	
	Narrow vehicle lanes to encourage slower speeds. Vehicle travel lanes should be no more than 3 m wide on urban streets. On streets with buses, freight, and other large vehicles, one travel lane may be up to 3.3 m wide.	●		●					
	Provide cyclist protection through buffers or raised facilities to increase comfort and safety for cyclists	●	●	●	●			●	
	Use operational strategies such as low-speed signal progression, leading pedestrian intervals (LPIs), leading bike intervals (LBIs), and banning turns	●	●	●					

Measuring what matters the most | Identify goals and key metrics

Streets for Kids Design Strategies		GOALS: Road safety	Universal accessibility	Active transportation	Air quality	Climate resilience	Social connection	Noise pollution	Outdoor play and learning
 **Reclaim** Allocate Space for People	**Replace mixed travel lanes** with transit-only lanes, protected cycle facilities, or sidewalks to move more people using less space and fewer vehicles	●		●	●	●		●	
	Manage vehicular volumes and parking demand by removing travel lanes and through limited access areas, parking and curbside management, and road pricing	●		●	●	●		●	
	Reclaim vehicle lanes for pause and play, or use them for curb extensions, buffers, utilities, or stormwater management	●	●	●	●	●	●	●	●
	Create pedestrian-only and shared streets	●	●	●	●	●	●	●	●
 **Activate** Incorporate Play and Learning	Integrate both small and large spaces for children and caregivers **to pause and enjoy streets**		●	●			●		●
	Provide opportunities for unstructured play on sidewalks, medians, and plazas and near transit stops by adding elements like murals, artwork, and installations			●			●		●
	Incorporate nature, trees, and landscaping	●		●	●	●	●	●	●
	Add programming for temporary events such as open streets and play streets that offer kids and families more space to play			●			●		●
 **Extend** Integrate Adjacent Spaces	**Consider the use of adjacent spaces**, including private spaces such as setbacks and school playgrounds and around museums, libraries, and more						●		●
	Define a frontage zone on wider sidewalks, and **allow and regulate the use of this space** for commercial activities, dining, and general public use		●	●			●		
	Activate empty lots			●		●	●		●
	Activate adjacent facades and encourage transparency for fences and gates. Blank walls can be activated by murals and other artwork.			●					●
	Update zoning regulations and other policies to promote active building frontages and streets			●			●		●

Goal: **Road safety**

Reduce traffic fatalities and injuries among children

In many cities around the globe, students are walking to school on streets with unsafe spaces for people walking, cycling, and using public transit, making them vulnerable to vehicle crashes. **Street transformations near schools can improve road safety by reducing vehicle volumes and speed limits and implementing traffic-calming measures; dedicated pedestrian, cycle, and transit infrastructure; and improved signage.**

Salvador, Brazil

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Length and width of sidewalks with unobstructed clear paths
- ↑ Square footage of pedestrian-only space
- ↑ Safety and speed reduction elements (crossings, pedestrian refuge islands, speed bumps, distance between crossings, etc.)
- ↓ Vehicle lane widths
- ↓ Crossing distances
- ↑ Pedestrian crossing time
- ↓ Speed limit

Changes in use and function

- ↓ Average vehicle speeds
- ↓ Vehicle volumes
- ↑ Percentage of vehicles complying with the speed limit
- ↓ Traffic conflicts
- ↓ Number of children walking or being carried in the roadbed
- ↓ Number of children crossing street outside of the pedestrian crossing
- ↑ Caregiver-and/or child-perceived safety (from traffic)
- ↑ Caregiver reports that they feel safe about their children walking or cycling independently

... to achieve long-term impacts

Resulting Impacts

- ↓ Reduction in killed and seriously injured (KSI) children

SUPPORTING EVIDENCE

- → Data from Latin American cities reveals that for every additional meter in pedestrian crossing distance, there's a 6% increase in the likelihood of vehicle collisions and pedestrian crashes.[1]
- → Research from Norway indicates speed humps lead to a roughly 50% reduction in the number of injury crashes for a given amount of traffic.[2]
- → The data available on chicane schemes showed a 54% decrease in injuries from crashes, along with a reduction in crash severity.[3]
- → South Korea reduced child traffic fatalities by 95% between 1988 and 2013 by introducing over 9,000 school zones with a 30 km/h speed limit and parking prohibitions.[4] In Seoul, crashes decreased by 30% in school zones after improved design and traffic-calming measures were put in place.
- → New York City's Safe Routes to School program consists of adding new traffic and pedestrian signals, exclusive pedestrian crossing times, speed bumps, speed boards, high-visibility crosswalks, and new parking regulations. This program has contributed to a 44% reduction in school-aged pedestrian injuries.[5]

Measuring what matters the most | Identify goals and key metrics

CASE STUDY

SAN BARTOLO SCHOOL ZONE

Location: Quito, Ecuador
Timeline: 2021-2022
Stakeholders: Empresa Pública Metropolitana de Movilidad y Obras Públicas (EPMMOP), Secretaría de Movilidad, Agencia Metropolitana de Tránsito (AMT), Administración Zonal Eloy Alfaro, Comités Barriales, Casa Somos, Bloomberg Initiative for Global Road Safety (BIGRS), Global Designing Cities Initiative

Description

With the goal of improving road safety for students and residents, and prioritizing pedestrians, cyclists, and transit users, the Municipality of Quito redesigned the streets surrounding the schools in San Bartolo.

San Bartolo is a residential neighborhood located in the south of Quito, where over 4,000 students attend two large schools, the Virginia Larenas School and the Fiscal Sucre Educational Institution. Residents and students were at great risk daily, especially around the Virginia Larenas School, due to high vehicle speeds, wide travel lanes, complex intersections, and the lack of safe areas for pedestrian crossings.

Using temporary, affordable, and quick-to-install materials, more than 12,000 square meters of streets were transformed and traffic-calming measures were installed, including new street markings, signage, planters, and a new traffic light with a pedestrian phase aimed at reducing speeds and improving pedestrian and cyclist safety.

In order to assess the impact of the transformation and plan for a permanent intervention in 2023, the project team collected data on site before and after.


San Bartolo, Quito

Metrics Used

Physical and operational changes

- → Increase in safe space dedicated to pedestrians
- → Number of intersections redesigned
- → Total space transformed

Changes in use and function

- → Percentage of vehicles reducing speeds after the intervention
- → Increase in number of pedestrians crossing the street in safe pedestrian crossings
- → Decrease in number of pedestrians walking on the roadbed

Results

- → **15 intersections** were transformed
- → 1,850 square meters of horizontal signaling, and over **2,500 square meters converted into pedestrian space**
- → **40% reduction in vehicle speeds** in critical areas of the project
- → Increase in safe crossings:
  - → More than twice as many pedestrians using the new signalized crosswalk at Av. Maldonado
  - → Three times fewer pedestrians crossing through areas without marked pedestrian crossings
  - → Twice as many pedestrians using the marked crossings in intervened areas
- → Three times fewer pedestrians using roadbed to walk
- → In the first eight months since the project was implemented, there were no reported crashes or pedestrian incidents

Goal: **Universal accessibility**

Increase school attendance by children with disabilities

Children and caregivers with disabilities often confront significant challenges accessing schools due to inadequate infrastructure. Insufficient ramps, lack of proper sidewalks, and the absence of accessible transportation options can create barriers that prevent their safe and timely arrival at educational institutions. This not only affects their educational experience and social engagement within the school community, but also means they may not be able to use resources that schools provide, such as assistive technologies, meal and health programs, and extracurricular/recreational activities. Addressing these accessibility shortcomings is pivotal to fostering an inclusive and equitable educational environment that caters to the diverse needs of all students and caregivers.


Milan, Italy

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Length and percentage of sidewalks and cycle lanes within school surroundings (e.g. 500-meter buffer)
- ↑ Number of accessibility devices (handrails, tactile paving, accessible wayfinding signage, or similar facilities) within school surroundings (e.g. 500-meter buffer)
- ↑ Length of obstacle-free clear paths on sidewalks (obstacle and pothole removal, pavement repair, etc.)
- ↑ Percentage of signalized and accessible crossings (e.g. with painted crosswalks, accessibility ramps, accessible signals)
- ↑ Pedestrian crossing time (if pedestrian signal provided)
- ↑ Percentage of parking spaces for mobility-impaired accessibility
- ↑ Street lighting

Changes in use and function

- ↑ Number and percentage of children and caregivers with disabilities accessing educational facilities
- ↑ Number of children with disabilities spending time in space
- ↓ Vehicular traffic, speed, and associated street noise
- • Change in perception regarding sensory overload

... to achieve long-term impacts

Resulting impacts

- ↑ Increase in safer choices to access school
- ↑ Increase in school attendance by children with disabilities
- ↑ Increase in school performance by children with disabilities

SUPPORTING EVIDENCE

- → In Ontario, Canada, half of children with disabilities interviewed for a study claimed that they had to use a different mode of transportation to get to school than other non-disabled children in their neighborhood, and one-fifth accessed school facilities using a different entrance. These differences in commute habits decrease the opportunities children with disabilities have to interact socially with other children, affecting their sense of inclusion.[6]
- → A qualitative study of 10 children with diverse mobility impairments in Southeast Queensland, Australia, found that the spatial conditions of streets—lack of sidewalks, parked cars, street width, curb ramps—and social conduct or norms—driver behavior, fear of traffic, etc.—are bigger influences of independent mobility rather than the disability itself.[7]

CASE STUDY

SAFE AND INCLUSIVE SCHOOL ZONE

Location: Banjarmasin, Indonesia
Time period: 2019-2021
Stakeholders: Kota Kita, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Asian Development Bank (ADB), Transformative Urban Mobility Initiative (TUMI), City Government of Banjarmasin, Urban+ Institute, Kaki Kota Banjarmasin

Description

In 2019, Kota Kita began collaborating with the City of Banjarmasin, urban designers and practitioners, academics, and civil society organizations to implement a multi-year initiative to promote a disability-inclusive city. One of the outcomes was the Safe and Inclusive School Zone pilot project launched in 2021, which used participatory approaches to understand the perceptions and aspirations of students from inclusive schools and relevant stakeholders in Banjarmasin towards creating more inclusive streets in the city.

The co-design process resulted in the transformation of the streets near two inclusive schools in Banjarmasin, with design features that improved the safety and accessibility of the sidewalks, parking area, and drop-off and pick-up areas. Shading structures were added to provide a comfortable and sheltered space for students to wait for their parents during after-school hours, and greenery is planned for the canopy. A participatory mural was created outside of the SDN2 Gadang School, bringing students from both schools together to showcase a school environment that reflects inclusive values.

Traffic-calming elements were also added to reduce vehicle speeds around the school zone, and pedestrian crossings, curb ramps, and tactile paving were installed to provide a safe and accessible entrance for people with visual impairments and physical disabilities. Additionally, a drop-off and pick-up zone was especially created for "Angkot Pelajar Ceria," a free public transport service for students with special needs run by the Banjarmasin City Transportation Agency. The approach also inspired the Banjarmasin Transportation Agency to build school zones in four other sites in Banjarmasin.

Metrics Used

Physical and operational changes

- → Length and area of street transformation
- → Number of added traffic-calming elements
- → Amount of added accessible pedestrian infrastructure
- → Length of added shading elements

Results

- → 63 m of street transformed
- → 172 m^2 of added pedestrian space
- → 8 m of added pick-up/drop-off zone
- → 4 rumble strips and 10 new signs added
- → 3 new pedestrian crossings and 10 new pedestrian ramps added
- → 21.2 m of added sheltered space


Mural co-created by students


Improved sidewalks and crossings

Goal: **Active transportation**

Increase children's independent mobility, physical activity, and well-being

Journeys to school are often short and within a neighborhood, making them ideal for active transportation and helping children meet the daily levels of physical activity recommended by the World Health Organization. Streets near schools should be designed to create safe spaces for kids to walk, cycle, or take transit to school. This would benefit not only those who rely on these options to get to school, but also encourage others who have the luxury to choose to consider these modes as realistic and viable alternatives. These modes not only benefit students' physical health and mental well-being, but also nurture caregiver-child interactions, which are crucial for cognitive growth. Unsupervised commutes can also foster children's social, physical, and emotional development, leveraging the rich environments of local neighborhoods.[8] To fully leverage active transportation, infrastructure improvements should align with programs ensuring safe walking and cycling, such as walk/cycle buses, school crossing guards, and initiatives promoting awareness, skills, and motivation for active school commutes.

Lisbon, Portugal

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Width of sidewalks with obstacle-free clear paths
- • Transformation into pedestrian-only space (street closure for vehicles)
- • Presence of traffic-calming elements
- ↑ Number of safe crosswalks
- ↑ Length of protected cycle lane network
- ↑ Number of bicycle racks or storage, in particular for smaller bikes and cargo bikes
- ↑ Number of bike share stations with children's bikes or seats

Changes in use and function

- ↑ Number of children walking and/or cycling to school
- ↑ Number and percentage of children cycling on safe infrastructure
- ↓ Number of caregivers driving children to school
- • Propensity to shift travel mode to active travel

... to achieve long-term impacts

Resulting impacts

- ↑ Increase in number of children/caregivers meeting WHO's recommendation for daily physical activity due to school commute
- ↓ Decreased self-reported (or reported by caregivers) cardiovascular illness
- ↑ Increased overall well-being of students and school community
- ↑ Increased academic performance of students
- • Improvement of air quality around schools and decreased respiratory illness among children

SUPPORTING EVIDENCE

- → In a variety of contexts, significant positive correlation has been found between the introduction of traffic-calming measures and the use of active transportation, particularly for trips to school.[9]
- → A study in the United States found that schools with infrastructure improvements increased walking and cycling to school by 18%.[10]
- → An Irish study reported that the rates of active transportation to school increased among adolescents if safe crossings for walking or cycling to school were available.[11]
- → A study from China demonstrated that children who walk or cycle to school prefer to commute on streets with sidewalks or cycle lanes, few intersections, low traffic speeds, greenery, and stores.[12]
- → As part of the School Streets program in London, there has been a 50% increase in children cycling to participating schools since the program launched in Waltham Forest.[13]
- → A study from Denmark suggested that walking or cycling to school can enhance educational outcomes, including improved concentration among students.[14]

CASE STUDY

OPEN STREETS TRIALS

Location: Merri-bek, Melbourne, Australia
Time period: 2021-present
Stakeholders: Merri-bek City Council, Bicycle Network

Description

Ride & Stride is a behavior change program designed to get more kids riding, striding, and scooting to school in Merri-bek, a city located in Melbourne's metropolitan area. The program's goal is for 80% of all school trips to be made by sustainable forms of transportation by 2030, in alignment with Merri-bek City Council's Zero Carbon Merri-bek Strategy. Ride & Stride works closely with schools to understand specific barriers to active travel in their local area and deliver a tailored suite of initiatives: Open Streets is one of them.

The program started in 2021 by carrying out pilots in two schools, with three more schools in 2022 and another four schools in 2023. Trials take place one day per week over three weeks and involve implementing a pedestrian- and cycling-only street on one or more streets surrounding each school for a short period at the start and end of the school day. Schools also help activate streets with recreational and social activities.

The impact of the initiative is measured through "hands-up" counts; caregiver, resident, and student surveys (before, during, and after events); observations (how users interacted with the street space and activities provided); and traffic monitoring (comparing traffic volumes at two or three critical intersections near each school). "Hands-up" counts are a method by which children raise their hands to respond to how they traveled to school; the data is gathered via Bicycle Network's Ride2School app.

Open Streets, Merri-bek

Metrics Used

Physical and operational changes

- → Number of open street events

Changes in use and function:

- → Percentage of children walking, cycling, and scooting to school
- → Increase in overall active travel (perception and intention for the future)
- → Number/percentage of children and caregivers participating in programming activities
- → Increase in caregivers using Open Streets to socialize (counts of caregivers standing on open street)
- → Traffic counts, speeds, and movements on critical side streets and intersections
- → Percentage of perception of safety
- → Percentage of caregivers and resident satisfaction with event
- → Percentage of children's enjoyment of event
- → Percentage of people interested in ongoing Open Streets (daily/weekly/monthly/yearly)

Results

- → Over three years, 31 Open Streets days were held at participating schools, raising active travel among children by 20% (from 50% to 70%).
- → Results indicate a boost in physical activity: families reported 60% more cycling and 46% more walking during events, with 17.5% planning more school commutes by foot or cycle in the future.
- → Safety perceptions soared during Open Streets, with 97% feeling safe, compared to 40% on a typical day.
- → 93% of caregivers and residents surveyed across all schools would like to see Open Streets more regularly at their school in the future.

Goal: **Air quality**

Reduce respiratory illnesses among children

Air quality issues around schools can significantly impact children's health and well-being. Proximity to busy roads and high vehicular traffic can expose students to elevated levels of pollutants such as fine particulate matter and nitrogen dioxide, which are linked to respiratory problems and developmental issues. Addressing these air quality concerns is essential for creating a conducive and healthy environment that supports students' academic success and overall growth.

Paris, France

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↓ Number of vehicle lanes
- ↑ Distance between vehicle lanes and school, pedestrian infrastructure, cycling facilities, and/or transit facilities
- ↑ More pavement (on unpaved streets)
- • Transformation into pedestrian-only space (street closure for vehicles)
- ↑ Number of trees and plants

Changes in use and function

- ↓ Vehicle volumes
- • Replacement of motorized travel with active or sustainable travel
- ↓ Number of heavy-polluting vehicles

... to achieve long-term impacts

Resulting impacts

- • Reduction in levels of nitrogen dioxide (NO_2) and particulate matter (PM)
- • Compliance with air quality standards (e.g. increased number of days when the daily average of pollutants complies with local/WHO standards)
- • Decrease in self-reported (or reported by caregivers) respiratory illness
- • Increased overall well-being of students and school community

SUPPORTING EVIDENCE

- → In Brent, Enfield, and Lambeth in London, closing off streets for vehicles during school hours led to a 23% reduction in nitrogen dioxide pollution.[15]
- → In the Sant Antoni superblock in Barcelona, reclaiming space for pedestrians and vegetation, adding traffic-calming measures, and restricting vehicles from accessing the intersection decreased nitrogen dioxide levels by 25% and particulate matter (PM10) levels by 17%.[16]
- → In Paris, the concentration of nitrogen dioxide decreased by 25% between 2021 and 2023 near the Saint-Merri school, where one traffic lane was reclaimed for two-way cycle lanes and the adjacent street was pedestrianized as part of the Rue aux Écoles program.[17]

San Antoni Superblock, Barcelona

CASE STUDY

PIAZZA APERTA VIA SACCHINI

Location: Milan, Italy
Time period: 2023
Stakeholders: Agenzia Mobilità Ambiente Territorio (AMAT), Bloomberg Associates, and the Global Designing Cities Initiative

Description

Since 2018, the City of Milan has developed an innovative public space program named Piazze Aperte or "Open Plazas." Piazze Aperte aims to enhance public spaces and turn them into community gathering places, extend pedestrian areas, promote sustainable forms of mobility to benefit the environment (such as by reducing traffic emissions), and improve quality of life in the city. As of 2023, the city has implemented 43 interim interventions, among them Piazza Aperta Via Sacchini, and continues to plan new ones.

Part of Via Sacchini is adjacent to a school and one of its main entrances. During school start and end times, the street is full of young people walking, waiting, gathering, and playing. However, most of the street section was dedicated to vehicles, although they represented less than 30% of the street users during the peak period, when students were arriving in the morning. Additionally, though in small numbers, passing vehicles were emitting a significant amount of pollution only a few meters away from other street users, mostly children and teenagers, who are more susceptible to the effects of air pollution.

By fully pedestrianizing the street, the intervention on Via Sacchini eliminated traffic emissions from where young people gather before and after classes. The intervention also contributes to improving air quality by providing a school commute that promotes walking, cycling and transit. This helps avoid traffic emissions as trips shift away from private motorized modes.

Metrics Used

Physical and operational changes

- → Number of vehicles on the street before and after the intervention to estimate the emissions removed
- → PM2.5 levels before and after the street transformation

Results

- → Emission reductions were equivalent to 35 small trucks passing during the four peak hours
- → 7.5% reduction in PM10 levels (or 5.5 µg/m3)
- → 6.6% reduction in PM2.5 levels (or 2.1 µg/m3)
- → Even apparently small changes in air quality scale up to important impacts at the societal level. For instance, a 10 µg/m3 increase in PM10 levels is associated with a 12% increase in the risk of death by respiratory causes.

Students gathering during school start and end times

Pedestrianization of Via Sacchini, Milan

Goal: **Climate resilience**

Decrease flooding and local temperatures during warmer months

Redesigning streets near schools offers a chance to tackle environmental challenges like heat, flooding, and other climate change-related issues. Introducing trees, plants, and rain gardens, and utilizing permeable pavement materials, can counter the urban heat island effect and improve drainage and water retention capacities. Additionally, designs with shade structures, permeable surfaces, and water features contribute to cooler microclimates. Beyond improving resilience, incorporating nature into projects has health benefits. Access to nature has also been shown to improve mental health in young people.[18] These changes not only facilitate safer access to sustainable transportation options and lower vehicle emissions, but they can also help streets mitigate and adapt to climate change. This fosters a more resilient environment and improves the overall health of students, pedestrians, and the broader community.

"Microparque Aconchego," Fortaleza, Brazil

KEY METRICS

... to measure short-term change

Physical and operational changes

- • Change in permeability of sidewalks and roadbeds
- ↑ Areas with shelter/shade
- ↑ Number of trees and plants
- ↑ Increase in percentage of green areas around schools (e.g. within 500-meter buffer)
- ↑ Number of water features
- ↓ Number of vehicle lanes and on-/off-street parking
- • Transformation into pedestrian-only space (street closure for vehicles)
- ↑ Cycle lanes

Changes in use and function

- ↓ Vehicle volumes
- ↓ Number of heavy-polluting vehicles
- ↑ Number of children walking and/or cycling to school
- • Replacement of motorized travel with active travel
- ↑ Perception of comfort
- ↑ Perception of the school environment
- ↑ Perception of proximity to nature

... to achieve long-term impacts

Resulting impacts

- • Decrease in local temperature during warmer months
- • Decrease in number of flooding events on transformed streets
- • Increased overall well-being of students and school community
- • Increased awareness of climate change and health-related issues among school community

SUPPORTING EVIDENCE

- → A study in Nigeria found that evergreen and broad-leaved trees can reduce temperatures by as much as 12 degrees Celsius / 54 Fahrenheit.[19]
- → Green alleys or streets, rain barrels, and tree planting are estimated to be 3-6 times more effective in managing stormwater per US $1,000 invested than conventional methods. In Houston, Texas, trees provide $1.3 billion in stormwater benefits based on $0.66 /cubic foot of storage.[20]
- → Studies have shown that people living with nature nearby had better relationships with their neighbors and felt safer than those with fewer trees near where they live.[21]
- → In a study from Canada, teachers, parents, and administrators at schools with added green grounds reported an increase in physical activity and behavior improvements among children.[22]
- → Social interaction can be difficult for children with disabilities. Different studies show that nature may facilitate social interaction by supporting cooperative play.[23]
- → Research indicates that early experiences with nature can cultivate lifelong environmental stewardship attitudes, as studies have shown that environmental activism often begins with childhood connections.[24]

CASE STUDY

BRIDGET JOYCE SQUARE

Location: London, UK
Time period: 2015
Stakeholders: London Borough of Hammersmith & Fulham, Robert Bray Associates

Description

A section of Australia Road, located in London, was pedestrianized and incorporated sustainable drainage systems (SuDS) to increase the community's safety and resilience. The area, named Bridget Joyce Square, is set between a school (Randolph Beresford Early Years Centre) and two playgrounds.

Prior to the project implementation, the street was unsafe for children accessing school and parks, and it was also at high risk of surface water flooding. Located in the Counters Creek Sewer catchment area, the creek was previously incorporated into the sewer network and its catchment had been suffering from sewer flooding after heavy rainfall.

Thus, the strategy adopted by Hammersmith & Fulham Council was to pedestrianize the street, with limited access for emergency and maintenance vehicles. Permeable block paving and school roofs now drain stormwater and direct it to a series of bioretention basins and rain gardens. While adapting the school surroundings to environmental needs, this SuDS project also provides an enticing and playful environment for children and their families, creating fun routes and pleasant gathering spaces.

Metrics Used

Physical and operational changes

- → Square meters of transformed space
- → Square meters of permeable surface
- → Number of trees and and plants
- → Volume of rainwater drained

Results

- → The project transformed **2,700 m² of streetscape,** installing **1,320 m² of permeable paving; planting 50 trees, 2,500 shrubs,** and many other drainage elements that help the site drain **55 m³ of rainwater**; increasing biodiversity; and making the area more attractive.
- → The new square was adopted spontaneously by the community. Beyond addressing the environmental and safety concerns, it is also contributing to social cohesion and increasing children's exposure to nature.

Australia Road, London

Australia Road, London

Goal: **Social connection**

Increase interactions between youth, families, and the school community

Redesigning streets near schools to be safer and accessible, with comfortable and attractive spaces, can provide more opportunities for children, youth, and caregivers to have meaningful interactions and for families to pause and meet. Oftentimes, streets and public spaces are designed to limit and discourage use by young people. However, opportunities for young people to gather with their friends and meet new people is an important developmental need.[25] In addition to social relationships with peers, they also need opportunities to engage with adults and younger children.[26] Spaces on streets to pause, play, and connect are important for the health and well-being of children, youth, their families, and local communities.[27]

Parents waiting in front of school in Lima, Peru

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Size of pedestrian-only space in front of schools
- ↑ Sidewalk widths in front of schools
- ↑ Number of seating elements
- ↑ Number of play elements
- ↑ Number of shading elements
- ↑ Number of age-appropriate recreational elements
- ↑ Family-friendly or educational signage and murals on streets around schools
- ↑ Programming outside of school hours

Changes in use and function

- ↑ Number of caregivers pausing with children
- ↑ Number of caregivers talking to each other
- ↑ Number of children and youth spending time in space, by age and gender
- ↑ Time spent on the streets surrounding the school
- ↑ Perception of connectedness or social cohesion between caregivers/community members

... to achieve long-term impacts

Resulting impacts

- ↑ Increase in self-reported sense of belonging
- ↓ Decrease in levels of self-reported loneliness, stress, and/or mental illness among children, youth, and caregivers

SUPPORTING EVIDENCE

- → In Kingston, Canada, a survey showed that 49% of parents found that transforming streets in front of schools helped them meet other parents.[28]
- → In Fortaleza's Planalto Ayrton Senna school zone project, surveys showed that 90% of caregivers found it easier to connect socially with their children and with each other. See *Snapshot* on p. 12.

Shaded waiting area in Solo, Indonesia

CASE STUDY

PIAZZE SCOLASTICHE

Location: Bologna, Italy
Time period: 2022
Stakeholders: Fondazione Innovazione Urbana, Navile District, Municipality of Bologna, European project EX-TRA "EXperimenting with city streets to TRAnsform urban mobility," in collaboration with the Politecnico di Milano and TransformTransport

Description

As part of Bologna's Emergency Pedestrianism Plan, a segment of Via Procaccini was temporarily transformed into the first school plaza in the city. The goal of the intervention was to pilot a new temporary pedestrian space while guaranteeing students greater autonomy and safety on their journeys to school and creating new spaces for waiting and meeting.

Before and after the intervention, local teams carried out an evaluation to monitor changes in the use of space. Data was collected through quantitative analysis tools, including on-site observations of activities and interactions, and video analysis of pedestrian and vehicular flows. Additionally, qualitative tools such as surveys were used to assess perception about the space, and interviews with school staff and caregivers were held to gain a deeper understanding of students' needs and habits.

The results created local evidence of the effectiveness of the street transformation on Via Procaccini, and the evaluation process introduced a new methodology, based on the use of sensors and innovative analysis technologies, for data collection and evaluation.

The experience with the initial pilot and subsequent evaluations of Via Procaccini and Via Milano led to the permanent transformation of the school square between the Tambroni schools and the local market of Chiesa Nuova. Now, three other interventions are underway. Creating new school plazas is part of the transformation of Bologna into "Città30," a public policy initiative to improve road safety by reducing speed limits and redesigning streets.

Metrics Used

Physical and operational changes

- → Area of pedestrian-only space in front of schools

Change in use and function

- → Time spent on the streets surrounding the school
- → Vehicular speeds turns
- → Perception of beauty and safety

Results

- → **300 square meters of street space were reallocated to pedestrians** through the use of paint, street furniture, play elements, and planters.
- → **43% increase in the cumulative time spent by pedestrians in the transformed area,** with an increase of 216% specifically in the school square.
- → Analysis of vehicular flow showed a relevant **reduction in average speeds near turns**, contributing to increased safety of pedestrians using crosswalks.
- → Qualitative data showed that the improvement was also confirmed by citizens: **on a scale of 1 to 5, perceptions of beauty and safety of the space changed from 1.9 to 3.4 and from 1.7 to 3.4, respectively.**

Via Procaccini, Bologna

Students involved in implementation

Goal: **Noise pollution**

Reduce noise pollution to minimize harm and improve children's focus, well-being, and academic performance

For children and young people, exposure to noise pollution at school can lead to decreased concentration, increased stress levels, and reduced cognitive function.[29] Rush hour, in particular, can be especially noise-intensive, with sudden noise intrusions such as honking. Younger children are much more susceptible to noise pollution than adults, with children in their primary school years experiencing greater detrimental effects of noise and reverberation,[30] and those with autism, in particular, often very sensitive to specific types of noise.[31] This can be especially problematic before and after school, which is often an opportunity for caregiving (for younger school children) and socializing (for teenagers).

The WHO strongly recommends reducing traffic-related noise levels to under 53 decibels, as long-term exposure to higher levels is associated with critical health outcomes including cardiovascular disease, annoyance, and cognitive impairments.[32] Because vehicular traffic is a major source of noise pollution, it can be reduced near schools and improve the health of children and adults by lowering speed limits and redesigning streets near schools. This can include incorporating better street surfaces, using trees and vegetation to buffer noise, and discouraging speeding and driving.[33]

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Number of trees and plants
- ↑ Percentage of green areas around schools
- • Use of "quiet pavement" on roadbed around schools
- • Access restrictions for heavy vehicles

Changes in use and function

- ↓ Vehicle volumes
- ↓ Heavy vehicles volumes
- ↓ Vehicle speeds
- • Replacement of motorized travel with active travel

... to achieve long-term impacts

Resulting impacts

- • Reduction in noise levels in school surroundings to healthy levels (under 53 decibels)
- • Improvement in children's self-reported stress levels
- • Increase in children's school performance

SUPPORTING EVIDENCE

- → To mitigate noise pollution, trees can absorb, reflect, and refract noise levels. Trees and vegetation have been found to reduce urban noise by 5 to 10 decibels.[34]
- → The city of Delft, Netherlands, managed to reduce road traffic noise by 6 decibels using quiet asphalt. Studies confirm that the limit for this technology is between 4 and 6 decibels.[35]
- → Restricting vehicles on the street in Gurgaon, India, for car-free Raahgiri Day decreased noise levels on the street by 16 decibels.[36]
- → Reducing speed limits from 50 km/h (30 mph) to 30 km/h (20 mph) can reduce traffic noise by around 3 decibels and up to 6 decibels at peak periods. Aggressive acceleration increases noise by as much as 6 decibels, so a 30 km/h (20 mph) limit, plus calmer acceleration, could reduce noise by nearly 10 decibels.[37]

Street closed to vehicles in Cerrillos, Chile

Goal: **Outdoor play and learning**

Increase children's physical activity, contact with nature, and overall well-being

Playing outdoors is fundamental to children's well-being, health, and development. Streets that are car-free or slower by design encourage kids to engage in active play and outdoor activities safely, while wider sidewalks and designated play areas encourage children and their caregivers to enjoy meaningful and playful interactions during their daily commute to school. When streets near schools provide street furniture such as benches and outdoor learning spaces, they can also foster a conducive environment for informal learning and social interaction.

Maltepe/Istanbul, Turkey

KEY METRICS

... to measure short-term change

Physical and operational changes

- ↑ Pedestrian-only area in front of schools
- ↑ Dedicated area for play on street
- ↑ Number of play elements
- ↑ Number of art and culture elements
- ↑ Number of educational elements
- ↑ Number of trees and plants
- ↑ Shading elements

Changes in use and function

- ↑ Number of children (of different ages) playing outdoors
- ↑ Time spent by children on the street
- ↑ Number of open air classroom sessions being held outside
- ↑ Number of kids interacting with nature
- • Perception of level of playability of school surroundings
- ↑ Daily average of screen time among children, young people, and caregivers

... to achieve long-term impacts

Resulting impacts

- ↑ Increase in number of children meeting WHO's recommendation for daily physical activity
- ↑ Increase in children's school performance
- ↑ Increased overall well-being of students

SUPPORTING EVIDENCE

- → In Fortaleza's Planalto Ayrton Senna school zone project, 90% of surveyed children agreed that reducing the speed limit, implementing traffic safety measures, and adding a dedicated play area created safer conditions for walking and playing in the streets near the school. See *Case Study* on p. 12.
- → Surveys and observations carried out in Barcelona show that in the spaces transformed under the "Let's protect the schools" program, children played more spontaneously and engaged in a wider range of activities. See *Case Study* on p. 42.
- → Children aged 3 to 4 are more physically active when they play in outdoor areas compared to indoor play areas.[38]
- → In a study from the United States, early childhood teachers and providers reported that going outside gave children more room to run and expend energy, and that children seemed more creative outdoors. Teachers also noted that children more freely expressed themselves when they were outside.[39]

Measuring what matters the most | Identify goals and key metrics

CASE STUDY

CASE STUDY

"PROTEGIM LES ESCOLES" PROGRAM

Location: Barcelona, Spain
Time period: 2020-present
Stakeholders: City of Barcelona

Description

The "Protegim les escoles" ("Let's protect the schools") program was officially launched by the city of Barcelona in 2020. The goal of the program is to enhance school surroundings to promote the safety and well-being of children through four main strategies:

1. Reduce motor vehicle speeds and volume.
2. Improve comfort and overall liveability by expanding pedestrian-only streets, increasing greenery, and incorporating urban furniture and playful elements.
3. Increase access and visibility of school facilities by adding signage, relocating parking spaces, and changing vehicular flows.
4. Engage children and school communities throughout the process, and include them in the design of pilot projects.

As of publication, the program has already transformed 217 school surroundings, translating into 1 in 3 nurseries, primary schools, and secondary schools in the city. It was included under the new city vision "Superilla Barcelona" and it is aligned with other urban strategies that address climate change (Climate Emergency Action Plan 2030) and a child-friendly and playable city (Plan for Play in Public Spaces 2030).


Barcelona, Spain

Metrics Used

The program was evaluated through two research studies. One of them used both quantitative and qualitative methods. Three main tools were applied between May 2021 and February 2022: observations and counts of 72 school surroundings before and after implementation; semi-structured individual and group surveys with children, young people, and adults from 51 schools; and online questionnaires with school principals and representatives from schools' parent associations. Some of the metrics evaluated included:

- Number of institutions with an increased number of people staying in their surroundings after school hours
- Perception of level of playability in school surroundings
- Perception of level of comfort
- Perception of level of safety
- Perception of overall well-being of the school community
- Satisfaction with the overall project and specific strategies/elements
- Satisfaction with engagement/communication efforts

The second study was carried out in at eight schools and eight control sites in May/June 2021 and 2022 using site observations and counts. The data was collected during two periods (after school start and end times) and included:

- Number and profile (gender and age) of public space users
- Pedestrian counts
- Vehicle counts
- Number of children playing/type of activity
- Air quality (NO_2 levels)

Results / Impact

Results from the first study included:

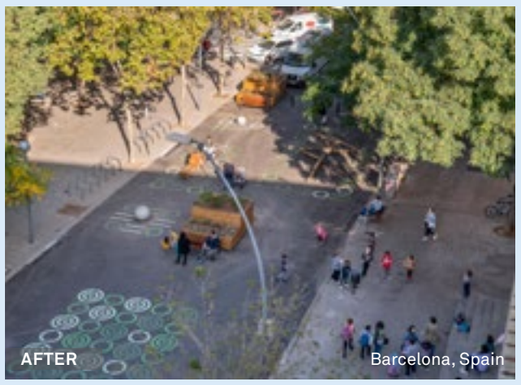
- 2x more active school surroundings. There was an increase in the number of areas where people spent time after school. Before the implementation, 25% of schools had people staying in their surroundings within 25 minutes of school closure. After implementation, this increased to 56%. No changes were observed in the control group.
- More playable school surroundings. 39% of school principals and parent associations claimed that the space was more playable after the implementation. Site observations show that in these new spaces children played more spontaneously and in a wider diversity of play activities.
- More comfortable school surroundings. 67% of school principals and 66% of parent associations believed that there was an increase in the level of comfort with the school surroundings.
- Increased well-being: 80% of school principals and 83% of parent associations believed that there was an increase in school community well-being.
- High satisfaction level: Average score among children was 7.3/10 and 7.8/10 among teenagers.

Results from the second study included:

- 3x increase in the number of users on fully pedestrianized streets.
- 4x increase in the number of children playing on the fully pedestrianized streets.
- Increase in the number of girls playing, reducing the average disparity between genders.
- 80% reduction in vehicular traffic.
- Reduction in NO2 levels between 2% and 7%.
- No changes in pedestrian movement when compared to control sites.


Barcelona, Spain


BEFORE
Barcelona, Spain


AFTER
Barcelona, Spain

New York City, Unites States

B

Evaluating streets near schools

B1 | Plan the data collection

On-site data collection can provide valuable insights into children's and caregivers' well-being, safety, and overall experiences near schools. It can complement existing datasets with more localized and age-specific information, identify new topics for research, and support other community and kid engagement efforts. However, collecting data about children, caregivers, and schools requires a nuanced approach due to their unique circumstances. This section outlines how to plan for on-site data collection, taking into account the ethical considerations, relevant stakeholders to involve, and the spatial, mobility, and scheduling specificities that streets near schools engender. Once you have defined a goal and the key metrics to evaluate, proceed to planning your data collection.

Safeguard children's rights

Gathering, sharing, and using data related to children demands sensitivity to privacy and security.

León, Mexico

Maltepe/Istanbul, Turkey

Respect their freedom and privacy
Children's best interests should be a primary consideration in all evaluation efforts. Remember that they have the right to disengage and re-engage, and they should not be forced into participating. Make sure to have transparent communication with caregivers, school authorities, and children and youth themselves to establish trust. If required, request permission to survey children from the local research board or school. Ensure parents and guardians give consent and/or children give assent to participate in research and be photographed. Keep sensitive information anonymous, and adhere to applicable data protection regulations or norms.

Refer to the **Consent and Invitation forms** templates in the **Resources** section on p. 112 for obtaining consent and assent to participate in activities and photography.

Photos, time-lapses, and videos are the most common and accessible tools for documenting a project. They can help run longer observation periods, and illustrate and communicate your findings. When photographing or filming an area near a school, consider putting up signs informing passersby and providing contact information, and ask for individual consent when appropriate.

See the **Evaluation notice** template to inform data collection and documentation in the **Resources** section on p. 198.

Identify data sources

Existing data from city agencies and research organizations can offer insights into safety, accessibility, and health, complementing technical information about the school's built environment. Such data also plays a crucial role in providing more context about students, the community, and the equity implications of a project. This is particularly useful when site-specific "before" data for a project is lacking. On-site data collection and documentation, on the other hand, offers a more nuanced view of how the street is being used, by whom, and their experiences in these spaces through observation and interaction-based methods, which is covered in Section *B2 Select appropriate methods and tools.*

TYPES OF DATA:

Existing databases and archival research

Child-health indicators, such as traffic fatalities or asthma rates, can typically be sourced from your city's health or police departments. Demographic data, age groups, student enrollment, attendance and commuting patterns, and general information about schools can often be found via local government websites, education departments, educational institutions, school district reports, school mobility plans, and/or in the census.

Interviews, focus groups, intercept surveys, and other interactive methods

To understand the needs, mobility patterns, priorities, insights, and feedback of children and young people, caregivers, school staff, community members, and other stakeholders.

See p. 55.

Information from technical drawings

Study and confirm dimensions of existing basemaps or create new ones to include the necessary details that can influence your design decisions and operational changes. These can also be a base to track physical changes before and after the street's redesign.

Observational data

To understand behavior, activity, challenges, and characteristics of a project site. This can be qualitative and/or quantitative.

See p. 54.

Online research

Organizations and research institutions focusing on child welfare, education, or community development might have data on children and students in the city.

Photos and videos

Before-and-after photos and videos taken at street level, as well as aerial shots, are very effective for demonstrating the process, appreciating the exact changes that were made to the geometry and the operations of the street, and the core beneficiaries of the project.

See GDCI's *How to Evaluate Street Transformations* handbook for more guidance on visual documentation.

Choose the right time and place

WHEN TO COLLECT DATA

Once priorities are set, create a plan to measure and collect data **before, during,** and **after** your street transformation project is implemented. Examine the variation between datasets to understand changes in street conditions, measure shifts in use and function, and evaluate the resulting impacts of the project.

Collect data before implementing the project to:

- Understand the site and define a vision
- Have a benchmark to compare to future data. Remember that "after" data needs to be collected at the same time/conditions/ place as the baseline data.
- Document and understand community members' and other stakeholders' needs, interests, and knowledge
- Identify activities, obstacles, and opportunities to implement specific design elements and take plenty of "before" photos to show the change!


Maltepe/Istanbul, Turkey

Collect data during or immediately after implementing the project to:

- Keep up momentum and continue to be transparent by communicating short-term results and initial reactions to the community
- Document immediate physical and operational changes
- Refine the design based on new observations
- Begin to build the case for a more permanent project


Maltepe/Istanbul, Turkey

Collect data weeks, months, or years after implementing the project to:

- Assess longer-term changes in usage, function, and perception of the site
- Inform new policies and future designs for similar projects
- Evaluate the impact on the frequency and severity of road traffic injuries, air quality, etc.
- Make the case for a more permanent project


Maltepe/Istanbul, Turkey

In order to replicate the data collection methodology and accurately measure change, the research design needs to remain stable throughout studies conducted over successive months and years. It is crucial to **collect the before and after data and documentation** at the same time of day, the same day of the week, and **in comparable conditions.**

Unlike other streets, those near schools experience rapid shifts in pedestrian flows, vehicle congestion, and activity levels within short timeframes, demanding dynamic data collection methods that adapt to these fluctuations.

Be strategic about when to collect different data. If you can, **prepare for data collection by scheduling a walking tour with a school contact to get familiar with the streets** near the school, and conduct site and accessibility analysis before peak hours start. Time observations and surveys to capture key moments, which can vary depending on what you are measuring. For example, measure noise when traffic is most intense, and count pause-and-play activities when kids are expected to be present.

As schools operate differently from one another, also make sure to check if there are **different schedules for different grades or activities**, additional **evening/night classes, or other uses during the weekend to capture the different activities throughout the day, week, or school year.**

Recognize the dynamic nature of children's routines and **align data collection efforts with school hours, vacations, and extracurricular activities** to ensure accurate insights while minimizing disruptions to caregivers, and students' routines and academic commitments.

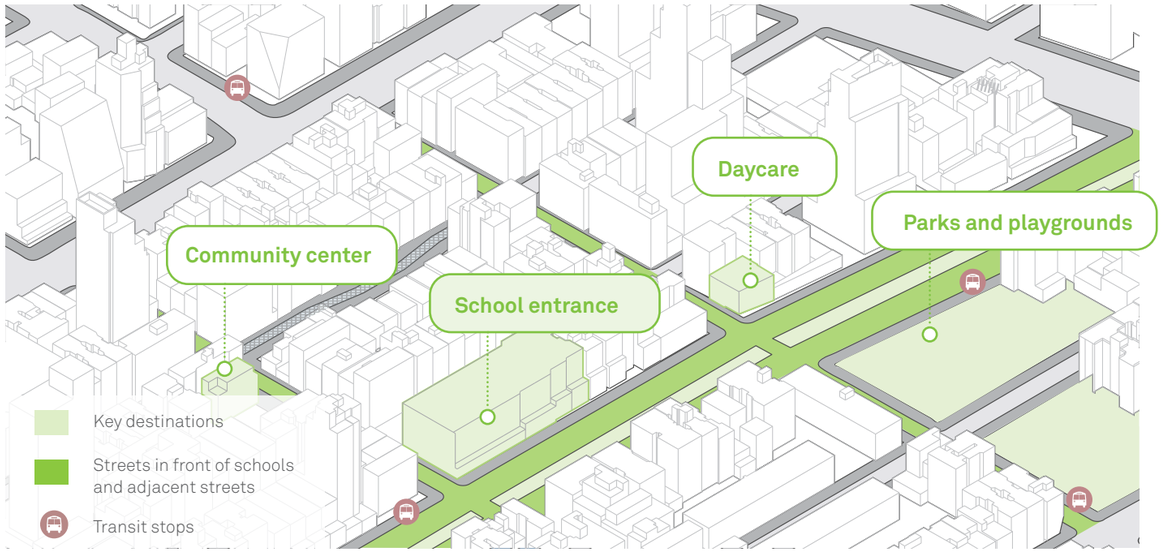
Conduct pedestrian and vehicle counts during **school start and end times** to help capture the impact of busy travel patterns on safety, comfort, and pollution. This would also be the time to observe any hazardous vehicle movements such as idling cars blocking pedestrian access or dangerous vehicle maneuvers such as reversing while children are walking on the roadbed. On the other hand, conducting speed measurements during these busy times could be deceiving, as vehicles' dangerous accelerations are only likely to be observed during **off-peak hours such as evenings and weekends.**

Plan ahead to collect data and conduct surveys **around key dates related to project goals**, such as "mobility week" or similar dates and events, when other activities are already taking place.

WHERE TO COLLECT DATA

Begin by visiting the site to observe key behaviors and spatial characteristics, and identify the most relevant locations to collect data. It will be impossible to measure everything everywhere, so be strategic about **prioritizing certain locations with specific types of data and aligning with goals and available resources.**

In order to have a full understanding of children's routes to school, try to assess streets in front of the school, as well as adjacent streets and routes between school, where students live, and other key destinations, such as parks, libraries, community centers, etc.




Hanoi, Vietnam


Bogotá, Colombia

Understanding peak school hours dynamics is crucial due to the unique spatial patterns they present. Children, parents, and caregivers often converge around **school entrances**, creating concentrated points of activity, which can sometimes be distributed to different entrances according to age. Oftentimes, there are also specific zones and times for children with special needs or disabilities to enter.

Besides school entrances, plan to collect data on the **adjacent streets**, as well as **near bus stops and transportation hubs**. If other family services exist close by, such as **community centers, daycares, playgrounds, health centers, or convenience stores**, identify them and plan data collection points strategically to capture pedestrian, cyclist, transit, and vehicular movements, as well as pause-and-play activities.

Hopefully, once relevant design strategies have been identified and the interventions have taken place, the same data can be collected at the same location, demonstrating improvements to identified challenges (i.e. raised crossings implemented, travel lanes narrowed, social space added, truck routes redirected, maintenance for flooding applied).

EXAMPLE OF DATA COLLECTION BEFORE STREET TRANSFORMATION:

- ▲ *High volumes of students crossing the street without crossing facilities.*
- ▲ *Travel lanes are very wide and motor vehicles are traveling at high speeds.*
- ▲ *Caregivers and students don't have enough space to wait, socialize, or play outside of school entrance.*
- ▲ *Pedestrians perceive the street as an unsafe and unpleasant place to walk and spend time.*

1. Mark pedestrian desire lines and note where there are existing pedestrian crossings, or if they are crossing at risk on the roadbed.
2. Measure vehicle speeds and count vehicles to determine if lanes can be redimensioned or reallocated for other uses.
3. Count and map pedestrians and pause-and-play activities to demonstrate where additional pedestrian infrastructure is needed.
4. Survey how pedestrians, including children and caregivers, perceive the street at different locations and how it can be improved.

- ▲ *Truck and large vehicle movement is very loud outside of the school.*
- ▲ *Access to school is challenging because of flooding and large puddles.*

5. Measure noise to assess if levels are unhealthy for children.
6. Take photos of existing conditions and survey pedestrians to understand how the situation affects their commute.

Organize the team

Consider the following steps as you're preparing to gather data. For a detailed breakdown of activities, see GDCI's *How to Evaluate Street Transformations* handbook.

Collaborate with different stakeholders

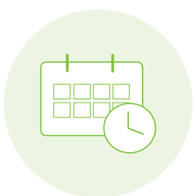
Engage with different stakeholders to support data collection. In cities where departments lack shared databases, early involvement is crucial to allow time for gathering and standardizing datasets. Inviting department representatives and community members to take part in on-site data collection is also valuable for offering firsthand experience with the challenges and potential solutions and encouraging collaborations.

Identify surveyors and resources

- The team of surveyors can be composed of city staff, consultants, volunteers, students, and/or community members.
- Identify a team leader to coordinate logistics and serve as the main point of contact.
- Team size affects data collection methods; a larger team of surveyors may be able to change shifts and cover more ground, while a smaller group may benefit from installing cameras at various locations to analyze recorded videos later.

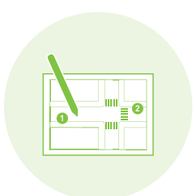
Train and brief surveyors

- Clear, approachable training sessions are crucial to inform team members about project goals, methodology, tools, and tasks, and to situate them within the site.
- Begin with an **overview of the project's goals and scope**, emphasizing key observations.
- **Aim to have surveyors reflect their community.** Training community members to collect data can be a great way to enhance involvement and support, as well as build local capacity.
- **Give instructions on how to collect data on the specific tools, and conduct trial counts and surveys.** Review surveyor results and make corrections or retrain as needed. Be open to adjusting methodologies and tools according to surveyors' opinions and experiences.
- **Stress the importance of child safety during data collection**, including obtaining consent from caregivers and assent from students, and ensuring school staff and/or caregivers are always present. Refer to the **Consent and Invitation forms** templates in the **Resources** section on p. 112 for obtaining consent and assent to participate in activities and photography.



Define data collection schedule

- Develop a **surveyor schedule** to plan time commitments.
- Decide **how often and for how long** data should be collected, considering school hours, holidays, and vacations.
- When staffing time is limited, instead of the ideal one-hour counts during the morning, afternoon, and evening, **gather data for 15-, 20-, or 30-minute intervals and use them to estimate the hourly total**. These short interval counts should be repeated at least three times a day to get an accurate sample.
- The team leader or supervisor should be tasked with checking collected data on a daily basis to make sure that all surveyors are doing it correctly.



Make a surveyor location map

- Pair a surveyor location map with a data collection schedule to help communicate the plan to your team as clearly as possible.
- Map out locations for data collection so surveyors can easily return to the same exact location to measure the "after" data.

SNAPSHOT

TRAINING COMMUNITY SURVEYORS

Salvador, Brazil

In Brazil, the City of Salvador and GDCI partnered on the "Caminho Legal" project, an extension of the "Picula" program by the city's Special Early Childhood Support Center (NEAPI), focusing on child-friendly urban spaces. The inaugural project centered around CMEI Olga Benário and nearby public services. Prioritizing community involvement, GDCI and locals collaborated on data collection. A training session prepped 14 community members, including teachers and caregivers, on street design and data-gathering tools, like vehicle and pedestrian counts, speed and desire line measurements, and activity mapping. After an initial presentation, participants were able to test the tools and share their experience during a meeting. Post-training, they actively participated in on-site surveys, capturing essential data about street users that later informed the proposed design.

Salvador, Brazil

SNAPSHOT

MATCHING THE SCHEDULE TO SURVEYOR LOCATION MAPS

Lusaka, Zambia

In 2023, GDCI supported the Zambia Road Safety Trust to design and implement a safe route to school intervention in the vicinity of two schools, Chilenje Primary School and My Smart Kids Academy in Lusaka. The project scope included the redesign of a critical intersection on Burma Road and the streets on the main route to the schools, as well as the creation of safe and attractive spaces for children to pause and play after school.

Data was collected on pedestrian and vehicle movements to assess the impact of the project design on road safety. The chart below notes the data types, responsible surveyors, and timeframe. The data codes correspond with locations on the map.

Weekdays (Example: Monday, Wednesday)			
		Surveyor 1	Surveyor 2
Morning	6:00 - 7:00 am	Vs1, Vs2, Vc1	Sc1, DL1, Pc1
	7:00 - 8:00 am	Am1, Vc2, Vs3	Sc2, DL3, Am2
	8:00 - 9:00 am	Vc3, Vs4	Pc2, DL2
Early afternoon	12:30 - 1:30 pm	Vs1, Vs2, Vc1	Sc1, DL1, Pc1
	1:30 - 2:30 pm	Am1, Vc2, Vs3	Sc2, DL3, Am2
	2:30 - 3:30 pm	Vc3, Vs4	Pc2, DL2
Late afternoon	3:30 - 4:30 pm	Vs1, Vs2, Vc1	Sc1, DL1, Pc1
	4:30 - 5:30 pm	Am1, Vc2, Vs3	Sc2, DL3, Am2
	5:30 - 6:30 pm	Vc3, Vs4	Pc2, DL2

Note: *For each data type, surveyors count for 15 minutes at a time at 3 different periods (morning, early afternoon, and late afternoon). Each count is then extrapolated for the hour.*

Surveyor position

Roadbed

Pc Pedestrians on/off sidewalks

Sc Pedestrians crossing

Vc Vehicle counts

DL Pedestrian desire lines

Am Activity mapping

Vs Vehicle speeds

B2 | Select appropriate methods and tools

Observation methods refer to data collection techniques that involve systematically observing and recording specific aspects of a situation or behavior. They can capture direct, tangible data to assess the impact of street transformations on various dimensions, including transportation behavior, safety, environmental quality, and overall user experiences. In the context of evaluating the impact of street transformations near schools, several observation methods can be used, including those listed below. *More comprehensive information, instructions, and templates for each method are provided in the* **Resources** *section.*

Solo, Indonesia

Site analysis and inventory

Document specific existing street conditions, such as its geometry, universal accessibility, presence of greenery, street furniture, parking, public spaces, etc.

Forms:
- → **School surroundings,** p. 116
- → **Accessibility,** p. 118
- → **Peak school hours circulation,** p. 122

Counts and observations

Count and observe pedestrian, cyclist, and vehicle flows and behaviors before and after transformation to identify mobility shifts, interactions, use of amenities, and changes in activities.

Forms:
- → **Pedestrian counts: Sidewalks,** p. 126
- → **Pedestrian counts: Crossing,** p. 128
- → **Pedestrian desire lines,** p. 132
- → **Street activities,** p. 136
- → **Pause-and-play activities,** p. 138
- → **Cyclists and micromobility counts,** p. 142
- → **Vehicle counts,** p. 146
- → **Vehicle speeds,** p. 148

Air quality monitoring

Measure pollutants like particulate matter and nitrogen dioxide in the air to assess improvements in environmental conditions.

Tools:
- → **Vehicle volumes and air quality estimate**, p. 152
- → **Particulate matter levels,** p. 154

Noise level assessments

Monitor noise levels before and after the transformation to understand changes in the acoustic environment and potential effects on student well-being.

Forms:
- → **Ambient noise,** p. 156
- → **Noise perception**, p. 158

See p. 70 in *Section B3 Collect data on site* for instructions on how to use these methods using GDCI data collection tools.

Tools you'll need:
- → Portable speed radar
- → Tally counters
- → Timers
- → Measuring tapes and wheels
- → Noise and air quality devices
- → Sensor and digital counter technology
- → Visual documentation tools (cameras, smartphones)
- → Surveys, street audits, and count forms

Data collection through **interactive methods** provides an opportunity for engaging children and youth, caregivers, and the school community. They play a vital role in assessing the outcomes of street transformations near schools by capturing nuanced aspects that observation methods may not fully convey. Interactive methods can be used quantitatively to capture travel patterns, details about student background, and support rates in the community. They can also be used as a qualitative tool to better understand needs and priorities before project implementation and demonstrate how transformed streets affect their daily lives, feelings of safety, social interactions, and overall well-being.

León, Mexico

Surveys

Surveys capture community attitudes, opinions, and behaviors. They can reveal travel preferences, perceptions about streets, and project satisfaction. See more guidance on p. 162.

Forms:
- → **Caregivers**, p. 164
- → **School staff,** p. 166
- → **Teens (ages 13-18),** p. 168
- → **My school street activity packet,** p. 170

Interactive boards

Interactive boards using posters and canvases can ask questions or solicit input from a larger group of people in the school or passing by a street, and can be an opportunity to make connections with local residents and the school community.

Boards:
- → **Interactive boards,** p. 180

Interviews

Interviews utilize structured or open-ended questions to explore personal experiences and are conducted in diverse formats like face-to-face, phone, or video conferencing.

Focus groups

Focus groups gather individuals with shared traits, such as groups of teachers or caregivers, to exchange perspectives and experiences, fostering group insights on common interests or experiences.

Shadowing

Shadowing involves following, observing, and talking to pedestrians as they navigate streets near schools, documenting their actions, interactions, and reactions. Photography and videos can complement notes.

In addition to data collection tools, make sure surveyors and staff have what they need for safety, such as safety vests and sun protection gear. They also need to be aware of local laws related to filming and photography, and should have the appropriate insurance, consent forms, and waivers. For a more comprehensive printable checklist of what your data collection team might need on site, see the **Surveyor Checklist** on p. 108 in the **Resources** section.

Who to engage

Engaging different stakeholders will bring unique perspectives and solicit more information for the project. Collaborating with these diverse stakeholders ensures a holistic and accurate perspective, enriching the data's relevance and impact.

Children and young people themselves are integral stakeholders when collecting data in and around schools. Their firsthand experiences and perspectives offer invaluable insights into travel patterns, safety and health concerns, interests, and their overall well-being. **Engaging children and youth through age-appropriate methods, such as surveys and interactive activities, empowers them to share their thoughts and elevates their voices and aspirations.**

See *Create or adapt tools to engage children and youth* on p. 66 for more details on how to engage children in the data collection process, and GDCI's *How to Engage Kids in Streets Design* handbook for an overview on how to engage children in street design projects.

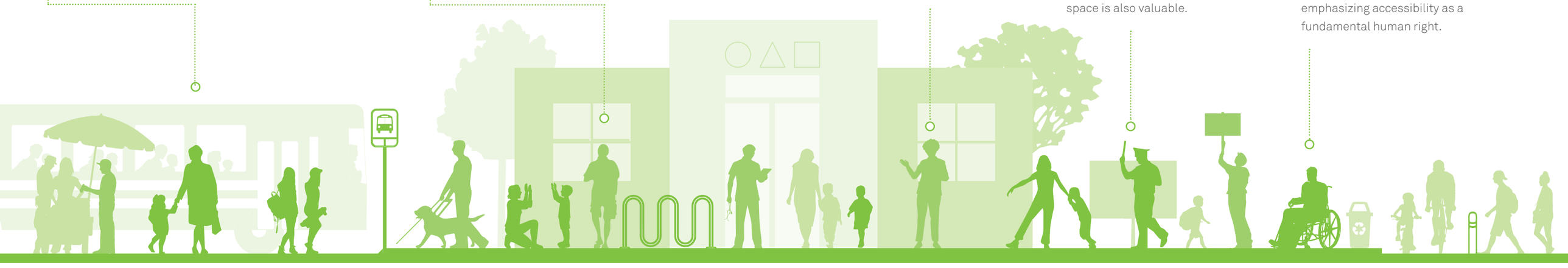
Primary caregivers, including parents and grandparents, play a crucial role in identifying early childhood priorities due to their intimate knowledge of daily routines and commuting challenges. Their involvement ensures young children feel safe and supported. Engaging caregivers not only addresses safety concerns but also considers the broader family context in urban planning.

Teachers and educators have a deep understanding of children's habits and neighborhood dynamics. Their involvement is key to tailoring activities that resonate with students and incorporating street design concepts into the curriculum and broader educational goals.

School administrators and staff are familiar with student commuting patterns, common conflicts during peak hours, and family profiles, including the number of students with disabilities and their proximity to school.

School guards, bus drivers, walk-cycle-to-school guides, and traffic agents can offer further insights into safety and the dynamics of streets surrounding schools. As authority figures who children encounter daily, data pertaining to their use and perceptions of the space is also valuable.

Include **children and caregivers with disabilities**—physical, sensory, cognitive, and mental health conditions—to identify key challenges in creating universally accessible streets. Their experiences inform solutions from sidewalk design to surface conditions, emphasizing accessibility as a fundamental human right.



Residents, business owners, local institutions, associations, and community members around the school will provide additional insights about uses and concerns beyond school hours and activities. When collecting data, making sure observations and surveys have an appropriate sample size of community members outside the school community will ensure the street is kept inclusive of multiple uses and abilities and continues to serve the community beyond school needs.

Local childcare service providers, often located near schools, offer valuable insights into the community and are connected with multiple families they serve.

Advocacy groups, nonprofit organizations, and local collectives are sources of information regarding children's and caregivers' needs in cities due to their expertise in local issues and specific topics such as education, children's rights, environment, disabilities, and more. They are also reliable partners for advocating, communicating about, and implementing street transformation projects. **Youth-based organizations, in particular, can provide direct insights into young people's needs and aspirations.**

Representatives from accessibility advocacy groups can provide valuable insights into the specific challenges faced by individuals with disabilities, identify potential barriers, recommend adjustments for improved accessibility, and make sure that the transformations genuinely cater to the diverse needs of the entire community.

Survey children and teenagers

Surveys are crucial for capturing the perceptions of children and caregivers about street transformations, offering specific insights into their experiences and needs. While interactive methods can be more engaging for children and young people to share their perspectives, surveys can be helpful for getting a larger sample of answers from different age groups and backgrounds, ensuring that diverse needs and experiences are captured. Additionally, as younger children are often accompanying their caregivers, who might be responding to surveys themselves, preparing questions specifically for them can complement adults' answers.

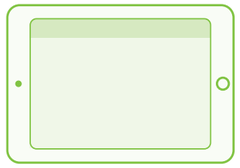
Remember to ask for caregiver consent when surveying children, and to check local laws and ethical regulations with respect to data collection involving children. Refer to the **Consent and Invitation forms** templates in the **Resources** section on p. 112 for obtaining consent and assent to participate in activities.

- Design your survey according to children's ages and abilities. If sending out a questionnaire, it is helpful if children can read and write. For younger children, questions can be created using icons or photos, or an adult or older child can read them the questions. See template for **My School Street Activity Packet** on p. 170.
- If surveying children in person, make sure they feel comfortable, and make sure they know it's fine to decline to answer a question. Show that you are listening carefully and that you care about what they are saying, and take notes to communicate them back later.
- Ask questions slowly and clearly, and give people time to answer.
- Use age-relevant terms and terms relevant to children's everyday life and their use of media.
- It can often be hard to get children's and youth's attention to answer online questionnaires. To ensure more responses, conduct in-person surveys, or ask schools or partner organizations to share the questionnaires during school hours or scheduled programs/activities.
- If possible, partner with a teacher to include surveys and questionnaires in the class curriculum. Students can help create the questions and conduct the survey with other students.
- Consider pairing these with other engagement strategies and methods, such as interactive boards (p. 180). See GDCI's *How to Engage Kids in Street Design* handbook for more guidance.

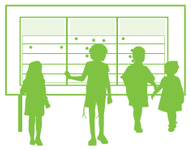
Fortaleza, Brazil

INCREASING YOUR REACH

Since schools often build communities of children, families, and alumni, they might have internal communication channels such as social media groups, newsletters, or email blasts. These could be used to collect data focused on specific groups and ages to help compare perceptions about the project and its impact.



Tailor your questions to match the audience's attention span and understanding. As people will be filling out the questionnaire without guidance, it might be more effective to gain fewer accurate insights than multiple rushed and confused answers. Make sure to translate surveys into other languages if need be.



Schools offer other opportunities for survey delivery. Consider if your questions could become a board in a classroom, with answers collected over time, or if it could be a type of "homework assignment" where children and caregivers respond and start a conversation.

Combine goals. Often, other stakeholders are conducting surveys as part of their regular operations. Joining forces could motivate respondents and facilitate partnerships.

Additionally, partnering with local stakeholders and community-based groups can be helpful for distributing questionnaires and reaching a large population given their connections.

SNAPSHOT

ENGAGING WITH COMMUNITY SURVEYORS

Recife, Brazil - 2023

As a part of GDCI's Streets for Kids program, the City of Recife was selected to transform the streets surrounding three schools in the Jordão neighborhood. For their engagement and data collection process, the project team enlisted community leaders and members to conduct surveys with residents and students' caregivers. Before going on site, the group of surveyors received training about the project and the survey methods. They also received a stipend and a surveyor kit with ID, a t-shirt with the program logo, and a tablet. Over the course of a week, they went door to door to talk to residents and spoke to caregivers during school start and end times. Their proximity to the community enabled them to survey 321 caregivers (representing over 50% of students) and 55 residents within a week.

Recife, Brazil

CREATING YOUR SURVEY

Surveys can be designed in different ways and with different goals in mind. This section provides tips for developing questions and prompts. Besides choosing the right format and the different stakeholders you need to engage, think about what you are trying to learn from respondents. This could include their perception about the street or project, behavior (for example, travel time, transport mode, or time spent outdoors), resources (such as owning a bike), preferences, or additional information you might be missing for a project or that you would like to evaluate before and after. Choosing the right questions thoughtfully is also important to guarantee answers that are helpful to support the design or advocate for a project, for example.

1 When developing a survey, discuss the rationale for your chosen method and try to answer the following questions:

- What information are you trying to collect? What is the most important thing to know?
- Who do you want to know this from? What groups of people will you collect information from (what ages, ethnic groups, schools, neighborhoods)?
- Will you use words, icons, or photos?
- How many people should you collect this information from?
- Will you conduct the survey in person or online?
- How will you use this information once it's collected?
- Are you doing surveys before and after, or only before? Only after? How do questions need to be adapted accordingly? For example, if only after, questions need to be framed to consider the space/design both before vs. after.

2 Brainstorm questions and determine how people will respond to them.

- **Open-ended questions** can be great for obtaining quotes and stories from respondents, but they're harder to analyze when you have a big sample.
- **Use multiple choice** when you have expected answers and you want to facilitate analysis.

How do you commute to school?
Walking / Cycling / Public transit / School bus / Private car / Taxi

- **Use a scale** when you want to represent a range of perceptions, using words and numbers:

On a scale of 1 to 5, how safe do you feel on this street?
1 (very unsafe); 2 (unsafe); 3 (neither safe nor unsafe); 4 (safe); 5 (very safe)

How often do you cycle to school?
Never / At least once a month / At least once a week / Every day

- **Use icons or emojis** when asking about young people's attitudes or feelings.

How much do you enjoy spending time on this street?


León, Mexico


Cerrillos, Chile

3 Pilot the survey. This test could include:

- Brief site assessment to choose the best locations and times for surveying.
- Testing survey format, content, and response time.

Tip: When carrying out in-person surveys, remember that closed-ended questions can be asked in two ways: either "prompted" with options voiced by interviewers to elicit responses, or "unprompted" where respondents choose without hearing options aloud. Both types offer predefined answers, but differ in presentation—either verbally by the surveyor or left to respondent interpretation. Choosing between prompted or unprompted depends on the survey's objectives, information needs, and considerations of control versus bias and respondent flexibility.

Tips for developing questions

- Collect only what you need, and keep the questionnaire as short as possible. Respondents can get tired and give up midway if a survey is too long.
- Keep questions as clear and specific as possible. Avoid technical jargon, and use words that are relatable to the audience.
- Have the questions follow a logical flow, going from general to more specific.
- Group questions on a similar topic together. For example, separate questions into themes such as mobility patterns, public space use, road safety, environment, etc.
- In multiple choice questions, include a full range of options, options, including "I don't know" and "Not applicable to me."
- When asking respondents to choose among options, limit the number of options so that you can observe their top concerns or priorities. Make sure options are clearly different from each other and do not overlap.
- In general, if including a few open-ended questions, put them after structured questions.
- If using a survey to evaluate change in perception or behavior, make sure to include similar questions when conducting the survey before and after.

QUESTION LIBRARY

Below are some examples of questions you might want to include in your survey or questionnaire, based on your project goal. If your project is trying to achieve multiple goals, choose the questions that will better demonstrate the impact of the street transformation for the stakeholders involved. Remember to keep your survey short to keep your audience engaged.

Remember to adjust questions depending on how old kids are and if you're surveying adults.

If your goal is:

ROAD SAFETY, then consider asking:

- How safe do you feel walking/cycling on the streets outside of the school? [Scale]
- (If caregiver) How safe do you feel about your kids walking or cycling on this street alone? [Scale]
- Do vehicles usually travel at high speeds in this street/neighborhood?

UNIVERSAL ACCESSIBILITY, then consider asking:

- Do you have any disabilities or functional diversity? If yes, please specify which one(s).
- On a scale of 1 to 5, how comfortable do you feel moving around on this street? [Scale]
- How easy/difficult is it to get from your home to school? [Scale]
- Where in your journey to school is it the most difficult to access? [open-ended]
- What would you do to make your school commute more accessible? [Open-ended or non-prompted multiple choice]

ACTIVE TRANSPORTATION, then consider asking:

- (If caregiver) Does your child walk to school? / Does your child cycle to school? [Multiple choice]
- How do you/does your child commute to school? [Multiple choice]
- Do you/does your child own a cycle? [Multiple choice]
- (If caregiver) How likely are you to let your child walk/cycle to school? [Scale]
- (If child) Would you like to walk/cycle to school? [Multiple choice]
- What would be necessary for you or your kids to choose to walk or bike to school? [Multiple choice or open-ended]

CLIMATE RESILIENCE, then consider asking:

- How much do you agree with the following statement: As I walk on the streets near the school, I feel protected from the heat. / (...) from the rain. [Scale]
- How much do you agree with the following statement: I have/children have easy contact with nature on the streets around the school. [Scale]
- [Flagging a multi-barreled question] How often do you/your children miss class due to heavy rain, floods, excess heat, and/or other climate-related issues that may affect your journey? [Scale]
- How does flooding affect your or your child's ability to access school safely? [Open-ended]

Evaluating streets near schools | Select appropriate methods and tools

SOCIAL CONNECTION, then consider asking:

- How often do you talk to others (parents, teachers, children, colleagues) on the streets outside of the school? [Scale]
- How much do you agree with the following statement: The street outside of the school offers opportunities for me to spend time with and talk to others (parents, teachers, children). [Scale]
- For youth: How much do you enjoy spending time outside the school? [Scale]
- For youth: How much do you agree with the following statement: I feel welcome in this space. [Scale]
- Would you like to see more space outside the school for gathering? [Multiple choice/open-ended]

NOISE POLLUTION, then consider asking:

- How do you experience the noise level on this street? [Scale]
  (See **Noise Perception survey** on p. 158)

OUTDOOR PLAY AND LEARNING, then consider asking:

- How often do you/your kids play/spend time in the streets outside of the school? [Scale]
- How much do you agree with the following statement: I feel comfortable and safe allowing children to play on the streets outside of the school. [Scale]
- How much do you agree with the following statement: There is appropriate space for children to play in the streets around the school. [Scale]

Additional questions across all goals:

- What are the top 3-5 changes you would suggest to make the street better for...? [Open-ended]
- Are you supportive of the transformation of this street? [Multiple choice]
- How would you rate the street before and after the transformation? [Scale]

Navigate community concerns

Similar to other street transformations, interventions around schools can encounter resistance from neighbors or other stakeholders who might have concerns about changes in traffic patterns, noise, public space use, or other perceived disruptions. It is vital to engage the community, build trust, and invest time in addressing these concerns where possible, emphasizing that the primary aim is the health and safety of children. Despite likely receiving some pushback, the focus must remain on the benefits for kids, ensuring that their needs take precedence over vehicles and that the loudest voices do not overshadow the common goal of creating a safer, more inclusive environment around schools.

Data itself can help persuade stakeholders about the merits of such projects. Using data such as numbers of kids or people killed or seriously injured in the city or near schools, or current air quality levels, can help people understand the sense of urgency and potential impact of the project. Qualitative data collected through surveys and other methods can capture community perceptions and needs, as well as tell their stories in a more personal way. By presenting quantitative and qualitative data together, project teams can foster a shared understanding of the project's positive impact, build trust, and effectively address any resistance by demonstrating the project's benefits for all stakeholders involved.

On the other hand, engaging communities in the data collection process, effectively turning them into researchers, can be a powerful strategy for building support for projects near schools. This approach not only empowers community members by involving them in decision-making but also fosters a sense of ownership and stewardship over the project. When residents actively participate in data collection, they often become project ambassadors, advocating for the initiative, mobilizing local support, and ensuring its long-term success. This grassroots involvement strengthens community bonds and enhances the chances of project sustainability. See *Case Study: Engaging with community surveyors in Recife, Brazil,* on p. 59.

Recife, Brazil

Evaluating streets near schools | Select appropriate methods and tools

SNAPSHOT

BRINGING THE COMMUNITY TO EXPERIENCE THE STREET AT 95 CM

Location: Kuala Lumpur, Malaysia
Time period: 2023
Stakeholders: Dewan Bandaraya Kuala Lumpur (DBKL), parents of schools such as SMK Danau Kota and SK Danau Kota, Bike Commute Malaysia, Bloomberg Initiative for Global Road Safety (BIGRS), Global Designing Cities Initiative

Description

Road traffic injuries are responsible for 14% of deaths among children aged 5-14 years in Malaysia, making it the leading cause of child mortality in the country. To reverse this situation, Malaysia is committed to achieving a 50% reduction in road traffic deaths and injuries by 2030, as outlined in Malaysia's Road Safety Plan 2022-2030. To support Malaysia's ambitious road safety goals, the city of Kuala Lumpur and GDCI launched the first phase of a school street transformation project for two schools in Jalan Danau Saujana 1. Before beginning the street redesign, the GDCI team engaged with students, caregivers, and teachers from the schools through participatory activities, gathering valuable insights to set a vision for safer streets near schools.

Learn more about the project's engagement strategy for children in GDCI's *How to Engage Kids in Street Design* handbook.

Community members explore the street with the reverse periscope

Besides the extensive engagement activities with students aged 7-15, the project team also engaged teachers and caregivers, important stakeholders for improving streets near schools. The activity consisted of using GDCI's Streets for Kids Reverse Periscope, a tool designed to help adults and adolescents experience streets from a child's height (approximately 95 cm). Using the observation forms included in the toolkit, workshop participants were able to note their impressions of different aspects of the street and rate their experience in terms of safety, comfort, and enjoyment.

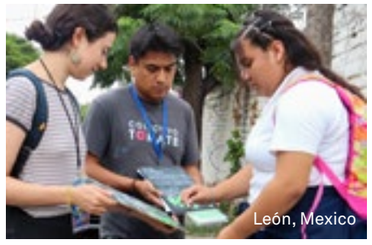
The activity allowed adults to perceive the different needs and challenges of children on the streets near the school. Viewing the incoming traffic, design elements, and street conditions from the lens of a three-year-old is an effective way to communicate the need and urgency for change required on our streets. It also helps with gaining support for the process of redesigning streets near schools.

For more information on building and using the periscope, consult GDCI's *Reverse Periscope Companion Guide.*

Participants noting their perceptions around the school

Create or adapt tools to engage children and youth

Methods for engaging children and youth involve employing approaches that resonate with their unique perspectives, abilities, and communication styles. Kids are experts of their lived experiences and are eager to contribute. Their participation will help them gain confidence and encourage them to voice their concerns, leading to more involved future adults. Projects that actively engage children and integrate their ideas tend to be more innovative, inclusive, and comprehensive. By tailoring methods to suit a young audience, teams can capture authentic insights that amplify the impact of street transformations from their own perspective, legitimizing decisions, strengthening accountability, and enhancing the effectiveness of street transformations near schools.


León, Mexico

Istanbul, Turkey


Tyre, Lebanon

- **Take an inclusive approach**
  Make sure to engage different age groups, abilities, and contexts, and treat them equally. Take into account specific needs and shape engagement tools accordingly. Children express themselves in different ways. Offering multiple mediums can allow participants to communicate their thoughts more effectively.
- **Respect their freedom and privacy**
  Remember children have the right to disengage and re-engage, and should not be forced into participating. Make sure that children and caregivers consent to voluntary participation in the project and to being photographed. Protect any sensitive information about children collected through participation and project analysis.
- **Create a safe space** where children feel welcome, confident, and protected from harm. Choose an accessible location and meet them where they are.
- When possible, avoid standalone activities. **Aim for ongoing engagement** to support learning through practice and in-depth insights.


Fortaleza, Brazil


Cerrillos, Chile


Lima, Peru

- **See schools and local organizations as your allies.** Connect activities to the school curriculum to integrate real-world applications into education and make learning experiential and relevant. Partner with school-based clubs/organizations and extracurricular activities to connect with youth more deeply and intentionally.
- **Give kids agency**
  Involve them in designing, carrying out, and documenting activities. This will promote ownership of the data collection process, help them better understand their communities, and enhance their critical thinking and problem-solving skills.
- **Encourage play**
  Learning, exploring, interacting, sharing feelings, and even resting are all part of their experience, often facilitated through play.

Evaluating streets near schools | Select appropriate methods and tools

Below are some ideas for tools and methods that can be used to gather children's and caregivers' insights. There are no one-size-fits-all solutions, and engagement strategies can range from informal conversations, walks, and play to drawings, mapping, and photo stories.

For more details on how to engage children and youth in the design process, see GDCI's How to *Engage Kids in Street Design* handbook.

Child-to-child
Older children can guide younger children and hear perceptions about their school environment and street improvements through guided walkshops and tours.

Visual surveys
Use a visual preference survey to get quick results. Make it accessible for those who cannot read.

Journaling
Encourage kids to keep a journal. For example, ask kids to document how they travel to school, the paths they take, how long this takes, and how they feel before and after a street transformation.

Mapping
Help identify, prioritize, and evaluate sites, routes, and mobility areas. Use large-scale maps to document children's environments, perceptions, and habits.

Street audit
Do a street audit with children and caregivers. Compare their different perspectives and discuss key challenges and potential solutions.

Technology
Ask children to report poor street conditions and document their travel to school by walking and cycling via gamified apps.

Photo story
Ask children to take pictures of places they like around their school and things that need to be improved on the streets. Share and discuss their findings.

Observations and counts
Understand how the street is used by kids of different ages and who the users are with quantitative counts.

Child-led tours
Children are passionate about the places where they live and study. Let children lead and show what works and what does not.

Interactive boards
Use interactive boards to ask students targeted questions about their routines, behaviors, and preferences.

See templates in the **Resources** section.

SNAPSHOT

MAPPING ROUTES TO SCHOOL

Location: São Paulo, Brazil
Time period: 2018
Stakeholders: CET-SP, ITDP Brazil, Global Designing Cities Initiative

Description

José Bonifácio, a neighborhood located 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 locally collected data, CET-SP, the city traffic management agency, designed a project to improve road safety at select sites. As part of the design and validation process, project partners carried out two workshops, one with 51 students from a local school and another with community members. Workshop goals were to gather information about participants' commuting habits and their insights about the design proposals, which were presented by CET-SP.

Using interactive boards and maps, participants shared information about their most common modes of transportation and routes to school. The activity revealed that over 60% of students walked to school on a daily basis. The mapping exercise, combined with interactive boards, helped local teams prioritize on-site interventions.


São Paulo, Brazil

Tools used

- Mapping
- Interactive boards

See **Interactive Boards** templates on p. 180

SNAPSHOT

SITE VISITS AND SURVEYS

Location: Paris, France
Time period: 2021-present
Stakeholders: City of Paris, Paris' Roads and Transport Department, Conseil d'architecture, d'urbanisme et de l'environnement (CAUE) de Paris

Description

The "Rue aux Écoles" program is dedicated to creating safer pedestrian-oriented spaces around schools and enhancing student safety and well-being. In collaboration with the City of Paris' Roads and Transport Department, the CAUE de Paris spearheads initiatives to engage schoolchildren in understanding and discussing changes to their streets. Through site visits, children are introduced to concepts like permeability, biodiversity, and the inclusive use of public spaces.

These visits, coupled with visual surveys, encourage students to critically observe their surroundings and contemplate the benefits of street transformations, including improved air quality, reduced noise pollution, and enhanced climate and biodiversity. By assessing the streets, children share their perceptions, preferences, and suggestions, offering insights into how they might utilize or redesign these areas. This approach not only educates children on sustainable urban design but also empowers them to contribute to the conversation about their community's development.


Paris, France

Tools used

- Street audit
- Visual survey

See **Visual Survey** template on p. 170.

CASE STUDY

OBSERVE PROGRAM

Location: Chennai, India
Time period: 2018-present
Stakeholders: Urban Design Collective, Center for the Living City

Description

The Observe program offers a dynamic platform for youth to critically engage with and assess their urban environments. Through structured workshops that unfold in **Discover, Connect, and Take Action** segments, the program empowers participants to explore their neighborhoods using all five senses, encourages understanding through diverse community characters and roles, and culminates in actionable solutions communicated to local authorities.

In the **Discover** phase, participants are prompted to reflect on what constitutes a city and its streets, bringing to light common urban challenges. This foundation sets the stage for a guided neighborhood walk, where they're encouraged to use all five senses to identify and document what they appreciate and wish to improve in their surroundings.

The **Connect** phase further enriches this learning experience by having participants draw mental maps based on their observations, focusing on some of the things that stood out for them. This fosters a reflective discussion that reveals diverse viewpoints on the neighborhood's characteristics.

For the closing segment, **Take Action**, participants decide collectively on actions that can foster change in their neighborhoods using simple tools. In this segment, participants are also introduced to concepts of urban governance as a way to understand the role of local governing bodies and identify channels to work with these bodies for positive action. Taking action may include writing postcards to local governing bodies highlighting the urban issues they identified on their walks while also touching upon solutions that were discussed collectively. It can also include small-scale, community-driven activities such as planting drives, setting up compost pits, and putting up signage.

As of 2024, UDC has conducted the Observe workshop in 3 private schools and 7 public schools with over 400 participants. Highlighted below are some observations from participating students:

- "I would fight to preserve the trees, parks, and water bodies in my neighborhood."
- "This open rainwater drain smells like feces; maybe the people here don't have public toilets. That is something for us to think about."


Street audit


Students talking to residents


Mapping

This comprehensive approach not only fosters a deeper understanding of urban challenges and opportunities for change but also prepares participants for future roles as empathetic, informed urban planners and active citizens dedicated to fostering healthier, more inclusive urban spaces.

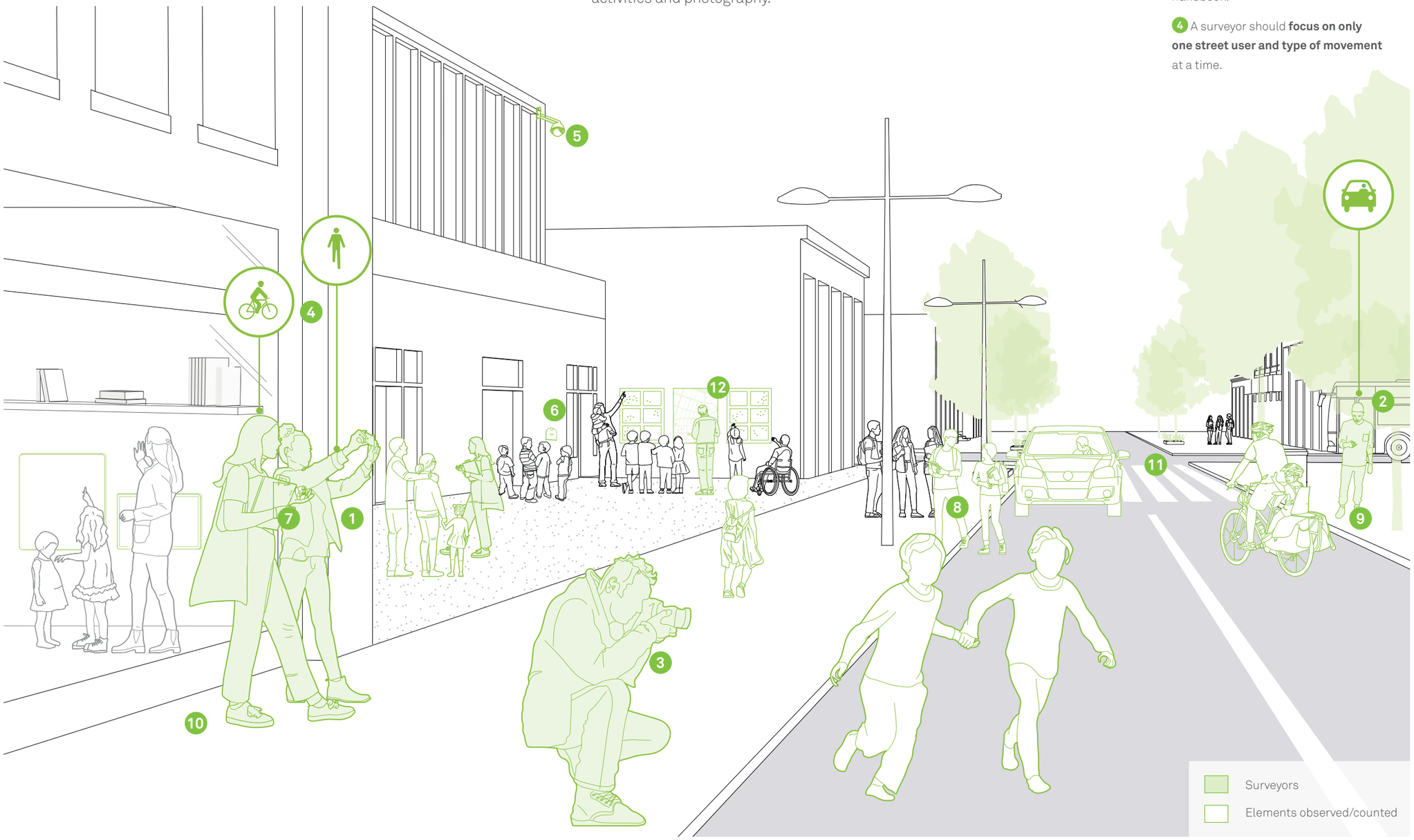
Tools used

- Street audit
- Mapping

B3 | Collect data on site

Once the on-site data collection is planned, it's time to proceed to the site. See **Data collection tools** in the **Resources** section to analyze existing site conditions, count street users, document activities, measure noise levels and air quality, and assess community members' perceptions of the street. Make sure to check local laws and ethical regulations tied to data collection about children and to ask for consent for caregivers when surveying children. Below are some tips for gathering data on site:

Refer to the **Surveyor Checklist** on p. 108 for general reminders, and the **Consent and Invitation forms** templates in the **Resources** section on p. 112 for obtaining consent and assent to participate in activities and photography.



1 **Make sure surveyors and staff are set up to work safely.** This could include working in pairs, making sure they're protected from vehicles, and providing them with safety vests and sun protection gear. They also need to be aware of local laws related to filming and photography, and they should have the appropriate insurance, consent forms, and waivers.

2 Consider **shade** on hot days when surveyors will be outside for a long time.

3 **Have a camera on hand to photograph existing challenges** to how the street functions, such as people walking on the roadbed, running to cross the street, or cycling in speeding traffic. Be careful about potential legal constraints around taking close-up photos of people, especially children. Always bring printed confidentiality/consent waivers on site. See *Visual documentation tools* in GDCI's *Evaluate Street Transformations* handbook.

4 A surveyor should **focus on only one street user and type of movement** at a time.

5 **Set up video devices that can capture on-site activities for your team to revisit and document later if needed.** Choose a safe location for the camera such as a window in the school or nearby store or the top of a street light. Check batteries and select the right memory card capacity.

6 **For air quality sensors or sound level meters,** aim to measure in a way that best represents how children are exposed to traffic emissions and noise, i.e. **closer to these sources and simulating children's heights**. However, if this poses logistical challenges, prioritize ensuring the devices are safe from interference (e.g. vandalism and theft).

7 **Use a tally counter for the most common user type and draw tally marks on your count form for all others.** For instance, if most pedestrians are children, use a tally counter for them and tally marks on your count form for adult caregivers and older people.

8 When counting people walking on the roadbed, count at pinch points, such as locations where utility poles, tree pits, etc. obstruct the sidewalk to **highlight extreme behaviors.**

9 **Ensure a position where surveyors' views remain unobstructed during counts.** For instance, when counting vehicles across multiple lanes, choose a location where larger vehicles such as buses and trucks won't block the view of traffic.

10 When finding a place to count or survey people, **make sure not to block clear paths on the sidewalk** or push people onto the roadbed.

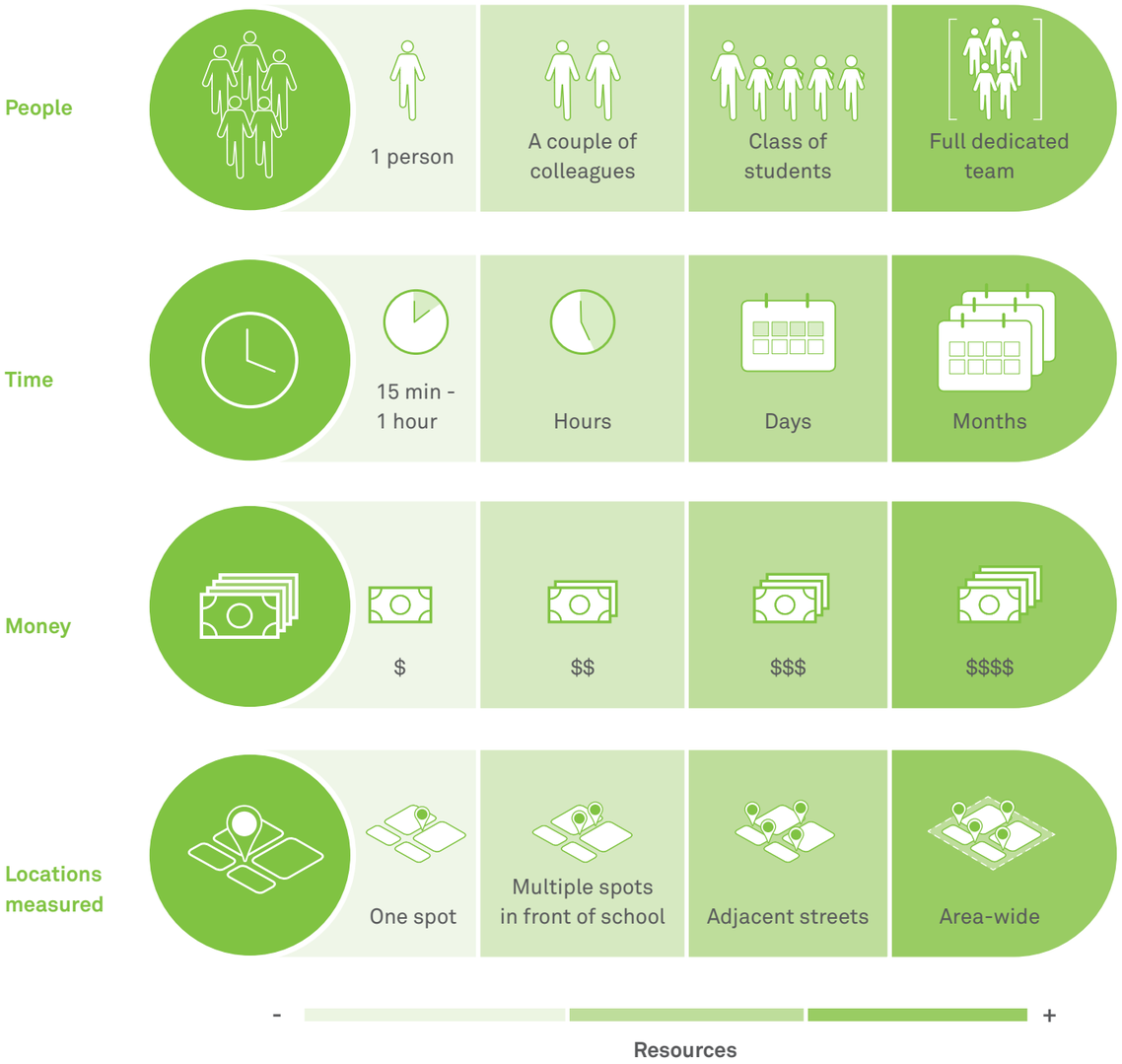
11 **For speed data, pick strategic corners or stretches** after traffic signals vs. before when vehicles are still beginning to accelerate.

12 When using interactive boards, **have team members on hand to listen and document community input.**

A little bit can go a long way

Often, teams lack the capacity or resources to deploy numerous surveyors over an extended period for on-site data collection. However, observations, counts, and photos/videos remain potent tools for comprehending and highlighting existing challenges, thereby advancing projects. Regardless of the scale of what data can realistically be collected, remember that a little data can go a long way in helping tell a compelling story about a specific site, project, or challenge. The snapshots on the following page share a few examples of how a range of resources were used to collect data in various projects.

No matter your resources, use them strategically to measure what matters the most.



SNAPSHOT

QUICK ACTIONS, BIG FINDINGS

Bogotá, Colombia

In Bogotá's Alquería neighborhood, a site visit led to an impromptu data collection session on AK 68 Street, as the project team noticed high volumes of people crossing the street outside of protected, marked crossings. One surveyor was available to count for 15 minutes using a paper, pen, and a timer on a phone. When extrapolated for the hour, the team realized there were 800 people crossing the street per hour. This finding was coupled with a series of photographs clearly demonstrating the challenge and highlighting the fact that many of the people crossing were kids and the elderly. This was an important finding to start a conversation about the need for more at-grade crossings in the area.


Bogotá, Colombia

SNAPSHOT

INCREASING CAPACITY WITH STUDENTS

São Paulo, Brazil

In 2017, the Santana Slow Zone was selected to receive enhanced traffic-calming infrastructure. As a part of their design process, which included engagement with residents and business owners, the team also collected data with the support of students from the FIAM-FAAM Architecture School. A group of approximately 30 students were trained and collaborated on data collection to measure pedestrian flows, vehicle volumes, traffic signal times, and compliance with existing pedestrian infrastructure, in addition to observations on land use and street activity. Partnering with educational institutions can be an opportunity to increase human resources while building local capacity.


São Paulo, Brazil

SNAPSHOT

PARTNERSHIPS AND TECHNOLOGY

Merri-Bek, Australia

Ride & Stride is a behavior change program designed to get more kids walking, cycling, and scooting to school in Merri-bek. See *Case Study* on p. 33. To measure its impact, the initiative uses different methods, including the Bicycle Network's Artificial Intelligence Road Survey (AIRS) program, which uses AI technology to identify and count different road users; "hands-up" counts (a method where children are asked to raise their hands to respond to how they traveled to school, and the data is gathered via app); surveys with caregivers, residents, and students (before, during, and after events); observations on street use and activities; and traffic monitoring. The data is then shared in an annual report to communicate the project's impact. Using technology can support data collection by automatizing counts, and partnering with local organizations can increase resources.

B4 | Gather insights

Assessing the impact of a street transformation near a school requires organizing the collected data in order to interpret the results, highlight valuable insights, and communicate them back to your key audiences. Clear before-and-after comparisons reveal changes in the way people, especially children and caregivers, move, pause, and play on the street, which can inform future design decisions, influence policies, and inspire the scaling up of similar types of projects.

Review goals and identify outcomes

Revisiting the goals set at the beginning of the project will help you analyze insights, identify any shifts in priorities, and set the stage for proposed solutions or actions.
See p. 75

Organize and standardize collected data

Standardize all collected data from different sources into spreadsheets. Compile notable quotes, observations, photos, and anecdotes related to street activities, demographics, and specific locations.
See p. 75

Analyze data and generate results

With your goals in mind, examine key metrics. Use quantitative and qualitative data, whether through observations, surveys, or other interactive methods, to verify changes in areas such as traffic volumes, speed patterns, types of activities, safety perception, community feedback, and overall satisfaction.
See p. 78

Refine design and propose future actions

Insights from the data analysis will guide future action. That might mean iterating on the design, making recommendations for future projects, advocating for scaling to other sites, or communicating results back to key stakeholders.
See p. 80

Review goals and identify outcomes

At the beginning of the project, specific goals were set (see *Section A: Measuring what matters the most* on p. 21). Objectives might have included enhancing road safety near a school or expanding opportunities for outdoor play and learning. Revisiting these goals enables an assessment of how successful the project was when compared to the final outcomes, and offers a framework for organizing, analyzing, and presenting the data. It also presents an opportunity to identify if goals and priorities have shifted, highlighting potential gaps in data collection for future stages of the project.


Salvador, Brazil

Organize and standardize collected data

Data collection can involve tools and forms, drawings, observations, photographs, quotes, and other outputs. **Digitize and save all data forms, drawings, and printed questionnaires, and create a comprehensive list of takeaways, including notable quotes, observations, and anecdotes if applicable.**

Standardize all collected data from tools into spreadsheets and organize it into categories to help with accurate data comparisons. Examples:

- Location of data collection point
- Before, immediately after, or some time after project implementation
- By day (weekday or weekend, school in session or not, holiday or workday, etc.)
- By time (peak or off-peak hour, morning or evening, etc.)

Data collection often entails sorting through large quantities of information retrieved by multiple surveyors. Make sure your results are comparable, with datasets collected over similar lengths of time (e.g. intervals of 15, 30, or 60 minutes) and areas using the same methodologies.

Istanbul, Turkey

Review data collection tools instructions in the **Resources** section on p. 98.

SNAPSHOT

SAMPLE SPREADSHEET TO ANALYZE PEDESTRIAN DATA NEAR SCHOOLS

GDCI's Streets for Kids project in León, Mexico, aimed to improve road safety around the Lomas de la Trinidad DIF Club and reduce the number of pedestrians, particularly children, walking outside designated facilities. The sidewalk closest to the school was extended to incorporate new seating and play elements along the street. Pedestrians were counted before and after the street transformation to assess shifts in pedestrian volumes.

The spreadsheet on the next page shows data from the pedestrian counts on/off sidewalks, which were collected using the **Pedestrian counts: Sidewalks** form and digitized. It includes the total number of pedestrians observed by age groups from two weekday evenings, before and after the street transformation (see p. 77).

See form **Pedestrian counts: Sidewalks** template on p. 126.

To demonstrate the safety gains of the project, the team highlighted the most powerful metrics, such as **change in percentage of children walking on the roadbed.**

Here are findings after the street transformation:

- **74% increase in children and teen volumes,** indicating the project was successful in attracting and accommodating more children and teens.
- After the installation of the sidewalk extension, there were **no more children or teens observed walking or being carried on the roadbed.**

1 General information
Note the day(s) of the week, date(s), and time(s) the data was collected, plus weather conditions and notes.

2 User types
Clearly note the relevant data subjects on the spreadsheets.

3 Before/after
Standardize data collection so that you can easily make before-and-after comparisons, e.g. collect data at the same time of day before and after project implementation.

4 Totals
Separate totals by street user type to compare.

5 Variation over time
Compare the differences between before-and-after data to evaluate the impact of implementations.

6 Project goals met?
Analyze relevant metrics to see if you've achieved the project's goals.

For more examples of how to analyze street data, see GDCI's *How to Evaluate Street Transformations* handbook, pages 64-67.

Evaluating streets near schools | Gather Insights

Fill out forms → Digitize → Transfer to spreadsheet for analysis

Pedestrian Volume Counts

Location / Code (1)	Day type (use dropdown menu)	Time (use dropdown menu)
School entrance	**Weekday (Tue-Thu)**	**6 pm - 7 pm**

Project Goals (5)		(6)	Totals (4)	
Description of project goal	**Outcome**	**Goal achieved?**	**Before**	**After**
Increase in pedestrians volume	67%	Yes	224.0	336.0
Reduction in pedestrians walking on the roadbed	-6%	Yes	6.3%	0.0%
Reduction in children and teens walking or being carried on the roadbed	-5%	Yes	5.4%	0.0%
Increase in share of children and teen volumes	74%	Yes	33.04%	44.64%

Input Data

		Total per hour (All types)	(2) Total (All types)	Young child (0-3)	Child	teen	Adult	Older adult (+75)
Before Counts								
Hour	**6:00 PM**							
Day	**Tue, April 25, 2023 + Thu, April 27, 2023** (1)							
Counted for:	30	Minutes						
(3) BEFORE	**Sidewalk A** (side of school)	**194**	97	4	15	11	67	
	Roadbed (always use this line for roadbed)	**14**	7	1	1		5	
	Sidewalk B (identify with reference point)	**16**	8	1	4		3	
	Other (if applicable)	**0**	0					
	Other (if applicable)	**0**	0					
	Total	112		6	20	11	75	0
	Total p/ hour	**224**		**12**	**40**	**22**	**150**	**0**
	% walking on the roadbed	**6.3%**		16.7%	5.0%	0.0%	6.7%	0.0%
After Counts								
Hour	**6:00 PM**							
Day	**Tue, Nov 14, 2023 + Thu, Nov 16, 2023** (1)							
Counted for:	30	Minutes						
(3) AFTER	**Sidewalk A** (Side of school)	**228**	114	19	22	11	60	2
	Roadbed (always use this line for roadbed)	**0**	0					
	Sidewalk B (identify with reference point)	**108**	54	9	5	9	31	
	Other (if applicable)	**0**	0					
	Other (if applicable)	**0**	0					
	Total			28	27	20	91	2
	Total p/ hour	**336**		**56**	**54**	**40**	**182**	**4**
	% walking on the roadbed	**0.0%**		0%	0%	0%	0%	0.0%

Analyze data and generate results

Analyzing pre- and post-transformation data can highlight changes in street conditions, measure shifts in use and function, and evaluate the resulting impacts. **Aligning your data analysis with the initial project goals, new priorities revealed through the process, and the narrative you aim to convey can be a good starting point**. For instance, if enhancing play near schools was a goal, monitoring demographics and activities could show notable shifts, like increased play among specific groups. Qualitative feedback supplements quantitative data, helping validate or challenge findings and uncover new insights, such as community perceptions of safety possibly reflected in speed or crossing data. This approach ensures data informs expectations and guides future improvements.

Be strategic and identify additional data to help push the project forward.
Sometimes, post-transformation data may not reflect significant changes or met goals, indicating a need for additional data collection or strategic reassessment to advance the project or make it permanent. Using survey results, anecdotes, and other qualitative data can be instrumental to supporting the project.

Extracting and interpreting significant information that resonates with key stakeholders and substantiates a project's value is just as important as data collection. Prioritizing and strategically utilizing resources in this manner is essential. It's also vital to balance quantitative data with qualitative insights to appeal to a diverse audience. While numbers are critical, the power of storytelling should not be underestimated in conveying impact and significance.

Remember to compare the same metrics before and after, and ensure they can be read in a relatable and simple way to understand changes and the resulting impact.

Categorize data, identify common themes, and generate insights from engagement
Try looking for keywords that relate to some of the metrics you are collecting through other tools (e.g. connect kids' perceptions such as "I feel scared when crossing this street" to a larger topic about "safety"), find recurrences, and use resources such as word clouds to identify patterns and themes. Try to match findings with illustrative photos.

For more guidance on gathering insights from interactive activities and engagement, see GDCI's *How to Engage Kids in Street Design* handbook.

Examine engagement maps to identify key locations and perceptions

Review meeting notes and recordings to categorize and identify common themes

Use survey and observation results to understand if and how goals were achieved

Tally results from forms and interactive boards

Before the transformation, **79%** of vehicles were exceeding 20 km/h.

Students shared concerns and wishes about their school street. Following previous crashes, they **worried about getting hit by vehicles.**

"When I went to school before, I had to worry about cars parking, but not anymore. Now I just walk the transformed route, knowing it will be safe!"

School student,
15 years old

After the transformation, only **4.4%** of vehicles exceeded 20 km/h.

As a consequence, observed **play activities tripled** following the transformation, especially active play.

Over 75% caregivers reported that they or their children now play on the street five times a week or more, increasing physical activity among children.

EXAMPLE: ANALYZING ACTIVITY COUNTS TO EVALUATE DIFFERENT PROJECT GOALS

The following example illustrates data analysis for a project that aimed to encourage outdoor play and increase social interactions. To assess if goals were met, the team analyzed activities observed before and after the street transformation.

The tables below show activity count data collected using the **Pause-and-play activities** form on p. 138. Data was collected before, during, and after school hours pre- and post-project implementation.

Activities Counts

Location / Code	Day type (use dropdown menu)	Time (use dropdown menu)
School entrance	**Avg. multiple days**	**Avg. multiple times of the**

Project Goals			Totals	
Description of project goal	**Outcome**	**Goal achieved?**	**Before**	**After**
Increase in people observed playing	500%	Yes	2.0	12.0
Increase in people observed socializing	37%	Yes	89	122
Increase in the share of people observed sitting comfortably	90%	Yes	6.67%	97.01%

Input Data

Pause and play activities

		Sitting (formal)	Sitting (informal)	Socializing	Playing
Before Counts					
Hours	**8:00, 12:30, 14:30, 16:30**				
Days	**Tuesday, Thursday and Saturday (5 days)**				
Counted for:	15 Minutes				
BEFORE	**Weekdays**	1	4	65	0
	Weekends	0	10	24	2
	Total	**1**	**14**	**89**	**2**
After Counts					
Time	8:00, 12:30, 14:30, 16:30				
Date:	**Tuesday, Thursday and Saturday (5 days)**				
Counted for:	15 Minutes				
AFTER	**Weekdays**	60	2	118	9
	Weekends	5	0	4	3
	Total	**65**	**2**	**122**	**12**

Results

Goal 1:
OUTDOOR PLAY AND LEARNING

→ **Five times more people were observed playing** on the street after the transformation.

Goal 2:
SOCIAL INTERACTIONS

→ **37% more people were observed engaging in conversations** after the transformation.

→ This may be, at least in part, a result of increased comfort. **Before the transformation, only 6% of people sat on benches, compared to 97% after.**

Refine design and propose future actions

After the initial results of a project become apparent, this is an optimal time to refer back to the project goals and assess whether the design has achieved them. This step can hint at adjustments that need to be made to the current design, such as adding or changing physical elements, or to future projects, processes, programs, and policies. For example, if your project aims to improve road safety around schools and vehicle speeds are still high, this could mean including additional traffic-calming elements to reduce speeds, or making policy regulations to reduce speed limits around schools.


Cerillos, Chile


Abuja, Nigeria


Lima, Peru


Merri-Bek, Australia

Consider some of these solutions:

Review and improve the design to incorporate additional traffic-calming measures and spaces to pause and play.

Develop policies and programs that formalize or memorialize street transformations and ongoing maintenance. This might include drafting design guidelines, proposing amendments to city planning regulations, adjusting budgeting processes, or updating internal processes.

Launch or support campaigns aimed at advocating for more street transformations near schools.

Emphasize and enhance the environmental and health benefits of street transformations, like reducing air pollution and promoting physical activity, to garner broader support.

Establish long-term monitoring and evaluation frameworks to continually assess the effectiveness of the transformations, and to make informed decisions about future projects and policy adjustments.

Identify and secure sustainable funding sources for ongoing and future transformations and maintenance. This could involve applying for grants, seeking private sponsorships, or collaborating with nonprofit organizations.

Develop models for scaling up successful transformations and replicating them in other areas. Document best practices and lessons learned to guide other communities interested in similar projects and build the capacity of local practitioners.

Strengthen partnerships with key stakeholders, including city officials, school boards, parent-teacher associations, and local businesses. These partnerships can provide support in terms of resources, policy influence, and community support.

Encourage and support community-led initiatives around schools. You could involve local residents in maintaining and monitoring street transformations, thereby fostering a sense of ownership and responsibility.

CASE STUDY

TIRANA SCHOOL STREET PROGRAM

Location: Tirana, Albania
Time period: 2020-present
Stakeholders: Municipality of Tirana, Tirana's Department for Transport and Mobility, Qendra Marrëdhënie, and Global Designing Cities Initiative

Description

In 2020, GDCI began to working with Albanian nonprofit Qendra Marrëdhënie and the Municipality of Tirana to transform a busy street, Kahreman Ylli, around Gjon Buzuku, a primary school. Kahreman Ylli is a wide street where drivers travel at high speeds, and where over a 1,000 students attend the school each day, putting students, caregivers, and teachers at risk. During the COVID-19 pandemic, the team engaged the school community and tested different design strategies to slow vehicles down and create more play space for students.

In May 2021, the team successfully completed the Streets for Kids project and made significant safety improvements —making this area of Kahreman Ylli the first school zone in Tirana. This first pilot was important for the city to evaluate results, learn key lessons, and scale up their efforts to other sites.


BEFORE Edith Durham


AFTER Edith Durham

Results

After completing the project, there was a:

- 16% decrease in vehicular speeds, and a 59% decrease in vehicles per hour.
- The project converted 1,680 square meters of street space into dedicated pedestrian space and transformed 310 square meters of underused parking space into a dynamic play space.
- Additionally, the city planted 25 trees and installed 25 square meters of new seating. The project introduced sustainable stormwater management elements and installed lighting that added a layer of perceived safety.

The success of the Gjon Buzuku interim project led to a capital construction project at Edith Durham—a school located in Rruga Pjeter Bogdani in the city center of Tirana. The Edith Durham project's success hinged on extensive community engagement, featuring diverse pop-up activities like street parties with mobility discussions, live music, cooking classes, and a cycling school for kids. Surveys captured local mobility needs and desired changes, fostering community support and momentum. This approach not only secured municipal investment for the project's accelerated construction but also highlighted its wide-ranging benefits to neighbors, showcasing the value of transforming street parking into a vibrant, multi-generational public space. The approach to pop-up street parties that developed at Edith Durham became a model for all project sites across the city, as did as surveys to document perceptions and collect key indicators:

- Mode share of all students to track mode shift
- Vehicle speeds
- Air pollution levels
- Number of benches, trees, and lighting
- Number of people on sidewalk before and after

The Municipality of Tirana is now planning on implementing 20 projects per year over the next three years, beginning in 2024.

Recife, Brazil

C

Communicating and taking action

C1 | Communicate findings

Clear and compelling communication about positive project impacts can help secure ongoing support and funding for street transformations near schools. Plan to communicate evaluation results either as a standalone update or as part of broader project communications. Tailor this information to meet the needs of diverse audiences, allowing them to understand the project's significance, methodologies, and outcomes. By summarizing the findings and adapting the presentation format, results can resonate more effectively with various groups. For internal stakeholders, condense results into a brief report or presentation. This facilitates sharing key lessons with the project team, supports internal development, celebrates achievements, and helps allocate resources for future initiatives. Consider people's busy schedules and create engaging summaries with visuals, data, and stories to highlight clear results.

Understand the audiences

Define the audience to make sure you're communicating strategically to foster engagement, education, and advocacy, not just disseminating information. Tailor your communication to audience needs and expectations.
See p. 85

Frame the narrative

Frame the narrative by aligning project goals, like improving air quality or road safety near schools, with broader aims such as making the project permanent or expanding it to other neighborhoods. Base messaging on evaluation results, but tell a story supported by community engagement outcomes and evidence from similar projects or research, making sure it is relevant to key audiences.
See p. 86

Choose the appropriate format

Selecting the right format ensures information is accessible and resonates with the intended audience, whether they are decision-makers, community members, or the general public, effectively conveying the project's impact.
See p. 88

Make findings visual and accessible

Make sure communications are visual and accessible to enhance understanding and engagement across diverse audiences. Break down complex data into digestible, appealing formats that effectively convey the message and impact of the project. Combine evaluation numbers with stories.
See p. 90

Understand the audiences

Different stakeholders have varying levels of knowledge, interests, and concerns. Identifying your audience can help you choose the right language, tone, and complexity of your messaging, making it more relevant and engaging. This not only ensures clarity, but also strategically influences the project's future by addressing the specific needs of various groups, from policy makers to the general public. For example, communicating effectively with funders or elected officials can lead to continued or increased support, while clear communication with caregivers and the community can enhance public buy-in and participation.

Sharing findings with diverse audiences allows project leads to:


Recife, Brazil

Istanbul, Turkey


Leon, Mexico

- **Give kids, caregivers, and communities a sense of ownership** over the project and allow them to provide additional feedback, voice concerns, or suggest further improvements.
- **Raise public awareness** about street transformations to highlight their benefits to communities. Sharing project outcomes through media educates people about and builds public support and advocacy for such initiatives.
- **Invite other schools, city officials, or professional peers to undertake similar initiatives,** and motivate individuals and organizations to get involved in creating safer and more accessible streets near schools.
- **Nurture support** from civil society organizations, research institutions, and professionals who can help spread the word about the project's impact and collaborate on future efforts.
- **Encourage policy makers, city officials, and elected officials to advocate for** and invest in more street transformations near schools.
- **Inspire leaders** to see the impact of street transformations near schools and encourage them to scale up initiatives across the city.
- **Remind practitioners** of the impact of their daily decisions in shaping urban streets and mobility options.

Frame the narrative

Plan how to communicate results and frame the narrative. It should reflect project goals and be rooted in results and findings from the analysis, as these provide concrete evidence of the project's impact and effectiveness. Integrating global, national, and local statistics can highlight the significance of the challenges faced by children on urban streets, enhancing the narrative's urgency. Furthermore, the narrative should tell a story that connects with the intended audience, making the data and outcomes relatable and compelling.

- **Reflect on the audience and what matters to them.** For example, if the audience is local caregivers, their primary concern might be children's safety and well-being; city engineers may focus on traffic flow and infrastructure efficiency; and for decision-makers, the financial viability and long-term economic benefits could be key. Keep these factors in mind when choosing what information to highlight.

- **Strengthen the message with supporting evidence from similar projects and other research.** This not only validates findings but shows that they are not a standalone result. Supporting evidence will give context and enrich the narrative, allow you to compare the scale of different outcomes, and give credibility to results by showing they align with previous findings. Using information from other databases, previous interventions, cost-benefit analyses, scientific articles, or referencing experts will help strengthen the argument that the street transformation project being evaluated has bigger or longer-term impacts beyond the data collected.

- **Reference the primary goals of the project and share the numbers,** whether it's improving air quality and how particulate matter levels changed, or enhancing road safety near schools and how vehicle speeds were reduced, or other goals as outlined on page 23 in Section A1. Use results to convey how project goals were met and how stakeholders benefit from the street transformation. Additionally, emphasize the sense of urgency and the scale of the issues addressed, underscoring the critical need for such transformations in urban environments and the substantial impact these changes have on community health, safety, and overall well-being.

- **Use visuals to emphasize the story.** Before-and-after photos are powerful tools to illustrate the previous challenges of a street and the benefits of the transformation for kids and caregivers. Feature photos of them using the spaces and the activities taking place before and after the transformation.

- **Beyond sharing results, tell a story.** Incorporate elements of community and kids' engagement, demonstrating community benefits and how the project resonates on a personal level. Technical and data-centric descriptions of street transformations can be challenging for engaging audiences, yet by humanizing them, the narrative becomes more relatable and captivating. Consider potential headlines and taglines for a local news story or the approach for sharing the project's story in 30 seconds with a community or political leader. See **Storytelling Worksheet** on p. 110 of the **Resources** section.

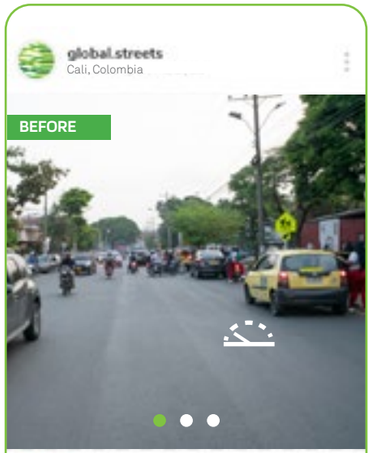
- **Consider how the goals and achieved results align with broader objectives,** like securing funding and support to advance the project, make it permanent, or scale it to other neighborhoods. Use the information to support and advocate for the end goal, which is to move towards long-term change.

- **Collaborate with knowledge-brokers, advocates, journalists, and other stakeholders** who can help with translating findings and crafting a compelling narrative that aligns with communication objectives.

KEY INFORMATION TO INCLUDE

Why	Where	What	Who	When
→ What is the goal of the project? What is the end goal of the evaluation? Why is this urgent/important?	→ Where is the project located? What is the name of the street, neighborhood, school?	→ What was done? What design strategies were employed? What activities took place?	→ Who was involved? Who benefited from the street transformation? How many people were impacted?	→ When did the transformation take place? How long did the pop-up or interim transformation last?

The example below illustrates how a social media post might begin to tell the story of a street transformation. Use a combination of before-and-after images and insights from data collection to highlight key lessons learned and showcase the impact of the project.



global.streets In Cali, Colombia, GDCI implemented a safe school zone after extensive consultation with the local community, students, teachers, and caregivers.

GDCI transformed streets near two schools attended by about **5,000 school children**! Approximately **300 m²** of public space was created for students and other pedestrians to walk safely in the area.

Drone footage before and after the project intervention showed how pedestrian crossings combined with pedestrian refuge islands made it easy for school kids to cross safely and encouraged vehicles to move more slowly and stop for pedestrians.

During the design phase and before the pop-up intervention, only **5%** of drivers adhered to the legal speed limit. This percentage increased to **83%** once the transformation was completed.

In a survey conducted afterward, the city found that **72.6% of the 600 participants were happy** with the outcome of the school zone project and the standard of road safety compared to before.

We're proud to work with @alcaldiadecali, @movilidadcali, @infraestructuracali, and @educacioncali to create streets for people!

@BloombergDotOrg
#roadsafety #safeschools
#streetsforpeople

Choose the appropriate format

Presenting information in different formats can make results resonate with different audiences. Summarizing results internally in a report, summary document, or presentation can be helpful for sharing lessons learned beyond the project team with decision-makers, city officials, and funders; growing internal capacity; celebrating accomplishments; and helping allocate resources for future projects. Moreover, this allows teams to assess how the project is contributing to specific program or citywide goals.

Engaging young people, schools, communities, and the general public often requires a more interactive and visual format. Find age-appropriate formats to share with kids, such as organizing exhibitions or sharing videos, allowing them to learn about the change they helped affect in their environment. If possible, plan to conduct feedback sessions with children and community members, giving them an opportunity to share their thoughts and validate the results of the evaluation and overall process.

The table below shows some format suggestions for different audiences:

Format	Kids	Teens	Caregivers and community members	Policy makers, city leaders, and elected officials
Exhibit or fair showcasing engagement outputs	●	●	●	●
Before-and-after photos from transformation with key statistics	●	●	●	●
Podcasts		●	●	●
Posters and flyers	●	●	●	●
Presentations	●	●	●	●
Press release and media coverage	●	●	●	●
Radio interviews		●	●	●
Street signage	●	●	●	●
Social media posts		●	●	●
Videos and testimonials	●	●	●	●
Visual reports		●	●	●

CASE STUDY

SHARING FINDINGS WITH THE COMMUNITY

Location: Tyre, Lebanon
Timeline: 2023-2024
Stakeholders: Municipality of Tyre, The Chain Effect, Lebanese Evangelical School Tyre, and Global Designing Cities Initiative

Description

In 2023, Tyre was one of 10 cities selected to receive GDCI's technical assistance and a grant to implement their vision for child-friendly streets. As part of the Streets for Kids program, their goal was to raise awareness of active travel and safe streets through a series of activities with students, parents, and teachers from the Lebanese Evangelical School Tyre. The engagement ultimately led to the implementation of a pop-up street transformation on the street in front of the school, changing the experience of children arriving at school and showcasing the potential of creating child-friendly streets and spaces in Tyre.

Student engagement began with different activities about the importance of safe, accessible, and attractive streets for kids. Approximately 150 elementary and middle school students, aged 10-12, were involved in a variety of activities, allowing them to explore their neighborhood through cycle rides and photo walks. They also assessed and reflected on their routes to school, street environment, behaviors, habits, and perceptions through mapping activities, visual surveys, and interactive boards. Students were also involved in painting and planting to create a mural and plant gardens in front of the school. For more on Tyre's engagement activities, see GDCI's *How to Engage Kids in Street Design* handbook, p. 188.

Educators, caregivers, and the broader community were also engaged through meetings and surveys, and students brainstormed how to improve school surroundings through hands-on design workshops with the project team. Input from these workshops, as well as feedback from residents, students, and teachers, was incorporated into an exhibition for the school community.

The project team created posters with key findings that were displayed on canvases spread throughout the school, and they were present to answer questions and provide further details to the students and other stakeholders. This event was also an opportunity for students to showcase their designs and vote for their favorite ideas. Some of these elements were then incorporated into the pop-up transformation implemented weeks later. The Tyre project illustrates how engaging the school community and sharing back results can meaningfully engage and rally support for street transformations, turning insights into action for a child-friendly city.

Key results shared before the street transformation:

- 68% of children were not allowed to use their cycles to move around/for transport.
- 77% of respondents chose parked cars as the most limiting factor to walking in their neighborhood. Lack of lighting, lack of public spaces, and parked cars were the top three limiting factors to walking for teachers.
- Sidewalk space and crossings, cycle lanes, and street lighting were cited as the top three things that would encourage both residents and teachers to allow their children to walk or cycle to school.
- Students cited narrow sidewalks, traffic disorganization and illegal driving, street pollution, and traffic congestion as the main things they didn't like about their school street.
- 34% of residents and 59% of teachers did not allow their children to play on the street outside their homes, and only 54% of children said they were able to play on the street.
- 88% of people enjoyed the painted mural and new planters, and 94% expressed support for implementing a street intervention outside the school.

Design exhibition in Tyre

Make findings visual and accessible

Inform the public about project goals and impacts in a visually engaging way. Depending on who the audience is, the metrics can be visualized as a table, infographic, graph, map, plan drawing, or something else. Most people respond best to photos and simpler graphics, as well as specific statistics. One well-chosen photo combined with a quote can speak volumes.

Children's perceptions can be expressed through their own words, photos, and even artwork. Words and images from interactive evaluation methods and kids' engagement can be helpful to link the evaluation to the engagement process and convey the authenticity of young people's perception and ideas for the street. The following visuals exemplify a few different ways that results can be shared:

Remember to ask for permission to use and share images, videos, voice recordings, or materials produced by children (e.g. drawings).

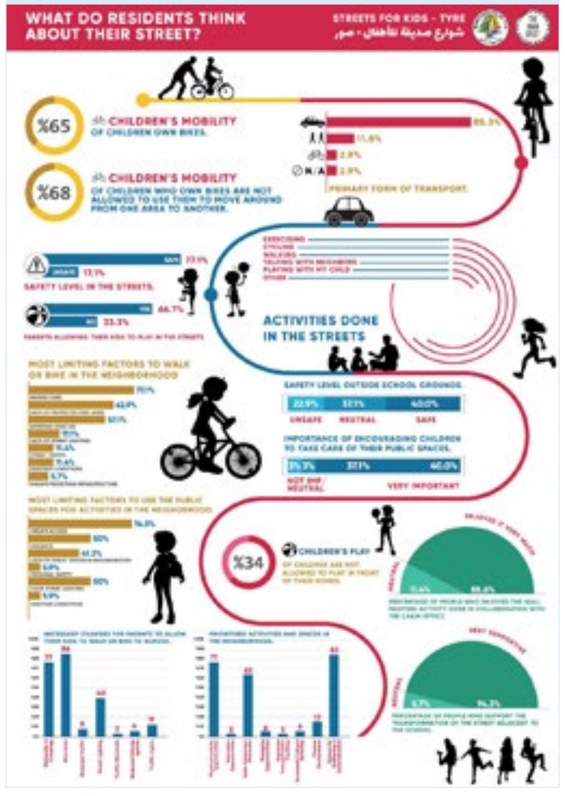
Planalto Ayrton Senna | Fortaleza, Brazil

Photo, quote, and data

Pimpri-Chinchwad on Foot and Cycle | ITDP | Pimpri-Chinchwad, India

Quotes and illustrations

Tyre Streets for Kids | The Chain Effect | Tyre, Lebanon

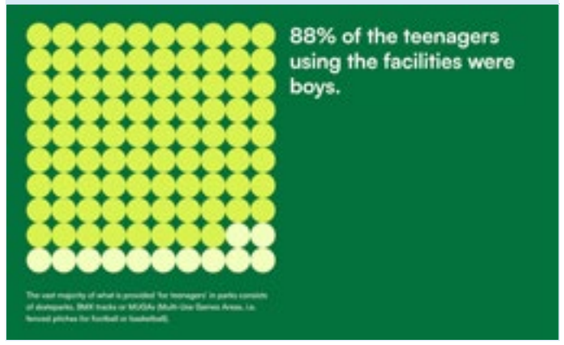


Infographics

Streets for Kids project| León, Mexico

Before and after photos

Parkwatch report | Make Space for Girls | United Kingdom



Infographics

Loma de la Trinidad Streets for Kids | León, Mexico

Video

Jalan Danau Saujana 1 project | Kuala Lumpur, Malaysia

Word cloud

Piazze Aperte report | Comune di Milano | Milan, Italy

Maps, infographics, and photos

C2 | Move towards long-term impact

Formalizing projects and processes through programs and policies

Evaluating street transformation projects near schools can create the evidence needed to influence future projects, citywide policies, and programs. Ideally, after assessing the street transformation project, make recommendations for how it could progress over the long term. Doing this can help increase the chances of maintaining impact across changes in political administrations, ensuring the project's benefits and objectives continue to be prioritized and integrated into urban planning, design, and mobility practices, irrespective of these changes.

Street Design Manual, Recife, Brazil

→ Make it permanent

Evaluation of pop-up and interim street transformations can generate insights into how street design and operations can be adjusted when implementing permanent projects.

→ Update policies and practices

Update design guidelines, codes, and procurement lists to include the successful components of a street transformation near a school.

→ Implement additional efforts

Your findings may suggest the need for complementary measures and synergies with other agencies.

→ Create a citywide program

Use the lessons from your street transformation project near a school and scale them up into citywide initiatives and programs.

→ Future research

Be conscious and honest about the limitations of the data collection and evaluation process. Acknowledge gaps in existing evidence and identify opportunities to improve methodologies and expand research efforts.

SNAPSHOT

FROM INTERIM TO PERMANENT: CAMINHOS DA ESCOLA

Location: Cristo Redentor, Fortaleza
Time period: 2021-2023

Description:
In 2019, Fortaleza created the Caminhos da Escola program with the goal of reducing the number of children killed and injured in traffic crashes. The first project in the Cristo Redentor neighborhood was key for the city to pilot the program through an interim street transformation and measure the design's effectiveness and impact. Two years later, leveraging funds initially designated for the "Meu Bairro Empreendedor" program, which aims to stimulate local economic growth in commercial areas, the project area underwent permanent transformation. This funding, allocated due to the project's vicinity to the Cristo Redentor school, facilitated the capital construction phase. Streets received permeable paving, while sidewalks were upgraded with tactile strips and pedestrian ramps to improve accessibility. Additionally, raised crossings and street furniture were introduced to enrich the pedestrian experience.


BEFORE


AFTER - INTERIM

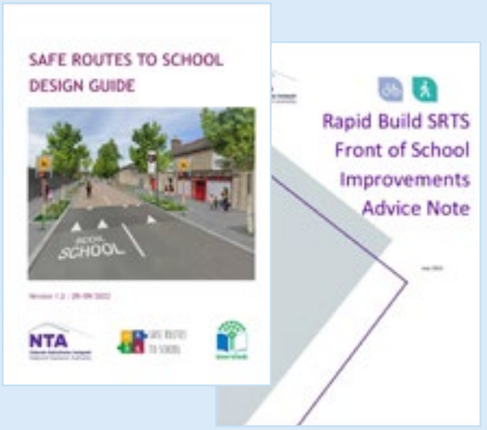

AFTER - CAPITAL

SNAPSHOT

FROM PRACTICE TO DESIGN GUIDELINES: SAFE ROUTES TO SCHOOL DESIGN GUIDE

Location: Ireland
Time period: 2021-present
Stakeholders: Ireland Department of Transport, Department of Education, An Taisce Safe Routes to Schools (SRTS) Programme, National Transport Authority (NTA), and local authorities

Description:
Ireland's Safe Routes to School (SRTS) program aims to encourage schoolchildren to walk and cycle to school. Launched through an open call to schools, it focuses on accelerating walking/scooting and cycling infrastructure enhancements along key school routes, improving school access, and boosting cycle parking facilities at schools. With over 900 schools (25% nationwide) showing interest and nearly 300 selected for participation, the NTA and SRTS teams produced the *Safe Routes to School Design Guide* in 2022. This guide offers technical guidance, design principles, and examples to assist local authorities, school communities, and professionals with making safer streets around schools. In 2023, with the increase in construction costs, the targets set by the national Climate Action Plan led to a need to deliver SRTS infrastructure using rapid-build, cost-effective methods both to maximize the amount of Safe Routes to School infrastructure delivered within available budgets and to increase the speed of delivery. Therefore a companion design guide was produced: *Rapid Build SRTS Front of School Improvements Advice Note.*



CASE STUDY

PROGRAM EXPANSION: PIAZZE APERTE PER OGNI SCUOLE

Location: Milan, Italy
Time period: 2018-present
Stakeholders: Municipality of Milan, Agenzia Mobilità Ambiente Territorio (AMAT), Bloomberg Associates, and the Global Designing Cities Initiative

Description

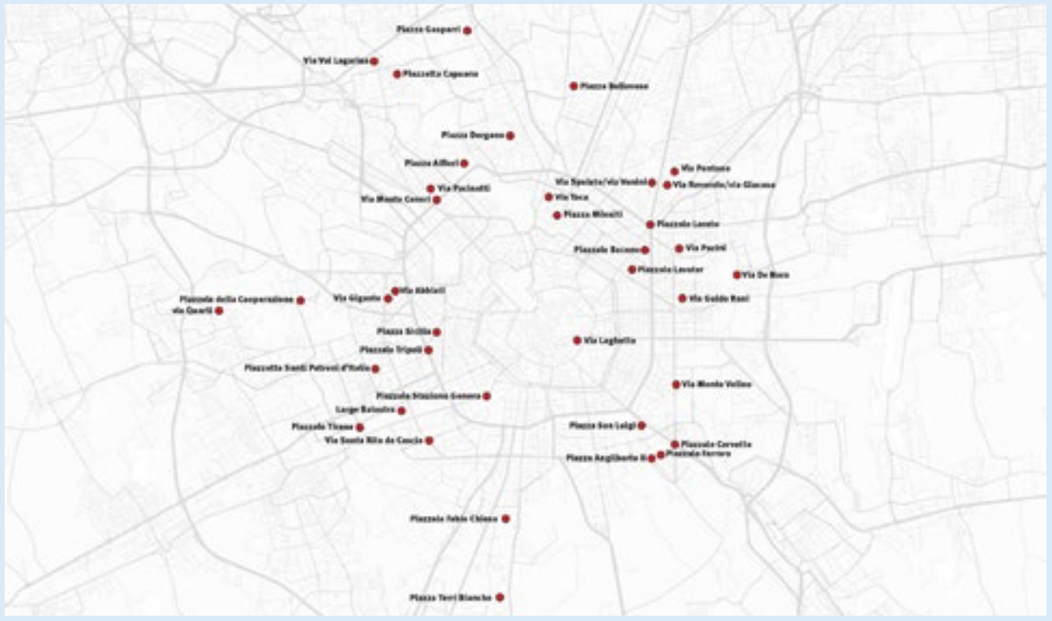
In 2018, the City of Milan launched its Piazze Aperte (Open Plazas) program with the aim of transforming public spaces into vibrant community hubs, expanding pedestrian areas, and fostering sustainable mobility to enhance urban quality of life. The program's success over the years led them to expand to improve streets and public spaces near schools in the recently launched "Piazze Aperte per Ogni Scuola" (Open Plaza for Each School) program.

The program focuses on testing flexible and low-cost design solutions and uses diverse interim strategies to transform streets through pedestrianization or other redesigns. The program also collaborates with residents through open calls. The first phase received 65 proposals, including many from schools. By 2023,
43 interventions had happened, including six major construction projects reclaiming **30,000 square meters for pedestrian use**, ensuring **a plaza is within 800 meters for half of Milan's residents.**

Near schools, these plazas enrich educational and community life, integrating children into urban design projects and inspiring parents to rethink commuting habits. Schools evolved into collaboration centers for local initiatives, improving play areas and air quality, providing a compelling argument to overcome community resistance.


Piazza Dergano

The "Piazze Aperte per Ogni Scuola" initiative, following the program's initial success, invited collaboration from schools, parent committees, and local businesses for creating and activating open plazas near educational institutions. Launched in late 2022, it garnered 87 applications, with 110 projects proposed across 250 schools, potentially benefiting 100,000 students. With two pilot plazas already implemented, Milan plans to introduce at least nine more by summer 2024, demonstrating a significant expansion and impact on urban and educational spaces.



Location of 38 Piazze Aperte in Milan

SNAPSHOT

FROM LOCAL TO INTERNATIONAL: SARSAI AND SAFE SCHOOLS AFRICA

Locations: Botswana, Côte d'Ivoire, Ghana, Kenya, Malawi, Mozambique, Namibia, São Tomé and Príncipe, Senegal, Tanzania, and Zambia
Time period: 2014-present
Stakeholders: Amend, FIA Foundation, Agence Française de Développement, the World Bank, the African Development Bank, the Puma Energy Foundation, Fondation Botnar, the Embassy of Switzerland to Tanzania, FedEx, Vital Strategies, the US Centers for Disease Control and Prevention, various government road agencies, city councils, NGO partners, and participating communities

Description

Over the last decade, the road safety NGO Amend has expanded its vital pedestrian infrastructure improvements from a single school in Tanzania to hundreds across 11 African countries. With Africa suffering the world's highest traffic fatality rates, the World Health Organization's 2023 report showed a troubling increase in deaths to over 225,000, representing 19% of global traffic fatalities.

Amend's School Area Road Safety Assessments and Improvements (SARSAI) program, recipient of the 2019 WRI Ross Center Prize for Cities, embraces "people-centered design." This approach ensures streets near schools prioritize pedestrians over vehicles, acknowledging the dense pedestrian activity in these areas.

A key to SARSAI's success was a comprehensive 2015 evaluation by the US Centers for Disease Control and Prevention (CDC), initially focused on Dar es Salaam, Tanzania. This study evaluated pedestrian infrastructure improvements—sidewalks, speed humps, signage, and more—at nine schools and compared the data with nine schools lacking these enhancements. Findings revealed a significant reduction in child injuries by over 26% as well as a reduction in the severity of injuries that did occur.

These results, published in the *Injury Prevention* journal and showcased globally, led to expanded support and funding. By 2016, Amend received funding to extend SARSAI to eight more African countries, significantly broadening its reach between 2017 and 2019.

In 2022, Amend launched the Safe Schools Africa initiative with the FIA Foundation and Agence Française de Développement (AFD). This partnership offers pro bono consulting to government street projects, emphasizing the safety of vulnerable street users and building local capacity. Through Safe Schools Africa, SARSAI's people-centered design principles are influencing major street projects, benefiting hundreds of thousands of children, and contributing to safer streets across the continent, ultimately saving lives and setting new standards for child-friendly urban environments.


Accra, Ghana


Tanga, Tanzania


Bouaké, Côte d'Ivoire

Resources

Salvador, Brazil

Resources | Data collection tools

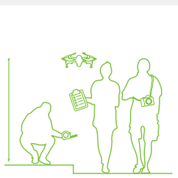
Data collection tools

This section contains basic ready-to-print checklists, data collection tools, surveys, and interactive boards, plus instructions on how to use them to support project evaluation. City leaders, designers, and practitioners are invited to continuously test, refine, and adapt these tools to their unique contexts. This process enhances collective knowledge and the effectiveness of these methods and activities.

Tools included:

EVALUATION PLANNING

Define goals and prioritize key metrics to collect. Organize data collection locations, teams, and tools beforehand.



SITE ANALYSIS AND INVENTORY

Document specific existing conditions of the street, such as its geometry, universal accessibility, presence of greenery, street furniture, parking, public spaces, etc.

COUNTS AND OBSERVATIONS

Count and observe pedestrian, cyclist, and vehicle flows and behaviors before and after transformation to identify mobility shifts, interactions, use of amenities, and changes in activities.

AIR QUALITY MONITORING

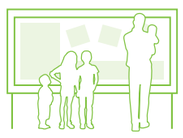
Measure pollutants like particulate matter and nitrogen dioxide in the air to assess improvements in environmental conditions.

NOISE LEVEL ASSESSMENTS

Monitor noise levels before and after the transformation to understand changes in the acoustic environment and potential effects on student well-being.

SURVEYS

Survey community members to understand attitudes, opinions, and behaviors. They can reveal travel preferences, perceptions about streets, and project satisfaction.



BOARDS

Use interactive boards to ask questions or solicit input from a larger group of people in the school or passing by a street.

Summary table: Project goals and data collection tools

The table below illustrates how GDCI data collection tools align with specific project evaluation goals outlined in Section A. While these tools are recommended starting points, other tools may also be used as needed.

	Road safety	Universal accessibility	Active transportation	Air quality	Climate resilience	Noise pollution	Social connection	Outdoor play and learning
Site analysis and inventory								
School surroundings | p. 116	●	●	●	●	●	●	●	●
Accessibility | p. 118		●	●					
Peak school hours circulation | p. 122	●	●	●	●			●	
Counts and observations								
Pedestrian counts: Sidewalks | p. 126	●	●	●					
Pedestrian counts: Crossing | p. 128	●	●	●					
Pedestrian desire lines | p. 132	●	●	●					
Street activities | p. 136							●	●
Pause-and-play activities | p. 138							●	●
Cyclist and micromobility counts | p. 142	●		●	●				
Vehicle counts | p. 146	●			●	●			
Vehicle speeds | p. 148	●		●					
Air quality monitoring								
Vehicle volumes and air quality estimates | p. 152				●	●			
Particulate matter levels | p. 154				●	●			
Noise level assessments								
Ambient noise | p. 156						●		
Noise perception | p. 158						●		

	Road safety	Universal accessibility	Active transportation	Air quality	Climate resilience	Noise pollution	Social connection	Outdoor play and learning
Surveys								
Caregivers | p. 164	●	●	●	●	●	●	●	●
School staff | p. 166	●	●	●	●	●	●	●	●
Teens (ages 13-18) | p. 168	●	●	●	●	●	●	●	●
My school street activity packet | p. 170	●	●	●	●	●	●	●	●
Boards								
Interactive boards | p. 180	●	●	●	●	●	●	●	●

How to use the templates

To use the templates, digitally add basemaps of project sites where needed or draw them by hand after printing. Refer to examples of what the forms might look like when completed to estimate the scale and detail level desired. If you prefer to customize the forms, a digital version is provided. Use the editable file below and follow the instructions to prepare and adapt forms from GDCI templates.

1. Access the editable file

Click on the buttons below to access the online templates.

- Depending on the form length, there are 1-2 A4-sized slides (sheets) for each form.
- Interactive boards are in A0.

Data collection tools, surveys and boards
bit.ly/evaluatestreetsnearschools

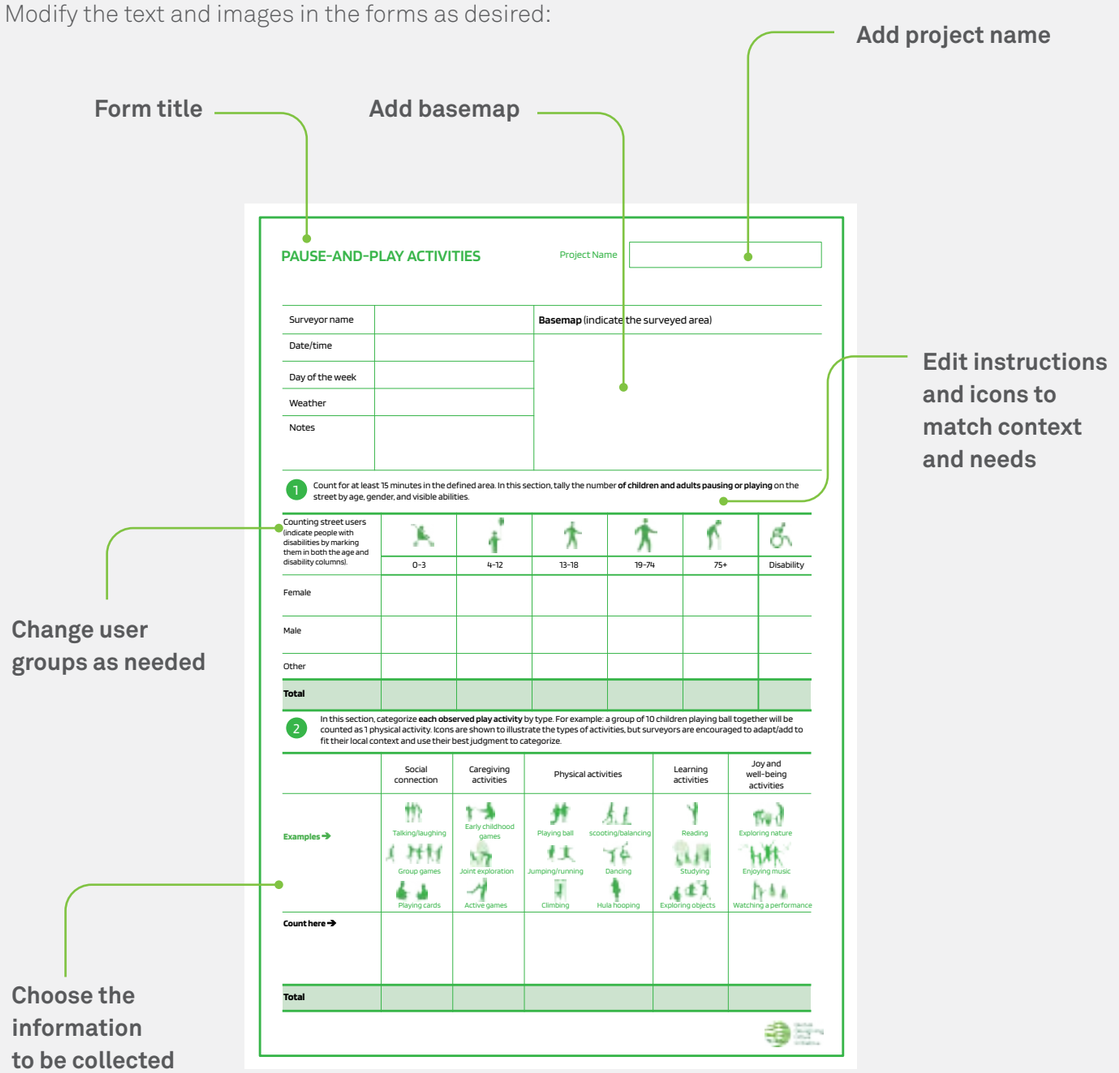
2. Create a personalized copy

Start by making a copy of the file on on your personal drive to work freely:

- In the menu, click File and then Make a copy.
- Choose Entire presentation to copy all of the forms, or select the ones needed and choose Selected slides.
- Name file and choose where to save it.

3. Edit as needed

Modify the text and images in the forms as desired:



4. Print forms

After completing the edits, export the forms as PDFs and print them.

- In the menu, click on the printer icon or go to **Menu > Print.**

Resources | Data collection tools

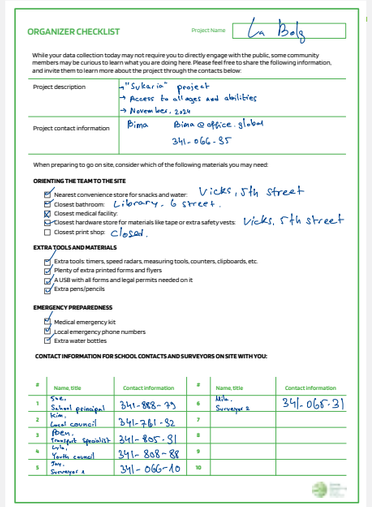
Evaluation planning forms

The forms and checklists below will help prioritize what data to collect, organize the team, and make sure the evaluation organizer, on-site data collection team, and school community have all of the necessary resources for a successful evaluation.

What forms could look like:

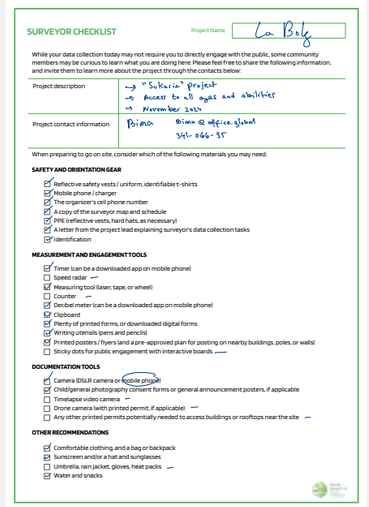
p. 106

GOAL-SETTING WORKSHEET



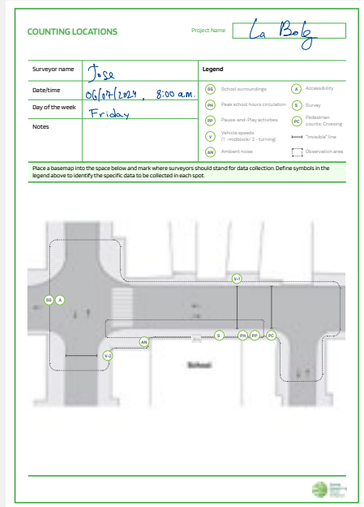
p. 107

ORGANIZER CHECKLIST



p. 108

SURVEYOR CHECKLIST



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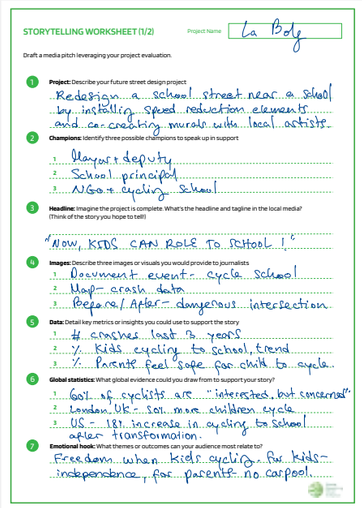
COUNTING LOCATIONS



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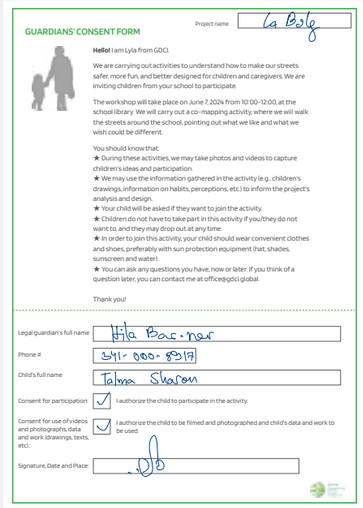
STORYTELLING WORKSHEET



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CONSENT AND INVITATION FORMS

GOAL-SETTING WORKSHEET

Project Name

1 Mark up to three key project goals. Consider aligning with stakeholders' agendas as they appear in official policy, media, or informal communications.

- ☐  Road safety
- ☐  Universal accessibility
- ☐  Active transportation
- ☐  Air quality
- ☐  Climate resilience
- ☐  Noise pollution
- ☐  Social connection
- ☐  Outdoor play and learning
- ☐ **Other:**
- ☐ **Other:**

2 Name key stakeholders and their priorities. Detail which metrics may increase their involvement and support for the project :

Stakeholders	Priorities	Metrics

3 In one year's time, what would the team aspire to say about the project? Think about various audiences: caregivers, school children, residents, the community at large, media, other city agencies. How would the project be communicated? When writing your answer, reflect on the data that could help support it.

Global Designing Cities Initiative

ORGANIZER CHECKLIST

Project Name

While your data collection today may not require you to directly engage with the public, some community members may be curious to learn what you are doing here. Please feel free to share the following information, and invite them to learn more about the project through the contacts below:

Project description	**Example:** This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].
Project contact information	**Example:** You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

When preparing to go on site, consider which of the following materials you may need:

ORIENTING THE TEAM TO THE SITE

- ☐ Nearest convenience store for snacks and water:
- ☐ Closest bathroom:
- ☐ Closest medical facility:
- ☐ Closest hardware store for materials like tape or extra safety vests:
- ☐ Closest print shop:

EXTRA TOOLS AND MATERIALS

- ☐ Extra tools: timers, speed radars, measuring tools, counters, clipboards, etc.
- ☐ Plenty of extra printed forms and flyers
- ☐ A USB with all forms and legal permits needed on it
- ☐ Extra pens/pencils

EMERGENCY PREPAREDNESS

- ☐ Medical emergency kit
- ☐ Local emergency phone numbers
- ☐ Extra water bottles

CONTACT INFORMATION FOR SCHOOL CONTACTS AND SURVEYORS ON SITE WITH YOU:

#	Name, title	Contact information	#	Name, title	Contact information
1			6		
2			7		
3			8		
4			9		
5			10		

Global Designing Cities Initiative

SURVEYOR CHECKLIST

Project Name

While your data collection today may not require you to directly engage with the public, some community members may be curious to learn what you are doing here. Please feel free to share the following information, and invite them to learn more about the project through the contacts below:

Project description	**Example:** This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].
Project contact information	**Example:** You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

When preparing to go on site, consider which of the following materials you may need:

SAFETY AND ORIENTATION GEAR

- ☐ Reflective safety vests / uniform, identifiable t-shirts
- ☐ Mobile phone / charger
- ☐ The organizer's cell phone number
- ☐ A copy of the surveyor map and schedule
- ☐ PPE (reflective vests, hard hats, as necessary)
- ☐ A letter from the project lead explaining surveyor's data collection tasks
- ☐ Identification

MEASUREMENT AND ENGAGEMENT TOOLS

- ☐ Timer (can be a downloaded app on mobile phone)
- ☐ Speed radar
- ☐ Measuring tool (laser, tape, or wheel)
- ☐ Counter
- ☐ Decibel meter (can be a downloaded app on mobile phone)
- ☐ Clipboard
- ☐ Plenty of printed forms, or downloaded digital forms
- ☐ Writing utensils (pens and pencils)
- ☐ Printed posters / flyers (and a pre-approved plan for posting on nearby buildings, poles, or walls)
- ☐ Sticky dots for public engagement with interactive boards

DOCUMENTATION TOOLS

- ☐ Camera (DSLR camera or mobile phone)
- ☐ Child/general photography consent forms or general announcement posters, if applicable
- ☐ Timelapse video camera
- ☐ Drone camera (with printed permit, if applicable)
- ☐ Any other printed permits potentially needed to access buildings or rooftops near the site

OTHER RECOMMENDATIONS

- ☐ Comfortable clothing, and a bag or backpack
- ☐ Sunscreen and/or a hat and sunglasses
- ☐ Umbrella, rain jacket, gloves, heat packs
- ☐ Water and snacks

Global Designing Cities Initiative

COUNTING LOCATIONS

Project Name

Surveyor name		**Legend**
Date/time		
Day of the week		
Notes		

Place a basemap into the space below and mark where surveyors should stand for data collection. Define symbols in the legend above to identify the specific data to be collected in each spot.

Global Designing Cities Initiative

STORYTELLING WORKSHEET (1/2)

Project Name

Draft a media pitch leveraging your project evaluation.

1. **Project:** Describe your future street design project

2. **Champions:** Identify three possible champions to speak up in support

   1
   2
   3

3. **Headline:** Imagine the project is complete. What's the headline and tagline in the local media? (Think of the story you hope to tell!)

4. **Images:** Describe three images or visuals you would provide to journalists

   1
   2
   3

5. **Data:** Detail key metrics or insights you could use to support the story

   1
   2
   3

6. **Global statistics:** What global evidence could you draw from to support your story?

   1
   2
   3

7. **Emotional hook:** What themes or outcomes can your audience most relate to?

Global Designing Cities Initiative

STORYTELLING WORKSHEET (2/2)

Project Name

Write a brief "portrait" describing your project (150 words). Consider beginning by framing your project's within the broader vision of creating a child-friendly city. Include a problem statement that outlines the challenges your initiative seeks to address. Emphasize the people who support the project and highlight the benefits users can expect to gain from its implementation. If possible, note the measurable impacts that could support the project, and outline the next steps needed to broaden and scale its positive effects.

Global Designing Cities Initiative

Project name

GUARDIANS' CONSENT FORM

Hello! I am [name] from [your organisation].

We are carrying out activities to understand how to make our streets safer, more fun, and better designed for children and caregivers. We are inviting children from [name of school, name of class/name to neighborhood] to participate.

The workshop will take place on [date] from [duration of activity], at [location]. We will carry out the following activities: [list main activities, specify type and location. Make sure to mention if they involve walking around local streets or visiting specific public spaces and facilities].

You should know that:

★ During these activities, we may take photos and videos to capture children's ideas and participation.

★ We may use the information gathered in the activity (e.g., children's drawings, information on habits, perceptions, etc.) to inform the project's analysis and design.

★ Your child will be asked if they want to join the activity.

★ Children do not have to take part in this activity if you/they do not want to, and they may drop out at any time.

★ In order to join this activity, your child should [specify needs such as gear, materials, bus card, snacks, sunscreen, etc.].

★ You can ask any questions you have, now or later. If you think of a question later, you can contact me at [email address or phone number].

Thank you!

Legal guardian's full name

Phone #

Child's full name

Consent for participation: ☐ I authorize the child to participate in the activity.

Consent for use of videos and photographs, data and work (drawings, texts, etc).: ☐ I authorize the child to be filmed and photographed and child's data and work to be used.

Signature, Date and Place:

Global Designing Cities Initiative

Project name

YOUNG KIDS INVITATION FORM

HELLO! I AM [NAME] FROM [YOUR ORGANISATION].

IT'S VERY NICE TO MEET YOU!

I CAME HERE SO WE COULD PLAY TOGETHER AND LEARN HOW TO MAKE STREETS BETTER FOR KIDS LIKE YOU!

I HAVE SOME FUN ACTIVITIES PLANNED FOR TODAY:


DRAW


PLAY GAMES


AND SHARE IDEAS.

SOMETIMES, WE WILL TAKE PHOTOS TO SHOW EVERYONE HOW KIDS ARE HELPING.

WOULD YOU LIKE TO JOIN US? IT'S OK TO SAY NO, AND IT'S ALSO OK IF YOU WANT TO STOP PLAYING AT ANY TIME.

☐ YES ☐ NO ☐ I DON'T KNOW

MY NAME IS...

MY AGE IS...

I AM A..

BOY

GIRL

OTHER / PREFER NOT TO SAY ☐

TODAY I AM FEELING...

Global Designing Cities Initiative

KIDS INVITATION FORM

Project name

Hello! I am [name] from [name from your organisation].

We are carrying out activities to understand how to make our streets safer, more fun, and better designed for kids like you. We would like to invite you to take part because you and your friends use these streets every day. You are our best experts!

The activity will last [length of activity]. We may ask you to draw, write, and share your experiences and ideas with others. It's okay if you don't want to share your thoughts and keep them to yourself. Some activities may involve walking around your local streets.

[Optional: During these activities, we may take photos to capture your ideas and participation. These photos might be used to show how kids and teens are helping to improve our streets].

You should know that:

★ You do not have to take part in this activity if you do not want to.

★ You may stop participating in this activity at any time.

★ Your guardian was asked if it is OK for you to be in this activity.

★ You can ask any questions you have, now or later. If you think of a question later, you or your caregivers can contact me at [email address or phone number].

Would you like to participate in this activity? ☐ Yes ☐ No

If any answers are NO, or you don't want to take part, DON'T fill out the information below!
If you DO want to take part, you can fill out you information below:

My name is

I am a ☐ Boy ☐ Girl ☐ Other / prefer not to say

Age

Today is

My school name is

My neighborhood is

My cycling skills: Mark ★ if:

☐ I know how to cycle

☐ I own/have access to a bicycle

☐ I would like to learn/ improve my cycling skills

Global Designing Cities Initiative

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School surroundings

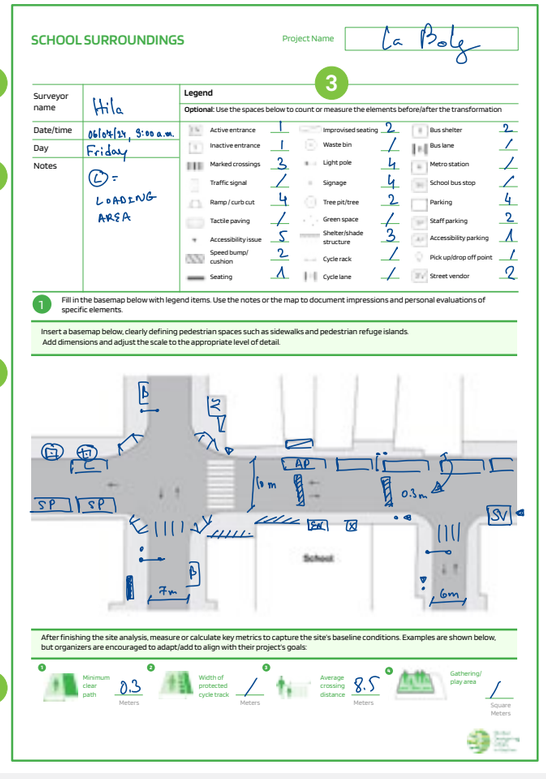
Spend time understanding the school surroundings, key destinations and routes to the school, and the site where the intervention will take place. Place relevant information from existing plans or maps of the site in the blank space on the form. Use the **Accessibility** form on the following page to supplement analysis with accessibility features and challenges. During your site visit, mark exact dimensions, geometries, street elements, and operational information to create an accurate basemap. In your notes, highlight differences between documents and site conditions and where further or missing information is needed.

Tools you'll need:

Why is this important?

- To have a comprehensive site analysis to develop evidence-based design proposals
- To understand what elements are missing or obstructing opportunities for children and caregivers to move, pause, or stay near the school
- To confirm dimensions and placement of elements that are not always coded in maps
- To communicate key changes to the site conditions

What your form could look like:



1. **General information**

2. **Notes**
Note differences between site documentation and site conditions or missing information that needs clarification through future site visits or interviews.

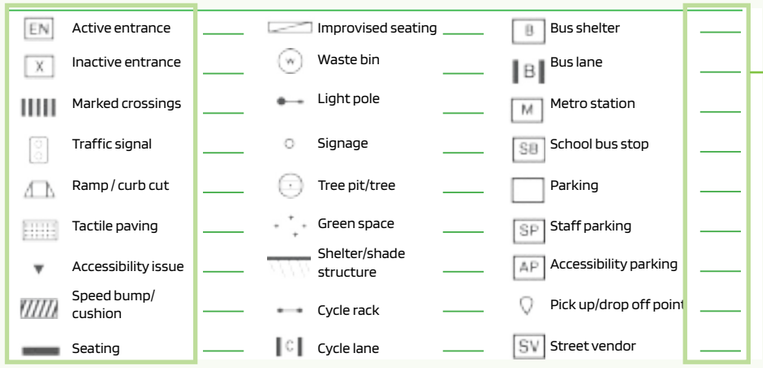
3. **Legend and counts**
Use legend items to map the site. When appropriate for your context, count or measure the elements to help communicate site conditions.

4. **Map**
Prepare and insert a basemap, and mark legend items as they apply to your site. If possible, fit the items to the scale and add measurements.

5. **Optional**
Use the form to calculate key information about physical conditions. After mapping and measuring the site, calculate how the street serves pedestrians and cyclists around the school. This could be done manually or using computer software.

A clear, unobstructed path for pedestrian movement should be wide enough to accommodate several people walking side by side, including children, people in wheelchairs, and people with strollers. The clear path should be at least **1.8–2.4 m** wide in residential settings and **2.4–4.5 m** wide in downtowns, school zones, or commercial areas with heavy pedestrian volumes. See p. 115 of GDCI's *Designing Streets for Kids* guide for more guidance.

Marking street elements on the basemap
You will find this list of suggested icons at the top of the provided Site Analysis form template, but we encourage you to add more as needed or develop your own.
Learn more about the process on page 42. in GDCI's *How to Evaluate Street Transformations* handbook.



Counting elements to evaluate the site
Use your judgment to decide which elements to count. Counting elements is time-consuming, but it can help show physical changes after street transformation.

Evaluating and communicating impact:

By counting the items you map, you can set a baseline to evaluate the current conditions and communicate future improvements. Depending on project goals, you may want to analyze the number of accessibility elements, marked crossings, or trees around the school before and after the project. Examples of metrics that can be extracted from the form:

	Element	Before	After	Change	Example for use
	Seating elements	0	4	4	**Encouraging social connection and play:** There was an increase in number (or percentage) of seating elements, creating more seating opportunities/ making it more convenient for caregivers with younger children.
	Minimum sidewalk width	1 m	3 m	2 m	**Improved accessibility and connectivity:** There was an increase in the minimum sidewalk width by 2 m, which allows stroller accessibility and larger groups and families to walk together.

Resources | Site analysis and inventory

Accessibility

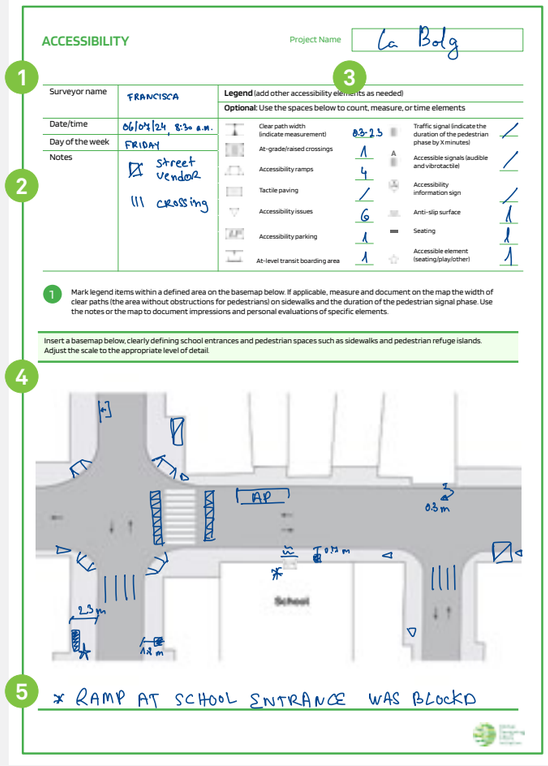
Enhance site analysis by focusing on universal accessibility and potential barriers, ensuring school access for all abilities. Prior to the survey, conduct a walkthrough with a school community member and/or disability advocacy group to gain more perspectives on accessibility needs. Use the form to include data from existing plans or maps. During the visit, document dimensions, geometries, elements, and operational details crucial for accessibility.[1] In notes, highlight discrepancies between plans and actual conditions, identifying areas where additional accessibility information is needed. Consider using the results to support a more rigorous evaluation that can address more comprehensive needs and regulations.

Tools you'll need:

Why is this important?

- To have a comprehensive site analysis to develop evidence-based design proposals
- To understand what elements are missing or obstructing opportunities for children and caregivers of all abilities to move, pause, or stay near the school
- To confirm dimensions and placement of elements that are not always coded in maps
- To communicate key changes to the site conditions

What your form could look like:



1. **General information**

2. **Notes**
Note differences between site documentation and site conditions or missing information that needs clarification through future site visits or interviews.

3. **Legend and counts**
Use legend items to map the site. When appropriate for your context, count, measure, or time the elements to help communicate site conditions.
Add additional items to capture context-specific elements and regulations accurately.

4. **Map**
Prepare and insert a basemap, and add legend items to the site. If possible, fit the items to the scale, and add measurements.

Sidewalks must be wide enough to allow two people in wheelchairs to pass one another, with clear paths on low-volume streets wider than **2 m** and never less than **1.8 m.** Clear paths should be unobstructed and level, and have a smooth surface. See p. 73 of GDCI's *Global Street Design Guide* for more guidance.

SNAPSHOT

SHADOWING CHILDREN AND CAREGIVERS WITH DISABILITIES

São Paulo, Brazil

Guided site tours with school community members and shadowing activities could be a great way to prepare for an accessibility assessment or critically review its findings. As part of their "Safe Routes to Schools" program, the city of São Paulo in Brazil worked together with the World Bank, IDOM, and Cidade Ativa to identify accessibility and mobility challenges of children with disabilities. During one of these activities, a researcher followed a four-year-old girl with Down syndrome and her mother during their walk to school on a rainy day, revealing that most of their route had to be covered through the roadbed as sidewalks had too many obstructions. Read more about this case study and other ways to engage school communities in GDCI's *How to Kids Engagement* handbook, p.85.


São Paulo, Brazil

Evaluating and communicating impact:

By reviewing your notes and counting the items you map, you can set a baseline to evaluate the current conditions and communicate future improvements. For example, depending on your resources, you may want to document the number of curb cuts or the minimum width of clear paths. Examples of metrics that can be extracted from the form:

	Element	Before	After	Change	Example for use
	Clear path minimum width	0	4	4	Expanding sidewalks and removing accessibility obstacles increased the clear path for pedestrians by over 2 meters, **making it safer and more convenient for larger groups and families and more accessible for students and school community members with disabilities.**
	Accessibility ramps	1	9	8	The transformation added eight new curb cuts near the school, **enhancing accessibility for strollers and people using wheelchairs or other mobility aids.**

SCHOOL SURROUNDINGS

Project Name

Surveyor name	
Date/time	
Day	
Notes	

Legend

Optional: Use the spaces below to count or measure the elements before/after the transformation

- EN Active entrance ____
- X Inactive entrance ____
- Marked crossings ____
- Traffic signal ____
- Ramp / curb cut ____
- Tactile paving ____
- Accessibility issue ____
- Speed bump/ cushion ____
- Seating ____
- Improvised seating ____
- W Waste bin ____
- Light pole ____
- Signage ____
- Tree pit/tree ____
- Green space ____
- Shelter/shade structure ____
- Cycle rack ____
- C Cycle lane ____
- B Bus shelter ____
- B Bus lane ____
- M Metro station ____
- SB School bus stop ____
- Parking ____
- SP Staff parking ____
- AP Accessibility parking ____
- Pick up/drop off point ____
- SV Street vendor ____

1 Fill in the basemap below with legend items. Use the notes or the map to document impressions and personal evaluations of specific elements.

Insert a basemap below, clearly defining pedestrian spaces such as sidewalks and pedestrian refuge islands.
Add dimensions and adjust the scale to the appropriate level of detail.

After finishing the site analysis, measure or calculate key metrics to capture the site's baseline conditions. Examples are shown below, but organizers are encouraged to adapt/add to align with their project's goals:

1 Minimum clear path ____ Meters

2 Width of protected cycle track ____ Meters

3 Average crossing distance ____ Meters

4 Gathering/ play area ____ Square Meters

Global Designing Cities Initiative

ACCESSIBILITY

Project Name

Surveyor name	
Date/time	
Day of the week	
Notes	

Legend (add other accessibility elements as needed)

Optional: Use the spaces below to count, measure, or time elements

- Clear path width (indicate measurement) ____
- At-grade/raised crossings ____
- Accessibility ramps ____
- Tactile paving ____
- Accessibility issues ____
- AP Accessibility parking ____
- At-level transit boarding area ____
- Traffic signal (indicate the duration of the pedestrian phase by X minutes) ____
- A Accessible signals (audible and vibrotactile) ____
- Accessibility information sign ____
- Anti-slip surface ____
- Seating ____
- Accessible element (seating/play/other) ____

1 Mark legend items within a defined area on the basemap below. If applicable, measure and document on the map the width of clear paths (the area without obstructions for pedestrians) on sidewalks and the duration of the pedestrian signal phase. Use the notes or the map to document impressions and personal evaluations of specific elements.

Insert a basemap below, clearly defining school entrances and pedestrian spaces such as sidewalks and pedestrian refuge islands.
Adjust the scale to the appropriate level of detail.

Global Designing Cities Initiative

Peak school hours circulation

On many streets near schools, the moments before and after school hours create an overflow of excited students walking and cycling with peers and family members. Depending on school location, this scene is sometimes overshadowed by a queue of idling cars or motorcycles, as well as school buses or transit maneuvering around pedestrians and cyclists.

Use the **Peak school hours circulation** form to understand the dynamics of the site and communicate key challenges and opportunities to address. Mark legend items for 15 minutes within a defined area. Combine with other counts for a better understanding of volumes and behaviors.

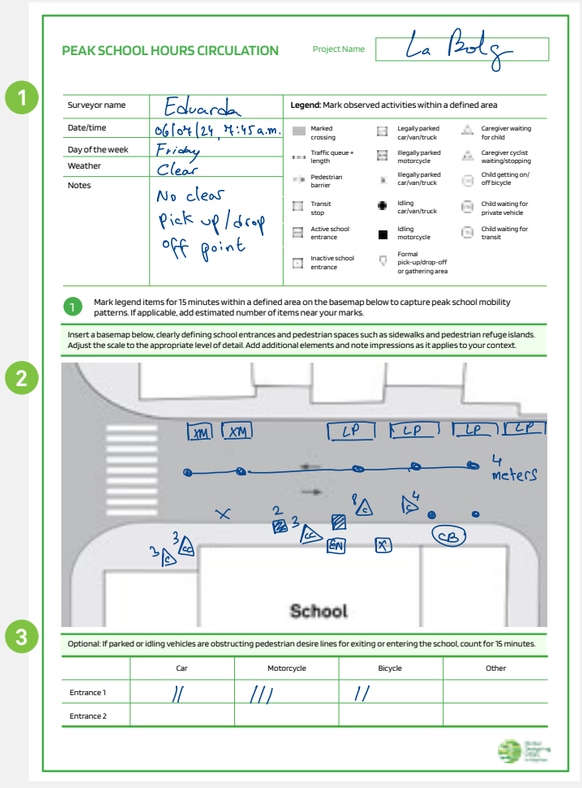
Tools you'll need:

Measuring tools | Camera | Basemap | Writing tools

Why is this important?

- To understand challenges for children and caregivers walking, cycling, and taking transit to school
- To estimate the negative effects of motor commutes to school, including noise and air pollution
- To identify key areas where children and the school community gather before or after school

What your form could look like:



1 General information

2 Map circulation
Stand in a central location overlooking the school entrance and mark legend items on a basemap. Add additional elements and note impressions as they apply to your context. If applicable, add estimated number of items near your marks.

3 Count obstructions
If vehicles are illegally parked/stopped in front of the school entrance and blocking children from entering the school, tally the number of vehicles obstructing pedestrian desire lines during your observation period by type.

Hanoi, Vietnam

Caregivers on motorcycles waiting outside school gates in Vietnam.


León, Mexico

Students exiting school entrance. Some are walking and others are waiting for drivers to pick them up with private vehicles.

Evaluating and communicating impact:

By counting the number of vehicles obstructing children on their way into or out of the school, you will be able to communicate to others:

- Number of vehicles obstructing children when going to or leaving school
- Fewer idling vehicles emitting harmful pollutants near the school
- Obstructions to children's access to transit stop, school bus, crosswalk, or cycle lane

PEAK SCHOOL HOURS CIRCULATION

Project Name

Surveyor name	
Date/time	
Day of the week	
Weather	
Notes	

Legend: Mark observed activities within a defined area

- Marked crossing
- Traffic queue + length
- Pedestrian barrier
- Transit stop
- Active school entrance
- Inactive school entrance
- Legally parked car/van/truck
- Illegally parked motorcycle
- Illegally parked car/van/truck
- Idling car/van/truck
- Idling motorcycle
- Formal pick-up/drop-off or gathering area
- Caregiver waiting for child
- Caregiver cyclist waiting/stopping
- Child getting on/off bicycle
- Child waiting for private vehicle
- Child waiting for transit

1 Mark legend items for 15 minutes within a defined area on the basemap below to capture peak school mobility patterns. If applicable, add estimated number of items near your marks.

Insert a basemap below, clearly defining school entrances and pedestrian spaces such as sidewalks and pedestrian refuge islands. Adjust the scale to the appropriate level of detail. Add additional elements and note impressions as it applies to your context.

Optional: If parked or idling vehicles are obstructing pedestrian desire lines for exiting or entering the school, count for 15 minutes.

	Car	Motorcycle	Bicycle	Other
Entrance 1				
Entrance 2				

Global Designing Cities Initiative

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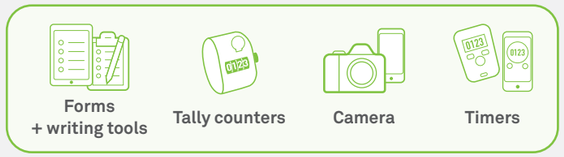
Pedestrian counts: Sidewalks

Safe, accessible sidewalks are the most fundamental aspect of infrastructure for walking safely. Count pedestrians on/off sidewalks to highlight shifts in sidewalk use. If applicable, separate the counts to identify different pedestrian types according to age groups and capture the number of pedestrians walking on the sidewalk near the school. During busy peak hours, maintain surveyors' accuracy by means such as separating sidewalk counts by side of the street or using tally counts for the most common user.

Remember to count during school start and end times to understand the scale of the issues when children are most exposed to traffic. Count for a period of at least 15 minutes, and multiply by 4 to arrive at a count for the hour. Count for longer periods if possible and resources allow.

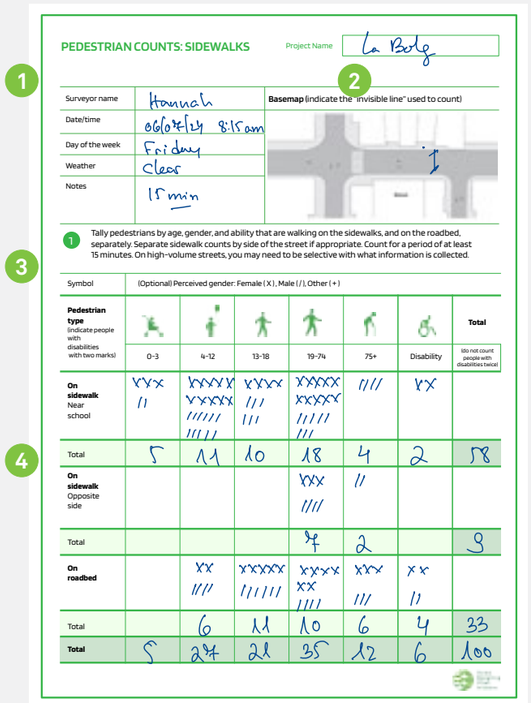
Tools you'll need:



Why is this important?

- To understand who uses the street
- To count pedestrian volumes
- To understand if existing pedestrian facilities such as sidewalks are adequately maintained, free of obstructions, wide enough, etc.
- To assess pedestrian exposure to risk from oncoming traffic
- To demonstrate pedestrian volume, particularly school children, accessing the school by foot

What your form could look like:



PEDESTRIAN COUNTS: SIDEWALKS — Project Name: La Borde

Surveyor name	Hannah
Date/time	06/07/24 8:15am
Day of the week	Friday
Weather	Clear
Notes	15 min

Basemap (indicate the "invisible line" used to count)

1 Tally pedestrians by age, gender, and ability that are walking on the sidewalks, and on the roadbed, separately. Separate sidewalk counts by side of the street if appropriate. Count for a period of at least 15 minutes. On high-volume streets, you may need to be selective with what information is collected.

Symbol — (Optional) Perceived gender: Female (X), Male (/), Other (+)

Pedestrian type (indicate people with disabilities with two marks)	0-3	4-12	13-18	19-74	75+	Disability	Total (do not count people with disabilities twice)
On sidewalk Near school	XXX //	XXXXX XXXXX ////// /////	XXXX /// ///	XXXXX XXXXX ///// ///	////	XX	
Total	5	11	10	18	4	2	58
On sidewalk Opposite side				XXX ////	//		
Total				7	2		9
On roadbed		XX ///	XXXXX //////	XXXX XX ////	XXX ///	XX //	
Total		6	11	10	6	4	33
Total	5	24	21	35	12	6	100

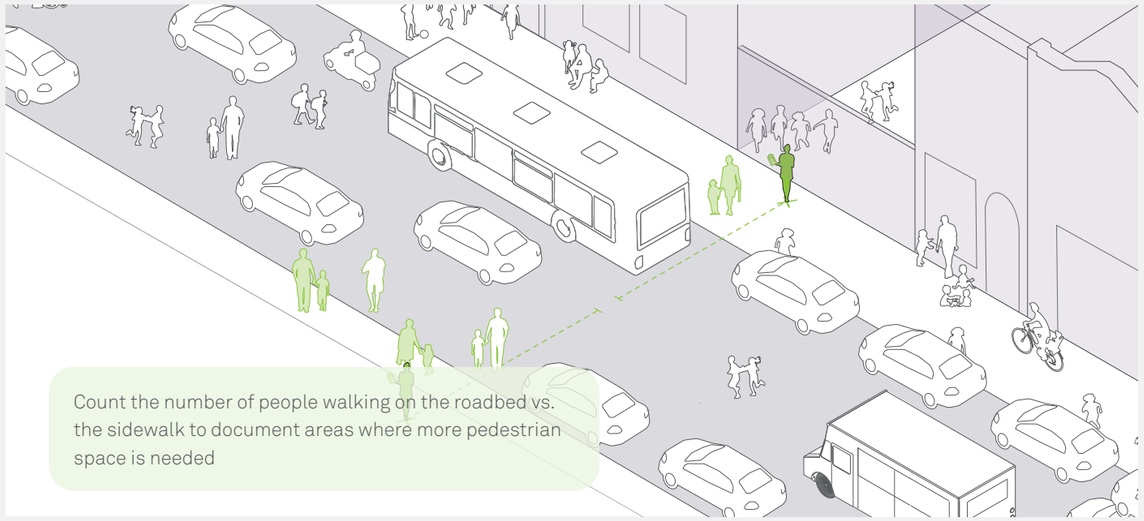
1. **General information**

2. **Location map**
   - Include a location map with data collection points. Decide on an "invisible line" on the project site and mark it to guide surveyors. Count only pedestrians crossing that line.
   - Add conventions and notes to describe the context. Highlight crossings leading to the school entrance if applicable.

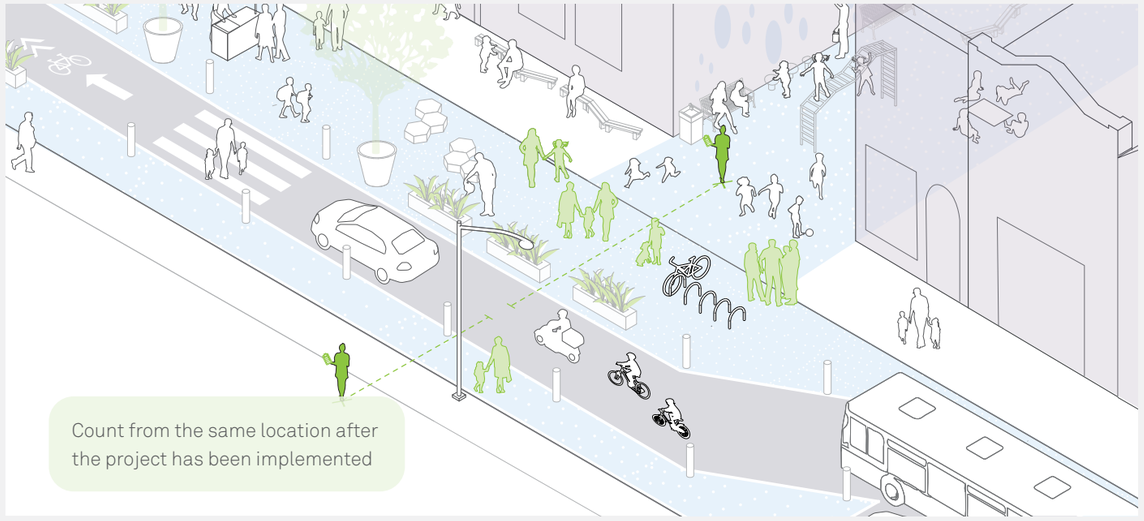
3. **Pedestrian types**
   Mark pedestrians by age groups. Indicate people with disabilities with two marks: one in the appropriate age group and one in the disability column.

4. **Tally counts**

Measuring before street transformation:
Pedestrians are forced to walk on the roadbed due to narrow sidewalks and obstructions to the clear path



Measuring after street transformation:



Evaluating and communicating impact:

By counting pedestrian movement on or off the sidewalk, you will be able to inform your design and communicate about:

- Decrease in street users walking on the roadbed on their way to school
- Average volumes of students accessing school by foot at specific times
- Proportion of children, teenagers, or people with disabilities no longer using unsafe infrastructure

Pedestrian counts: Crossing

Crosswalks are a key component of safe walking networks and how kids in particular are taught to navigate streets. Identify how many caregivers, children, teenagers, and people with disabilities cross the street on marked crosswalks or the roadbed. The **Pedestrian counts: Crossing** form also identifies whether pedestrians walk or rush across the street during a signal cycle. Rushing may indicate the distance is too long, or the signal is too short. If you are counting in a signalized crossing, adjust the counts to match the signal cycle. For instance, if the cycle is 1.5 minutes, count 10 cycles for 15 minutes.

Use with the **Pedestrian desire lines form** on p. 132 to help inform additional crossing locations and improvements.

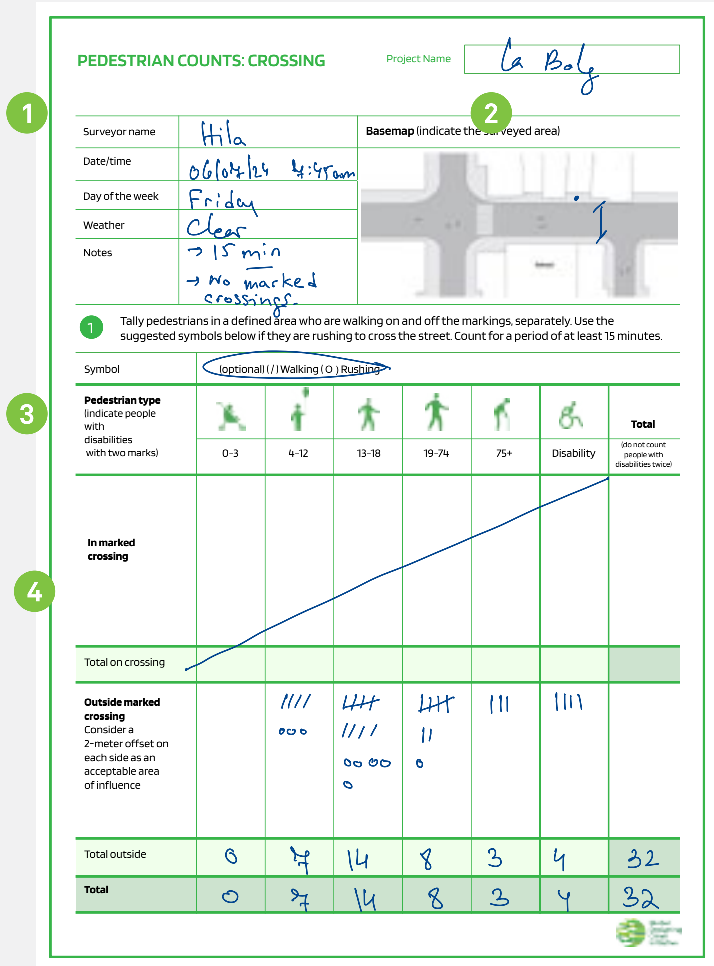
Tools you'll need:

- Forms + writing tools
- Tally counters
- Camera
- Timers

Why is this important?

- → To measure pedestrian volumes at crossings
- → To justify the need for new crossings
- → To evaluate the effectiveness of existing crossings
- → To observe whether the implemented design serves pedestrian desire lines
- → To measure pedestrian comfort crossing the street (running vs. walking, during signal vs. without signal)
- → To observe if crossing distances are too long
- → To design curb extensions, pedestrian refuge islands, wider crossings, and other solutions

What your form could look like:



PEDESTRIAN COUNTS: CROSSING — Project Name: La Bolg

Surveyor name	Hila	Basemap (indicate the surveyed area)
Date/time	06/07/24 7:45am	
Day of the week	Friday	
Weather	Clear	
Notes	→ 15 min → No marked crossings.	

1 Tally pedestrians in a defined area who are walking on and off the markings, separately. Use the suggested symbols below if they are rushing to cross the street. Count for a period of at least 15 minutes.

Symbol: (optional) (/) Walking (O) Rushing

Pedestrian type (indicate people with disabilities with two marks)	0-3	4-12	13-18	19-74	75+	Disability	Total (do not count people with disabilities twice)
In marked crossing							
Total on crossing							
Outside marked crossing Consider a 2-meter offset on each side as an acceptable area of influence		//// ooo	~~////~~ //// oo oo o	~~////~~ // o	///	////	
Total outside	0	7	14	8	3	4	32
Total	0	7	14	8	3	4	32

1 **General information**

2 **Location map**

- → Include a location map with data collection points. Decide on an "invisible line" on the project site and mark it to guide surveyors. Count only pedestrians crossing that line.
- → Add conventions and notes to describe the context. Highlight crossings leading to school entrances if applicable.

3 **Pedestrian types**

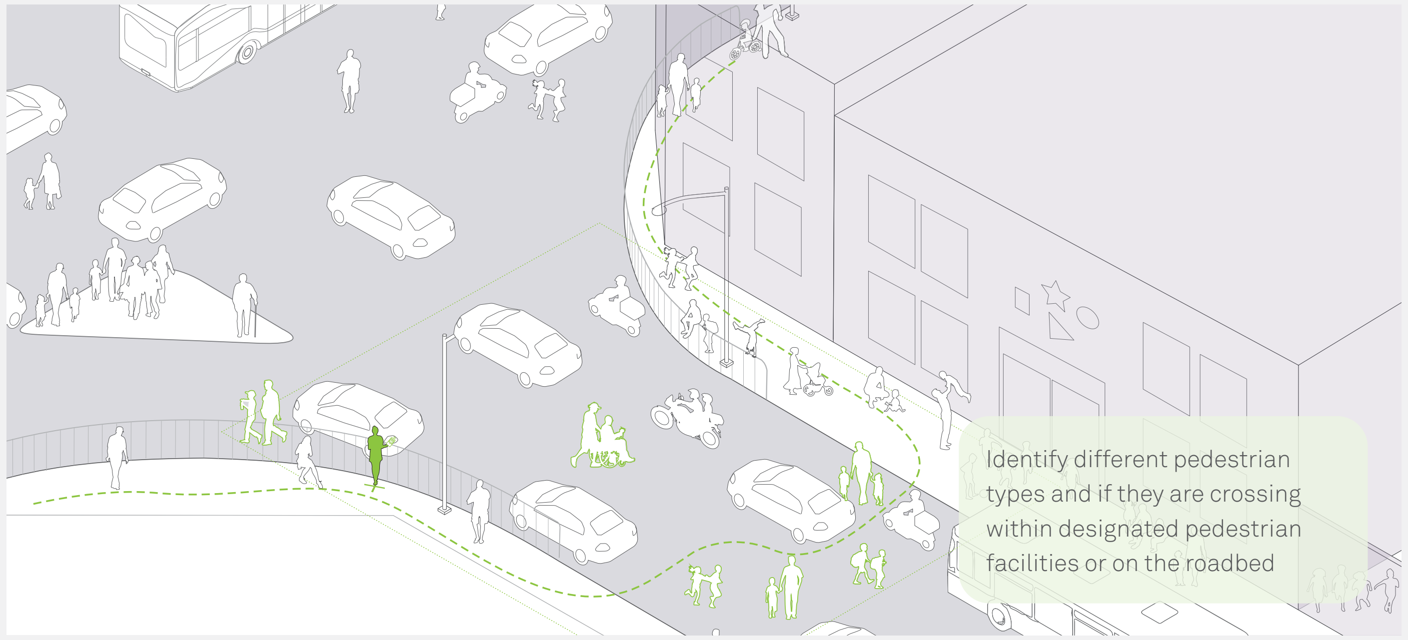
Mark pedestrians by age groups. Consider using different symbols to indicate if pedestrians walk or rush as they cross the street. Indicate people with disabilities with two marks: one in the appropriate age group and one in the disability column.

4 **Tally counts**

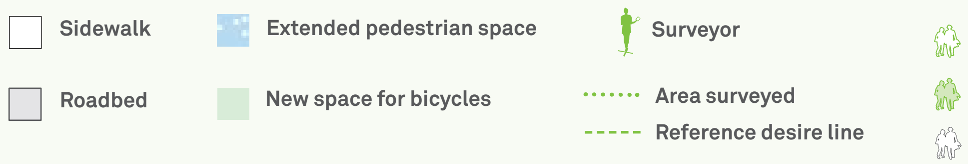
Shorter crossing distances reduce exposure and risk of kids getting hit by moving vehicles. See p. 112 of the *Designing Streets for Kids* handbook for more guidance on crosswalks.

Measuring before street transformation:

Pedestrians have to rush to cross the street to reach the school entrance as vehicles maneuver around them



Measuring after street transformation:



Evaluating and communicating impact:

By counting the movements of pedestrians crossing the street, you will be able to inform your design and communicate about:

- → Increase in types of pedestrians, particularly children, crossing the street using safe crossings
- → Reduction in types of pedestrians rushing to cross the street due to improved conditions

PEDESTRIAN COUNTS: SIDEWALKS

Project Name

Surveyor name		**Basemap** (indicate the "invisible line" used to count)
Date/time		
Day of the week		
Weather		
Notes		

1 Tally pedestrians by age, gender, and ability that are walking on the sidewalks, and on the roadbed, separately. Separate sidewalk counts by side of the street if appropriate. Count for a period of at least 15 minutes. On high-volume streets, you may need to be selective with what information is collected.

Symbol	(Optional) Perceived gender: Female (X) , Male (/), Other (+)						
Pedestrian type (indicate people with disabilities with two marks)	0-3	4-12	13-18	19-74	75+	Disability	**Total** (do not count people with disabilities twice)
On sidewalk Near school							
Total							
On sidewalk Opposite side							
Total							
On roadbed							
Total							
Total							

Global Designing Cities Initiative

PEDESTRIAN COUNTS: CROSSING

Project Name

Surveyor name		**Basemap** (indicate the surveyed area)
Date/time		
Day of the week		
Weather		
Notes		

1 Tally pedestrians in a defined area who are walking on and off the markings, separately. Use the suggested symbols below if they are rushing to cross the street. Count for a period of at least 15 minutes.

Symbol	(optional) (/) Walking (O) Rushing						
Pedestrian type (indicate people with disabilities with two marks)	0-3	4-12	13-18	19-74	75+	Disability	**Total** (do not count people with disabilities twice)
In marked crossing							
Total on crossing							
Outside marked crossing Consider a 2-meter offset on each side as an acceptable area of influence							
Total outside							
Total							

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Pedestrian desire lines

Desire lines indicate pedestrians' desired paths of movement. Drawing where people cross the street can reveal specific locations where there is a need for improved or additional facilities to allow pedestrians to cross safely. This can be especially important to observe in the middle of a block and at intersections. Use multiple forms to allow you to focus on small sections of the street at a time.

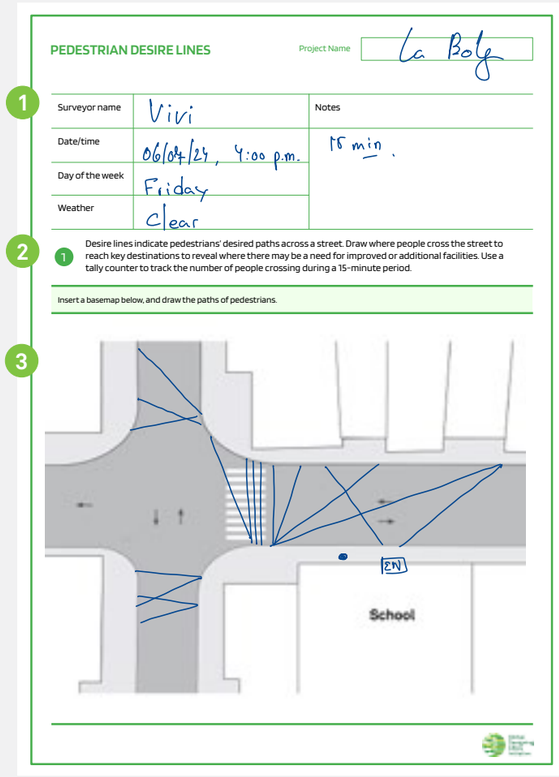
Why is this important?

- To document the need for pedestrian facilities at specific locations such as curb extensions or improvements, pedestrian refuge islands, or new pedestrian crossings (where existing crossings are too far apart
- To count pedestrian volumes
- To explain pedestrian exposure to risk by documenting long crossing distances without protection
- To improve access to popular origins and destinations

Tools you'll need:

Timelapse cameras can be especially effective for capturing desire lines and pedestrian gathering areas.

What your form could look like:



PEDESTRIAN DESIRE LINES

Project Name: La Bolg

Surveyor name	Vivi
Date/time	06/04/24, 4:00 p.m.
Day of the week	Friday
Weather	Clear

Notes: 15 min.

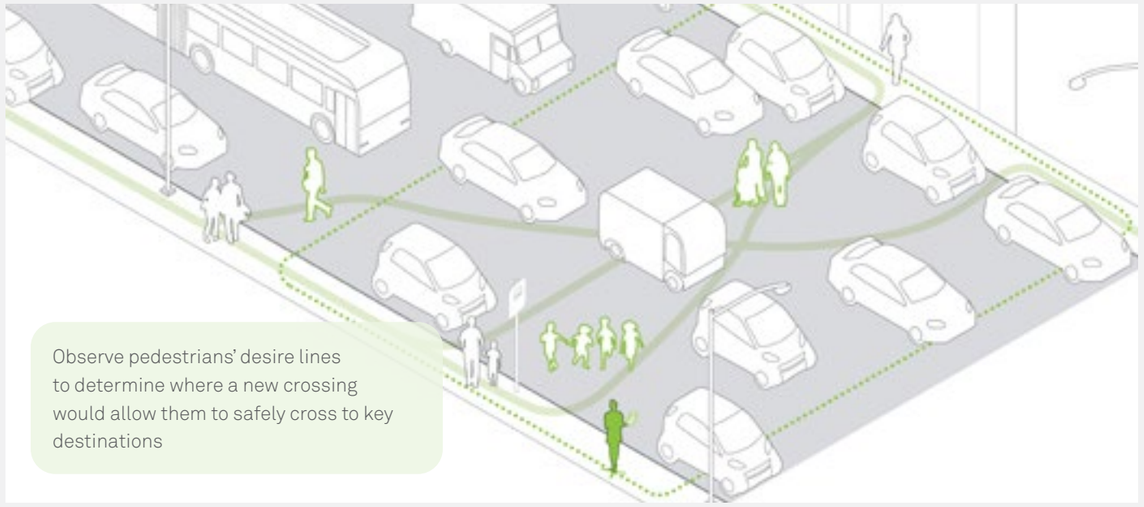
1. Desire lines indicate pedestrians' desired paths across a street. Draw where people cross the street to reach key destinations to reveal where there may be a need for improved or additional facilities. Use a tally counter to track the number of people crossing during a 15-minute period.

Insert a basemap below, and draw the paths of pedestrians.

1. **General information**
2. **Instructions**
   Helpful for larger teams or to reinforce methods
3. **Location map**
   Surveyors should mark their position and the area they can observe

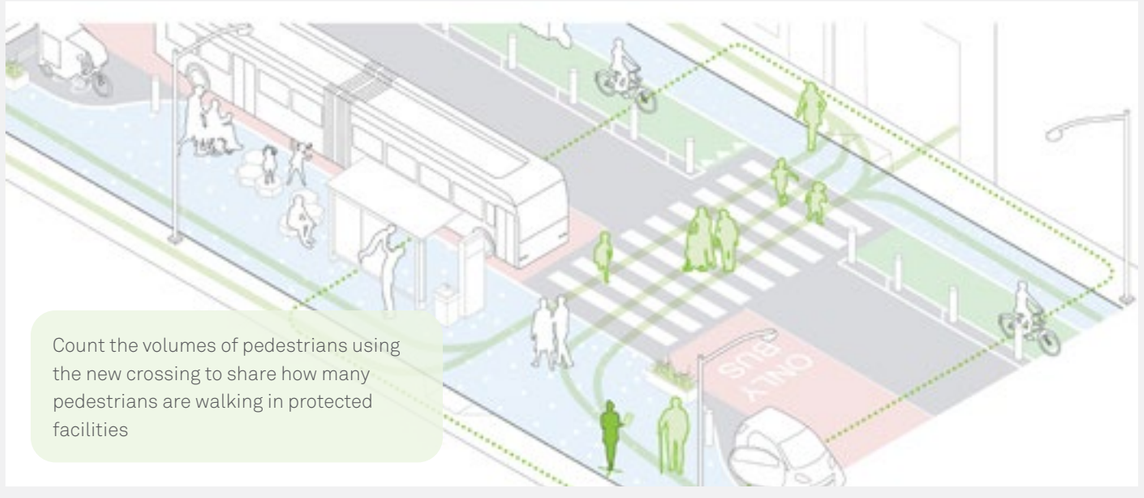
Safe, accessible crossings should be provided every **80-100 m**, and at all legs of an intersection, to ensure a connected walkable network. See p. 112 of GDCI's *Designing Streets for Kids* handbook for more guidance on crosswalks.

Measuring before street transformation:
High pedestrian volumes crossing long distances without crossing facilities

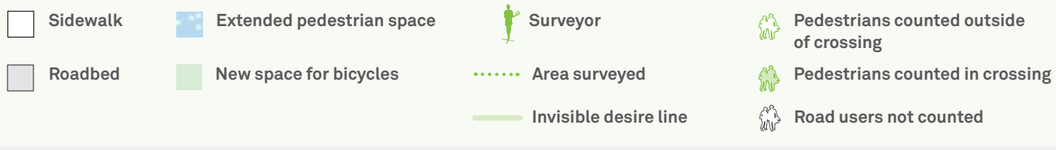


Observe pedestrians' desire lines to determine where a new crossing would allow them to safely cross to key destinations

Measuring after street transformation:



Count the volumes of pedestrians using the new crossing to share how many pedestrians are walking in protected facilities



PEDESTRIAN DESIRE LINES

Project Name

Surveyor name		Notes
Date/time		
Day of the week		
Weather		

1 Desire lines indicate pedestrians' desired paths across a street. Draw where people cross the street to reach key destinations to reveal where there may be a need for improved or additional facilities. Use a tally counter to track the number of people crossing during a 15-minute period.

Insert a basemap below, and draw the paths of pedestrians.

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Street activities

Street transformations near schools can generate new public spaces as they redistribute space to pedestrians, cyclists, transit users, and people socializing and playing. Define the boundary of the area being surveyed and create a route to walk around it once an hour. If the site is not too large, stand in a central location and observe for at least 15 minutes, and then multiply by 4 to extrapolate results for the hour. Refer to the **Pause-and-Play activities** form on p.138 to supplement your findings.

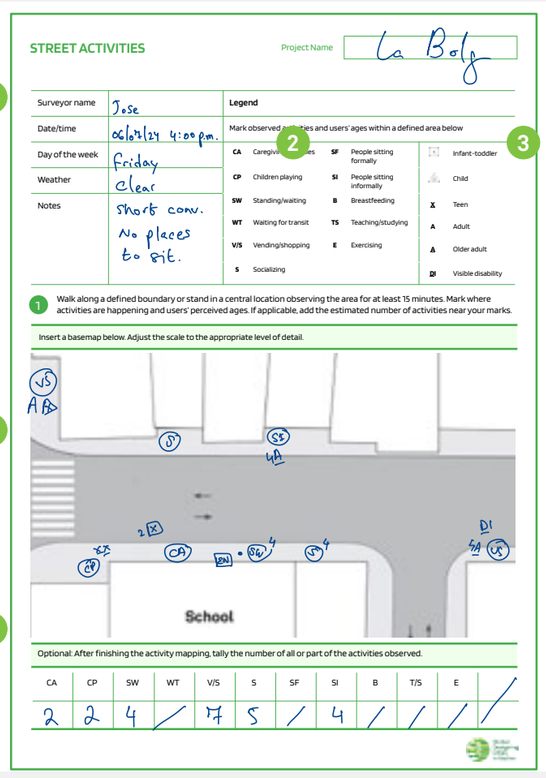
Why is this important?

- To enhance understanding of the place, dynamics, and activities around the school, and changes after the project is implemented
- To inform design according to observed activities
- To demonstrate that streets can be used for more functions and activities than moving vehicles
- To measure shifts in street activities as a consequence of new design

Tools you'll need:

- **Forms + writing tools**
- **Basemap**
- **Camera**

What your form could look like:

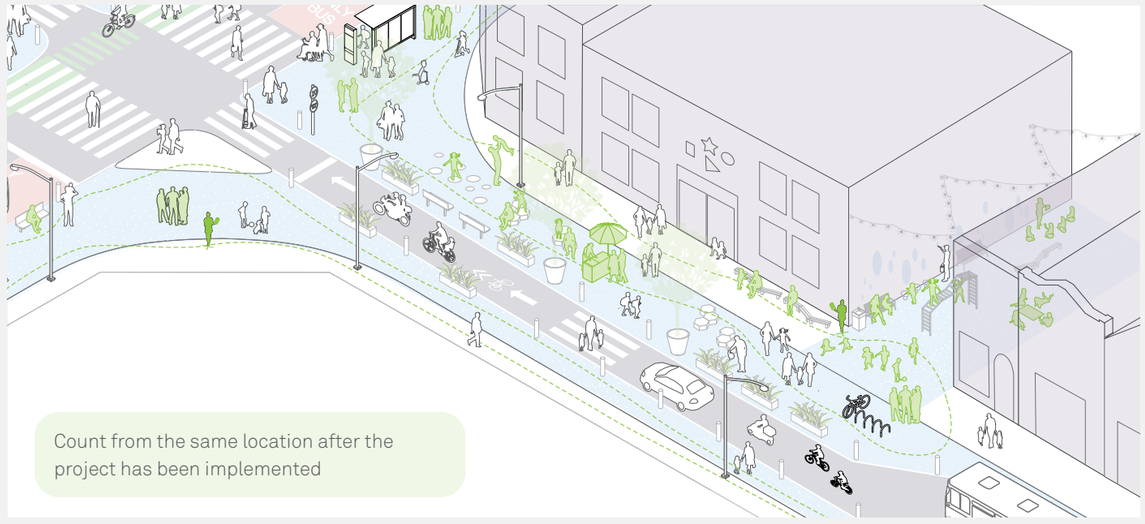


1. **General information**
2. **Activities legend**
   Define codes or icons for each activity.
3. **User legend**
   When appropriate, note the type of user according to their age and visible disability to gain insights into how the space is used by different users.
4. **Location map**
   Walk around the site (follow the boundary to be consistent) or stand in a central location and mark where activities are happening using the codes defined in the legends. If applicable, add estimated number of items near your marks.
5. **Optional: Count activities**
   After completing your map, tally activities that are crucial to achieving your project goals.

Measuring before street transformation:
Pedestrians are crowding near the school entrance, standing and waiting for their kids

Note key locations, such as where children or caregivers are setting up informal seating or where lack of adequate space could block pedestrian clear paths

Measuring after street transformation:



Count from the same location after the project has been implemented

- **Sidewalk**
- **Roadbed**
- **Extended pedestrian space**
- **New space for bicycles**
- **Surveyor**
- **Path that the surveyor walks to observe the site**
- **Pedestrians counted staying / doing an activity**
- **Road users not counted**

Evaluating and communicating impact:

By mapping the activities of people in the space, you will be able to inform your design and communicate about:

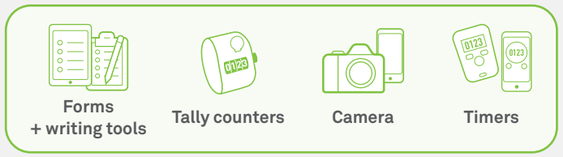
- Types of prominent activities taking place in the space
- Key obstructions or challenges you observed
- Activities that could be encouraged by design
- Changes in activities that take place in the street before and after the project

Pause-and-play activities

While activity mapping can help inform your design with insights on how the school community uses the streets near the school, focusing on pause-and-play activities helps quantify who is using the streets to pause and play, and what type of play activities they conduct. Separating types of play activity helps capture their benefits, such as increased social connection, caregiving, physical activity, learning and development, and joy and well-being.

Count for at least 15 minutes at times when children are expected to be present, and then multiply by 4 to extrapolate results for the hour.

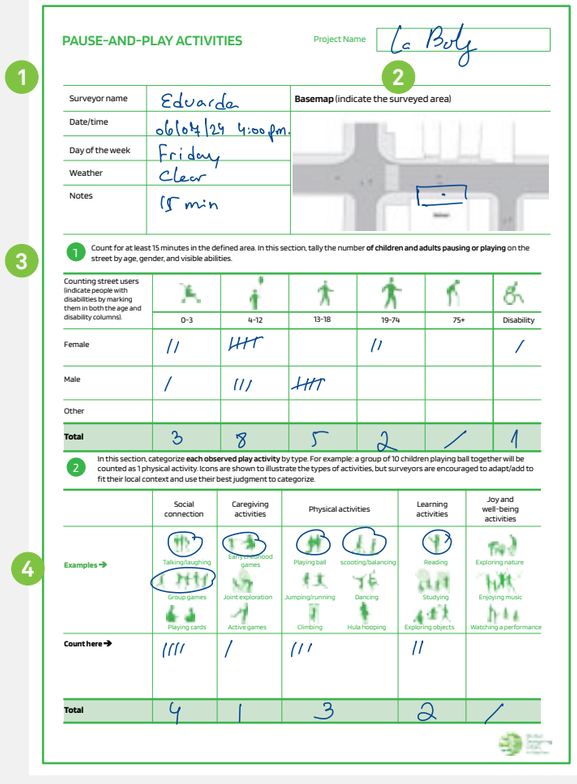
Tools you'll need:



Why is this important?

- To understand who uses the street and design to include those who are not.
- To demonstrate change and highlight age, gender, and ability groups that will benefit from playing near the school
- To communicate the benefits experienced by users after the transformation, such as physical activity, social interactions, and well-being.

What your form could look like:



PAUSE-AND-PLAY ACTIVITIES — Project Name: La Bodi

Surveyor name	Eduarda
Date/time	06/04/24 4:00pm
Day of the week	Friday
Weather	Clear
Notes	15 min

Basemap (indicate the surveyed area)

1 Count for at least 15 minutes in the defined area. In this section, tally the number **of children and adults pausing or playing** on the street by age, gender, and visible abilities.

Counting street users (indicate people with disabilities by marking them in both the age and disability columns)	0-3	4-12	13-18	19-74	75+	Disability
Female	II	HHT		II		I
Male	I	III	HHT			
Other						
Total	3	8	5	2	/	1

2 In this section, categorize **each observed play activity** by type. For example: a group of 10 children playing ball together will be counted as 1 physical activity. Icons are shown to illustrate the types of activities, but surveyors are encouraged to adapt/add to fit their local context and use their best judgment to categorize.

	Social connection	Caregiving activities	Physical activities		Learning activities	Joy and well-being activities
Examples →	Talking/laughing, Group games, Playing cards	Play-based games, Joint exploration, Active games	Playing ball, Jumping/running, Climbing	scooting/balancing, Dancing, Hula hooping	Reading, Studying, Exploring objects	Exploring nature, Enjoying music, Watching a performance
Count here →	IIII	I	III		II	
Total	4	1	3		2	/

1 **General information**

2 **Location map and notes**
Use the legend items to document where play is happening in the defined area.

3 **User counts**
Use a tally mark in appropriate rows to capture users pausing or playing by age and gender. Count people with visible disabilities by adding a tally mark to the appropriate row, noting both their gender and disability.

4 **Play type counts**
Review the examples and use your judgment categorize observed pause-and-play activities.

This form is flexible. You can change icons to offer surveyors examples that resonate locally or change types of play to capture the impacts that matter most to evaluate your goals.

Measuring before street transformation:
Pedestrians are standing on a narrow sidewalk, with little room to play or socialize

Define the boundary of the area being surveyed and stand in a central location. Count users and play activities.

Measuring after street transformation:

Count users and activities in newly designated areas

Sidewalk
Roadbed
Extended pedestrian space
New space for bicycles
Surveyor
Path that the surveyor walks to observe the site
Pedestrians counted playing
Road users not counted

Evaluating and communicating impact:

By counting the types of users and their play activities, you will be able to inform your design and communicate about:

- Increase in play for specific users. For example:
  - *Teens*
  - *Caregivers*
  - *Girls*
- Increase in type of play activity. For example:
  - *High-energy play that contributes to physical activity*

STREET ACTIVITIES

Project Name

Surveyor name		**Legend**
Date/time		Mark observed activities and users' ages within a defined area below
Day of the week		
Weather		
Notes		

CA	Caregiving activities	**SF**	People sitting formally		Infant-toddler
CP	Children playing	**SI**	People sitting informally		Child
SW	Standing/waiting	**B**	Breastfeeding	**X**	Teen
WT	Waiting for transit	**T/S**	Teaching/studying	**A**	Adult
V/S	Vending/shopping	**E**	Exercising	**A**	Older adult
S	Socializing			**DI**	Visible disability

1 Walk along a defined boundary or stand in a central location observing the area for at least 15 minutes. Mark where activities are happening and users' perceived ages. If applicable, add the estimated number of activities near your marks.

Insert a basemap below. Adjust the scale to the appropriate level of detail.

Optional: After finishing the activity mapping, tally the number of all or part of the activities observed.

CA	CP	SW	WT	V/S	S	SF	SI	B	T/S	E	

Global Designing Cities Initiative

PAUSE-AND-PLAY ACTIVITIES

Project Name

Surveyor name		**Basemap** (indicate the surveyed area)
Date/time		
Day of the week		
Weather		
Notes		

1 Count for at least 15 minutes in the defined area. In this section, tally the number **of children and adults pausing or playing** on the street by age, gender, and visible abilities.

Counting street users (indicate people with disabilities by marking them in both the age and disability columns).	0-3	4-12	13-18	19-74	75+	Disability
Female						
Male						
Other						
Total						

2 In this section, categorize **each observed play activity** by type. For example: a group of 10 children playing ball together will be counted as 1 physical activity. Icons are shown to illustrate the types of activities, but surveyors are encouraged to adapt/add to fit their local context and use their best judgment to categorize.

	Social connection	Caregiving activities	Physical activities		Learning activities	Joy and well-being activities
Examples →	Talking/laughing Group games Playing cards	Early childhood games Joint exploration Active games	Playing ball Jumping/running Climbing	scooting/balancing Dancing Hula hooping	Reading Studying Exploring objects	Exploring nature Enjoying music Watching a performance
Count here →						
Total						

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Cyclists and micromobility users

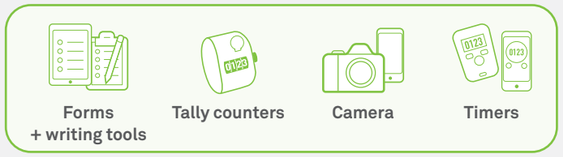
Count all cyclists and micromobility users riding through the project site according to age, type of vehicle, or other category that corresponds most with the project goals.

Separate counts by row: One row counts users riding within a cycle facility, the second row is for users riding on the sidewalk, and the third row is for users riding on the roadbed. Count for at least 15 minutes.

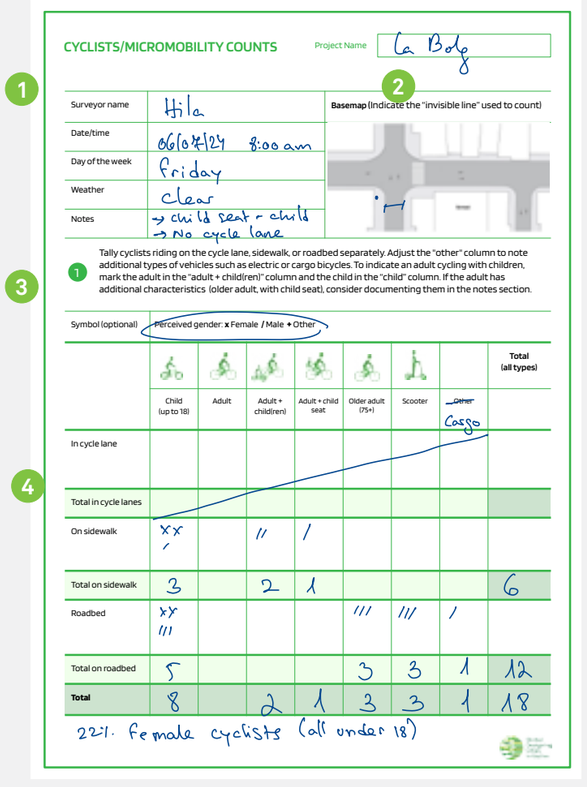
Why is this important?

- To assess cyclists' and micromobility users' exposure to risk (riding on cycle infrastructure, pedestrian infrastructure, or the roadbed)
- To assess potential conflicts between cyclists riding on sidewalks and pedestrians, especially children
- To understand cycling volumes and the change as a result of the project, particularly among specific groups such as children, caregivers, and families
- To justify the addition or change of cycling infrastructure, including parking, storage, lane width, and two-directional paths

Tools you'll need:



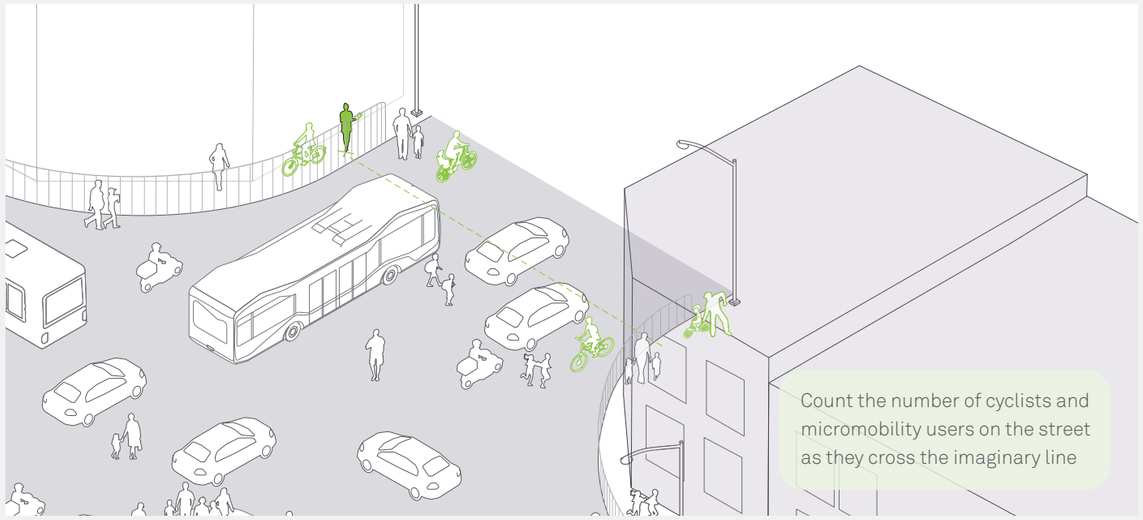
What your form could look like:



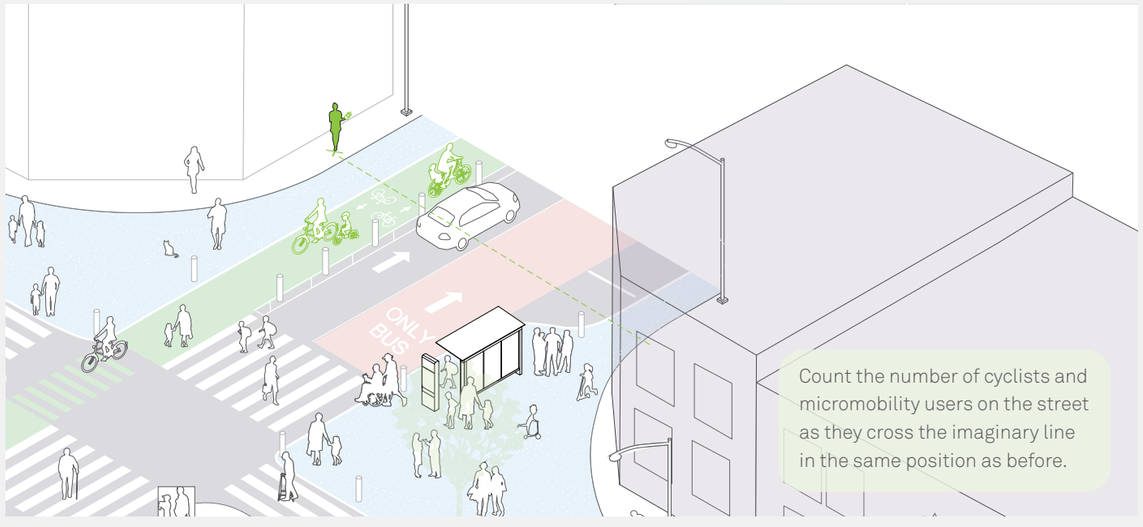
1. **General information**
2. **Location map**
   - Include a location map with data collection points. Decide on an "invisible line" on the project site, and mark it to guide surveyors. Count only cyclists and micromobility users crossing that line.
   - Add conventions and notes to describe the context.
3. **User type**
4. **Tally counts**

Documenting counter-flow cyclists can also be helpful to understand whether this street could benefit from a two-way cycle lane.

Measuring before street transformation:
Cyclists are cycling unprotected on the roadbed, or sharing the sidewalk with pedestrians.



Measuring after street transformation:



Evaluating and communicating impact:

By counting the type of cyclists and micromobility users, you will be able to inform your design and communicate about:

- Increase in users riding on protected infrastructure
- Increase in observable variety of riders (more women, children, caregivers with children)
- Fewer cyclists and micromobility riders on pedestrian infrastructure
- Fewer crashes involving cyclists over time

CYCLISTS/MICROMOBILITY COUNTS

Project Name

Surveyor name		**Basemap** (Indicate the "invisible line" used to count)
Date/time		
Day of the week		
Weather		
Notes		

1 Tally cyclists riding on the cycle lane, sidewalk, or roadbed separately. Adjust the "other" column to note additional types of vehicles such as electric or cargo bicycles. To indicate an adult cycling with children, mark the adult in the "adult + child(ren)" column and the child in the "child" column. If the adult has additional characteristics (older adult, with child seat), consider documenting them in the notes section.

Symbol (optional)	Perceived gender: **x** Female **/** Male **+** Other							
								**Total (all types)**
	Child (up to 18)	Adult	Adult + child(ren)	Adult + child seat	Older adult (75+)	Scooter	Other	
In cycle lane								
Total in cycle lanes								
On sidewalk								
Total on sidewalk								
Roadbed								
Total on roadbed								
Total								

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Vehicle counts

Count different vehicle types driving through the project site. It is recommended to separate counts by direction, especially if there are high volumes. This can be measured in the middle of a block and at intersections. Adjust the tally counts to the signal phasing, if applicable.

Why is this important?

- To count vehicle volume by type and movement
- To understand movements of taxis, transit, buses, etc.
- To compare space distribution by mode
- To understand if low-traffic areas can be pedestrianized at certain hours or permanently

Tools you'll need:


Forms + writing tools

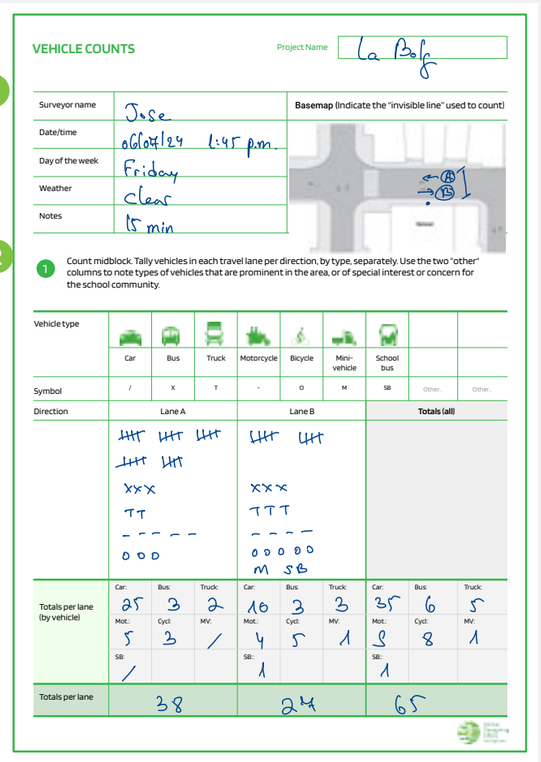

Tally counters


Cameras


Automated counting technology

It may be helpful to distinguish between short and long trucks (e.g. trucks with trailers) because their size can influence what is possible in terms of reducing turning radii.

What your form could look like:


VEHICLE COUNTS

Project Name: La Bolfa

1

Surveyor name	Jose
Date/time	06/04/24 1:45 p.m.
Day of the week	Friday
Weather	clear
Notes	15 min

Basemap (Indicate the "invisible line" used to count)

2

1 Count midblock. Tally vehicles in each travel lane per direction, by type, separately. Use the two "other" columns to note types of vehicles that are prominent in the area, or of special interest or concern for the school community.

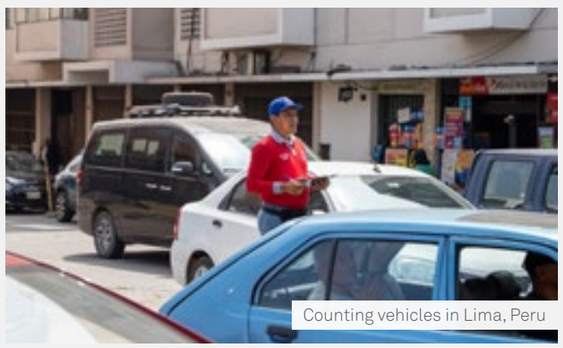
Vehicle type	Car	Bus	Truck	Motorcycle	Bicycle	Mini-vehicle	School bus		
Symbol	/	X	T	-	O	M	SB	Other..	Other..
Direction	Lane A			Lane B			Totals (all)		
	HH HH HH HH HH			HH HH					
	XXX			XXX					
	TT			TTT					
	- - - - -			- - - -					
	OOO			OOOOO M SB					
Totals per lane (by vehicle)	Car: 25	Bus: 3	Truck: 2	Car: 10	Bus: 3	Truck: 3	Car: 35	Bus: 6	Truck: 5
	Mot.: 5	Cycl: 3	MV: /	Mot.: 4	Cycl: 5	MV: 1	Mot.: 9	Cycl: 8	MV: 1
	SB: /			SB: 1			SB: 1		
Totals per lane	38			24			65		

1 General information

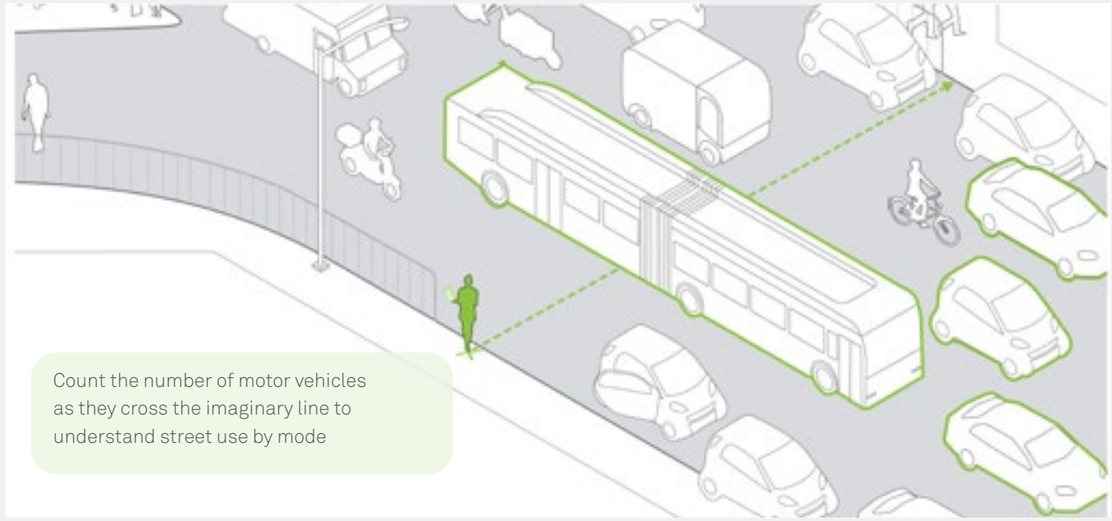
2 Vehicle type

- Car
- Bus
- Truck
- Motorcycle
- Bicycle
- Mini-vehicle
- School vehicle

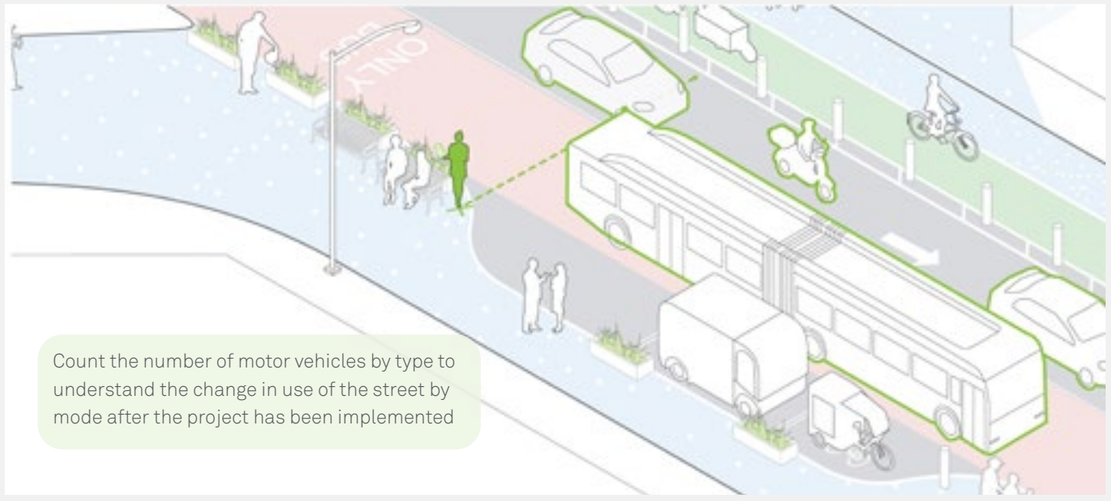
NOTE: Mark loading/unloading locations on the basemap if applicable.


Counting vehicles in Lima, Peru

Measuring before street transformation:
Pedestrian and cyclist crash rates and fatalities are high at this location


Count the number of motor vehicles as they cross the imaginary line to understand street use by mode

Measuring after street transformation:


Count the number of motor vehicles by type to understand the change in use of the street by mode after the project has been implemented

Sidewalk | **Roadbed** | **Extended pedestrian space** | **New space for bicycles** | **Surveyor** | **Invisible line surveyed** | **Vehicles counted** | **Vehicles not counted**

Evaluating and communicating impact:

By counting the number and type of vehicles, you will be able to inform your design and communicate about:

- Decrease in motor vehicle volumes, leading to safer conditions for pedestrians
- Decrease in motor vehicle and truck volumes, contributing to air quality benefits

Resources | Counts and observations

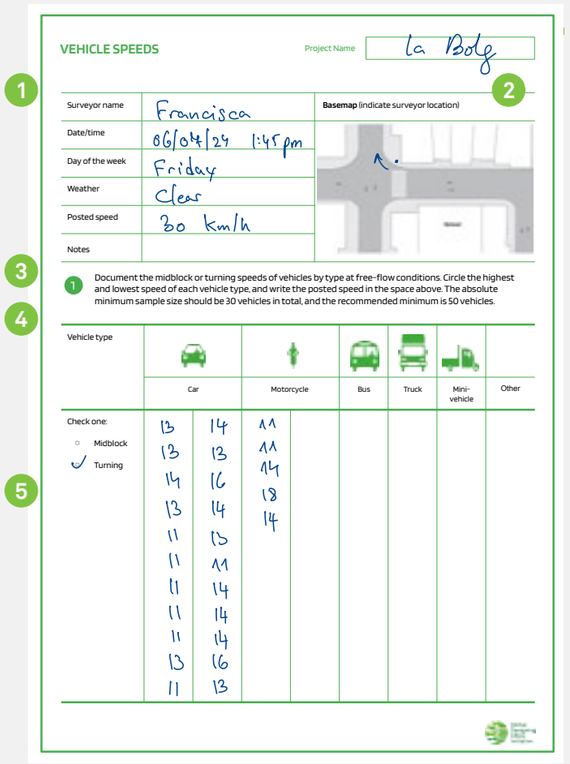
Vehicle speeds

The speed of moving vehicles is directly related to the safety of the street and other users. Use compact speed radars to document vehicle speeds on specific corridors and corners, according to vehicle type. Count a minimum of 40 vehicles to have a significant sample size, and more if possible. Count turning speeds at corners and freeflowing speeds at mid-block locations.

Tools you'll need:

Count forms + writing tools | **Tally counters** | **Speed radar**

What your form could look like:



Why is this important?

- To observe characteristics of the site that affect vehicle speed, such as extra-wide lanes, and identify design solutions
- To identify peak speeds at specific locations
- To document speeds of different vehicle types moving through the site, before and after
- To understand if the operating speed of the street segment is appropriate for its surrounding context

Measure speeds near your school during peak hours to determine the risk to school community members walking or cycling to school. Always supplement this by measuring speeds in freeflowing conditions such as evenings and weekends to understand peak speeds. To capture other potentially dangerous vehicle movements, use the **Peak school hours circulation** form on p. 122.

1 General information

2 Location map

3 Vehicle type

- Car
- Motorcycle
- Bus
- Truck
- Mini-vehicle
- Other

4 Midblock or turning speed

- Check one of the boxes

5 Speed

Register speed of all vehicles passing by

NOTE: If vehicle volumes are too high, divide vehicle types into multiple forms to facilitate data collection

Urban streets should be designed to support a maximum of **40 km/h**. In the densest urban areas and when sharing a lane with cycles, speeds should be at or below **30 km/h**. When shared with pedestrians, it may be necessary to limit speeds to **15 km/h or below**. See p. 121 of the *Global Street Design Guide* for more guidance on vehicle speeds.

How to use your speed radar:

- The radar must be pointed at oncoming traffic (instead of across the road) in order to work.
- A compact speed radar has the advantage of being more discreet (it looks like a smartphone) than classic "speed guns." If drivers identify the surveyor as speed enforcement by the city, this may influence their behavior and survey results.
- Note that compact radars may be inaccurate for speeds below 15-20 km/h, limiting their usefulness for turning speeds.

SNAPSHOT

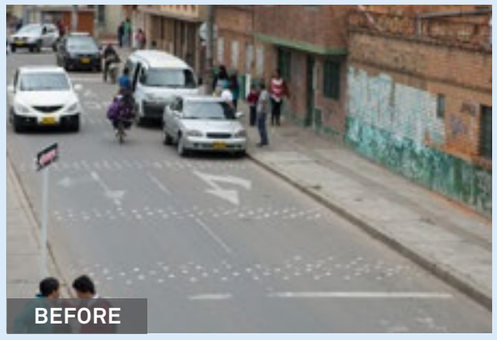
MEASURING SPEED

Bosa - Bogotá, Colombia

Due to street parking, this two-lane street regularly operates as a wide one-lane street, encouraging higher traffic speeds and exposing a high volume of pedestrians to traffic violence. The first pop-up chicane project in Bogotá narrowed the street with paint and cones as a traffic-calming strategy to reduce speeds.

Speed reduction during pop-up:

Private car	31% reduction
Taxi	25% reduction
Motorcycle	37% reduction
Truck	8% reduction
Bus	28% reduction



VEHICLE COUNTS

Project Name

Surveyor name		**Basemap** (Indicate the "invisible line" used to count)
Date/time		
Day of the week		
Weather		
Notes		

1 Count midblock. Tally vehicles in each travel lane per direction, by type, separately. Use the two "other" columns to note types of vehicles that are prominent in the area, or of special interest or concern for the school community.

Vehicle type	Car	Bus	Truck	Motorcycle	Bicycle	Mini-vehicle	School bus		
Symbol	/	X	T	-	O	M	SB	Other...	Other...
Direction	Lane A			Lane B			**Totals (all)**		
Totals per lane (by vehicle)	Car:	Bus:	Truck:	Car:	Bus:	Truck:	Car:	Bus:	Truck:
	Mot.:	Cycl:	MV:	Mot.:	Cycl:	MV:	Mot.:	Cycl:	MV:
	SB:			SB::			SB::		
Totals per lane									

VEHICLE SPEEDS

Project Name

Surveyor name		**Basemap** (indicate surveyor location)
Date/time		
Day of the week		
Weather		
Posted speed		
Notes		

1 Document the midblock or turning speeds of vehicles by type at free-flow conditions. Circle the highest and lowest speed of each vehicle type, and write the posted speed in the space above. The absolute minimum sample size should be 30 vehicles in total, and the recommended minimum is 50 vehicles.

Vehicle type	Car		Motorcycle		Bus	Truck	Mini-vehicle	Other
Check one: ☐ Midblock ☐ Turning								

Vehicle volumes and air quality estimate

Streets near schools attract children, who are especially vulnerable to the effects of harmful pollutants.[2,3] School grounds usually host intense physical activities such as play and sports that may further expose children.

There is a wide range of tools to evaluate air quality near schools, which involve varying levels of required resources and scientific accuracy.[4] Counting vehicles before and after project implementation is one way to assess air pollution, as vehicle volumes can indicate a reduction in traffic emissions.

Evaluating physical changes to the site can also indicate that vulnerable users have been made more protected from transportation emissions.

Why is this important?

- To estimate the reduction of traffic-emitted pollution produced on streets near schools and children
- To offer initial evidence to make the case for more rigorous and long-term air quality monitoring

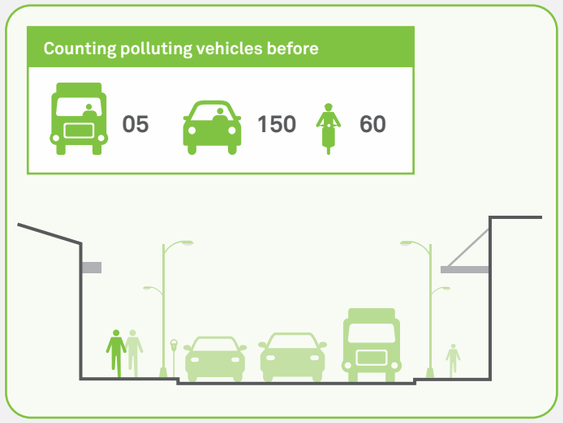
Compare vehicle volumes before and after street transformation

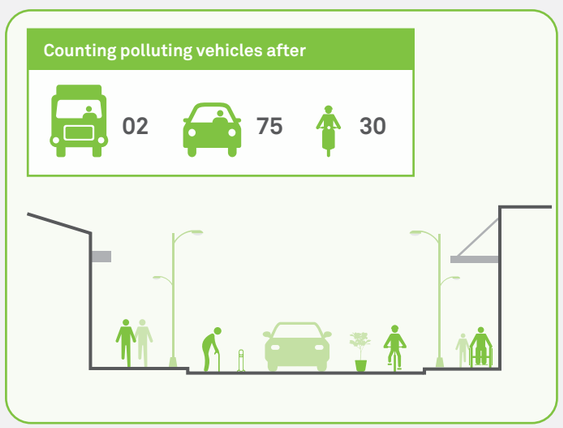
Count motor vehicle volumes by type of vehicle to evaluate how many motorized vehicles were successfully deterred from traveling on streets near the school. Complete pedestrianization, permanent or temporary, is one of the most effective measures of improving air quality in an area. Use the **Vehicle counts** form on p. 146 to evaluate these benefits.

Additional things to keep in mind:

- Air pollution results from many factors. Insights from vehicle counts could speak to the harm caused by the volume of traffic and its emissions.
- On streets near schools, consider locating the surveyor near especially vulnerable areas where students gather or play.

When applicable, evaluate the reductions in heavy-duty vehicle volume. In many cities, they emit disproportionately more pollution than other vehicles. They are commonly associated with air pollution, which helps communicate impact.

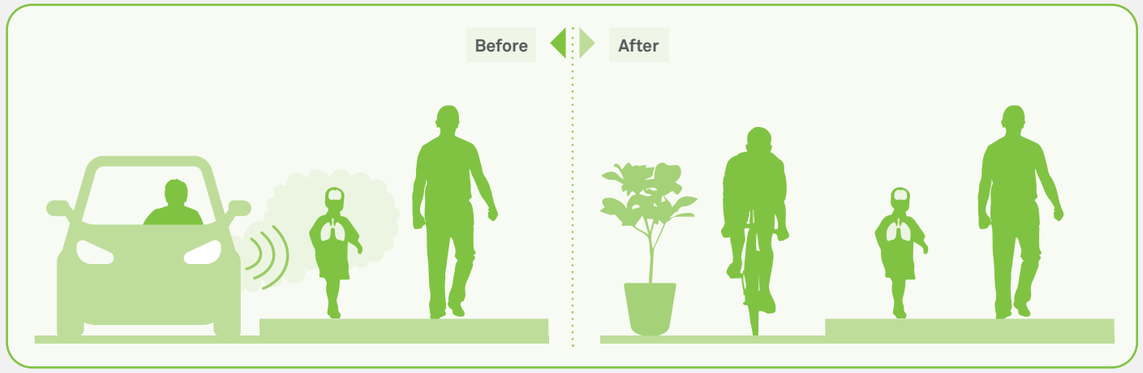




Compare site conditions before and after street transformation

Pollution levels are higher near emissions sources, meaning that the air quality tends to be worse right near the roadbed, close to transport emissions. Physical measures, such as widening sidewalks, adding curb extensions, and implementing cycling infrastructure (separated by buffers) help protect people from polluted air.[5] Aim to create distance from both moving and parked vehicles.

Use the **School Surroundings** form on p. 116 to compare site conditions before and after the transformation to highlight air quality benefits near the school.



Site analysis could help highlight:

- Areas that are more susceptible to air pollution, such as narrow sidewalks or cycle lanes.
- Locations that are more vulnerable, such as where children are likely to gather or conduct physical activities such as sports or play.
- Elements that could extend the distance between traffic pollution and protect vulnerable users, such as sidewalk extensions, vegetation, and protected cycle tracks.

Evaluating and communicating impact:

By evaluating physical changes, you can communicate air quality benefits, such as:

Square meters of pedestrianized street, removing motor vehicle pollutants from the street.

Sidewalk extended by X meters, distancing schoolchildren from polluting motor vehicles.

Square meters/length of protected cycle lanes added (with buffer), reducing cyclists exposure to pollution from traffic emissions.

Number of plants added, expected to grow to a height of Y and serve as a buffer from traffic emissions for children walking to school.

Particulate matter levels

Different platforms and tools, including microsensors, are available to measure PM levels for street transformations. AirBeam is recommended due to its versatility and user-friendly interface, which makes it easier to extract evaluations; engage stakeholders, including youth or school community members; and support communication efforts.

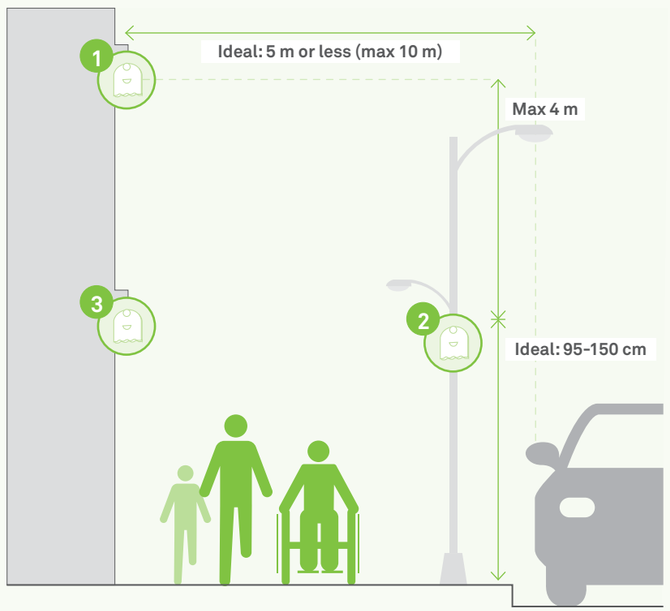
In order to conduct reliable comparisons of before-and-after conditions near schools, data collection should take place for at least four weeks. To control for trend effects, you will also need to simultaneously collect data from a comparison site: a similar area, unaffected by the intervention. Depending on your expertise, you may also want to consult experts to support your evaluation efforts. Partnering with researchers at local universities can be a good starting point.

Why is this important?

- → To evaluate the impact of transportation emissions on PM levels on site
- → To offer initial evidence to make the case for more rigorous and long-term monitoring

An AirBeam device safely located on a window ledge facing the street

Choose where to locate the device[6]



1. The device must be at a distance of 10 meters or less from the roadbed (ideally 5 meters).
2. The device must be located at a height of 4 meters or less (ideally, at a breathing height of around 1.5 meters for adults or 95 cm for young children), but its security should be prioritized.
3. The device should be at least 3 meters away from other pollution sources (like exhaust vents, food kiosks) and at least 10 cm away from obstructions to the air circulation like signs, and horizontal surfaces.

→ Try to position the device where it will not be displaced/altered by the intervention (e.g. traffic signs and lampposts can be removed).

What the process could look like:

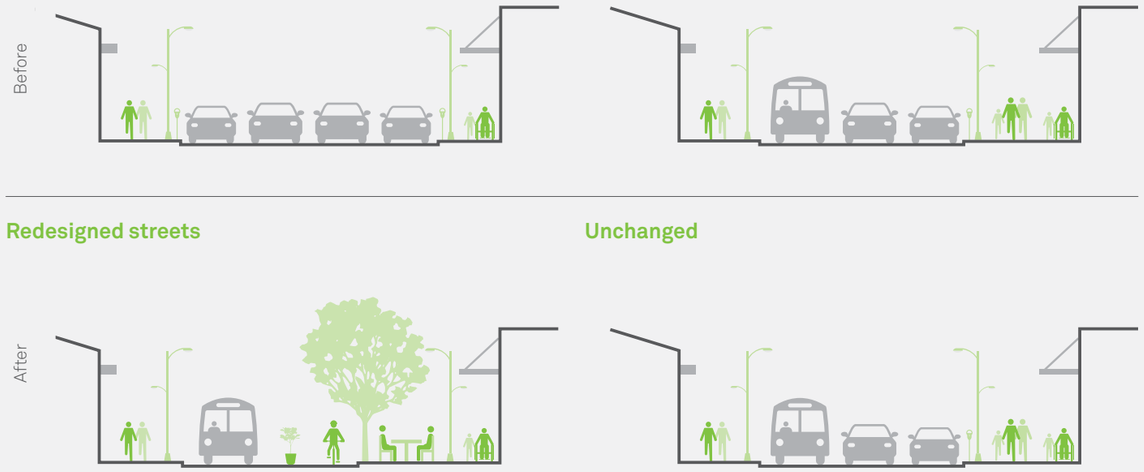
Measure pollution levels at the intervention site before and after the implementation. At the same time, conduct the same measurements at a similar site that is not affected by the intervention.

Collect data for at least four weeks prior to the implementation and four weeks after the implementation once traffic patterns have stabilized.

Intervention site

Comparison site

Similar area unaffected by the intervention



Redesigned streets

Unchanged

PM microsensors such as the AirBeam must be calibrated to the local context by an expert to be compared with reference levels, like WHO's standards for air quality. If you are using an uncalibrated device, avoid comparisons to absolute values. Instead, evaluate relative change.

The comparison site must have a similar context to the intervention, e.g. near similar schools on a similiar type of street.

Evaluating and communicating impact:

By comparing the relative changes in daily averages before and after the street transformation and at the comparison site, you will be able to inform the design and communicate to others. When communicating your findings:

- → Avoid using absolute values. This can be done only when the device has been calibrated to the context.
- → A positive change doesn't have to be an absolute reduction in PM levels. If the comparison site shows an increase in PM levels, the transformation could demonstrate a smaller increase.
- → A positive change is indicated if there is a meaningful distinction of at least 10% difference between the changes in the intervention site and the comparison site.

Ambient noise

Elevated street noise levels result from different causes, such as vehicle movements, construction sites, or outdoor play. If your site has high vehicle volumes, movement from noisy vehicles such as motorcycles and trucks, or repeating impulse sounds like sirens, conduct an initial noise measurement to evaluate ambient noise levels.[7]

Sound measurement devices are available in different formats. Professional sound level meters, sometimes operated by experts, are the most reliable option. The NIOSH app is a simple alternative currently available exclusively on iOS devices.[8]

Record between two and five sessions for a period of 15 minutes, at appropriate and consistent times and locations, to compare before and after average noise levels (LAeq) as well as peak impulse noises (LCpeak).

Why is this important?

- To demonstrate the connection between street design and use and dangerous levels of noise pollution, especially in close vicinity to schools and play areas
- To offer initial evidence to make the case for more rigorous and long-term monitoring

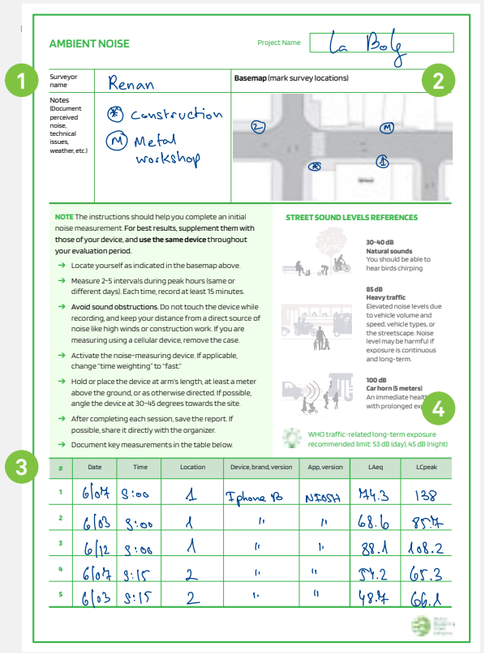
Tools you'll need:

Sound level meter or phone with app

Forms + writing tools

Surveys

What your form could look like:



AMBIENT NOISE

Project Name: La Bolg

1 Surveyor name: Renan

Notes (Document perceived noise, technical issues, weather, etc.): (C) construction; (M) Metal workshop

2 **Basemap** (mark survey locations)

NOTE The instructions should help you complete an initial noise measurement. **For best results, supplement them with those of your device, and use the same device throughout your evaluation period.**

- Locate yourself as indicated in the basemap above.
- Measure 2-5 intervals during peak hours (same or different days). Each time, record at least 15 minutes.
- **Avoid sound obstructions.** Do not touch the device while recording, and keep your distance from a direct source of noise like high winds or construction work. If you are measuring using a cellular device, remove the case.
- Activate the noise-measuring device. If applicable, change "time weighting" to "fast."
- Hold or place the device at arm's length, at least a meter above the ground, or as otherwise directed. If possible, angle the device at 30-45 degrees towards the site.
- After completing each session, save the report. If possible, share it directly with the organizer.
- Document key measurements in the table below.

STREET SOUND LEVELS REFERENCES

30-40 dB **Natural sounds** You should be able to hear birds chirping

85 dB **Heavy traffic** Elevated noise levels due to vehicle volume and speed, vehicle types, or the streetscape. Noise level may be harmful if exposure is continuous and long-term.

100 dB **Car horn (5 meters)** An immediate health with prolonged ex

4

WHO traffic-related long-term exposure recommended limit: 53 dB (day), 45 dB (night)

3

#	Date	Time	Location	Device, brand, version	App, version	LAeq	LCpeak
1	6/04	8:00	1	Iphone 8	NIOSH	44.3	138
2	6/08	8:00	1	"	"	68.6	85.4
3	6/12	8:00	1	"	"	88.1	108.2
4	6/04	8:15	2	"	"	54.2	65.3
5	6/08	8:15	2	"	"	48.4	66.1

1 **General information**

2 **Location map**
Choose a location with increased noise levels before the transformation, or that is expected to improve as a result of the change. Mark the locations where measurements took place to maintain consistency.

3 **Measurements**
For each session, document the time, location, device brand, and app. Note the average LAeq and LCpeak results. If LAeq surpasses 53 dB, consider conducting a more rigorous evaluation.

4 **Sound references**
Review the references to understand how your measurements compare with typical street sound levels.

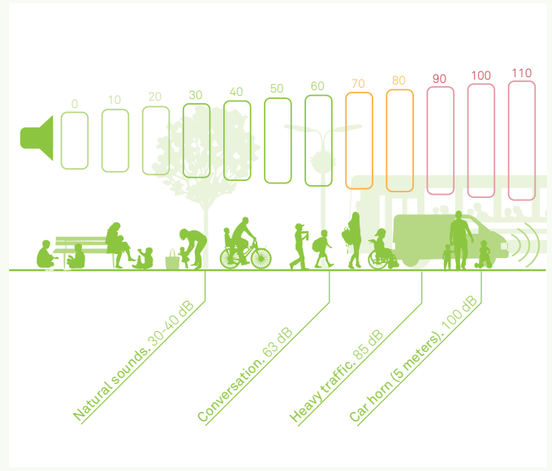
The WHO recommends that long-term and continuous exposure to noise from road traffic should not exceed **53 dB** during the day to avoid adverse consequences on critical health outcomes including cardiovascular disease and cognitive impairments.

Measurement results on moderately noisy streets may fail to capture relevant aspects of street noise. For example, pedestrianizing a street with periodic motorcycle movements and introducing recreational activities such as play may elevate average noise levels despite improving the overall experience of noise.

To capture a more nuanced impact, conduct perception surveys as well, comparing how people experience different types of noise and the joy or stress they attribute to them. See *Noise perception form*, p. 158 .

Concepts to keep in mind:

- **Sound measurements commonly use decibel levels (dB).** However, on its own, the level of noise will not reflect how loud or disturbing people perceive it to be. People tend to find noise that is impulsive (such as a honk), socially inappropriate (such as an accelerating motorcycle), or mechanical especially disturbing.
- **Perceptions of decibel changes are not linear.** While humans can barely notice a 3-dB increase, a 5-dB increase will be noticeable, and a 10-dB increase will sound twice as loud as the baseline. For this reason, it's important to communicate the changes in noise levels with references to well-known standards (dB) and relatable references to common sounds, as shown in this example.



Evaluating and communicating impact:

Collecting noise measurements could help inform your design and communicate about:

- Percentage reduction in the average or peak noise level
- Sounds that children are able to hear on the street given the noise level

Noise perception

Perception surveys can show how street users, especially children, are experiencing noise exposure and its effects. Survey a representative group of street users to capture how their perception of the noise changed after the transformation.

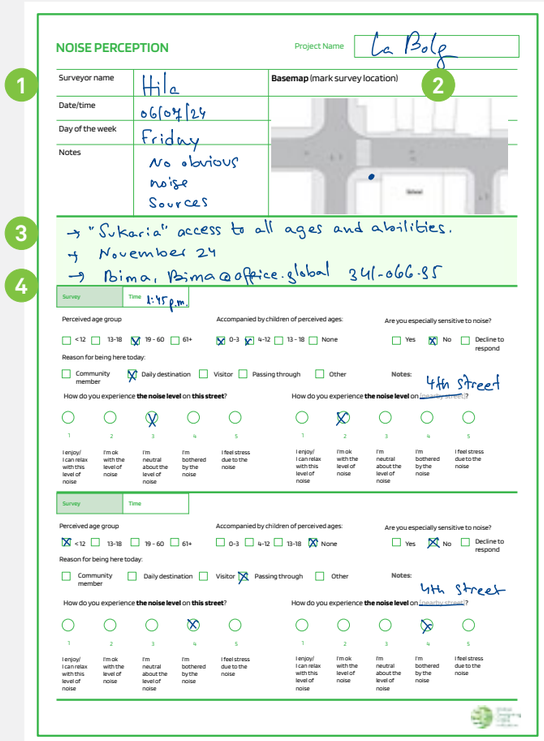
Respondents' assessment of the noise levels of nearby streets could indicate if noise pollution was reduced or merely relocated due to changes in use and function resulting from the new design.

Why is this important?

- To demonstrate the connection between street design and use and dangerous levels of noise pollution, especially in close vicinity to schools and play areas
- To make the case for more rigorous and long-term noise monitoring
- To measure change in the way people perceive noise levels on the street as enjoyable, disturbing, or stressful

Tools you'll need:

What your form could look like:



1. **General information**

2. **Location map**
Choose a location with increased noise levels before the transformation, or that is expected to improve as a result of the change. Mark the locations where surveys took place to maintain consistency.

3. **Project information**
Start a conversation by offering details on the project. Have key contact information on hand for further inquiries.

4. **Questionnaire**
Each form includes two copies of identical surveys. Use one copy per respondent, marking the time for each at the designated place.

You can also assess noise perception using *Interactive Boards* on p. 180 .

SNAPSHOT

MOQUEWAWA

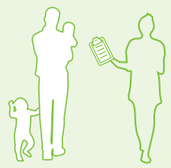
Location: Lima, Peru
Year: 2023
Actors involved: Municipality of Lima, Gerencia de Movilidad Urbana, Gerencia de Planificación, Gestión y Recuperación del Centro Histórico de Lima – PROLIMA, Anidare company, and Global Designing Cities Initiative

Description

The Moquewawa project was an initiative of the Municipality of Lima, in partnership with GDCI's Streets for Kids program, that aimed to improve the safety and accessibility of students walking to Andres Rosales Valencia school. Initial conversations with community members revealed that noise impacted students' performance, particularly for younger children whose classrooms were at street level. Using a free app, before-and-after noise measurements were conducted during school hours.

In order to simplify the intersection, the project pedestrianized one of the streets, Moquegua, added benches and play elements, and reclaimed 850 m^2 of space. See *Snapshot*, p. 13. Results demonstrated that redesigning the street and enhancing enforcement of noisy business activities resulted in a significant reduction of noise levels. On the pedestrianized street, noise levels were reduced so children could hear their teachers clearly. These outcomes were showcased through an outdoor community exhibition featuring before-and-after images, highlighting the transformation and its impact. They were then communicated to decision-makers as a new measure to evaluate mobility projects from the perspective of children and caregivers.


Community exhibition in Lima, Peru



Consider pairing noise evaluations with other surveys (see p. 162). Planning ahead will allow you to incorporate ambient noise measurements into your surveying timeline and choose times and locations that can capture potential change.

Evaluating and communicating impact:

Collecting users' perceptions about noise could help inform your design and communicate about:

- Reduction in children reporting they feel bothered or stressed by noise on the street
- Increase in school community members reporting they can enjoy and relax despite the noise levels in streets near their school

AMBIENT NOISE

Project Name

Surveyor name		**Basemap** (mark survey locations)
Notes (Document perceived noise, technical issues, weather, etc.)		

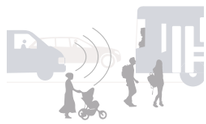
NOTE The instructions should help you complete an initial noise measurement. **For best results, supplement them with those of your device, and use the same device throughout your evaluation period.**

- → Locate yourself as indicated in the basemap above.
- → Measure 2-5 intervals during peak hours (same or different days). Each time, record at least 15 minutes.
- → **Avoid sound obstructions.** Do not touch the device while recording, and keep your distance from a direct source of noise like high winds or construction work. If you are measuring using a cellular device, remove the case.
- → Activate the noise-measuring device. If applicable, change "time weighting" to "fast."
- → Hold or place the device at arm's length, at least a meter above the ground, or as otherwise directed. If possible, angle the device at 30-45 degrees towards the site.
- → After completing each session, save the report. If possible, share it directly with the organizer.
- → Document key measurements in the table below.

STREET SOUND LEVELS REFERENCES

30-40 dB
Natural sounds
You should be able to hear birds chirping

85 dB
Heavy traffic
Elevated noise levels due to vehicle volume and speed, vehicle types, or the streetscape. Noise level may be harmful if exposure is continuous and long-term.



100 dB
Car horn (5 meters)
An immediate health risk with prolonged exposure

WHO traffic-related long-term exposure recommended limit: 53 dB (day), 45 dB (night)

#	Date	Time	Location	Device, brand, version	App, version	LAeq	LCpeak
1							
2							
3							
4							
5							

Global Designing Cities Initiative

NOISE PERCEPTION

Project Name

Surveyor name		**Basemap** (mark survey location)
Date/time		
Day of the week		
Notes		

- → **Project description:** Example: This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].
- → **Contact information:** Example: You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

Survey | Time

Perceived age group
☐ < 12 ☐ 13-18 ☐ 19 - 60 ☐ 61+

Accompanied by children of perceived ages:
☐ 0-3 ☐ 4-12 ☐ 13 - 18 ☐ None

Are you especially sensitive to noise?
☐ Yes ☐ No ☐ Decline to respond

Reason for being here today:
☐ Community member ☐ Daily destination ☐ Visitor ☐ Passing through ☐ Other

Notes:

How do you experience **the noise level** on **this street**?

1	2	3	4	5
I enjoy/ I can relax with this level of noise	I'm ok with the level of noise	I'm neutral about the level of noise	I'm bothered by the noise	I feel stress due to the noise

How do you experience **the noise level** on [nearby street]?

1	2	3	4	5
I enjoy/ I can relax with this level of noise	I'm ok with the level of noise	I'm neutral about the level of noise	I'm bothered by the noise	I feel stress due to the noise

Survey | Time

Perceived age group
☐ < 12 ☐ 13-18 ☐ 19 - 60 ☐ 61+

Accompanied by children of perceived ages:
☐ 0-3 ☐ 4-12 ☐ 13-18 ☐ None

Are you especially sensitive to noise?
☐ Yes ☐ No ☐ Decline to respond

Reason for being here today:
☐ Community member ☐ Daily destination ☐ Visitor ☐ Passing through ☐ Other

Notes:

How do you experience **the noise level** on **this street**?

1	2	3	4	5
I enjoy/ I can relax with this level of noise	I'm ok with the level of noise	I'm neutral about the level of noise	I'm bothered by the noise	I feel stress due to the noise

How do you experience **the noise level** on [nearby street]?

1	2	3	4	5
I enjoy/ I can relax with this level of noise	I'm ok with the level of noise	I'm neutral about the level of noise	I'm bothered by the noise	I feel stress due to the noise

Global Designing Cities Initiative

Surveys

Current perceptions of different pedestrians, motorists, and other street users interacting with school surroundings can be understood through quick questionnaires given at different hours of the day. Survey as many people as you can and make sure you adjust your sample size and diversity according to each context so your data is reliable and relevant.

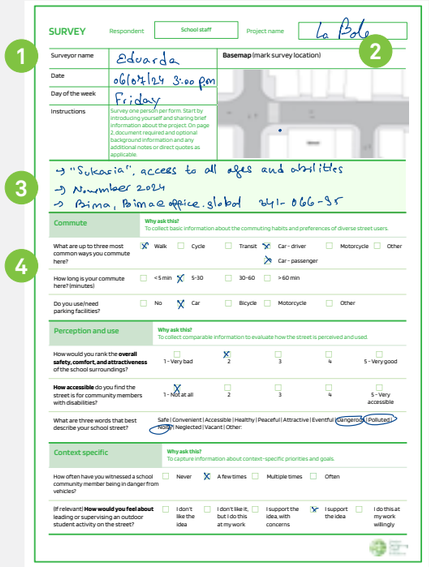
Why is this important?

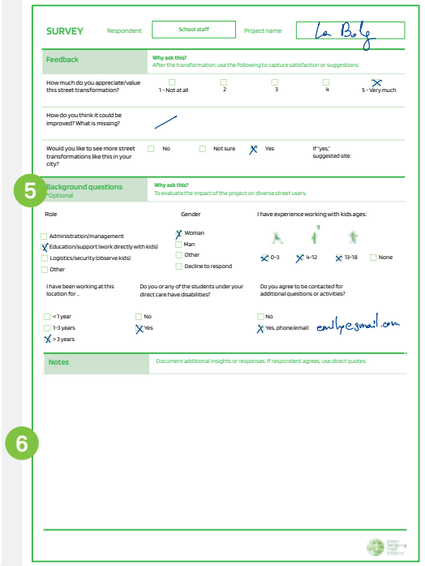
- To learn how people feel about the school surroundings, how they get to and from school, and how they use the space before and after school hours
- To complement aggregate data by getting insights according to specific user groups
- To engage in conversation and understand young people's perspectives on a particular topic
- To demonstrate the need for improved facilities
- To humanize the data being collected when telling the story about the project later
- To measure change in perception or behavior after street

Tools you'll need:

Surveys + writing tools | **Clipboard** | **Survey tablets/ kiosks**

What your form could look like:





1 General information

2 Location map
Mark the location the survey took place.

3 Project information
Start a conversation by offering details on the project. Have key contact information on hand for further inquiries.

4 Questionnaire
Add or change questions questions based on how they apply to your project goals and timelines

5 Optional: Profile
Consider adding context-appropriate socio-economic questions, and mark this section as optional.[9]

6 Notes
Document additional details or impressions. If respondent agrees, document insights using direct quotes.

Who to survey?

Engage a diverse audience, capturing perceptions of people from the school community and outside of it. Talk to people who are walking, cycling, or using mobility devices. Talk to people of different genders, ages, ethnicities, abilities, and backgrounds, and talk to caregivers with children. Use the opportunity to approach teenagers of all genders, in groups or individually. See p. 56 for more details on *Who to Engage*.

If certain groups are not present, mark the location the survey took place and investigate why. Are the streets accessible for people with disabilities? Is public transportation connected to this site? Does the school or other institutions attract users at other times? What conditions exist that might dissuade different genders, ethnicities, and ages from being here? See p. 59 for more information about how to increase your reach and prepare your survey.

Capturing the perceptions and habits of caregivers and children:

- Time your surveys to peak hours when you can expect many to be present, such as school start and end. If possible, choose periods when you think people will be more available to engage.
- Count caregivers' and children's replies separately.
- Prepare variations for questions that make sense for different types of respondents and have different questionnaires for each user group printed out. For example, when surveying teachers ask them about their students, not their own children who may live far away from the site. Review **Question Library** on p. 62 for more examples.
- When surveying teens, consider that their decisions are often a reflection of their parents' decisions and the resources available to them.
- Open a conversation. Instruct your surveyors how to explain your project to respondents and capture responses that offer additional insights.
- Use surveys to estimate the project's impact on equity by collecting respondents' socioeconomic information. Make sure you have a representative sample to validate results, and align with local regulations. Ask these questions at the end, and mark them as optional.

Reference **Surveying Children and Teenagers** on p. 58 for more tips on how to develop a survey. Use the **Question Library** to add or change questions based on goal and audience.

Evaluating and communicating impact:

Depending on your project goals, collecting users' perceptions and behaviors could help inform your design and communicate about:

- Increase in older children walking/cycling to school independently
- Increase in teenagers reporting they enjoy spending time on the street
- Percentage of community members who support the transformation


Cerrillos, Chile

SURVEY

Respondent: **Caregiver**

Project name:

Surveyor name		**Basemap** (mark survey location)
Date		
Day of the week		
Instructions	Survey one person per form. Start by introducing yourself and sharing brief information about the project. On page 2, document required and optional background information and any additional notes or direct quotes as applicable.	

→ **Project description:** Example: This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].

→ **Contact information:** Example: You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

Commute

Why ask this?
To collect basic information about the commuting habits and preferences of diverse street users.

Why are you here today? ☐ Residence ☐ School ☐ Work ☐ Services/shopping ☐ Other

What are up to three most common ways you commute here? ☐ Walk ☐ Cycle ☐ Transit ☐ Car - driver ☐ Car - passenger ☐ Motorcycle ☐ Other

How long is your commute here? (minutes) ☐ < 5 min ☐ 5-30 ☐ 31-60 ☐ > 60 min

Perception and use

Why ask this?
To collect comparable information to evaluate how the street is perceived and used.

How **safe** do you feel around motor vehicles on the street?	☐ 1 - Not at all	☐ 2	☐ 3	☐ 4	☐ 5 - Very safe
How much do you **enjoy** spending time on this street?	☐ 1 - Not at all	☐ 2	☐ 3	☐ 4	☐ 5 - Very much
How likely is your child to **play** on this street?	☐ 1 - Not at all	☐ 2	☐ 3	☐ 4	☐ 5 - Very likely
How safe do you feel it is for your child to walk, cycle, or play on this street with **limited supervision**?	☐ 1 - Not at all	☐ 2	☐ 3	☐ 4	☐ 5 - Very safe

Context specific

Why ask this?
To capture information about context-specific priorities and goals.

[Question]	☐	☐	☐	☐	☐

SURVEY

Respondent: **Caregiver**

Project name:

Feedback

Why ask this?
Use the following to capture satisfaction or suggestions before, during, or after a transformation.

How much do you appreciate/value this street transformation?	☐ 1 - Not at all	☐ 2	☐ 3	☐ 4	☐ 5 - Very much

How do you think it could be improved? What is missing?

Would you like to see more street transformations like this in your city? ☐ No ☐ Not sure ☐ Yes If "yes," suggested site:

Background questions
*Optional

Why ask this?
To evaluate the impact of the project on diverse street users.

Age groups

☐ 9-12 ☐ 13-18 ☐ 19-74 ☐ 75+

( ) mark if answered based on observation

Gender

☐ Woman
☐ Man
☐ Other
☐ Decline to respond

Please mark if **accompanied** by underaged children:

☐ 0-3 ☐ 4-12 ☐ 13-18 ☐ None

( ) mark if answered based on observation

Background questions

If appropriate, insert questions that will best help to capture diversity in your location and are aligned with local norms and regulations. Only add background questions when you have access to a representative sample size.

[Question type: Population group]	[Question type: Socioeconomic background]	[Question type: Disability]
☐ Option 1	☐ Option 1	☐ Option 1
☐ Option 2	☐ Option 2	☐ Option 2
☐ Option 3	☐ Option 3	☐ Option 3
☐ Mix (mark all that apply)	☐ Decline to respond/not applicable	☐ Decline to respond/not applicable
☐ Decline to respond/not applicable	☐ Other:	☐ Other:
☐ Other:		

Notes

Document additional insights or responses. If respondent agrees, use direct quotes.

SURVEY

Respondent: **School staff**

Project name:

Surveyor name		**Basemap** (mark survey location)
Date		
Day of the week		
Instructions	Survey one person per form. Start by introducing yourself and sharing brief information about the project. On page 2, document required and optional background information and any additional notes or direct quotes as applicable.	

→ **Project description:** Example: This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].

→ **Contact information:** Example: You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

Commute

Why ask this?
To collect basic information about the commuting habits and preferences of diverse street users.

What are up to three most common ways you commute here? ☐ Walk ☐ Cycle ☐ Transit ☐ Car - driver ☐ Car - passenger ☐ Motorcycle ☐ Other

How long is your commute here? (minutes) ☐ < 5 min ☐ 5-30 ☐ 30-60 ☐ > 60 min

Do you use/need parking facilities? ☐ No ☐ Car ☐ Bicycle ☐ Motorcycle ☐ Other

Perception and use

Why ask this?
To collect comparable information to evaluate how the street is perceived and used.

How would you rank the **overall safety, comfort, and attractiveness** of the school surroundings? ☐ 1 - Very bad ☐ 2 ☐ 3 ☐ 4 ☐ 5 - Very good

How accessible do you find the street is for community members with disabilities? ☐ 1 - Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 - Very accessible

What are three words that best describe your school street? Safe | Convenient | Accessible | Healthy | Peaceful | Attractive | Eventful | Dangerous | Polluted | Noisy | Neglected | Vacant | Other:

Context specific

Why ask this?
To capture information about context-specific priorities and goals.

How often have you witnessed a school community member being in danger from vehicles? ☐ Never ☐ A few times ☐ Multiple times ☐ Often

(If relevant) **How would you feel about** leading or supervising an outdoor student activity on the street? ☐ I don't like the idea ☐ I don't like it, but I do this at my work ☐ I support the idea, with concerns ☐ I support the idea ☐ I do this at my work willingly

Global Designing Cities Initiative

SURVEY

Respondent: **School staff**

Project name:

Feedback

Why ask this?
After the transformation, use the following to capture satisfaction or suggestions.

How much do you appreciate/value this street transformation? ☐ 1 - Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 - Very much

How do you think it could be improved? What is missing?

Would you like to see more street transformations like this in your city? ☐ No ☐ Not sure ☐ Yes If "yes," suggested site:

Background questions

*Optional

Why ask this?
To evaluate the impact of the project on diverse street users.

Role

- ☐ Administration/management
- ☐ Education/support (work directly with kids)
- ☐ Logistics/security (observe kids)
- ☐ Other

Gender

- ☐ Woman
- ☐ Man
- ☐ Other
- ☐ Decline to respond

I have experience working with kids ages:

☐ 0-3 ☐ 4-12 ☐ 13-18 ☐ None

I have been working at this location for ...

- ☐ < 1 year
- ☐ 1-3 years
- ☐ > 3 years

Do you or any of the students under your direct care have disabilities?

- ☐ No
- ☐ Yes

Do you agree to be contacted for additional questions or activities?

- ☐ No
- ☐ Yes, phone/email:

Notes

Document additional insights or responses. If respondent agrees, use direct quotes.

Global Designing Cities Initiative

SURVEY

Respondent: **Teens (ages 13-18)**

Project name:

Surveyor name		**Basemap** (mark survey location)
Date		
Day of the week		
Instructions	Survey one person per form. Start by introducing yourself and sharing brief information about the project. On page 2, document required and optional background information and any additional notes or direct quotes as applicable.	

→ **Project description:** Example: This [name] project is meant to improve the safety of routes near [school name] and encourage [goal(s)]. It's led by [organization] with the support of [name any other partners], and is meant to be completed by [month/year].

→ **Contact information:** Example: You can read more about the project at [web page/QR code] and contact [name] with questions or concerns about the project or evaluation/engagement activities. (Include their title/role and contact information.)

Commute

Why ask this?
To collect basic information about the commuting habits and preferences of diverse street users.

What are up to three most common ways you commute here?
☐ Walk ☐ Cycle ☐ Transit ☐ Car - driver ☐ Car - passenger ☐ Motorcycle ☐ Other

How long is your commute here? (minutes)
☐ < 5 min ☐ 5-30 ☐ 31-60 ☐ > 60 min

Are you usually accompanied?
☐ No ☐ Adult ☐ Older child ☐ Younger child ☐ Other

Perception and use

Why ask this?
To collect comparable information to evaluate how the street is perceived and used.

How would you rank the **overall safety, comfort, and attractiveness** of the school surroundings?	☐ 1 - Very bad	☐ 2	☐ 3	☐ 4	☐ 5 - Very good
How many times a week do you usually play on this street?	☐ Never	☐ 2	☐ 3	☐ 4	☐ 4 or more
Are you allowed to walk, cycle, or play on this street alone?	☐ No	☐ Yes	☐ Other:		

Context specific

Why ask this?
To capture information about context-specific priorities and goals.

[Question]	☐	☐	☐	☐	☐
[Question]	☐	☐	☐	☐	☐

Global Designing Cities Initiative

SURVEY

Respondent: Teens (ages 13-18)

Project name:

Feedback

Why ask this?
After the transformation, use the following to capture satisfaction or suggestions.

How much do you appreciate/value this street transformation?
☐ 1 - Not at all ☐ 2 ☐ 3 ☐ 4 ☐ 5 - Very much

What would you like to do on the street? What is missing?

Would you like to see more street transformations like this in your city?
☐ No ☐ Not sure ☐ Yes
If "yes," suggested site:

Background questions

Why ask this?
To collect demographic information to evaluate the impact of the project on diverse street users.

Age group
☐ 9-12 ☐ 13-18 ☐ 19-74 ☐ > 75
( ) mark if answered based on observation

Gender
☐ Girl
☐ Boy
☐ Other
☐ Prefer not to say

Please mark if **accompanied** by younger child:
☐ 0-3 ☐ 4-12 ☐ 13-18 ☐ None
( ) mark if answered based on observation

Notes

Document additional insights or responses. If respondent agrees, use direct quotes.

Global Designing Cities Initiative

Resources | Surveys

Visual survey: My school street activity packet

Visual surveys can be a compelling way to encourage older kids to reflect on the streets surrounding their school, how they feel, what they like, and what they would do to improve them. Surveys can be applied in multiple ways, including inside classrooms, take-home assignments, an ongoing journal, or during outdoor excursions. Data collected can offer insights on children's perspectives and habits, which can be contrasted with data from other age groups and be collected both before and after street transformations.

Tools you'll need:

Why is this important?

- To learn how children get to and from school, how they feel about their journeys and street space, and to gather their ideas on how spaces could be improved
- To complement aggregate data by getting insights according to specific user groups
- To communicate the project, engage in conversation, and understand young people's perspectives
- To raise children's awareness about their mobility choices and streetspace
- To demonstrate the need for improved facilities
- To humanize the data being collected when telling the story about the project later
- To measure change in perception or behavior after street transformation

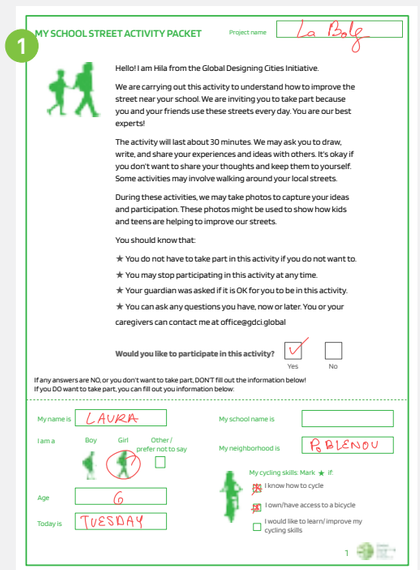
Who to survey?

Use the packet to survey children ages 7 to 12. It could be adapted to engage teenagers. Ideally, it should be applied as part of school activities or a series of engagement activities. Talk to children of different genders, ages, ethnicities, abilities, and backgrounds. See p. 56 on more details on **Who to Engage**.

What your visual survey could look like:

This visual survey can combine one or more of the following sheets. Questions can be adapted according to the age groups engaged. Additional sheets can further explore specific topics of interest. It could also be used as a journal that children can keep for a few days or weeks.

1 **General information and consent sheets:** Introductory sheets offer tips for facilitators and invite children to participate by introducing the project, a summary of the "activity packet," and guidance on completion. They also include basic questions on age, gender, and cycling skills.


MY SCHOOL STREET ACTIVITY PACKET

Project name: La Baly

Hello! I am Hila from the Global Designing Cities Initiative.

We are carrying out this activity to understand how to improve the street near your school. We are inviting you to take part because you and your friends use these streets every day. You are our best experts!

The activity will last about 30 minutes. We may ask you to draw, write, and share your experiences and ideas with others. It's okay if you don't want to share your thoughts and keep them to yourself. Some activities may involve walking around your local streets.

During these activities, we may take photos to capture your ideas and participation. These photos might be used to show how kids and teens are helping to improve our streets.

You should know that:

★ You do not have to take part in this activity if you do not want to.
★ You may stop participating in this activity at any time.
★ Your guardian was asked if it is OK for you to be in this activity.
★ You can ask any questions you have, now or later. You or your caregivers can contact me at office@gdci.global

Would you like to participate in this activity? ☑ Yes ☐ No

If any answers are NO, or you don't want to take part, DON'T fill out the information below!
If you DO want to take part, you can fill out you information below.

My name is: LAURA
I am a: Boy / Girl / Other / prefer not to say
Age: 6
Today is: TUESDAY
My school name is:
My neighborhood is: BOLENOU
My cycling skills: Mark ★ if:
I know how to cycle
I own/have access to a bicycle
I would like to learn/ improve my cycling skills

1

2 **Questions and activities:**

- **Questions about transportation** help focus the kids on the theme, building vocabulary and generating interest. Questions about kids' journeys to school and perceptions help collect valuable data about their daily commute.
- **Outdoor excursion sheet:** Encourages children to explore school surroundings and share their perceptions.
- **Dream school drawing:** Encourages children to think about their ideal street and share ideas on how their school street could be improved.

Capturing the perceptions and habits of older children:

- Prepare your packet according to where, when, and how children will be engaged.
- Prepare variations of the suggested forms and questions that make sense for different age groups. Review the **Question Library** on p. 62 for more examples, and adapt them to your audience.
- Open a conversation. Instruct facilitators on how to explain your project, and discuss their answers for additional insights. When appropriate, include information that would allow your team to stay in touch (e.g. link to a social media group).
- Nurture a conversation among children and the school community. Help children share their responses and drawings, and discuss what they have learned during the activity.


Paris, France

See **Snapshot** on p. 68 for an example in Paris, France of how this can be used with students.

Evaluating and communicating impact:

Depending on your project goals, collecting children's perceptions and behaviors could help inform your design and communicate about:

- Increase in children walking or cycling to school
- Increase in older children who walk or cycle to school independently
- Increase in children reporting positive feelings about the streets near their school
- Increase in activities children are allowed to perform independently near school

MY SCHOOL STREET ACTIVITY PACKET

School Name

Facilitator Name

Age range

Number of kids

Facilitator notes

INTRODUCTION: FACILITATORS

Dear facilitator, thank you for guiding the "My School Street" activity!

This activity packet aims to engage children and their communities about how they experience one of their most frequented public spaces: the street near their school. It is designed to help practitioners gather information about how school-children use their street and how they feel as they move or play in it. It also invites them to imagine better streets, and communicate their wishes. If conducted before and after a street transformation, the packet can help measure its effects on awareness and use of the streets where the transformation takes place.

Before getting started, please consider the following:

- ➔ Depending on the participants, the activity can take **about 30 minutes** to complete (not including the outdoor excursion). Try to choose a time when both you and the child are alert, comfortable, and engaged.
- ➔ If you are conducting the activity in class, inform the children's guardians to get their consent and support for the activity.
- ➔ This activity is best suited for **ages 7-12**. Try to read all parts of the questions out loud to assess if the child is following along. Some questions ask about children's ability **to be independent** outdoors. For children not ready to navigate streets alone, independent movement would mean they can explore and play freely while an adult is nearby but not directly supervising their movements.
- ➔ The activity could be conducted as **a guided classroom or take-home activity**. Page 3 ("Outdoor excursion") should ideally be completed after visiting the street being evaluated.
- ➔ **"Shareout Bonus"** questions best suit older or more engaged children. Try to leverage the child's response to conduct meaningful conversations with yourself or with peers.
- ➔ Encourage the child to draw, take pictures, or write their answers. If possible, have multiple **drawing utensils and a camera** available. To learn more about interpreting and documenting children's responses, see GDCI's *How to Engage Kids in Street Design* pp. 60-61.

MY SCHOOL STREET ACTIVITY PACKET

Project name

Hello! I am [name] from [name from your organisation].

We are carrying out this activity to understand [how to improve the street near your school]. We are inviting you to take part because you and your friends use these streets every day. You are our best experts!

The activity will last [length of activity]. We may ask you to draw, write, and share your experiences and ideas with others. It's okay if you don't want to share your thoughts and keep them to yourself. Some activities may involve walking around your local streets.

[Optional: During these activities, we may take photos to capture your ideas and participation. These photos might be used to show how kids and teens are helping to improve our streets].

You should know that:

★ You do not have to take part in this activity if you do not want to.

★ You may stop participating in this activity at any time.

★ Your guardian was asked if it is OK for you to be in this activity.

★ You can ask any questions you have, now or later. If you think of a question later, you or your caregivers can contact me at [email address or phone number].

Would you like to participate in this activity? ☐ Yes ☐ No

If any answers are NO, or you don't want to take part, DON'T fill out the information below!
If you DO want to take part, you can fill out you information below:

My name is

I am a ☐ Boy ☐ Girl ☐ Other / prefer not to say

Age

Today is

My school name is

My neighborhood is

My cycling skills: Mark ★ if:

- ☐ I know how to cycle
- ☐ I own/have access to a bicycle
- ☐ I would like to learn/ improve my cycling skills

MY SCHOOL STREET ACTIVITY PACKET

My name is

1 There are different ways to move around. **Circle all the ways** you remember you traveled lately.
Talk to family or friends to find at least one other common way to move where you live and **add it to the box.**

Walking	Cycling	Motorcycle	Bus	Car	

2 Think of the ways people move where you live, and answer the questions below.
You can ask **an adult, a sibling, or a friend** to write down their opinions as well, and compare them together.

In my opinion ...	**My answer**	**An adult/sibling/friend** Name:
The **quickest** way to move is ...		
The **easiest** way to move is ...		
The **safest** way to move is ...		
The **most fun** way to move is ...		

My journey to school

3 **Circle** all the answers that describe your way to school:

How I usually get to school ...

I walk	I cycle	I take the bus	I come by motorcycle	I come by car	Add another way ...

I usually get there with ...

An adult	A sibling/friend	A group	By myself	Add another way ...

4 Try to think how long it takes you to get to school, and **fill in**:
If you can't remember, try to time it at home with a family member :

I left for school at : 

How I traveled ... Walk | Bicycle | Bus | Motorcycle | Car | Other

I got to school at : 

OUTDOOR EXCURSION

My name is

1 The name of the street closest to my school is ----------

Next time you visit the street, take a short walk around. **Write, take a photo, or draw**:

Something that I enjoyed...	Something that made me feel bad or worried...

SHAREOUT BONUS

How did you feel on the street?
What made you feel this way?

---

2 Circle actions that you are allowed **to do by yourself** or with limited supervision near your school.

Play in a playground	Cycle, scoot, or skate	Play on the street	Cross the street

SHAREOUT BONUS

What are places you can usually go by yourself?
What do you or your caregivers think make these places safe?

SCHOOL JOURNEY ACTIVITY PACKET - ROUTE TO SCHOOL DRAWING

Draw your typical journey to school, thinking about the different places, elements, and people you encounter along the way. Would you get there by foot or vehicle? Who are you with?

START: HOME

FINISH: SCHOOL

SHAREOUT BONUS:

Draw emojis to show how you felt during different stages of the journey.

DREAM SCHOOL STREET DRAWING

My name is _____

Take a photo, draw, or create a collage of your dream school street. How would you get there? What activities would you do there?

SHAREOUT BONUS:

Three things I wish my school street will have are:

1 _____ 2 _____ 3 _____

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is left blank

SCHOOL JOURNEY ACTIVITY PACKET - ROUTE TO SCHOOL MAPPING

Mark your typical route to school. Would you get there by foot or vehicle? Who are you with?

SHAREOUT BONUS:

Draw emojis to show how you felt during different stages of the journey.

Resources | Interactive boards

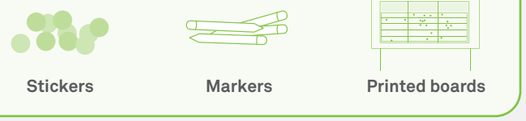
Interactive boards

Surveying the community is a great way to gain quick and actionable insights into the perceptions and habits of focused, willing, and consenting adults and teens. However, interactive boards may be an easier and quicker way to engage a larger number of stakeholders, especially children and busy caregivers, while also investing less resources. Although the collected data will not be exhaustive and cannot be disaggregated, interactive boards allow you to interact with crowds in a fun way. Encouraging participants to view each other's responses can also be a helpful tool to build consensus about community needs and opinions. See p. 55 for more information on collecting data through interactive methods and p. 102 for more information on how to use the templates.

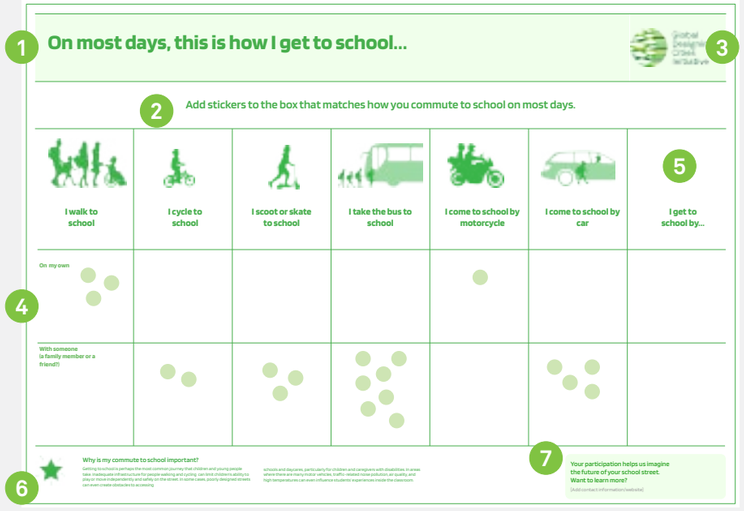
Why this is important?

- To understand school commute experiences and feelings about street spaces, and gather improvement ideas from children and caregivers
- To assess personal safety, accessibility, and sense of belonging
- To pinpoint specific areas with challenges and opportunities
- To communicate the project effectively, foster dialogue, and collect feedback
- To raise community awareness of mobility choices and street space usage
- To add a personal dimension to collected data for storytelling
- To track changes in perceptions or behaviors after street transformation

Tools you'll need:



What your board could look like:



1. Title
2. Clearly articulated task/question
3. Program and partner logos
4. Space to place stickers or notes
5. Make space for additional options
6. Offer background to raise awareness and explain the activity's significance to the school community
7. Offer ways for participants to learn more about the project and contact you in case of questions or concerns

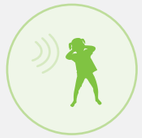
Topics to explore

School journey: Mobility choices p. 182

This board quickly gathers data on school travel modes for children/caregivers. After project implementation, it assesses changes in travel patterns, such as active transport increases due to infrastructure improvements.

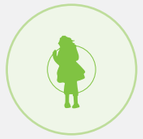
School journey: Routes and surroundings, p. 184

This board gathers details on commuting patterns and perceptions of streets and public spaces among children/caregivers. Post-implementation, it evaluates route changes and improved safety and well-being from infrastructure enhancements.



Noise perception, p. 186

This board evaluates noise perceptions and raises awareness about the impacts of noise pollution. Post-implementation, it tracks changes due to reduced traffic or lower speeds.



Play activities, p. 188

This board examines children's street play, which can inform the street redesign. Post-implementation, it can be used to measure the change in play activities by type, informing potential physical and mental health outcomes.

Street/project satisfaction, p. 190

This board gathers children and caregivers' perceptions of streets and spaces/elements they like or dislike. Post-implementation, it assesses satisfaction and gathers further improvement ideas.

Street vision and priorities, pp. 192-195

These boards examine visions and priorities for street design. They collect inputs on values, street elements, and design alternatives, steering the design toward priorities driven by the community.

Enable participation

- Make it easier for people of all ages and abilities to share their thoughts without relying on technical knowledge and vocabulary.
- Avoid technical drawings and plans to present the design; simple diagrams and graphics that show the main changes are preferable.
- If possible, have people on the team who are ready to listen and document what the community has to say.
- Provide interpretation services and prints, and support for visual and hearing impairments.


Pimpri-Chinchwad, India

- Place them in classrooms, hallways, or near the school entrance to invite students and busy caregivers to participate.


Lusaka, Zambia

- Alternatively, place them outside the school or during launch events to invite residents and other community members to participate or visualize children's needs, perceptions, or priorities.

On most days, this is how I get to school...

Global Designing Cities Initiative

Add stickers to the box that matches how you commute to school on most days.

	 I walk to school	 I cycle to school	 I scoot or skate to school	 I take the bus to school	 I come to school by motorcycle	 I come to school by car	I get to school by...
On my own							
With someone (a family member or a friend?)							

Why is my commute to school important?

Getting to school is perhaps the most common journey that children and young people take. Inadequate infrastructure for people walking and cycling can limit children's ability to play or move independently and safely on the street. In some cases, poorly designed streets can even create obstacles to accessing schools and daycares, particularly for children and caregivers with disabilities. In areas where there are many motor vehicles, traffic-related noise pollution, air quality, and high temperatures can even influence students' experiences inside the classroom.

Your participation helps us imagine the future of your school street. Want to learn more?

[Add contact information/website]

Mapping my school journey and neighborhood

Global Designing Cities Initiative

Draw the route you usually take from your home to school. Then, add as many stickers as you'd like to mark places that you go to in the neighborhood to show where you feel happy, scared, or something else.

[insert site map]

Legend (add stickers with different colors)

- Home
- Where I feel happy
- Where I feel scared of traffic
- Where I feel ...

Why is my commute to school important?

Getting to school is perhaps the most common journey that children and young people take. Inadequate infrastructure for people walking and cycling can limit children's ability to play or move independently and safely on the street. In some cases, poorly designed streets can even create obstacles to accessing schools and daycares, particularly for children and caregivers with disabilities. In areas where there are many motor vehicles, traffic-related noise pollution, air quality, and high temperatures can even influence students' experiences inside the classroom.

Your participation helps us imagine the future of your school street. Want to learn more?

[Add contact information/website]

On my street, I feel...

Global Designing Cities Initiative

Place stickers below the line, indicating how the noise level on this school street makes you feel.

* Decibel (dB) is a commonly used standard measurement for sound.

I can enjoy and relax with the noise level

I'm okay with the noise level

I feel stressed or uncomfortable with the noise level

Why is noise pollution important?

EFor children and young people, exposure to noise pollution in schools can make it harder to concentrate, increase stress levels, and reduce cognitive function. Younger children and children with autism are much more susceptible to noise pollution than adults. As a major source of noise pollution comes from vehicular traffic outside of schools, redesigning streets to lower speeds and buffer noise can reduce noise pollution and improve the health of children and adults.

Your participation helps us imagine the future of your street. Want to learn more?

[Add contact information/website]

How did I spend time here today?

Global Designing Cities Initiative

Add as many stickers as you'd like to share how you played on the street today,
Use ◯ for girls, and ◯ for boys, or ◯ for other. Add sticky notes to share more activities!

I played ball games

I played group games

I hung out with friends

I rolled or skated

I played music, sang, or listened

I also ...

Add a sticky note to share other ways you spent time here today!

I played cards or board games

I climbed a tree or explored nature

I read, drew, or painted

I danced or jumped around

I roleplayed or did make believe

Why is play important?

In many cities, streets are the largest continuous network of connected public spaces. 81% of children are estimated to be insufficiently physically active. By shaping one of the most accessible public spaces, redesigning streets to encourage play can improve children's health, development, and well-being.

Your participation helps us imagine the future of your street.
Want to learn more?

[Add contact information/website]

How do you feel about your [new/school] street?

Global Designing Cities Initiative

I ❤️ THAT ...	LIKE! ☺️	DISLIKE! ☹️	I WISH THAT...
Add a sticky note to share what you LOVE about your street!	Place a sticker to vote ↓		Add a sticky note to share what could be improved

Why temporary street transformations?

Quick-build materials or phased solutions provide opportunities to quickly demonstrate change at a lower cost, and therefore can be easier to adjust, approve, and implement. These can also be powerful strategies to enable permanent change.

Your participation helps us imagine the future of your street.
Want to learn more?

[Add contact information/website]

What are the most important needs for your community?

Global Designing Cities Initiative

Please choose 3 per participant.

Use ◯ for girls and ◯ for boys or ◯ for other. Add sticky notes to share more needs!

Better health

More educational opportunities

Safer streets

Improved transportation

More cultural activities (art, music, etc.)

Other...

Add a sticky note to share other needs for your neighborhood

More active play

Cleaner environment and sustainability

Spaces for gatherings and entertainment

More play spaces

More places to buy things

Why is it important to understand the needs of the community?

By choosing priorities like better health, safer streets, vibrant cultural spaces, or a greener environment, we guide the transformation of streets into more than just spaces to move—but places where people can play, stay, and thrive.

Every community has its own rhythm and story, and its streets should reflect that. By identifying what is most important for our neighborhoods, we begin to define a vision for the streets we desire.

Your participation helps us imagine the future of your street.
Want to learn more?

[Add contact information/website]

What elements would you like for your street?

Global Designing Cities Initiative

Please choose 3 per participant.

Use ◯ for girls and ◯ for boys or ◯ for other. Add sticky notes to share more needs!

 Lighting	 Seating	 Water fountains	 Weather protection	 Play areas	Other...
 Trees and landscaping	 Signage and wayfinding	 Bike parking	 Trash cans	 Public toilets	

Why are street elements important?

Street elements such as street lighting, trash cans, and signage are essential to make streets safe and accessible. Other elements, such as public toilets and drinking fountains, make moving through cities more comfortable and convenient and encourage kids and caregivers to spend time on streets.

Your participation helps us imagine the future of your street.
Want to learn more?

[Add contact information/website]

Which street design do you prefer?

Global Designing Cities Initiative

Add a sticker to the design you like better for your street.

[insert before image]

[insert after image or rendering]

I prefer this street

I prefer this street

Why temporary street transformations?

Quick-build materials or phased solutions provide opportunities to quickly demonstrate change at a lower cost, and therefore can be easier to adjust, approve, and implement. These can also be powerful strategies to enable permanent change.

Your participation helps us imagine the future of your street.
Want to learn more?

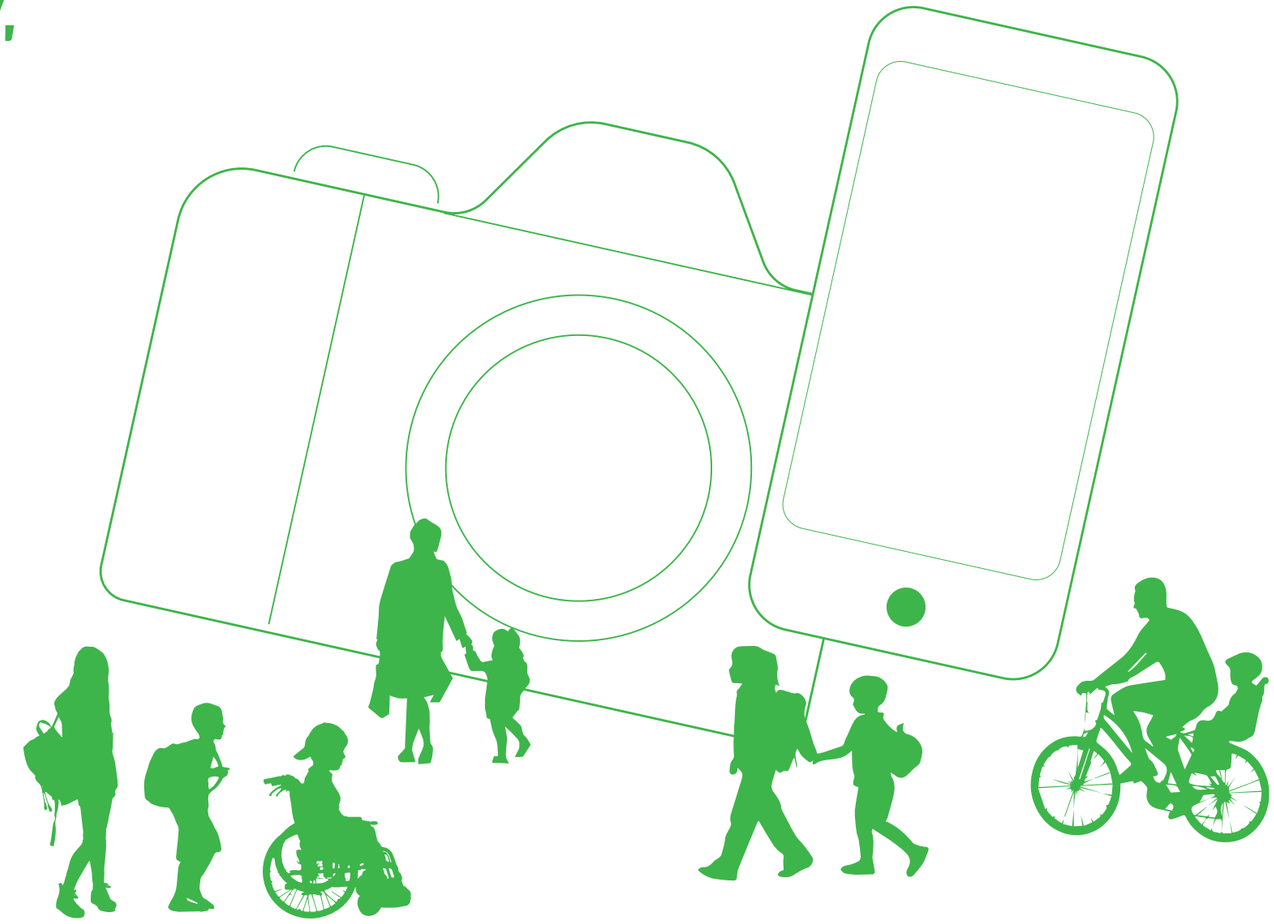
[Add contact information/website]

Exciting News!

Global Designing Cities Initiative

[Street Name] is being evaluated to improve the safety, comfort, and well-being of the community. Between [DD/MM] and [DD/MM], you may observe the following activities:

- → Measurement collection
- → Surveys and interviews
- → Observations
- → Photography



Why is evaluation important?

Data plays a crucial role in identifying key issues that affect children and their needs, and it helps with making decisions based on evidence. Evaluating streets near schools helps us understand who is being harmed by current conditions and who benefits from street transformations, which can inform better designs.

After a successful transformation, data can help gather support to make the changes permanent; encourage fair discussions about street use among diverse users; including children, and advocate for safer, more enjoyable, and sustainable streets.

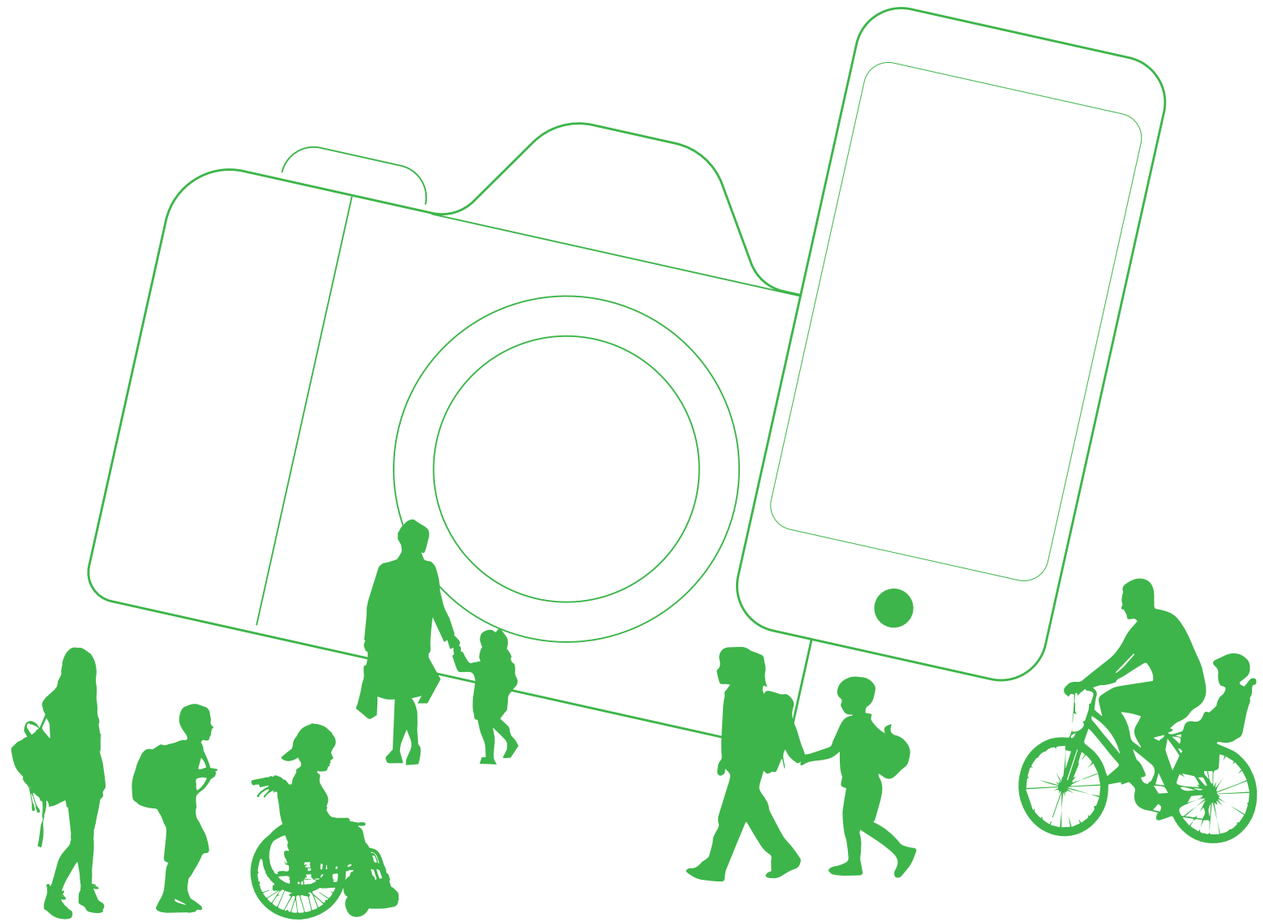
Your cooperation helps us imagine the future of your street.
Want to learn more?
[Add contact information/website]

Exciting News!

Global Designing Cities Initiative

We are [working/discussing how] **to make streets safer, more comfortable, and enjoyable for kids!**

Photographs and/or film footage will be taken at today's event.



Why is engagement important?

Engaging kids in street design helps us understand what you need and want in your streets. By participating, you can share your ideas and make your voice heard. This helps us create streets that are safe, enjoyable, and designed with kids in mind.

Using photos and art

Photos and artwork created during these activities may be used to showcase your ideas. Please make sure sign the consent form. We will handle all materials responsibly and respectfully.

Your cooperation helps us imagine the future of your street.
Want to learn more?

[Add contact information/website]

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II bottom Colectivo Tomate. V Pinar Gedikozer/Superpool. top right Comune di Milano.

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2 bottom Hanoi DoT. 6 top right Sustrans; 6 middle right Sustrans; bottom right Gary Manhine/Hackney Council. 7 top and bottom right Christophe Belin/Ville de Paris. 8 top left GMU - Municipalidad de Lima; top right Street Lab; middle left Hanoi DoT; middle right GDCI/Artur Jaramillo; bottom left Seattle DOT; bottom right GDCI/Toca. 11 top left Pinar Gedikozer/Superpool; 12 top right Donjeta Sahatciu; middle right GDCI/Paulo Winz; bottom right Amend. 13 top right GMU - Municipalidad de Lima; middle right Kota Kita/Angga Bakti; bottom right NYC DOT. 14 bottom left Pinar Gedikozer/Superpool. 15 top right Municipality of Niterói; middle right Kunda Jonathan; bottom right Bwalya Mweene DroneTECH. 17 bottom left and right GDCI/Paulo Winz.

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C. Evaluating streets near schools:
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D. Communicating and taking action:
85 middle left Josenildo Gomes/Prefeitura do Recife; middle Colectivo Tomate; middle right MARUF23. 87 left, center, and right GDCI/Artur Jaramillo. 89 bottom right May Farra. 90 middle left Paulo Winz/GDCI; bottom left ITDP; right The Chain Effect. 91 top left and right Colectivo Tomate; middle left Make Space for Girls; middle right Colectivo Tomate; bottom right AMAT. 92 top right Josenildo Gomes/Prefeitura do Recife; middle right and bottom left Paulo Winz/GDCI; bottom right Tiago Gondim/GDCI. 93 middle right Safe Routes to School Ireland. 95 top, middle, and bottom right Amend.

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97 GDCI/ Manuela Cavadas. 115 top right Cidade Ativa. 119 top Hanoi Flycam; bottom Jessica Salman, General Direction of Mobility, Léon Municipality. 150 top right Comune di Milano. 155 top right GMU - Municipalidad de Lima. 159 bottom right GDCI / El Plan Producciones. 167 middle right CAUE de Paris. bottom right ZRST.

Key terms and definitions

Caregiver

In this handbook, caregiver refers to the person who provides assistance, support, and cares for infants, children, and teenagers. They may include family members, friends, professionals, and educators who support children in their daily activities and health. Primary caregivers are those providing primary responsibility for kids, and often include parents, grandparents, older siblings and other family members.

Data analysis

The process of extracting meaningful information from standardized datasets for evaluation.

Data collection

The process of gathering, measuring, or counting variables of interest in a planned, systematic manner. In this handbook, the data collection process enables movement, perception, and activity in urban streets to be captured so that outcomes of a project can be evaluated.

Data standardization

The process of organizing collected data into groups such as by date or time it was collected, street user type, mode, etc. This formatting enables it to be analyzed.

Engagement

Connecting with people, communicating, and involving individuals and organizations representing different stakeholder groups, such as children of different ages, caregivers, community members, the public sector, and others. Engagement activities may happen in different settings and apply various tools, according to contextual needs and/or projects' goals, resulting in different levels of involvement.

Evaluation

The determination of whether a project has achieved its expected results and goals. This process can be informed by both qualitative and quantitative analysis, and should be made at multiple points throughout a project's lifespan to understand the degree of success, strategy for improvement, or inform particular next steps to be taken.

Exposure and risk

For the purposes of this handbook, "exposure" is defined as the state of being exposed to risk. It is measured as the probability of a user being involved in a crash. "Risk" refers to any situation involving exposure to danger, injury, or loss. Mathematically, it is defined as injury rate calculated as the number of injuries or crashes over the amount of exposure or the population. Risk may apply to perception of risk or the tendency to take risk.

Kids

In this publication, the term includes infants, young children, older children, and teenagers, from ages 0 to 18.

Metric

A simplified measurement of impact that may indicate the attainment of a goal or the result of a specific change over time. This handbook uses metrics as a synonym for "indicator", a means of embodying the change in collected data before and after a street transformation, in comparable conditions, to enable understanding of overall project impact, indications of success, and areas of improvement.

Quantitative data

What you can count, measure, rate, or scale. Quantitative data measures the change in physical space, operations, number of people or vehicles, movements, and more.

Qualitative data

Intangible qualities that can be observed or shared through stories. Qualitative data is subjective and relates to how space is perceived rather than measured.

Stakeholders

In the street transformation context, stakeholders are all those interested in the process of reshaping streets and its outcomes. For instance: the city and its agencies, the communities affected by the project (residents, children and caregivers, businesses, passersby), activists, etc.

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