

Complete Neighborhoods for Babies, Toddlers, and Their Caregivers

A SUPPLEMENTAL GUIDE TO THE TOD STANDARD
















**PRINCIPLES FOR COMPLETE NEIGHBORHOODS
FOR BABIES, TODDLERS AND CAREGIVERS**





CONTENTS

| | |
|--|----|
| What are Complete Neighborhoods for Babies, Toddlers, and Their Caregivers? | 3 |
| About the TOD Standard | 4 |
| Why Babies, Toddlers, and Caregivers | 5 |
| Needs of Babies, Toddlers, and Their Caregiver | 6 |
| How to Use This Guide | 10 |
| Principles, Objectives, and Metrics of Inclusive TOD | |
|  WALK | 12 |
| Why WALK | 14 |
| WALK: Objectives and Metrics | 14 |
| Objectives in Detail | 15 |
|  CYCLE | 18 |
| Why CYCLE | 20 |
| CYCLE: Objectives and Metrics | 20 |
| Objectives in Detail | 21 |
|  CONNECT | 22 |
| Why CONNECT | 24 |
| CONNECT: Objectives and Metrics | 24 |
| Objectives in Detail | 25 |
|  How WALK, CYCLE, and CONNECT can be further enhanced | 26 |
|  TRANSIT | 28 |
| Why TRANSIT | 30 |
| TRANSIT: Objective and Metrics | 30 |
| Objective in Detail | 31 |
|  How TRANSIT can be further enhanced | 32 |



| | | |
|---|--|----|
|  | MIX | 34 |
| | Why MIX | 36 |
| | MIX: Objectives and Metrics | 37 |
| | Objectives in Detail | 38 |
|  | How MIX can be further enhanced | 40 |
|  | DENSIFY | 42 |
| | Why DENSIFY | 44 |
| | DENSIFY: Objectives and Metrics | 44 |
| | Objectives in Detail | 45 |
|  | COMPACT | 46 |
| | Why COMPACT | 48 |
| | COMPACT: Objectives and Metrics | 48 |
| | Objectives in Detail | 49 |
|  | How DENSIFY and COMPACT can be further enhanced | 50 |
|  | SHIFT | 52 |
| | Why SHIFT | 54 |
| | SHIFT: Objective and Metrics | 54 |
| | Objectives in Detail | 55 |
|  | How SHIFT can be further enhanced | 56 |
| | Glossary | 58 |
| | References | 60 |
| | Acknowledgements | 61 |

MIKA 20!
MUONEKANO MPYA,
LADHA ILE ILE.

TAIFA LETU.
FAHARI YETU.
BIA YETU.

HALI KUNYWA KISTAARABU





WHAT ARE COMPLETE NEIGHBORHOODS FOR BABIES, TODDLERS, AND THEIR CAREGIVERS?

A complete neighborhood for babies, toddlers, and caregivers is one where the built environment and mobility options support the health and well-being of families with young children, such that they thrive. In an ideal complete neighborhood:

- caregivers can easily meet all the daily needs for the development of babies and toddlers, from food to shelter to childcare to open space to doctor's offices;
- stress is lowered for caregivers because of that ease of access, and that in turn encourages frequent warm, responsive interactions between them and their young child; and
- babies and toddlers have safe, healthy, and stimulating environments that foster their social, emotional, physical, and cognitive growth. This includes space for play and green space, as well as reduced air and noise pollution.

A complete neighborhood is one where a mix of services and activities are safely accessible through walking and are well-connected to the rest of the city through high-quality public transport. It is, in essence, transit-oriented development (TOD). While TOD is a familiar concept, it has not often been examined through the lens of babies, toddlers, and their caregivers to understand how TOD can deliver better outcomes for them and respond to their specific needs. This guide seeks to address that.

ITDP's *TOD Standard* defines TOD using a set of core principles, objectives, and metrics. This guide builds on that foundation to explain how it applies to babies, toddlers, and their caregivers. The guide will

help decision-makers and practitioners understand how to use those universal principles from the *TOD Standard* to create better urban environments for babies, toddlers, and caregivers. At the same time, it can also benefit a wider group of professionals—such as designers, community planners, and advocates—to make the connections between the needs of vulnerable groups, such as babies, toddlers and caregivers, and the built environment.



ABOUT THE TOD STANDARD

The *TOD Standard* defines eight core principles of inclusive TOD that encompass sustainable access and mobility, urban design, and land use: **WALK**, **CYCLE**, **CONNECT**, **TRANSPORT**, **MIX**, **DENSIFY**, **COMPACT**, and **SHIFT**. Each principle is supported by clear and simple performance objectives and easily measurable metrics. Together they create a complete, functional framework for inclusive neighborhoods that are dense and have a mix of activities that support quality public transport services and vibrant public spaces for walking and cycling. The framework embedded in the *TOD Standard* is a tool that helps us measure the performance of our cities and neighborhoods and plan and design them to fulfill the needs of all users. It is the foundation on which to build cities that address the needs of young children and caregivers, a good start to making cities inclusive to all people regardless of their physical ability, age, gender, race, or socioeconomic status.



WHY BABIES, TODDLERS, AND CAREGIVERS

Nearly a third of all people living in cities are children under 18 years old, yet we do not plan our cities with them in mind. Moreover, babies and toddlers have specific needs and a heightened vulnerability to environmental influences that require special consideration. The early years of a child (from birth to age 5) lay the foundation for their lifetime social, emotional, cognitive, and physical development. This development rests on a child's well-being, which is contingent on both the quality of care from their caregivers and the quality of the environment. The quality of care from the caregiver is also dependent on their environment. The more stressful an environment, the lower the quality of care; the more time spent fulfilling basic needs, the less quality time spent with the child.

According to UNICEF, over 80 percent of a baby's brain is formed by the age of three, including the neural connections that shape language skills, cognitive functions, and sensorial capacity. These early years have a profound, lasting impact on a person's future physical health and mental well-being. This “window of opportunity” determines cognitive evolution, from core skills acquisition, executive function development, memory processing, and the establishment of healthy attitudes and behaviors to the flourishing of mature relationships. Investing in babies and toddlers pays dividends in the future, including improved health, more effective learning, less likelihood of criminal involvement, and increased employability. While early-childhood development is critical for the future well-being of the adult they will become, every child deserves and has a right to a safe, healthy, and loving beginning in life. Given urbanization rates and the proportion of the population that comprises children, our cities are our future—and that future will depend on how well we take care of babies and toddlers now.

TOD orients urban development around people. This guide examines how, to orient them specifically around babies, toddlers, and caregivers. By doing so, our neighborhoods can set the foundation for well-being for those children, their caregivers, and their families.



NEEDS OF BABIES, TODDLERS, AND THEIR CAREGIVERS

Babies and toddlers need access to good nutrition, to places and spaces for care, physical activity, and social interactions, and to healthcare, among other support services. Babies and toddlers also need safe and stimulating physical environments to explore, as well as frequent, warm, and responsive interactions with loving adults. Providing those environments for babies and toddlers includes ensuring opportunities for play, because playing builds brain architecture, including the development of motor, cognitive, and socioemotional skills. Young children are also the most vulnerable to environmental factors, such as poor air quality and noise pollution, which impedes their development and growth. Interaction with their caregivers is one of the most important factors for the development of babies and toddlers. These interactions include playing together, storytelling, singing, reading, or talking and are key to building the brain architecture that creates the foundation for socio-emotional and language evolution.

Caregivers are responsible to meet those needs and typically for the needs for the household, while also being able to take care of themselves. Chronic stress impedes a caregiver's ability to have responsive interactions with, and provide for the well-being of, babies and toddlers. Having ample, affordable, and diverse goods and services nearby can support a caregiver's socioemotional health and connection to the community, while helping them meet the needs of the household, specifically young children. Caregivers also need access to jobs through reliable sustainable transport modes. The conditions and quality of both the built environment, including the public realm, and the mobility options, specifically pedestrian infrastructure, affect caregiver's ability to meet those needs. But caregivers, traveling with young children, have different mobility needs and characteristics that affect what is accessible and how they use public space.

Short distances (the need for things to be close by) and dependent travel (traveling with young children and often goods) are central for understanding relationships between caregiver travel and distances to destinations. Traveling with babies and toddlers typically results in slower walking speeds and more encumbered journeys, since caregivers may also carry food, toys, clothing, etc. Because caregivers are typically responsible for the household, they may also be carrying goods from the store and be traveling with more members of the

family. Caregivers balance multiple responsibilities, so they tend to trip-chain, combining several destinations into one trip. All of these factors also mean that caregivers are time-constrained. Traveling with young children also means frequent stopping and a higher risk aversion or feeling of vulnerability to chaotic environments, road crashes, urban violence, and poor environmental conditions.

The characteristics of caregiver mobility reveal the importance of proximity and quality of the environment, both of which are at risk when streets are designed for private vehicles. Streets are our frontline for mobility and access, as well as a city's most abundant public space. The overdominance of private motor vehicle planning, however, has left our streets more dangerous and polluted and our cities less accessible. Moreover, most caregivers globally do not have access to private motor vehicles.

In addition to air pollution and road crashes, other negative externalities associated with the proliferation of automobiles and motorcycles include sprawl, climate change, and noise pollution. Sprawl is the antithesis to proximity and leads to longer distances and higher cost in terms of time and money, which are all main constraints for caregivers. Climate change will exacerbate extreme weather conditions and poor air quality, which will impact caregivers, both in terms of meeting their existing responsibilities and potentially adding more as illnesses increase. Noise pollution from cars and motorcycles degrades the environment and has a greater impact on babies and toddlers. Finally, designing with and for nature in our urban environments has not been a priority. So much of our urban space lacks nature. This means that our cities are hotter and less able to withstand extreme weather conditions, and our air is more polluted. Nature is also a key need for babies and toddlers for their healthy physical and cognitive development, and provides a myriad of other benefits to caregiver mental health.

Inclusive TOD that is responsive to the needs of babies, toddlers, and caregivers is the solution to developing complete neighborhoods for family well-being that address the negative impacts of car-oriented design.





A caregiver in Monterrey, Mexico pushes her toddler in a stroller while carrying childcare supplies. The shade helps protect them from the sun, and the smooth paving facilitates traveling with a stroller.



A caregiver on a bicycle in Nijmegen, the Netherlands, travels with multiple children and supplies. Wide, protected cycle lanes help families to cycle safely.



A woman and her child wait for BRT service at a station in Rio de Janeiro, Brazil. Convenient level boarding to vehicles helps caregivers navigate their trips with children under their care. Wayfinding signage, lighting, and seating areas provide additional comfort and safety features for caregivers.



Caregivers rest with their toddler in a car-free neighborhood of Liuyun Xiaoqu, Guangzhou, China. Young children are especially sensitive to the environment. Poor air quality and noise pollution are detrimental to youth development and adult health. Car-free and car-light places reduce noise and localized air pollution.



A caregiver plays with her baby in a park in Madison, WI, USA. Having stress-free open space where they can play and explore helps the baby develop and grow.



Children play in Pune, India, on equipment installed in the walkway. Streets are a city's most bountiful open space, and embedding play options there helps make the trip more fun and interactive. The space also becomes a destination for the neighborhood.



A local neighborhood playground in Tirana, Albania, is nestled in the center of a residential area. Clustering playgrounds with other child-supportive services helps the caregiver plan trips and maximize their limited time.



A caregiver accompanies her child as they navigate a food market in Fez, Morocco. Access to sources of fresh food is important so caregivers can provide healthy nutrition to their children every day. The options may include grocery stores as well as small and informal markets.

HOW TO USE THIS GUIDE

This guide follows the *TOD Standard*'s structure of principles, performance objectives, and metrics to explain how each principle and performance objective relate to babies, toddlers, and their caregivers while referencing the *TOD Standard* for more detail. The guide highlights how imperative the principles and objectives are to the daily experiences of caregiving and thriving in urban environment. The metrics are conveniently indexed with *TOD Standard* page numbers for easy reference. Additional suggestions elaborate on how the design, construction, and programming of spaces, neighborhoods, buildings, and the public realm can be further enhanced. Lastly, a helpful glossary pulls together the most essential terms referenced throughout the guide.

The principles form the overarching frame for understanding the key components of TOD. Below are the Eight Principles with their original summary. To help understand these principles and how they apply to babies, toddlers, and their caregivers, an additional description has been added.

The next section goes into more depth about why it matters for babies, toddlers, and their caregivers, as well as how the corresponding objectives apply.



WALK

Develop neighborhoods that promote walking, so that walking around and to essential destinations is safe, healthy, comfortable, and stimulating



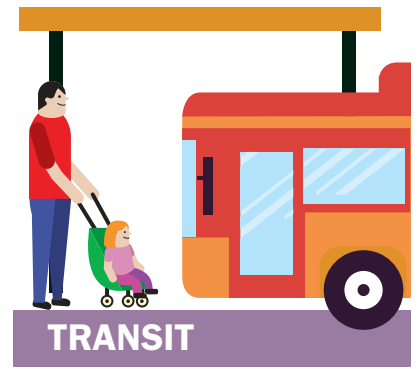
CYCLE

Prioritize non motorized transport networks, so that efficient and quick cycling travel for families is protected, safe, and convenient



CONNECT

Create dense networks of streets and paths, so that walking and cycling routes are short, convenient, and connected, with priority for caregivers and children



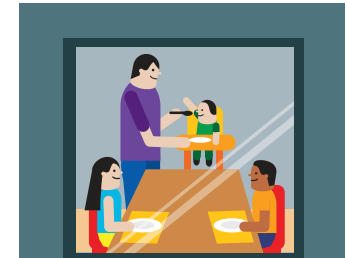
TRANSIT

Locate development near high-quality public transport, so that reliable, safe, frequent, and affordable public transport meeting caregivers' travel needs is easily accessed by walking



MIX

Plan for mixed uses, incomes, and demographics, so that essential services and housing opportunities are available locally to families of all sizes and incomes



DENSIFY

Optimize density and match transit capacity, so that enough people live nearby to sustain local services and local employment options that caregivers may need



COMPACT

Create regions with short transit commutes, so that travel outside the neighborhood takes less time and fewer resources to reach key destinations for time-constrained caregivers



SHIFT

Increase mobility by regulating parking and road use, so that space for motor vehicles is reduced to promote play, interaction, and health

WALK

WALKING AROUND AND TO
ESSENTIAL DESTINATIONS
IS SAFE, HEALTHY,
COMFORTABLE, AND
STIMULATING



WHY WALK

Safe, quick, healthy, and comfortable walking trips to local destinations, services, and public transport improve caregiver experiences and reduce travel-related stress. For babies and toddlers, playing and interacting with caregivers and being stimulated by a vibrant environment positively affects their physical, cognitive, and socioemotional development. Walking allows for those opportunities. Walking is also a fundamental form of mobility for caregivers traveling with babies and toddlers, because it is relatively reliable and predictable, both key considerations for time-constrained caregivers. Walking provides flexibility for a caregiver to stop and attend to a child, to take a break, and even to return home if needed. When the pedestrian realm is pleasant, healthy, and stimulating, routes frequented by caregivers with their babies can also become destinations themselves.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

The pedestrian realm is safe, complete, and accessible to all

- Walkways (p. 34)
- Crosswalks (p. 36)

■ OBJECTIVE B:

The pedestrian realm is active and vibrant

- Visually active frontage (p. 38)
- Physically permeable (p. 40)

■ OBJECTIVE C:

The pedestrian realm is temperate and comfortable

- Shade and shelter (p. 41)

OBJECTIVES IN DETAIL

OBJECTIVE A

THE PEDESTRIAN REALM IS SAFE, COMPLETE, AND ACCESIBLE TO ALL

Safe, continuous, wheelchair- and stroller-accessible **walkways**, free of obstructions, are critical for caregivers who carry babies, use strollers, and walk with young children. Safe walkways can take the form of pedestrian-only streets and paths, street space shared with vehicles at a very slow speed (<15km/h), or sidewalks protected from faster-speed roadways. Smooth and unobstructed pathways are essential to safely navigating in the pedestrian realm with small children, strollers, and goods. Obstructions may include parked cars, vendors, trash, or broken sidewalks. For families traveling together, wide walkways allow caregivers to walk next to toddlers or other family members and also have space for strollers. Caregivers with babies and toddlers may be walking slowly, so having wide sidewalks allows faster walkers to pass them. A critical component of a continuous pedestrian network is all-accessible **crosswalks**. To make crossing safer, crosswalks should be well-demarcated and ideally at-grade. Crosswalks can be raised to the level of the sidewalk, which acts as a traffic calming device to slow down cars and motorcycles while prioritizing the pedestrian path. In the case of faster-speed roadways, safe crosswalks are needed at every intersection and in all directions. Crosswalks through wider streets should include features like bulb-outs to reduce the crossing distance in the roadbed for caregivers tending young children, as well as refuge islands that have enough space for stroller maneuvering and families traveling together. At signalized intersections, crossing times should allow time for slower walkers to clear the intersections before the light changes. All walkways and crosswalks should also receive adequate street lighting at night for safety and security. Wayfinding and signs at eye level help caregivers navigate easily and can be designed as prompts for child-caregiver interaction or play. It is key for caregivers that the pedestrian realm is clean and a healthy place to bring babies and toddlers. A complete pedestrian realm must be clean and well-maintained.

OBJECTIVE B

THE PEDESTRIAN REALM IS ACTIVE AND VIBRANT

Visually active and physically permeable frontages increase activity along the street, making the pedestrian realm feel more vibrant and safe for caregivers walking during the day and the evening hours. This means having ground-floor activities and services, visual transparency between the buildings and the street, public entrances, and good lighting. Additionally, blank walls, especially along routes frequented more often by caregivers and their small children, can provide an opportunity for storytelling and brain stimulation through public art projects such as colorful murals. Residential neighborhoods with windows facing the street have just as much visually active frontage as a bustling shopping strip. Designing diverse building frontages and adding interactive urban design solutions like small rest and play nooks and lighting can help animate the frontage zone for the comfort and safety of caregivers and young children. Activating the public realm requires that it is clean and well-maintained so that caregivers feel comfortable bringing their children into those spaces.

OBJECTIVE C

THE PEDESTRIAN REALM IS TEMPERATE AND COMFORTABLE

Use of **shade and shelter** keeps public spaces temperate and makes walking, playing, and resting more comfortable. Providing shade and shelter reduces exposure to the elements. Having spaces to stop, rest, and regroup reduces stress on the caregiver and the fatigue of journeys for young children. Large public spaces like parks, playgrounds, and plazas should feature ample shaded seating spaces and safe comfort stations equipped with diaper-changing facilities. These are important along walkways, too, so that caregivers have areas where they can pause, tend to their child, or just take a breath without obstructing other people walking. The public realm along streets can include simple urban design solutions that help caregivers on their journey, like rest benches and trees within the street furniture zone, porous building facades with awnings or arcades, and small pocket parks for rest and play. These need sufficient space for strollers or multiple members of a family to rest. These ideas may be implemented as temporary or permanent solutions in underutilized spaces in setbacks and vacant lots where possible. Part of making the pedestrian realm temperate and comfortable is bringing shade, ideally through trees and natural canopies, and ensuring good stormwater management, including through bioswales. Both of these—also known as green and blue infrastructure—can help mitigate extreme rain events while providing natural elements that are good for young children and caregivers alike.

CYCLE

EFFICIENT AND QUICK
CYCLING TRAVEL FOR
FAMILIES IS PROTECTED,
SAFE, AND CONVENIENT



WHY CYCLE

Cycling provides another reliable and sustainable option for efficient, door-to-door travel as walking, but at greater distances. Because of that, cycling can give the caregiver greater flexibility and access to more services that may be beyond a reasonable walking distance. Cycling is also good for last-mile travel to or from public transport. Cycling can allow the caregiver to travel more easily with other goods than walking or transit, too. Cycling also offers a multitude of health benefits from the increased physical activity. When caregivers cycle with a baby or toddler, it can be a time for positive interactions and engagement, such as talking with the child and pointing out sights.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

The cycle network is safe and complete

- Cycle network (p. 45)

■ OBJECTIVE B:

Cycle parking and storage are ample and secure

- Cycle parking at transit stations (p. 47)
- Cycle parking at buildings (p. 48)
- Cycle access in buildings (p. 49)

OBJECTIVES IN DETAIL

OBJECTIVE A

THE CYCLE NETWORK IS SAFE AND COMPLETE

Safe **cycle routes** are easily accessible within a short bicycle or walking distance. They can take the form of shared streets, slow vehicular-traffic streets, or protected bike lanes along faster roadways. Protected cycling infrastructure has been proven to be the best way to encourage cycling, and it will alleviate the stress of road safety concerns for a caregiver. Like with sidewalks, wider cycle lanes may be needed to allow caregivers to travel with a bigger bike (such as a cargo bike or tricycle) or with a small child cycling next to them. Toddlers can freely learn how to cycle in safe and open spaces or on pedestrian-cycle shared paths, but once they have learned, having wide and protected bike lanes will be essential to encourage them to cycle with their caregivers. Cycle routes, just like pedestrian routes, should form a continuous network and link key destinations that caregivers need to reach, such as daycares, parks, and transport services. Like with walking, designing safe intersections is critical to the cycling trip. A safe intersection approach can include protected intersection design, simultaneous green for cyclists in all directions, or a leading bicyclist interval at signalized intersections.

OBJECTIVE B

CYCLE PARKING AND STORAGE ARE AMPLE AND SECURE

Parking and **storage** options that are available at key destinations—especially where families live, near children’s services, and close to public transport stations—are essential to enable cycling, especially for bikes equipped to carry babies and toddlers, including cargo bicycles and tricycles. Having space for parking helps relieve stress once caregivers traveling with young children get to their destination. Additionally, affordable bike sharing can help improve access to cycling for lower-income communities and address the constraints of personal storage space, bike share systems should have bikes with child seats and carrying capacity.

CONNECT

WALKING AND CYCLING
ROUTES ARE SHORT,
CONVENIENT,
AND CONNECTED,
WITH PRIORITY
FOR CAREGIVERS
AND CHILDREN



WHY CONNECT

Walking and cycling are more convenient and enjoyable if there is a tight network of paths and streets that offers multiple routes to many destinations. Caregivers tend to prefer flexible, shorter trips and being closer to home as they navigate both the neighborhood and the needs of babies and toddlers, such as feeding and sleeping schedules and the unpredictable nature of young ones. As traveling with young children often means moving more slowly, having shorter, more direct connections helps reduce stress for caregivers and speed up the trip. Caregivers are more likely to “trip-chain”—to complete trips with multiple stops throughout the day—so having a dense, connected network that links various destinations helps them meet the various responsibilities of maintaining the household.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

Walking and cycling routes are short, direct, and varied

- Small blocks (p. 53)

■ OBJECTIVE B:

Walking and cycling routes are shorter than motor vehicle routes

- Prioritized connectivity (p. 54)

OBJECTIVES IN DETAIL

OBJECTIVE A

WALKING AND CYCLING ROUTES ARE SHORT, DIRECT, AND VARIED

Neighborhoods should be laid out to ensure direct routes and to prioritize walkers and cyclists. The best way to achieve that is through **small pedestrian blocks** (sides less than 110 m) that balance space efficiency with the directness and variety of walking routes. When small blocks don't exist, having public access every 100 m through large buildings or blocks can help achieve this. Small blocks are important for babies, toddlers, and their caregivers, because they

help slow down traffic, provide a direct network, and offer more choices of walking paths to suit individual needs. Long blocks form obstacles and detours that can discourage pedestrian movement, especially for caregivers with children. Some solutions to shorter block lengths include planning neighborhoods around the principle of an arterial grid for faster traffic and smaller inner blocks for a more convenient circulation for pedestrians, especially in residential areas and along routes to destinations frequented by caregivers with young children. For areas with limited road space, streets can be redesigned by formalizing existing walking paths, trails, and informal routes and upgrading them with lighting, retrofitted stroller rails on stairs, and simple paving.

OBJECTIVE B

WALKING AND CYCLING ROUTES ARE SHORTER THAN MOTOR VEHICLE ROUTES

Having more **pedestrian- and cycle-only intersections** encourages walking and cycling over motor vehicle use and helps keep the urban environment safer and easier to navigate for caregivers and young children heading to local destinations. By having more non motorized intersections than motor vehicle ones, a neighborhood gives caregivers, babies, and toddlers more healthy options for walking and cycling to local destinations in the neighborhood. This can include shared streets where motor vehicles are allowed but only at slower and safer speeds of 15 km per hour or less, or pedestrian- and cycling-only spaces, including car-free streets and plazas. Key routes frequented by caregivers, babies, and toddlers can be designated as pedestrian and cycle priority routes. Fully pedestrianized and shared streets with traffic-slowing measures are examples of solutions for pedestrian prioritization. Long pedestrian blocks abutted by heavier traffic roadways should at least allow for crossings mid-block or every 150 m. Limited-traffic zones and superblocs, which are being implemented in Barcelona, are two ways to achieve this.

HOW **WALK**, **CYCLE**, AND **CONNECT** CAN BE FURTHER ENHANCED

Each of the previous principles is important in its own right for babies, toddlers, and caregivers. However, they are even more powerful when combined to enhance the public realm and create both places and journeys that foster warm, healthy interactions between caregiver and young child, reduce stress for both, and increase stimulation and engagement of the baby or toddler with their environment. Additional and intentional measures can further enhance the experience and enjoyment of babies, toddlers and caregivers walking, cycling, and interacting in public space.

The principles of **WALK**, **CYCLE**, and **CONNECT** lay out the foundation for local mobility and ensure that the pedestrian realm is comfortable, accessible, and safe. To further promote healthy neighborhoods, planning for **WALK**, **CYCLE**, and **CONNECT** should be coupled with approaches for reducing interactions with cars and increasing interactions with nature and open space.

Car-free neighborhoods and neighborhoods with limited access for cars improve health and relieve stress for families and caregivers tending young children. Green and blue infrastructure and natural elements act as natural buffers protecting pedestrians and cyclists from cars, make the air cleaner to breathe, and stimulate children's healthy development. They are also necessary components for resiliency in the face of climate change and can help with extreme heat and weather events. They can be integrated with the systems of open spaces, pedestrian and cycle networks, and land use through design standards for streets and frontages.



SOURCE: ITDP





Children's routes that connect areas where families live to child-oriented destinations should be identified and prioritized for traffic-slowing measures that improve safety and environmental quality. Interactive safety and design features can include colorfully marked routes and intersections that alert drivers to the presence of children. Connecting local spaces through safe and engaging routes promotes walking and cycling.

Play is a form of learning and interacting for toddlers. Daily play and interaction throughout the day in safe environments, both independently and with caregivers, is essential for healthy brain and emotional development in children. Parks and open spaces are obvious play places, but streets can also serve as open spaces when they are programmed for play. For example, street closures for family-oriented festivals, ciclovias, and no-parking days—as well as the tactical urbanism interventions that reuse space for cars as play and rest areas—can help promote infant/toddler interaction with caregivers and the environment. Building frontage and sidewalk areas can also feature small public spaces that incorporate elements of play, nature, and shade. They can be strategically placed near transport stops and children's facilities or along pedestrian corridors. Enhancements to the pedestrian realm can greatly improve the experience of babies, toddlers, and caregivers in neighborhoods that lack enough open spaces, such as in busy commercial and business areas and near transit stops that are typically designed for pass-through traffic but also frequented by caregivers.

LEFT: Street-safety and programming solutions in Sunter Jaya, an urban village in Jakarta, were delivered through a community participation process. Simple surface paint, foliage, and street furniture create a refuge for pedestrians and slow down traffic.

RIGHT: In Fortaleza, Brazil, bikeshare features options for toddlers and young children. The ability to rent child-size bicycles create opportunities for exploration and play for the toddlers as well as interactions with caregivers when they cycle together for short distances.



SOURCE: ITDP

TRANSIT

RELIABLE, SAFE, FREQUENT,
AND AFFORDABLE PUBLIC
TRANSPORT MEETING
CAREGIVERS' TRAVEL
NEEDS IS EASILY ACCESSED
BY WALKING



WHY TRANSIT

Public transport is the most efficient and sustainable mode for medium- to long-distance trips. Reliable, safe, and frequent public transport that is affordable and within a short walking distance is essential for giving caregivers access to destinations across the whole city (e.g., markets, health facilities, workplaces, and child-oriented services). In areas without those destinations nearby or where the walking and cycling conditions to access them are not safe and comfortable, transit is the critical lifeline for caregivers. Taking public transport can also provide a space for caregivers to interact with their babies or toddlers instead of focusing on navigating streets. A caregiver's role as passenger versus pilot creates room and time to sing, read, and converse together, as well as attend to the child during the trip. Maintaining a household for a family can be costly, so affordability is critical to ensuring access. Lower-income areas are less likely to have services nearby, so transit is necessary to connect caregivers, babies, and toddlers to those services.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

High-quality public transport is accessible by foot (this is a requirement for TOD)

- Walking distance to transit (p. 58)

OBJECTIVES IN DETAIL

OBJECTIVE A

HIGH-QUALITY PUBLIC TRANSPORT IS ACCESSIBLE BY FOOT

Residences and destinations need to be located less than 1,000 m **walking distance from high-quality rapid transport service** or within 500 m of regular public transport to enable direct walking access to transit that has at least an all-day 15-minute service frequency. Ideally, all urban residents should have a 10-minute walk or less to 10-minute frequency transport, but that is not often the reality. The 10-minute walk is highly dependent on who is doing the walking and under what conditions. On average, 500 m is a 10-minute walk for a non-disabled person on a paved and unobstructed walkway. The walking speed of caregivers traveling with babies and toddlers will be lower, meaning a 10-minute walk may only get them 200 m to 300 m. While transit frequency during peak hours is usually high—i.e., a person will wait less than 10 minutes for the next service to arrive—most off-peak service is infrequent, and that is when many caregivers are traveling. The 15-minute all-day service is a high bar for many systems, as that would mean off-peak transit would also come every 15 minutes. Therefore, 500 m and a 15-minute frequency is the maximum threshold for access to transit, but it should be less so that caregivers can reach transit within a realistic 10-minute walk to a service that comes every 10 minutes or less regardless of the time of day. Being able to trust that transit service will come in under 10 minutes helps with trip planning for time-constrained caregivers. Reliability is increased if that transit has its own dedicated right-of-way, like a bus-only lane. Less time waiting at the station means less time managing a baby or toddler in that environment and less opportunity for urban violence. More frequency can hopefully translate into less crowding, which can be a deterrent for caregivers traveling with babies and toddlers.

HOW TRANSIT CAN BE FURTHER ENHANCED

While access to public transport and its service levels are the critical foundation for transport to work for caregivers, babies and toddlers, more is needed to make the trip safe, convenient, and affordable. Care activities reached by transit are typically non-regular trips that take planning and navigating: Having good information to help with wayfinding, trip planning, and navigating the system will help non regular users of transport systems.

Station design should feature design solutions that facilitate access, safety and comfort for caregivers traveling with young children. Level boarding and off-board fare collection help alleviate the stress of boarding and alighting while traveling with young children and supplies. Ramps, elevators and wide entrances to transport stations allow caregivers to safely access transport. Stairs and narrow openings are hard to navigate while carrying a child or a stroller. Having designated space and seating at transport stations for caregivers traveling with babies and toddlers will encourage them to use transport. Sufficient lighting,

Colorful murals in transport stations make more vibrant, engaging environments that positively impact mental health for adults while providing entertainment and a point of engagement for young children.

PICTURED: Buenos Aires Subte station.



SOURCE: Tom McGrath via Flickr

signage, and visibility increases personal security and creates a more comfortable environment for young children. Overcrowding in stations and on buses and trains can add stress to the trip, while also increasing the possibility of harassment, robbery, and violence, especially for women or elderly caregivers. A transit stop or station is a public space that can incorporate interactive and stimulating elements when thoughtfully designed, including art, commerce, small rest and play areas for feeding and waiting, public restrooms, and water fountains.

Pedestrian and cycle connectivity improvements and design for seamless **intermodal integration** of public transport stations can strongly improve mobility and the usability of transport. Caregivers are more likely to “trip-chain” or to complete trips with multiple stops throughout the day, such as to reach a childcare facility, job, or grocery store. This often leads to more expensive trips, as caregivers have to pay for each segment of their journey. A fare policy that allows for trip-chaining helps caregivers affordably use transit as they fulfill the obligations of the household.



MIX

ESSENTIAL SERVICES AND
HOUSING OPPORTUNITIES
ARE AVAILABLE LOCALLY
TO FAMILIES OF ALL SIZES
AND INCOMES



WHY MIX

Locating daily destinations and child- and caregiver-oriented services within a walkable distance from where families live ensures easy, free, and low-stress access to these opportunities and promotes local community and social capital. A mix of residences, workplaces, and local retail and commerce encourages walking and cycling, supporting a caregiver's local mobility while also activating the public realm. Having both residential and nonresidential uses in a neighborhood helps keep local streets animated and safe, day and night.

Caregivers frequent certain services more often than others to provide for the well-being of babies and toddlers and for themselves. These include:

- Local fresh food sources—Access to local fresh food contributes to the fundamentals of brain and body development, and a lack of nutrition can lead to increased risk of illness and obesity in later life as well as stunted development. Convenient and close access to healthy food options is critical, because caregivers often buy groceries multiple times a week, shop with children, and stock goods for the entire household.
- Variety of open spaces—Having open space for social interaction, physical movement, exploration, engagement, and play is essential for babies and toddlers, and even their caregivers. Play is the universal building block for child health. Having space for physical movement helps bodies develop, from lungs to muscles to hearts. It can also help children expend energy and lead to better sleeping at night. Greenery and nature in open spaces are important to support health, interactions, and play. Finally, caregivers need social interactions, and these can happen in open spaces.
- Basic healthcare and pharmacies—Pregnant women, babies, and toddlers have a greater need for access to medical services because of more frequent doctor visits, sometimes as often as monthly. This begins with pregnancy and continues on to regular checkups for the first three years of life.
- Daycares, kindergartens, and primary schools—Participation in high-quality childhood programs is critical during the early years and has been linked to lower levels of depression and obesity later in life, higher chances of completing primary and secondary education, and 25% higher incomes in adulthood. Moreover, families are often composed of multiple children at varying ages and stages of education, and caregivers are responsible for

meeting all their needs. Having primary schools and kindergartens nearby helps the caregiver meet the competing educational needs of the household.

Mixed-income housing for families of different socioeconomic levels benefits everyone in the social mix. A variety of housing options makes it more feasible for workers of all income levels to live near their jobs and helps prevent lower-income residents dependent on lower-cost public transport from being systematically displaced to poorly served outlying areas. Mixed housing enables shorter trips for different jobs within that neighborhood, reducing travel distance and demand while enabling more vibrant neighborhoods with active residents and improved environments for mental health.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

Opportunities and services are within a short walking distance of where people live and work, and public space is activated over extended hours

- Complementary uses (p. 63)
- Access to local services (p. 66)
- Access to parks and playgrounds (p. 68)

■ OBJECTIVE B:

Demographics and income ranges are included among local residents

- Affordable housing (p. 69)
- Housing preservation (p. 72)
- Business and service preservation (p. 74)

OBJECTIVES IN DETAIL

OBJECTIVE A

OPPORTUNITIES AND SERVICES ARE WITHIN A SHORT WALKING DISTANCE OF WHERE PEOPLE LIVE AND WORK, AND PUBLIC SPACE IS ACTIVATED OVER EXTENDED HOURS

A mix of complementary uses is integral to having complete, balanced neighborhoods. Residential uses balanced by jobs and activities serving family needs keep destinations accessible within the neighborhood. This helps to decrease travel distances for caregivers and to enliven the public realm so it is active and secure, day and night. It also helps bring opportunities for employment close to home, so that caregivers can work nearby.

Local services near where families live include sources of fresh food and essential children-oriented services like healthcare, early childhood education, and public outdoor spaces. Smaller but more frequent options like informal vendors and fruit stands can help meet the needs of the neighborhood, especially when placed along key routes and near transport stops and open spaces. If a neighborhood lacks services, pop-up or mobile services, such as mobile healthcare vans, can help fill those gaps. Pharmacies often act as the first line of healthcare in a neighborhood and serve as a proxy for availability of healthcare. Ideally, basic healthcare facilities are available within walking distance for ease of accessing prenatal care and the required checkups and vaccinations that young children need. While every child deserves high-quality childcare to ensure better educational and emotional development, primary schools within walking distance is a proxy for the availability of educational support in the neighborhood. For caregivers, it may be important to have both primary schools and daycares nearby, as they are often taking care of multiple children.

Open spaces such as parks and playgrounds of all sizes give babies and toddlers a place to explore and play in their environment and offer caregivers an area to socialize, relax, and tend to their young children. Open spaces should be designed so that children can be relatively independent while they are playing, including lighting, seating areas, changing areas for babies, and protection from different weather conditions (rain, heat, snow, sun). If parks and public areas are not available, new spaces can be opened by identifying underutilized or vacant land that can be repurposed into a green area or public space, reclaiming parking spaces for play, and

creating parklets where caregivers and young children can pause and play. If the street grid is fine-grain enough (with short blocks and pedestrian-priority intersections and paths), neighborhoods can implement permanent street closures to make a park or greenway.

The *TOD Standard* recommends that these services should be within 500 m and 1,000 m. For caregivers traveling with young children, distances matter: The closer the better is the ideal, but in a lot of contexts, even getting services within this distance would be a first step. So, like transport, this is the maximum threshold, but ideally, services that young children and their caregivers frequently use should be located within 225 m to 500 m, or a 15-minute walk for caregivers tending a small child. These services include daycares, sources of fresh food, pharmacies, and a variety of open spaces and places to rest. Destinations that are used less frequently can be located in a walkshed of 500 m to 1,000 m, and these include larger markets, neighborhood parks, and primary schools.

OBJECTIVE B

DIVERSE DEMOGRAPHICS AND INCOME RANGES ARE INCLUDED AMONG LOCAL RESIDENTS

A mix of housing options and preservation of preexisting local businesses and households in the course of compact development makes communities diverse and inclusive. A socioeconomic mix fostered by preservation of affordable community services and housing options for families of all income ranges helps caregivers stay closer to quality services and sources of income. Cities also benefit from social mix by having the workforce closer, requiring less driving causing less pollution, and requiring less cost to mitigate traffic and health impacts. Local social safety nets sustain caretaking activities for lower-income families, and the preservation of local businesses and residences helps keep those social safety nets intact.

HOW **MIX** CAN BE FURTHER ENHANCED

MIX is the foundation for vibrant and inclusive neighborhoods for all families. With diverse activities and opportunities located nearby, caregivers can walk to essential services, reducing their time and money costs. **Clustering childhood services**, like healthcare or daycare facilities, and locating them near housing, jobs, markets, public transport stations, and other frequent destinations can make trips short, multipurpose, and efficient for caregivers. A MIX of opportunities served by sustainable transport networks can enable access by walking, cycling, or public transport in under 15 minutes.

Flexible shared use of public space and facilities can also provide opportunities to improve MIX. For example, schoolyards can be open to the public after hours to serve local residents when communities lack access to formal parks and playgrounds. Public parks can also serve as locations for fresh food and produce or pop-up child-oriented services. These might include libraries or mobile health clinics, such as “pediatricians on wheels.”

Protecting local opportunities helps neighborhoods remain inclusive. Policies can be devised to **maintain housing and commercial affordability and continuity of tenure**, especially for children-oriented facilities (public and private) and local retail and services (e.g., quality grocery stores).



An underutilized facility in Tirana, Albania, has been transformed to house a neighborhood library and a pharmacy, accessible to families living nearby (before, **ABOVE**; after, **BELOW**).



SOURCE: Qendra Marrëdhënie

DENSIFY

ENOUGH PEOPLE LIVE
NEARBY TO SUSTAIN LOCAL
SERVICES AND LOCAL
EMPLOYMENT OPTIONS THAT
CAREGIVERS MAY NEED



MARKET



WHY DENSIFY

Complete, walkable neighborhoods require sufficient densities of residents, workers, and visitors to make public and commercial services viable (e.g., public transport, health and education, local retail, and children-oriented services). The density of people and activities is also critical to public space activation that helps caregivers feel safer in public space. Good density means efficient use of space for activities and housing supported by adequate infrastructure systems, open spaces, and transit. Because of the challenges of childcare, many caregivers need employment options nearby to facilitate picking up/dropping off children at daycare, schools, and after-school activities, and so they are able to respond to emergencies, such as if the child is sick. Good density of nonresidential uses means a greater likelihood that employment nearby is a possibility. It also means reduced time spent on commuting, which allows more time for care.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

High residential and job densities support high-quality transit

- Nonresidential density (p. 79)
- Residential density (p. 82)

OBJECTIVES IN DETAIL

OBJECTIVE A

HIGH RESIDENTIAL AND JOB DENSITIES SUPPORT HIGH-QUALITY TRANSIT

Density of neighborhood jobs and visitors (**nonresidential density**) and housing unit density (**residential density**) support high-quality transport, family-oriented local services, and opportunities for interaction in public spaces. Dense neighborhoods can have active, vibrant public spaces, transport stations, and destinations for goods/ services with continuous community interaction. This supports family mental health, socializing, and community resilience, and it offers young children opportunities for stimulation and activity for healthy neurological development. Density does not mean overcrowding: It means sufficient space for activities, for living, for sunlight, for air circulation, all supported by public utilities with sufficient capacity, such as sewage, water, electricity, and public transport.

COMPACT

TRAVEL OUTSIDE THE
NEIGHBORHOOD TAKES
LESS TIME AND FEWER
RESOURCES TO REACH KEY
DESTINATIONS FOR TIME-
CONSTRAINED CAREGIVERS



WHY COMPACT

Caregivers need choices for convenient travel to destinations, not only within the neighborhood but also across the whole city (e.g., to access employment centers). Traveling with a baby or toddler can be challenging because of their frequent feeding and sleeping schedules, the supplies needed for the trip, the sensitivity of children to the environment, and the unpredictable nature of toddlers. Thus, having to travel long distances and being faced with the challenges of traveling with a young child can restrict or prevent access. If a city grows in a more compact manner, the distances for caregivers to travel to other parts of the city are lessened. Having multiple integrated public transport options also allows caregivers choices to reach different parts of the city more easily.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

The development is in, or next to, an existing urban area

- Urban site (p. 87)

■ OBJECTIVE B:

Traveling through the city is convenient

- Transport options (p. 90)

OBJECTIVES IN DETAIL

OBJECTIVE A

THE DEVELOPMENT IS IN, OR NEXT TO, AN EXISTING URBAN AREA

Building in existing **urban areas**, within walking distance of a network of multiple transport options, enables shorter travel distances and times to destinations outside the neighborhood.

OBJECTIVE A

TRAVELING THROUGH THE CITY IS CONVENIENT

Multiple **transport options** also give flexibility to the caregiver in determining how best to reach those destinations. As cities grow, public policies and private investment must ensure that development happens where, and only where, the urban system allows lifestyles centered on short walks and abundant public transport options. Transport options can include frequent transport service and bikeshare systems, and they should be integrated with activities and existing transport systems for multimodal transfers and convenience of trips. Bikeshare systems should accommodate the needs of caregivers and feature equipment for cargo transport and transport of children.



HOW **DENSIFY** AND **COMPACT** CAN BE FURTHER ENHANCED

Quality of life in **DENSIFY** and **COMPACT** conditions is highly dependent on density of infrastructure and services, as well as on design and construction quality.

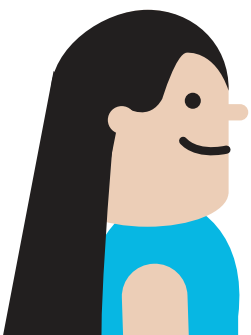
For neighborhoods to enable families to thrive in a healthy manner, housing density needs to be complemented by the density of family-oriented facilities and services, ample and diverse open spaces, and continuous and dense pedestrian and cycle networks. In addition, neighborhoods must feature walking and cycling routes that can be frequented by caregivers and the young children they care for and are anchored around frequent-transport stops.

Density is only functional if there is sufficient public right of way (streets) and basic urban services in good supply, including water, stormwater drainage, sewage, solid waste management, and electricity. These basic urban services and utilities are critical to the well-being of babies, toddlers, and those who care for them, as well as the cornerstone for healthy and equitable walkable neighborhoods. Poorer communities, including informal settlements, often suffer from a lack of public investment in these basic services. When these services do exist, they are often inadequate and provided by private service providers at prices much higher than in other communities in the city—a trend often known as the poverty penalty ([Jane Weru: COVID-19 and the City webinar](#), July 30th, 2020). Caregivers in urban slums are burdened with these issues on top of the daily activities required to care for a baby and toddler or multitask between employment and childcare.

Clustering services and conveniently locating them near transport access and population densities allows caregivers to run their frequent errands related to childcare and family welfare without the stress of making multiple trips in different directions.

Integration of sustainable transport modes with where people live is the core attribute of compact, sustainable neighborhoods. Developing new neighborhoods and retrofitting existing ones should always come in tandem with extending pedestrian, cycle, and transport networks; enabling access to bikeshare systems; and dedicating enough space for recreational uses of different sizes and characteristics (e.g., providing open spaces suitable for people of all ages, including young children as well as the elderly). Prioritizing disinvested neighborhoods should mean bringing in interventions and quality services that help satisfy family needs locally without disrupting community ties.

Fostering good density should always mean creating healthy, inclusive, and walkable environments, not overcrowding. While overcrowding is too many people in each housing unit, density is sufficient quality housing for all people.



The Yerawada Community in Pune, India, has been upgraded through the In Situ Slum Rehabilitation for Urban Poor Project which brought improvements to housing, street network and the basic infrastructure and added more living space for the residents and commercial space for the home-based businesses. Pictured, a community visioning session with residents represented by all social groups: elderly, women, men and children (top), and the streetscape of Yerwada filled with activities and people.



SOURCE: Prasanna Desai Architects Shreesha Arondekar

SHIFT

SPACE FOR MOTOR
VEHICLES IS REDUCED
TO PROMOTE PLAY,
INTERACTION, AND
HEALTH



WHY SHIFT

Children are the most vulnerable to environmental factors during the early years, and their well-being rests on reducing health risks like poor air quality, noise pollution, and road safety. Babies and toddlers suffer more from exposure to noxious motor vehicle fumes than adults do because of their more rapid breathing and their closer proximity to direct fumes from exhaust pipes. Noise pollution has been associated with reduced cognitive function, inability to concentrate, and increased feelings of nervousness and helplessness in babies and toddlers. Lastly, with a height of 95 cm or less, young children are often invisible to motor vehicles, especially as car design continues to get bigger and bigger. Young children are also at a greater risk of injury and death when involved in a road crash with motorized vehicles. Not only do road crashes affect young children, but if someone in the household is injured, the burden of care usually falls on the primary caregiver and can result in a loss of income for the family.

Streets are the main source of public space in a city and can comprise 80 percent of a city's total public space, but the overprioritization of cars leaves little room for open space and play. A key to shifting from motor vehicle-centric development to people-centric is to reduce the share of public and private space allocated to motor vehicles while increasing availability of walkable destinations and affordable transport.

OBJECTIVES AND METRICS

■ OBJECTIVE A:

The land occupied by motor vehicles is minimized

- Off-street parking (p. 95)
- Driveway density (p. 97)
- Roadway area (p. 98)

OBJECTIVES IN DETAIL

OBJECTIVE A

THE LAND OCCUPIED BY MOTOR VEHICLES IS MINIMIZED

When **off-street parking** (e.g., underground parking and parking structures) is minimized, there are fewer cars accessing buildings and ultimately neighborhoods, lessening the interaction of young children with polluting cars. Off-street parking contributes to higher housing costs for families and to sprawl, thus creating longer distances to reach services for caregivers. Access to off-street parking also contributes to the number of driveways that intersect the pedestrian realm: The more driveways, the more vehicles that cross walkways, affecting the safety of caregivers and young children. Children being pushed in strollers or toddlers being led by their caregivers are particularly susceptible to being injured by cars pulling in and out of the driveways because of their small size and limited physical mobility. Minimizing driveways (**driveways density**) can be done by locating them inside alleys to divert vehicles away from pedestrian spaces.

When the amount of **the roadway area** dedicated to motor vehicles is minimized, it helps reduce traffic, in turn reducing the exposure of babies, toddlers, and their caregivers to poor air quality, noise pollution, and chances for direct injury. This can be achieved by reclaiming space from motor vehicles and dedicating it for other modes, like cycling and public transport. Parking spaces can be converted into parklets, expanded walkways, bike lanes, etc. New neighborhoods should be designed around the principles of complete streets, and existing neighborhoods can employ interventions like bike lanes, traffic-calming measures (such as speed bumps, bulb-outs, etc.), and safety measures to slow down traffic. Temporary interventions like pop-up plazas and play streets may be adopted as permanent solutions in areas near key routes and services.

HOW **SHIFT** CAN BE FURTHER ENHANCED

Any **SHIFT** toward car-free or car-light ways of life is contingent on other TOD elements to enable and support it. However, various regulatory and street design measures can help reduce the impact of motor vehicles in the interim: limiting car speeds, introducing physical traffic-calming design, limiting duration and location of on-street parking, limiting access to residential streets, or opting for no parking in buildings.

As **SHIFT** reduces space devoted to cars, it opens up space for a healthier and safer pedestrian realm, while also promoting cleaner air. Car-dependent neighborhoods could benefit from solutions like streetscape greenery and elements of play. Nature elements act as natural barriers from car traffic. Neighborhoods that gradually become better served by transport, and thus less dependent on cars, can work toward repurposing car parking, on- and off- street. Decommissioned parking lots and car infrastructure can be used for community gardens, pop-up farms, and open spaces.



Temporary intersection and street treatment reclaiming space from cars and allocating it to pedestrians in Rio de Janeiro, Brazil. Many permanent solutions get tested out with a pop-up installation.



SOURCE: ITDP



GLOSSARY

CAREGIVER

A person who is very closely attached to the child and responsible for their daily care and support. Primary caregivers include parents, pregnant women, families, and other people who are directly responsible for the child at home. Note that secondary caregivers such as frontline workers are not included in this definition.

CHILD DEVELOPMENT

The early childhood period encompasses several quite distinct phases: from conception to birth and from birth to 3 years, with emphasis on the first 1,000 days (from conception to 24 months), followed by the preschool and pre-primary years (3 years to 5 or 6 years, or the age of school entry), and finally the period from 6 to 8 years of age.

CYCLING NETWORK

A network of safe cycling routes including designated cycleways, slow streets (safely shared between cycles and motor vehicles because vehicle speeds are under 30 km/h [20 mph]), and pedestrian-priority streets (safely shared by pedestrians, cycles, and motor vehicles because vehicle speeds are under 15 km/h).

PEDESTRIAN BLOCK

A block defined by public walkways demarcated by block line separating adjoining properties from the public access.

PEDESTRIAN REALM

Public or publicly accessible areas dedicated to, or prioritized for, pedestrian activity.

The pedestrian realm includes walkways, safe crossings, shared streets and spaces, plazas, and parks.

QUALITY PUBLIC TRANSPORT

Reliable, frequent, rapid public transport.

FREQUENT TRANSPORT

Transport stop served by headways of 10 minutes or less in both directions from 5 a.m. to 9 p.m. on weekdays.

RAPID TRANSPORT

Bus rapid transit, rail, or ferry.

SUSTAINABLE TRANSPORT MODES

Walking, cycling (including electric bikes and scooters), and public transport.

WALKWAYS

A portion of the pedestrian realm specifically designed to accommodate pedestrians, including caregivers with strollers.

WALKING DISTANCE

The distance walked by a caregiver accompanying a toddler or an infant (e.g., by pushing a stroller) in 15 minutes. Walking distance depends on the continuity of safe walkways free of obstructions.

VISUALLY ACTIVE FRONTAGE

Ground-floor building frontage (wall) abutting a public walkway that is visually penetrable via transparent glazing.

VISUALLY PERMEABLE FRONTAGE

Ground-floor building frontage (wall) abutting public walkway that is physically permeable via public access entrances.

REFERENCES

1,000 Days. 2018. [Nutrition in the first 1,000 days: A foundation for brain development and learning](#).

American Lung Association. [Living near highways and air pollution](#). Accessed November 1, 2020.

Bernard van Leer Foundation. 2020. [Cycling cities for infants, toddlers, and caregivers](#).

Center on the Developing Child. 2007. [The science of early childhood development \(InBrief\)](#). Accessed November 1, 2020.

First Thing First, Early Childhood Matters: [Brain Development](#). Accessed July 14, 2021

Global Designing Cities Initiative. 2020. [Designing streets for kids](#). National Association of City Transportation Officials, New York.

ITDP. 2017. [TOD Standard 3.0](#).

Larusdottir, Aldis Run. 2014. and A. S. Dederichs, [Evacuation Dynamics of Children - Walking Speeds, Flow through Doors in Daycare Centers](#). Technical University of Denmark.

National Institutes of Health. 2020. [What is prenatal care and why is it important?](#) Accessed November 1, 2020.

Newton, William Isaac, and Sara Candiracci. 2019. [Proximity of care](#). ARUP, London.

Pinheiro, Abel Táiti Konno, Akihiko Hokugo, and Tomoaki Nishino. 2014. [Walking speed of children by age under the lead of nursery school teacher on a sidewalk and overpass bridge stairs during an urban evacuation drill](#). *Journal of Architecture and Planning*, 79(697), 583–88.

Urban95. 2019. [An Urban95 starter kit: Ideas for action](#). Bernard Van Leer Foundation, The Hague.

UNICEF. 2013. [Why early childhood development?](#) Accessed November 1, 2020.

UNICEF. Early Childhood Development: [Building your baby's brain](#). Accessed July 13, 2021.



ACKNOWLEDGEMENTS

ITDP gratefully acknowledges that this work has been done with the support, collaboration, and guidance of the Bernard van Leer Foundation (BvLF).

Working with the BvLF team has helped us engage with the specific and critical needs faced by babies and toddlers, as well as their caregivers, and opened up the way we are approaching transportation and urban planning.

We also like to acknowledge the Technical Committee and ITDP staff that contributed to the creation and revisions of the TOD Standard. The TOD Standard framework lays the foundation for ITDP's approach to sustainable urban development. The Technical Committee and ITDP Staff continue to be critical thinkers, ensuring technical excellence with the Standard.

LAYOUT AND GRAPHIC DESIGN: Igloo



Bernard van Leer  FOUNDATION