

Child-friendly traffic spaces

Requirements of child-friendly traffic space design
and recommendations on practical action



The original version of this publication refers to conditions in Switzerland and Liechtenstein. It has been adapted for the international context. National conditions may differ in certain aspects, such as national legislation, the level of urbanization or the responsible stakeholders.

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The design of traffic spaces has a profound impact on how children and young people grow and develop. It plays a decisive role in determining whether, and to what extent, children and young people can stay in public spaces and move freely in them.

UNICEF Switzerland and Liechtenstein works to ensure that children and young people are protected, nurtured and involved also in traffic spaces.

1 Foreword

Increased mobility requirements, population growth, urban development and transport planning have radically changed the public space since the 1960's. At the same time, public spaces with a high qualitative value for the population, such as green areas, public squares and play areas, have sacrificed their accessibility and livability because of noise, emissions and safety risks.

Public space is important for the socialization and development of children and young people. Free and unwatched play, exploring and shaping the residential areas – this also includes the traffic space – develops skills such as the ability to assess risks and personal capabilities. By interacting with their surroundings, children develop self-confidence and self-efficacy.

Being able to go to school by themselves makes children and young people independent and responsible.

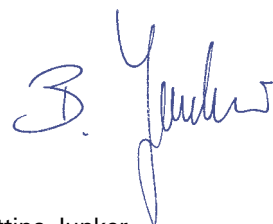
Today, reservations about traffic safety on the part of parents or legal guardians or the children and young people themselves, on top of poor livability in the traffic space, mean that children

and young people are exploring their environment independently less and less and are spending more time indoors (Robert Koch Institute, 2020).

In many places, there is a battle for space going on in traffic space design. More space for motorized transport, more space for parking lots, more space for public transport such as trams and buses, more space for cycle paths, more space for pedestrians. Yet things could be different. If the requirements of society as a whole were to be made the central focus of the planning and design of the traffic space, with input from the population, and demands were not added up separately but considered on an integrated basis, attractive spaces with a high quality of living for everyone could be created. Effective involvement of children and young people is central here, because they themselves know best where they feel comfortable or uncomfortable in traffic spaces and what solutions may serve as remedies. Creating opportunities for participation for children and young people is not just a side issue. Because according to the UN Convention on the Rights of the Child (Children's Rights Convention for short), children and young people have the right to be involved in all matters that concern them.

A great deal is already being done in cities and communities to improve livability in traffic spaces. Examples of this are the creation of traffic-calmed areas and the reduction of the legal maximum speed limit to 30 km/h. However, implementation is not always easy in many places, as witnessed by the resistance when parking lots are withdrawn. In addition, children's and young people's requirements are not adequately considered in many cases. There is a lack of opportunities for children and young people to participate, or the planning processes are not child friendly.

By their actions, policy makers, urban planners, associations, the science community – and, ultimately, each and every one of us – have each and ultimately every one of us have a great responsibility for the real living conditions of children and young people. We would like to encourage you to address the existing challenges and make traffic spaces safe and attractive for children and young people. This publication is intended to help inform you as to how the Children's Rights Convention can also be implemented in regard to traffic spaces.



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In the handbook "Planning and designing child-friendly living spaces" published in 2021, UNICEF Switzerland and Liechtenstein demonstrates with checklists and case studies how child-responsive urban planning can be successfully achieved in practice.



unicef.ch/en/handbook-cfls

2 Background

2.1 The child in traffic spaces

When a child leaves their house or apartment, they almost always find themselves on a street. Traffic has an enormous impact on the development of children and young people.¹ Traffic emissions, noise, and busy, confusing high-traffic areas have negative effects on their well-being. On roads with heavy traffic, children and young people also have to focus constantly on safety aspects so as not to endanger themselves and others. This reality is in stark contrast to residential and recreational spaces with light traffic and many natural and green spaces. Both cities and communities are affected. Because even quite small communities often feature thoroughfares bearing heavy traffic. In addition, it is not always pleasant and safe to use municipal roads and move around on them. The increase in motor traffic in particular is considered to be the greatest threat to children's freedom of movement in urban areas (Verkehrsclub Deutschland, 2023).

The volume of traffic and the traffic regime determine in many places whether children and young people make their own way to school, whether they can go out freely in their leisure time and whether they can be in public spaces at all without supervision.

Canadian researchers have studied the extent to which car-centered societies in Western Europe and North America have led to a decline in the free mobility of children and young people since the middle of the 19th century (Frohlich & Collins, 2023). The opportunity for children and young people to move freely in public spaces is considered an important prerequisite for children and young people going out on foot or by bicycle, or playing outdoors. In many locations, the urban planning model of the car-friendly city started to feature in the 1960's and still shapes our cities and communities to this day (Schwende, 2022). Current research on childhood shows that the decline in children's and

young people's free mobility and the resulting lack of contact with their environment has negative effects on their physical, mental and social health (UNICEF Office of Research, 2022).

On the way to preschool or school, children's and parents' lack of a sense of security is becoming a self-reinforcing problem. This is because fear that the child is at risk in the traffic space is one of the most frequent motives for parents and guardians to take their children to preschool or school by car (Verkehrsclub der Schweiz, 2017). However, for those children who come by themselves, the parent taxis² present an additional risk. In many places, communities and schools are trying to reduce the number of parent taxis, because the way to school is an important learning experience for children. In addition, making their own way to school promotes physical and mental health because of the physical mobility, social contact with their peers and the development of their independence.

The degree to which children's and young people's health and development are affected by traffic is also related to social inequality.

Families with low socio-economic status are more likely to live in areas with heavy traffic with higher maximum speed limits (Uhr et al., 2017). The children and young people who live in them therefore have to cross roads that are more dangerous. They are less likely to have play areas and meeting places available which they can reach safely on their own. Children with lower socio-economic status are also less often accompanied by adults. They therefore have an increased accident risk or have no or only very limited opportunities to move around and play freely outdoors. This is also reflected in traffic-related noise pollution. According to Eurostat, lower-income households with children³ live more frequently in a traffic situation exposed to noise than households with children with an average income (Eurostat, 2024). Noise also has consequences for the mental and physical health and the learning achievements of children and young people (Tangermann & Rösli, 2018). Consequently, children and young people with lower socio-economic status are more frequently exposed to a traffic-related infringement of their rights.

In this publication, the term “**traffic space**” encompasses all public traffic routes on which mobility takes place or which are reserved for traffic, including pedestrian areas (footpaths, recreational areas, stopping points). These include streets, parking lots and areas for public transport. Traffic-calmed areas,⁴ pedestrian areas and 30 km/h speed limit zones are also addressed. The rail network and private paths and streets in residential areas are not covered.

A traffic space can be described as **child friendly** if the children’s rights guaranteed in the Convention on the Rights of the Child are complied with (cf Chapter 2.3 Children’s rights and traffic spaces – a classification).

The term “**motorized transport**” encompasses all vehicles for personal and business use. These include automobiles, motorbikes, motor scooters and trucks.

The term “**active transport**” relates to all types of transport which are based on muscle power. These include walking or cycling (with or without assisted pedaling), but also the use of walking bikes, scooters and skateboards.

2.2 From baby to young adult – age-specific requirements

Children’s and young people’s requirements from the traffic space vary widely depending on their age and stage of development. While babies primarily need peace to sleep and protection from sudden noise for healthy development (Bottino et al., 2012), from the time they start to walk special requirements relating to safety and quality arise. Most children cannot correctly judge distance – that of an approaching car, for example – until the age of nine (Uhr, 2015). Speeds can only be assessed correctly by children around 10 to 12 years old, although even 13- to 14-year-olds can also still make mistakes in decisions on when to cross. This results in special requirements on traffic safety. With increasing age, the distances to destinations and

therefore the requirement for independent mobility increase. Preschool and primary school children still prefer to take roundabout routes so as to go with other children. The route taken varies enormously and depends on friends, the season or moods (Pedestrian Mobility Switzerland, 2009). “Secret paths” or routes with obstacles that can only be overcome by climbing or crawling are particularly popular. In many cases, these are not the designated routes to preschool or school. They can cover the route either on foot, by scooter or by bike. In contrast, older children and young people often want efficient mobility. They cover longer routes independently by bicycle, e-bike, moped, motorbike or public transport. Compared to older road users, young people and



young adults have more accidents (Swiss Council for Accident Prevention, 2023). Most of the serious accidents occur with motorbikes. The reasons include inattention, excessive speed, lack of experience or alcohol consumption.

Attractive and safe footpaths and cycle paths and well-developed public transport – at weekends, also at night – can accommodate young people’s requirements for both efficient mobility and improved traffic safety.

2.3 Children’s rights and traffic spaces – a classification

The Convention on the Rights of the Child (United Nations, 1989) is a treaty consisting of 54 articles. It formulates human rights in consideration of the special needs of children from 0 to 18 years of age. The Children’s Rights Convention has been ratified by 196 states and is therefore universally acknowledged. With its ratification, children’s rights become internationally binding and the child becomes a legal subject rather than a legal object. This means that children are independent legal entities with rights that can be claimed. Consequently, children’s rights can also be claimed through advocacy

(for example by children’s and youth work services) in participatory processes or in the design of traffic spaces. States which have ratified the Children’s Rights Convention are obliged to implement the convention at the national level and to apply it to all children. It is about not only protecting children, but also developing them and involving them actively in decision-making processes. Children’s rights must therefore also be applied in matters of planning and designing the traffic space.

Basic principles of the Convention on the Rights of the Child

Art. 2 Right to non-discrimination



Article 2 of the Children’s Rights Convention grants all rights to all children. Children must be able to move around freely and safely in the traffic space irrespective of their place of residence,

socio-economic status and physical condition, taking age-related restrictions into account. The aspect of accessibility is central here. Roads with heavy traffic may mean an insuperable obstacle for a child. The removal of obstructions to visibility, such as parking lots or awkwardly planted street greening, as well as low speed limits can encourage children to move around freely. Special attention must be directed here to children with a lower socio-economic status: a disproportionately high number of them live on streets or crossings bearing heavy traffic, which restricts their access to outdoor areas (Uhr et al., 2017).

Art. 3 Best interests of the child

Whenever decisions are made that may affect children, the best interests of the child take precedence. Children’s needs must therefore be incorporated into planning projects in the traffic space. For example, when (re)designing a crossing, busy road or neighborhood street, children’s interests and requirements must also be considered, because they, too, spend time in the traffic space and use it on the way to school, to visit friends or to go to other destinations.



Art. 6 Right to life and development



Children have a right to life and survival, as well as the right to the best possible support in their physical, mental and social development. With regard to the traffic space, central factors are protection from accidents, emissions and noise, as well as the guarantee of growing up healthy. Reduced opportunities to play, meet and take exercise or lack of access to green spaces may represent restrictions here.

For transport planning, this means that traffic spaces must be safe and allow for and encourage play, meetings and physical mobility. This can only succeed if generously proportioned and attractive footpaths and cycle paths are available or traffic-calmed areas are established, among other things. To protect children from accidents, adequate measures relating to traffic volume, speed and obstructions to visibility as well as other infrastructural measures have to be implemented. In addition, protection from excessive heat is gaining in importance in the course of climate change. More green areas, traffic routes that are shaded (by trees, for example) and fewer sealed surfaces and parking lots can make a contribution (Swiss Federal Office for the Environment, 2018).

Art. 12 Right to be heard and to participate

Children have the right to have their needs heard and considered in all matters that concern them. This also applies to the planning and design of the traffic space. For children's issues to be included in the traffic space, it is of central importance that they are informed in a child-friendly way and involved in all planning steps right from the beginning. This not only applies to the planning but also to the design of the traffic space, for example when the matter concerned is the design of a traffic-calmed area. In addition to

direct participation by children and young people, there must always be people to represent their interests who can integrate the children's needs professionally into the project.



2.4 UN goals for sustainable development

The 17 goals for sustainable development are the core of the 2030 Agenda (United Nations, General Assembly, 2015). They are to be achieved globally and by all UN member states by 2030. All UN member states are therefore called on to implement the goals at the national level. Sustainability is central to ensuring virtually all children's rights, now and in the future. Goals 3 and 11 in particular are of special importance to the traffic space:

Goal 11:
Make cities and human settlements inclusive, safe, resilient and sustainable

This includes access for children to safe, affordable and sustainable transport systems. Road safety is to be improved, notably by expanding public transport. Special attention is also to be paid to the needs of children.

Goal 3:
Ensure healthy lives and promote well-being for all at all ages

This includes both the protection of children and young people from accidents and equality of opportunities in health and development.

2.5 Requirements for child-friendly traffic space design

The implementation of children's rights and the goals for sustainable development entail a number of qualitative requirements on the traffic space.

A child-friendly traffic space ...

... meets high traffic safety standards.

To protect children from accidents, adequate measures should be implemented with regard to the clear arrangement of the traffic space, avoidance of obstacles to visibility (for example parked automobiles or awkwardly planted street greening) and the actual speed at which vehicles are driven. Factors for particular consideration here are children's viewing height and limited perception of distance and speed.



... has extensive street greening.

Trees, bushes, hedges or meadows at the edge of the road can significantly increase the quality of recreation and usability if they provide shade and make the space varied and lively. Cultivated areas that separate the road from the sidewalk can act as buffers. In addition, they can help to improve the micro-climate and reduce the development of heat islands. When putting street greening in place, care must be taken not to create obstacles to visibility, particularly at pedestrian crossings.

... promotes the health of children and young people.

This is achieved by making structural physical mobility the central issue in the planning and usage regulations of the traffic space. The central focus is that active transport (walking bikes, scooters, bicycles) should be assigned more space compared to motorized transport. Measures to reduce noise and emissions may also help in making improvements. These include low speed limits, time-limited driving bans, partial driving bans⁵ or reductions in lanes for motorized transport. Low-noise road surfaces which reduce the noise of vehicles can also make a further contribution locally to noise reduction (Swiss Federal Office for the Environment, 2023).



... invites encounters.

The creation of traffic-calmed areas accommodates children's and young people's requirement for interaction and exchange with their peers. Inter-generational encounters can also be encouraged by this means. Where it is impossible to create traffic-calmed areas, seating arrangements such as low walls or stones on the sidewalk or in recreational areas can encourage encounters.



... incorporates changeable elements.

This can be achieved by, for example, using natural materials at the edge of the street, on the sidewalk or in recreational areas. Generously dimensioned sidewalks, roads with light traffic or traffic-calmed roads (traffic-calmed areas in particular) allow for making chalk drawings or for planted areas that are created and maintained by children and young people, among other things. Temporary road closures allow for seating and play elements to be set up.



... is sustainably planned and targeted.

Children have the right to a healthy and safe environment, now and in the future. The transition to climate-friendly, space-saving and socially acceptable mobility is therefore very much in their interest.



2.6 Challenges for the planning and design of the traffic space

The challenges facing traffic planning are immense when it comes to making the traffic space child friendly. In many places, the reality is still very far from the stated requirements.

Four major challenges have to be overcome to enable the Children's Rights Convention and the goals for sustainable development to be implemented in the planning and design of the traffic space.

Competition for space

In many places, various modes of transport are battling for space. Motorized transport (including the parking lots required), public transport and active transport are competing against each other for space. Population growth and the associated increase in traffic are threatening to make the situation more acute if no countermeasures are taken to significantly encourage space-saving forms of mobility such as walking, cycling or using public transport (Swiss Federal Office for Spatial Development, 2021).

Politicians and society need to change their thinking so that children's concerns also find their place in the traffic space – away from the automobile-centered city and towards sustainably designed public spaces with a high quality for the population.

Objections from residents, tradespeople and interest groups

In many places, residents, tradespeople and interest groups who favor motorized transport fight against measures that would improve child-friendliness such as lower speed limits, reductions in lanes and parking lots, or traffic calming. The challenges lie in showing how far the local quality of life of the whole population can benefit from the measures, and also in offering alternative mobility solutions by means of attractive infrastructure for pedestrian and cycle traffic and public transport. Measures that are declared to improve traffic safety, in particular to improve safety on the way to schools, are often widely accepted.

Divided responsibilities

In many countries, different administrative bodies have divided responsibilities relating to road infrastructure. In many cases, national laws and requirements apply, so that infrastructural measures or changes in the regulations are not within the remit of the communities and cities. These divided

In these cases, cities and communities are faced with the task of assessing and weighing up interests, because the number and type of objections cannot be equated with a majority vote.

A policy centering on the interests of children and young people commits to a building culture that gives higher priority to the creation and maintenance of livable outdoor areas than to the needs of motorized traffic.

responsibilities often make it difficult to improve the child-friendliness of the traffic space, for example in the implementation of connected, child-friendly networks of routes to school.

Limited opportunities for participation by children and young people

Children and young people have fewer opportunities than adults to push for the implementation of their rights. The direction that transport policy will take is largely decided in elections, in which they cannot participate.

In matters of planning and implementing concrete projects, children and young people are very rarely fully involved (UNICEF Switzerland and Liechtenstein, 2018).

In addition, forms of participation that are in accordance with the age and abilities of children and young people are rarely chosen. There is often a lack of knowledge and experience of how the participation of children and young people can be used effectively. For this reason, children's concerns about the traffic space are rarely heard.

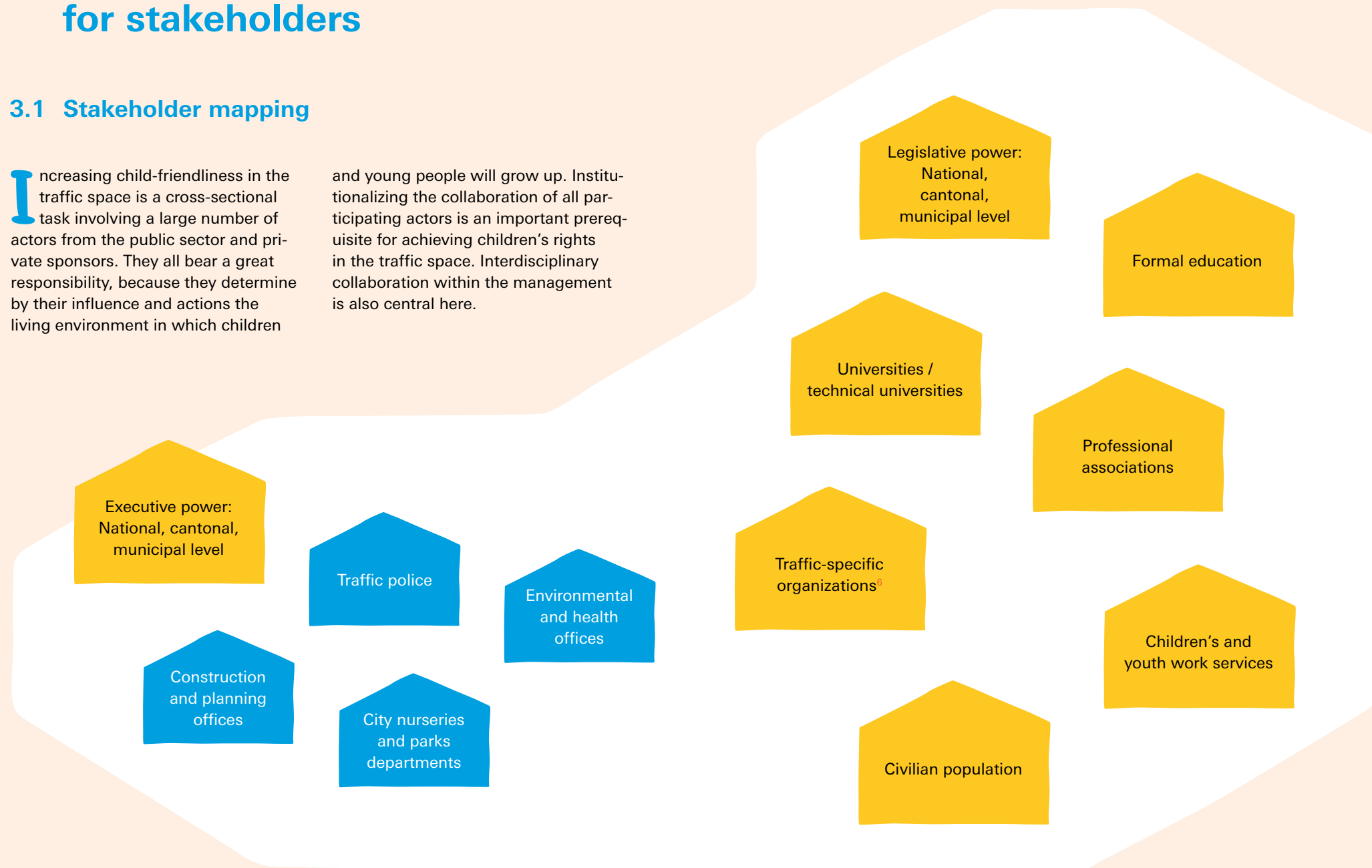
Furthermore, they rarely have people to represent their interests. Although a trend towards participative processes has been observed in the area of infrastructure and in spatial and mobility planning for some years now, children and young people are not regarded as a separate user group with age-specific needs and involved accordingly.

3 Recommendations for stakeholders

3.1 Stakeholder mapping

Increasing child-friendliness in the traffic space is a cross-sectional task involving a large number of actors from the public sector and private sponsors. They all bear a great responsibility, because they determine by their influence and actions the living environment in which children

and young people will grow up. Institutionalizing the collaboration of all participating actors is an important prerequisite for achieving children's rights in the traffic space. Interdisciplinary collaboration within the management is also central here.



3.2 Recommendations per stakeholder

Executive power: National, cantonal, municipal level

Construction and planning offices

Traffic planners and other specialists from spatial planning and design have an enormous influence on the design of traffic spaces. They can promote the implementation of the requirements of child-friendly traffic space design. Because with their work, they can actively exert an influence on the issues of reserving adequate room for pedestrians and cyclists and ensuring child-friendly design of the traffic space. They can also influence whether and where crossing aids are installed and whether and where play elements, seating or street greening are provided for.

The central issue is for children and young people to be considered in the planning tools as a relevant section of the population.

The needs of children and young people should also be taken into account when formulating the programme for tendering processes. The integration of children's and young people's involvement into the planning process will be used to clarify their needs.

Traffic police

In the enforcement of the legal system, special attention is paid to traffic safety and the welfare of children and young people. This includes, for example, regular reviews of compliance with speed limits, compliance with right of way at pedestrian crossings or in traffic-calmed areas, and sanctions on excessive, avoidable traffic noise at places where children and young people live or spend time.

Another important contribution lies in teaching children and young people to become confident and independent road users. This is often done in education and in collaboration with management and teaching staff from preschools and schools. Making the way to school safe and actions to reduce parent taxis are also within the remit of the traffic police – in collaboration with the schools. It is worthwhile here to conduct surveys at regular intervals of children, young people, parents and guardians about safety deficits on the way to school.

Environmental and health authorities

Environment and health authorities can contribute to the enforcement of air and noise control limits with increased measures and controls in places where children and young people spend time. They can also have a positive influence on children's and young people's health and welfare by performing a critical review of the appropriateness of the noise emission and air quality limits in respect of this group.

Some cities and communities also have concepts or measures in place to encourage physical mobility for children and young people in their daily lives.

Legislative power: National, cantonal, municipal level

Action guidelines and legislation are crucial to achieving child-friendly traffic spaces. Models, strategies, laws and building regulations can state that children's welfare must be considered a priority in all stages of traffic planning and designs for public spaces. By this means, consideration of children's and young people's interests and the

City nurseries and parks departments

Well-being and the quality of recreation and usability for children and young people in the traffic space can be significantly increased by extensive, child-friendly street greening. The central factor is that no additional obstacles to visibility (high hedges, trees, etc. in front of exits or crossings) should be created that could impair traffic safety for children and young people. Planning responsibilities lie directly with the city nurseries and parks departments in some communities, in others with higher-level authorities in the civil engineering department.

age-specific abilities of children and young people can become a planning principle in traffic space design.

When loans are approved, aspects should be included relating to traffic safety and the welfare of children and young people as well as opportunities to involve them in the planning and implementation of projects.

Formal education

Teachers and school administrators have major opportunities for influence when it comes to the safety and quality of the way to school. They can work to reduce the parent taxis by providing information to parents and guardians and establishing alternative offerings such as the Pedibus.⁷ When children are taken to preschool or school by car, it is particularly important to seek to ensure that no cars stop on the sidewalk, because they could endanger children on their way to school.

With thorough traffic education which teaches children and young people to become confident and independent road users, preschools and schools make an important contribution to children and young people being able to move around freely and safely in the traffic space.

Because the accident figures are high particularly for older children and young people who use a bicycle or, from the age of 14, a moped, it is recommended to increase traffic education at the Secondary 1 level (Uhr et al., 2017).

Universities / technical universities

Universities and technical universities can work towards more child-friendliness in the traffic space by including modules on aspects of the child-friendly traffic space, the involvement of children and young people in planning processes, the needs and rights of children and young people in traffic, and the associated legal and planning frameworks in the mandatory curricula. Further training offerings for specialists can

also make an additional contribution. In addition, academic studies form the basis for political and social change. Examples of this would be further studies on the socio-spatial effects of traffic on children and young people as they grow up or studies on air and noise pollution and their effects on the mental, physical and social health of children and young people.

Professional associations

Professional associations of traffic engineers, road and traffic professionals and other transport experts can promote child-friendliness in the traffic space if they make the relevant content central to their further training, publications and events. With guidelines aimed at the

municipal level, the recommendations can be spread to the community, the children's and young people's living environment. This way, they can highlight the importance of child-friendly traffic space design and pass on academic basic principles to practitioners.

Children's and youth work services

Children's and youth work services advocate for the interests of young people in political bodies, in interdisciplinary project groups and towards the public. They act here as a link between the children and young people and the decision-makers and actors. In doing so, they also perform important translation work. If they proactively introduce concerns and age-specific needs into traffic planning projects, they can contribute to

more child-friendliness in the traffic space. In addition, they can encourage the direct involvement of children and young people in projects in the traffic space by providing specialist knowledge and implementation support for participation with children and young people. They can also initiate and support participative processes with children and young people in traffic planning.

Traffic-specific organizations

Traffic-specific organizations raise awareness about their topics with the public and the political sphere. As a result, they have a direct influence on the quality and safety of pedestrian and cycle traffic as well as public transport. They can also influence child-friendliness in the traffic space by focusing on children's concerns in their

political lobbying and in public relations work. Campaigns on safety on the way to school can contribute to raising awareness among vehicle drivers and preventing parent taxis. Similar campaigns about child-friendly driving would also be possible (see box on page 26).

Civilian population

With the individual mobility decisions of every individual, but also also their election votes, the civilian population influences how much room is reserved in the public space for motorized transport, cyclists or pedestrians, what maximum speed limits apply, whether parking lots or green areas will be established or who has priority in a street. Those who own a vehicle can implement the rec-

ommendations on a child-friendly style of driving or, in the interests of lower environmental pollution, switch to other mobility solutions if possible. With an active commitment and participation in traffic projects, as well as demanding the implementation of children's rights, the civilian population can also work towards more child-friendliness in the traffic space.

Aspects of a child-friendly way of driving:

- Always be very alert, particularly when close to pedestrian crossings, when maneuvering and when reversing (frequent causes of accidents [Uhr et al., 2017]).
- Drive by sight in locations where children and young people live or are out on foot.
- Avoid unnecessary noise.
- Make eye contact with children and young people crossing the road.
- Take care when parking not to cause obstacles to visibility.

3.3 Areas for action

With collective responsibility, the actors referred to can master the challenges cited in Chapter

2.6 if they become active in the following five areas for action.

Area for action I: Increase well-being and livability

A sense of personal safety and the potential for experiences are decisive factors in whether children and young people enjoy being out and about in the traffic space. Confusing crossings, high speeds, high traffic volume, noise and aggressive driving by vehicle drivers can lead children and young people to be afraid to use the traffic space – even when the criteria of traffic safety are met by objective standards.

Well-being and livability can be improved, for example, by the use of a wide range of seating or activity elements and extensive greening at the side of the road or by generously

dimensioned pavements. By this means, opportunities arise for casual meetings with peers and for play. A special added value to increase well-being and livability for children and young people in the traffic space can arise from the creation of traffic-calmed areas, where pedestrians, scooters and walking bikes often have priority over motorized traffic. A reduced speed limit of a maximum of 20 km/h or walking pace can free up additional space for physical mobility, encounters and play. As a rule, parking is only permitted in marked bays, which makes the arrangement of the traffic space clearer.

Area for action II: Encourage independence

Children and young people can then move freely in the traffic space when the route is classed as safe by objective and subjective criteria. It is often the parents or guardians who, for fear of accidents, do not allow their children to

go out on their own, or only to a limited extent. However, the children's and young people's subjective sense of safety in the traffic space and associated well-being also influence how frequently they go out independently. To encour-



age children and young people to go out and about independently, it is therefore of central importance for measures relating to the traffic infrastructure (safe crossings, pedestrian islands, removal of obstacles to visibility, separate footpaths and cycle paths) and to the use of the space (low speed, low traffic volume) are implemented wherever a large number of children and young people are out and about. Vertical and horizontal offsets⁸ in key positions such as pre-schools, schools and other play and recreation areas can help to reduce speed locally. These measures are supplemented with age- and development-specific road safety training.

Speed is one of the decisive factors in traffic safety (Swiss Council for Accident Prevention, 2020). The higher the speed, the higher the risk of accidents and injury; for not only the frequency but also the seriousness of accidents rises with increasing speed. The subjective sense of safety as well as well-being can be additionally improved by noise-reduction measures or grass verges which separate the road from the sidewalk.

In any event, it is of central importance for children and young people themselves to be heard and for them to be able to state where they feel unsafe or uncomfortable in traffic spaces and what improvements they would like to see.

Communities and schools can make a contribution by regularly providing opportunities to collect the concerns of children, young people and parents and take them seriously. Children's and young people's votes should be taken into account in the event of infrastructural measures and changes to the use of the traffic space.

Communities can also take actions to make the route to school safer and more pleasant for all schoolchildren. For example, communities can reduce the number of parent taxis at schools and preschools by involving children and parents in the planning of routes to school. Financial support for concepts like the Pedibus can also make a contribution. Stopping restrictions in front of schools and preschools in locations where the traffic is confusing can be effective. The parents or guardians have authority with regard to the way children go to school. They can decide whether a child or young person walks, cycles, uses public transport or is driven to school. In addition to the wishes of the children and young people, safety aspects often determine whether or not parents or guardians allow children to set off independently.

Area for action III: Promotion of health

In many places, traffic has highly negative effects on the health of children and young people. During the summer months, ozone pollution levels throughout Switzerland are above the permitted limits, and in some areas they are even considerably higher (Swiss Federal Office for the Environment, & Swiss Federal Laboratories for Materials Science and Technology, 2023). The nitrogen dioxide limits in urban areas close to arterial roads are exceeded. A similar picture is evident in many other countries.

Children and young people quite often develop asthma when they live in places with a high traffic volume (Meltzer Kutlar et al., 2019). This is compounded by the fact that children who suffer from asthma react more sensitively than adults. They are taken to hospital with emergency respiratory problems three times more frequently. Likewise, an increase in mortalities, cancer incidence and reduced lung growth can be observed in children subject to long-term high exposure to nitrogen dioxide pollution. The large-scale Swiss study SAPALDIA has shown that the health of children and young people improves rapidly when the atmospheric pollutant load decreases (Swiss Federal Department of the Environment, Transport, Energy and Communications, & Swiss Federal Office for the Environment, 2020).

The noise caused by traffic also has a negative effect on children's and young people's health. Traffic noise causes a stress reaction in children and young people (Tangermann & Rösli, 2018). This has consequences for cardiovascular health and for cognitive skills such as reading ability, memory capacity and attentiveness. In young people in particular, street noise in the living environment leads to impairments in memory and concentration because of the reduced quality of sleep, and this also has an effect on their school performance (Tangermann et al., 2023).

Children and young people who go out on foot or by bicycle enjoy healthier lives in the long term (Frohlich & Collins, 2023).

Consequently, many indirect effects are added to the direct impact of traffic on health due to pollutants and noise. For example, a high traffic volume, lack of traffic safety, absence of green areas and poor livability in the traffic space lead in many areas to children and young people spending less time outdoors and choosing active forms of mobility less frequently (Frohlich & Collins, 2023). The consequences are lack of exercise and associated negative effects on motor and cognitive skills, social development and well-being (UNICEF Office of Research, 2022).

To implement the rights of children to non-discrimination, education, leisure and health, it is therefore of central importance for children and young people to be protected from the environmental effects of traffic at their place of residence, in schools and in the traffic spaces in which they spend time. The most effective measures for this at the cantonal and community level are a reduction in the speed limits to 30 km/h or 20 km/h and the promotion of active

and public transport. The use of low-noise road surfaces can make a further contribution to reducing noise (Swiss Federal Office for the Environment, 2023). These measures, combined with creating and upgrading open spaces, for example by reducing the number of parking spaces and by greening streets, can contribute to children and young people using public spaces and moving freely and socializing in them more frequently.

Area for action IV: Participation in the planning, design and use of the traffic space

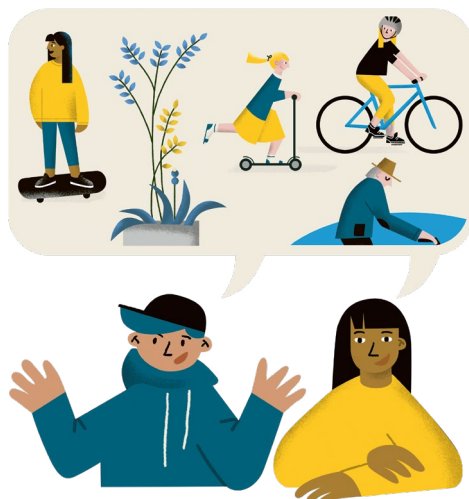
Children are experts in their own living space. They see the world with different eyes and can reveal viewpoints that remain hidden to us adults. This also applies to the traffic space. Children and young people have the right to be involved in all matters that concern them. Since the traffic space shapes the immediate reality of children's and young people's lives, it is essential for the implementation of the Convention on the Rights of the Child to involve children and young people in the planning, design and use of the traffic

space, directly or through representation by advocates. This applies not only to traffic-calmed areas, but also to the planning of new streets or crossings bearing heavy traffic.

In the context of planning and designing the traffic space, the involvement of children and young people is particularly important

- to identify places in the traffic space where children and young people feel threatened and where they are indeed threatened.
- to identify places in the traffic space where children and young people feel uncomfortable or where they do not like to be out and about.
- to plan actions to ameliorate traffic situations which are dangerous or unsuitable for children and young people.

- when concrete planning and design of road spaces is under way.
- when areas with a 30 km/h speed limit or traffic-calmed areas are being defined.
- when local planning is being revised or village centers renovated.
- in the planning of footpaths and cycle paths.
- in the planning of routes to school.
- in the clarification of requirements for public transport.



UNICEF Switzerland and Liechtenstein has put together guidance and general recommendations on the planning and implementation of meaningful participation by children and young people in the brochure "Participation of children and young people in theory and practice – For communities and cities."



For communities and cities (available in German, French and Italian)

For children and young people (available in German, French and Italian)



unicef.ch/de/publikationen

Area for action V: Climate and environment

The climate crisis is a child rights crisis because climate change threatens virtually all children's rights in every corner of the world now and in the future. As a result, important achievements of the past decades will be wiped out. For example, climate change has negative consequences for the supply of food, drinking water, health services and much more. Last but not least, human health suffers under extreme heat. In Infants and small children in particular, the body's own self-cooling mechanisms are not yet fully developed, which means that they are particularly vulnerable to the rising temperatures (UNICEF, 2021).

To enable the implementation of children's rights now and in the future, it is imperative to address climate change, combat it by every possible means and contain the effects.

Traffic is one of the biggest drivers of climate change all over the world. It accounts for a share of more than 20 percent of the total global greenhouse gas emissions. In addition, traffic emissions are not falling, but are rising further (International Energy Agency, 2022).

A sustainable solution could be to reduce the level of motorized traffic by prioritizing public transport or other forms of active transport such as cycling or walking. Traffic space design has an enormous influence on this because it can limit the capacities of motorized transport in favor of active or public transport by a reduction of capacity (e.g. reduction of lanes, time-limited driving bans, partial driving bans, conversions to traffic-calmed streets). Parking space management also has an important incentive effect (Swiss Federal Office for Spatial Development, 2021). A shorter supply of parking spaces and simultaneous promotion of public and active transport can have a significant incentive effect. This approach would make a double contribution to the promotion of child-friendly living spaces at a stroke: with 30 percent of the total urban area, traffic in Switzerland requires only slightly less space than housing (35 percent of the urban area) (Swiss Federal Statistical Office, 2021). Road surface accounts for 88 percent of this. Added to this is the area for parking of 69 square kilometers (plus underground and multistorey car parks) (Swiss Federal Statistical Office, 2023). This corresponds to 5.5 million parking spaces. The picture is likely to be similar in other countries.

A change of use therefore harbors enormous potential for the creation of safe foot-paths and cycle paths, but also for child-friendly public spaces such as green areas, play areas and meeting places.

Less concreted space would also reduce the occurrence of urban heat islands, which are particularly problematic for the health of small children (Röösli & Ragettli, 2020).

Traffic electrification can make an additional contribution to achieving climate neutrality for traffic. However, the switch to electric vehicles does entail challenges from the point of view of children's rights: rare metals such as cobalt are sometimes mined under conditions in which child labor cannot be ruled out, or in which such labor has actually been proven (German Federal Enterprise for International Cooperation, 2019). It is therefore important to ensure that the transition to more sustainable mobility is made fairly and the aspects concerning human beings and children are taken actively into account.

4 Case studies

UNICEF Switzerland and Liechtenstein has an online collection containing examples of the promotion of child-friendly living spaces. It also contains a wealth of examples relating to the child-friendly traffic space.

Allschwil	School route safety
Basel	Temporary 30 zones
Canton Basel-Stadt	Optimizing traffic safety at schools and preschools
Geneva	Coaching on the school route for greater safety and independence in road traffic
Geneva	Participatory development of school mobility plans (SMPs)
Grenchen	Collaboration on traffic safety
Schaan	Walking or cycling to school
Wauwil	Speed reduction on the cantonal road



Full collation of case studies

unicef.ch/en/child-friendly-living-spaces/case-studies

Endnotes

- 1 Young people are defined as children between the ages of 12 and 18.
- 2 Parents or guardians taking children to school and collecting them by car.
- 3 Households with less than 60 percent of the median equivalized income at their disposal.
- 4 Traffic calmed areas may be realized with codes of behavior. The codes of behavior may contain the following measures among others: pedestrians, scooters, walking bikes, etc. have priority over motorized traffic. The maximum speed limit is reduced to 20 km/h or walking pace. Parking is only permitted in marked bays.
- 5 Partial driving bans can prohibit or restrict access for certain road users (trucks, for example) to protect residents.
- 6 Organizations that advocate attractive footpaths and cycle paths and which promote active mobility, expansion of public transport or traffic safety.
- 7 “Pedibus” is the name given to a concept in which a group of children walk to and from preschool or school together. The “bus drivers” are adults who accompany the children on foot.
- 8 Vertical offsets are separated elevations in the road, with the steepness of the ramps being mainly responsible for the speed-reducing effect. Horizontal offsets are lateral restrictions in the road surface which are often implemented in the form of greening or parking spaces.

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