



PATH
Partnership for
Active Travel and Health



Measuring Active Travel Success

Implementation Guide



PathForWalkingCycling.com

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INTRODUCTION

This is a first attempt at a comprehensive system connecting visions to outcomes and performance. Feedback is encouraged from academics, practitioners, communities, politicians and investors to improve it further while maintaining an affordable, universally applicable and insightful system. **Our shared goal remains to ensure the growing momentum for walking and cycling policy is funded, delivered with measurable benefits felt by: people locally, nationally and regionally around the world.**



INTRODUCTION (Cont'd)

The policy momentum is growing in every region of the world, as national governments recognise walking and cycling as a solution to mitigate climate change, support public transport, reduce pollution, save lives, benefit public health and create vibrant, inclusive and equitable societies.

However, there is also some concern that the translation from ambition to impact is being held back by the lack of a viable mechanism for measuring the success of funded action.

In 2026, a review of Nationally Determined Contributions (the national pledges where each country outlines their commitment and action plans to collectively limit global warming, reduce greenhouse gas emissions and adapt to the impacts of climate change) found more than a third of countries are now committed to walking and cycling actions - a 12% increase since the baseline assessment three years earlier.¹ However, the same review identified an almost universal lack of credible evaluation frameworks for active travel, risking the full impact of the active travel ambition from being realised.

A similar evaluation gap was identified in PATH's study of national transport policies in 2023. Although 41% of countries were found to have a walking policy and 17% a cycling policy, only 28% for walking and 14% for cycling had any sort of evaluation framework and hardly any measured impacts against their objectives².

- 1 PATH, Walking + Cycling in the New Generation of NDCs, 2026. https://pathforwalkingcycling.com/wp-content/uploads/Walk21-0925-Walking_Cycling-New_Gen_NDCs_v6.pdf
- 2 PATH, Regional fact sheets for Walking and Cycling in all 197 UNFCCC countries, 2024. <https://pathforwalkingcycling.com/wp-content/uploads/PATH-UNFCCC-policies-report-FINAL.pdf>



INTRODUCTION (Cont'd)



Those countries that were found to be measuring the success of their active travel policy implementation programmes - mostly in the global north - seemed more likely to have secured long-term funding and had stronger political commitment. However, the measurement systems that they used were often complex, costly and context specific, which makes them difficult to scale up and replicate. Ironically, it's in the places where people are walking and cycling most, where there were some of the weakest policies, least funding and a dearth of evaluation frameworks.

PATH is responding to the need for a measurement system with this guide, proposing an international approach to measuring active travel success. The aim is to help communities, governments and investors translate more of the national active travel ambitions into funded, delivered and valued actions that result into measurable positive impacts.

Measures have been borrowed from existing agreed systems wherever possible; recommendations made to improve their usefulness; and a package created that is as simple, affordable, scalable and hopefully universally helpful so that:

- **Communities** are more engaged and enabled to walk and cycle
- **Governments** are more confident and effective at creating more walkable and cyclable places
- **Investors** are more willing to embed walking and cycling into their funding processes and priorities.



LIMITATIONS

There are many existing transport appraisal methodologies, health impact tools and emission reduction measurement systems available for adoption.

e.g. the WHO Health Economic Assessment Tool³; the World Bank Road Safety and Performance Tool⁴, ITDP's Impacts of New Footpaths in Chennai report⁵, Queensland Government's Active Travel Economic Appraisal Tool⁶, the UK's Propensity to Cycle Tool⁷, and Sweden's Travel and Climate Calculator⁸.

There are also several very helpful academic studies exploring cost benefit analysis formulas, evaluation frameworks and effective tools and models for measuring active travel - e.g. VREF's 2026 Review of Pedestrian Models⁹, Carroll et al's Monitoring the potential benefits of increased active travel¹⁰, Nazel et al's Quantitative review of comparing air pollution exposures in active vs. passive travel modes¹¹, Giles Corti et al's Healthy and Sustainable Cities¹², ITDP's Case for Cycling Improvement Investment¹³ and Chapman et al's Cost Benefit Analysis of an Active Travel Intervention with Health and Carbon Emission Reduction Benefits¹⁴.

3 <https://www.who.int/tools/heat-for-walking-and-cycling>

4 <https://blogs.worldbank.org/en/transport/world-bank-launches-road-safety-performance-and-appraisal-tool>

5 <https://itdp.org/publication/steps-to-sustainability-the-impacts-of-new-footpaths-in-chennai/>

6 <https://era-tpb-at-cba-tool-interface-t64vcd.streamlit.app/>

7 <https://www.pct.bike/>

8 <https://travelandclimate.org/>

9 <https://vref.se/publications/advancing-pedestrian-models-a-comparative-review-and-vision-for-the-future/>

10 <https://www.sciencedirect.com/science/article/abs/pii/S0967070X18303871>

11 <https://www.sciencedirect.com/science/article/abs/pii/S0160412016304585>

12 [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(22\)00070-5/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00070-5/fulltext)

13 <https://itdp.org/publication/the-case-for-cycling-infrastructure-investments/><https://www.mdpi.com/1660-4601/15/5/962>

14 <https://www.mdpi.com/1660-4601/15/5/962>





LIMITATIONS (Cont'd)



This guide does not attempt to evaluate the existing methodologies, compete with or in any way replace them. Rather, they are promoted as useful references and complementary resources, well worth exploring, along with many other examples.

However, many of the current approaches are quite complex, tend to focus on measuring just one project or one or two outcomes (better health and well-being, reduced emissions from transport, or a more sustainable transport mode share for example) and few connect measurements to financial decisions. An accessible international approach to measuring active travel success seems to still be missing. No wonder then that so few countries have yet to develop or adopt a practical system that can be scaled.

This guide attempts to connect the needs of communities with the responsible national government authorities and investment decision makers. As such it promotes a very simple, affordable and adaptable approach, anchored to agreed global approaches, that potentially can be scaled and applied anywhere.

As a general rule, the more resources allocated, the more robust the data and the deeper the insights for better decision making (e.g., if you have more money measure more things!). By borrowing established approaches, and adapting them, where resources permit and its agreed would be helpful to steer further investment and action locally, it is possible to understand who is walking and cycling already and the extent that the current level of service is or isn't supporting and encouraging people to be active.

Managing and maintaining national data systems that can be globally integrated have challenges and limitations. For instance, less than half of governments collect adequate road safety data. Data collected on physical activity related to active travel at national scale is often outdated, in some cases it is more than ten years old.



LIMITATIONS (Cont'd)

Resources for measuring the success of any policy are often scarce. Unfortunately, analysis of the global data suggests that this is especially true where the minutes walking and cycling are some of the highest, and the safety, security, accessibility and comfort levels are among the lowest. Too often there isn't any data yet to quantify or qualify the existing situation and this can paralyse concrete actions leading to real progress.

For this reason, each section in this guide suggests affordable approaches to simplify a system - demonstrating how comparable and scalable insights can be gained, even when resources are very small.

This is a first attempt at a comprehensive system connecting visions to outcomes and performance. Feedback is encouraged from academics, practitioners, communities, politicians and investors to improve it further. Note that there might be gaps in this approach to date, but please be assured we are committed to further updates with improvements after feedback. Our long term collective motivation of PATH remains to ensure the growing momentum for walking and cycling policy is further funded, delivered and the benefits felt by people locally, regionally and nationally around the world.





PATH POLICY FRAMEWORK

The Partnership for Active Travel and Health (PATH) published the Active Travel Policy Template in 2025.

The framework is designed to assist national governments to be more ambitious and impactful for walking and cycling in their transport, health and climate policies. The example vision, goals, objectives and actions are directly connected to tangible measures and clear outcomes in a logical framework that can be adapted to suit any local context.

The 6 prescribed interconnected goals and objectives for maximising the potential of active travel - activity, safety, security, accessibility, comfort and satisfaction - unpack the vision “for everyone to have a safe, easy and enjoyable walking and cycling experience, which helps mitigate climate change, support public transport, reduce pollution, save lives, benefit public health and create vibrant, inclusive and equitable societies”.

The people-centred template recommends 6 key measures - one for each of the goals - which, when considered collectively, help further our understanding of the extent to which the goals and objectives have been adopted, delivered and had an impact following implementation of the 20 suggested actions.



ADOPT THIS POLICY TO MAXIMISE THE POTENTIAL OF ACTIVE TRAVEL

VISION													
We want everyone to have a safe, easy and enjoyable walking and cycling experience to mitigate climate change, support public transport, reduce pollution, save lives, benefit public health and create vibrant, inclusive and equitable societies.													
GOALS													
ACTIVITY	SAFETY AND SECURITY	ACCESSIBILITY	COMFORT	SATISFACTION									
We want everyone to walk or cycle regularly.	We want all people walking and cycling to be free from risk of being hurt.	We want everyone to be able to reach public transport and other key destinations on foot or by bike.	We want all people walking and cycling to have space and facilities to support their needs.	We want everyone to perceive walking and cycling as positive experiences.									
OBJECTIVES													
ACTIVITY	SAFETY AND SECURITY	ACCESSIBILITY	COMFORT	SATISFACTION									
We will increase the number of minutes walked and cycled per day.	We will reduce the number of people killed and seriously injured per km walked and cycled per million inhabitants.	We will increase the % of the population that has good walking and cycling access to transport, everyday services, public spaces, bike sharing and sustainable local tourism.	We will increase the percentage of urban roads that are three stars or better for pedestrians and cyclists.	We will increase the satisfaction of people walking and cycling.									
ACTIONS													
Actions 1-4: We will support and encourage people to walk and cycle by delivering x4 key actions		Actions 5-14: We will create safe, easy and enjoyable places to walk and cycle by delivering x10 key actions		Actions 15-20: We will embed walking and cycling into the policy process by delivering x6 key actions									
MEASURES													
ACTIVITY	SAFETY AND SECURITY	ACCESSIBILITY	COMFORT	SATISFACTION									
We will measure the average minutes walked / cycled per day per person.	We will measure the number of pedestrians/cyclists killed or injured in traffic and the % of people that feel safe walking alone after dark in the area where they live.	We will measure the share of the population within 500m of public transport.	We will measure the % of urban roads that are classified by IRaP as 3* or better for pedestrians and cyclists.	We will measure the share of the population that perceivewalking/cycling as a positive experience.									
OUTCOMES													
3.4	3.6	3.9	5c	8.9	9.1	10.2	11.2	11.3	11.6	11.7	13.2	13.3	16.1.4



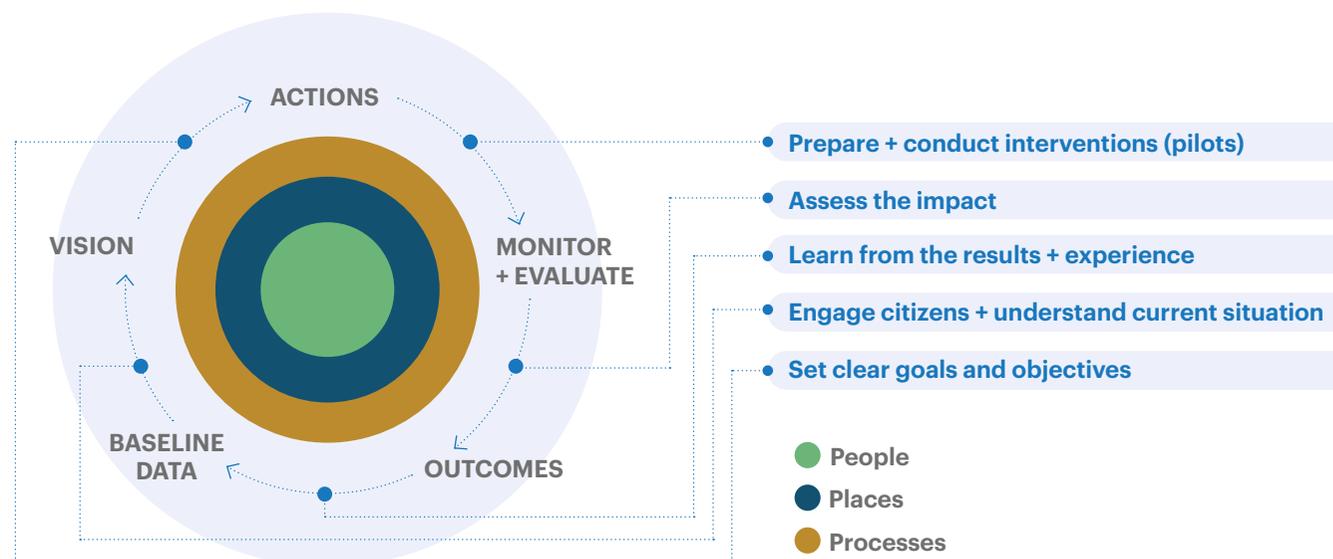
Figure 1: The PATH policy template



WHY MEASURE SUCCESS?



Evaluation is part of an effective policy process¹⁵ as illustrated in Figure 1. Measuring policy success is crucial for accountability, learning, and effective resource allocation, ensuring policies achieve intended goals, improve public services, identify failures, and inform future decisions for better societal outcomes. It moves beyond good intentions to assess real-world impact, efficiency, and fairness, preventing ineffective policies from persisting and guiding adjustments for better results.



¹⁵ <https://www.interregnorthsea.eu/active-cities>

Figure 1: The Effective Policy Process.



WHY MEASURE SUCCESS?

(Cont'd)

Success can be measured in a variety of ways, including:

- **Performance Indicators:** Using quantifiable metrics to assess effectiveness, efficiency, and equity.
- **Outcome Metrics:** Tracking tangible results like decreased commute times or increased activity levels.
- **Comparative Analysis:** Comparing results against initial goals or benchmarks.
- **Stakeholder Feedback:** Gathering input on real-world impacts and experiences.

In this guide, our focus is on performance and outcome measures. If baselines are created and targets set locally, the system could potentially be adapted to support the development of performance indicators and comparative analysis to measure success. Stakeholder feedback is recommended at regular intervals throughout the policy process as part of good governance.





WHY MEASURE SUCCESS?

(Cont'd)



Key principles, inspiring the PATH measurement framework, include:

- A Affordable and timely:** Appropriate to scale of investment and universally adoptable.
- B Beneficial insights that inspire action:** Only collecting data that is useful and can help future policies and investments be even more effective.
- C Communication of progress:** Useful to qualify and quantify effectiveness between politicians, experts and the general public.
- D Data disaggregated by age, gender and ability:** So that social equity is embedded into the policy process and benefits are universal.
- E Engagement of citizens:** Remembering the vision is people-centred and ultimately enabling better walking and cycling experiences.

It's acknowledged that some systems recommend the use of up to 200 measures to help understand the intricacies of active travel - all of which can be helpful for those with sufficient resources to interpret them and know how best to respond. Alternatively, this system proposes six key measures that provide relevant and holistic insights to lay the foundation of a comprehensive dataset as a robust and affordable starting point.



GUIDE STRUCTURE

For each Objective, an outcome and performance measure are considered with a methodology recommended to create a baseline and indicators to monitor progress that can inform future investment. The six measures are taken from the available global data sets hosted by different agencies. These data sets have their own, existing criteria and protocols.

From this starting point additional data can be collected and more insights gained to answer the 6 key active travel policy questions:

-  → **01 ACTIVITY** → Does **everyone** walk or cycle **regularly for transport/leisure**?
-  → **02 SATISFACTION** → Does **everyone** perceive walking and cycling **as a positive experience**?
-  → **03 SAFETY** → Is **anyone** who is walking and cycling **at risk of being hurt by other road users**?
-  → **04 SECURITY** → Is **anyone** who is walking and cycling **at risk of being a victim of crime**?
-  → **05 COMFORT** → Does **everyone** who is walking and cycling **have sufficient space and facilities to support their needs**?
-  → **06 ACCESSIBILITY** → Is **everyone** able to **conveniently reach public transport and other key destinations** on foot and also by bike?

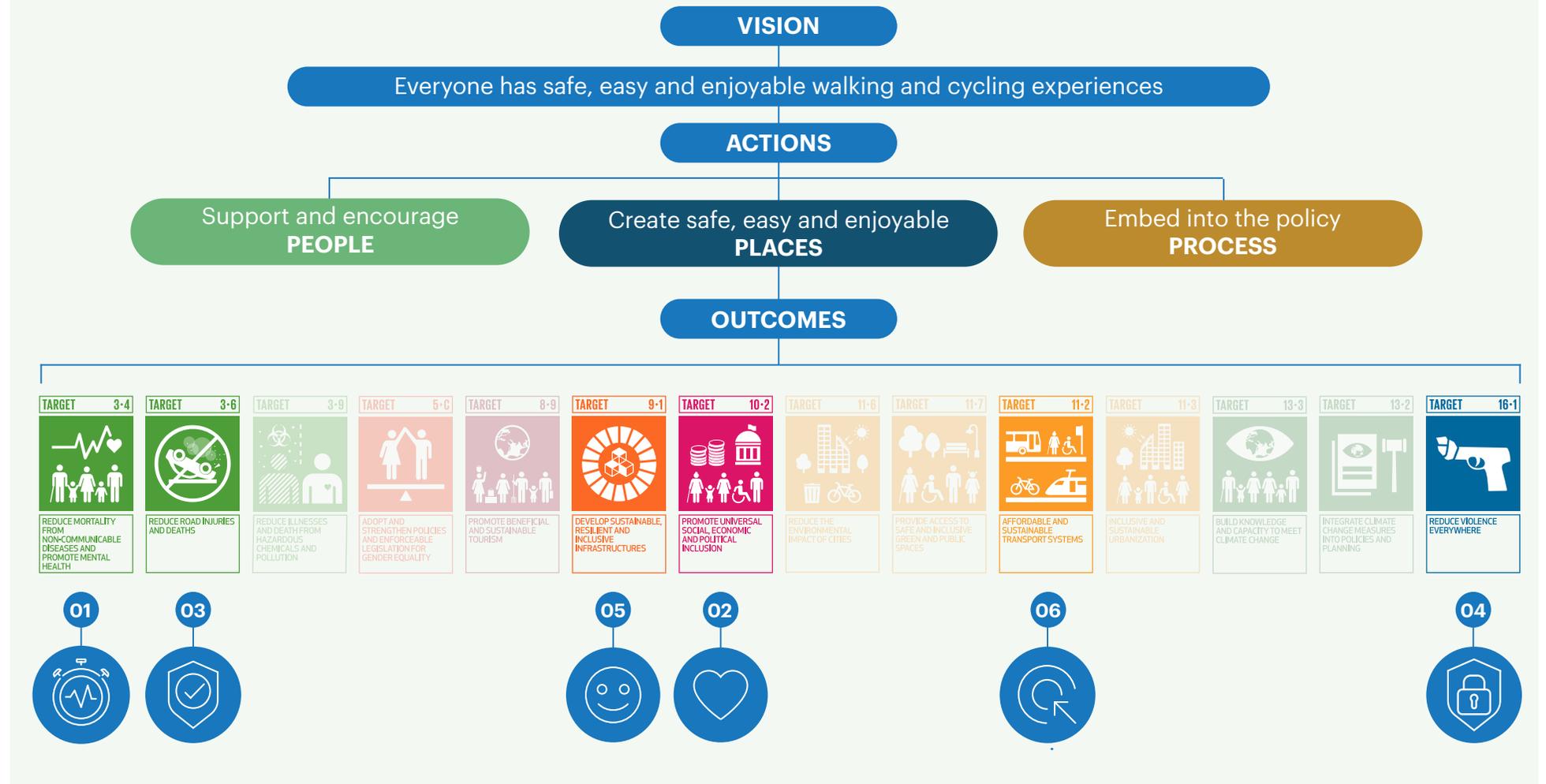
By collecting answers to these questions communities, governments and investors will be able to jointly agree: **A plan for action, where to best implement it, who benefits the most from it and how to value its overall impact.**

CLICK TO NAVIGATE



THE MEASURING SUCCESS MATRIX

Informed by relevant existing SDG targets



- 01** ACTIVITY
- 02** SATISFACTION
- 03** SAFETY
- 04** SECURITY
- 05** COMFORT
- 06** ACCESSIBILITY

Figure 2: The measuring success matrix, informed by relevant existing SDG targets.



GUIDE STRUCTURE (Cont'd)

Each section includes the following information:



POLICY GOAL QUESTION



POLICY OBJECTIVE QUESTION



PATH POLICY MEASURE



TOOL



TARGET



OUTCOME SDG



CUSTODIAN AGENCY / GUARDIAN



GLOBAL CONTEXT



CASE STUDY



CONCLUSIONS

Note: References to specific apps and tools, throughout the guide are given to illustrate implementation of the active travel measures. That does not imply automatic endorsement by PATH.



01



ACTIVITY



POLICY GOAL QUESTION

Does everyone walk or cycle regularly for transport /leisure?



POLICY OBJECTIVE QUESTION

Has the number of minutes walked or cycled per day increased during the policy implementation period?



PATH POLICY MEASURE

The average minutes walked and / or cycled per day per person.



TOOL

Questionnaire

How much time do you spend walking on a typical day and also how much time do you spend cycling on a typical day?

of minutes walking
of minutes cycling



TARGET

At least a 15% increase in walking and cycling

(targeting the least active)



CUSTODIAN AGENCY

World Health Organisation



LINKED OUTCOME SDG

3.4: Reduce mortality from non-communicable diseases and promote mental health

01



ACTIVITY

GLOBAL CONTEXT

The WHO guidelines on physical activity and sedentary behaviour promote time in 'minutes' as the main measure as illustrated in Figure 3.

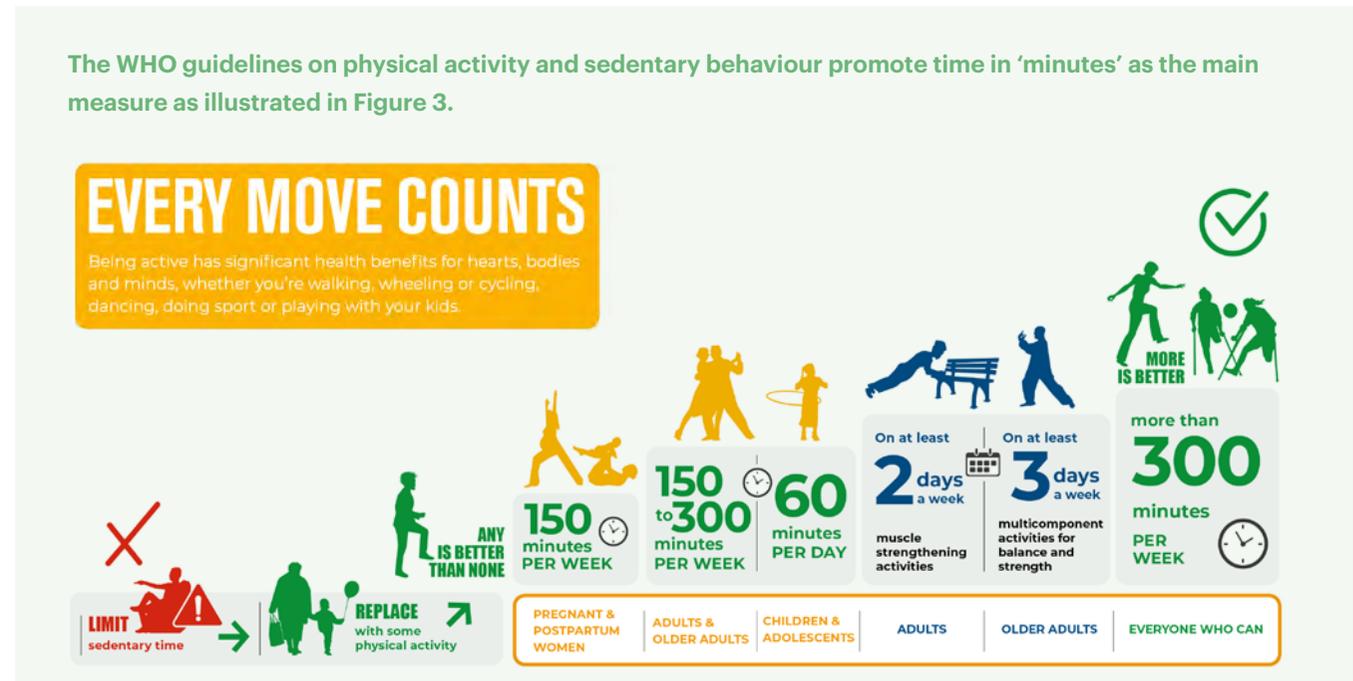


Figure 3: WHO Guidelines on Physical Activity and Sedentary Behaviour

01



ACTIVITY

**GLOBAL CONTEXT** (Cont'd.)

Analysis of global ‘minutes active’ data suggests, 31% of adults and 80% of adolescents do not meet the recommended levels of physical activity. The global target set to reduce levels of physical inactivity in adults and adolescents is 15% by 2030, from the 2010 baseline. The global estimate of the cost of physical inactivity to public health care systems between 2020 and 2030 is about US\$ 300 billion (approximately US\$ 27 billion per year) if levels of physical inactivity are not reduced.¹⁶

Understanding how many minutes people are active every day is most often undertaken using questionnaires, as these are relatively affordable and easy to administer compared to objective measurement techniques. Measuring ‘minutes active’ provides a more accurate understanding of how much walking and cycling is actually happening than traditional modal share surveys - which often only count the main mode on commuter journeys and therefore can undervalue the real active travel mode share by as much as 75%.

If resources for implementing a questionnaire survey are limited it may be possible to interview people walking and cycling using existing apps to record a similar headline. The Walkability App, for example, lets interviewers record the minutes people walk in a typical day using five pre-determined categories (less than 10 minutes; 10-30 minutes; 30-60 minutes; 60-120 minutes; more than 120 minutes). The advantage of this approach is that these sorts of apps usually also allow the collection of anonymised data on age, gender and ability too - allowing for disaggregated analysis. (The Walkability App also can be used to collect other data on the satisfaction of people’s walking experiences, including perceptions of safety, security and comfort - see Success Measures 2, 3 and 4).

¹⁶ <https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/steps>

01



ACTIVITY

GLOBAL CONTEXT (Cont'd.)

When additional resources are available, they can improve the data robustness and accuracy of questionnaires' responses, as they can be compared and validated with objective measurements from mobile or wearable devices, such as phones and fit bands with GPS, pedometer and accelerometers that can record active mobility. Note WHO guidance on how to do this is available.¹⁷

There are other customised travel-oriented tools that can be used to improve the accuracy of the walking and cycling activity data where resources permit. For instance, Motiontag¹⁸ is a German-based GPS tracking mobile app that accurately records individual and aggregated walking and cycling distance and time attached to the street network. In Austria, mobile phone GPS route tracking data is being used to understand activity and also for tracking routes and destinations. Invenium Data Insights is one of the leading agencies involved¹⁹. And in many cities around the world there are infra-red, video or pressure pad sensor counter systems being used to study the numbers of people walking and cycling in specific locations. Ecocounter is one of the most accurate systems being used²⁰.

By understanding who is walking and who is cycling every day, it will be easier to target actions that support those already active and encourage those who are least or less active to join the others.

Whichever tool selected, sample sizes and protocols depend on context. The STEP-WISE protocols for national sampling are well defined by WHO and available²¹.

17 https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/steps/steps-objective-physical-activity-measurement-module.pdf?sfvrsn=fa03d364_2

18 <https://motiontag.com/>

19 <https://invenium.io/en/>

20 <https://www.eco-counter.com/>

21 https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/gpaq-analysis-guide.pdf?sfvrsn=1e83d571_2

In conclusion, measuring minutes walked and minutes cycled for transport and also for leisure provides a good foundation for understanding the scale of how much walking and cycling is happening already. It also creates a helpful baseline at a national, city and project level to later evaluate the impact of any implemented actions.

To reach the '15% increase in walking and cycling' target, a package of actions will be required to both keep those already active on their feet and in the saddle and to reach and encourage the least or less active to walk and cycle more. The suggested actions to help achieve that are clarified in the WHO in the Global Action Plan for Physical Activity²² and summarised in the PATH Active Travel Policy Template.

²² <https://www.who.int/initiatives/gappa>



Case Study 01: Germany

KLIMA TALER APP

Cities in Germany are working together to empower their residents to walk and cycle to contribute meaningfully to local and global climate goals.

The collective challenge is promoted on the Klima-Taler app²³ which has embedded the Motiontag tracking technology and a mobility insights dashboard. This allows governments to understand how much more active people are and where people are going.

The system's automated mode detection seamlessly tracks when participants are walking and cycling as well as when they use public transport and cars — without manual input from users. As an incentive for sharing this information, every eco-friendly activity tracked earns users climate coins ('Klima-Taler') for every 5km travelled by bike, walking, or public transport. The rewards can be exchanged for discounts on sustainable products, or services offered by local businesses and municipal partners. The app has offers from over 500 local merchants and more than 40 public swimming pools. Local and cross-city challenges are promoted and cities can view aggregate mobility data to inform better urban planning decisions. The intuitive and automated process has proven popular and been able to measure long-term behavioral change while providing municipalities with high-quality mobility data.

In Aachen, for example, the city has attracted 6% of residents to use the app and recorded 67.8 million km of sustainable trips. 72% of users reported walking, cycling, or using public transport more, which resulted in an 8% Median Reduction in Carbon Emissions.

²³ <https://www.motiontag.com/news/news-details/the-klima-taler-network-building-a-community-of-climate-conscious-cities-through-the-klima-taler-app>



Case Study 01: Germany

KLIMA TALER APP

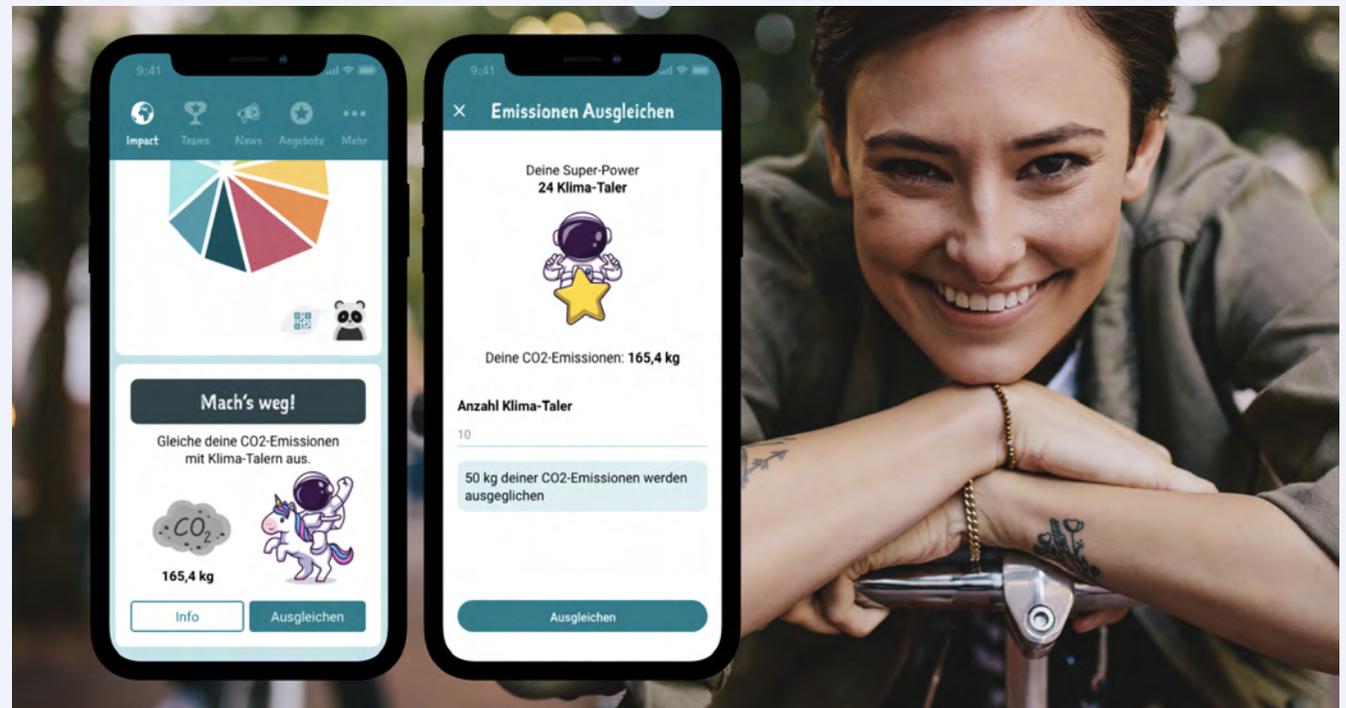


Figure 4: Some of the mobility data being collected in German cities to understand walking + cycling minutes active.

Source: <https://klima-taler.com>

02



SATISFACTION



POLICY GOAL QUESTION

Does everyone perceive walking and cycling as a positive experience?



POLICY OBJECTIVE QUESTION

Is there an increase in the percentage of people perceiving walking and cycling as a positive experience during the policy implementation period?



PATH POLICY MEASURE

% of people that perceive walking and cycling as a positive experience.



TOOL

Walkability /
Bikeability Apps

How positive or negative do you perceive your walking / cycling experience? (Very positive, positive, neutral, negative, very negative)



TARGET

At least 65%
positive reports

(targeting young people, women, the disabled, older people and those with low incomes)



CUSTODIAN GUARDIANS

Walking and cycling advocacy organisations



LINKED OUTCOME SDG

10.2: Promote universal social, economic and political inclusion



02



SATISFACTION

GLOBAL CONTEXT

People often continue to walk and cycle even when the conditions are dangerous, difficult or unpleasant - but usually less so, especially if there is a viable and affordable alternative.

Conversely, when walking and cycling experiences are safer, more secure, accessible and comfortable, more people choose to be more active (by embedding walking and cycling into their daily routines), which results in **benefits for everyone**. Measuring experiences based on the perceived quality of public space for pedestrians and cyclists, by inviting citizen to share how they feel and why, can provide relevant insights to better understand the current status and level of service of public space for active travel, knowing where to prioritise investments and who would benefit from them.

Effective and meaningful citizen engagement is a continuous part of an effective active travel policy process. It needs to be made easy, free and worthwhile for citizens to share their perceptions of their walking and cycling experiences. Citizens should be encouraged and enabled to share, validate, analyse and respond to positive and negative experiences with their own proposals and initiatives.



02



SATISFACTION

GLOBAL CONTEXT (Cont'd.)

Satisfaction is a compound response that involves different walking/cycling experiences perceived or received at the same time. From a socio-ecological perspective, these experiences are shaped by different environmental determinant, such as personal abilities and interests, quality of the place, and societal norms and attitudes, all influenced by regulations or incentives from policy and planning strategies.

In turn, satisfaction has a direct influence on active travel behaviour and activity, such as whether or not people are active, how often, for how long and their choice of route or area.

As a result, if policy and planning provide active travel-friendly environments and systems for all that translates into high levels walking and cycling satisfaction, this leads to more and better walking and cycling, which ultimately contributes to achieve several SDGs.

Therefore, satisfaction is a key policy element that provides a relevant insight to understand current situations, guide specific actions, and assess the impact and evolution of policies towards achieving desired outcomes.

The framework for this is illustrated in Figure 5.

02



SATISFACTION



Figure 5: The influence of walking and cycling experiences on behaviour and the policy opportunity for supporting and encouraging walking and cycling.

02



SATISFACTION

**GLOBAL CONTEXT** (Cont'd.)

The shared insights into what is already perceived as successful, are just as useful as locating where there are clusters of concerns. A package of locally appropriate interventions related to high levels of satisfaction by citizens are much more likely to extend or implement positive walking and cycling experiences when applied in other areas.

Those with limited resources are especially encouraged to start with this measure - by engaging with even a small number of citizens, preliminary insights can be found and the foundation is built for a more evidence based policy and a more convincing case can be made to potential investors.

The Walkability App²⁴ is a free participatory mapping tool, available in 13 languages, to understand walking experiences linked to public spaces. For cycling experiences there are several bikability systems that are also available. The BiciZen App for example allows cyclists to share their experiences but there is not a positive and negative scale.²⁵ By tracking changes over time, related to investments that are responsive to the data, a repository of effective interventions can be developed to showcase and demonstrate how to make more people's walking and cycling experiences better at any scale.

²⁴ <https://walk21.com/resources/walkability-app/>

²⁵ <https://www.bicizen.org/about-the-project>

In conclusion, measuring satisfaction of people walking and cycling provides one of the clearest and most determinant / influential insights for understanding what needs to be improved where and who would benefit from the investment, especially when connected to additional safety, security, comfort and accessibility data.

It also helps locate what is already successful, and why, which can be audited to compare positive and negatively perceived places by different users. (see Measure 5 Comfort).

Satisfaction measures can also be used to create a helpful baseline at a project level to later evaluate the impact of any implemented actions. A '20% target to improve satisfaction' overall or in any given population (based on deficiencies visible in the baseline data) is a practical approach. The suggested actions to help achieve the target can be interpreted from the baseline list of environmental determinant data and a summary of the actions are in the PATH Active Travel Policy Template.



Case Study 02: Kumasi, Ghana

WALKABILITY APP



The city of Kumasi, Ghana committed to increasing road safety for pedestrians on a systemic level in the city.

The Yaa Asantewa Road, which includes several school main entrances, witnessed 86 road crashes between 2020 and 2022 in the area, with pedestrians accounting for over 40% of victims. Cars routinely exceeded the 50 km/h speed limit, with more than a quarter reaching speeds above 70 km/h. Sidewalks were narrow, crossings faded, and people often had no choice but to walk in the road itself.

Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development (AAMUSTED) coordinated a team of students to interview people on-street and learn more about how they felt walking in the area. In response, the city constructed two new raised pedestrian crossings, provided new road markings and signs (speed limits, school zones, warnings), and installed rumble strips to slow vehicles before crossings.

For the first time, the impact of these small-scale interventions to improve road safety on the Yaa Asantewa Road was measurable. Before the interventions, nearly 60% of walking experiences were negative, with pedestrians reporting discomfort, danger, and frustration. After the upgrades, the positive experiences more than doubled, rising from 19% to nearly 49%; reports of people feeling unsafe dropped by 48 percentage points; walking comfort rose sharply, with comfortable experiences increasing from 11% to 50%; and enjoyment of walking soared, with 74% describing their experience as enjoyable or very enjoyable.

Overall, the Walkability App helped the city with a composite measure that shows an improvement from 39.2 to 59.6 out of 100, showing clear gains in perceived walkability based on safety, comfort and enjoyment²⁶.

²⁶ https://f7beae87-b91f-4017-bebb-dd648498731f.usrfiles.com/ugd/f7beae_5160eb608db8461d85f816d68590348e.pdf



Case Study 02: Kumasi, Ghana

WALKABILITY APP

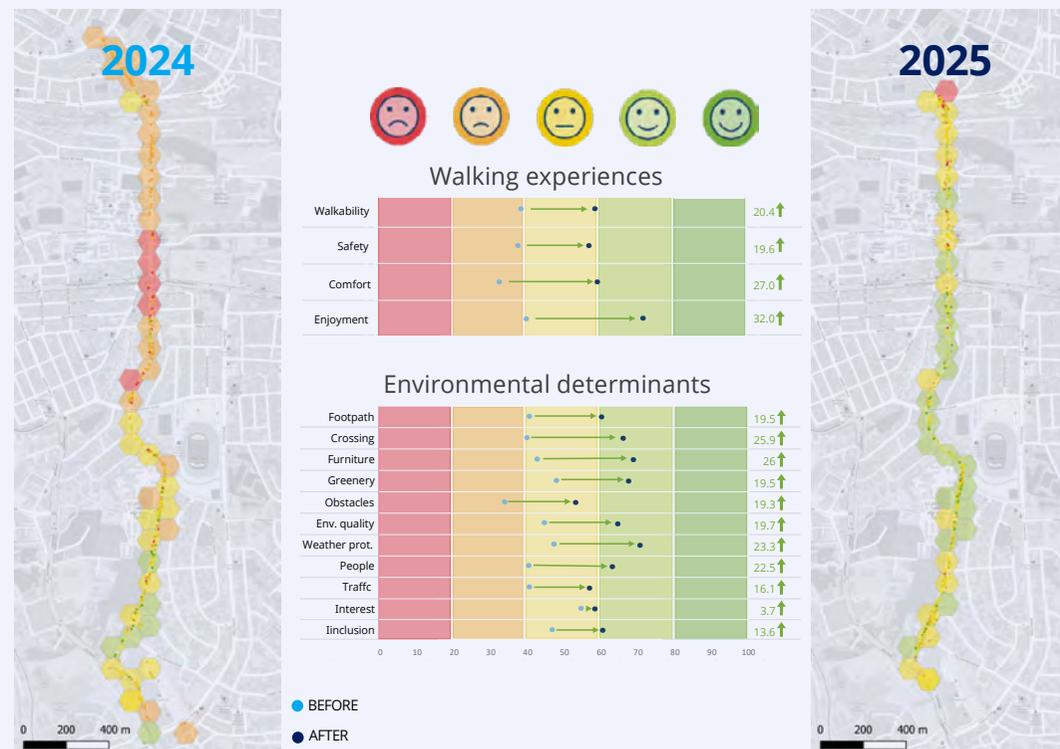


Figure 6: The Measure of success in Kumasi, Ghana, post interventions on a school street shows a 20% increase in perceived walkability overall and increases in perceptions of safety (19%), comfort (27%) and enjoyment (32%).

03



SAFETY



POLICY GOAL QUESTION

Is anyone who is walking and cycling at risk of being hurt by other road users?



POLICY OBJECTIVE QUESTION

Has the number of people that have been killed or injured by other road users while walking or cycling reduced during the policy implementation period?



PATH POLICY MEASURE

The number of pedestrians and cyclists being killed or injured in traffic.



TOOL

Police report / hospital data analysis

How many pedestrians and cyclists were injured in road crashes in the previous year?

Fatally injured (Death within 30 days of the road crash) + seriously injured (hospitalised at least 24 hours) + slightly injured (hospitalised less than 24 hours or not hospitalised).



TARGET

At least 50% decrease in the number of casualties who were people walking and cycling



CUSTODIAN AGENCY
World Health Organisation



LINKED OUTCOME SDG

3.6: Reduce road crash injuries and deaths

03



SAFETY

GLOBAL CONTEXT

It is estimated that nearly 22 million people are road crash casualties while walking or cycling every year.

From 1.19 million annual road traffic deaths around the world, pedestrians represent 23% and cyclists 6%. Globally pedestrian(s) deaths rose 3% and cyclist(s) deaths 20% between 2010 and 2021. However, there were significant variations across regions. For example, pedestrian deaths increased by 42% in the South-East Asia Region, and across Africa, the region with the highest fatality rates, pedestrians represent 33% of fatalities. Cyclist deaths rose 50% in the European Region, and by 88% in the Western Pacific Region where cyclists represent up to 15% of fatalities. Road crashes remain the leading cause of death for children and young people aged 5-29. The WHO global data can be accessed directly.²⁷

	Total impact annually	Total financial cost	Fatalities	Financial cost	Injured	Financial cost
Pedestrians	11,906,111	\$941.8bn	438,852	\$243bn	11,467,259	\$698.8bn
Cyclists	9,794,633	\$386.6bn	69,261	\$45bn	9,725,372	\$296.6bn
Total	21,700,744	\$1,328.4bn	508,113	\$288bn	21,192,631	\$995.4bn

Figure 7: The annual impact and cost of walking and cycling casualties²⁸

²⁷ https://cdn.who.int/media/docs/default-source/documents/health-topics/road-traffic-injuries/gsrss23-indicators-for-participating-countries-or-territories.xlsx?sfvrsn=88035adb_3

²⁸ <https://irap.org/safety-insights-explorer/>

03



SAFETY

**GLOBAL CONTEXT** (Cont'd.)

The World Health Organisation encourages countries to report the number of road traffic fatalities and injury deaths per 100,000 population as part of their SDG 3.6 reporting. National Data Focal Points (NDFPs), who were nominated by their governments, are required to identify up to eight other road safety experts within their country from different sectors (e.g. health, police, transport, nongovernmental organizations and/or academia) to facilitate a consensus meeting to agree on one final estimate that best represented their country's situation at the time. WHO categorises countries into four groups, acknowledging that the accuracy of existing data collection and reporting varies widely²⁹. Less than half of the countries collect road deaths data. Others have limitations with their data; are in the process of improving their system; are countries with less than 150,000; or don't have eligible data at all. A list of the countries and how they have been assessed for their data reliability is included in the last section: **Data Measures by Country.**

Make contact with the designated National Data Focal Point and invite them to share police records, health facility records, vital registration data and insurance records to see what data already exist. In addition to the fatalities and injuries question it is also proven helpful to understand the context of road crashes, which ideally should be included in the way road crash data is digitally recorded.

The additional data to collect includes:

What was the context of pedestrian /cyclist injuries position just before the crash: Crossing (intersection crossing); Crossing (at mid block); Standing or walking/cycling on the carriageway; On a sidewalk or pedestrian path or on a bike lane or cycle path (not on the carriageway). Other relevant additional data can include the speed limit of the area.

²⁹ [https://cdn.who.int/media/docs/default-source/documents/health-topics/road-traffic-injuries/final-who-gsrrs-\(2023\)-questionnaire_w-operational-definitions_june-2023.pdf?sfvrsn=156c7fe6_3](https://cdn.who.int/media/docs/default-source/documents/health-topics/road-traffic-injuries/final-who-gsrrs-(2023)-questionnaire_w-operational-definitions_june-2023.pdf?sfvrsn=156c7fe6_3)

03



SAFETY

GLOBAL CONTEXT (Cont'd.)

If police records, health facility records, vital registration data and insurance records are limited, or if there are insufficient resources in the short term to improve their accuracy and accessibility, it may be helpful to look at collecting subjective road safety data. Interviewing pedestrians and cyclists already using existing tools can record their perceived safety (see Measure of Success 2 - Satisfaction) and identify places with negative and positive safety experiences, which is particularly useful to prioritise investments on cost-effective interventions.

For people walking, again the Walkability App allows pedestrians share their perceived safety while identifying which elements and characteristics of the public space influence them in a positive or negative way. The Walkability App presents eleven predefined walking determinants, including footpath, crossing, street furniture, greenery, obstacles, environmental quality, protection from weather, people, traffic, interest and inclusion. These categories help identify and prioritise concrete safety interventions based on pedestrians' shared experiences.

There are several tools that cyclists' can use including BikeMaps.org, a crowdsourcing platform, originated in Canada, where cyclists can share their experiences related to road crashes, near-misses, hazards and bike thefts. The BikeMaps dashboard and toolkit include some visualization and analysis functionalities, which help identify specific problematic areas and issues that might not be captured in official police reports and hospital statistics. As illustrated in Figure 8.



03



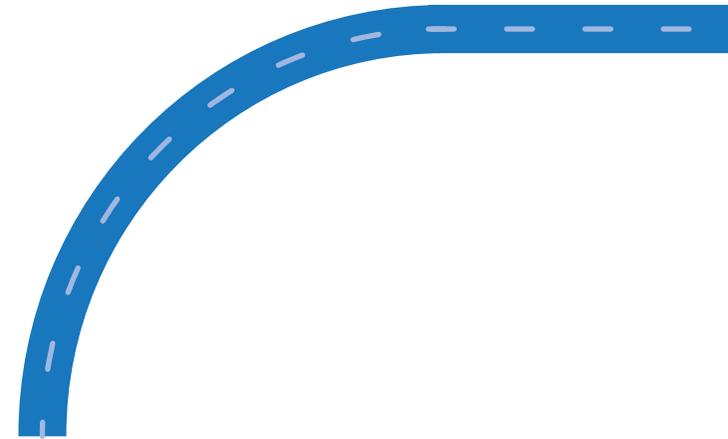
SAFETY

GLOBAL CONTEXT (Cont'd.)

Additional tools can also be used to improve the understanding of walking and cycling road safety risk. The Global Road Safety Alliance, for instance, has a 'Mobility Snapshots campaign tool' which communities can use to "share the realities of how unsafe our streets are and suggest solutions that could make our communities more viable and sustainable."³⁰

The advantage of these approaches is that apps often collect anonymised data on age, gender and ability - allowing disaggregated analysis. Dashboards with data visualization and analysis functionalities can be used to compare perceived safety in the same area before and after an intervention to assess their impact and return from investment. The disadvantage of this approach is that it only records road safety perceptions of those who are already walking/cycling and in a given area. It may be that others are absent because of a fear of road safety but this needs a separate approach to understand fully (see also Measure 2 Satisfaction).

³⁰ <https://www.roadsafetyngos.org/act-now/mobility-snapshots/>



In conclusion, measuring safety (the risk of being hurt by other road users) helps understand the risk that people walking and cycling face everyday. Mapping the contributing factors where injuries are occurring can further help find patterns to apply target solutions that can mitigate risks in the future.

Collecting data on perceived safety helps understand the fear of risk before a crash happens, which may be preventing some from walking or cycling at all in certain places.

This measure can create a helpful baseline at any level to later evaluate the impact of any implemented actions. To reach the '50% decrease in walking and cycling fatalities' target, a package of actions will be required to both ensure the safety of those already active and to reach and encourage those who are hesitant to walk or cycle due to fear of venturing out. The suggested actions to help achieve that are clarified in the WHO Global Action Plan for Road Safety³¹ and summarised in the PATH Active Travel Policy Template.

³¹ <https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030>



Case Study 03: Canada

BIKEMAPS



The Bikemaps team organise regular mapathon challenges³² to their on-line community of users to ensure that OpenStreetMap (OSM) contains the necessary infrastructure information to aid cyclist route planning across Canada.

The Main Street in Vancouver, for instance, is well-attributed since it is officially mapped as a primary road with six lanes, a 50 km/h speed limit and has a shared lane for bikes. Given that information, some people may choose a different route. On OSM it's mapped as a non-conforming major road officially designated infrastructure that is not physically separated from traffic (sharrows or painted lanes) and that has speed limits above 30 km/h; absence of traffic calming or diversion; and more than two lanes. The detailed safety data is being used to weight routing algorithms and understand the impact of infrastructure features on the risk and severity of crashes.

In addition to the mapping of bike lanes and traffic speeds in Canada, Bikemaps is also helping capture the conditions on the 34,000km of paths and trails where people have tagged they cycle off-road. Collaborative mapping from the app users add relevant information on the network, differentiating between unpaved trails and solid surfaces. Paved surfaces are known to attract pedestrians including those with disabilities which is used as evidence for advocating to governments for more space to ride separated from other modes. A list of research publications, produced from analysing the safety data is available.³³

³² <https://bikemaps.org/blog/>

³³ <https://bikemaps.org/about/>



Case Study 03: Canada

BIKEMAPS

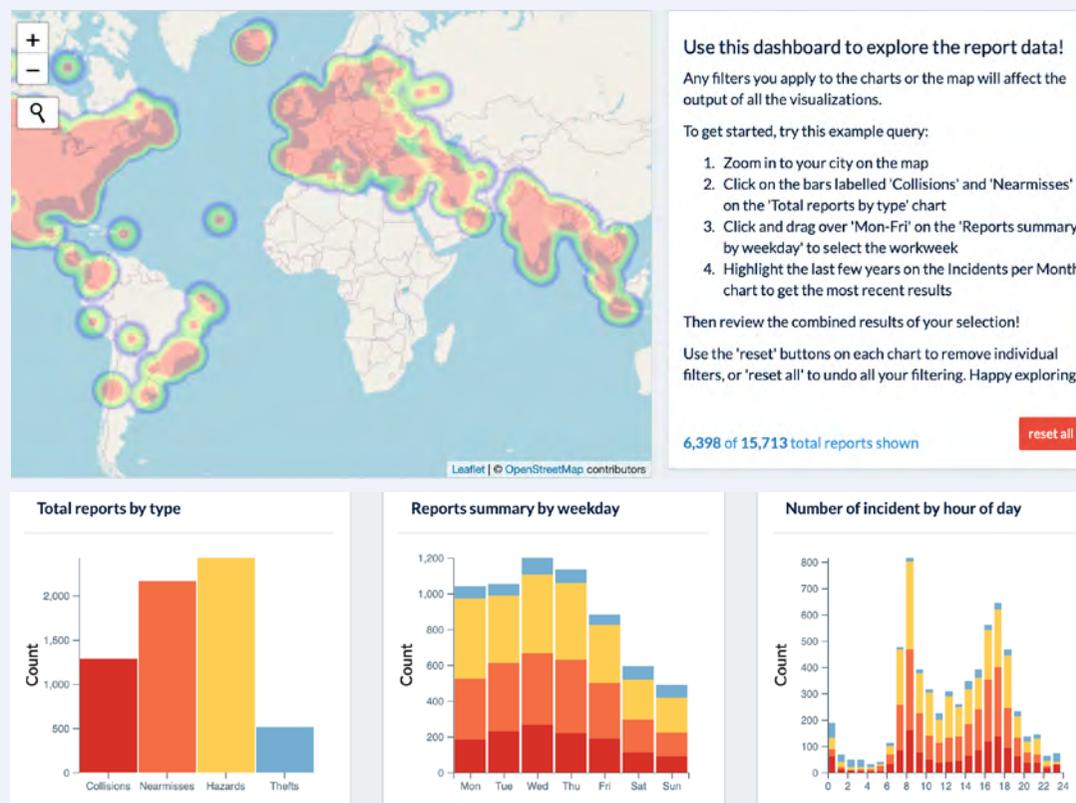


Figure 8: Bikemaps.org incident reporting platform dashboard.

Source: <https://bikemaps.org/vis/>

04



SECURITY



POLICY GOAL QUESTION

Is anyone who is walking and cycling at risk of being a victim of crime?



POLICY OBJECTIVE QUESTION

Do people (especially women) feel safer when walking alone at night in the neighbourhood where they live during the policy implementation period?



PATH POLICY MEASURE

% of people that feel safe walking alone after dark in the area where they live.



TOOL

Questionnaire

How safe do you feel walking alone in your neighbourhood after dark and what is your gender? (Very safe; safe; unsafe; very unsafe + Gender).



TARGET

At least 80% of people feel safe walking alone at night + an equitable balance between genders.



CUSTODIAN AGENCY

United Nations Office on Drugs and Crime (UNODC).



LINKED OUTCOME SDG

16.1.4: Proportion of population that feel safe walking alone around the area they live after dark.

04



SECURITY

GLOBAL CONTEXT

The Global Safety Report³⁴ is based on the SDG indicator 16.4.1 from 145,000 adults in 144 countries.

It confirms that **73% of adults worldwide feel safe walking alone at night where they live, which is considerably higher than it was a decade ago.** However, progress has stalled on this measure in the past several years, since slightly fewer people today feel safe than in 2020, when a record-high felt safe.

Regionally, at least seven in ten people feel safe in Asia-Pacific, Western Europe, the Middle East and North Africa, Northern America (U.S. and Canada), and post-Soviet Eurasia. Of all the regions, post-Soviet Eurasia has gained the most ground in the past two decades, with almost twice as many feeling safe in 2023 (71%) than in 2026 (37%).

People continue to feel the least safe in sub-Saharan Africa (53%) and Latin America and the Caribbean (50%). Further, feelings of safety have declined more in sub-Saharan Africa than in any other region over the past two decades. According to UN Women, the average gender gap globally is 12%, and in Latin America only 37% of women feel safe (see Figure 9).

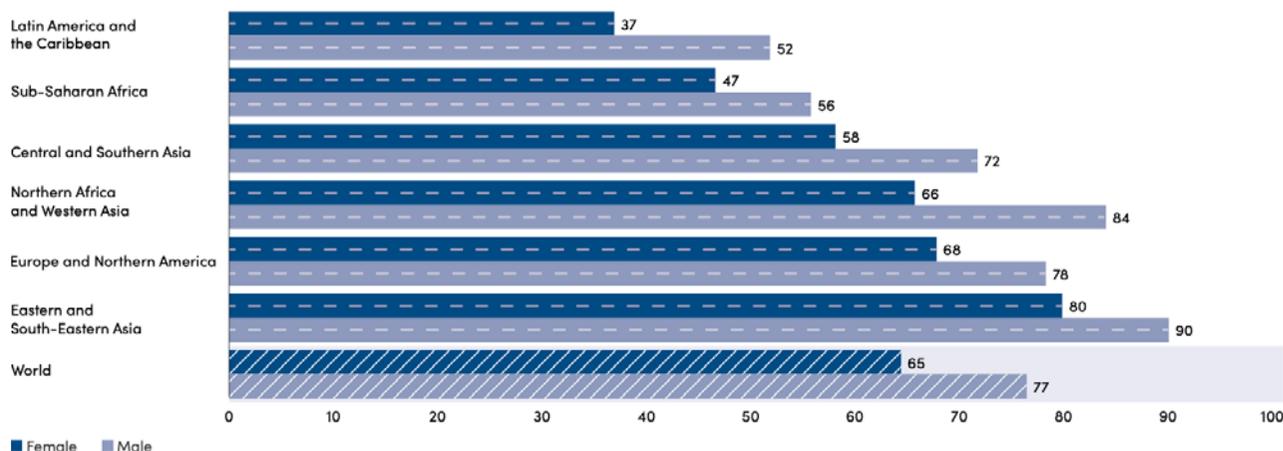
34 <https://www.gallup.com/analytics/356996/gallup-global-safety-research-center.aspx>

04



SECURITY

Proportion of the population that feels safe walking alone at night where they live, by region and sex, 2020–2022 (percentage)



Source: UNODC, 2024. Based on responses to the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems and the Gallup World Poll.
 Note: Regional aggregates refer to three-year averages weighted by country population size. Averages for Oceania were removed, as data were only available for one country.

Figure 9: The percentage of people who feel safe walking alone at night in their neighbourhood by region and gender 2020- 2022

Source: <https://www.unwomen.org/sites/default/files/2024-09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2024-en.pdf>

04



SECURITY

GLOBAL CONTEXT (Cont'd.)

According to the data collected by Gallup, globally 68% of women of women said they feel safe walking alone at night, compared with 79% of men. That 11-point gap persists across more than 100 countries, underscoring how women's insecurity remains entrenched despite broader improvements. The disparity is widespread, with a gender gap of at least 10 percentage points present in 104 out of 144 countries and territories surveyed.

The report notes that this gap in perceived safety persists regardless of a country's income or stability. In fact, many high-income countries were found to have the largest gender gaps, suggesting that economic progress alone is not enough to eliminate this inequality. In high-income countries, the divide was often sharpest, with the United States, Australia and several European Union member states recording some of the largest gaps. The US reported a 26-point gender gap in perceptions of safety. This means only 58% of women said they felt safe, compared to 84% of men. If rankings were based solely on the safety perceptions of women, the US would fall from 61st to 77th globally. Italy recorded the lowest level among the EU, with women at 44% - a proportion similar to Uganda - despite 76% of Italian men feeling secure.

The UNDOC coordinates the global data set for the proportion of the adult population who feel safe walking alone in their neighbourhood after dark as an SDG indicator 16.1.4.³⁵ The indicator aims to capture fear of crime in the context of people's everyday lives and is usually included as a question in a general population survey or as part of dedicated surveys on crime victimisation.

³⁵ <https://unstats.un.org/sdgs/metadata/files/Metadata-16-01-04.pdf>

04



SECURITY

**GLOBAL CONTEXT** (Cont'd.)

The United Nations Survey on Crime Trends and the Operations of Criminal Justice System (UN-CTS) requires a national focal point to be appointed by governments. There are currently 144 Member States to collect and submit the data to UNODC. In most cases these focal points are national institutions responsible for data production in the area of crime and criminal justice (National Statistical Offices, Ministry of Interior, Ministry of Justice, etc.). For countries that have not appointed a focal point, the request for data is sent to permanent missions in Vienna. When a country does not report to UNODC, other official sources such as authoritative websites, publications, or other forms of communication are used to estimate the data. Once consolidated, data are shared with countries to check their accuracy and validity. An official manual on Victimization Surveys (2010) is available³⁶, as well as implementation guidance for the questionnaire.³⁷

Make contact with the designated UN-CTS focal point and explore what data exists.

If data is limited or there are insufficient resources in the short term to improve it, subjective data on perceived security may be helpful to complement or mitigate this data gap. Interviewing everyday pedestrians and cyclists using existing apps can record their perception of security, locate positive and negative experiences and identify their main environmental determinants to encourage and guide future investments. (See Measure 2).

³⁶ <https://www.unodc.org/unodc/en/data-and-analysis/Manual-on-victim-surveys.html>

³⁷ https://www.unodc.org/documents/data-and-analysis/sdgs/SDG16_Survey_Initiative_-_Questionnaire.pdf

04



SECURITY

GLOBAL CONTEXT (Cont'd.)

There are several other additional tools that can be useful to improve the understanding of walking and cycling security risk. The literature review from the INCLUSIFY Project³⁸ in 2019 presents many tools, including Harassmap (an anonymous reporting and mapping tool in Egypt); Hollaback (lets users record where they have either experienced or witnessed gender-based harassment anywhere in the world); Harasstracker (an online tool to track and document sexual harassment in Lebanon); and Safe Streets (a sexual harassment reporting and alerting system in Yemen).



38 <https://walk21.com/wp-content/uploads/2022/05/W21-Inclusify-Empowerment-Strategies-010322-copy-2.pdf>

In conclusion, measuring the perception of security by people walking and cycling provides a good foundation for understanding the equity of existing conditions.

If geolocated data is used, it can also create a helpful scalable baseline at a project level to later evaluate the impact of any implemented action.

To reach the '80% target for equitable perception of security across genders', a package of actions will be required to both keep those already active secure and to reach and encourage those currently adapting their behaviour because of fear. The suggested actions to help achieve that are clarified in several key texts including the World Bank Gender Inclusive Design Handbook³⁹, the GIZ 'Toolkit for Gender Inclusive Mobility Planning'⁴⁰ and they are also summarised in the PATH Active Travel Policy Template.

39 <https://www.worldbank.org/en/topic/urbandevelopment/publication/handbook-for-gender-inclusive-urban-planning-and-design>

40 <https://static1.squarespace.com/static/695c2965aa77be79d78ea9b0/t/696a989cc3e7a218a8283616/1768593564230/Toolkit+for+Gender+Inclusive+Mobility+Planning.pdf>



Case Study 04: India

SAFETIPIN

In cities across India, Safetipin is being used by women and girls to share information about factors that promote safety.

The tool provides a structured data collection approach to audit⁴¹ infrastructure problems while travelling, such as poor or no lighting, broken or blocked footpaths, open wiring, etc. These Safety Audits can be then accessed by pedestrians and cyclists to identify safe and unsafe reported locations and make informed route choice decisions accordingly.

The audit information is shared with governments to encourage improvements such as: fixing streetlights, resurfacing unpaved walkpaths, making public transport more accessible and reducing the number of unsafe areas. Companies are also using Safetipin to extend safety outside the workplace, by providing information and recommendations to employees on transport, places to stay and planning routes based on employee locations. Employees are also using the tracking feature in the app to let others know of their location and possible dangers.

The app was used in Delhi to generate over 50,000 audit observations in 2015. The Power Secretary responded to the 7,500 dark spots in the city and promised to reduce them. Other departments acted on the metro station area data and the perception of security around tourist monuments. A further study in 2018, commissioned by the Department of Women and Child Development, showed a 63% decrease in the number of locations with poor illumination from 7,500 in 2015 to 2,700 in 2018 in response to the security audit data⁴².

⁴¹ <https://safetipin.com/about-our-company/>

⁴² <https://safetipin.com/the-safetipin-impact-on-delhi/>



Case Study 04: India

SAFETIPIN

Safetipin is a practical example of a collaborative map based mobile phone app, designed to make communities and cities safer by providing safety related information collected by users and trained auditors. At the core of the app is the Women's Safety Audit (WSA), a participatory tool for collecting and assessing information about perceptions of urban safety in public spaces.

The audit is based on nine parameters: Level of lighting, Openness (sight lines), Visibility (overhanging trees, high walls etc), Level of crowding or emptiness, Security (agents), Walk/ footpath, Availability of public transport, Usage of the public space (for instance, if it's male dominated or mixed), and Feeling/ emotional response to the space (Known as "eyes on the street").





Case Study 04: India

SAFETIPIN

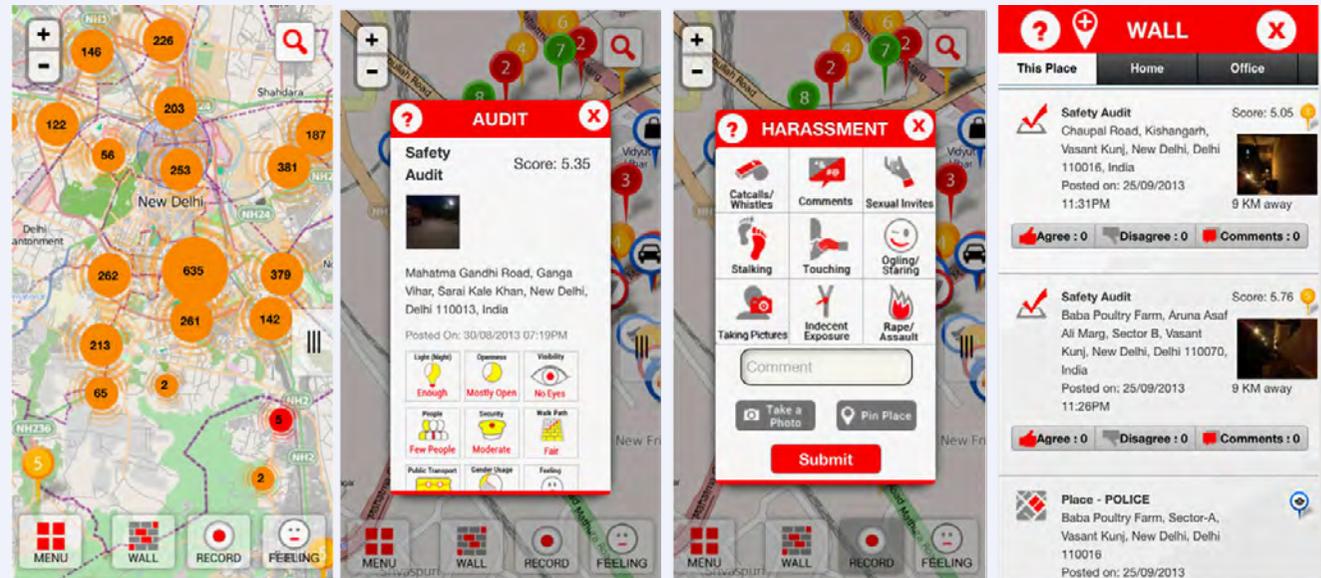


Figure 10: The Safetipin reporting tool

Source: <https://edtimes.in/safetipin-tool-womens-safety/>

05



COMFORT



POLICY GOAL QUESTION

Does everyone who is walking and cycling have sufficient space and facilities to support their needs?



POLICY OBJECTIVE QUESTION

Is the percentage of urban roads meeting the minimum needs, or better, for pedestrians and cyclists increasing during the policy implementation period?



PATH POLICY MEASURE

% of urban roads that are meeting the minimum needs of pedestrians and cyclists.



TOOL

Walkability / Bikeability audit

Pedestrian and cyclist audits focused on accessibility, safety, security and comfort.



TARGET

All new roads built to a 3-star or better standard and 75% of travel is on roads rated 3-star or better.



CUSTODIAN GUARDIANS

Global Designing Cities Initiative / International Road Assessment Programme



LINKED OUTCOME SDG

9.1: Develop sustainable, resilient and inclusive infrastructures



05



COMFORT

GLOBAL CONTEXT

Enhancing the comfort of pedestrians and cyclists, by providing environments that meet their needs, is essential for creating sustainable, livable, and inclusive urban environments where everyone feels welcomed and valued.

While safety focuses on preventing injury, comfort encompasses the physical and mental experience of moving through a space with ease and freedom from walking or cycling constraint.

Comfort is influenced by environmental, infrastructural, and social factors:

- **Infrastructure Design:** Smooth, well-maintained surfaces (avoiding potholes or vibrations), wider walking or cycle paths, and clear zoning (e.g., separating frontage, pedestrian, and furniture zones) are fundamental as well as seating (benches, tables), lighting (street lights), navigation (way finding), services (public fountains and toilets), waste management (litter bins), etc. These meet specific needs for pedestrians and cyclist that make their experience more comfortable.
- **Traffic Interaction:** Low motor vehicle speeds and volumes significantly increase the perceived comfort. Physical separation from traffic (e.g., protected bike lanes) is a top priority for most users.
- **Environmental Quality:** Clean and quiet environments, well-maintained greenery and water are all examples of elements that positively impact active travel comfort.
- **Social and Personal Factors:** Perceptions vary by demographic. For instance, women, older adults and people with impaired mobility, visibility and hearing often report lower comfort levels in shared or high-traffic environments.

05



COMFORT

GLOBAL CONTEXT (Cont'd.)

The **PLOS system (Pedestrian Level of Service)** is an attempt to measure walking comfort with a scale from **A to F**.

There is a similar system for Bicycle Level of Service (BLOS). These approaches oversimplify walking and cycling comfort based on space, speed and manoeuvrability (a traffic-oriented approach).

The Highway Capacity Manual (HCM) typically defines these levels of pedestrian service, for example based on space and flow:

- **LOS A:** Excellent conditions. Pedestrians move freely at their desired speed without interference from others.
- **LOS B-C:** Good to stable conditions. Some awareness of other pedestrians is needed, but speed and manoeuvrability remain high.
- **LOS D:** Adequate but restricted. Walking speed and the ability to pass others are limited by congestion.
- **LOS E:** Inadequate. Space is severely restricted, and walking speed is much slower than desired.
- **LOS F:** Worst conditions (Gridlock). Frequent physical contact and significant delays; the facility is often over capacity.

Source: <https://transformtransport.org/media/articles/pedestrian-level-of-service-plos/>

Source: https://nacto.org/wp-content/uploads/bicylce_Level_of_service_model_sprinkle_consulting.pdf

05



COMFORT

**GLOBAL CONTEXT** (Cont'd.)

To date, traffic interaction has been the main global audit proxy system for measuring comfort. More needs to be done to develop further comprehensive approaches to measuring active travel comfort but until then, the International Road Assessment Programme⁴³ approach is the recommended proxy. The IRAP tool is embedded in the Global Road Safety Action Plan (2021-2030)⁴⁴ as the way to help countries meet specific performance targets, like ensuring 'All new roads are built to a 3-star or better standard' (Target 3); and that '75% of travel is on roads rated 3-star or better' (Target 4). By identifying high-risk roads and guiding infrastructure improvements for all users, IRAP's metrics directly align with the road safety UN targets, offering a roadmap for developing national plans, implementing safety treatments, and tracking progress to save lives and reduce crashes.

Analysis of the IRAP existing road safety audit data highlights that roads continue to be primarily built for motor vehicles. From the roads evaluated through the Programme, only 20% meet the basic safety standards for pedestrians. This means they lack dedicated footpaths, crossings and appropriate traffic speeds. For bicycle riders, only 0.2% of roads assessed have cycle lanes. The global target, set in the WHO Global Action Plan for Road Safety, is to ensure at least 75% of the roads where people walk or cycle meet at least the 3-star minimum standard (where 1-star is least safe and 5-star the safest), as illustrated in Figure 11. Apart from traffic volume and speed, IRAP audits footpath presence, width, obstructions and separation from traffic; crossing typologies, and public lighting. While these elements are relevant to understand comfort, a more walking and cycling-centred audit that considers other key elements, such as street furniture, greenery and environmental quality ideally, are also needed.

⁴³ <https://irap.org/>

⁴⁴ <https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030>

05



COMFORT

Star Ratings by distance travelled (km)

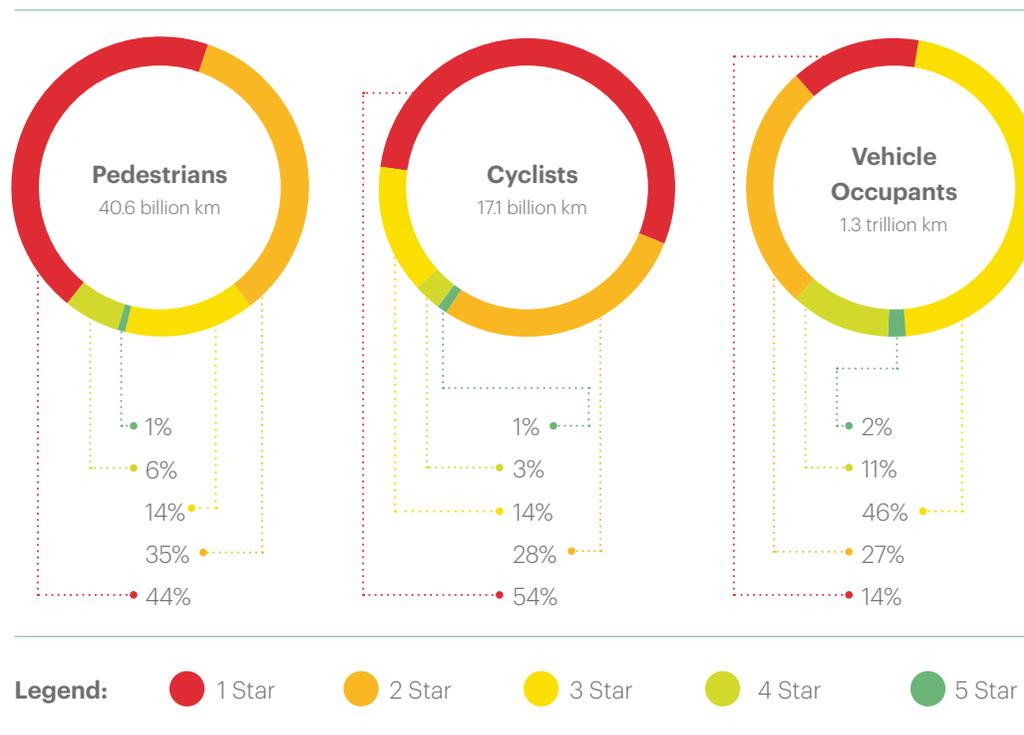


Figure 11: Star ratings by distance travelled according to the IRAP system and the map of assessed roads.

05



COMFORT



Figure 12: The map of roads where IRAP has audited road safety.

Source: <https://irap.org/safety-insights/how-safe-are-our-roads/>

05



COMFORT



Star Rating				
★	No sidewalk, No safe crossing, 60 km/h traffic	No cyclepath, No safe crossings, poor road surface, 70 km/h traffic	No motorcycle lane, undivided road, trees close to road, winding alignment, 90 km/h traffic	Undivided road with narrow centerline, trees close to road, winding alignment, 100 km/h traffic
★★★	Sidewalk present, pedestrian refuge, street lighting, 50 km/h traffic	On-road cycle lane, good road surface, street lighting, 60 km/h traffic	On-road motorcycle lane, undivided road, good road surface, >5m to any roadside hazards, 90 km/h traffic	Wide centerline separating oncoming vehicles, >5m to any roadside hazards, 100 km/h traffic
★★★★★	Sidewalk present, signalized crossing with refuge, street lighting, 40 km/h	Off-road dedicated cycle facility, raised platform crossing of major roads, street lighting	Dedicated separated motorcycle lane, central hatching, no roadside hazards, straight alignment, 80 km/h traffic	Safety barrier separating oncoming vehicles and protecting roadside hazards, straight alignment, 100 km/h traffic

* For details on the full model for all road users and more urban and rural examples see <https://www.irap.org//3-star-or-better/what-is-star-rating>.

Figure 13: IRAPs star rating system explained

Source: <https://irap.org/safety-insights/how-safe-are-our-roads/>

05



COMFORT

GLOBAL CONTEXT (Cont'd.)

The Global Designing Cities Initiative provides a library of metrics, shown in Figure 14, that add a more comprehensive measure of comfort for those who have the resources to apply it.⁴⁵

Recommended measures for pedestrian/cyclist focused accessibility, safety and comfort:

- Presence and width of sidewalks
- Materiality of sidewalks (slipperiness, etc.)
- Water management (drainage issues close to crossings)
- Accessibility of sidewalks (obstacles, potholes, etc.)
- Number and quality of accessibility ramps
- Number of handrails or similar facilities
- Furniture for pedestrians to rest/sit
- Areas with shelter/shade
- Type and direction of street lighting
- Number and quality of pedestrian crossings
- Crossing distance
- Distance between crossings
- Refuge islands (dimensions, level of protection from vehicular traffic)
- Number of accessible pedestrian signals
- Number of adequate waiting areas for transit
- Length and width of cycle facilities
- Percentage of bike lanes that are protected from vehicular traffic
- Bollards (type, height, and visibility if applicable)
- Number of bike share stations and docks
- Size of the curb radii at intersections

Figure 14: The GDCI evaluation framework for street transformations

⁴⁵ <https://globaldesigningcities.org/publication/how-to-evaluate-street-transformations-english/>

05



COMFORT

GLOBAL CONTEXT (Cont'd.)

Recommended measures for pedestrian/cyclist counts, behavior and perception:

- Number of pedestrians by age and gender
- Number of pedestrians by type of activity and duration of stay
- Number of cyclists per day
- Percentage of pedestrians walking on the road-bed vs. on dedicated facilities
- Percentage of cyclists riding within facilities vs. on the sidewalk
- Number of pedestrians crossing the street with and without crossing facilities
- Number of people at transit stops
- Average time it takes for pedestrians to finish crossing the street
- Number of people using spaces with polluted / clean air
- Change in volume of clients at local businesses before and after a cycle lane / sidewalk is implemented
- Pedestrian/ cyclists' level of stress and comfort

Figure 14 (Cont'd.): The GDCL evaluation framework for street transformations

05



COMFORT

GLOBAL CONTEXT (Cont'd.)

Make contact with the IRAP team and explore if there are any safety audit records in their VIDA⁴⁶ system or plans locally where their system has started to collect walking and cycling data. Systematically apply the approach, with a focus on urban areas, to assess the minimum essential conditions.

If resources don't allow for the roll out of the IRAP or GDCI system at scale, it may be helpful to use existing apps to collect the data in a more simplified way. This can be especially helpful if citizens are given the same opportunity to report on the categories used to audit the walking and cycling conditions (see Measure 2 Satisfaction). When citizens are invited to report their perceptions first, it's possible to focus comfort audits on areas which are reported to be particularly positive and negative for comparison. It may be that there are specific ambitions to improve comfort for people with mental or physical difficulties; to address concerns about speeding traffic; or ensure the needs of women are included in the way streets are designed and managed. In any of these cases analysis of the citizen reported data will help target the areas for the auditors attention.

Other tools that have emerged recently to help collect street audit data include the International Federation of Pedestrian's sidewalk scanner lidar machine⁴⁷ and the Footpath AI tool based in Sydney, Australia.⁴⁸ Using AI tools to gather photos on foot, in a similar way to the IRAP system, is also offering large-scale, global datasets of high-resolution 360° street-level imagery that allows infrastructure features to be identified, categorised and mapped. Licences are sold per km of street on a geofenced data license.

⁴⁶ <https://vida.irap.org/en-gb/home>

⁴⁷ <https://ifpedestrians.org/sidewalkscanner/>

⁴⁸ <https://footpath.ai/>

In conclusion, measuring the comfort levels of people’s walking and cycling is helpful to understand the extent that the existing level of service supports and encourages people to walk and cycle (a way often used to define walkability/ bikeability). However, auditing all elements and characteristics of public space that may influence walking and cycling comfort at street scale is highly time and resource consuming with the existing tools. Photos and machine taught algorithms provide some insights but the on-street observations at the local scale provide the most useful and accurate measure of success at the moment. Comfort levels do matter and so some nationally agreed guidelines on a systemic and affordable approach to measuring comfort is necessary.

To reach the global targets for ‘All new roads built to a 3-star or better standard’ and ‘75% of travel is on roads rated 3-star or better’ a package of actions will be required to both keep those already active on their feet and in the saddle and to reach and encourage the least or less active to walk and cycle more. The suggested standards to reach that, or provide beyond average comfort levels, are clarified in the GDCI Global Street Design Guide⁴⁹ and summarised in the PATH Active Travel Policy Template.

⁴⁹ <https://globaldesigningcities.org/publication/global-street-design-guide/>



Case Study 05: Aotearoa New Zealand

HEALTHY STREETS

Waka Kotahi New Zealand Transport Agency has piloted the Healthy Streets Approach and tools as part of their Aotearoa Urban Street Planning and Design Guide.⁵⁰

The guide provides a national framework to support the development of well-functioning urban environments and is a practical toolkit for anyone involved in the design, planning, construction, operations and maintenance of urban streets in Aotearoa New Zealand.

National street indicators have been developed to assist practitioners to think about the whole street and the human experience, including a focus on air quality, emissions and noise reduction, road safety and creating a sense of place.

These were adapted from the Healthy Streets design checklist for an Aotearoa New Zealand context. They are providing a design checklist to support the creation of streets that are pleasant, safe and attractive, where noise, air pollution, inaccessibility and lack of seating and shelter are not barriers that prevent people from getting out and about. The design check tool, originally developed by Lucy Saunders⁵¹, is being used throughout the project lifecycle including assessing existing streets, developing new street designs, and evaluating changes to streets once they are made. It helps designers and engineers shift from focusing on individual modes and movement to holistic design. It is has also been used to support conversations with stakeholders about proposed interventions⁵².

⁵⁰ <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/urban-design-and-landscape/urban-street-guide>

⁵¹ <https://www.healthystreets.com/new-zealand>

⁵² <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/urban-design-and-landscape/urban-street-guide/pilot-new-zealand-design-check-tool>



Case Study 05: Aotearoa New Zealand

HEALTHY STREETS

Metric	Everyone feels welcome	Easy to cross	Shade and shelter	Places to stop and rest	Not too noisy	People choose to walk and cycle	People feel safe	Things to see and do	People feel relaxed	Clean air
7 Ease of crossing at intersections	●	●				●	●		●	
8 Quality of the footpath	●					●			●	
9 Space for walking	●			●		●	●		●	
10 Quality of the carriageway surface	●				●	●	●		●	
11 Space for cycling	●			●		●	●		●	
12 Lighting	●					●	●		●	
13 Sense of place	●					●		●		
14 Public seating	●			●		●		●	●	
15 Cycle parking	●			●		●			●	
16 Trees and shelter	●		●			●		●	●	
17 Green infrastructure	●					●		●	●	
18 Reducing through traffic	●	●			●	●	●		●	●
19 Bus stops	●		●	●		●			●	

Figure 15: Example of the Healthy Streets scoring system being used to value street comfort in Aotearoa New Zealand

06



ACCESSIBILITY



POLICY GOAL QUESTION

Is everyone able to conveniently reach public transport and other key destinations on foot and also by bike?



POLICY OBJECTIVE QUESTION

Is the percentage of people with good access to public transport, everyday services, public space, bike sharing and sustainable tourism increasing during the policy implementation period?



PATH POLICY MEASURE

% of people within convenient access of public transport.



TOOL GIS analysis

Identify public transport stops; create 500m service areas for each stop and calculate the number of people living within the service areas.



TARGET

At least 75% of the population have convenient access to public transport. (A safe, comfortable and enjoyable walk within 10 minutes from home).



CUSTODIAN AGENCY United Nations Habitat



LINKED OUTCOME SDG

11.2: Affordable and sustainable transport systems

06



ACCESSIBILITY

GLOBAL CONTEXT

Due to data scarcity and lack of resources, accessibility for active travel is often oversimplified as “proximity to public transport”.

Although walking and cycling proximity (in distance and time) to public transport is a key indicator, it does not always accurately reflect the complex reality. On the one hand, cyclists living in “30min cycling cities” do not necessarily need public transport to reach most of their daily key destinations. On the other hand, pedestrians living within 500 or 1,000 meters from public transport, might not be able to access them due to lack of inclusive and universal design. This means that although proximity is a key factor for accessibility, inclusive and universal design are also necessary to provide and enable accessibility for all.

Universal design is an enabler of accessibility for all. The same way that the framework differentiates between safety and security, it would be helpful, in the medium term, to potentially differentiate between proximity (in time/distance) and accessibility (based in inclusive design).

However, for now, ‘convenient accessibility’ is captured in SDG 11.2, which states that there should be access to safe, affordable, accessible and sustainable transport systems for all by 2030. This will improve road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons. The main indicator is 11.2.1: the proportion of the population that has convenient access to public transport, by sex, age and personal abilities. The custodian for the indicator is UN-Habitat.

06



ACCESSIBILITY

GLOBAL CONTEXT (Cont'd.)

When addressing walking and cyclists accessibility, medium and long distance commutes by pedestrians and cyclist critically need accessible, reliable, frequent, inclusive and affordable public transport.

Public transport stops and stations do not only need to be accessible by proximity from homes and jobs, but also their walking and cycling catchment areas need to be safe, comfortable and inclusive to reach. Achieving SDG 11 target 11.2 requires a fundamental shift in the thinking on transport with the focus on the goal of transport rather than on its means. With accessibility to services, goods and opportunities for all as the ultimate objective, priority is given to making cities more compact and walkable through better planning and the integration of landuse planning with transport planning.

The imperative to make cities more inclusive means that cities will have to move away from car-oriented planning and car-dependent societies to places and people that prioritise sustainable transport primarily based on walking, cycling and public transport, with good intergeneration and connectivity amongst them. It is empirically proven that public transport makes cities more inclusive, safe and sustainable. Effective and low-cost transportation is critical for reducing urban poverty and inequalities while enhancing economic development since it provides access to jobs, health care, education services and other public goods.⁵³

⁵³ UN-Habitat (2018). SDG Indicator 11.2.1 Training Module: Public Transport System. United Nations Human Settlement Programme (UN-Habitat), Nairobi

06



ACCESSIBILITY

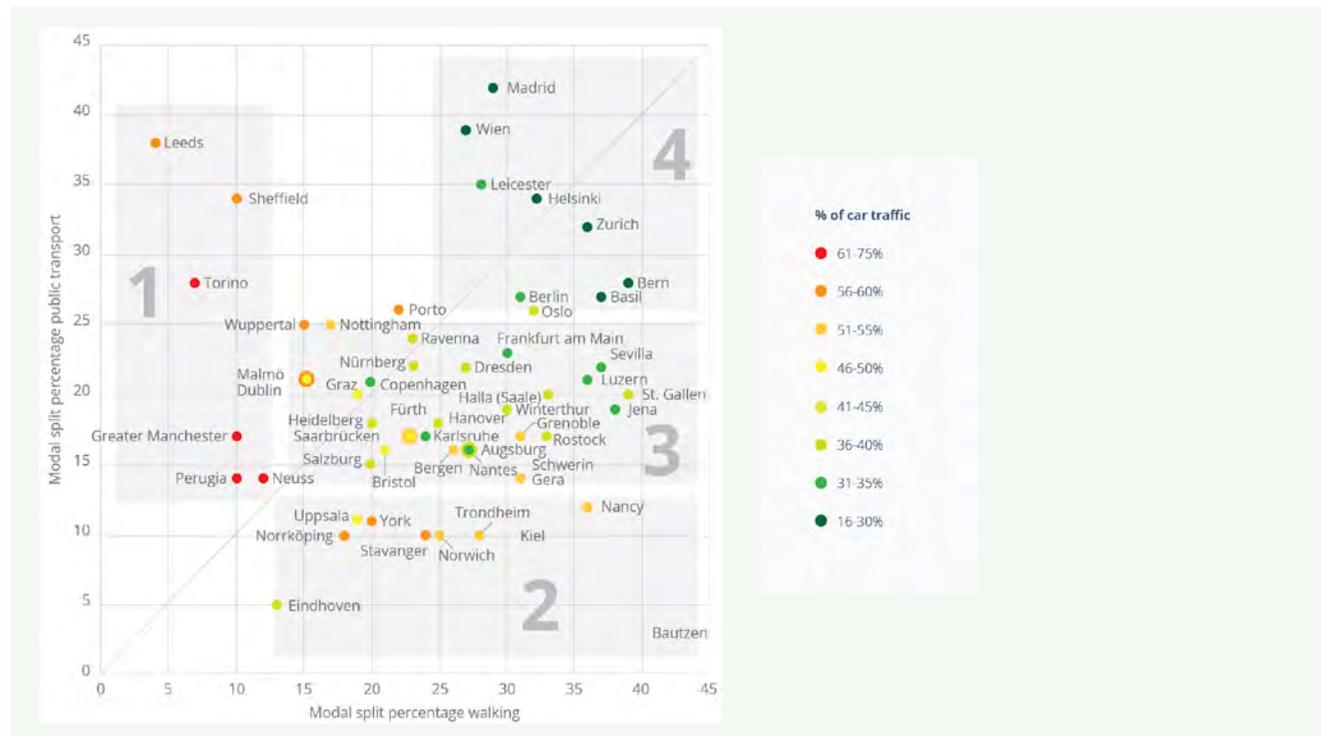


Figure 16: The importance of investing in good walkability and good public transport systems (from research by Helge Hillnhutter).

Source: <https://www UITP.org/publications/integrating-walking-and-public-transport/>

06



ACCESSIBILITY

GLOBAL CONTEXT (Cont'd.)

National Statistical Offices (NSOs) are responsible for data collection on accessibility to public transport at a city level and share it with UN-Habitat annually. The methodology has three parts; a) identifying public transport or 1,000 meters to main stations, b) creating service areas for each stop - which is defined as a walking distance of 500 meters to a public stop along a road/ street network, and c) calculating the population living within the service areas.⁵⁴

UN-Habitat acknowledges that mass transport systems such as trains, metro, bus rapid transit systems and ferries, etc., have a bigger area of influence than smaller capacity bus stops. In effect, this means that people can walk longer distances (up to 1,000 meters) to access a mainline railway or metro station or stop. Countries and cities are also encouraged to collect data on the number of people within 1,000 meters walking distance along street networks to these high capacity transport systems.

One limitation of this system is the assumption that there is equal access to public transport by all groups of people - i.e., that everyone can walk 500 m, however, in reality, this varies significantly by population group (children, people with reduced mobility, women, older people, etc.). Other assumptions, that influence the data are that all the streets are walkable - while existing barriers are known; that all buildings within the service area are inhabited, and that the population is equally distributed across the built up areas and/or all inhabited land use classes; and that each stop has the necessary facilities to support access to all population groups e.g., universal access.

⁵⁴ <https://data.unhabitat.org/documents/GUO-UN-Habitat::template-for-compilation-of-sdg-indicator-11-2-1/about>

06



ACCESSIBILITY

GLOBAL CONTEXT (Cont'd.)

Further local data collection such as affordability, safety and universal accessibility, which are known to also influence the use of public transport, can help explore these assumptions where possible and ensure 'accessibility' can be interpreted beyond a distance measure. According to 2022 data from 1,507 cities in 126 countries, only 52% of the world's urban population has convenient access to public transport, with considerable variations across regions.⁵⁵ The regional variations can be seen in Figure 17.

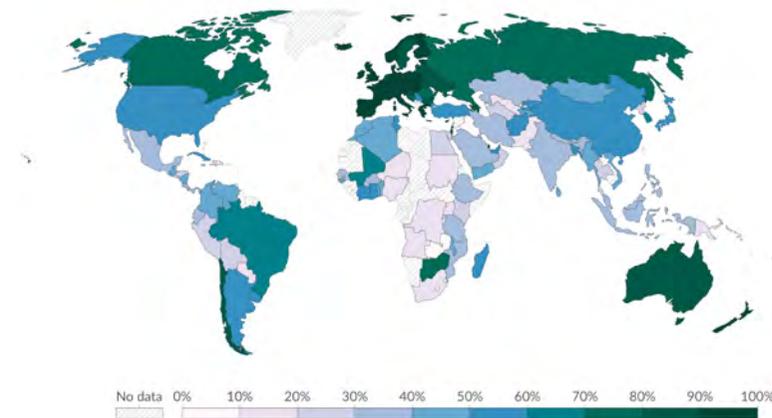


Figure 17: The share of the population with convenient access to public transport

Source: <https://ourworldindata.org/sdgs/sustainable-cities>

⁵⁵ <https://unhabitat.la/sdg-11/>

In conclusion, measuring accessibility for people walking and cycling ideally goes beyond mapping proximity and includes an understanding of universal access to safe, comfortable and inclusive public services and spaces. By paying particular attention to the needs of women and children, older persons and persons with disabilities, it will become clear how accessible walking and cycling can be enabled in more places.

A '75% convenient target for accessible public transport can be adopted for other key destinations too (health care, education sites, retail areas, workplaces, parks, sports facilities, places of worship, etc.) and all improvements will be achievable with a package of actions that both keep those already using these public services satisfied and encourages those choosing other ways to shift their travel behaviour.

The suggested actions to help achieve this are clarified in the UN-Habitat New Urban Agenda⁵⁶ and are also summarised in the PATH Active Travel Policy Template.

⁵⁶ <https://habitat3.org/the-new-urban-agenda/>



Case Study 06: Quito, Ecuador

STREET TRANSFORMATIONS

In the San Bartolo area of Quito, Ecuador, GDCI worked with local partners to understand how people were using the public space. From the observations of the one-day study, 484 people crossed the street at grade, while 96 used the pedestrian overpasses.

The team counted the number of pedestrians in the area and number of people in cars, as well as their speed. This data were used to start a conversation with the local community about how they wanted to improve everyday accessibility to local destinations and services. Examples of street transformations from other cities (footpath widening in Bogota and shorter crossing distances in Forteleza) led to co-created and re-designed interventions in public space that were implemented to ensure that people walking and cycling had priority and better access to more local destinations.





Case Study 06: Quito, Ecuador

STREET TRANSFORMATIONS



Figure 18: New safer crossings were implemented in Quito to improve accessibility to everyday destinations and services.

Source: https://nacto.org/wp-content/uploads/GDCI-Presentation_-_Transforming-Streets-for-Safety-and-Sustainability-in-the-Global-South-1-1.pdf

INFORMING APPRAISAL SYSTEMS



INFORMING APPRAISAL SYSTEMS

Once Active Travel Success Measures are agreed and adopted, they need to be embedded into policy plans, implementation strategies, reporting frameworks and financing decision making.

Ideally, the baseline measures, would be used to identify priorities where the benefits deliver most - in direct relation to the policy objectives:

- **Objective 1: Activity:** Has the number of minutes walked or cycled for transport/leisure per day increased?
- **Objective 2: Satisfaction:** Is there an increase in the percentage of people perceiving walking and cycling as a positive experience?
- **Objective 3: Safety:** Has the number of people that have been killed or injured by other road users while walking or cycling reduced?
- **Objective 4: Security:** Do people (especially women) feel safer when walking alone at night in the neighbourhood where they live?
- **Objective 5: Comfort:** Is the percentage of urban roads meeting the minimum needs, or better, for pedestrians and cyclists increasing?
- **Objective 6: Accessibility:** Is the percentage of people with good access to public transport, everyday services, public space, bike sharing and sustainable tourism increasing?



INFORMING APPRAISAL SYSTEMS (Cont'd)

Adopting these measures (and targets) into scheme appraisal systems ensures priorities and investment decisions are evidence based, which improves transparency and accountability. Few places do this well yet, but financial institutions are increasingly interested in supporting and funding active travel projects and, it is hoped, that this framework might be piloted soon, in some case studies to test its practicality at different scales.

The Active Travel England is an example that is already embedding a matrix of relevant measures into a scheme appraisal system using the Active Mode Appraisal Toolkit (AMAT)⁵⁷. This is a spreadsheet-based tool published by the Department for Transport (DfT) in the UK for assessing the overall benefits and costs of proposed walking and cycling interventions, ranging from capital investments to behaviour change programmes. By quantifying the key impacts of a proposed intervention, AMAT helps provide decision-makers with a holistic and comprehensive view about impacts on transport users, the environment, society and the economy. AMAT also provides a measure of the 'Value for Money' of a proposed intervention, in the form of a benefit-cost ratio (BCR). AMAT quantifies a wide range of potential benefits of cycling and walking interventions including: Health improvements from increased levels of physical activity in terms of reduced mortality risk and lower work absenteeism; Improvements to journey quality as a result of providing the perception of a safer or pleasant journey whilst using walking and cycling infrastructure; and Impacts associated with modal shift away from cars and taxis including improvements in traffic congestion, greenhouse gas emissions, air quality, noise, road crashes, infrastructure maintenance, and changes to indirect tax revenues as a result of reducing distance travelled by these modes.

Typically, health improvements represent over 50% of overall intervention benefits, with journey quality and mode shift impacts comprising around 30% and 20% respectively, although the proportions can vary considerably by type of intervention. The AMAT output metrics are shown in Table 1.

⁵⁷ <https://assets.publishing.service.gov.uk/media/631744188fa8f50220e60d1a/active-model-appraisal-toolkit-user-guidance.pdf>



INFORMING APPRAISAL SYSTEMS (Cont'd)

Cost / Benefit Type	Benefit metrics	Description
Mode Shift	Congestion Benefit	Traffic congestion improvements as a result of a reduction in vehicle kilometres.
	Infrastructure maintenance	Reduced wear and tear on the roads, and therefore reduced maintenance costs, due to fewer vehicles travelling on the road infrastructure.
	Road crashes	Reduced road traffic crashes due to a reduction in car kilometres. Note that AMAT does not currently estimate changes in accidents from changes in numbers of cyclists or walkers or changes in infrastructure type e.g. introduction of segregated cycle lanes.
	Local Air Quality	Improvements in air quality from a reduction in car kilometres including changes in nitrous oxide (NOx) and particulate matter (PM).
	Noise	Improvements in noise pollution as a result of a reduction in car kilometres
Health	Greenhouse gases	A reduction in emissions of greenhouse gases due to a reduction in car kilometres.
	Reduced risk of premature death	Increased active travel delivers health benefits by reducing the risk of premature death.
	Absenteeism	Increased physical activity of individuals improves their health and therefore reduces their number of 'sick days', resulting in increased economic activity.
Journey quality	Journey Ambience	Benefits to new and existing cyclists or walkers as a result of improvements to infrastructure can relate to a perception of improved safety and/or environmental conditions.

Benefit metrics Description

Government impact	Indirect taxation	Typically, a reduction in car kilometres is associated with a reduction in fuel duty
	Government Costs	The cost to central and local government from the intervention. Note: these costs are different from those input into the User Cost Interface as they have been adjusted to 2010 prices and discounted to reflect the fact people prefer costs to occur later in the future.
Private Costs	Private Contribution	Business contributions to the intervention if appropriate.

Table 1: The Active Mode Appraisal Toolkit output metrics used in England.



Case Study:

VILNIUS, LITHUANIA

As a pilot to test the PATH measures at a city level, the Sustainable Urban Mobility Plan in Vilnius was reviewed against the PATH active travel policy template.

Gaps were identified where the city could improve their effectiveness, particularly for people walking. The existing policy requires “40% of the walking budget to be spent in the city centre”, but is this the right investment to support and encourage all the people walking in the city?

To help understand ‘how things are at the moment for people walking in Vilnius’ the city applied Transform Transport’s 15-minute model of European cities⁵⁸ to map the population’s proximity to everyday goods and services. The city centre, where the majority of everyday services are within a 10 minute walk, was compared to two other city area typologies. The Transform Transport indicator describes the share of everyday destinations that can be reached within 15 minutes walking. The thresholds are set at 80-100% of destinations for High Accessibility, 50-80% for Medium Accessibility and 0-50% Low Accessibility.

A representative sample of +100 pedestrians in each study area were interviewed (with the Walkability App) to share their positive and negative experiences related to environmental factors, which can guide future budgets focused on specific interventions.

⁵⁸ <https://transformtransport.org/research/urban-mobility-metrics/15min-city-score-toolkit-urban-walkability-analytics/>



Case Study: VILNIUS, LITHUANIA

The results were extrapolated to the city level and confirmed that more people walk in the areas with better accessibility to key destinations and more positive walking experiences from participants. The data also suggests that the quality of the experience needs to be improved in areas with lower accessibility to key destinations to attract more walking activity.

The evidence is being used to create a new walking policy to inform more cost-effective and impactful urban planning and investment decisions, which can accelerate delivery of the city goals to improve inclusion, reduce emissions, traffic and car dependency, and help meet the city's climate target.

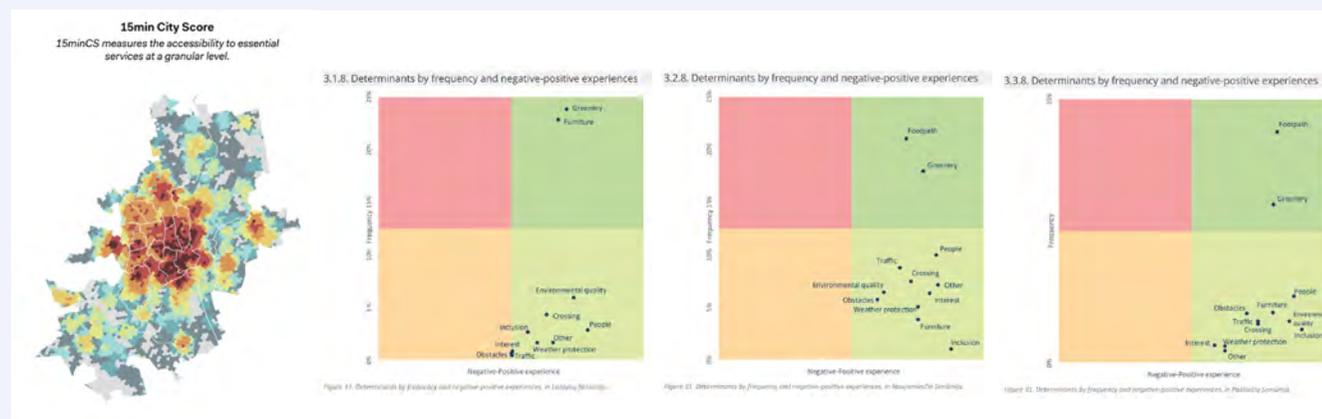


Figure 19: The 15 minute city score for the City of Vilnius, measuring the accessibility to essential services at a granular level. (Source Transform Transport)⁵⁹

59 <https://app.transformtransport.org/15minCS/europe-map.html#9/54.7213/25.09>

Measures Data **BY COUNTRY**



Measures Data

BY COUNTRY

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Afghanistan		1	4		1	1
Albania			4			1
Algeria		1	4		1	1
American Samoa		1				
Angola					1	1
Anguilla		1				
Antigua and Barbuda			3			
Argentina			1	1		1
Armenia		1	1		1	1
Australia			1		1	1
Austria			1		1	1
Azerbaijan		1	4			1
Bahamas		1	1		1	1
Bahrain		1	1			1
Bangladesh		1	4	1	1	1
Barbados		1	1			1
Belarus		1	1	1	1	1
Belgium			1	1		1
Belize			1		1	1
Benin		1	4	1		1
Bermuda		1				
Bhutan		1	4		1	1

* "WHO STEPwise approach to NCD risk factor surveillance (STEPS) system data report"

** WHO Road Safety Data Classification (1= with road safety deaths data; 2A = with road death data but limitations; 2B=improving road death data system; 3= 150,000 people or less; 4= without road death data.



Measures Data

BY COUNTRY

 (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Bolivia (Plurinational State of)			4	1		1
Bosnia and Herzegovina			4		1	1
Botswana		1	4			1
Brazil			1	1	1	1
British Virgin Islands		1				
Brunei Darussalam		1				1
Bulgaria			1	1	1	1
Burkina Faso		1	4			1
Burundi			4		1	1
Cabo Verde		1	4	1		1
Cambodia		1	4			1
Cameroon		1	4		1	1
Canada			1	1	1	1
Cayman Islands		1			1	
Central African Republic		1	4	1	1	1
Chad		1	4	1	1	1
Chile			1	1		1
China			1	1	1	1
Colombia		1	1	1		1
Comoros		1	4	1	1	1
Congo		1	4			1
Cook Islands		1	3		1	

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Measures Data

BY COUNTRY

 (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Costa Rica		1	1	1		1
Côte d'Ivoire		1	2B		1	1
Croatia			1		1	1
Cuba			1	1		1
Cyprus			1		1	1
Czechia			1			1
Democratic People's Republic of Korea (North)		1			1	1
Democratic Republic of the Congo		1	4	1		
Denmark			1		1	1
Dominica		1	3			
Dominican Republic			1	1	1	1
Ecuador		1	1			1
Egypt		1	1		1	1
El Salvador			1	1		1
England and Wales				1		
Equatorial Guinea						1
Eritrea		1	4			1
Estonia			1	1	1	1
Eswatini		1	4	1	1	
Ethiopia		1	4		1	1
Fiji		1		1		1
Finland			1	1	1	1

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BY COUNTRY

 (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
France			1	1		1
French Polynesia		1				1
Gabon		1	4		1	1
Gambia		1	4	1	1	1
Georgia		1	1	1	1	1
Germany			1	1		1
Ghana		1	4	1	1	1
Greece			1		1	1
Grenada		1				
Guatemala		1	1			1
Guinea		1	4		1	1
Guinea-Bissau			4			1
Guyana		1	1	1	1	1
Haiti			4			1
Honduras			4	1	1	1
Hungary			1			1
Iceland			1	1	1	1
India		1	2A		1	1
Indonesia		1	4	1	1	1
Iran (Islamic Republic of)		1	1		1	1
Iraq		1	4	1	1	1
Ireland			1	1		1

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BY COUNTRY

 (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Isle of Man					1	
Israel			1	1		1
Italy			1	1	1	1
Jamaica			1	1		1
Japan			1	1	1	1
Jordan	1	4			1	1
Kazakhstan		1			1	1
Kenya	1	4			1	1
Kiribati	1	3		1		
Kosovo				1	1	1
Kuwait	1	1			1	1
Kyrgyzstan	1	1		1	1	1
Lao People's Democratic Republic	1	4			1	
Latvia		1		1		1
Lebanon	1	4			1	1
Lesotho	1	4		1	1	1
Liberia	1	4			1	1
Libya	1	4			1	1
Lithuania		1			1	1
Luxembourg		1		1	1	1
Madagascar	1	4		1	1	1
Malawi	1	4		1		1

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↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Malaysia		1	4	1	1	1
Maldives		1	1		1	1
Mali		1	4		1	1
Malta			1		1	1
Marshall islands		1			1	
Mauritania		1	4		1	1
Mauritius		1	1		1	1
Mexico			1	1	1	1
Micronesia (Federated States of)		1			1	
Mongolia		1	1	1	1	1
Montenegro			1	1		1
Morocco			2B		1	1
Mozambique		1	4			1
Myanmar		1	4	1	1	
Namibia			4			1
Nauru		1			1	
Nepal		1	2B			1
Netherlands			1		1	1
New Caledonia		1				1
New Zealand			1		1	1
Nicaragua			1		1	1
Niger		1	4		1	1

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	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Nigeria			4	1	1	1
Niue		1	3			
Northern Ireland				1		
North Macedonia			1			1
Norway			1		1	1
Occupied Palestinian territory, including East Jerusalem		1	1	1	1	
Oman		1	1			1
Pakistan		1	4	1	1	1
Palau		1			1	
Panama			1	1		1
Papua New Guinea		1			1	1
Paraguay		1	1	1	1	1
Peru			4	1	1	1
Philippines			1			1
Poland			1	1	1	1
Portugal			1		1	1
Puerto Rico						1
Qatar		1	1		1	1
Republic of Korea			1	1		1
Republic of Moldova		1	1			
Russian Federation			1	1	1	1
Rwanda		1	4			1

* "WHO STEPwise approach to NCD risk factor surveillance (STEPS) system data report"

** WHO Road Safety Data Classification (1= with road safety deaths data; 2A = with road death data but limitations; 2B=improving road death data system; 3= 150,000 people or less; 4= without road death data.



Measures Data

BY COUNTRY

 (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Saint Kitts and Nevis		1				
Saint Lucia		1	3	1	1	
Saint Vincent and the Grenadines		1				
Samoa		1	4	1		
Sao Tome and Principe		1	4			
Saudi Arabia		1	2A	1	1	1
Scotland				1		
Senegal		1	2B		1	1
Serbia			1		1	1
Seychelles		1	3		1	
Sierra Leone		1	4		1	1
Singapore			1		1	1
Slovakia			1		1	1
Slovenia			1		1	1
Solomon Islands		1			1	1
Somalia			4		1	1
South Africa			1	1	1	1
South Sudan			4			1
Spain			1		1	1
Sri Lanka		1	4		1	1
Sudan		1	4			1
Suriname		1	1	1	1	1

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Measures Data

BY COUNTRY (Cont'd)

Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
Source Reference →					
Sweden		1	1	1	1
Switzerland		1	1	1	1
Syrian Arab Republic	1	4			
Tajikistan	1	4		1	1
Taiwan				1	1
Tanzania				1	1
Thailand		2A	1	1	1
Timor-Leste	1	4			1
Togo	1	4		1	1
Tokelau	1				
Tonga	1		1	1	
Trinidad and Tobago	1	1	1	1	1
Tunisia		2A	1	1	1
Türkiye	1	1	1	1	1
Turkmenistan	1		1	1	1
Turks and Caicos			1		
Tuvalu	1		1		
Uganda	1	4		1	1
Ukraine	1			1	1
United Arab Emirates	1	2A		1	1
United Kingdom		1		1	1
United Republic of Tanzania	1	2B		1	1

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Measures Data

BY COUNTRY (Cont'd)

	Measures →	Activity	Safety	Security	Comfort	Accessibility
↓ Country List	Source Reference →	*	**	UNODC SDG 16.1.4 Data Report	IRAP Safety Data	UN Habitat SDG 11.2 Data Report
United States of America			1	1	1	1
Uruguay		1	1		1	1
Uzbekistan		1	1	1	1	1
Vanuatu		1			1	
Venezuela (Bolivarian Republic of)			1		1	1
Viet Nam		1	4	1	1	1
Wallis and Futuna		1				
Western Sahara						1
Yemen			4		1	1
Zambia		1	2B		1	1
Zimbabwe		1	4	1	1	1

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PATH is a coalition calling on governments and cities to make a real commitment to walking and cycling as a key solution to the climate, health and equity challenges which we face.

The PATH coalition seeks to unlock walking and cycling's potential to accelerate the achievement of climate goals and other sustainability benefits, through greater prioritisation and investment, including through national transport, health and environment strategies and through Nationally Determined Contributions and Voluntary National Reviews.

PATH is composed of more than 500 leading organisations in the sustainable mobility community who collaborate to promote walking and cycling. It is coordinated by a core group consisting of the FIA Foundation – who are funding the coordination work – Walk21, the European Cyclists' Federation and the UN Environment Programme.

This policy template was supported by the generous funding of The FIA Foundation. The FIA Foundation is an independent UK-registered charity, working closely with grant partners to

shape projects and advocate to secure change in policy and practice. Our objective is safe and healthy journeys for all. Through partners with global reach, we are supporting safer vehicles and highways, clean air and electric cars and greater mobility access and inclusivity.

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