JUNE 2019

URBAN MOBILITY INDICATORS

FOR WALKING AND PUBLIC TRANSPORT

URBAN AGENDA INDICATORS RELATING TO SUSTAINABLE DEVELOPMENT GOAL 11.2 TO INVEST IN MORE ACCESSIBLE, SAFE, EFFICIENT, AFFORDABLE AND SUSTAINABLE INFRASTRUCTURE FOR WALKING AND PUBLIC TRANSPORT

URBAN AGENDA FOR THE EU
WORKING TOGETHER FOR BETTER CITIES
URBAN MOBILITY
UITP ADVANCING PUBLIC TRANSPORT
VBK
Walk21

FOREWORD

Urban mobility is currently facing changing circumstances globally including congestion, air and noise pollution, climate change, the search for alternatives to fossil fuels, urbanisation and the impacts of new technology. Cities are facing ever greater social challenges in respect of the environment, transport, health and social cohesion. The Urban Agenda aims to address those challenges.

The Urban Agenda for the EU was officially established by the Pact of Amsterdam, agreed by the EU Ministers responsible for urban matters in May 2016. The Urban Agenda aims to promote cooperation between Member States, cities, the European Commission, European organisations and other stakeholders in order to achieve a sustainable, socially inclusive, innovative and economically powerful Europe. The Urban Agenda sets out a new way of working together to stimulate growth, liveability and innovation in the cities, gain maximum benefits from their growth potential and successfully tackle current and future challenges.

This new approach includes the creation of a range of European partnerships to focus on twelve agreed priority themes of the Urban Agenda for the EU. One of these is the Partnership Urban Mobility (PUM).

The Urban Agenda sits within a framework of 17 Sustainable Development Goals (SDGs), including SDG 11.2 (Sustainable Transport for All), with the explicit goal of investing in more accessible, safe, efficient, affordable and sustainable infrastructure for walking and public transport. Other PUM partners are exploring parallel issues including cycling and behaviour change.

UITP and Walk21 recognise that this goal requires public transport systems and walking infrastructure offering genuine door-to-door accessibility. Our cooperation on *PUM Action No. 3 Evaluating best practices in convenient access to public transport* aims to understand and benchmark, on a consistent basis, how accessible public transport systems are in cities and regions.

We have developed a common set of urban mobility indicators and best practice case studies on the walkability of cities and access to public transport.

Indicators and best practices will allow cities to benchmark themselves against other cities of a similar size and learn from each other. This is particularly relevant given that it can help to target better funding opportunities based on need and performance. Scaling up the European Commission methodology and identifying best practices on ways to improve access through better walking and better public transport can make a significant contribution to SDG 11.2 by identifying ways to 'expand public transport'.

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THE POLICY CONTEXT FOR INVESTING IN WALKING AND PUBLIC TRANSPORT

The Habitat III New Urban Agenda 144 (a) states *"We will promote access for all to safe, age-and gender-responsive, affordable, accessible and sustainable urban mobility and land and sea transport systems, enabling meaningful participation in social and economic activities in cities and human settlements, by integrating transport and mobility plans into overall urban and territorial plans and promoting a wide range of transport and mobility options, in particular by supporting:*

> (a) *"A significant increase in accessible, safe, efficient, affordable and sustainable infrastructure for public transport, as well as non-motorised options such as walking and cycling, prioritising them over private motorised transportation".*

The New Urban Agenda sits within a framework of 17 Sustainable Development Goals (SDGs), and 169 detailed component targets, which provide a blueprint to achieve a better and more sustainable future for all.

There are several targets directly linked with investing in more walking and public transport, most notably SDG 11.2 (Sustainable Transport for All) which states: *"By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving 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"*.

Adopting these new urban mobility indicators will ensure future investment in walking and public transport is effective and value for money

Mohamed Mezghani,
Secretary General UITP

Other direct impacts include SDG 10 (Reduced Inequalities), SDG 3.6 (Reduced road deaths), SDG 3.9 (Reduced exposure to air pollution) and indirectly through improved accessibility to SDG 1.4 (Poverty reduction– equal rights to basic services), SDG 2.1 (Zero hunger– access to healthy and nutritious food), SDG 3.7 (Access to sexual & reproductive healthcare) and SDG's 4.2, 4.3 4.5 (Access to nursery, primary and tertiary education) and SDG 8 (Access to decent work). There are further cross cutting benefits to SDG 5 (Gender Inequalities), SDG 13 (Climate Action) and SDG 16 (Strong Institutions).

The European Union committed to the Urban Agenda in the EU 2030 Agenda for Sustainable Development and the Pact of Amsterdam. The Pact, in particular, sets out a shared vision to make cities and human settlements inclusive, safe, resilient and sustainable; and encourages a Partnership on Urban Mobility (PUM) to support implementation at national and local levels.

The PUM recognises the need to set local goals and targets, based on the Urban Agenda and SDGs; the need to localise the SDGs and the critical role of local and regional governments in the monitoring and reporting process of them; and has inspired a common set of indicators to monitor and evaluate investment in walking and public transport and ensure effectiveness and value for money.

Partnerships are key to the sustainable, socially inclusive, innovative and economically powerful Europe that the Pact of Amsterdam envisions

Prof. Dr. Anke Karmann-Woessner,
PUM Coordinator

02

THE CHALLENGE

With sufficient support city urban plans and transport policies can deliver accessible, safe, efficient, affordable and sustainable walking and public transport infrastructure.

However, according to Eurostat in 2012, 20.4% of people in the EU report 'high' or 'very high' levels of difficulty of access to good public transport. This means that one in five of EU citizens are being unreasonably inconvenienced by a lack of access to basic urban services, like jobs, schools, health care and shops.

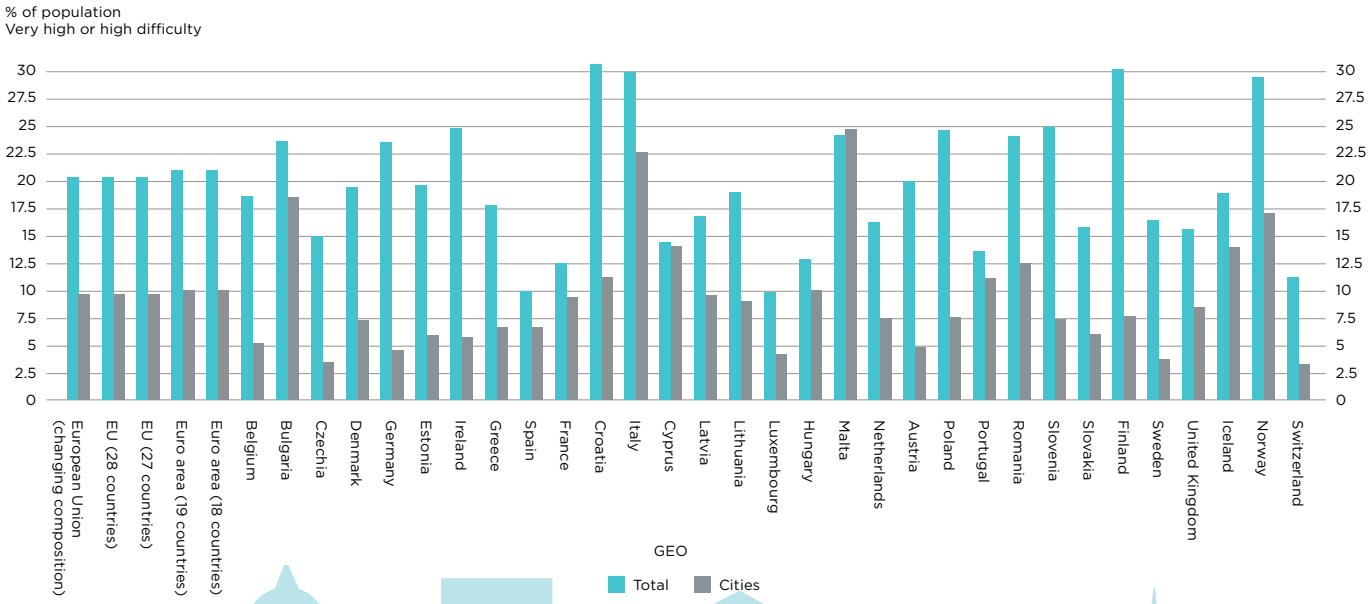
Public transport and walking are inextricably linked since access to public transport in most urban areas is predominantly on foot. Planning for seamless door-to-door passenger journeys needs to consider walking infrastructure and the waiting environment as well as the journey within the public transport vehicle.

Walking is key to the integration of communities and their public transport access at a very local level, and access to public transport for all including women, children, persons with disabilities and older persons can only be guaranteed if the walking environment is safe and accessible.

Europe's sustainable mobility future relies on an accessible, safe, efficient, affordable and sustainable infrastructure for walking and public transport

Bronwen Thornton,
CEO, Walk21

Difficulty in accessing public transport by level of difficulty and degree of urbanisation (2012 data)



03

THE IMPORTANCE OF DATA

The lack of reliable and consistent data on walking has long been a challenge in urban mobility planning. Public transport data is collected by operators and local government bodies for a range of commercial and planning purposes but does not frequently capture issues of walking accessibility to public transport.

Reliable data is needed to inform the development of evidence-based urban policy. Data can help with the understanding of where the deficiencies in existing infrastructure and services are; where the best return on further investment can be realised; lead to better knowledge and decision-making; and ensure positive impact for communities on the desired SDG outcomes.

The official global core indicator on SDG 11.2 is: The % of the population that is 500m from a public transport stop (which equates to a walking distance of around 5 minutes). This indicator is valuable as a globally consistent measure, but it will not fully highlight how urban public transport is 'expanding' as intended by the SDGs.

More qualitative and quantitative measures are therefore also needed to steer investment decisions, and the proposed indicators in this document give a fuller picture of the interaction between walking and public transport.

The World Business Council for Sustainable Development promotes a road map process for developing further indicators. The International Association of Public Transport (UITP) and the Walk21 Foundation have collaborated on a road map process to propose a number of new indicators to help cities and regions to measure, in a comparable way, the impact of different approaches to more accessible, safe, efficient, affordable and sustainable walking and public transport.

Collecting data, reporting and informing action will accelerate progress against SDG targets and goals

Stefanie Holzwarth,
UN Habitat

04

FACTORS AFFECTING ACCESS, SAFETY, EFFICIENCY AND AFFORDABILITY

The factors relevant to determining the appropriate level of access, safety, efficiency and affordability for walking and public transport in an urban area are grouped in four areas.

COMFORT AND SAFETY

Space for walking, wide enough, good surface quality, clear of obstacles; good sight lines; continuous paths; safe crossing points, short wait times; enough time to cross; dropped kerbs; tactile paving; audible signals; managed traffic speed, parking, noise and pollution; secure from crime and perception of crime risk.

Reliable and frequent public transport service; quality of vehicles, stops and stations; ease of payment; managed crowding; safe and secure access, stations, stops and services.

SERVICE DEMAND

Total time and frequency spent on daily trips by age, gender and ability.

Adequate infrastructure and public transport services that keep pace with need and demand.

CONNECTING DESTINATIONS

Convenient direct routes between key destinations where people are choosing to walk and can easily cross the roads.

Accessible public transport services (collective passenger transport and demand responsive services); easy modal transfers; integrated ticketing.

SUPPORT AND ENCOURAGEMENT

Trees; cafés; active shop fronts; lighting, bins, legible signs with time, distance and key destinations; seats.

Clear, legible timetables of public transport lines and frequency; affordable fares.

05

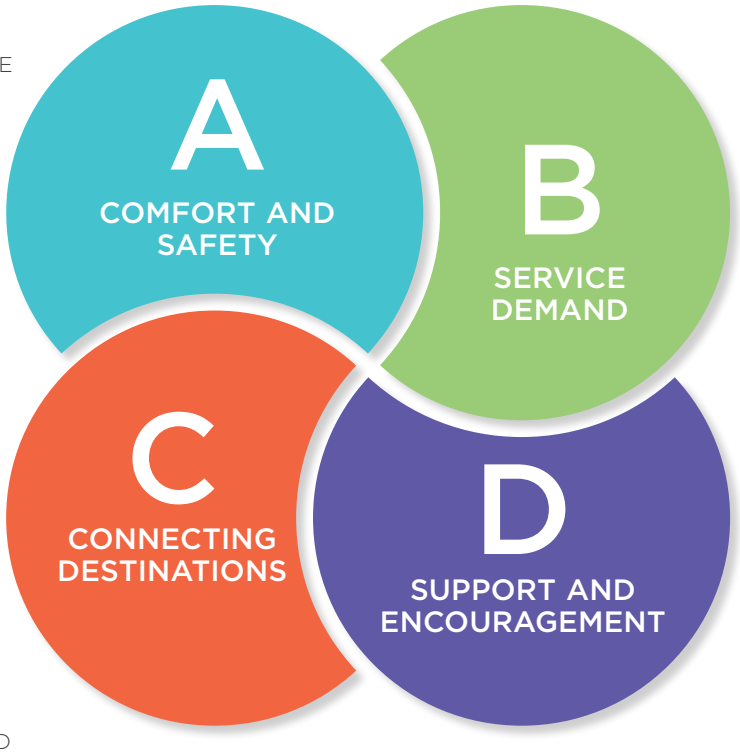
THE WALKING AND PUBLIC TRANSPORT INDICATOR FRAMEWORK

PRINCIPLE INDICATORS

- **A1.** OVERALL EXPERIENCE
- **A2.** SAFETY
- **A3.** SECURITY
- **A4.** WALKING INFRASTRUCTURE
- **A5.** PUBLIC TRANSPORT INFRASTRUCTURE
- **A6.** OPERATIONAL PERFORMANCE
- **A7.** IMPACT OF MOTORISED TRAFFIC ON WALKABILITY

PRINCIPLE INDICATORS

- **C1.** ACCESS TO PUBLIC TRANSPORT STOPS
- **C2.** ACCESS TO JOBS AND SERVICES



PRINCIPLE INDICATORS

- **B1.** DAILY TRIPS

PRINCIPLE INDICATORS

- **D1.** INFORMATION
- **D2.** AVAILABILITY OF WALKING AMENITIES
- **D3.** AFFORDABILITY
- **D4.** INCENTIVES

The indicators are provided in a tiered approach, to empower national agencies to generate data, report and inform action and accelerate progress against the target and goal. The tiered approach enables government agencies and operators to incrementally align their data collection with the indicator framework:

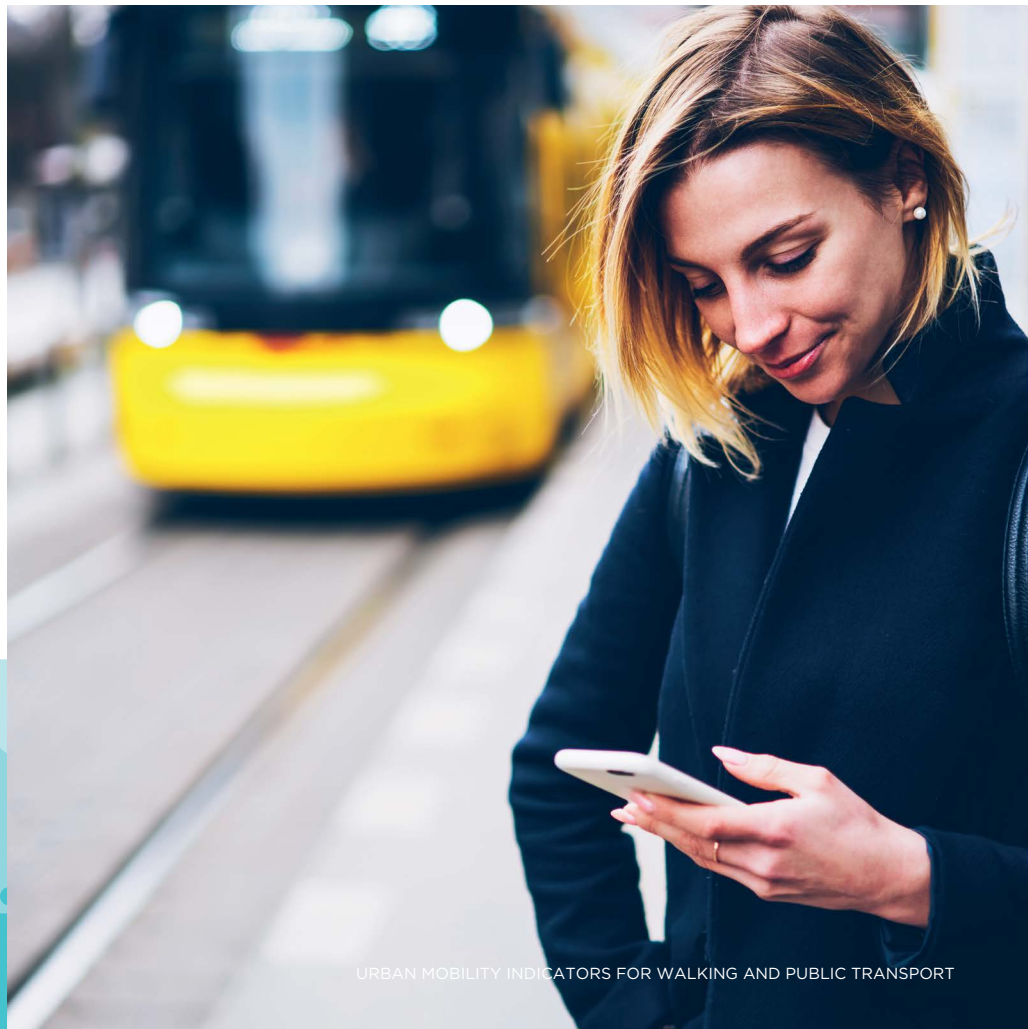
- **Tier 1** measures provide a high-level framework for consistent international benchmarking of the four topic areas.
- **Tier 2** measures represent a second level of information to support measurement of the four topic areas.
- **Tier 3** measures are made up of a total of 33 factors to understand patterns within the four core topic areas.

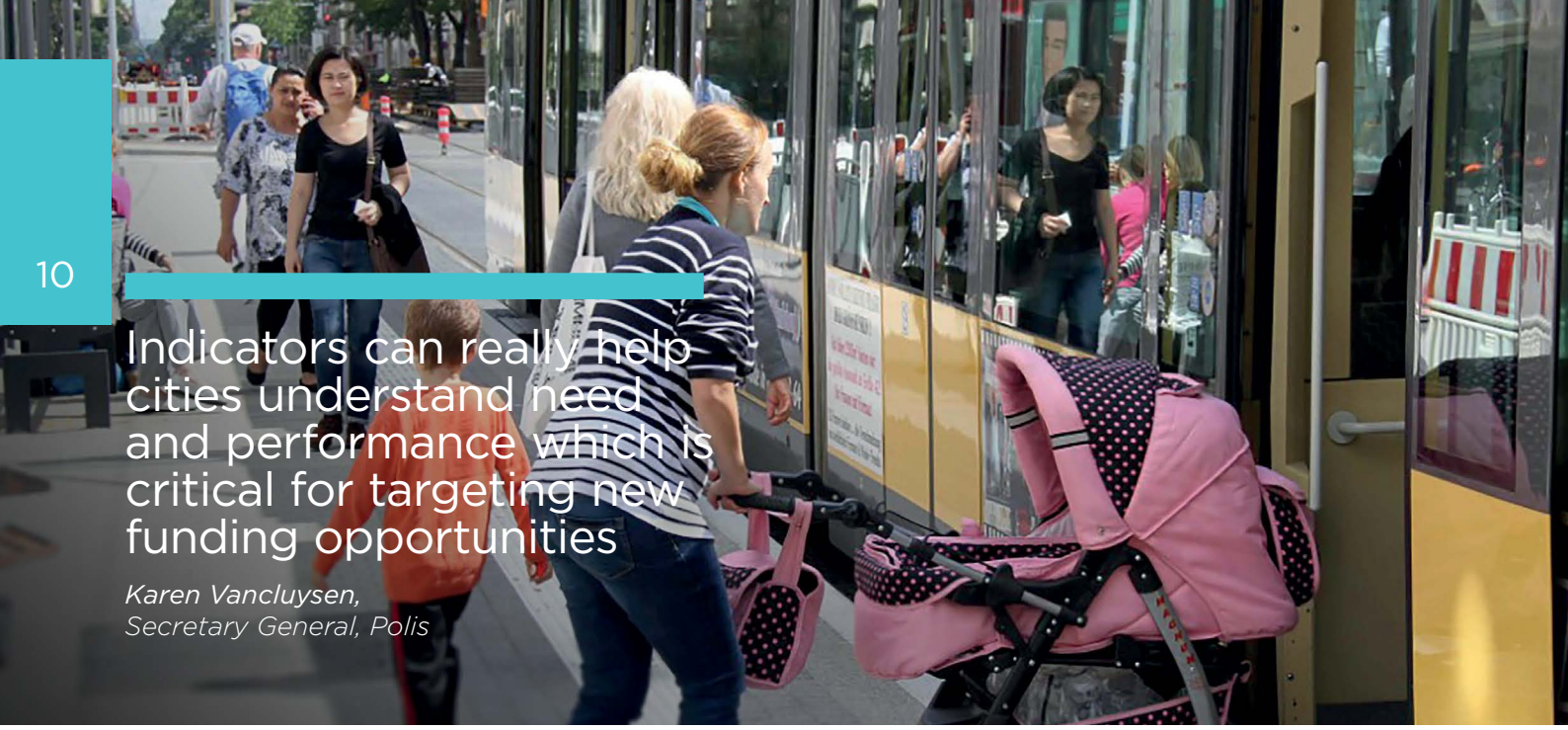
The indicators are a mix of objective, satisfaction and quality measures that link to the GRI Sustainability Reporting Standards in a modular, interrelated structure, which represent the global best practice for reporting on a range of economic, environmental and social impacts. The quality measures have adopted a 'traffic light' (Red-Yellow-Green) value scoring where feasible, in an attempt to keep the system practical and affordable.

Depending on the relevant governance structures in a city, indicators may be collected by local government authorities (LGA) or public transport operators (PTO).

The data structure and classification is based on the Global Reporting Initiative (GRI) which is the world's leading sustainability reporting standard. In doing so, it provides clear definitions to the indicators being reported, reducing potential errors and misunderstandings.

More detailed definitions and reporting guidelines are planned in the future to further support the SDG 11.2 target: *"By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, with special attention to the needs of those in vulnerable situations, women, and children, persons with disabilities and older persons".* The Appendix to this document sets out the basis for creating common definitions for objective, satisfaction and quality measures.





Indicators can really help cities understand need and performance which is critical for targeting new funding opportunities

Karen Vancluysen,
Secretary General, Polis

INDICATOR TABLE: A

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
A. COMFORT AND SAFETY	A1. OVERALL EXPERIENCE	A1.1. Walking satisfaction overall (% very satisfied, satisfied, dissatisfied)			*LGA*	*GRI 102-43/44*
		A1.2. PT Satisfaction overall (% very satisfied, satisfied, dissatisfied)			*LGA/ PTO*	*GRI 102-43/44*
	A2. SAFETY		A2.1 Provision of safe crossings (R-Y-G)		*LGA*	*GRI 203-1, GRI 201-1, GRI 416-1*
				A2.2 Sense of safety from injury caused by motorised transport or cycling (R-Y-G)	*LGA/ PTO*	*GRI 416-1*
				A2.3 Number of injuries	*LGA*	*GRI 416-2*
				A2.4 Number of fatalities	*LGA*	*GRI 416-2*
	A3. SECURITY		A3.1 Sense of personal security while walking (R-Y-G)		*LGA*	*GRI 416-1*
				A3.2 Level of human activity (R-Y-G)	*LGA*	*GRI 416-1*
				A3.3 Perception of safety for women (% of women reporting fear of crime as deterrent)	*LGA*	*GRI 416-1*
				A3.4 Availability of lighting (R-Y-G)	*LGA*	*GRI 416-1*

We do our best to create more walkable cities, while benefiting from our PUM partners' experience, as one of the leaders in mobility actions

Katarzyna Gruszecka-Spychala, Deputy Mayor, Gdynia, Poland.

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
A. COMFORT AND SAFETY	A4. WALKING INFRASTRUCTURE		A4.1 Provision of walking space (R-Y-G)		*LGA*	*GRI 203-1, GRI 201-1*
				A4.2 Quality of pavement materials (R-Y-G)	*LGA*	*GRI 203-1, GRI 201-1*
				A4.3 Maintenance level of the walking surface (R-Y-G)	*LGA*	*GRI 203-1, GRI 201-1*
				A4.4 Cleanliness of walking environment (R-Y-G)	*LGA*	*GRI 203-1, GRI 201-1*
				A4.5 Degree of path drainage (R-Y-G)	*LGA*	*GRI 203-1, GRI 201-1*
	A5. PT INFRASTRUCTURE		A5.1 Accessibility of stations and stops to people with reduced physical mobility (%)		*LGA/ PTO*	*GRI 413-1*
				A5.2 Accessibility of vehicles to people with reduced physical mobility (%)	*LGA/ PTO*	*GRI 413-1*
				A5.3 % of stations with step free access from street to platform	*LGA/ PTO*	*GRI 413-1*

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
A. COMFORT AND SAFETY	A6. OPERATIONAL PERFORMANCE		A6.1 Average reliability of services		*LGA/ PTO*	*GRI 203-1, GRI 201-1*
				A6.2 Number of annual journeys by mode	*LGA*	*GRI 203-1, GRI 201-1*
				A6.3 Vehicle km	*PTO*	*GRI 203-1, GRI 201-1*
				A6.4 Passenger km	*PTO*	*GRI 203-1, GRI 201-1*
				A6.5 Number of stops	*PTO*	*GRI 203-1, GRI 201-1*
				A6.6 Length of lines	*PTO*	*GRI 203-1, GRI 201-1*
				A6.7 Number of vehicles in fleet	*PTO*	*GRI 203-1, GRI 201-1*
				A6.8 Average waiting time at stops (minutes)	*PTO*	*GRI 203-1, GRI 201-1*
				A6.9 Average commercial speed of public transport	*PTO*	*GRI 203-1, GRI 201-1*
				A6.10 Average frequency of services	*PTO*	*GRI 203-1, GRI 201-1*
				A6.11 Operational revenues and costs	*PTO*	*GRI 203-1, GRI 201-1*
	A7. VEHICLE QUALITY		A7.1 Average age of vehicles		*PTO*	*GRI 203-1*
	A8. IMPACT OF MOTORISED TRAFFIC ON WALKABILITY		A8.1 Sense of appropriate traffic speed (R-Y-G)		*LGA*	*GRI 416-1*
				A8.2 Sense of noise (R-Y-G)	*LGA*	*GRI 102-43/44*
				A8.3 Sense of air quality (R-Y-G)	*LGA*	*GRI 102-43/44*
				A8.4 Sense of impact of parking (R-Y-G)	*LGA*	*GRI 102-43/44*

CASE STUDIES

INDICATOR	CITY EXAMPLE	EXEMPLAR ACTION
COMFORT AND SAFETY	RENNES, FRANCE	In partnership with local disability group Handicap 35 the City upgraded Metro line A to be fully accessible in 2002, setting a new standard for the new metro line B (due 2019). All buses are also accessible for people in wheelchairs and each has two spaces reserved for people in wheelchairs and a screen with visual and vocal announcements of the stops. 75% of bus stops are accessible and stops are equipped with passenger information terminals. 180 disabled people use the bus network per day and 250 the metro. A dedicated public transport service for persons with reduced mobility has also been launched. It is a door-to-door service upon reservation.
	SALZBURG, AUSTRIA	The city published a safety brochure for senior passengers in public transport on the premise that older people will remain customers if their specific needs are taken into account and they are able to use public transport safely. The number of accidents among older people has reduced. This initiative also led to more awareness among all users of public transport and public transport drivers of the specific problems faced by older passengers.

Qualitative and quantitative transport measures help steer much better investment decisions

Dr Frank Mentrup,
Lord Mayor of Karlsruhe

INDICATOR TABLE: B

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
B. SERVICE DEMAND	B1. DAILY TRIPS	B1.1 Total number of daily trips by walking and public transport			*LGA*	*GRI 203-1, GRI 201-1*
			B1.2 Mode share walking and Public Transport (%)		*LGA*	*GRI 203-1, GRI 201-1*
			B1.3 Total time spent walking on daily trips (minutes)		*LGA*	*GRI 203-1, GRI 201-1*
			B1.4 Total time spent riding on public transport on daily trips (minutes)		*LGA/ PTO*	*GRI 203-1, GRI 201-1*
				B1.4 Age (0-15; 16-30; 31-60; 60+)	*LGA/ PTO*	*GRI 102-43/44*
				B1.5 Gender (F; M; Other)	*LGA/ PTO*	*GRI 102-43/44*
				B1.6 Ability (Able; Impaired; Assisted)	*LGA/ PTO*	*GRI 102-43/44*
				B1.7 Frequency of trips (daily, often, occasionally)	*LGA/ PTO*	*GRI 102-43/44*

CASE STUDIES

INDICATOR	CITY EXAMPLE	EXEMPLAR ACTION
SERVICE DEMAND	SWITZERLAND	The public transport operator launched a fully flexible demand responsive door-to-door service in 32 regions to complement traditional public transport in low density areas. Users call a free number to order the service and are driven to connections on the main public transport network. 20,000 to 30,000 people use the service per year and 98% are satisfied or very satisfied with it
	COPENHAGEN, DENMARK	The City built a metro in three phases to connect the city and airport (2002-2007). A new city circle line 'Citytringen' (15km + 17 stations) is currently under construction as well as two more lines. The metro receives 60.9 million passengers yearly (49% increase in 3 years) with a reduction in car traffic by 4%. Passenger numbers are expected to exceed 100 million once the new line is open

Ridership went up by 15% in Prague when we adopted a door to door approach to our public transport system

Jaroslav Mach,
Head of Transportation Development and Financing Department, Prague City Hall

INDICATOR TABLE: C

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
C. CONNECTING DESTINATIONS	C1 ACCESS TO PUBLIC TRANSPORT STOPS	C1.1 Population residing <500 metres from a public transport stop (%)			*LGA*	*GRI 413-1*
				C1.2 Distance travelled to reach nearest PT stop (minutes)	*LGA*	*GRI 413-1*
				C1.3 Availability of motorised transport alternative (Y, N)	*LGA*	*GRI 413-1*
	C2 ACCESS TO JOBS AND SERVICES		C2.1 Number of jobs and urban services accessible within 60 minutes by public transport (%)		*LGA*	*GRI 203-1*

CASE STUDIES

INDICATOR	CITY EXAMPLE	EXEMPLAR ACTION
CONNECTING DESTINATIONS	GHENT, BELGIUM	The City implemented a new traffic circulation strategy in 2017 to reduce through traffic in the city centre. At the same time they limited parking, improved air quality, noise levels and invested in a network of walkable streets. The bus and tram company of the Flanders Region of Belgium, introduced SMS public transport ticketing in parallel making it easier to purchase tickets in advance to reduce total journey time delay and public transport use.
	KARLSRUHE, GERMANY	Since 1992 the city has linked the tram, S-Bahn (suburban railway) and urban rail networks in a single system called Karlsruhe Stadtbahn, creating new and more efficient connections to neighbouring regions. Over 70% of passengers now have their starting and destination point along the train line and avoid any need to interchange. Passenger numbers increased four times after the implementation of this system.

INDICATOR TABLE: D

COMPONENT FACTOR	PRINCIPLE INDICATOR	TIER 1	TIER 2	TIER 3	WHO	GRI G4 STANDARD
D. SUPPORT AND ENCOURAGEMENT	D1 INFORMATION	D1.1 Ease of wayfinding (R-Y-G)			*PTO*	*GRI 102-43/44*
				D1.2 Satisfaction with maps, timetables, and journey information (R-Y-G)	*PTO*	*GRI 102-43/44*
	D2 AVAILABILITY OF WALKING AMENITIES		D2.1 Provision of pedestrian orientated amenities such as bins, lighting, seating and signage (R-Y-G)		*LGA*	*GRI 203-1*
	D3 AFFORDABILITY			D3.1 Average income spent on transport (%)	*LGA*	*GRI 203-1*
	D4 INCENTIVES		D4.1 Number of passengers with concession / subscription tickets (trips made with concession / subscription tickets as a % of all trips on the network)		*PTO*	*GRI 203-1*

CASE STUDIES

INDICATOR	CITY EXAMPLE	EXEMPLAR ACTION
SUPPORT AND ENCOURAGEMENT	PRAGUE, CZECH REPUBLIC	The City developed an accessibility strategy to support more disabled users on the network. Vehicles, stops and information systems were all made more accessible. Low floor buses, step-free metro stations, a remote control information system for the visually impaired, acoustic beacons and a dedicated free bus service for people with disabilities was launched. Public transport ridership has since increased by 15%.
	VIENNA, AUSTRIA	More than a third of people walk every day in Vienna but new data clarified only 18% enjoyed it and to walk more; 31% wanted less car traffic; 28% more green spaces; 22% slower cars; and 20% more opportunities to sit and linger. In 2015, the Deputy Mayor and Executive City Councillor for Traffic and Transport signed 'The International Charter for Walking' and declared a *"Year of Walking"* in response. A new Mobility Agency was created and charged with promoting walking events and campaigns. In parallel an infrastructure investment programme was set up to meet more of the needs of people walking. Under the *"Wien zu Fuss"* (Vienna on Foot) brand, new activities included: a walking route map; a street life festival; online route planner with gamification rewards connected to businesses; and several of the most walked streets were made significantly more connected and walkable. Vienna's image as a walkable city improved by 5% and mode share by 1% within a year, giving the authority a mandate to further invest in the transformation of streets into more walkable public spaces and inspiring a National Walking Strategy.

APPENDIX: INDICATOR DEFINITIONS

OBJECTIVE MEASURES

These measures relate to the data that is already collected by operators and government agencies, or can be calculated from available datasets. The greatest value is derived from these datasets where the measures are aligned to existing definitions to maximise the comparability of the indicators in different geographies and over time. Several of these measures need to be normalised (e.g. on a per capita basis) for meaningful comparisons between cities, regions and countries.

Measuring walking and public transport together gives a much better understanding of how people really travel and what they need

Carlo de Antonio,
Minister for Mobility, Land Use Planning and Environment, Wallonia Region, Belgium

MEASURE	TIER	DEFINITIONS
B1.1 Total number of daily trips by walking and public transport	1	Definition of main mode trips from the Walk21 International Walking Data Standard
C1.1 Population residing <500 metres from a public transport stop (%)	1	Existing SDG 11.2 methodology (subject to review)
A5.1 Accessibility of stations and stops to people with reduced physical mobility (%)	2	
A6.1 Average reliability of services	2	
A7.1 Average age of vehicles	2	
B1.2 Mode share of walking and Public Transport (%)	2	Definition of main mode trips from the Walk21 International Walking Data Standard
B1.3 Total time spent walking on daily trips (minutes)	2	Definition of main mode trips and time spent walking from the Walk21 International Walking Data Standard
B1.4 Total time spent riding on public transport on daily trips (minutes)	2	
C2.1 Number of jobs and urban services accessible within 60 minutes by public transport (%)	2	
D4.1 Number of passengers with concession / subscription tickets (trips made with concession / subscription tickets as a % of all trips on the network)	2	

MEASURE	TIER	DEFINITIONS
A2.3 Number of injuries	3	ITF (2018) Safer City Streets recommends use of the Maximum Abbreviated Injury Scale (MAIS) whereby the MAIS3+ definition of serious injury is adopted as the cut-off point between minor and serious injuries
A2.4 Number of fatalities	3	ITF (2018) Safer City Streets recommends the use of 5 years' fatality data in reporting
A5.2 Accessibility of vehicles to people with reduced physical mobility (%)	3	
A5.3 % of stations with step free access from street to platform	3	
A6.2 Number of annual journeys by mode	3	
A6.3 Vehicle km's operated	3	
A6.4 Passenger km's	3	
A6.5 Number of stops	3	
A6.6 Length of lines	3	
A6.7 Number of vehicles in fleet	3	
A6.8 Average waiting time stops (minutes)	3	
A6.9 Average commercial speed of pubic transport	3	
A6.10 Average frequency of services	3	
A6.11 Operational revenues and costs	3	

SATISFACTION AND PERCEPTION MEASURES

These are indices that measure the satisfaction of the population in relation to a product or service, or their perception of its quality.

The survey method used should meet locally recognised criteria for reaching a representative sample of the population in question through random, stratified or quota sampling. Ideally the questions can be embedded in existing transport, social attitudes or other panel surveys to minimise costs, maximise sample size and reduce the risk of survey bias.

There is some technical debate about whether to use the standard Likert 5-point scale or an even-numbered scale without a 'neutral' response. For ease of comparison it is recommended to adopt the standard 5-point Likert scale for these measures. Results can be expressed as the % of respondents stating that they very satisfied or satisfied, or the equivalent top two categories for perception questions.

UITP and Walk21 will seek to develop a common set of survey questions to encourage consistency in the perception measures.

MEASURE	TIER	DEFINITIONS
A1.1. Walking satisfaction overall (% very satisfied, satisfied, dissatisfied)	1	
A1.2. PT Satisfaction overall (% very satisfied, satisfied, dissatisfied)	1	
D1.1 Ease of wayfinding	1	
A3.1 Sense of personal security while walking (R-Y-G)	2	
A8.1 Sense of appropriate speed (R-Y-G)	2	
D2.1 Provision of pedestrian orientated amenities such as bins, lighting, seating and signage (R-Y-G)	2	
A2.2 Sense of safety from injury caused by motorised transport or cycling (R-Y-G)	3	
A3.3 Perception of safety for women (% of women reporting fear of crime as deterrent)	3	
A4.4 Cleanliness of walking environment (R-Y-G)	3	
A8.2 Sense of noise (R-Y-G)	3	
A8.4 Sense of impact of parking (R-A-G)	3	

QUALITY MEASURES

These are measures of the quality of walking and public transport infrastructure that are typically measured at a neighbourhood scale. The quality measures have adopted a 'traffic light' (Red-Yellow-Green) value scoring where feasible, in an attempt to keep the system practical and affordable. Existing measures and definitions are recommended to encourage greater consistency where possible.

The scale of measurement is the key challenge in benchmarking these measures across cities and nations. An appropriate sampling framework needs to be determined to enable the aggregation of results from a sample of neighbourhoods to a traffic light score that is representative of the city geography as a whole. The 500m catchments around public transport stops (see measure C1.1) could form the 'population' from which neighbourhoods are sampled.

UITP and Walk21 will seek to pilot appropriate methodologies and determine internationally meaningful benchmarks for Red-Yellow-Green scores.

MEASURE	TIER	DEFINITIONS
A2.1 Provision of safe crossings (R-Y-G)	2	ITDP Pedestrians First neighbourhood indicators: Crosswalks
A4.1 Provision of walking space (R-Y-G)	2	
A3.2 Level of human activity (R-Y-G)	3	ITDP Pedestrians First neighbourhood indicators: Visually active frontage and physically permeable frontage
A3.4 Availability of lighting (R-Y-G)	3	
A4.2 Quality of pavement materials (R-Y-G)	3	
A4.3 Maintenance level of the walking surface (R-Y-G)	3	
A4.5 Degree of path drainage (R-Y-G)	3	
A8.3 Sense of air quality (R-A-G)	3	Annual number of days where WHO guidelines for NOx or PMs are breached in sample areas

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