

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions for cities
4	City indicators
5	Economy
5.1	Percentage of service contracts providing city services which contain an open data policy
5.1.1	General
5.1.2	Indicator requirements
5.1.3	Data sources
5.1.4	Data interpretation
5.2	Survival rate of new businesses per 100 000 population
5.2.1	General
5.2.2	Indicator requirements
5.2.3	Data sources
5.3	Percentage of the labour force employed in occupations in the information and communications technology (ICT) sector
5.3.1	General
5.3.2	Indicator requirements
5.3.3	Data sources
5.4	Percentage of the labour force employed in occupations in the education and research and development sectors
5.4.1	General
5.4.2	Indicator requirements
5.4.3	Data sources
6	Education
6.1	Percentage of city population with professional proficiency in more than one language
6.1.1	General
6.1.2	Indicator requirements
6.1.3	Data sources
6.1.4	Data interpretation
6.2	Number of computers, laptops, tablets or other digital learning devices available per 1 000 students
6.2.1	General
6.2.2	Indicator requirements
6.2.3	Data sources
6.2.4	Data interpretation
6.3	Number of science, technology, engineering and mathematics (STEM) higher education degrees per 100 000 population
6.3.1	General
6.3.2	Indicator requirements
6.3.3	Data sources
6.3.4	Data interpretation
7	Energy

7.1	Percentage of electrical and thermal energy produced from wastewater treatment, solid waste and other liquid waste treatment and other waste heat resources, as a share of the city's total energy mix for a given year
7.1.1	General
7.1.2	Indicator requirements
7.1.3	Data sources
7.2	Electrical and thermal energy (GJ) produced from wastewater treatment per capita per year
7.2.1	General
7.2.2	Indicator requirements
7.2.3	Data sources
7.3	Electrical and thermal energy (GJ) produced from solid waste or other liquid waste treatment per capita per year
7.3.1	General
7.3.2	Indicator requirements
7.3.3	Data sources
7.4	Percentage of the city's electricity that is produced using decentralised electricity production systems
7.4.1	General
7.4.2	Indicator requirements
7.4.3	Data sources
7.4.4	Data interpretation
7.5	Storage capacity of the city's energy grid per total city energy consumption
7.5.1	General
7.5.2	Indicator requirements
7.5.3	Data sources
7.5.4	Data interpretation
7.6	Percentage of street lighting managed by a light performance management system
7.6.1	General
7.6.2	Indicator requirements
7.6.3	Data sources
7.7	Percentage of street lighting that has been refurbished and newly installed
7.7.1	General
7.7.2	Indicator requirements
7.7.3	Data interpretation
7.7.4	Data sources
7.8	Percentage of public buildings requiring renovation/refurbishment
7.8.1	General
7.8.2	Indicator requirements
7.8.3	Data sources
7.9	Percentage of buildings in the city with smart energy meters
7.9.1	General
7.9.2	Indicator requirements
7.9.3	Data sources
7.10	Number of electric vehicle charging stations per registered electric vehicle
7.10.1	General
7.10.2	Indicator requirements
7.10.3	Data sources
8	Environment and climate change
8.1	Percentage of buildings built or refurbished within the last 5 years in conformity with green building principles
8.1.1	General
8.1.2	Indicator requirements
8.1.3	Data sources
8.2	Number of real-time remote air quality monitoring stations per square kilometre (km2)
8.2.1	General
8.2.2	Indicator requirements
8.2.3	Data sources
8.3	Percentage of public buildings equipped for monitoring indoor air quality
8.3.1	General
8.3.2	Indicator requirements
8.3.3	Data sources

- 9           **Finance**
  - 9.1           Annual amount of revenues collected from the sharing economy as a percentage of own-source revenue
    - 9.1.1          General
    - 9.1.2          Indicator requirements
    - 9.1.3          Data sources
    - 9.1.4          Data interpretation
  - 9.2           Percentage of payments to the city that are paid electronically based on electronic invoices
    - 9.2.1          General
    - 9.2.2          Indicator requirements
    - 9.2.3          Data sources
    - 9.2.4          Data interpretation
- 10          **Governance**
  - 10.1          Annual number of online visits to the municipal open data portal per 100 000 population
    - 10.1.1         General
    - 10.1.2         Indicator requirements
    - 10.1.3         Data sources
  - 10.2          Percentage of city services accessible and that can be requested online
    - 10.2.1         General
    - 10.2.2         Indicator requirements
    - 10.2.3         Data sources
    - 10.2.4         Data interpretation
  - 10.3          Average response time to inquiries made through the city's non-emergency inquiry system (days)
    - 10.3.1         General
    - 10.3.2         Indicator requirements
    - 10.3.3         Data sources
  - 10.4          Average downtime of the city's IT infrastructure
    - 10.4.1         General
    - 10.4.2         Indicator requirements
    - 10.4.3         Data sources
- 11          **Health**
  - 11.1          Percentage of the city's population with an online unified health file accessible to health care providers
    - 11.1.1         General
    - 11.1.2         Indicator requirements
    - 11.1.3         Data sources
  - 11.2          Annual number of medical appointments conducted remotely per 100 000 population
    - 11.2.1         General
    - 11.2.2         Indicator requirements
    - 11.2.3         Data sources
  - 11.3          Percentage of the city population with access to real-time public alert systems for air and water quality advisories
    - 11.3.1         General
    - 11.3.2         Indicator requirements
    - 11.3.3         Data sources
- 12          **Housing**
  - 12.1          Percentage of households with smart energy meters
    - 12.1.1         General
    - 12.1.2         Indicator requirements
    - 12.1.3         Data sources
  - 12.2          Percentage of households with smart water meters
    - 12.2.1         General
    - 12.2.2         Indicator requirements
    - 12.2.3         Data sources
- 13          **Population and social conditions**
  - 13.1          Percentage of public buildings that are accessible by persons with special needs

- 13.1.1 General
- 13.1.2 Indicator requirements
- 13.1.3 Data sources
- 13.2 Percentage of municipal budget allocated for the provision of mobility aids, devices and assistive technologies to citizens with special needs
  - 13.2.1 General
  - 13.2.2 Indicator requirements
  - 13.2.3 Data sources
- 13.3 Percentage of marked pedestrian crossings equipped with accessible pedestrian signals
  - 13.3.1 General
  - 13.3.2 Indicator requirements
  - 13.3.3 Data sources
- 13.4 Percentage of municipal budget allocated for provision of programmes designated for bridging the digital divide
  - 13.4.1 General
  - 13.4.2 Indicator requirements
  - 13.4.3 Data sources
- 14 Recreation
  - 14.1 Percentage of public recreation services that can be booked online
    - 14.1.1 General
    - 14.1.2 Indicator requirements
    - 14.1.3 Data sources
- 15 Safety
  - 15.1 Percentage of the city area covered by digital surveillance cameras
    - 15.1.1 General
    - 15.1.2 Indicator requirements
    - 15.1.3 Data sources
    - 15.1.4 Data interpretation
- 16 Solid waste
  - 16.1 Percentage of waste drop-off centres (containers) equipped with telemetering
    - 16.1.1 General
    - 16.1.2 Indicator requirements
    - 16.1.3 Data source
  - 16.2 Percentage of the city population that has a door-to-door garbage collection with an individual monitoring of household waste quantities
    - 16.2.1 General
    - 16.2.2 Indicator requirements
    - 16.2.3 Data sources
  - 16.3 Percentage of total amount of waste in the city that is used to generate energy
    - 16.3.1 General
    - 16.3.2 Indicator requirements
    - 16.3.3 Data sources
  - 16.4 Percentage of total amount of plastic waste recycled in the city
    - 16.4.1 General
    - 16.4.2 Indicator requirements
    - 16.4.3 Data sources
  - 16.5 Percentage of public garbage bins that are sensor-enabled public garbage bins
    - 16.5.1 General
    - 16.5.2 Indicator requirements
    - 16.5.3 Data sources
  - 16.6 Percentage of the city's electrical and electronic waste that is recycled
    - 16.6.1 General
    - 16.6.2 Indicator requirements
    - 16.6.3 Data sources
- 17 Sport and culture
  - 17.1 Number of online bookings for cultural facilities per 100 000 population
    - 17.1.1 General
    - 17.1.2 Indicator requirements
    - 17.1.3 Data sources

17.1.4	Data interpretation
17.2	Percentage of the city's cultural records that have been digitised
17.2.1	General
17.2.2	Indicator requirements
17.2.3	Data sources
17.3	Number of public library book and e-book titles per 100 000 population
17.3.1	General
17.3.2	Indicator requirements
17.3.3	Data sources
17.4	Percentage of city population that are active public library users
17.4.1	General
17.4.2	Indicator requirements
17.4.3	Data sources
17.4.4	Data interpretation
18	Telecommunication
18.1	Percentage of the city population with access to sufficiently fast broadband
18.1.1	General
18.1.2	Indicator requirements
18.1.3	Data sources
18.2	Percentage of city area under a white zone/dead spot/not covered by telecommunication connectivity
18.2.1	General
18.2.2	Indicator requirements
18.2.3	Data sources
18.3	Percentage of the city area covered by municipally provided Internet connectivity
18.3.1	General
18.3.2	Indicator requirements
18.3.3	Data sources
19	Transportation
19.1	Percentage of city streets and thoroughfares covered by real-time online traffic alerts and information
19.1.1	General
19.1.2	Indicator requirements
19.1.3	Data sources
19.2	Number of users of sharing economy transportation per 100 000 population
19.2.1	General
19.2.2	Indicator requirements
19.2.3	Data sources
19.2.4	Data interpretation
19.3	Percentage of vehicles registered in the city that are low-emission vehicles
19.3.1	General
19.3.2	Indicator requirements
19.3.3	Data sources
19.4	Number of bicycles available through municipally provided bicycle-sharing services per 100 000 population
19.4.1	General
19.4.2	Indicator requirements
19.4.3	Data sources
19.5	Percentage of public transport lines equipped with a publicly accessible real-time system
19.5.1	General
19.5.2	Indicator requirements
19.5.3	Data sources
19.6	Percentage of the city's public transport services covered by a unified payment system
19.6.1	General
19.6.2	Indicator requirements
19.6.3	Data sources
19.7	Percentage of public parking spaces equipped with e-payment systems
19.7.1	General
19.7.2	Indicator requirements
19.7.3	Data sources
19.8	Percentage of public parking spaces equipped with real-time availability systems

19.8.1	General
19.8.2	Indicator requirements
19.8.3	Data sources
19.9	Percentage of traffic lights that are intelligent/smart
19.9.1	General
19.9.2	Indicator requirements
19.9.3	Data sources
19.10	City area mapped by real-time interactive street maps as a percentage of the city's total land area
19.10.1	General
19.10.2	Indicator requirements
19.10.3	Data sources
19.11	Percentage of vehicles registered in the city that are autonomous vehicles
19.11.1	General
19.11.2	Indicator requirements
19.11.3	Data sources
19.12	Percentage of public transport routes with municipally provided and/or managed Internet connectivity for commuters
19.12.1	General
19.12.2	Indicator requirements
19.12.3	Data sources
19.13	Percentage of roads conforming with autonomous driving systems
19.13.1	General
19.13.2	Indicator requirement
19.13.3	Data sources
19.14	Percentage of the city's bus fleet that is motor-driven
19.14.1	General
19.14.2	Indicator requirement
19.14.3	Data sources
19.14.4	Data interpretation
20	Urban/local agriculture and food security
20.1	Annual percentage of municipal budget spent on urban agriculture initiatives
20.1.1	General
20.1.2	Indicator requirements
20.1.3	Data sources
20.2	Annual total collected municipal food waste sent to a processing facility for composting per capita (in tonnes)
20.2.1	General
20.2.2	Indicator requirements
20.2.3	Data sources
20.2.4	Data interpretation
20.3	Percentage of the city's land area covered by an online food-supplier mapping system
20.3.1	General
20.3.2	Indicator requirements
20.3.3	Data sources
21	Urban planning
21.1	Annual number of citizens engaged in the planning process per 100 000 population
21.1.1	General
21.1.2	Indicator requirements
21.1.3	Data sources
21.2	Percentage of building permits submitted through an electronic submission system
21.2.1	General
21.2.2	Indicator requirements
21.2.3	Data sources
21.3	Average time for building permit approval (days)
21.3.1	General
21.3.2	Indicator requirements
21.3.3	Data sources
21.3.4	Data interpretation
21.4	Percentage of the city population living in medium-to-high population densities
21.4.1	General
21.4.2	Indicator requirements

21.4.3	Data sources
22	Wastewater
22.1	Percentage of treated wastewater being reused
22.1.1	General
22.1.2	Indicator requirements
22.1.3	Data sources
22.1.4	Data interpretation
22.2	Percentage of biosolids that are reused (dry matter mass)
22.2.1	General
22.2.2	Indicator requirements
22.2.3	Data sources
22.3	Energy derived from wastewater as a percentage of total energy consumption of the city
22.3.1	General
22.3.2	Indicator requirements
22.3.3	Data sources
22.4	Percentage of total amount of wastewater in the city that is used to generate energy
22.4.1	General
22.4.2	Indicator requirements
22.4.3	Data sources
22.5	Percentage of the wastewater pipeline network monitored by a real-time data-tracking sensor system
22.5.1	General
22.5.2	Indicator requirements
22.5.3	Data sources
22.5.4	Data interpretation
23	Water
23.1	Percentage of drinking water tracked by real-time, water quality monitoring station
23.1.1	General
23.1.2	Indicator requirements
23.1.3	Data sources
23.1.4	Data interpretation
23.2	Number of real-time environmental water quality monitoring stations per 100 000 population
23.2.1	General
23.2.2	Indicator requirements
23.2.3	Data sources
23.3	Percentage of the city's water distribution network monitored by a smart water system
23.3.1	General
23.3.2	Indicator requirements
23.3.3	Data sources
23.3.4	Data interpretation
23.4	Percentage of buildings in the city with smart water meters
23.4.1	General
23.4.2	Indicator requirements
23.4.3	Data sources
24	Reporting and record maintenance
Annex A	(informative) Mapping of ISO 37122 indicators to ISO 37101 issues and purposes
Annex B	(informative) Mapping of ISO 37122 indicators to United Nations Sustainable Development Goals (SDGs) (2015)