



« Sustainable Cities and Communities »

ISO/TC 268

Date:
2019-02-27

Doc. Number:
N 430

Assistant:
Patricia SAINT-HERVÉ
Direct line: + 33 (0)1 41 62 83 11
patricia.saintherve@afnor.org

Your contact:
Etienne CAILLEAU
Direct line : + 33 (0)1 41 62 85 71
etienne.cailleau@afnor.org

ISO/DIS 37123 - Sustainable cities and communities -- Indicators for resilient cities

Ballot result and comments

COMMENTS

Dear member,

Please find below the result and comments of the ISO/DIS 37123 Sustainable cities and communities -- Indicators for resilient cities.

WG 2 will resolve comments received during its forthcoming meeting to be held in Paris, France from April 8th to 12th 2019.

Please note that SII (Israel) has changed its position from "abstention" to "approval with comments". It has been decided to accept this modification due to the fact that there no incidence on ballot result. Then, please consider the ballot result with an additional approval from SII.

FOLLOW UP

For information

SOURCE

ISO/TC 268 Secretariat

Ballot Information

Reference	ISO/DIS 37123	Committee	ISO/TC 268
Edition number	1		
English title	Sustainable cities and communities -- Indicators for resilient cities		
French title	Villes et communautés territoriales durables -- Indicateurs de performance pour les villes résilientes		
Start date	2018-11-29	End date	2019-02-21
Opened on	2018-11-29 00:01:53	Closed on	2019-02-22 00:02:09
Status	Closed		
Voting stage	Enquiry	Version number	1
Note			

Result of voting

P-Members voting: 24 in favour out of 24 = 100 % (requirement \geq 66.66%)

(P-Members having abstained are not counted in this vote.)

Member bodies voting: 0 negative votes out of 24 = 0 % (requirement \leq 25%)

Approved

Votes by members

Country	Member	Status	Approval	Disapproval	Abstention
Algeria	IANOR	P-Member			
Australia	SA				X
Austria	ASI	P-Member			X
Barbados	BNSI	P-Member			X
Belgium	NBN	O-Member			X
Benin	ANM	P-Member			
Brazil	ABNT	P-Member	X *		
Burkina Faso	ABNORM	P-Member			
Cameroon	ANOR	P-Member			X
Canada	SCC	P-Member	X *		
China	SAC	P-Member	X *		
Côte d'Ivoire	CODINORM	P-Member			
Czech Republic	UNMZ	P-Member			X

Denmark	DS	P-Member	X		
Ecuador	INEN	P-Member			X
Egypt	EOS	P-Member			X
France	AFNOR	Secretariat	X *		
Germany	DIN	P-Member			X *
Greece	NQIS ELOT	P-Member			X
Haiti	BHN	P-Member			
India	BIS	P-Member	X *		
Iran, Islamic Republic of	ISIRI	P-Member	X		
Ireland	NSAI	P-Member			X
Israel	SII	P-Member			X
Italy	UNI	P-Member			X
Japan	JISC	P-Member	X		
Kazakhstan	KAZMEMST	P-Member	X		
Kenya	KEBS	P-Member	X		
Korea, Republic of	KATS	P-Member	X		
Mauritius	MSB	P-Member	X		
Mexico	DGN	P-Member			X
Morocco	IMANOR	P-Member	X		
Netherlands	NEN	P-Member			X
Niger	DNQM	P-Member	X		
Nigeria	SON	P-Member	X		
Norway	SN	P-Member			X
Philippines	BPS	P-Member	X		
Romania	ASRO	P-Member	X		
Russian Federation	GOST R	P-Member	X		
Rwanda	RSB	P-Member	X		
Serbia	ISS	P-Member			
South Africa	SABS	P-Member			X
Spain	UNE	P-Member			X
Sri Lanka	SLSI	P-Member	X		
Sweden	SIS	P-Member	X		
United Kingdom	BSI	P-Member	X		
United States	ANSI	P-Member	X *		
Viet Nam	STAMEQ	P-Member	X		
P-Member TOTALS			24	0	16

Total of P-Members voting: 24			
TOTALS	24	0	18
(*) A comment file was submitted with this vote			

Comments from Voters			
Brazil	ABNT	P-Member	ISO_DIS 37123_ABNT.doc
Canada	SCC	P-Member	ISO_DIS 37123_SCC.doc
China	SAC	P-Member	ISO_DIS 37123_SAC.doc
France	AFNOR	Secretariat	ISO_DIS 37123_AFNOR.doc
Germany	DIN	P-Member	ISO_DIS 37123_DIN.docx
India	BIS	P-Member	ISO_DIS 37123_BIS.doc
United States	ANSI	P-Member	ISO_DIS 37123_ANSI.doc

Comments from Commenters	
ISO	ISO_DIS 37123_ISO.docx

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MB/ NC ¹	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment ²	Comments	Proposed change	Observations of the secretariat
IS 001				ge	<p>I suggest that we should distinguish between 3 types of Indicators/measurements:</p> <ol style="list-style-type: none"> 1. Indicators that refer to level of Readiness and preparedness for emergency/extreme situations. (This should measure also level of management of a Data Base regarding communities/individuals/infrast ructures/systems in particular those that need special awareness). 2. Indicators that refer to capacities of local communities/individuals to manage hazardous/emergency situation (without outside help that may receive later) 3. Indicators that refer to the capacity and abilities of "crises management" based on real time & transparent data collected from affected area / affected communities. <p>These 3 types of indicators related together and will support community/urban resiliency as defined in the standard</p>		
CN 002				te	Add the Indicators for internet security and data security.	To introduce a new indicator.	

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					Such as, Number of events of internet security and data security per year.		
CN 003				Ge	It is excellent work to make so good indicators framework. Nevertheless, in the other hand, we wondering that people can be easier to use and make sense of all the indicators if you add problem list in the front of every chapter.	For example, “5 economy” should focus on the problem as following: How to reduce the product losses in the disaster? How could city get more economy support after the disaster? Is the insurance perfect for the city product? How to reduce the employment risk? “7 Energy” should focus on the problem as following: How to reduce the energy supply risk? How to guarantee the safety of energy system operation? How to reduce the accident rate of energy system? How to make the balance between the peak and valley of energy supply and energy consumption?	
DE 003 004				ed	As agreed to in CA 153 you find an ANNEX F proposal linking the indicators to the resilience framework developed in CWA 17300:2018 , presented during the Zhuhai session.	Please integrate our ANNEX F proposal	
DE 002 005				ed	In the collided comments of ISO CD 37120 we agreed on adding social media (DE 120)	Please add social media to the means of communication in case of an event	

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					<p>In ISO DIS 37120 a note is added disfavoring the social media (15.1 note 2).</p> <p>We disagree to exclude the use of social media form the text, since examples in Germany showed that by using “bird-sound” the police could encourage a positive crowd control during a racist/terrorist attack.</p> <p>+ same could be said about web</p>		
DE 001 006				ge	<p>ISO/DIS 37123 focusses on an important part of urban life. Sustainable cities and communities ought to be resilient cities. Therefor they need to define and consider indicators that measure the main factors of urban resilience.</p> <p>These indicators have to be comprehensible, user-friendly, corresponding to existing and accessible data and should allow measuring the efficiency of all activities. Qualitative characteristics are more eligible than mere quantitative indicators.</p> <p>ISO/DIS 37123 proposes a catalogue of indicators for the main urban sectors. The authors acknowledge the often restricted influence cities have on governing many indicators. However, a standard has to take into account the practical relevance, otherwise being almost useless for any risk-based controlling concept.</p>	Please check or replace these indicators.	
FR 007				te	Add sentence on profile indicators	<p><i>Add “This document also includes a category of indicators – profile indicators – that are recommended to provide basic statistics and background information to help cities conduct peer comparisons.” In page xii after ...(Annex C).</i></p>	

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FR 008				GE	Several indicators are under the leadership of national bodies not the cities. This particularly the case for chapter 11 on health. In France these indicators are a national perspective not a city government perspective	The problem concerns the whole §11 and in particular §11.1 –11.3- 11.5 – 11.	
FR 009				GE	The link with ISO 37101 has to be made for each new indicator except if they are indicators similar to the profile indicator of ISO 37120, that is indicators recommended to provide basic statistic and background information to help cities. In particular, in section 8 (ie 8.4 to 8.8) and 12 (ie 12.5-12.6) several indicators of this type were included in the last version but they are not clearly identified as such. The presentation should be aligned with ISO 37120 by announcing these indicators as specific which can also explain why the link with ISO 37101 is not made.	Introduction should mention the link with ISO 37101 and also announced the category “profile indicators” with a sentence such as <i>This document also includes a category of indicators – profile indicators – that are recommended to provide basic statistics and background information to help cities conduct peer comparisons.</i> For each indicator a note specifying the link with ISO 37101 should be made as it was the case with ISO 37120 and ISO 37122. It was not made for indicators introduced after Zuhai meeting	
FR 010				Ge	Resilience is a complex subject. The availability of the links with other frameworks in annexes is useful (and thanks for the work achieved); nevertheless an application guide should be useful for cities in order to mobilize ISO 37123 indicators in an appropriate manner.		
FR 011				Ge	Annual reporting: hazard are not regular phenomena and resilience are mid or long term approach. As it's precised, some indicators are difficult to report and it could counterproductive to spend a lot of time and money for some indicators.		

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					Some indicators should be reported annually and shall at least every 3 or 5 years.		
FR 012				GE	The French mirror committee supports the need to develop and publish ISO/DIS 37123. Nevertheless, it is still considered that the current draft has to be improved, as a result we have prepared the following comments accordingly. Data availability, annual reporting, global relevance, pre-existence of conflicting national regulations were identified as key driver to suggest some modifications or deletions.		
BR 013				te	Based on technological disasters we suggest to include more indicators.	We suggest to include the following indicators for cities: Bridges and viaducts that had passed for a preventive maintenance as a percentage of the number of bridges and viaducts of the city. Public Buildings that have passed their life cycle and been upgraded or had passed through a preventive maintenance as a percentage of all public buildings of the city. Abandoned Buildings that have passed their life cycle and been upgraded or had passed through a preventive maintenance as a percentage of all abandoned buildings of the city.	
BR 014				te	Based on technological disasters we suggest to include more indicators.	We suggest to include the following indicators for population that lives near to dams: Population living near dams as a percentage of the total population of the city	

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						Dams that received preventive maintenance as a percentage of total dams	
BR 015				te	Based on the support offered for the population we suggest to include more indicators	Population that obtained psychological support after a disaster in relation to the affected population	
BR 016				te	The decision-making staff should be trained to know how to manage a range of risk reduction documents (plans, maps, etc.).	Percentage of city government employees that have been trained in disaster risk reduction as a percentage of government employees	
FR 221		Contents		Ed	The presentation of the table of contents should be aligned with ISO 37120 and ISO 37123.	Only category and title of the indicator should appear in the content. le 5.Economy 5.1 Historical disaster losses as a percentage of city product (sub section 5.1.1 ; 5.1.2; 5.1.3 should not appear in the "contents")	
US/ 222 ANSI	General	Entire Document		ge	This is a good global model. Data sources and metrics will need to be updated as current bench marks become more accepted.		
** 223		General		Ed	URNs should be written in full in the body text, not inserted as hyperlinks, e.g. 5.7.1 NOTE, 'UNDP'. If easier, add reference details to the Bibliography and insert a citation number in the main text.	Please add all URNs to the main text.	
** 224		General		Ed	ISO documents use 'conformity' not 'compliance', unless speaking about regulations.	Please change all instances of comply/compliance to conform/conformity.	
** 225		General		ed	ISO/IEC Directives, Part 2, 2018, 10.6, References in a document to itself 'For an individual document, the form "this document" shall be used.'	Change 'this International Standard', 'this standard', 'ISO 37123', etc. to 'this document' throughout.	

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** 226		General		ed	ISO/IEC Directives, Part 2, 2018, 9.1 'The decimal sign shall be a comma on the line in all language versions.' 'Each group of three digits shall be separated by a small space from the preceding digits.'	Please change all decimal points to decimal commas, and insert spaces between each group of three digits.	
** 227		General		Ed	ISO documents are referenced by their number, not their title. This can be detailed in Clause 2 or the Bibliography.	Titles removed at DIS edit.	
** 228		General	Figures	Ed	Please provide separate, editable image files so we can make any necessary corrections to text, figures, fonts, etc. See https://www.iso.org/drafting-standards.html for Guidelines for the submission of text and graphics to ISO/CS. Please also prepare figures according to ISO guidelines.		
** 229		General	'must'	Ed	ISO/IEC Directives, Part 2, 2018, 7.6 'Must shall be used to indicate constraints or obligations defined outside of the document.'	Please check all instances of 'must' and change to 'shall' if they are requirements of the document. Please ensure that no requirements or recommendations are included in NOTES.	
** 230		Introduction		Ed	The Introduction is meant to be concise, providing specific information or commentary about the technical content of the document, and about the reasons prompting its preparation. Three pages is very unusual and seems excessive.	Reduce the length of the Introduction if possible.	
FR 231		Introduction		te	To be consistent with ISO 37122, introduce a similar sentence on the Link with ISO 37101 & 37120 after the second § of the introduction	Add the sentence " This document when used in conjunction with ISO 37120 helps the cities to identify indicators for applying city management systems such as ISO 37101 and implement resilient cities policies, program and projects.	
FR 232		Introduction	§4	te	In the standards, some riks are missing, eg volcanic eruption	add "volcanic eruption and so one". " These shocks can include floods, earthquakes, hurricanes, wildfires, volcanic eruption, pandemics, chemical spills and explosions, terrorism, power	

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						outages, financial crises, cyber-attacks, conflicts and so one".	
** 233		Introduction	12, 3 rd bullet	Ed	Please add full reference details for UNISDR Disaster Resilience Scorecard for Cities to the Bibliography.		
** 234		Introduction Figure 1	8	Ed	'The structure of the 'Family of City Indicators Standards for Sustainable Development of Communities' in this ISO series reflects this relationship between sustainable development, resilient development and smart development (see Figure 1).' The title of ISO/TC 268 is now 'Sustainable cities and communities', so Figure 1 should be updated. Also, this is not a series (one ISO document number containing different parts) but a group of standards covering a similar theme.	Text revised at DIS edit. Please update Figure 1 to read 'Sustainable cities and communities'.	
DE 004 235		Introduction	After the last bullet point on page xii	te	The consideration of the UN-Habitat III "New Urban Agenda" is missing	Add after the last bullet point on page xii the new bullet point: – "Support the local implementation of The New Urban Agenda. The New Urban Agenda was released in May 2016 in Quito, Ecuador at the UN-Habitat II-conference and finally agreed by UN members on The United Nations General Assembly in September 2016. It will serve as a guideline for urban development for the next twenty years. The New Urban Agenda presents a paradigm shift based on the science of cities; it lays out standards and principles for the planning, construction, development, management, and improvement of urban areas along its five main pillars of implementation: national urban policies, urban legislation and regulations, urban planning and design, local economy and municipal finance, and local implementation. The New Urban Agenda is a resource for every level of government, from national to local; for civil society organizations; the private sector; constituent groups; and for	

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						all who call the urban spaces of the world "home" to realize this vision."	
DE 005 236		Introduction	Before the first bullet point on page xiii	te	The focus Earth's natural life supporting systems is a relevant element of the urban transformation towards sustainability. It should be mentioned in the introduction that city developers had to achieve the SDGs within a safe operating space. That means they have to focus also on planetary guard rails, to avoid intolerable external shocks. The application of indicators for resilient cities can help to operationalize planetary guard rails on the city level	Add before the first bullet point on page xiii the new bullet point: – <i>"Alignment the city development with the Earth's natural life supporting systems. The adoption of the Agenda 2030 for implementing the UN SDGs was a global turning point in setting a new course. For the first the world has agreed on a roadmap for humanity's future that in principle aligns the economy with the natural life supporting systems of the Earth. Sustaining the natural life-support systems is an important dimension of the urban transformation towards sustainability. The Agenda 2030 calls the city developers up to figure out the smartest way of achieving the SDGs within a safe operating space. In consequence means that acting within the planetary boundaries without transgressing them to avoid intolerable external shocks. Therefore, the application of indicators for resilient cities helps to identify entry points for safeguarding the Earth's natural life supporting systems (planetary guard rails). It's the basis for operationalizing planetary guard rails on the city level. A practical example for a planetary guard rail is to be in compliance with a CO₂-reduction level with a view to limiting temperature rises to 1,5 C° (climate change guard rail)."</i>	
DE 006 237		Introduction	End of the last paragraph on page xi	te	The intention of the ISO 37123 to clarify where challenges and opportunities are lying should be mentioned.	Add the following text after the last sentence of the last paragraph of page xi: "Its intention is to clarify where challenges and opportunities lie and to point out the areas where fundamental modifications and system changes are required."	

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FR 238		Introduction	Fig 1	te	The figure should be aligned with ISO 37122 final version (see FDIS ISO 37122)	Align the figure with last version of ISO 37122	
BIS 239	Page xiii	Introduction	Figure 1	te	The complete indicators for resilient cities would also be inter-twined with the following standards, namely, "ISO 37101: Management system for sustainable development."	In Figure 1, add another box in the third (bottom) level to indicate "ISO 37101: Management system for sustainable development."	
DE 007 240		Introduction	Last paragraph on page xi	te	A clear word on the "transformation" towards sustainability is missing	Add the following text line after the first sentence of the last paragraph of page xi. Before "ISO 37123.....": "That means this standard aims on the transformation towards sustainability to urban areas."	
DE 008 241		Introduction	Page xi Before first paragraph i	te	Urbanization has a formative effect on people's quality of life, as well as on the global consumption of resources and energy. The force of the city's growth will primarily affect developing countries and emerging economies in Asia and Africa. What means that the urbanization surge in the coming decades, and the character of the 'world cities society' will thus not be driven and shaped by societies – but these developments will have a huge impact on global and also on western societies. Due to this starting point, it's important to say some words in the introduction part to these challenges and their linkages to an International Standard for indicators for resilient cities.	Add the following sentence before the first paragraph which begins with "Cities need indicators": The 21st century will be the century of the cities. The global urban population could increase from just under 4 billion today to 6.5 billion people by 2050 – and city infrastructures will grow with it. The consequence is, that cities should play a decisive role as key drivers of the transformation towards sustainability. After this proposed new paragraph reformulate the former first sentence as followed: „Therefore cities need indicators to establish appropriate baseline, and measure and evaluate their performance in the lighth of an sustainable and resilient city“.	
BIS 242	Page xiii	Introduction	Paragraph 2	ge	In Paragraph 2, which has a sub-title " <i>Alignment with climate adaptation</i> ", reference to the Paris Agreement may also be useful.	Add the following sentence at the end of Paragraph 2, which has a sub-title ' <i>Alignment with climate adaptation</i> ': "This is in conformity with the Paris Agreement of 2015, which came into effect in November 2016.	

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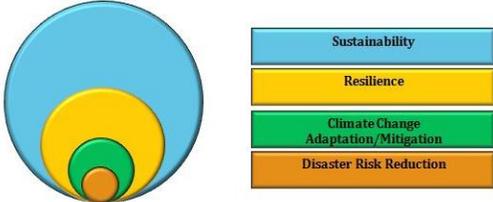
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BIS 243	Page xii Line 10 from the bottom of the page	Introduction	Paragraph 4	ed	Small grammatical suggestion.	In the line that reads as “..... at an historic UN Summit” replace the word “an” with “a”.	
DE 009 017		- 5.03 - 6.02 - 9.4 - 9.7 - 10.1 - 10.2 - 10.3 - 12.7 - 13.1 - 13.2 - 15.1 - 20.4		ed	Missing Chapter XX.1 General "Hanging paragraphs" shall be avoided since reference to them is ambiguous. [see ISO/IEC Directives, Part 2, 2018, Clause 22.3.3]	Please add chapter XX.1 General to be consistent	
** 018		01		ed	ISO/IEC Directives, Part 2, 2018, 14.2, The scope is a normative element. It shall not contain requirements, permissions or recommendations.	Text updated at DIS edit.	
DE 010 019		01			Thank you for the changes done to the introduction section. Following the agreement from ISO CD 37123 (DE 15), to underlined the understanding of the connection between resilience and sustainability, we propose the following diagram.		

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DE 011 020		02	After the second paragraph (ISO 37101)	te	It can be assumed that the International Standard ISO 37104 "Sustainable cities and communities -- Transforming our cities -- Guidance for practical local implementation of ISO 37101" will be issued before the publication of the ISO 37123. A reference to the ISO 37101 is a relevant information for the user of the ISO 37123.	Refer to the ISO 37104 after the second paragraph (ISO 37101) in chapter 2 "Normative references"	
NL 021		03		te	We miss the actual definition of <i>indicator</i> ? It is part of the title of this ISO standard. To ensure alignment with other ISO documents including the use of indicators, we would recommend including such definition.	Add a definition similar as included in ISO14091: 3.14 indicator - quantitative, qualitative or binary variable that can be measured or described, in response to a defined criterion [SOURCE: ISO 13065:2015, 3.27]	
DE 012 022		03			Please add the source to all definitions used in this section	Add sources to all definitions	
DE 013 023		03	03.10	te	See text above (3.3)	Delete the first paragraph Vulnerability and add a new paragraph Vulnerability with the following text: "Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt."	
DE 014 024		03	03.3	te	A discussion on resilience cannot happen without a discussion of various related concepts including risk, vulnerability, and hazards. Those three concepts are described best by the definitions of the IPCC definitions this paper (International Panel on Climate Change Working Group II, 2014). In the meantime these IPCC	Delete the first paragraph Hazard. Add a new paragraph Hazard with the following text: "The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health	

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					<p>definitions are also well accepted outside of the climate change community for example UN-Habitat III uses them throughout.</p> <p>Another advantage is, that other relevant ISO Standards e.g. the Standards of the ISO 14000 family are referring to the IPCC definitions. That means there is a better compliance between the terms of the standard series ISO 14000 and ISO 37000.</p> <p>Therefore, the above-mentioned IPCC definitions should be part of the chapter 3 "Terms and definition" of the ISO 37123.</p>	<p>impacts, as well as damage and loss to property, infrastructure, and livelihoods, service provision, ecosystems, and environmental resources."</p> <p>Remark: The note 1 to entry should be kept.</p>	
DE 015 025		03	03.7	te	See text above (3.3)	<p>Add a new paragraph on Risk with the following text:</p> <p>"Risk: The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard."</p>	
DE 016 026		03	After 3.5	te	<p>The approach of setting climate change guard rails or guard rails for sustaining the natural life-support systems (Earth system services approach) is derived from Planetary guard rails concept. It's the consequence of avoiding transgressing planetary boundaries. In the light of this it gets more and more important, that decision makers can draw on a approach that safeguards to live within the safe operating space of a stable planet. To implement these approach is also a relevant a city management focused on sustainable development. For operationalizing this approach an understanding of the planetary guard rails concept is needed.</p>	<p>Add a new paragraph on Planetary guard rails with the following text and remunerate the headline accordingly:</p> <p>"Planetary guard rails: Planetary guard rails are a concept to describe quantitatively defined damage limits whose transgression would have intolerable consequences. They are scientifically deduced, but always contain an evaluating component. Sustainable development pathways do not transgress these guard rails. The approach is</p>	

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					A definition of the term „Planetary guard rails“ is missing.	based on the realization that it is hardly possible to define a desirable, sustainable future in terms of a state to be achieved. It is, however, possible to agree on the definition of an area that is recognized as unacceptable, and which society wishes to avoid. Compliance with the guard rails is a necessary, but not sufficient, criterion for sustainability.” “Note 1 to entry: One example is the climate-protection guard rail, which means that an increase in the global mean temperature by more than 2 °C above the pre-industrial level should be prevented (see new proposed point 8.1) Sustainable development pathways do not transgress these guard rails.	
BIS 027	Page 1 Last line	03.01	Paragraph 1	te	Citation of UN Sendai Framework as source seems superfluous as these examples of critical infrastructure are universally accepted and adopted.	Omit the last line with the parenthesis, namely, “[SOURCE: UNITED NATIONS, Sendai Framework for Disaster Risk Reduction]”.	
** 028		03.01 3.2 3.3 3.5 3.10		Ed	Do you have permission to reproduce this text? If not then please seek permission from the copyright holder and provide full publication details. More information can be found here: https://www.iso.org/declaration-for-participants-in-iso-activities.html		
NL 029		03.02		missing	Add ‘subsidence’ as a slow-onset disaster that emerges gradually over time Cities in Delta areas world-wide are confronted with subsidence, which make them more vulnerable for storm water events. Consider to add an indicator ‘subsidence rate’	Add ‘subsidence’ in chapter 3.2 note 1 3.2 Disaster Note 1 to entry: Disasters can be frequent or infrequent, depending on the probability of occurrence and the return period of the relevant hazard. A slow-onset disaster is one that emerges	

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						gradually over time, for example through drought, desertification, sea level rise, subsidence , or epidemic disease. A sudden-onset disaster is one triggered by a hazardous event that emerges quickly or unexpectedly, often associated with earthquakes, volcanic eruptions, flash floods, chemical explosions, critical infrastructure failures, or transport accidents.	
BIS 030	Page 2	03.02	Paragraph 3 (Citation of Source)	ed	Citing the source of definition of "Disaster" as UN Sendai Framework does not appear appropriate as the definition of Disaster has primarily been taken from the UNISDR Terminology on Disaster, 2009.	Replace the citation, which currently reads as: "[SOURCE: UNITED NATIONS, Sendai Framework for Disaster Risk Reduction]", with the following: "[Source: UNISDR Terminology on Disaster, 2009.]"	
FR 031		03.06		te	The definition of potable water is not aligned with the definitions used in water services (ISO 24513) and water reuse (ISO 20670) standards. Moreover in ISO DIS 24513 the term "potable water" is deprecated and "drinking water" is preferred	Align with ISO 24513 §3.2.2.1	
DE 017 032		03.07			Strengthen consistency in the way that definitions are presented in Chapter 3. Inconsistency in 3.7	Consider to change as follows. Delete: A resilient city is Keep: <i>able to prepare for, recover from and adapt to shocks and stresses.</i>	
FR 033		03.07	NOTE 1	ed	Word "city" is missing	A resilient CITY can resist ..."	
BIS 034	Page 3	03.07	Note 1 to entry; Line 5	te	While including transport accidents in the definition of disaster, it would be appropriate to include 'fire' also.	Insert the word 'fire' in between the words 'failures,' and 'or'.	
BIS 035	Page 3	03.07	Note 1 to entry;	ed	The word 'city' is missing, per typo.	Insert the word 'city' in between the words 'resilient' and ' can'.	

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			Line 1				
** 036		03.07	Source	Ed	Sources are used when a terminological entry has been reproduced from another document. This is not the case here, where only note 3 comes from other source material. In addition, it's unclear what material from ISO 22300 has been used.	Source removed at DIS edit.	
FR 037		03.08			In the definition, some risks are missing, eg volcanic eruption	add "volcanic eruption and so one".	
CN 038		03.10	03.10 Vulnerability	Te	Adopt ISO 22300:2018 3.273 Vulnerability	ISO 22300:2018 Vulnerability process of identifying and quantifying something that creates susceptibility to a source of risk that can lead to a consequence	
NL 039		04		te	<p>We would also recommend including additional information on the type of indicators alongside the currently more descriptive nature of city indicators</p> <p>This would include making a distinction between two types of indicator. A process indicator and outcome indicator. There should also be a clear causal relation between the two types of indicator where the processes result into the desired outcome. For the purpose of governance, it is desirable to be aware of such distinction, and to support further alignment with for example impact frameworks mentioned in ISO14090 and ISO14091.</p> <p>It would also align with the theory of change and the MEL framework forwarded by the OECD. Given the complex nature to reduce vulnerability to shocks and stresses, complementary monitoring and evaluation efforts require a dynamic, flexible and iterative approach to learning efforts to "institutionalise" the use of the information</p>	<p>Please add:</p> <p>Process indicators reflect the process of measuring vulnerability to climate change when the project is implemented. Process indicators are specific, measurable, achievable, relevant and time-bound (SMART) and must define the fundamental processes of adaptation to reduce vulnerability, both qualitative and quantitative of the project.</p> <p>Outcome indicators seek a uniform outcome that align with sustaining and improving resilience of organisations. Therefore, outcome indicator reflects the anticipated adaptation to climate change result, the potential climate impact. Examples of outcome indicators may be defined as: Loss of lives that are prevented (%) OR Money that is saved, assets protected (€)</p>	

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					generated. The distinction, simplifies to adjust the process. Dinshaw, A. et al. (2014), "Monitoring and Evaluation of Climate Change Adaptation: Methodological Approaches", OECD Environment Working Papers, No. 74, OECD Publishing. http://dx.doi.org/10.1787/5jxrclr0ntjd-en	Harley, M. and J. Van Minnen (2009). Development of Indicators. http://acm.eionet.europa.eu/docs//ETCACC_TP_20_09_6_Adaptation_Indicators.pdf ETC/ACC Technical paper: 37.	
FR 040		04			The French mirror committee has identify that it might be difficult to compare cities and communities based on ISO 37123. This differs slightly from ISO 37120 and ISO 37122	It might be relevant to reflect this change into the content of ISO 37123 or deleted the last paragraph of the clause 4.	
DE 018 041		05			In CD commenting phase the following was agreed DE 39 <i>5 Economy (te) Disposable income has not been used in ISO 37120. Nevertheless, it is more significant than average income. It can be as well used for estimations on vulnerability on economic stress. Thus, we recommend including the Chinas proposal for the "disposable income" indicator (proposed in Boston meeting) in the ISO 37123 indicator set. Add disposable income indicator – see Chinese proposal</i> OBSERVATION: Agree. This was discussed in Boston and proposed for ISO 37120 and could be used for ISO 37123. Use Chinese proposal. Disposable income gives a better indication on economic status. Income	Please add the Chinese proposal as discussed in Boston and agreed in Zhuhai to the DIS.	
DE 019 042		05.01		ge	The indicator is not available in the cities and can only be produced by considerable additional costs. This type of data is usually available from large insurance companies and is not publicly available.	Please check all indicators for availability and costs	

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CN 043		05.01.2	05.1.2	TE	"city product" should reference its definition in 37120:2018	"city product" should reference its definition in 37120:2018	
DE 020 044		05.01.2	1	te	The indicator should be modified. A period of 5 years is not sufficient as some consequences/effects unveil long-term view (e.g. Chernobyl).	From a cities perspective a period of 10 years seems to be more appropriate.	
CN 045		05.02	05.2	ED	Add word "Predicted" to beginning of title	Add word "Predicted" to beginning of title	
CN 046		05.02.2	05.2.2	TE	Does not address the problem of models focusing on different effects of disasters, hence their results being additive, not averaged.	Modify the models	
CN 047		05.02.3	05.2.3	TE	Definition does not make clear for what the time period this averaging is performed.	Make the definition clear	
BIS 048	Page 5	05.02.3	Line 2 of Sub-Clause 5.2.3 Data sources	te	Insurance companies also undertake Catastrophe modelling.	A new sentence to be added at the end of the sub-clause 5.2.3 as below: "Insurance companies also undertake Catastrophe modelling."	
FR 049		05.03		te	This indicator is complementary to the indicator 10.4 and it would be better to have it in the same chapter than 10.4 in order to see the complementarity due to different governance choices	Move the indicator to in chapter 10.	

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** 050		05.03 6.2 9.4 9.7 10.1 10.2 10.3 12.7 13.1 13.2 15.1 20.4	1	Ed	ISO/IEC Directives, Part 2, 2018, 22.3.3 “Hanging paragraphs” shall be avoided since reference to them is ambiguous.’	X.X.1 General heading inserted before opening paragraph and subsequent subclause headings renumbered.	
DE 021 051		05.03.1		te	The indicator should be modified. Instead of focussing on the existence of documented business continuity plans (=quantity), their content (quality) and their accessibility are essential. The mentioned ISO 22301: 2012 can be considered to assure the quality of the document. Thus we would like to further underline the need to follow the ISO 22301: 2012.	Consider to modify. e.g.: <ul style="list-style-type: none"> • Do not use a NOTE but put the reference into the main text. • Strengthen the need to follow ISO 22301 by adding the text below. • set here a minimum e.g. 5 years Business continuity planning shall involves identification of potential risks, determining how those risks will affect operations, implementing safeguards and procedures to mitigate those risks, and regularly reviewing risks to ensure their relevance and accuracy. Business continuity plans should be regularly updated all XXyears.	

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BIS 052	Page 6	05.03.2	Line 2 of Sub-Clause 5.3.2 Data source ¹	ed	The word 'from' is appearing twice, unwarrantedly.	Delete the word 'from' coming later in this line.	
CA 053		05.03/5.4		te	Definition of non-residential and residential	Further define non-residential and residential	
DE 022 054		05.04		te	How does this indicator consider city areas that are not covered by an insurance? And what is it actually measuring? Some communities developed areas, which are under high risk, but at the same time in high-risk areas quite often insurance coverage is denied (e. g. flood-insurance in coastal areas). And thus not shifting the burden from the tax-payer as proclaimed in the NOTE 1. So the reasons for a low coverage could be induced by the insurance companies themselves or the lack of people not willing to invest in such an insurance.	Clarification needed	
FR 055		05.04			Percentage of properties with insurance coverage for high risk hazards "High risk" is never defined	Defined or delete "high risk"	
FR 056		05.04		te	Insurance is important for living together and has a limited link with Well-Being. NOTE 2 has to be revised	Modify NOTE 2 Replace " Living and working environment" issue by "Living together, interdependence and mutuality" and delete "Well-being" in purposes	
BIS 057	Page 7	05.04	Sub-Clause 5.4.2	ed	The description of 'Data sources' should be given a proper sub-clause number and font made bold, in line with the rest of the document.	Give sub-clause number 5.4.3 to the sub clause on 'Data sources' and make the number and title of this sub-clause in bold fonts. Renummer the existing sub-clause ' 5.4.3 Data interpretation ' as ' 5.4.4 Data interpretation '.	

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BIS 058	Page 7	05.04	Sub-Clause 5.4.2 Data sources	ge	The use of the phrase 'public' is avoidable, as data can and should be sourced from all insurance companies, whether public or otherwise.	Delete the word 'public'.	
FR 059		05.04.2		ed	Data source should be a specific § 5.4.3	Restore §5.4.3 Data sources and renumber §Data interpretation as §5.4.4	
DE 023 060		05.04.2	3	ed	Delete comma after e.g.	(e.g. educational... (e.g. non-commercial....	
DE 024 061		05.04.2	4	ed	Bracket missing	Where possible, insurance coverage data for each sector (i.e. residential and non-residential) and the hazards being insured against should be reported and listed in tables.	
** 062		05.04.2 8.2.2 8.5.2 8.6.2 9.1.1 9.2.1 10.1 10.3 10.5.1 13.3.2 15.1 15.3.1 15.3.1 17.2.1	NOTE NOTE NOTE NOTE NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE NOTE 1 NOTE 1 NOTE 2 NOTE 1	Ed	ISO/IEC Directives, Part 2, 2018, 24.5 'Notes shall not contain requirements or any information considered indispensable for the use of the document, for example instructions (imperative mood), recommendations or permission. Notes should be written as a statement of fact.'	NOTE changed to body text at DIS edit.	

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		17.2.1 20.1.1 20.4 22.1.1 22.2.1	NOTE 2 NOTE 1 NOTE 1 NOTE 1 NOTE 1				
DE 025 063		05.04.3		ed	Numbering of Data source missing and this need to renumber Data interpretation into 5.4.4	Change accordingly	
BIS 064	Page 8	05.05	Sub-Clause 5.5.3 Data sources	ge	The use of the phrase 'public' is avoidable, as data can and should be sourced from all insurance companies, whether public or otherwise.	Delete the word 'public'.	
FR 065		05.05.2		ed	Last sentence a parenthesis is missing	Add) after residential as such (ie residential and non-residential)	
FR 066		05.06		te	The link with resilience is not obvious. The indicator describes not the issue of diversity of local economy. What is important is the concentration of various domains of economy taking into account that a city is less resilient of their a mono kind of activity. It is very complex to describe such an idea in a dedicated indicator and city scale is not the right one.	Delete the indicator.	
BIS 067	Page 8	05.06	Sub-Clause 5.6.1 General Note 1	ed	There are two notes in this sub-clause. However, 'Note 1' is mentioned only as 'Note', which appears to be a typographical error.	Add the numeral '1' to Note 1.	
BIS 068	Page 8	05.06	Sub-Clause 5.6.3 Data sources	te	The data sources indicated in Clause 5.7 are more comprehensive and also relevant for Clause 5.6 as well.	Replace the existing description of Data sources in Sub-Clause 5.6.3 with the following" '5.6.3 Data sources Data on employment concentration should be obtained through labour force surveys or city	

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						employment assessments administered by local, regional or national authorities/statistical bodies, or Ministry or Department of Labour & Employment.'	
BIS 069	Page 9	05.06	Sub-Clause 5.6.4 Data interpretation	te	The data interpretation for this indicator is more appropriately described in NOTE 1 of Sub-Clause 5.6.1 and the same should be adopted in of Sub-Clause 5.6.4 as well.	Replace the existing description of Data interpretation in Sub-Clause 5.6.4 with the following" '5.6.4 Data interpretation A diverse local economy is a key component of city resilience. Some communities can be dependent on a small number of industries for providing employment and/or local taxation revenue, rendering these communities vulnerable to serious stresses associated with disasters and hazards of various kinds.'	
CN 070		05.07	05.7.4	Te	5.7 percentage of the workforce in informal employment, is necessarily to a more resilient city	Delete 5.7.4	
FR 071		05.07.1		te	NOTE 2 is missing (link with ISO 37101)	Add NOTE 2 This indicator reflects the "Economy and sustainable production and consumption" issue as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" purpose of the city as defined in ISO 37101.	
DE 026 072		05.X		te	An additional indicator could be the regulatory requirements that focus on the main risk in the specific city, e. g. German building authorities request earthquake-proofed building in seismic prone areas.	(We will ask the commenter to provide a methodology for the meeting in Paris, which we will put to discussion.)	
CA 073		06.02		te	This indicator is extremely difficult to measure.	Suggest to delete	
FR 074		06.02.1		te	Second alinea is not aligned with the text of 6.1.2	Align with 6.1.2	

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						Replace by "Emergency preparedness and disaster risk reduction activities shall refer to training drills, and awareness programs, for example, but not limited to evacuation simulations, practicing/rehearsing emergency protocols, testing the carrying capacity of potential evacuation routes, and evaluating the response times for emergency services."	
CA 075		06.03		te	This indicator is extremely difficult to measure.	Suggest to delete	
FR 076		06.03		te	the counting/ census of persons with disabilities does not respond to ethical principles. Moreover some vulnerability are temporary and other not. Some are cumulative. Counting will be impossible and solutions of trainings will not be the same.	Delete it	
CN 077		06.03	06.3.2	Te	It's very difficult to get the data of vulnerable people, who can be engage with emergency preparedness and disaster risk reduction activities.		
FR 078		06.03.1		te	3 rd alinea is not aligned with the text of 6.1.2	Align with 6.1.2 Replace by "Emergency preparedness and disaster risk reduction activities shall refer to training drills, and awareness programs, for example, but not limited to evacuation simulations, practicing/rehearsing emergency protocols, testing the carrying capacity of potential evacuation	
FR 079		06.04.1		te	Complete note 1 Specify how are disseminated the publications /information and which population is reallyt informed.	Add a sentence. "It is important to be particularly sensitive to the distribution of such type of publication in tourism centers in order to inform not only the citizens but also tourists/non-permanent citizens"	

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FR 080		06.04.1	1st alinea	ed	Last sentence : ...preparedness publication information ... Information has to be deleted	Delete " information" that was replaced by "publication"	
FR 081		06.04.2	2 nd alinea	te	Other languages : specify " than the official one"	Add "than the official one"	
CA 082		06.05		te	Delete "Partial lost teaching days" due to the added difficulty of accounting for partial days lost	Delete sentence	
FR 083		06.05		te	NOTE 2 is missing (link with ISO 37101)	Rename NOTE as NOTE 1 Add NOTE 2 This indicator reflects the "Education and capacity building" issue as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" and "Attractiveness" purposes of the city as defined in ISO 37101.	
CA 084		07		te	Currently, there is a gap measuring the amount of time a city's electricity peak electricity demand exceeds capacity – the current indicator only provides an annual average view of this.	Consider adding a new indicator around the percentage of the year in a year a city's peak demand exceeds electricity supply capacity (possibly number of days per year, monthly average, etc).	
CA 085		07		te	Currently, there is a gap on the disruption of energy services to institutions beyond healthcare facilities.	Consider adding new indicators. Additional suggestions welcome.	
CA 086		07		te	Currently, indicator 7.1 only addresses dependence sources but not dependence on electricity suppliers. Table needed to add information on the total city's population being served by each supplier.	Suggest to add indicator: Number of different electricity suppliers serving more than 10% of the city's population	
** 087		07		Ed	'... at least 5 percent of total energy...'	Please use the percentage symbol after a value throughout the document, i.e. change to '5 %'.	

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BIS 088	Page 14	07		te	During certain calamities such as torrential rains coupled with flooding, or earthquake, the entire transmission and distribution system get disrupted for some days. In such situations, the only way out would be the decentralised energy sources such as solar energy. Cities should, therefore, have at least 5 per cent of electricity supply from decentralised sources.	<p>Add sub-clause 7.3 after the sub-clause 7.2, as follows:</p> <p>7.3 Number of decentralised electricity sources providing at least 5 percent of total energy supply capacity</p> <p>7.3.1 General</p> <p>Those implementing this International Standard should report on this indicator in accordance with the following requirements.</p> <p>NOTE During certain calamities such as torrential rains coupled with flooding, or earthquake, the entire transmission and distribution system might get disrupted for some days. In such situations, the only way out would be the decentralised energy sources such as solar energy. Cities should, therefore, have at least 5 per cent of electricity supply from decentralised sources.</p> <p>7.3.2 Indicator requirements</p> <p>Number of decentralised electricity supply sources providing at least 5 percent of total energy supply capacity shall refer to the number of such decentralised electricity supply sources that do not depend on the normal transmission and distribution system and would continue to supply energy to the city to meet the basic needs of the residents such as lighting, mobile phone charging, some level of heating etc. Put together, such decentralized sources should be able to provide at least 5 percent of total energy supply requirements for the city.</p> <p>7.3.3 Data sources</p> <p>The data for this indicator could be sourced from energy system regulators or management authorities, individual energy</p>	

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						<p>providers, electric utilities, and electricity supply or service providers.</p> <p>7.3.4 Data Interpretation</p> <p>While multiple, different, electricity sources contribute to city resilience in the event of a system failure, this is not necessarily indicative of city resilience in all cases. For instance, during certain calamities such as torrential rains, flooding, or earthquake, the entire transmission and distribution system might get disrupted for some days. In such situations, the only way out would be the decentralised energy sources such as solar energy. While 5 per cent is proposed as a basic minimum level, a higher ratio would make the city more resilient in this respect.</p>	
CN 089		07	7	Te	<p>For the “7, energy”.</p> <p>We suggest to add some new indicators as following:</p> <p>7.3 The safety days of energy system.</p> <p>7.4 The smoothness of urban energy demand and supply.</p>	To introduce a new indicator.	
CA 090		07.01		te	<p>Consider to request that municipalities report sources as well as number of electricity energy providers by source.</p>	Add a table to account for energy sources and number of electricity energy providers by source.	
CA 091		07.01		te	<p>Should have another indicator added which takes into account alternative energy supply as geographic coverage and another indicator as a measure per 100,000 population too account for population served.</p>	Suggest to develop two new indicators pertaining or it could be columns added to the table requested in the indicator requirements of indicator 7.1.	
NL 092		08			<p>Land subsidence is causing more and more damage every year. However, it scarcely registers on the radar of many countries. Even so, the</p>	Include land subsidence initially into clause 8 Environmental and climate change	

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					<p>impact on coastal cities and peat areas is increasingly apparent. Levels of flood damage are rising and the risk of casualties is significant. Land subsidence can also lead to major economic losses such as structural damage and high maintenance costs for roads, railways, dikes, pipelines and buildings. The total bill worldwide mounts up to many billions of dollars annually. Land subsidence can only exacerbate under the pressure of climate change, population growth and the intensification of economic activities in delta areas.</p> <p>Furthermore, coastal cities often suffer from more severe, natural, falling land levels because they are built on soft soils like clay and peat.</p> <p>There are different techniques for measuring land subsidence e.g. InSAR, LiDAR, CGPS, Spirit Leveling, Extensometers and Piezometers. InSAR and LiDAR are currently popular techniques. In addition, measuring groundwater tables offer another proxy for future land subsidence.</p>	<p>Percentage of exposed city land area to subsidence.</p> <p>General</p> <p>Those implementing this International Standard should report on this indicator in accordance with the following requirements.</p> <p>NOTE: Land subsidence is causing severe damage every year and the impact on coastal cities and peat areas is increasingly apparent. Land subsidence also leads to major economic losses such as structural damage and high maintenance costs for roads, railways, dikes, pipelines and buildings. Land subsidence can only exacerbate under the pressure of climate change, population growth and the intensification of economic activities in delta areas. In periods of drought excessive groundwater extraction is suggested as the main driver for land subsidence. And as groundwater levels drop, subsidence is induced through aquifer compaction. The relative sea-level rise is increasing more rapidly in areas prone to land subsidence and are therefore more vulnerable.</p> <p>Indicator requirements</p> <p>The annual percentage of exposed land to subsidence shall be calculated as the area in m² within the grid size, on a predefined raster, within which the land altitude change occurs. The resolution of the raster will define the accuracy the map. The calculated annual difference between two consecutive years of altitude measurements divided by the former year results into the percentage land subsidence or uplift in the city over one year.</p> <p>The basis of these calculations are Digital Elevation Models (DEM) including the measurement of centimetric surface deformations of the terrain.</p>	

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						<p>Data sources</p> <p>Data on land subsidence can be sourced from local, regional or national scientific organizations or departments monitoring the environment and climate change.</p> <p>One example of land subsidence data can be obtained by InSAR. Interferometric Synthetic Aperture Radar (InSAR) is an effective way to measure changes in land surface altitude. InSAR makes high-density measurements over large areas by using radar signals from Earth-orbiting satellites to measure changes in land-surface altitude at high degrees of measurement resolution and spatial detail (Galloway and others, 2000).</p> <p>These are maps of relative ground-surface change that are constructed from InSAR data to help scientists understand how human activities, such as groundwater pumping and hydrocarbon production, cause the land surface to uplift or subside. Interferograms require 2 images taken at intervals in time to determine if there has been any shift in land surface levels. If the ground has moved away from (subsidence) or towards (uplift) the satellite between the times of the two SAR images, a slightly different portion of the wavelength is reflected back to the satellite resulting in a measurable phase shift that is proportional to displacement.</p>	
FR 093		08		te	Introduce an indicator on “cold” island effect. See resolution made in Moscou when treating comments of DIS ISO 37122 (see FR147)	<p>Percentage of urban area that reduce urban heat islands</p> <p>1. General</p> <p>Those implementing this International Standard should report on this indicator in accordance with the following requirements.</p> <p>NOTE 1: Urban heat islands affect health and well-being of the occupants. These impacts can affect a large</p>	

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						<p>number of occupants and especially sensitive persons such as children or elderly.</p> <p>Urban heat islands influence the local climate of the city, aggravate atmospheric pollution, or have consequences on energy consumption.</p> <p>To limit the health and economic consequences of urban heat islands smart cities could develop urban cool islands either by means of green infrastructures /green roofs considered in ISO 37120 or outdoor spaces:</p> <ul style="list-style-type: none"> to allow city dwellers to limit the impact of high temperatures, searing heat or extreme heat events on their health and well-being to limit urban temperatures during heat waves <p>NOTE 2: This indicator reflects the “Health and care in the community”, “Living and working environment”, “Smart community infrastructures”, “Economy and sustainable production and consumption” issues as defined in ISO 37101. It can allow an evaluation of the contribution to the “Resilience” and “Well-being” purpose of the city as defined in ISO 37101</p> <p>2. Indicator requirements</p> <p>Percentage of urban area offering cold heat islands shall be calculated as :</p> <ul style="list-style-type: none"> the total surface of total city area, excluding green spaces as defined in ISO 37120 §21.1, built with cool pavements, clear color permeable/draining materials with a high albedo, street trees (numerator) divided by the total surface of city area excluding 	

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						<p>green spaces (denominator). The result shall then be multiplied by 100 and expressed as a percentage</p> <p>NOTE : Green roofs are already covered in ISO 37120 §21.1</p> <p>3. Data sources</p> <p>Information should be obtained from building owners and managers</p>	
DE 027 094		08	08.1-8.8 Chapter 8 Environment and climate change In general	ge	<p>The content of this chapter is not focused on environmental issues. It's more specific to climate change related issues. This affects climate change mitigation as well as adaptation to climate change.</p> <p>It is proposed to add two new indicators. Once for addressing climate change mitigation and once for the field of adaptation to climate change and place them on the beginning. The headlines of this chapter should be remunerated accordingly.</p>	<p>Add the two new indicators and the headlines number 8.1 and 8.2 according the proposed text further down. (See proposed 8.1 and 8.2)</p>	
DE 029 095		08	Before 8.1	te	<p>Chapter 8 is focussing on climate change related issues but an indicator which serves as an introduction to the issues of adaptation to climate change is missing.</p>	<p>Add after the proposed new point 8.1 the following new text and remunerate the subsequent headlines accordingly:</p> <p><i>"8.2 Adaptation to climate change: City programs to cope with climate change</i></p> <p><i>8.2.1 General</i></p> <p>Building resilience and adapting to climate change is increasingly a high priority for cities. Besides</p>	

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						<p>mitigation, on which efforts have largely focused in the past, cities should today play a larger role in adaptation. Moderate adaptors usually address general disaster risk reduction rather than specific climate related impacts. A special indicator focussing on the city's ability manage the impacts of climate change is needed.</p> <p><i>8.2.2 Indicator requirements</i></p> <p>For a city's ability to handle the impacts of climate change two aspects (between others) are relevant: On the one hand a solid knowledge of its inhabitants about the possible local impacts of climate change. On the other hand, the preparedness of the vulnerable groups to cope with climate related events described under points 8.1 and 8.4 - 8.7. Therefore, it needs good informed and skilled persons those are affected.</p> <p>The city's ability on addressing climate change adaptation shall be calculated as the number of established programs to improve skills of vulnerable groups to cope with climate change initiated by city's government or its respective department.</p> <p><i>8.2.3 Data sources</i></p> <p>The data shall be sourced from government departments which are dealing with the issues of city planning, city development and urbanization and adaptation to climate change. Sources can also be agencies and research institutions that assist the</p>	

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						government in drafting and formulating programs to improve skills of vulnerable groups to cope with climate change. This includes also non-governmental institutions and associations from the civil society e.g. environmental NGOs.”	
DE 028 096		08	Before 8.1	te	Chapter 8 is focussing on climate change related issues but an indicator adressing climate change mitigation is missing.	<p>Add before point 8.1 the following new text and remunerate the subsequent headlines accordingly:</p> <p><i>“8.1 Climate change Mitigation: Establishing city oriented climate change guard rails</i></p> <p><i>8.1.1 General</i></p> <p>Climate change is a great challenge for cities around the world, particularly in developing countries where urbanization is happening in a high-speed manner. It threatens to destroy economic gains, and hinder social and economic development. Especially the urban poor, living and work in informal settlements, are affected disproportionately. Their urban environment is more exposed to climate related hazards. According the climate-safeguarding approach derived from the concept of respecting the planetary boundaries a guard rail referring to climate change mitigation is a sustainable solution. Especially city planners and developers are here in a responsible situation.</p> <p><i>8.1.2 Indicator requirements</i></p>	

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						<p>Establishing a climate change guard rail on city level is a practical example for implementing the concept for safeguarding Earth system services, which is required to avoid the planetary guard rails. Ceasing the city's CO₂-emissions from fossil sources completely by 2070 at the latest is such a climate change guard rail. Doing so it's the city's contribution to have a realistic chance of reaching the target of limiting global mean surface temperature rises to well below 2 °C compared to pre-industrial levels. A requirement of the international agreed Paris Accord.</p> <p>The city shall calculate the number of established programs which are in line with the actual version of the Nationally Determined Contributions (NDCs) the country in which the city is located has submitted to the UNFCCC-Secretariat.</p> <p><i>Note to entry:</i> The term „in line with NDCs“ means, that a program initiated by the city's government or a city government department contributes actively to the implementation of the respective NDC. The aim of the program shall be the replacement of the city's CO₂-emissions from fossil sources with emissions-free alternatives by 2070 at the latest. These programs can refer to different means to climate change mitigation. Examples are: Establishing a long-term plan for city development exclusively emissions-free and ensuring sustainable management of materials and material flows. Or a program that aims to Increase incentives for passive energy-saving in city-district development and construction</p>	

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						<p><i>8.1.3 Data sources</i></p> <p>The data shall be sourced from government departments which are responsible for drafting the submitted NDCs and from departments which are dealing with the issues of city planning, city development and urbanization in general. Sources can also be agencies and research institutions that assist the government in drafting the NDCs or drafting and formulating programs which are in line with the actual NDC.”</p>	
DE 031 097		08.01.2		ed	Delete comma after e.g.	(e.g. park,...	
DE 030 098		08.01.2		te	The location of sensors is of utmost importance (see particulate pollution). Thus, we advise to specify the locations in the text.	The indicator should include orientation on the installation of sensors. Either by referring to an appropriate standard or listing locations.	
FR 099		08.02.1		Te/ed	FR 78 of CD ISO 37123 was not implemented Moreover NOTE 3 is in fact a NOTE 2	In accordance with the resolution of comments of CD 37123 add “Resilience” in the purpose mentioned in NOTE 3. Also rename NOTE 3 as NOTE 2	
CA 100		08.03		te	The idea of protective ecosystem services is already sufficient covered under indicator 8.2. Moreover, what does this value convey – for example, a city might not necessarily have degraded ecosystems so that number is lower.	Suggest to delete	

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CN 101		08.03	08.3.2	Te	Denominator should change to the areas which need to implement ecosystem restoration.		
FR 102		08.03.1		te	“Resilience” purpose is missing in NOTE2	Add “Resilience” in NOTE 2	
CN 103		08.03/9.3	08.3.2/ 9.3.1 note1 and note3	Te	8.3.2 and 9.3.1 offer the definition of ecosystem restoration, but they are different.	Add a new term of ecosystem restoration. Ecosystem restoration refer to the process of recovering natural and semi-natural landscape elements (i.e., related to soil, water bodies and vegetation) that have been degraded, damaged or destroyed.	
FR 104		08.04		te	It seems that it is a “profile” indicator. Should be clearly stated	Add (profile) in the title	
FR 105		08.04.2		te	Regards to geography and the size of territory, it may be relevant to have more precise data at a subdivision level if available	Add a sentence: When relevant and available, more precise data at a subdivision level may reported”	
FR 106		08.05		te	It seems that it is a “profile” indicator. Should be clearly stated	Add (profile) in the title	
FR 107		08.05.2		te	Regards to geography and the size of territory, it may be relevant to have more precise data at a subdivision level if available	Add a sentence: When relevant and available, more precise data at a subdivision level may reported”	
FR 108		08.06		te	It seems that it is a “profile” indicator. Should be clearly stated	Add (profile) in the title	

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FR 109		08.06.2		te	Regards to geography and the size of territory, it may be relevant to have more precise data at a subdivision level if available	Add a sentence: When relevant and available, more precise data at a subdivision level may reported"	
FR 110		08.07		te	It seems that it is a "profile" indicator. Should be clearly stated	Add (profile) in the title	
FR 111		08.08.1		te	NOTE 2 is missing (link with ISO 37101)	Rename NOTE as NOTE 1 Add NOTE 2 This indicator reflects the "Biodiversity and Ecosystem services" issue as defined in ISO 37101. It can allow an evaluation of the contribution to the "Preservation and improvement of environment" , "Well-being" and "Resilience", purposes of the city as defined in ISO 37101.	
FR 112		09.01.1		te	Appropriate allocation of city budget has a link with responsible financial resource use and cities have to invest in maintenance to prevent some risks	Add in NOTE the purpose "Responsible resource use"	
DE 032 113		09.01.2	3	ed	Infrastructure considered by this standard should give examples of assets for each service e.g. transport: motorway bridges, rapid transit tunnels, public transport...	Consider to arrange along services and give more examples, or provide an exemplary table	
FR 114		09.02.1		te	Appropriate allocation of city budget has a link with responsible financial resource use and cities have to invest in maintenance to prevent some risks	Add in NOTE the purpose "Responsible resource use"	
FR 115		09.03.1		te	Appropriate allocation of city budget has a link with responsible financial resource use and cities have to invest in ecosystem restoration to prevent some risks	Add in NOTE the purpose "Responsible resource use"	
CA 116		09.04		te	Definitions of green and blue infrastructure are not easy to follow	Consider to clarify definition of green and blue infrastructures.	

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FR 117		09.04.1		te	Maintenance expenditure are also included. If green and blue infrastructure is not maintained they should be quickly inefficient	Add "maintaining" after "creating" in the sentence "...creating and enhancing green and blue infrastructure..."	
FR 118		09.04.1		te	Appropriate allocation of city budget has a link with responsible financial resource use and cities have to invest in green infrastructure to prevent some risks	Add in NOTE the purpose "Responsible resource use"	
FR 119		09.05.3		te	Budget documents are different from one country to the other. Be more generic and don't specify "capital and maintenance"	Delete "capital and maintenance". Add "or in the relevant city services department"	
FR 120		09.06.1		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the "Governance, empowerment and engagement" and "Living together, interdependence and mutuality" issues as defined in ISO 37101. It can allow an evaluation of the contribution to the "Social cohesion and "Resilience" purposes of the city as defined in ISO 37101.	
DE 033 121		09.06.2		te	Focussing on quantity (promoting community centres etc.) does not have any implication on quality and sustainability of these activities.	We will ask the commenter to provide a methodology for the meeting in Paris, which we will put to discussion.	
FR 122		09.07.1		te	Appropriate allocation of disaster reserve funds is also an issue of Governance and contributes also to responsible financial resource use	Add in NOTE 2 the issue " Governance and empowerment and engagement" and the purpose "Responsible resource use"	
CA 123		10			There is currently a gap relating to intergovernmental coordination and stakeholder engagement	Suggest to add new indicators.	
DE 034 124		10	After 10.7			Add before point 10.7 the following new text and remunerate the subsequent headlines accordingly:	

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						<p><i>“10.8 Monitoring and evaluation city’s contribution to international conventions (e.g. Agenda 2030 and UN Habitat III)</i></p> <p><i>10.8.1 General</i></p> <p>With adoption of the two agreements of the United Nations on the one hand the document „Transforming our world: the 2030 Agenda for Sustainable Development“ - here especially the Sustainable Development Goal 11: Make cities inclusive, safe, resilient and sustainable – and on the other hand the „New Urban Agenda“ internationally agreed on the third UN-Habitat Conference, city governments can draw on a clear orientation for a resilient and sustainable urban development. This means they can make use of the laid down information and indicators and supplement them where they are not specific enough for their city-requirements. To ensure that those agreements does not just remain a promise, leads to concrete monitoring and evaluation process in the light of the city’s requirements.</p> <p><i>10.8.2 Indicator requirements</i></p> <p>To gain a successful implementation of the SDG 11 and New Urban Agenda on city level it’s a duty of a sustainable city governance to create structures for an adequate implementation and monitoring process. Therefore, the city departments in this respect have to be enabled conduct a department tailored monitoring and evaluation process. The</p>	

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						<p>results of those processes have to be reported to the to the highest level of the city's management.</p> <p>The indicator shall be established by calculating the percentage of city departments reporting on their contributions for implementing the recommendations of Agenda 2030 (Goal 11 of the SDGs) and the UN-Habitat III „New Urban Agenda)</p> <p><i>10.8.3 Data sources</i></p> <p>The data shall be sourced from the government department which is responsible for the contents of the documents regarding the implementation of the SDGs (e.g. SDG 11) and the „New Urban Agenda“, submitted to the UN-Habitat III Secretariat and of the UN Agenda 2030 officially and are dealing with the issues of city planning, city development and urbanization. Sources can also be agencies and research institutions that assist the government in drafting and formulating the mentioned implementation programs. This includes also non-governmental institutions and associations from the civil society e.g. environmental NGOs.”</p>	
CA 125		10.01		te	<p>All of the elements of a risk assessment (i.e., hazard mapping, assessment of vulnerable populations, emergency preparedness) that comprise multi-stakeholder risk assessments are covered in many indicators in this Standard, and all of these elements are fundamentally measureable.</p> <p>Moreover, this indicator is not measureable (1) on an annual basis, since multi-stakeholder assessments are done on average every five years, and (2) the measurement of that frequency</p>	Strongly suggest to delete.	

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					is not in keeping with the construction of an indicator in accordance with the other indicators that have a defined numerator and denominator, frequency has not been defined as an indicator and the text in 10.1 has not been written in the form indicator.		
DE 035 126		10.01.2			In the last years, the competence of civil society and NGOs (e.g. environmental NGOs) for contributing on issues that are related to sustainable development increased significantly. Also in the case of the assessment of urbanization related risks. Mentioning this circumstance is missing under point 10.1.2	Add after the last paragraph of point 10.1.2 the following text line: "NOTE 1: In the last years, the competence of civil society and NGOs for contributing on issues that are related to sustainable development increased significantly. Especially environmental NGOs have gain expertise in the field of transformation a community or a city in direction to a more resilient area. This circumstance shall be taken into account."	
DE 036 127		10.01.3			In the last years, the competence of civil society and NGOs (e.g. environmental NGOs) for contributing on issues that are related to sustainable development increased significantly. Also in the case of the assessment of urbanization related risks. Mentioning this circumstance is missing under point 10.1.3	Add after the last paragraph of point 10.1.2 the following text line: It shall be taken into account, that information related to a city's sustainability and resilience derived from the civil society (e.g. environmental NGOs) are a relevant data source. This circumstance shall not be restricted to calculate indicators for risk assessments. It's relevant for a sustainable city government in general.	
CA 128		10.02			All of the elements of a disaster management plan (i.e., hazard mapping, assessment of vulnerable populations, emergency preparedness, energy, water, etc. in terms of critical infrastructure are measure in other parts of this standard, emergency response and evacuation routes is also are measured in this Standard) that comprise disaster management plans are covered in many indicators	Strongly suggest to delete.	

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					in this Standard, and all of these elements are fundamentally measureable. Moreover, this indicator is not measureable (1) on an annual basis, since multi-stakeholder assessments are done on average every five years, and (2) the measurement of that frequency is not in keeping with the construction of an indicator in accordance with the other indicators that have a defined numerator and denominator, frequency has not been defined as an indicator and the text in 10.1 has not been written in the form indicator.		
CA 129		10.03			NOTE 1 sets up a totally different way of thinking of this measure and contradicts the title. The line "should consideration be given to..." and also because it includes businesses makes it impossible to measure, and again, contradicts the title.	Suggest to delete this indicator	
CA 130		10.04			Essential services may include more than what is listed	Research should be conducted to further develop and validate the list proposed.	
FR 131		10.04.2		te	In French legislation waste management is not considered as an essential service. See appendix of decree n°2018-348 of 23 mai 2018 (JORF n°0118 of 25ht of mai 2018)	Delete "waste management" in the sentence "essential service shall refer to ..."	
DE 037 132		10.05.1		ed	Note2 change capital letter to lowercase	"Ggovernance,	
FR 133		10.05.1		te	Secure and remote back storage has a link with safety and security and community infrastructure	Add in NOTE 2 the issues " Safety and security" and "Community infrastructure"	
DE 038 134		10.05.2	2	ed	Consistency and comma e.g. is used in the text	(i.e., e.g. offsite)	

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DE 039 135		10.06		te	The number of public events has no significance for quality and benefit.	Please delete or replace the indicator.	
CN 136		10.06	10.6.2	Te	Need the explanation to tell what kinds of meetings belong to Public meeting	Add the explanation of Public meeting	
FR 137		10.06.1		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the "Governance, empowerment and engagement" and "Education and capacity building" issues as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" purpose of the city as defined in ISO 37101.	
DE 040 138		10.06.2		te	Focussing on quantity of meetings does not have any implication on quality, the knowledge outreach is not measured by this and sustainability of these activities are unsure. As well it is unsure who the facilitator of this action is, only the city? Or other initiatives and than, how to make sure they are communicated/documentated on the internet and not other media	Address the question who the facilitator is Consider to include elements that will allow a minimum knowledge on the outreach and quality or consider deleting this indicator.	
FR 139		10.07.1		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the "Governance, empowerment and engagement" issue as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" purpose of the city as defined in ISO 37101.	

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DE 041 140		10.07.2			In the last years, the evidence of city networks with relevance to sustainability increased. An existing membership of a city in such a network can be a data source for the indicator described under point 10.7. A reference to this is missing.	Add after the last paragraph of point 10.7.2 the following text: "There are numerous transnational city networks, some of which have a general remit, while others work on individual aspects such as coping with impacts on climate change. In the last years, more and more of the city networks are addressing the issue of a city's resilience including the preparedness against external shocks. It shall be taken into account that an existing city network can be a data source for generating this indicator.	
DE 042 141		10.07.3			See text above.	Add after the first (and only one) of point 10.7.3 the following text: "If the city is member of a city network with relevance to the city's sustainability and resilience this network shall be also used as a data source. <i>Note 1:</i> Examples of transnational city networks with relevance to a city's sustainability are: „United Cities and Local Government (UCLG)“, „ICLEI – Local Governments for Sustainability“, „C40 Cities“ and „The Compact of Mayors“	
IS 142	28	11		te	We suggest to add 2 more indicators related to health mobile services, which are crucial in life saving.	11.7 Number of Ambulances per 100000 population 11.8 Number of paramedics per 100000 population	
FR 143		11.01		te	This is a national issue not a city one in France. The city has no influence on this topic. Moreover the awaiting time in hospital emergency in common operating situation will change in case of crisis (in consistency with emergency plans)	Delete the indicator	

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DE 043 144		11.01.2		te	Apart from hospital emergency rooms public insurance emergency services exist.	Consider the variety of emergency services in the indicator.	
BR 145	28	11.01.2		te	This topic indicates the waiting time in hospital emergency rooms.	We understand that this topic should be more elaborate and specified, or even excluded. For example, we should measure the waiting time in hospital, but when we talk about resilience, we have to specified that this waiting is towards a disaster. And we have to consider that there is a public health system in some countries that doesn't work as same as a particular system, so we have to separate or make it clear to join this attendance.	
CA 146		11.02		te	By definition, a health care facility must have capabilities of medical supplies to deal with acute needs, and cities may have difficulty measuring this indicator.	Suggest to delete	
FR 147		11.02		te	This is more a national issue. A crisis is not managed facilities per facilities. It is an issue at the territory level "Being able to deal with at least 90 percent of major injuries within 6 hours" should be justified	Revise the indicator or delete Explain the criteria and justify it Add a date interpretation section as in some countries it is a national issue	
BR 148	29	11.02.2		te	This topic indicates the Percentage of health care facilities equipped with capabilities and medical supplies for acute needs.	The "medical supplies for acute needs" is generic and too subjective to be measured.	
FR 149		11.03		te	In any case NOTE 2 (link with ISO 37101) is missing	In any case add NOTE 2 () and rename NOTE as NOTE 1 NOTE 2 This indicator reflects the "Health and care in the community" and "Community infrastructure" issueq as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" purpose of the city as defined in ISO 37101.	

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FR 150		11.04			It is a personal issue or national issue. In case of crisis health insurance is an issue. Everybody will be considered and healed. It is not an indicator for resilience. Resilience and health are two different issue.	Delete this indicator	
FR 151		11.05		te	This is a national issue not a city one in France In any case NOTE 2 (link with ISO 37101) is missing	Delete the indicator In any case add NOTE 2 (idem 11.2.1) and rename NOTE as NOTE 1	
BR 152	30	11.05.2		te	This topic indicates the Percentage of children that are fully immunized.	We suggest to include an indicator for the percentage of population at all that are immunized.	
FR 153		11.06		te	This is a national issue not a city one in France In any case NOTE 2 (link with ISO 37101) is missing	Delete the indicator In any case add NOTE 2 (idem 11.2.1) and rename NOTE as NOTE 1	
FR 154		12.01.1		te	Emergency shelter have a link with " Living and working together"	Add in NOTE 2 the issue "Living and working together"	
FR 155		12.02		te	Percentage of buildings structurally vulnerable to high-risk hazards "High risk" is never defined	Defined or delete "high risk"	
CN 156		12.03	12.3.2	Te	The building codes and standards should be in force.		
** 157		12.03.1	NOTE	Ed	TMB Resolution 70/2018 states the following: 'Statements that include an explicit requirement or recommendation to comply with any specific law, regulation or contract (such as a normative reference to such requirements), or portion thereof, are not permitted.' 'These codes and standards must be legally and actively enforced to ensure that buildings withstand the high-risk hazards that a community faces, and	Please revise the text accordingly or remove the sentence from the document.	

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					thereby reduce risk of building damage or collapse during a disaster.' Is this intended to be a requirement of the document? If so, this is not permitted.		
FR 158		12.04		Te	Data interpretation section is missing. It is important as "number and length" measurement has to be explained.	Add a data interpretation section	
FR 159		12.04		te	The calculation in terms of " number and length" is not very clear. Specify in a table that the percentage may be calculated both with number and in length	Add a table	
FR 160		12.04		te	The denominator is not correct. "build back better" infrastructure should be compared to total damaged infrastructure	Replace "total number and length of infrastructures within the city" by total number and length of damaged infrastructures within the city	
FR 161		12.04		te	"High risk" is never defined.	Defined or delete "high risk"	
FR 162		12.04.1		te	This indicator concerns city infrastructures. It should be mentioned in NOTE 2	Add in NOTE 2 the issue "Community infrastructure"	
FR 163		12.05		te	Deaths in not the alone parameter Refer also to death and injuries definition that was defined in ISO 17755-2 (fire safety statistical data collection)	Complete deaths with injuries. Add a table specifying the value for death and the value for injuries. Refer to the ISO standard when explaining the calculation	
FR 164		12.05		te	This indicator is already in ISO 371202 (indicator 15.2 of ISO 37120)	Delete	
FR 165		12.06		te	Complete or create another indicator for "critical infrastructure"	Add(profile) in title "annual number of "critical infrastructure" flooded as a percentage of total "critical infrastructure" in the city.	
FR 166		12.06		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the "Safety and security" and "Living and working environment"	

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						issues as defined in ISO 37101. It can allow an evaluation of the contribution to the "Attractiveness", "Resilience" and "Well-Being" purposes of the city as defined in ISO 37101.	
BR 167		12.06		te	Based on the indicator 12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city	We suggest to include an indicator with the Annual number of residences that had problems or were destroyed by a landslide as a percentage of all residences of the city.	
FR 168		12.07		te	"High risk" isn't clearly defined : High-risk zones shall refer to those areas of the city that are particularly vulnerable to natural hazards, such as flood plains, and hillsides prone to mudslides, and low-lying coastal areas. Hazard maps should be used to identify such areas and indicate the probability of occurrence of a relevant hazard. What means "particularly vulnerable" ? It's not clear and not comparable. They are national definition for risk and high risk and some kind of risk. For example for the terrorism risk, all the cities are concerned. A zone can be concerned by one or more natural or industrial risk. All the risks don't provide the same danger for residential area or people	Defined more, precised the kind and the number of risk considered. It's more clear in 13.3 which focused on natural hazards and propose to list the percentage data for each relevant hazard.	
FR 169		13.01		ge	to the counting/ census of persons with disabilities does not respond to ethical principles. Moreover some vulnerability are temporary and other not. Some are cumulative.	Delete the indicator Complete 13.1.2 by " individual voluntary identification"	
CA 170		13.02			It is unclear what this is measuring and why.	Suggest to delete and replace with an indicator that focuses on the lack of a social safety net in many countries in the developing world.	
FR 171		13.02.1			This indicator has a link with living together	Add in NOTE 2 the issue "Living together, interdependence and mutuality"	

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FR 172		13.03		te	The definition is more clear but "high risk" isn't clearly defined and they are national or local definitions for risk and high risk.	delete "high" and just keep "risk". Add : The level of considered risk should be defined for each relevant hazard.	
FR 173		13.04		te	The link with resilience is very limited as it is express in the in the note " may exacerbate the impact..." but it is not proved. Moreover, We have already the Gini coefficient in ISO 37120 (indicator 13.3) that considers the topic In addition Table in 13.4.2 in US currency should be discussed	Delete the indicator	
DE 044 174		13.04.1		te	In Germany social security contributions, contributions to compulsory health insurance, statutory pension and public unemployment insurance reduce the income. However they guarantee a basic assistance. Consequently, the index of dissimilarity between income groups in countries with no social welfare system represents of bigger spatial segregation than in those countries with a welfare system.	(We will ask the commenter to provide for the meeting in Paris, which we will put to discussion.)	
** 175		13.04.2	Formula	ed	ISO/IEC Directives, Part 2, 2018, 27.5 'Descriptive terms or names of quantities shall not be arranged in the form of a mathematical formula. Names of quantities or multiletter abbreviated terms, for example presented in italics or with subscripts, shall not be used in the place of symbols.'	<i>Pop</i> changed to <i>p</i> .	
FR 176		13.05		te	The link with resilience is not obvious NOTE 2 is missing	Delete the indicator add NOTE 2 if kept	
FR 177		14.01		te	The link with resilience is not obvious This indicator is already considered in ISO 37120 (indicator 14.2)	Delete the indicator add NOTE 2 if kept	

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					NOTE 2 is missing		
FR 178		15.01		ed	The paragraph "general" is missing. A wrong numbering of sub-sections	Revise the edition of this §	
FR 179		15.01		te	NOTE 2 : concerning social media seems not to be at the right place. We cannot discuss about means taking into account that these means are not proved today. We want to alert people, not to know how they are alerted	Delete NOTE 2 or adapt it so that it could be understood with this indicator. Rename NOTE 3 as NOTE 2	
DE 045 180		15.01.1			The CD included the notion of interrelated effects, which we proposed to change to " <i>interrelated and cascading effects</i> " (e.g. CD version 14.1.1). The current document does not include this anymore, but we would like to suggest mentioning it in this paragraph still, since we think the new wording "or cumulatively over time" is not sufficiently addressing it.	Consider to change	
FR 181		15.02.1		te	FR 125 of CD ISO 37123 was not implemented	Add " Education and capacity building" purpose in NOTE 2 as decided for FR 125	
FR 182		15.02.2		Te/ed	Ideally is not a term to use in a standard		
FR 183		15.03.1		Te	NOTE 2 concerning social media seems not to be at the right place We cannot discuss about means taking into account that these means are not proved today.	Delete NOTE 2 or adapt it so that it could be understood with this indicator Rename NOTE 3 as NOTE 2	
CA 184		15.04			Currently expressed in an unclear manner that will make the indicator difficult to measure	Suggest to revise indicator or delete	
FR 185		16.01.1		te	NOTE 2 (link with ISO 37101) is missing	Add	

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						NOTE 2 This indicator reflects the “Community infrastructure” issue as defined in ISO 37101. It can allow an evaluation of the contribution to the “Resilience” and “Preservation and improvement of environment” purpose of the city as defined in ISO 37101.	
FR 186		16.01.2		te	This indicator has to be revised as it was developed with a wrong knowledge of waste management. In fact disposal sites are most of the time not located within the city boundaries. It is very frequent to have regional disposal centers. Moreover some waste management centers mentioned in this indicator are not “disposal” centers.	Consider waste “disposal” sites accessible to the city and not in the city Replace waste disposal sites by waste management sites Replace “waste disposal sites in the city” by “waste management sites accessible to the city”	
FR 187		17.01.1		te	Emergency responder equipped with specialised communication technologies are part of the city infrastructure	Add in NOTE 2 the issue “Community infrastructure”	
CA 188		17.02			Not directly relevant to telecommunications	Suggest to delete	
FR 189		17.02.1		te	NOTE 2 concerning social media seems not to be at the right place	Delete NOTE 2 or adapt it so that it could be understood with this indicator Rename NOTE 3 as NOTE 2	
CA 190		18.01			Timeliness in every day operations does not necessarily map to service efficiencies during emergencies.	Suggest to delete	
FR 191		18.01		Te	This indicator has no link with resilience. It concerns quality of life and would be for ISO 37120 next revision. We are qualifying the service not its resilience	Delete this indicator	

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FR 192		18.02.1		Te	Link with attractiveness is not obvious	Delete in NOTE2 the purpose “attractiveness”	
FR 193		18.02.1		te	Note 1 add predefined	write “predefined evacuation routes	
FR 194		18.02.2		te	We are talking about predefined route and it depends from the type of event The same route can be a good evacuation route or not depending of the type of event. In certain circumstances (snow), highways can used as evacuation route. People are blocked.	Add “predefined” and specify better the type evacuation to count in a specific situation Appropriate Evacuation route per of Type of event should be specified in a table	
FR 195		19.01		te	Food reserves appropriate delivery is an issue of city governance	Add in NOTE 2 the issue”Governance, empowerment and engagement”	
FR 196		19.02		te	The distance should not be expressed in km because it depends on the territory. We should consider the grocery that is accessible by foot	Replace “one kilometer” by “accessible by foot”	
FR 197		19.02		te	The indicator should be the percentage of the city population living within one kilometer from a grocery store rather than “living more than one kilometer”	Replace in th title and in the calculation “ more than” by “within”	
FR 198		19.02		te	This indicator is already considered in ISO 37120 (see indicator 21.4 Basic service proximity with a distance of 300m)	Delete the indicator	

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FR 199		19.02.1		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the “Health and care in the community” and “mobility” issues as defined in ISO 37101. It can allow an evaluation of the contribution to the “Resilience” purpose of the city as defined in ISO 37101.	
CA 200		19.04			Too difficult to measure. It is normally planning departments that do and plan risk assessments, so it is the same department implementing it. Why percentage of city departments? How do you measure integration into investment on top of planning – it is very confusing. Also, critical assets are mentioned, but how does this related to the indicator?	Suggest to delete	
FR 201		20		te	Please consider the integration of this indicator which could help to support and promote urban solutions which are aimed to support flood mitigation.	Please integrate the following indicator as formulated : Percentage of water retention tanks or zones 1 General Those implementing this International Standard should report on this indicator in accordance with the following requirements. NOTE 1: Floods can have serious consequences for persons, economic activities, infrastructures and buildings, as well cultural heritage and for the environment. In complement of dikes, and their maintenance, cleaning of storm water drains, to mitigate/reduce flood risk and to limit health, environmental and economic consequences of floods smart cities could create flood zones to confine water as detention basins, retention ponds. UNISDR proposes others solutions like the underground	

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						<p>parking garages used as holding tanks for storm water, and parks that function as flood zones</p> <p>NOTE 2: This indicator reflects “Smart community infrastructures”, “Safety and security”, “Well-being” issues as defined in ISO 37101. It can allow an evaluation of the contribution to the “Resilience” purpose of the city as defined in ISO 37101</p> <p>2. Indicator requirements</p> <p>Percentage of flood reduction measures shall be calculated as the total flood prevention measures divided by the total prevention measure taken by the city (denominator). The result shall then be multiplied by 100 and expressed as a percentage</p> <p>3. Data sources</p> <p>Information should be obtained from city managers</p>	
FR 202		20		Te	It might be interesting to integrate an indicator which is aimed to measure/follow the urbanized part of the community which remains pervious as an addition to the indicator 20.2 ; please consider the introduction of the proposed indicator as 20.3.	<p>Please integrate the following indicator as formulated :</p> <p>Percentage of soakaways and porous pavement</p> <p>1 General</p> <p>Those implementing this International Standard should report on this indicator in accordance with the following requirements.</p> <p>NOTE 1: The waterproofing of soils has an influence on the water cycle, on the modification of the functions of the soil and on the living environment. The waterproofing of urban surfaces has damaging consequences as floods, concentration of pollution, alteration of nature, impact on the living environment and up to the safety of goods and people.</p>	

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						<p>To deal with urban storm-water run-off, to replenish groundwater and to limit health, environmental and economic consequences of soil sealing smart cities could use porous surfacing materials and soakaways.</p> <p>NOTE 2: This indicator reflects “Smart community infrastructures”, “Safety and security”, “well-being”, “Biodiversity and ecosystem services” issues as defined in ISO 37101. It can allow an evaluation of the contribution to the “Resilience” purpose of the city as defined in ISO 37101</p> <p>2. Indicator requirements</p> <p>Percentage of soakaways and porous pavement shall, be calculated as the total surface of public spaces or pavement built with porous and permeable materials divided by the total surface of public spaces or pavement in the city (denominator). The result shall then be multiplied by 100 and expressed as a percentage</p> <p>3. Data sources</p> <p>Information should be obtained from city managers</p>	
FR 203		20.03			The denominator is not correct. To be more comparable and revelant, we should divide by the city land area in risk zones and not by the total land area of the city	change : City land area in risk hazard zones where relevant risk reduction measures have been implemented (square kilometres) (numerator) divided by the city land area in risk zone (square kilometres) (denominator).	
FR 204		20.03		te	"Risk reduction measures" is not clearly explained to be comparable. What do you include or not ? Eg in France, flood barrier (dyke) (protective infrastructure) arn't considered as risk reduction measures because this kind of infrstructure can break and be more dangerous. However risk reduction measure shall be linked to	Defined the kind of risk reduction measure taking account. If you want, add a new indicator : Percentage of city land area in risk zones protected by a specific protective work	

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					the risk level.		
FR 205		20.03		Te	"high risk" isn't clearly defined and they are national or local definitions for risk and high risk.	delete "high" and just keep "risk".	
FR 206		20.04	4 th alinea	te	The alinea on critical assets is no appropriate	Delete this paragraph or revise it to be clearer	
FR 207		21.01		te	<p>This indicator is not appropriate and operational at it is written:</p> <ol style="list-style-type: none"> 1) It is not obvious that decentralization of water services improves resilience in comparison to centralized water services as there are key issues of maintenance for decentralized treatments, in particular for small units. To our knowledge, there are no study showing the prevalence of decentralized systems in terms of resilience. 2) Indicator should not be developed with similarity to energy decentralization as issues are different. For water it is in many cases individual treatment where the question of functioning and maintenance is a key issue. It depends on local context, maintenance capacities etc..., criteria that are not taken into account in the scope of the indicator 3) Decentralized treatment and centralized treatment are complementary offers adapted to different situations. Decentralized treatment may be a complement to centralized treatment when it is difficult to install networks in a short term. 4) Their technico-economical benefits depend from the urban form, city typology, geography, It depends also 	<p>Delete the indicator or revise the indicator deeply</p> <p>This indicator shall be deleted if improvement is impossible. Lack on feedbacks on these systems may be a constraint to the indicator development.</p> <p>In any case it shall be revised in order to be more objective on the complementarity of decentralized and centralized systems</p> <p>When describing the benefits of decentralized treatment, the NOTE should take into account urban form, refurbishment conditions, systems considered etc and specify in which case the benefit are expected</p> <p>Considering the definition of "decentralized system", precision on capacities considered have to be introduced.</p> <p>A data interpretation section (21.1.4) needs to be added if the indicator is not deleted</p>	

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					<p>from the context of the city in terms of refurbishment. These elements are not taken into account in the description of the indicator which will be impossible to interpret.</p> <p>5) Decentralized treatment as it is defined in the indicator can either cover systems of small capacities (few inhabitants eq) or systems treating waste water for up to hundred thousands of inhabitant equivalent (systems with networks exist in India for more than 350 000 inhab.eq). Corresponding systems are so different that their impact on resilience may also differ. Mesh of population should be taken into account for data interpretation. "small volumes" is unclear</p> <p>6) In fact, the NOTE is incorrect as the benefits mentioned depend on criteria that are not described. It must be changed completely</p> <p>Data interpretation will be impossible if the decentralized systems are not better specified and their impact on resilience is not better analyzed and characterized.</p>		
FR 208		21.01.1		te	NOTE 2 (link with ISO 37101) is missing	Add NOTE 2 This indicator reflects the "Health and care in the community" and "community infrastructures" issues as defined in ISO 37101. It can allow an evaluation of the contribution to the "Resilience" purpose of the city as defined in ISO 37101.	
DE 046 209		22		te	Additional to the quality of water (potable water) the free access to water can be an elementary factor, addressed in ISO 37120.	How to link to ISO 37120 here?	

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FR 210		22.02		te	In the title “potable” is used : see the comment on alignment with water terminology standard ISO 24513 Potable water should be replaced by “drinking water”	Replace “potable” by “drinking water”	
BIS 211	Pages 2 & 3	3	After Sub- Clause 3.6	te	It would be desirable to introduce the term ‘Resilience’ also, which is well defined in the UNISDR Terminology on Disaster Risk Reduction”, Geneva, May 2009 (http://www.unisdr.org/we/inform/terminology) and subsequently adopted in the UN Sendai Framework Document 2015-2030.	Insert the following term and definition after sub-clause 3.6: “3.7 Resilience ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. [Source: United Nations Office for Disaster Risk Reduction (UNISDR), “2009 UNISDR Terminology on Disaster Risk Reduction”, Geneva, May 2009 (http://www.unisdr.org/we/inform/terminology)]”	
CN 212		3 Terms and definitions		Te	Add a new term, essential city service	The definitions of City services, essential city services, city services providers, are appearing in different indicators explanation. It’s necessary to add a new term of essential city service. Essential city services shall refer to services that are deemed vital to the wellbeing and functioning of the community. These can include but are not limited to: transportation, electricity, gas, water, sanitation and wastewater treatment, waste	

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						management, food, health, police, fire and emergency services, and ambulance.	
** 213		A E		Ed	ISO/IEC Directives, Part 2, 2018, 20.5 'Each annex shall be explicitly referred to within the text.'	Please provide a reference to Annex A and Annex E in the main text.	
** 214		A	Note	Ed	Has this document been published yet?		
FR 215		Annex A		te	Annex seems incomplete	Develop if necessary	
FR 216		Annex B		te	Some indicators are not correctly associated to key stages of risk management	Check and revise; please find enclosed comments on Annex B ; content in green is added, content in red and barred is proposed to be deleted.	
FR 217		Annex C		te	Some indicators are not correctly associated to key elements of the disaster of management process	Check and revise please find enclosed comments on Annex C ; content in green is added, content in red and barred is proposed to be deleted.	
FR 218		Annex D		te	Some indicators are not correctly associated to SDG's	Check and revise – see attached table provided by France	
FR 219		Annex E		te	Correct table in consistency with the modification in the text	Check and revise - see attached table provided by France	
** 220		Bibliography		Ed	Bibliographic entries should be listed either in the order in which they appear in the text or in the following order: 1. ISO documents 2. Other international standards 3. Other national/regional standards 4. Other publications	Please reorder and number all Bibliographic references. Add in-text citations (reference numbers) where necessary (e.g. Introduction, reference to City Resilience Index).	

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Addition from AFNOR (France) regarding the annexes (referred in comments FR 216; 217; 218):

ANNEX B

Mapping ISO 37123 Indicators to the Risk Management Process

Risk Context

- ~~11.1 Average wait time in hospital emergency rooms~~
- ~~11.4 Percentage of population with basic health insurance~~
- ~~11.5 Percentage of children that are fully immunized~~
- ~~11.6 Number of infectious disease outbreaks per year~~
- ~~13.1 Vulnerable population as a percentage of city population~~
- ~~13.2 Percentage of population with access to social assistance programs~~
- ~~13.4 Spatial segregation as measured by the Index of Dissimilarity based on income grouping~~
- ~~13.5 Percentage of neighbourhoods with regular, open neighbourhood association meetings~~
- 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity
- 8.1 Magnitude of urban heat island effects (atmospheric)
- 8.4 Annual frequency of extreme rainfall events
- 8.5 Annual frequency of extreme heat events
- 8.6 Annual frequency of extreme cold events
- 8.7 Annual frequency of flood events
- 8.8 Percentage of city land area covered by tree canopy
- 12.3 Percentage of residential buildings not in conformity with building codes and standards
- 20.2 Pervious land area as a percentage of total city land area

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22.1 Number of different sources providing at least 5 percent of total water supply capacity
 19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency

Risk Assessment:
 — Risk Identification
 — Risk Analysis
 — Risk Evaluation

~~5.2 Average annual disaster loss as a percentage of city product~~
~~7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity~~
~~8.1 Magnitude of urban heat island effects (atmospheric)~~
 10.1 Annual number of multi-stakeholder risk assessments
 10.2 Frequency with which disaster management plans are updated
 10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks
~~10.6 Percentage of public meetings dedicated to resilience in the city~~
 10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements
 12.2 Percentage of buildings structurally vulnerable to high-risk hazards
~~12.3 Percentage of residential buildings not in conformity with building codes and standards~~
~~12.5 Annual number of deaths in residential fires per 100 000 population~~
~~12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city~~
 12.7 Percentage of residential properties located in high-risk zones
 13.3 Percentage of population at high risk from natural hazards

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~~18.1 Percentage of public transportation trips operating on schedule~~

20.1 Percentage of city area covered by publicly available hazard maps

~~20.2 Pervious land area as a percentage of total city land area~~

~~22.1 Number of different sources providing at least 5 percent of total water supply capacity~~

Risk Treatment:

Avoidance

Reduction

5.3 Percentage of essential service providers that have a documented business continuity plan

6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction

6.2 Percentage of population trained in emergency preparedness and disaster risk reduction

6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities

6.4 Percentage of emergency preparedness publications provided in alternative languages

8.2 Percentage of natural areas within the city that have undergone ecological evaluation for their protective services

8.3 Territory undergoing ecosystem restoration as a percentage of total city area

9.1 Annual expenditure on maintenance and upgrades of city service assets as a percentage of total city budget

9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget

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9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget

10.4 Percentage of essential city services covered by a documented continuity plan

10.5 Percentage of city electronic data with secure and remote back-up storage

11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs

15.1 Percentage of city population covered by multi-hazard early warning system

15.2 Percentage of emergency responders that have received disaster response training

15.3 Percentage of local hazard warnings by national agencies that are received in a timely fashion by city

17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction

18.2 Number of evacuation routes available per 100 000 population

19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency

20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

20.4 Percentage of city departments and utility services that integrate the results of risk assessment in their planning and investment

22.2 Percentage of population that can be supplied potable water by alternative methods for 72 hours

Transfer

5.4 Percentage of properties with insurance coverage for high risk hazards

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			5.5		Percentage of total insured value to total value at risk within the city		
Acceptance			9.5		Annual expenditure on emergency management planning as a percentage of total city budget		
			9.7		Total allocation of disaster reserve funds as a percentage of total city budget		
			17.1		Percentage of emergency in the city equipped with specialised communication technologies able to operate reliably during a disaster even		
Communication & Consultation			10.6		Percentage of public meetings dedicated to resilience in the city		
			6.4		Percentage of emergency preparedness publications provided in alternative languages		
			15.1		Percentage of city population covered by multi-hazard early warning system		
			15.2		Percentage of emergency responders that have received disaster response training		
			15.3		Percentage of local hazard warnings by national agencies that are received in a timely fashion by city		
			17.2		Percentage of city population that receives communications about emergency preparedness and disaster risk reduction		
Monitoring & Review			5.1		Historical disaster losses as a percentage of city GDP		
			5.2		Average annual disaster loss as a percentage of city product		
			12.3		Percentage of damaged infrastructure that was “built back better” after a disaster		
			12.5		Annual number of deaths in residential fires per 100 000 population		

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12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city

13.6 Annual percentage of the city population directly affected by natural hazards

15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population

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ANNEX C

Mapping ISO 37123 Indicators to the Disaster Management Process

Mitigation

- ~~5.2 Average annual disaster loss as a percentage of city product~~
- ~~5.4 Percentage of properties with insurance coverage for high risk hazards~~
- ~~5.5 Percentage of total insured value to total value at risk within the city~~
- 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity
- ~~8.1 Magnitude of urban heat island effects (atmospheric)~~
- 8.2 Percentage of natural areas within the city that have undergone ecological evaluation for their protective services
- 8.3 Territory undergoing ecosystem restoration as a percentage of total city area
- 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget
- 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget
- 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget
- 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget

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9.6 Annual expenditure on social and community services as a percentage of total city budget

~~10.1 Annual number of multi-stakeholder risk assessments~~

~~10.6 Percentage of public meetings dedicated to resilience in the city~~

~~10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements~~

~~11.1 Average wait time in hospital emergency rooms~~

~~11.4 Percentage of population with basic health insurance~~

~~12.2 Percentage of buildings structurally vulnerable to high-risk hazards~~

~~12.3 Percentage of residential buildings not in conformity with building codes and standards~~

~~12.7 Percentage of residential properties located in high-risk zones~~

~~13.1 Vulnerable population as a percentage of city population~~

~~13.2 Percentage of population with access to social assistance programs~~

~~13.3 Percentage of population at high risk from natural hazards~~

~~18.1 Percentage of public transportation trips operating on schedule~~

~~20.1 Percentage of city area covered by publicly available hazard maps~~

20.2 Pervious land area as a percentage of total city land area

20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

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					20.4 Percentage of city departments and utility services that integrate the results of risk assessment in their planning and investment		
					22.1 Number of different sources providing at least 5 percent of total water supply capacity		
Preparedness					5.3 Percentage of essential service providers that have a documented business continuity plan		
					5.4 Percentage of properties with insurance coverage for high risk hazards		
					5.5 Percentage of total insured value to total value at risk within the city		
					6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction within their curriculum		
					6.2 Percentage of population trained in emergency preparedness and disaster risk reduction		
					6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities		
					6.4 Percentage of emergency preparedness publications provided in alternative languages		
					9.5 Annual expenditure on emergency management planning as a percentage of total city budget		
					10.1 Annual number of multi-stakeholder risk assessments		
					10.2 Frequency with which disaster management plans are updated		
					10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks		
					10.4 Percentage of essential city services covered by a documented continuity plan		

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10.5 Percentage of city electronic data with secure and remote back-up storage

10.6 Percentage of public meetings dedicated to resilience in the city

10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements

11.1 Average wait time in hospital emergency rooms

11.3 Percentage of hospitals equipped with back-up electricity supply

11.5 Percentage of children that are fully immunized

13.5 Percentage of neighbourhoods with regular, open neighbourhood association meetings

15.1 Percentage of city population covered by multi-hazard early warning system

17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction

18.2 Number of evacuation routes available per 100 000 population

19.1 Percentage of city population that can served by city food reserves for 72 hours in an emergency

20.1 Percentage of city area covered by publicly available hazard maps

22.2 Percentage of population that can be supplied potable water by alternative methods for 72 hours

Response

9.7 Allocation of disaster reserve funds as a percentage of total city budget

11.2 Percentage of health care facilities equipped with adequate capabilities and medical supplies for acute needs

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~~13.6 Annual percentage of the city population directly affected by natural hazards~~

15.2 Percentage of emergency responders that have received disaster response training

15.3 Percentage of local hazard warnings by national agencies annually that are received in a timely fashion by city

17.1 Percentage of emergency in the city equipped with specialised communication technologies able to operate reliably during a disaster even

Recovery/ Reconstruction

~~5.1 Historical disaster losses as a percentage of city product~~

12.4 Percentage of damaged infrastructure that was “built back better” after a disaster

~~15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population~~

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Table D.2 — Mapping of ISO 37123 indicators to Sendai Framework for Disaster Risk Reduction

(a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.

- ~~5.1 Historical disaster losses as a percentage of city product~~
- ~~5.2 Average annual loss as a percentage of city product~~
- ~~6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction~~
- ~~6.2 Percentage of population trained in emergency preparedness and disaster risk reduction~~
- ~~6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities~~
- ~~6.4 Percentage of emergency preparedness publications provided in alternative languages~~
- ~~11.1 Average wait time in hospital emergency rooms~~
- ~~11.5 Percentage of children that are fully immunized~~
- ~~11.6 Number of infectious disease outbreaks per year~~
- ~~12.5 Annual number of deaths in residential fires per 100 000 population~~
- ~~13.1 Vulnerable population as a percentage of city population~~
- ~~13.2 Percentage of population with access to social assistance programs~~
- ~~13.3 Percentage of population at high risk from natural hazards~~
- ~~13.6 Annual percentage of the city population directly affected by natural hazards~~
- ~~15.1 Percentage of city population covered by multi-hazard early warning system~~

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					<p>(b) Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 - 2030 compared to the period 2005-2015.</p> <p>5.1 Historical disaster losses as a percentage of city product</p> <p>5.2 Average annual disaster loss as a percentage of city product</p> <p>6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction</p> <p>6.2 Percentage of population trained in emergency preparedness and disaster risk reduction</p> <p>6.4 Percentage of emergency preparedness publication in alternative languages</p> <p>12.2 Percentage of buildings structurally vulnerable to high-risk hazards</p> <p>12.3 Percentage of residential buildings not in conformity with building codes and standards</p> <p>12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city</p> <p>12.7 Percentage of residential properties located in high-risk zones</p> <p>13.1 Vulnerable population as a percentage of city population</p> <p>13.2 Percentage of population with access to social assistance programs</p> <p>13.3 Percentage of population at high risk from natural hazards</p> <p>13.6 Annual percentage of the city population directly affected by natural hazards</p> <p>15.1 Percentage of city population covered by multi-hazard early warning system</p> <p>20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented</p>		

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(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

- 5.1 Historical disaster losses as a percentage of city product
- 5.2 Average annual loss as a percentage of city product
- 5.4 Percentage of properties with insurance coverage for high risk hazards
- 5.5 Percentage of total insured value to total value at risk within the city
- ~~5.7 Percentage of the workforce in informal employment~~
- ~~9.5 Annual expenditure on emergency management planning as a percentage of total city budget~~
- ~~9.7 Total allocation of disaster reserve funds as a percentage of total city budget~~
- 12.2 Percentage of buildings structurally vulnerable to high-risk hazards
- 12.3 Percentage of residential buildings not in conformity with building codes and standards
- 12.4 Percentage of damaged infrastructure that was “built back better” after a disaster
- 12.7 Percentage of residential properties located in high-risk zones
- ~~20.1 Percentage of city area covered by publicly available hazard maps~~
- ~~20.2 Pervious land area as a percentage of total city land area~~
- 20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

(d) Substantially reduce disaster damage to critical infrastructure 5.3 Percentage of essential service providers that have a documented business continuity plan

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and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

6.5 Educational disruption

- 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity
- 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget
- 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget
- 9.3 Annual expenditure allocated to ecosystem restoration in the city’s territory as a percentage of total city budget
- 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget
- 9.6 Annual expenditure on social and community services as a percentage of total city budget
- 10.1 Annual number of multi-stakeholder risk assessments
- 10.2 Frequency with which disaster management plans are updated
- 10.4 Percentage of essential city services covered by a documented continuity plan
- 10.5 Percentage of city electronic data with secure and remote back-up storage
- ~~10.6 Percentage of public meetings dedicated to resilience in the city~~
- ~~10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements~~
- 11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs

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11.3 Percentage of hospitals equipped with back-up electricity supply

~~12.1 Capacity of designated emergency shelters per 100 000 population~~

~~12.2 Percentage of buildings structurally vulnerable to high-risk hazards~~

~~12.3 Percentage of residential buildings not in conformity with building codes and standards~~

12.4 Percentage of damaged infrastructure that was “built back better” after a disaster

~~12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city~~

~~12.7 Percentage of residential properties located in high-risk zones~~

15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population

~~18.1 Percentage of public transportation trips operating on schedule~~

~~18.2 Number of evacuation routes available per 100 000 population~~

~~19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency~~

~~20.1 Percentage of city area covered by publicly available hazard maps~~

~~20.2 Pervious land area as a percentage of total city land area~~

20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

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22.1 Number of different sources providing at least 5 percent of total water supply capacity
 22.2 Percentage of city population that can be supplied potable water by alternative methods for 72 hours

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.

10.1 Annual number of multi-stakeholder risk assessments
 10.2 Frequency with which disaster management plans are updated
 10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks
 10.4 Percentage of essential city services covered by a documented continuity plan
 10.6 Percentage of public meetings dedicated to resilience in the city
 10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk

6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction.
 6.2 Percentage of population trained in emergency preparedness and disaster risk

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information and assessments to the people by 2030.

6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities

6.4 Percentage of emergency preparedness publications provided in alternative languages

10.6 Percentage of public meetings dedicated to resilience in the city

15.1 Percentage of city population covered by multi-hazard early warning system

17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction

15.3 Percentage of local hazard warnings issued by national agencies annually that are received in a timely fashion by the city

Priority 1. Understanding disaster risk
Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

5.1 Historical disaster losses as a percentage of city product

5.2 Average annual disaster loss as a percentage of city product

~~5.3 Percentage of essential service providers that have a documented business continuity plan~~

5.4 Percentage of properties with insurance coverage for high risk hazards

8.1 Magnitude of urban heat island effects (atmospheric)

8.4 Annual frequency of extreme rainfall events

8.5 Annual frequency of extreme heat events

8.6 Annual frequency of extreme cold events

8.7 Annual frequency of flood events

8.8 Percentage of city land area covered by tree canopy

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12.3 Percentage of residential buildings not in conformity with building codes and standards

~~5.5 Percentage of total insured value to total value at risk within the city~~

~~5.7 Percentage of the workforce in informal employment~~

~~10.1 Annual number of multi-stakeholder risk assessments~~

~~10.2 Frequency with which disaster management plans are updated~~

~~10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks~~

~~10.4 Percentage of essential city services covered by a documented continuity plan~~

~~10.5 Percentage of city electronic data with secure and remote back-up storage~~

~~10.6 Percentage of public meetings dedicated to resilience in the city~~

~~10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements~~

12.7 Percentage of residential properties located in high-risk zones

13.1 Vulnerable population as a percentage of city population

~~13.2 Percentage of population with access to social assistance programs~~

13.3 Percentage of population at high risk from natural hazards

~~13.5 Percentage of neighbourhoods with regular, open neighbourhood association meetings~~

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13.6 Annual percentage of the city population directly affected by natural hazards

20.1 Percentage of city area covered by publicly available hazard maps

20.2 Pervious land area as a percentage of total city land area

20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

~~20.4 Percentage of city departments and utility services that integrate the results of risk assessment in their planning and investment~~

Priority 2. Strengthening disaster risk governance to manage disaster risk
Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

9.5 Annual expenditure on emergency management planning as a percentage of total city budget

9.7 Total allocation of disaster reserve funds as a percentage of total city budget

10.1 Annual number of multi-stakeholder risk assessments

10.2 Frequency with which disaster management plans are updated

10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks

10.4 Percentage of essential city services covered by a documented continuity plan

10.5 Percentage of city electronic data with secure and remote back-up storage

10.6 Percentage of public meetings dedicated to resilience in the city

10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements

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~~13.5 Percentage of neighbourhoods with regular, open neighbourhood association meetings~~

Priority 3. Investing in disaster risk reduction for resilience
Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

- 5.4 Percentage of properties with insurance coverage for high risk hazards
- 5.5 Percentage of total insured value to total value at risk within the city
- 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget
- 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget
- 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget
- 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget
- 10.4 Percentage of essential city services covered by a documented continuity plan
- 10.5 Percentage of city electronic data with secure and remote back-up storage
- 11.3 Percentage of hospitals equipped with back-up electricity supply
- 12.2 Percentage of buildings structurally vulnerable to high-risk hazards
- ~~12.3 Percentage of residential buildings not in conformity with building codes and standards~~
- 12.4 Percentage of damaged infrastructure that was "built back better" after a disaster
- 12.7 Percentage of residential properties located in high-risk zones

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~~18.1 Percentage of public transportation trips operating on schedule~~

- 20.1 Percentage of city area covered by publicly available hazard maps
- 20.2 Pervious land area as a percentage of total city land area
- 20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented

Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction
The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

- 6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction
- 6.2 Percentage of population trained in emergency preparedness and disaster risk reduction
- 6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities
- 6.4 Percentage of emergency preparedness publications provided in alternative languages
- 9.5 Annual expenditure on emergency management planning as a percentage of total city budget
- 9.7 Total allocation of disaster reserve funds as a percentage of total city budget
- 11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs
- 11.3 Percentage of hospitals equipped with back-up electricity supply
- 12.4 Percentage of damaged infrastructure that was “built back better” after a disaster

~~13.6 Annual percentage of city population directly affected by natural hazards~~

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~~15.1 Percentage of city population covered by multi-hazard early warning system~~

15.2 Percentage of emergency responders that have received disaster response training

15.3 Percentage of local hazard warnings by national agencies annually that are received in a timely fashion by city

~~15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population~~

17.1 Percentage of emergency in the city equipped with specialised communication technologies able to operate reliably during a disaster event

17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction

18.2 Number of evacuation routes available per 100 000 population

19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency

22.1 Number of different sources providing at least 5 percent of total water supply capacity

22.2 Percentage of city population that can be supplied potable water by alternative methods for 72 hours

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ANNEX D

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Sustainable Development Goal (2015)							
	Goal 1: End poverty in all its forms everywhere <i>Extrême pauvreté, accès aux services de base et aux nouvelles technologies pour les plus vulnérables</i> <i>1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable</i> <i>1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters:</i> <i>1.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people</i> <i>1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP)</i> <i>1.5.3 Number of countries with national and local disaster risk reduction strategies</i>				5.1 Historical disaster losses as a percentage of city product 5.2 Average annual disaster loss as a percentage of city product 5.6 Employment concentration (proposed to deleted) 5.7 Percentage of the workforce in informal employment 10.1 Annual number of multi-stakeholder risk assessments 10.2 Frequency with which disaster management plans are updated 10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks 10.4 Percentage of essential city services covered by a documented continuity plan 11.4 Percentage of population with basic health insurance (proposed to deleted) 11.5 Percentage of children that are fully immunized 11.6 Number of infectious disease outbreaks per year 12.7 Percentage of residential properties located in high-risk zones 13.1 Vulnerable population as a percentage of city population (proposed to deleted) 13.2 Percentage of population with access to social assistance programs 13.3 Percentage of population at high risk from natural hazards 13.4 Spatial segregation as measured by the Index of Dissimilarity based on income grouping (proposed to deleted) 13.6 Annual percentage of city population directly affected by natural hazards 15.1 Percentage of city population covered by multi-hazard early warning system 15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population 17.1 Percentage of city area covered by publicly available, up-to-date hazard maps 20.1 Percentage of city area covered by publicly available hazard maps		
	Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture <i>Lutte contre la faim, viabilité et productivité des systèmes de production agricoles</i>				19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency 19.2 Percentage of the city's population living more than one kilometre from a grocery store (proposed to deleted)		

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					<p>Goal 3: Ensure healthy lives and promote well-being for all at all ages</p> <p><i>Santé, mortalité (y/c sécurité de la route, pollution)</i></p> <p><i>Specifically noting:</i></p> <p><i>3.8.2 Number of people covered by health insurance or a public health system per 1,000 population</i></p>		
					<p>11.1 Average waiting time in hospital emergency rooms (proposed to deleted)</p> <p>11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs ((proposed to deleted or revised)</p> <p>11.3 Percentage of hospitals equipped with back-up electricity supply</p> <p>11.4 Percentage of population with basic health insurance (proposed to deleted)</p> <p>11.5 Percentage of children that are fully immunized (proposed to deleted)</p> <p>11.6 Number of infectious disease outbreaks per year (proposed to deleted)</p> <p>14.1 Percentage of city population living within 0.5 km of public outdoor recreation space (already in 37120)</p> <p>15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population</p>		
					<p>Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p> <p><i>Accès à l'éducation, formation professionnelle, accessibilité PMR des écoles</i></p>		
					<p>6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction</p> <p>6.2 Percentage of population trained in emergency preparedness and disaster risk reduction</p> <p>6.5 Educational disruption</p> <p>15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population</p>		
					<p>Goal 5: Achieve gender equality and empower all women and girls</p> <p><i>Discrimination, violence contre les femmes</i></p>		
					<p>Goal 6: Ensure availability and sustainable management of water and sanitation for all</p> <p><i>Accès à l'eau potable à un cout abordable, accès à l'assainissement, qualité de l'eau potable, traitement des eaux usées, gestion de la ressource</i></p>		
					<p>9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget</p> <p>20.2 Pervious land area as a percentage of total city land area</p> <p>21.1 Percentage of the city's wastewater treated through decentralized wastewater treatment (revised or deleted)</p> <p>22.1 Number of different sources providing at least 5 percent of total water supply capacity</p> <p>22.2 Percentage of city population that can be supplied potable water by alternative methods for 72 hours</p>		
					<p>Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all</p> <p><i>Accès à l'énergie, énergie renouvelable, efficacité énergétique,</i></p>		
					<p>7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity</p> <p>7.2 Electricity supply capacity as a percentage of peak electricity demand</p> <p>11.3 Percentage of hospitals equipped with back-up electricity supply</p>		

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					<p>Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p><i>Innovation, secteurs à forte valeur ajoutée, emploi, production "durable", droit du travail, tourisme durable</i></p> <p>5.1 Historical disaster losses as a percentage of city product 5.2 Average annual disaster loss as a percentage of city product 5.4 Percentage of properties with insurance coverage for high risk hazards 5.5 Percentage of total insured value to total value at risk within the city 5.7 Percentage of the workforce in informal employment 9.7 Total allocation of disaster reserve funds as a percentage of total city budget</p>		

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Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Infrastructure fiable, durable et résiliente (voirie, transport, NTIC, assainissement, énergie, eau), industrialisation durable et propre, innovation et R&D, accès au NTIC , ESS ?

Specifically noting:

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

- ~~5.3 Percentage of essential service providers that have a documented business continuity plan~~
- 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity
- 7.2 *Electricity supply capacity as a percentage of peak electricity demand*
- 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget
- 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget
- 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget
- 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget
- 9.6 Annual expenditure on social and community services as a percentage of total city budget
- 10.1 Annual number of multi-stakeholder risk assessments
- 10.2 Frequency with which disaster management plans are updated
- 10.4 Percentage of essential city services covered by a documented continuity plan
- 10.5 Percentage of city electronic data with secure and remote back-up storage
- 10.6 Percentage of public meetings dedicated to resilience in the city
- 10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements
- 11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs
- 11.3 Percentage of hospitals equipped with back-up electricity supply
- 12.1 Capacity of designated emergency shelters per 100 000 population
- 12.2 Percentage of buildings structurally vulnerable to high-risk hazards
- 12.3 Percentage of residential buildings not in conformity with building codes and standards
- 12.4 Percentage of damaged infrastructure that was "built back better" after a disaster
- 12.5 Annual number of deaths in residential fires per 100 000 population ~~(proposed to deleted)~~
- 12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city
- 12.7 Percentage of residential properties located in high-risk zones

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17.1 Percentage of emergency responders in the city equipped with specialised communication technologies able to operate reliably during a disaster event

18.1 Percentage of public transportation trips operating on schedule (proposed to delete)

18.2 Number of evacuation routes available per 100 000 population

~~19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency~~

~~20.1 Percentage of city area covered by publicly available hazard maps~~

~~20.2 Pervious land area as a percentage of total city land area~~

~~20.3 Percentage of city land area in high-risk zones where risk reduction measures have been implemented~~

~~22.1 Number of different sources providing at least 5 percent of total water supply capacity~~

~~22.2 Percentage of city population that can be supplied potable water by alternative methods for 72 hours~~

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					<p>Goal 10: Reduce inequality within and among countries <i>Augmentation des revenus et autonomie des personnes, égalité des chances, migration, marché financier,</i></p> <p>Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable <i>Accès au logement et services de base</i> <i>Systèmes de transport sûrs, accessibles</i> <i>Urbanisme durable / Planification</i> <i>Patrimoine culturel et naturel</i> <i>Prévention des risques</i> <i>Qualité de l'air, déchets</i> <i>Accessibilité et sûreté des espaces publics</i></p>			
					<p>6.4 Percentage of emergency preparedness publications provided in alternative languages 13.2 Percentage of population with access to social assistance programs</p> <p>5.1 Historical disaster losses as a percentage of city product 5.2 Average annual disaster loss as a percentage of city product 5.3 Percentage of essential service providers that have a documented business continuity plan 5.7 Percentage of the workforce in informal employment 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget 9.6 Annual Expenditure on social and community services as a percentage of total city budget 9.7 Total allocation of disaster reserve funds as a percentage of total city budget 10.1 Annual number of multi-stakeholder risk assessments 10.2 Frequency with which disaster management plans are updated 10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks 10.4 Percentage of essential city services covered by a documented continuity plan 10.5 Percentage of city electronic data with secure and remote back-up storage 10.6 Percentage of public meetings dedicated to resilience in the city 10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements 11.1 Average wait time in hospital emergency rooms (proposed to deleted) 11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs 11.3 Percentage of hospitals equipped with back-up electricity supply 11.4 Percentage of population with basic health insurance 11.5 Percentage of children that are fully immunized</p>			

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~~11.6 Number of infectious disease outbreaks per year~~
 12.1 Capacity of designated emergency shelters per 100 000 population
 12.2 Percentage of buildings structurally vulnerable to high-risk hazards
 12.3 Percentage of residential buildings not in conformity with building codes and standards
 12.4 Percentage of damaged infrastructure that was “built back better” after a disaster
~~12.5 Annual number of deaths in residential fires per 100 000 population (proposed to deleted)~~
 12.6 Annual number of residential properties flooded as a percentage of total residential properties in the city
 12.7 Percentage of residential properties located in high-risk zones
~~13.1 Vulnerable population as a percentage of city population (proposed to deleted)~~
 13.2 Percentage of population with access to social assistance programs
 13.3 Percentage of population at high risk from natural hazards
~~13.4 Spatial segregation as measured by the Index of Dissimilarity based on income grouping (proposed to deleted)~~
~~13.5 Percentage of neighbourhoods with regular and open neighbourhood association meetings (proposed to deleted)~~
 13.6 Annual percentage of the city population directly affected by natural hazards
~~14.1 Percentage of city population living within 0.5 km of public outdoor recreation space (already in 37120)~~
~~15.1 Percentage of city population covered by multi-hazard early warning system~~
 15.2 Percentage of emergency responders that have received disaster response training
~~15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population~~
 17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction
 18.1 Percentage of public transportation trips operating on schedule (proposed to delete)
 18.2 Number of evacuation routes available per 100 000 population
 20.1 Percentage of city area covered by publicly available hazard maps
 20.3 Percentage of city land area in high risk zones where risk reduction measures have been implemented
 22.1 Number of different sources providing at least 5 percent of water supply capacity

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					22.2 Percentage of population that can be supplied potable water by alternative methods for 72 hours		
	Goal 12: Ensure sustainable consumption and production patterns <i>Gestion durable et utilisation rationnelle des ressources Déchets (dont alimentaires)</i> <i>Marché public durable, modes de vie durable (consommation)</i>				7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity 16.1 Number of active waste disposal sites available for debris and rubble per square kilometre 22.1 Number of different sources providing at least 5 percent of total water supply capacity		
	Goal 13: Take urgent action to combat climate change and its impacts <i>Résilience, sensibilisation et adaptation au changement climatique</i> <i>13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</i> <i>13.1.1 Number of countries with national and local disaster risk reduction strategies</i> <i>13.1.2 Number of deaths, missing persons and persons affected by disaster per 100,000 people</i> <i>13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</i> <i>13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula</i> <i>13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</i>				5.1 Historical disaster losses as a percentage of city product 5.2 Average annual disaster loss as a percentage of city product 5.3 Percentage of essential service providers that have a documented business continuity plan 6.1 Percentage of schools that teach emergency preparedness and disaster risk reduction 6.2 Percentage of population trained in emergency preparedness and disaster risk reduction 6.3 Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities ((proposed to deleted) 6.4 Percentage of emergency preparedness publications provided in alternative languages 7.1 Number of different electricity sources providing at least 5 percent of total energy supply capacity 8.1 Magnitude of urban heat island effects (atmospheric) 8.4 Annual frequency of extreme rainfall events (profile indicators) 8.5 Annual frequency of extreme heat events (profile indicators) 8.6 Annual frequency of extreme cold events (profile indicators) 8.7 Annual frequency of flood events (profile indicators) 8. ? Percentage of urban area that reduce urban heat islands 9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget 9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a percentage of total city budget 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget 10.1 Annual number of multi-stakeholder risk assessments 10.2 Frequency with which disaster management plans are updated 10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks		

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Project: ISO/DIS 37123

MB/ NC ¹	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment ²	Comments	Proposed change	Observations of the secretariat
					<p>10.4 Percentage of essential city services covered by a documented continuity plan</p> <p>10.5 Percentage of city electronic data with secure and remote back-up storage</p> <p>11.2 Percentage of health care facilities equipped with capabilities and medical supplies for acute needs (proposed to deleted or revised)</p> <p>11.4 Percentage of population with basic health insurance (proposed to deleted)</p> <p>12.1 Capacity of designated emergency shelters per 100 000 population</p> <p>12.2 Percentage of buildings structurally vulnerable to high-risk hazards</p> <p>12.3 Percentage of residential buildings not in conformity with building codes and standards</p> <p>12.4 Percentage of damaged infrastructure that was “built back better” after a disaster</p> <p>12.7 Percentage of residential properties located in high-risk zones</p> <p>13.1 Vulnerable population as a percentage of city population (proposed to deleted)</p> <p>13.2 Percentage of population with access to social assistance programs</p> <p>13.3 Percentage of population at high risk from natural hazards</p> <p>13.6 Annual percentage of the city population directly affected by natural hazards</p> <p>15.1 Percentage of city population covered by multi-hazard early warning system</p> <p>15.4 Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population</p> <p>18.1 Percentage of public transportation trips operating on schedule</p> <p>18.2 Number of evacuation routes available per 100 000 population</p> <p>19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency</p> <p>20.1 Percentage of city area covered by publicly available hazard maps</p> <p>22.1 Number of different sources providing at least 5 percent of total water supply capacity</p> <p>22.2 Percentage of city population that can be supplied potable water by alternative methods for 72 hours</p>		
					Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development		

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					<i>Pollution marine, gestion des écosystèmes marins, pêche</i>		
					Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss <i>Forêts, désertification, Biodiversité</i>	8.2 Percentage of natural areas within the city that have undergone ecological evaluation for their protective services 8.3 Territory undergoing ecosystem restoration as a percentage of total city area 8.8 Percentage of city land area covered by tree canopy 9.3 Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget 9.4 Annual expenditure on green and blue infrastructure as a percentage of total city budget	
					Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels <i>Paix, efficacité des institutions, participation citoyenne, accès à l'information</i>	10.3 Percentage of city departments that are engaged in preparing for and responding to potential risks 10.6 Percentage of public meetings dedicated to resilience in the city 10.7 Number of intergovernmental agreements dedicated to planning for shocks as percentage of total intergovernmental agreements 20.4 Percentage of city departments and utility services that integrate the results of risk assessment in their planning and investment	
					Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development <i>Partenariat, organisation des institutions, évaluation des progrès</i>		

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ANNEX E

ISO 37123/ ISO 37101

Indicateurs	37101 issue	37101 Purpose
5.1 Historical disaster losses as a percentage of city product	Economy and sustainable production and consumption	resilience
5.2 Average annual disaster loss as a percentage of city product	Economy and sustainable production and consumption	resilience
5.3 Percentage of essential service providers that have a documented business continuity plan	Governance, empowerment and engagement	resilience
5.4 Percentage of properties with insurance coverage for high risk hazards	living & working environment Living together, interdependence and mutuality	well being resilience
5.5 Percentage of total insured value to total value at risk within the city	Economy and sustainable production and consumption	resilience
5.6 Employment	Economy and sustainable	Resilience

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			Concentration		production and consumption	ATTRACTIVENESS	
	5.7		Percentage of the workforce in informal employment		Economy and sustainable production and consumption	Resilience	
	6.1		Percentage of schools that teach emergency preparedness and disaster risk reduction		Education and capacity building Safety and security	resilience	
	6.2		Percentage of population trained in emergency preparedness and disaster risk reduction		Education and capacity building Safety and security	resilience	
	6.3		Percentage of the vulnerable population that has been engaged with emergency preparedness and disaster risk reduction activities		Education and capacity building Safety and security Living together, interdependence and mutuality	Resilience social cohesion	
	6.4		Percentage of emergency preparedness publications provided in alternative languages		Safety and security Living together, interdependence and mutuality	Resilience social cohesion	
	6.5		Educational disruption		Education and capacity building	Attractiveness Resilience	

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	7.1	Number of different electricity sources providing at least 5 percent of total energy supply capacity	Community infrastructures			Resilience	
	7.2	Electricity supply capacity as a percentage of peak electricity demand	Community infrastructures			Resilience	
	8. ?	Percentage of urban area that reduce urban heat islands	Health and care in the community Living & working environment Community infrastructures ??? Economy and sustainable production and consumption ??			wellbeing ATTRACTIVENESS Resilience	
	8.1	Magnitude of urban heat island effects (atmospheric)	Biodiversity and Ecosystem Services Health and care in the community Living & working environment			preservation and improvement of the environment wellbeing ATTRACTIVENESS Resilience	
	8.2	Percentage of natural areas within the city that have undergone ecological evaluation for	Biodiversity and Ecosystem Services			preservation and improvement of the environment	

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					their protective services		
						Resilience	
					8.3 Territory undergoing ecosystem restoration as a percentage of total city area	Biodiversity and Ecosystem Services Living & working environment	preservation and improvement of the environment Resilience
					8.4 Annual frequency of extreme rainfall events		
					8.5 Annual frequency of extreme heat events		
					8.6 Annual frequency of extreme cold events		
					8.7 Annual frequency of flood events		
					8.8 Percentage of city land area covered by tree canopy	Biodiversity and Ecosystem Services	preservation and improvement of the environment WELL-BEING resilience
					9.1 Annual expenditure on upgrades and maintenance of city service assets as a percentage of total city budget	Governance, empowerment and engagement Community infrastructures	Resilience RESPONSIBLE RESOURCE USE
					9.2 Annual expenditure on upgrades and maintenance of storm water infrastructure as a	Community infrastructures	Resilience RESPONSIBLE RESOURCE USE

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					percentage of total city budget		
	9.3	Annual expenditure allocated to ecosystem restoration in the city's territory as a percentage of total city budget	Biodiversity and Ecosystem Services Living & working environment		preservation and improvement of the environment RESPONSIBLE RESOURCE USE		
	9.4	Annual expenditure on green and blue infrastructure as a percentage of total city budget	Biodiversity and Ecosystem Services Living & working environment		preservation and improvement of the environment RESPONSIBLE RESOURCE USE		
	9.5	Annual expenditure on emergency management planning as a percentage of total city budget	Governance, empowerment and engagement Safety and security		resilience responsible use		
	9.6	Annual Expenditure on social and community services as a percentage of total city budget	Living together, interdependence and mutuality Governance, empowerment and engagement		SOCIAL COHESION resilience		
	9.7	Total allocation of disaster reserve funds as a percentage of total city budget	Safety and security Governance, empowerment and engagement		Resilience RESPONSIBLE RESOURCE USE		

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	10.1	Annual number of multi-stakeholder risk assessments	Governance, empowerment and engagement		resilience		
	10.2	Frequency with which disaster management plans are updated	Governance, empowerment and engagement		resilience		
	10.3	Percentage of city departments that are engaged in preparing for and responding to potential risks	Governance, empowerment and engagement		resilience		
	10.4	Percentage of essential city services covered by a documented continuity plan	Governance, empowerment and engagement		resilience		
	10.5	Percentage of city electronic data with secure and remote back-up storage	Governance, empowerment and engagement safety and security community infrastructures		resilience		
	10.6	Percentage of public meetings dedicated to resilience in the city	Governance, empowerment and engagement Education and capacity building		resilience		
	10.7	Number of intergovernmental	Governance, empowerment and		resilience		

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					agreements dedicated to planning for shocks as percentage of total intergovernmental agreements		
	11.1				Average waiting time in hospital emergency rooms	ATTRACTIVENESS WELL-BEING	
	11.2				Percentage of health care facilities equipped with capabilities and medical supplies for acute needs	resilience	
	11.3				Percentage of hospitals equipped with back-up electricity supply	resilience	
	11.4				Percentage of population with basic health insurance	Resilience SOCIAL COHESION	
	11.5				Percentage of children that are fully immunized	WELL-BEING SOCIAL COHESION	
	11.6				Number of infectious disease outbreaks per year	WELL-BEING	
	12.1				Capacity of designated emergency	resilience	

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					shelters per 100 000 population		
					Living together, interdependence and mutuality		
					living & working environment		
	12.2	Percentage of buildings structurally vulnerable to high-risk hazards			living & working environment		resilience
	12.3	Percentage of residential buildings not in conformity with building codes and standards			living & working environment		resilience
	12.4	Percentage of damaged infrastructure that was "built back better" after a disaster			Governance, empowerment and engagement Innovation, creativity and research Living & working environment		resilience
					community infrastructure		
	12.5	Annual number of deaths in residential fires per 100 000 population			safety and security		WELL BEING
	12.6	Annual number of residential properties flooded as a percentage of total residential properties in the city			safety and security Living & working environment		ATTRACTIVENESS Resilience well being

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	12.7	Percentage of residential properties located in high-risk zones	safety and security		Resilience attractiveness		
	13.1	Vulnerable population as a percentage of city population	Living together, interdependence and mutuality		Resilience social cohesion		
	13.2	Percentage of population with access to social assistance programs	Health and care in the community Living together, interdependence and mutuality		Resilience social cohesion		
	13.3	Percentage of population at high risk from natural hazards	Health and care in the community Living together, interdependence and mutuality Living & working environment		Resilience well being attractiveness		
	13.4	Spatial segregation as measured by the Index of Dissimilarity based on income grouping	Living together, interdependence and mutuality		social cohesion		
	13.5	Percentage of neighbourhoods with regular and open neighbourhood association meetings	Living together, interdependence and mutuality		social cohesion		

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	13.6	Annual percentage of the city population directly affected by natural hazards	safety and security		Wellbeing resilience		
	14.1	Percentage of city population living within 0.5 km of public outdoor recreation space	Living & working environment		Well-being social cohesion		
	15.1	Percentage of city population covered by multi-hazard early warning system	safety and security		resilience		
	15.2	Percentage of emergency responders that have received disaster response training	Education and capacity building safety and security		resilience		
	15.3	Percentage of local hazard warnings issued by national agencies annually that are received in a timely fashion by the city	safety and security		resilience		
	15.4	Number of health and educational facilities in the city destroyed or damaged by natural hazards per 100 000 population	Education and capacity building Health and care in the community		resilience		
	16.1	Number of active waste disposal sites available for debris and rubble per square kilometre	Community infrastructure		PRESERVATION AND IMPROVEMENT OF ENVIRONMENT resilience		

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			17.1 Percentage of emergency responders in the city equipped with specialised communication technologies able to operate reliably during a disaster event		safety and security community infrastructure	resilience	
			17.2 Percentage of city population that receives communications about emergency preparedness and disaster risk reduction		safety and security education and capacity building	resilience	
			18.1 Percentage of public transportation trips operating on schedule		mobility	Resilience attractiveness	
			18.2 Number of evacuation routes available per 100 000 population		mobility	Resilience attractiveness	
			19.1 Percentage of city population that can be served by city food reserves for 72 hours in an emergency		Health and care in the community Governance, empowerment and engagement	resilience	
			19.2 Percentage of the city's population living more than one kilometre from a grocery store		mobility	Attractiveness	
			20.1 Percentage of city area covered by publicly		Governance, empowerment and	resilience	

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					available hazard maps	engagement	
	20.2	Pervious land area as a percentage of total city land area			Biodiversity and Ecosystem Services	Resilience preservation and improvement of environment	
	20.3	Percentage of city land area in high risk zones where risk reduction measures have been implemented			Governance, empowerment and engagement	resilience	
	20.4	Percentage of city departments and utility services that integrate the results of risk assessment in their planning and investment			Governance, empowerment and engagement	resilience	
	21.1	Percentage of the city's wastewater treated through decentralized wastewater treatment			Community infrastructure Health and care	resilience	
	22.1	Number of different sources providing at least 5 percent of total water supply capacity			Health and care in the community community infrastructure	resilience	
	22.2	Percentage of city population that can be supplied potable water by alternative methods for 72 hours			Health and care in the community community infrastructure	resilience	

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ISO_DIS 37123_AFNOR.doc: Collation successful

ISO_DIS 37123_ANSI.doc: Collation successful

ISO_DIS 37123_BIS.doc: Collation successful

ISO_DIS 37123_DIN.docx: Collation successful

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ISO_DIS 37123_SAC.doc: Collation successful

ISO_DIS 37123_SCC.doc: Collation successful

ISO_DIS_37123_Israel.doc: Collation successful

ISO_DIS_37123_NEN.doc: Collation successful

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PASSED TEST (number of files conformed to CCT table model): 10

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