

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	57568	8	0	0	0	0	Mico climate possiblities and adaptation/mitigation of improving micro climate should be included and focused on it (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	This has been addressed in 8.2
2	57569	8	0	0	0	0	Thermal bioclimate conditions in cities should be addressed (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	also addressed in 8.2
3	57570	8	0	0	0	0	Thera are lot of studies who deal with the topic of improving urban climate and mitigating UHI in cities esp. For micro climate (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	also addressed in 8.2
4	57571	8	0	0	0	0	Also to be given urban planning and micro climate measures - focused more on quantitative results and less in qualitative assessments (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	also addressed in 8.2
5	57573	8	0	0	0	0	Adaptation and mitigation measures should be given in terms of number - see Matzarakis and Endler (2010) (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	Don't understand the comment; not sure of reference - perhaps Matzarakis, Andreas and Christina Endler (2010), Climate change and thermal bioclimate in cities: impacts and options for adaptation in Freiburg, Germany, International Journal of Biometeorology Volume 54, Issue 4, pp 479-483. this work has been acknowledged in the text
6	57574	8	0	0	0	0	If required several papers/studies can be provided (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	see above
7	58085	8	0	0	0	0	General: In this chapter the inclusion of examples from Latin America (not from the Caribbean) is equal to other parts of the world. Overall most of the other chapters show lack of information in this region. Information from this chapter could actually be used in the other chapters (Carmen Lacambra Segura, Grupo La era)	with thanks
8	58156	8	0	0	0	0	General Comments on Chapter 8. Urban Areas: Very strong chapter which presents how the climate change will impact on urban centers and their populations and enterprises. Also, measures which can be taken to adapt to these changes and prtect the vulnerable groups. Table 8-1 is very impressive which presents the distribution of world's urban population by region from 1950 through 2010 with projection to 2030 and 2050. Table 8-2 presents too the large spectrum of the capacity of urban centers to adapt to climate change. This chapter presents the vulnerability and resilience to climate change and the new issues raised in AR5 rater than AR4. This chapter presents the urbanization processes, climate change risksand impacts. The transportation and telecommunication part is new and impressive using updated references. Also, the extreme events probabilities. The heart of this chapter is the adaptation of urban areas which is very impressiveand updated than what was published before especially the adaptation of key sectors part. The green and white roofs is impressive and involves new information and data. (Mounir Wahba Labib, Third National Communication (TNC) Project)	With thanks
9	58977	8	0	0	0	0	(1) The whole chapter is builded on a "climate change" that is not defined in its scope or intensity, and a link between climate change and "extreme weather events" that is even less defined. This base seems much too weak to proceed to conclusions; (2) Even if the scientific base was sound and solid, to proceed to conclusions (adverses effects for men of these changes) supposes value judgments, which should be formulated, not only implied. (Drieu Godefridi, Cogito)	The definition of climate change is in other chapters; the ES now has more precise language on this
10	59371	8	0	0	0	0	This is a very good account on adaptation and cities. All aspects of the topic are covered in a comprehensive and interesting manner. There is a little overlap with chapter 23 (settlements, land use etc) where these topics are covered rather epidemically and in fragments. Therefore, in my opinion, it is important that all relevant parts of chapter 23 should be deleted and maintained only in chapter 8. (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	This is recommendation for chapter 23
11	59372	8	0	0	0	0	Studies on indoor environmental conditions during heat waves have to be mentioned. In particular, the impact of high urban temperatures on indoor environmental conditions in low income citizens has been studied recently and the results are spectacular. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	More detail now in the text and more studies cited
12	59373	8	0	0	0	0	The impact of economic crisis in many countries on the energy consumption of low income urban citizens has to be discussed. Some studies have been published on this topic. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	Impacts of recession mentioned but cannot see relevance of impact of economic crisis on energy consumption to this chapter
13	59374	8	0	0	0	0	Indoor air quality problems in poor urban areas have to be discussed. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	Now mentioned

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14	59375	8	0	0	0	0	Techniques to cool cities and improve local microclimates have been well developed, tested and used in many real case projects. More information has to be given. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	More detail of this now in the text
15	59376	8	0	0	0	0	The energy and environmental impact of heat island on low income population and not only, has to be discussed. Many studies are available. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	In 8.2 and the cross chapter box on heat stress
16	59377	8	0	0	0	0	The new available data on the intensity and strenght of heat island has to be discussed. (Matheos Santamouris, Department of Physics, National University of Athens, Greece) (GREECE)	New studies and references added
17	59378	8	0	0	0	0	The chapter provides an important view of the challenges for urban adaptation plans and describes the steps for developing adequate adaptation plans in cities. However the chapter needs enhancement in terms of the role of drivers of climate change in urban areas, such as land use/land cover changes, surface albedo, land surface temperature and the extent and intensity of urban heat island. A discussion on urban sprawl, i.e. current state in different regions, trends, impacts and mitigation/adaptation measures is missing. The relationship between the size of the urban area on the one hand and the impacts/risks/vulnerabilities of the urban areas would be beneficial. The chapter does not provide adequate attention to urban climatology aspects as influenced by climate change or having the potential to impose changes in local climate. In addition, it carries a rather poor description of energy issues in urban areas, especially with respect to mitigation plans. Further information on thermal comfort in urban areas should be provided, especially with respect to impacts to health. Sections 8.2.4.5 and 8.2.4.6 should be expanded. Chapter 8.3 is well balanced and provides important information on the ways and methodologies to develop an adaptation plan for urban areas; a distinction of the elements of such a plan depending on the size of the urban area should be made. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	Most points raised here addressed in the chapter. Not clear why this chapter should deal with mitigation plans
18	59379	8	0	0	0	0	There is not even a single reference to active solar thermal systems for heating, domestic hot water and solar air-conditioning. Similarly for building integrated photovoltaics. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	The text does point to the need for fundamental changes in energy systems and to shift to a low carbon economy. For the detail suggested here, this needs to be in WG III
19	59380	8	0	0	0	0	The chapter deals with the role of urban environment to the climate change. It merges all significant aspects of urban life, i.e. people, water, energy, transport, health. The chapter needs editing in order to avoid repetitions in various paragraphs. Although the chapter covers the problems and potential solutions for adaptation of urban environment in climate change, in the overall analysis, the European initiatives for Smart Cities and Urban Environment are not mentioned. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	repetition has been cut
20	61191	8	0	0	0	0	General Remark: In the chapter is really nothing new with respect to the adaptation part in cities, apart from strengthening the earlier arguments with respect to need to adaptation and the planning institutions at city scale responsible to take care of future resilience. There is a need to quantify, specially for cities, the impacts of synergies between mitigation and adaptation. Cities are the perfect test-bed to achieve ambitious climate protection goals and social integrity and safety. This should become much clearer. There are still research gaps, i.e. although more regional climate model have been developed in the past the climate impacts on concrete on regional/local planning and existing infrastructure is still quite vague. Recent achievements making the link clear between lifestyles and basic needs in cities were not taken up (cf. Bettencourt et al. (2007) Growth, innovation, scaling, and the pace of life in cities. Proc Nat Acad Soc 104:7301–7306 or Dodman D (2009) Blaming cities for climate change? Environ Urban 21(1):185–201) This work would provide insight how city growth might affect livelihood and ambitious climate protection targets. Here a perfect link can be made in terms of reconciliation of climate protection, adaptation and sustainable development. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Discussion of links between adaptation, mitigation and development strengthened

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21	61961	8	0	0	0	0	General comment: there appears to be little focus on the cross-scale resource dependence of large cities across regions but in particular national and continental boundaries. These can effectively shift some of the impacts of local climate change to other countries/regions able to export their resources, labour etc to countries with the greatest need and able to pay the highest import price at local ports. The final balance of winners and losers then becomes highly complex. The regulation of such flows beyond market mechanisms may be problematic in some areas, resisted in other respects, and in any case undertaken at the risk of perverse outcomes. This feeds into what resilient development may mean in practice? Is there a risk in this chapter of an over-focus on 'the city' to the exclusion the impacts of their cross-scale linkages? (Matthew Bunce, Institute of Marine Engineering, Science and Technology)	addressed
22	62068	8	0	0	0	0	The Executive Summary is too long (Avelino Suarez, Institute of Ecology and Systematic, Cuban Environmental Agency)	addressed
23	62532	8	0	0	0	0	The chapter has 611 references, out of which 107 (18%) are from the chapter authors. (INDIA)	Not clear what the point of this is (and our analysis suggests a lack of accuracy and it clearly took no account of co-authors). A chapter written by eight of the world's leading specialists on climate change adaptation (and asked to participate because of their contribution to the literature) will inevitably have many references to their work
24	62533	8	0	0	0	0	Out of these 611 references, only 53 (9%) are on developing countries. It is suggested that a more balanced approach could be adopted. (INDIA)	Our analysis suggests that this under-estimates considerably the number of authors from low- and middle-income countries
25	62534	8	0	0	0	0	A quick check on the total universe of articles in peer-reviewed journals since AR4 (2007) indicates that there are almost 31000 in journals of Science Direct, 379 in Francis and Taylor, 12000 in Springer, 560 in sage, around 50000 in Wiley and around 7000 in JSTOR totaling to around 100000 articles in all on topic covered in this chapter. The chapter has captured almost 0.61% of existing literature. (INDIA)	The issue is what proportion of the existing literature on urban adaptation has been captured and we believe we have captured much of this
26	62535	8	0	0	0	0	Out of total 100000 articles mentioned as above, almost 17000 are on developing countries (around 17%) and issues related to them. It indicates that there is a large enough pool of articles to be picked up on developing countries to be cited in this chapter. The authors may like to take a look at it. (INDIA)	See response above. See also Box 8-1.
27	62605	8	0	0	0	0	Some paragraphs are more like literature review, such as 8.2.4,page26, line 1-4, while in some paragraphs, onle a few reference to support the argument. I suggest the authors to pay attention to these. (yan zheng , Chinese Academy of Social Sciences (CASS))	More references have been included
28	62606	8	0	0	0	0	a clear definition on Local, urban, city would be helpful in this chapter. (yan zheng , Chinese Academy of Social Sciences (CASS))	there are no agreed definitions; issue of urban definition is covered
29	62607	8	0	0	0	0	In the table 8-2 and P4 line38/46, P13 line41, P15 line45..., it seems similar terms like "bounce forward", "bounce back", "recovery"..., what's the difference about the meaning with "coping capacity", "adaptive capacity" and "resilience"? I suggest to make these informal terms clarified or consistent with the terminology of IPCC. (yan zheng , Chinese Academy of Social Sciences (CASS))	the meaning of these terms has been made clear
30	62608	8	0	0	0	0	There has 5 levels in the chapter categorios, such as 8.3.3.1.1、 8.3.3.1.2, may I suggest to reduce the levels to the 4th one and also make the text concise? (yan zheng , Chinese Academy of Social Sciences (CASS))	have done so
31	62609	8	0	0	0	0	Imbalance of the pages length between sub-sections. (yan zheng , Chinese Academy of Social Sciences (CASS))	addressed
32	62610	8	0	0	0	0	inconsistence of the using of "confidence, evidence and agreement", please note this especially in each key statement of the ES. (yan zheng , Chinese Academy of Social Sciences (CASS))	Addressed in revised ES
33	63419	8	0	0	0	0	This chapter includes various kinds of impacts and adaptation measures. It is recommended to add a table or figure of summary to grasp the whole picture. (Yoshiyuki Shimoda, Osaka University)	See figure 8.3

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34	63542	8	0	0	0	0	This chapter does not seem to be conform with the plenary approved outline. Please ensure completeness and consistency. The reference list is incomplete to a point that feasibility of a thorough review is challenged. The chapter is also severely overlength and very text heavy. We strongly recommend to shorten and focus discussion in this important chapter, with a view to include all items of the plenary approved outline. (GERMANY)	The plenary approved outline is the basis for this chapter but with additional issues revealed by the literature review added. Below are the links between the plenary approved outline (IN CAPITALS) and the final outline. URBAN AREAS [CONTEXT] is covered in 8.1 Introduction (which includes a section on context - an urbanizing world). As required by IPCC, it also includes sections on key uncertainties and research priorities and what has changed since AR4. URBANIZATION PROCESSES, SUSTAINABLE HABITATS AND CLIMATE CHANGE RISKS is covered in 8.2 - Urbanization Processes, Climate Change Risks and Impacts. This includes sections on URBAN MICRO-CLIMATES and URBAN HEAT ISLANDS. The other items mentioned in the plenary approved outline (CIVIC SERVICES AND INFRASTRUCTURE, HOUSING AND SETTLEMENTS. ECONOMIC BASE, DEVELOPMENT PLANS AND DEVELOPMENT PATHWAYS. URBAN PLANNING AND MANAGEMENT AND GOVERNANCE. AND LANDSCAPE AND REGIONAL INTERCONNECTIONS) are all covered in detail with aspects relating to climate change risk and impacts in 8.2 (which includes sections on civic services and infrastructure), adaptation in 8.3 (which includes sections on development plans and pathways, the economic base, housing and settlements and civic services and infrastructure) and governance, planning and management in 8.4. In addition, some of the content is within more disaggregated and specific sub headings as in CIVIC SERVICES AND INFRASTRUCTURE covered in sections headed Water Supply, Wastewater, and Sanitation, Energy Supply, Transportation and Telecommunications, green Infrastructure and Ecosystem Services and Health and Social Services in 8.2 and adapting Urban Water, Storm, and Waste Systems, Electric Power and Energy Systems, Transport and Telecommunications Systems, Green Infrastructure and Public Services in 8.3. The chapter has been shortened and the reference list enhanced
35	65532	8	0	0	0	0	The chapter is highly relevant and emphasises the urgently needed urban focus. However, it is very long (much longer than most other chapters). Hence, it is recommended to shorten the chapter in general. Particularly the points in the executive summary could/should be more concise -- also to make them more contingent with the format used in the other chapters and to increase their chances of being read by decision makers etc. (Matthias Garschagen, United Nations University)	Text has been shortened and the ES is much shorter
36	65533	8	0	0	0	0	Some parts of the chapter read less like a review but rather like an original conceptual paper, i.e. providing extended paragraphs without many (or any) citations (e.g. the first paragraphs of 8.1.4 or 8.3.2.2). The chapter later on makes reference to a large number of review papers published in the literature. Key findings from these papers could be used as introduction to these early sections of chapter 8. (Matthias Garschagen, United Nations University)	Additional references added. 8.1 seeks to provide the big context into which our detailed knowledge can be plugged
37	65544	8	0	0	0	0	Inconsistency in hyphenation of 'low-'/low'/middle-'/middle income countries'. Suggest consistent use of hyphen in all cases. (Jo da Silva, Arup)	addressed
38	65545	8	0	0	0	0	Inconsistency in use of 'ibid.' - in some places it appears in italics, but in others in regular text. (Jo da Silva, Arup)	addressed
39	65546	8	0	0	0	0	Inconsistency in use of inverted commas/speech marks for quotes and/or terms used throughout the chapter (Jo da Silva, Arup)	addressed or will be addressed in final copy edit
40	65547	8	0	0	0	0	It would be of benefit in the name of clarity if cities mentioned could be included with mention of where they are (i.e. which country), particularly the first time they are referred to in the chapter, for example, the first mention of Chittagong on page 27. (Jo da Silva, Arup)	addressed

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41	65548	8	0	0	0	0	Inconsistency in hyphenating 'community based/community-based' and other terms using 'based / -based'. (Jo da Silva, Arup)	to be checked in final read
42	65582	8	0	0	0	0	Inconsistent reference to New York / New York City. Use New York City throughout unless referring to the state (Jo da Silva, Arup)	to be checked in final read
43	69024	8	0	0	0	0	Sec 8.2: is only mentioned once as a reference in the SPM (p5, L34) and two times more in the TS; This is surprising as it bears the "policy relevant" and important title: "Urbanization Processes, Climate Change Risks, and Impacts", and furthermore contains about 20 pages of text. We wonder whether it could be referenced more often in SPM. (NETHERLANDS)	Addressed in revised ES
44	72609	8	0	0	0	0	Adaptation and resilience seem to be mixed/conflated in the chapter - perhaps include definitions at the beginning of chapter and give examples specific to the urban context. (UNITED STATES OF AMERICA)	addressed
45	72610	8	0	0	0	0	At various points in the chapter green infrastructure appears conflated with ecosystem services. The two are very related in that many green infrastructure projects provide some ecosystem services. In some cases, green infrastructure projects include ecosystems and therefore their services. However, in many cases, green infrastructure projects consists of plant material selected for particular purposes that do not support habitat values or large ecosystem function and greater ecosystem services. (UNITED STATES OF AMERICA)	text changed to support this point
46	72611	8	0	0	0	0	Definitions for vulnerability, sensitivity, exposure, and adaptation capacity as they relate to urban areas should be included at the beginning of the chapter, with examples from an urban context. (UNITED STATES OF AMERICA)	We are using the same definitions as the SPM and the glossary
47	72612	8	0	0	0	0	Green infrastructure is mentioned a lot but is not really defined until Page 48, Lines 8-11. Consider providing a glimpse of a definition of GI earlier in the chapter when it first starts to appear. (UNITED STATES OF AMERICA)	definition moved to the first part of the text that discusses green infra
48	72613	8	0	0	0	0	In many places there are speculative statements -- the use of the words "may", "could" "potential" should be avoided unless based on some modeled projection of the future. (UNITED STATES OF AMERICA)	addressed
49	72614	8	0	0	0	0	In many places, the text is too western- or developed-country centric in perspective - what may work in developed settings may not work in developing settings. Differences should be elaborated upon a little with lessons learned / best practices that may be universally applied. (UNITED STATES OF AMERICA)	Text focuses very strongly on low and middle-income countries.
50	72615	8	0	0	0	0	Is UHI defined anywhere in the chapter? It is referred to several times. (UNITED STATES OF AMERICA)	Defined in the glossary
51	72616	8	0	0	0	0	Much is said about the need and value of integrating mitigation and adaptation, adaptation and sustainable development, adaptation and sustainable development goals, and integration of disaster risk reduction and adaptation, in addition to calling for improved governance, community input, private sector involvement etc....Realistically however, which cities are capable of doing all of this and doing it well? It strikes me as a very western-centric or developed country-centric view that is likely out of context in many mid and low income cities and settlement. (UNITED STATES OF AMERICA)	A valid point - but the chapter does cover the lack of capacity and the very large risk-reducing infrastructure deficit in urban centres in low- and middle-income nations in considerable detail. See in particular Table 8.2.
52	72617	8	0	0	0	0	The acronym for urban heat island effect should be "UHIE" (UNITED STATES OF AMERICA)	UHI so widely used in the literature
53	72618	8	0	0	0	0	The authors note that there are different and conflicting definitions of urban areas and the term city. However, these are core terms used in the chapter so the authors really should identify at least one definition that they will be using so that readers understand the context in which these terms are used. (UNITED STATES OF AMERICA)	almost all data for urban areas in countries is only available for whatever definition of urban the government is using.
54	72619	8	0	0	0	0	The authors present the term "accumulated resilience" but the concept could use further substantiation. (UNITED STATES OF AMERICA)	additional material added
55	72620	8	0	0	0	0	The authors should consider adding this text: A summary of the state of adaptation planning in urban areas included at the beginning of the chapter would be very useful. This section could draw from the following research: Carmin, JoAnn, Nikhil Nadkarni, and Christopher Rhie. 2012. Progress and Challenges in Urban Climate Adaptation Planning: Results of a Global Survey. Cambridge, MA: MIT. (UNITED STATES OF AMERICA)	Reference in with findings also summarized
56	72621	8	0	0	0	0	The chapter does not seem to have a clear audience in mind. It is not likely well suited for policymakers or non technical person as it is too densely written. (UNITED STATES OF AMERICA)	have sought to remedy this

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57	72622	8	0	0	0	0	The chapter is overly long and dense, with uneven coverage of key topics, e.g., urban climate impacts are given short shrift in general, while community-based adaptation is overly long. Despite the length, the data and evidence supporting the main points of the chapter are weak. Figures and tables are not effective in general and need rigorous attention to improve them. Shortening and sharpening the chapter will help to highlight the main point regarding the need for 'transformation' in urban settings that integrates adaptation, mitigation, and sustainable development. (UNITED STATES OF AMERICA)	chapter shortened and other suggestions addressed
58	72623	8	0	0	0	0	The chapter makes excessive reference to New York City. While NYC is doing great work, there are a lot of other US cities that can be referenced. Consider, for example: Chula Vista, CA; Lewes, DE; Chicago, IL; S.E. Florida Climate Compact; Flagstaff, AZ; Tucson, AZ; the Western Adaptation Alliance; San Francisco; Grand Rapids, MI. (UNITED STATES OF AMERICA)	References? Focus on New York in part because the documentation of what is being done is there.
59	72624	8	0	0	0	0	The chapter presents a lot of very useful information but one glaring omission is the importance of acknowledging different world views and belief systems in adaptation action. The authors assert that having more and better information will lead to better urban adaptation...but this hasn't proven universally true. What we know is that adaptation activities need to respect existing world views and belief systems. This omission of these concepts is a notable gap in the chapter. (UNITED STATES OF AMERICA)	This would take us well away from the plenary approved chapter we were asked to prepare and we also think that this is a more general point that should be considered in other chapters
60	72625	8	0	0	0	0	The concept of intentionality could strengthen this chapter. In other words, effective adaptation planning is not coincidental and 'good development' does not inherently result in climate change adaptation planning. Instead, deliberate actions to address climate change impacts must be taken. National Wildlife Federation has produced a Quick Guide to Adaptation that discussed intentionality. It can be found here: http://www.nwf.org/~media/PDFs/Global-Warming/Climate-Smart-Conservatio... (UNITED STATES OF AMERICA)	We believe the text describes clearly where good development does not result in climate change adaptation; this point has also been expanded from the SOD
61	72626	8	0	0	0	0	The Executive Summary is far too long, is repetitive, has contradictory statements, contains statements that are not well supported, and contains a level of detail inappropriate for an ES. As Examples: "City governments are slowly learning from climate change adaptation implementation experience" and "The process of city-based climate adaptation learning is slow, complex and fraught with multiple interlinked challenges" -- repetitive; "Cities are complex inter-dependent systems with potential synergies that could be leveraged to support climate change adaptation" is either contradicted by the following text or not supported by it (governance and coordinating institutions are not systems); "Successful global climate change adaptation depends centrally on what is done in urban areas" -- not supported by following text. (UNITED STATES OF AMERICA)	es much shorter
62	72627	8	0	0	0	0	The Executive summary should use lower level sections for citation to facilitate tracing of statements (UNITED STATES OF AMERICA)	done
63	72628	8	0	0	0	0	The style of writing is inappropriate for a scientific assessment in many sections. In many cases there are statements without evidence presented or citations. In some cases there are several paragraphs with not citations (i.e., as though this was a book expressing the author's views). For example, on page 9 it states "Furthermore, the level of funding needed for urban adaptation exceeds the capacities of local and national governments and international agencies." While this may be true, a better formulation is "Several recent studies [citation 1, citation 2, citation 3] have concluded that the level of funding needed ..." (UNITED STATES OF AMERICA)	Many more citations added; one difficulty here is the lack of papers in peer reviewed journals about serious problems and issues. See for instance the lack of studies on heat stress in low- and lower-middle income nations.
64	72629	8	0	0	0	0	The text of this chapter utilizes too much jargon - making it relatively inaccessible to the non-expert. (UNITED STATES OF AMERICA)	examples? Our final editing process sought to cut jargon
65	72630	8	0	0	0	0	There are a lot of references listed at the end of the document but there could be more referencing in the text. There are a lot of great statements that can be enhanced by linking them to their supporting references. (UNITED STATES OF AMERICA)	have sought to do this
66	72631	8	0	0	0	0	There are a lot of run on sentences that bury content and make the chapter hard to read. It's unfortunate because a lot of good meanings get lost in the sheer confusion of trying to navigate the text. (UNITED STATES OF AMERICA)	have sought to remedy this
67	72632	8	0	0	0	0	There are lots of locations in the text that aren't supported by citations. While this reads better than most chapters, it could be compressed by eliminating explanatory discussion, particularly areas where citations are not present. (UNITED STATES OF AMERICA)	Many more citations added

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68	72633	8	0	0	0	0	There are several places in the chapter where the authors go well beyond policy relevance and are policy prescriptive. For example, the construction "This will need..." should be replaced with "Recent studies [citation, citation, citation] have found the following components are needed to adapt to..." As a specific example, "Effective urban governments will also need to work with a range of government and civil society institutions at local and supra-local levels and to get support and enabling frameworks from higher levels of government." This prescribes that urban governments get frameworks for higher levels of government when in fact this may not be needed. And won't ineffective urban governments need to do this as well? A better formulation is "Recent studies [citation, citation, citation] have found that working with a range of government and civil society institutions at local and supra-local levels increase the effectiveness of urban government adaptation efforts; support and enabling frameworks from higher levels of government were also found to be helpful." (UNITED STATES OF AMERICA)	Redraft incorporated into 8.1. Box 8.1 has been added to show the range of studies on which the text draws. One difficulty is that if one draws a general point from many case studies, the text becomes very heavy with references.
69	72634	8	0	0	0	0	There is a fair degree of disorganization especially in the jumping from high income cities to medium income cities and low income cities. Suggest reorganizing chapter around these 3 categories (UNITED STATES OF AMERICA)	There are too few detailed studies of urban centres in low and middle income countries to be able to do this
70	72635	8	0	0	0	0	There is a lack of clarity and inconsistencies in use of confidence measures and likelihood etc.. (UNITED STATES OF AMERICA)	See revised ES
71	72636	8	0	0	0	0	There is a need to define the key terms in this chapter. Adaptation, resilience, vulnerability, etc. Also, the authors need to consistently use these terms. Frequently it appears that the authors use adaptation and resilience interchangeably. (UNITED STATES OF AMERICA)	terms defined in glossary
72	72637	8	0	0	0	0	There was no mention of climate services in the text as a potential tool and service. Was this intended? (UNITED STATES OF AMERICA)	Surely this is not an issue for urban areas but for national governments?
73	72638	8	0	0	0	0	This chapter is much too long, and can be shortened in a number of places (especially the Intro and the Exec Summary). Suggestions are provided below for reorganizations and cuts to streamline the chapter. Also, citations are spotty throughout, with evidence and conclusion statements in some sections well-cited, some poorly cited, and in a few cases, whole sections with barely any citations at all (e.g., 8.1, especially 8.1.1, 8.1.4, 8.2.3.6, 8.3.3.8). In fact, where statements are unsupported by the literature, it might be best to cut them. All conclusion statements should be based on the literature, e.g., "Studies suggest that...", with citations, rather than assertions of the authors. Policy statements or calls for actions/changes (e.g., in the finance section) should be avoided. (UNITED STATES OF AMERICA)	chapter has been shortened and other points raised acted on
74	72639	8	0	0	0	0	This chapter is too long and needs substantial reduction. The length of the chapter detracts from the very important message that given the reality of rapidly urbanizing world, urban areas are a prime target and opportunity for making significant headway on reducing GHG emissions, providing opportunities and incentives as well as education to adjust and adapt continually to climate change (especially climate variability-related) risks and hazards. Also the other important message that governance at urban and local scales is much more productive and effective in fostering societal practices aimed at fostering adaptation and resilience. (UNITED STATES OF AMERICA)	chapter has been shortened and other points raised acted on
75	72640	8	0	0	0	0	Too many instances of equating adaptation potential and good adaptation with capacity to engage in a multiplicity of coordination at a variety of levels and scales, and engage in massive levels of complex integration. This appears detached from the realities of cities on the ground and specially cities in developing countries - notably medium and low income cities. (UNITED STATES OF AMERICA)	The chapter discusses this point in some detail - see in particular table 8.2
76	77487	8	0	0	0	0	A general comment: Over and above reviewing building codes, it may be more the climate data info which the codes refer to that need to be revised along with the ways to interpret this info (or how to apply codes in the face of an evolving risk). This does not appear clearly in text but is a major issue. For example, the whole notion of "return periods" for designing infrastructure does not make sense in a changing climate (work by Engineers Canada and the Public Infrastructure engineering vulnerability committee - see www.piev.ca). (Caroline Larrivee, Ouranos inc.)	text strengthened and recommended reference added
77	77488	8	0	0	0	0	The notion of infrastructure deficit should include the lack of proper maintenance and rehabilitation which is mostly a problem in higher-income nations but a major source of vulnerability to climate change. See Engineers Canada, 2008, Adapting to Climate Change: Canada's First National Engineering Vulnerability Assessment of Public Infrastructure, Engineers Canada, 76 p. See also Engineers Canada, 2011, PIEVC Engineering Protocol for Infrastructure Vulnerability Assessment and Adaptation to a Changing Climate. (Caroline Larrivee, Ouranos inc.)	Key statement 4.2 refers to 'cities with universal provision of infrastructure and services and have a strong base for building climate resilience if processes of design and allocation of resources are responsive to emerging climate risk'. Reference to Engineers Canada added

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
78	77492	8	0	0	0	0	For defining "wicked problem" and also dealing with uncertainty of climate change scenarios, add reference: Gardner, S. and D. Noble eds. 2008, Stepping up to the climate change challenge: Perspectives on local government leadership, policy and practice in Canada, Municipal Knowledge Series, Municipal World. (Caroline Larrivee, Ouranos inc.)	Reference added
79	77506	8	0	0	0	0	Chapters 8 and 9 could be still better coordinated. Even though in chapter 8 there are a few references to rural areas and urban-rural interaction, theories and mechanisms of interaction are not elaborately discussed, apart from local urban-rural interaction (i.e. near the urban fringe) in the context of urban (expansion) planning, e.g. on page 12. On the other hand in chapter 9 on rural development there is more attention for the urban-rural interaction (at several scales) and the term 'urban' appears clearly more often in Ch.9 (approx. 50x) than 'rural' in Ch.8 (approx. 35x). Chapter 8 deals especially with challenges of (future) larger cities and mega cities and takes urbanization as given. Probably nobody denies the strong urbanization ahead, but there is some policy leeway to shape the process in terms of how much urbanization concentrates on one or a few cities only or alternatively a gentler distribution of more (medium sized) cities is aspired. Nowhere theories of optimal city size in conjunction with a country's city size hierarchy are discussed, not the empirical tests. (Adriaan Perrels, Finnish Meteorological Institute FMI)	There is no consensus on optimal city size or on the validity of the very concept or on the rationale for governments to influence city size hierarchies.
80	77568	8	0	0	0	0	A listing of adaptation interventions across regions is missing (Malini Nair, Indian Institute of Science)	Why is this required? We feel that the sub-headings guide the reader in regard to the classification of adaptation interventions
81	77919	8	0	0	0	0	General comment to the whole chapter: It is very technical and in many cases the papers chosen present very local problems without relations to other regions. (POLAND)	We have sought to synthesize general conclusions especially in the ES; the reports on local climate change adaptation experiences reflects the literature
82	80119	8	0	0	0	0	Conclusions: Transport not included in the summary for the policy makers. Resiliency is only qualitative, would be helpful to have it also in some way measured. In energy all energy saving is measured. That is obviously very good, but more and more in the future the peak power demand becomes crucial in respect to emissions. Thus more emphasis should be highlighted to the peak demand reduction and peak shifting (e.g. by demand control). Energy efficiency together with good indoor climate should be emphasized more. Energy efficiency is usually also giving better quality on indoor air and thermal comfort. (Miimu Airaksinen, VTT Technical Research Centre of Finland)	Transport now included in ES. Energy efficiency of housing stressed and discussed in 8.3.3.3 and mentioned in other places
83	81245	8	0	0	0	0	The tone of the chapter should be policy relevant and not policy prescriptive. (Monalisa Chatterjee, IPCC WGII TSU)	addressed
84	81329	8	0	0	0	0	The chapter has rich discussions on several interdependent topics. For FGD preparation, authors may wish to synthesize key messages in tables or in form of other synthetic elements as 'finding rich capsules' that people can use from this assessment. (Monalisa Chatterjee, IPCC WGII TSU)	greater focus on key messages now in ES and in new tables added
85	81330	8	0	0	0	0	Considerable amount of synthesis is required to condense the chapter. Moreover, it would be very useful if the chapter findings find ways of contributing to the emerging messages of WGII assessment. (Monalisa Chatterjee, IPCC WGII TSU)	chapter has been shortened
86	81334	8	0	0	0	0	Chapter needs easily accessible synthesized climate change impact on urban areas findings. (Monalisa Chatterjee, IPCC WGII TSU)	addressed
87	82259	8	0	0	0	0	1) Shortening the chapter -- In developing the final draft of the chapter, the author team is strongly encouraged to prioritize shortening of the chapter. The effectiveness of the assessment would be greatly enhanced if length were ambitiously reduced--from the current 76 pages of text in the main body of the chapter, down to approximately 35 pages. Such tightening and condensing of the chapter would be beneficial in a number of senses. 1st, a shorter chapter will be read in its entirety by many more readers. 2nd, a chapter without overlap among sections provides greater focus on the key findings of the assessment. (Katharine Mach, IPCC WGII TSU)	the chapter has been shortened. But there are limits to shortening if the chapter is to be comprehensive and to reflect the very large expansion in the literature
88	82260	8	0	0	0	0	2) Highlighting key findings -- To shorten and tighten the assessment, the chapter team is encouraged to 1st clearly identify the key, non-overlapping assessment findings of its assessment. This 1st step could be achieved by reducing the executive summary to 2 pages, clearly articulating the key messages. 2nd, the subsections of the chapter should be reduced with the key messages in mind. Overlap should largely be eliminated, and the reader should understand how each section is distinct from the others. Each key message should emerge in the chapter clearly, traceably, and just once, rather than partially emerging a number of times. (Katharine Mach, IPCC WGII TSU)	the ES has been reworked and reduced to around two pages. Overlap has been cut.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
89	82261	8	0	0	0	0	3) Comprehensive, traceable assessment -- In final revisions, the chapter team should ensure that citations are provided in clear and direct support of all statements in the chapter. (Katharine Mach, IPCC WGII TSU)	more citations added
90	82262	8	0	0	0	0	4) Coordination across Working Group II -- In developing the final draft of the chapter, the author team should continue to ensure coordinated assessment, both in the chapter text and at the level of key findings. As appropriate, cross-references to the specific relevant sections of other chapters and/or their assessment findings should be used, continuing to ensure that overlaps are reduced and assessment harmonized. (Katharine Mach, IPCC WGII TSU)	This has been addressed
91	82263	8	0	0	0	0	5) Harmonization with the Working Group I contribution to the AR5 -- In developing the final draft, the chapter team should also ensure all cross-references to the Working Group I contribution are updated, with discussion of climate, climate change, and climate extremes referencing the assessment findings in that volume. (Katharine Mach, IPCC WGII TSU)	addressed
92	82264	8	0	0	0	0	6) Policy neutrality -- Given the mandate to provide a policy relevant, but not policy prescriptive assessment, the chapter team is encouraged to further consider the formulation of statements across the chapter. For example, the word "need" is frequently used, and in some places readers could potentially interpret the statements as prescriptive. The chapter team should explore opportunities to provide more information rich statements that avoid potential interpretations of prescription. (Katharine Mach, IPCC WGII TSU)	The use of the term "need" and "required" has been reviewed for the whole text and replaced where relevant
93	82265	8	0	0	0	0	7) Report release -- The chapter team should be aware that the final drafts of the chapters will be posted publicly at the time of the SPM approval, before final copyediting has occurred. Thus the chapter team is encouraged to continue with careful attention to refined syntax and perfected referencing. (Katharine Mach, IPCC WGII TSU)	Noted.
94	82266	8	0	0	0	0	8) Characterization of future risks -- In characterizing future risks for urban areas, to the degree appropriate the chapter team should indicate the extent to which risks (or key risks) can be reduced through mitigation, adaptation, development, poverty reduction, etc. That is, is it possible to indicate how risks may increase as the level of climate change increases or, potentially, to indicate the relative importance of changes in mean conditions, as compared to changes in extreme events, as compared to potential non-linear changes associated with biome shifts or tipping points? And then, how much can risks be reduced through adaptation or development, in the near-term and in the long-term? How are factors or stressors that multiply risks relevant in this context? As supported by its assessment of the literature, the author team should consider communicating risks for the era of climate responsibility (the next few decades, for which projected temperatures do not vary substantially across socioeconomic/climate scenarios) and for the era of climate options (the 2nd half of the 21st century and beyond). As might be helpful to the chapter, the framing of table SPM.4 could be considered in the characterization of future risks, along with the key and emergent risk typology of chapter 19. (Katharine Mach, IPCC WGII TSU)	addressed through new tables
95	82267	8	0	0	0	0	9) Informing the summary products -- To support robust and insightful summary products for the report, the chapter team is encouraged to maximize nuance and traceability in developing concise and distinct key findings, continuing to use calibrated uncertainty language effectively. In addition to nuanced characterization of future risks (see the previous comment), the chapter team is encouraged to consider themes emerging across chapters, indicating for example how extreme events have demonstrated adaptation deficits and vulnerabilities to date and may relate to future risks, how limits to adaptation may be relevant in the context of this chapter, how multidimensional inequality is relevant in the context of climate change, how adaptation experience has been observed to date, and how interactions among mitigation, adaptation, and sustainable development may occur. (Katharine Mach, IPCC WGII TSU)	Noted.
96	85115	8	0	0	0	0	GENERAL COMMENTS: I congratulate the author team for their work on the SOD, recognizing that there is more work to be done. Currently, the chapter text (and the executive summary) are much too long and must be reduced substantially. There are clear opportunities to do this because both the text and the executive summary cover the same ground multiple times. When considering the suite of review comments, please look for all opportunities to hone and focus the text in revision, reducing length significantly. In addition, avoid policy-prescriptive formulations such as "need" and "require" throughout. (Michael Mastrandrea, IPCC WGII TSU)	addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
97	85116	8	0	0	0	0	SUMMARY PRODUCTS: In preparing the final draft of your chapter and particularly your executive summary, please consider the ways in which your chapter material has been incorporated into the draft SPM and TS. For Chapter 8, this includes presentation of observed impacts and vulnerabilities in section A.i, adaptation experience in section A.ii, principles for effective adaptation in section B.ii, and sectoral and regional risks in section C.i, as well as related figures and tables. Are there opportunities for presenting chapter findings and material in a way that further supports broad themes highlighted in the summary products and that facilitates additional cross-chapter synthesis in specific findings or figures/tables? Do the existing summary product drafts suggest additional coordination that should occur between Chapter 8 and other chapters at LAM4? (Michael Mastrandrea, IPCC WGII TSU)	we reviewed the SPM and have made recommendations and suggestions to improve the linkages between this and chapter 8
98	78333	8	0	46	0	0	"does not find an increase in UHI in the 2050's" this seems misleading to me. Indeed, no increase in UHI does not mean at all that that there will be no increase in heatwave risk. Readers could therefore misunderstand this sentence. (Vincent Vigi�, CIRED)	Correct, the statement is specifically relating to UHI intensity and is not corrected specifically to the presence of heatwaves (typically associated with high daytime temperatures). That being said, the lack of UHI increase indicates that no change in heat stress (associated with high nighttime temperatures) during heatwaves will occur
99	78334	8	0	51	0	52	Here again, I find that this sentence is misleading. It would seem clearer to me too write that "Another warming of about 0.5�C is projected due to an increase in UHI caused by possible land-use change". Also, it seems strange to me to focus, as it is done in this paragraph, on the average value of UHI during a whole day, because UHI amplitude varies strongly during the day. UHI has its most adverse impact at night, when it is stronger and prevents air temperature to decrease as much as in the countryside. During the day, its effect is much smaller and of less practical importance. Focusing on an average between day and night therefore does not give the reader a good description of the phenomenon and of its amplitude. (Vincent Vigi�, CIRED)	Revised text to make it more clear – and that the 0.5 was on top of the existing 1.0 uhi condition. UHI of course most importantly is a night time condition and in fact rural areas often have higher air temperatures during the day than nearby urban areas as a result of UHI principles.
100	77097	8	1	0	0	0	More attention needs to be given in this chapter to the importance of early warning systems and timely disaster prevention actions based on short-term risk information. Currently, the emphasis is almost entirely on long-term risk reduction, not giving due attention to the establishment of systems to monitor forecasts of heightened risk (ie: rainfall forecast) and trigger disaster prevention actions on an ongoing basis. Such early warning systems are important to deal with changing and uncertain risks due to climate change, and particularly effective in cities. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Good point; reference to early warning systems now made in several parts of the report
101	85117	8	2	12	0	0	Executive Summary: As mentioned in my general comments, please refine the focus and clarity of the executive summary as you revise the chapter--it is currently too long and repetitive, and the key findings are not easy to determine. Each paragraph should present one key finding (in the bold sentence), with the subsequent nonbold sentences providing additional support and context to the bold finding. In addition, please carefully check and ensure the clear traceability of all executive summary statements to the underlying chapter text. Cite specific subsections of the chapter wherever possible, rather than major sections (unless the full section is intended as support). Finally, please use calibrated uncertainty language consistently throughout the executive summary, as currently a mixture of confidence, agreement/evidence, and confidence based on agreement/evidence are used. (Michael Mastrandrea, IPCC WGII TSU)	The ES has been completely rewritten to address the points raised here
102	69025	8	2	29	0	0	Suggest to change the term "Urban Government" to "Municipality", which has direct equivalence to most national jurisdictions. The term "Urban Government" is never used in TS or SPM. Further explanation in Proposition 9 of the review. Idem page 6, line 31 and 39, page 7, line 52, etc. (NETHERLANDS)	Urban government is clearer. In some nations, there are rural municipal governments, in others municipalities are in effect 'district' governments as they encompass urban and rural settlements. Urban government also encompasses city or metropolitan governments which may not be considered municipal
103	79513	8	3	0	0	0	This chapter covers all the main issues related to urbanisation and climate change reasonably well but in places it makes broad statements and generalisations that could be easily refuted and do not seem to be backed by robust evidence. Given the level of criticism that previous ARs have been subjected to (even if often unfounded) it would be wise to avoid these altogether or at least reduce them to a minimum. I have some examples of such statements below. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	Attention has been given to this - especially in additional references

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
104	72641	8	3	1	9	28	The entire executive summary could be better organized; currently it is a mixture of many kinds of information and the result is that it is very difficult to follow- possible groupings/headings of information include the following: overview, climate impacts in urban areas, key strengths and weaknesses of urban areas; strategies to reduce risk and develop adaptation activities and plans (eg., ecosystem-based adaptation). Even further, the adaptation strategies could be grouped together - eg., all economic strategies in one place, all strategies related to human and institutional capacity are together, etc. (UNITED STATES OF AMERICA)	see revised ES
105	72642	8	3	1	9	28	The executive summary does not characterize the full range of climate impacts in urban areas, but it should. Although sea level rise and coastal and riverbank flooding are included, stormwater flooding, drought and increasing aridity, and wildfires are not mentioned to the extent that they should be. For example, the section on microclimate (p 4, line 32) mentions stormwater, but increased stormwater runoff is NOT a result of changes to urban microclimates. (UNITED STATES OF AMERICA)	Drought is mentioned as an urban climate impact, as is inland flooding. Increasing aridity has been added. A summary table has also been added on key risks between 8.2 and 8.3
106	69026	8	3	4	3	4	The word "good" is probably "sustainable". Urban practices may be more usefully described and characterized in terms other than good, bad, right or wrong which often implies moral, ethical or regulatory argumentation. If that is not scope of the assessment, other characterization can better assist. Further explanation in Proposition 6 of the review. Words like good, bad, right or wrong are never used in TS or SPM. (NETHERLANDS)	Surely reference to good-quality housing is acceptable?
107	68088	8	3	12	0	0	Taking into account 8.1.4.2, page 5 line 23-43; page 6, line 28-29; and page 7, line 49-51, it is suggested to insert an additional conclusion into its ES to describe how developing and developed countries are different from each other in adapting to climate change at city level. (CHINA)	This is stressed in the ES and throughout the rest of the chapter - see in particular Table 8-2
108	82268	8	3	12	0	0	Executive Summary -- In revising the executive summary, the chapter team could consider 3 priorities. 1st, the executive summary should be reduced to 2.5 pages--maximum--to allow the reader to readily understand the key conclusions of the chapter. 2nd, per my overall comment on characterization of risks, the executive summary could more clearly highlight key risks for urban areas and the degree to which these risks can be reduced through proactive adaptation. 3rd, repetition across paragraphs in the executive summary should be reduced to a minimum, so that each key conclusion emerges clearly--in only one paragraph. (Katharine Mach, IPCC WGII TSU)	Addressed
109	57663	8	3	12	3	12	The summary is very long. It's verbose too. You can cut 75% of the words without loss of information (Richard S.J. Tol, Vrije Universiteit Amsterdam)	Addressed
110	62611	8	3	12	9	28	The cited sections in the ES should be more indicative and traceable, such as 8.1.4 or 8.1.4.1, not only 8.1. (yan zheng , Chinese Academy of Social Sciences (CASS))	This is not easily done since the ES statements are highly synthesized. However, it can be attempted after 8.5 is absorbed into the remaining chapter
111	72643	8	3	12	9	28	Executive Summary is far too long. Select at maximum the 10 major points to cover in two pages maximum, or group the points into several sections with sub-points. (UNITED STATES OF AMERICA)	Addressed
112	59381	8	3	14	2	14	The word "centrally" reflects an overstatement. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	The word central not in shortened ES text
113	57661	8	3	14	3	15	Trite. Cities are important 'cause that's where people live. The countryside is important because that's where food is grown. Chairs are important because that's what we sit on. (Richard S.J. Tol, Vrije Universiteit Amsterdam)	The AR5 has a chapter on urban areas, which previous AR's did not have because more and more vulnerable people are ending up living in cities
114	62612	8	3	14	3	15	this argument can be improved by adding "because it is not only a major GHGs emitter but also suffers most from its increasing exposure to climate change risk" after it. I also suggest to replace the "very high confidence" as "high confidence" here. (yan zheng , Chinese Academy of Social Sciences (CASS))	Medium confidence and high agreement now. Phrasing of this argument: A high proportion of the population and economic activities most at risk from climate change are in urban areas, and a high proportion of global greenhouse gas emissions are generated by urban-based activities and residents

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
115	72644	8	3	14	9	28	This executive summary is way too long, contains points that seem to be redundant, seems to lack a progression in terms of the order of the points, and inconsistently addresses uncertainty. With respect to uncertainty first, looking at the first three points on page 3, the first bullet addresses agreement and evidence, the second bullet addresses confidence, and the third bullet addresses agreement and evidence. The fourth bullet (page 4, line 1) is "medium confidence, characterized by high agreement and medium evidence." With respect to redundancy, one example is the redundancy of point number 3 (page 3, line 27) with point number 19 (page 8, line 14). Suggested cuts on these points will be made with respect to specific points below, but I suggest an entire reordering that progresses from points about the essential role cities play in adaptation, to difficulties in playing that role, to what they can do despite those difficulties, and finally to ways their capacity to adapt can be increased. (UNITED STATES OF AMERICA)	Addressed
116	77920	8	3	15	3	15	The sentence "Urban areas house more than half the world's populations ..." is not clear (POLAND)	house is now changed to hold
117	77921	8	3	18	3	19	The sentence "projections for the next few decades suggest that it is in and around urban areas that almost ..." is not clear (POLAND)	sentence no longer in the ES
118	72645	8	3	19	3	19	Change word "increment" to "increase" (UNITED STATES OF AMERICA)	word increment no longer in the ES
119	64456	8	3	24	3	25	medium evidence' should be added as majority of evidence are from developed countries while very few evidence exists for the developing countries most especially in Africa (Maruf Sanni, National Centre for Technology Management)	high evidence in the ES supports 3 key statements: 2.3 Cities and city regions are sufficiently dense and of a spatial scale that they influence their local micro-climate, exacerbating the impacts of climate change. 3.6 Good quality, affordable and well-located housing provides a strong base for city-wide climate change adaptation. 3.7 Reducing basic service deficits and building resilient infrastructure systems could significantly reduce hazard exposure and vulnerability to climate change, especially for those who are most at risk or vulnerable
120	82269	8	3	24	3	35	Although this paragraph represents important introduction to the chapter, as the executive summary is shortened, this text could be maintained in an introductory section, rather than as a core finding of the chapter. (Katharine Mach, IPCC WGII TSU)	Addressed
121	72646	8	3	26	3	26	...initial responses to adaptation; shouldn't this really be "initial responses to climate change." (UNITED STATES OF AMERICA)	No longer in the ES text
122	64457	8	3	27	3	28	social scientists should be added to the list of professionals (Maruf Sanni, National Centre for Technology Management)	reference to professionals is no longer in the text
123	72647	8	3	28	3	31	The claim that shifting from urban adaptation to building resilience "supports the capacity to withstand unexpected impacts, flexibility, redundancy, and planning for 'safe failure'" seems to be at odds with the vast amount of literature on adaptation. These concepts are well known and considered to be key, important characteristics of adaptation. As it is currently written, section 8.1.4 does not support this statement, and it is one of the sections most in need of citations. (UNITED STATES OF AMERICA)	The discussion on resilience and adaptation (and differences) is no longer within the shortened ES text. We also hope that the discussion of resilience in 8.1 is now clearer
124	72648	8	3	30	3	30	In the list of 'resilience characteristics', the authors include the concept of redundancy. There has been growing controversy over whether or not redundancy is really an important component of resilience. In fact, in many cases, redundancy can reduce resilience and lead to cascading effects. Would consider replacing redundancy with something like modularity. This is also a comment for consideration later in the document when redundancy is listed as a key concept. Consider replacing there as well. (UNITED STATES OF AMERICA)	The discussion on resilience and redundancy is no longer within the shortened ES text
125	72649	8	3	31	3	34	This sentences uses adaptation twice which makes the sentence hard to navigate. Also, the authors present the idea of transformative adaptation but don't really discuss what transformative adaptation is and how it differs from more traditional incremental adaptation. (UNITED STATES OF AMERICA)	Addressed
126	64458	8	3	34	3	35	Another sentence on the fact that there are some discussions on how private sectors could be intergrated in urban climate change adaptation strategies should be added (Maruf Sanni, National Centre for Technology Management)	The ES does not include long discussions , it does make note of the role of the private sector in CC adaptation
127	66333	8	3	35	0	0	There should be reference to literature concerning " Carrying capacity & limits to growth ", it is affected by climate variability / change (Alka Bharat, M.A.National Institute of technology)	Not possible in ES unless captured in other sections, such as 8.1

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
128	59382	8	3	37	0	0	This part is mentioned as "low evidence". My opinion is that the executive summary needs to be rephrased in that point to reflect the "low evidence" stated. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Addressed
129	72650	8	3	37	3	38	The term "bounce forward" is introduced and needs a very brief definition here. MBC (UNITED STATES OF AMERICA)	Addressed in the glossary
130	72651	8	3	37	3	52	The header mischaracterizes the information in the paragraph. Reading the supporting paragraph, a better header might be "Cities have complex inter-dependent systems that complicate adaptation". If point 19 is kept, it could follow this point and lines 48-52 of this point could be deleted, starting with "Thus raising urban adaptive capacity..." (UNITED STATES OF AMERICA)	Difference in understanding of cities as containing systems or being systems themselves (the commentator expresses the former and the authors express the latter). Original framing of the key statement retained.
131	78053	8	3	38	3	38	The uncertainty qualification should read "limited evidence" (instead of "low evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	changed
132	82270	8	3	38	3	38	Following the uncertainties guidance for authors, "limited evidence" is the summary term that should be used here in place of "low evidence." (Katharine Mach, IPCC WGII TSU)	changed
133	72652	8	3	42	3	44	this section mentions "a few cities,"and then provides a reference to section 8.3, but when you look at section 8.3.3.5 Adapting Electric Power and Energy Systems, there are no examples of cities that have adaptation initiatives underway. Somewhere in the document there should be explicit mention of which cities have initiatives underway. Also, if this section includes energy systems as the example given to illustrate why cities are inter-dependent cities with synergies, there needs to be better explanation. (UNITED STATES OF AMERICA)	No longer in ES text. In main body, summarized by drawing conclusion from Hammer et al., 2011
134	72653	8	3	47	3	47	This sentence uses the term "adapting well". What does this mean? One of the biggest research needs constantly articulated is the need to understand what successful adaptation means. As such, consider altering this sentence or providing more description of what is needed. (UNITED STATES OF AMERICA)	Adaptation definition addressed in glossary
135	66334	8	3	48	0	0	[after resilience (8.5)] :specific sectors like energy, infrastructure (water, sewer lines) should be specified. Rise in temperature is a major issue for solid waste (Alka Bharat, M.A.National Institute of technology)	adaptation of Water, Sanitation, Drainage covered in 8.3.3.4. waste and storm water management in 8.3.3.4.2
136	82271	8	3	48	3	48	This statement could be interpreted as policy prescriptive, and rewording the statement to show the benefits of multi-level governance may be preferable. (Katharine Mach, IPCC WGII TSU)	Addressed
137	69027	8	3	48	3	52	(Same as chp. 8, page 3, line 48) This is evidence that there is no advantage or interest in making "urban executive" capacity autonomous within the Municipality. (NETHERLANDS)	comment does not require any changes to the ES
138	72654	8	3	49	3	49	The term "end-of-pipe" is used but not defined. A self-explanatory term would serve better. (UNITED STATES OF AMERICA)	term no longer in the ES
139	66335	8	3	50	0	0	(after adaptation measures) : sample for understanding adaptation measures should be mentioned. (Alka Bharat, M.A.National Institute of technology)	examples of urban adaptation measures are now provided
140	72655	8	3	50	3	53	The authors should consider modifying the text to read: "Although adaptation strategies can reinforce land-use management patterns around a cities that supports livelihoods while protecting ecosystem services in peri-urban or nearby rural areas, there are few global examples of this approach in practice." (UNITED STATES OF AMERICA)	This key statement now combined with others in 1.3
141	66336	8	3	51	0	0	(after encouraged) : at Regional level (strategywise) and implemented at urban, Rurban and Rural levels) (Alka Bharat, M.A.National Institute of technology)	ES is revised
142	82272	8	4	1	4	2	The phrase "imperative for adaptation" could be interpreted as policy prescriptive, and rewording the statement would thus be beneficial. (Katharine Mach, IPCC WGII TSU)	Addressed
143	72656	8	4	1	4	3	The authors should consider modifying the text to read: "Although the scale and concentration of urban climate risk is acknowledged and there is a growing imperative for adaptation activities, the risk is still poorly understood and the development of strategies to reduce risk is rare" (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
144	82273	8	4	2	4	3	Following the uncertainties guidance for authors, it would be preferable to use a phrase such as "based on" rather than "characterized by" in communicating the summary terms for evidence and agreement that serve as the basis for and underpin the assigned level of confidence. (Katharine Mach, IPCC WGII TSU)	changed
145	72657	8	4	7	4	7	"but responses"...need more clarification of "responses to what" (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
146	66337	8	4	8	0	0	(after awareness) : capacity and institutional building) (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
147	59383	8	4	8	0	9	The terms "awareness building, etc." are too general. How these are linked with the specific subject about the climate risk? (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	ES is revised and does not include this phrase
148	72658	8	4	8	4	8	The authors list things that will enable urban adaptation. Consider including something that mentions the alleviation of legal and institutional barriers since these are critical barriers that often impede action. (UNITED STATES OF AMERICA)	Considered and not included
149	82274	8	4	9	4	10	Given that infrastructure can be very expensive, it could be helpful to clarify what is meant by "low-cost interventions" here. (Katharine Mach, IPCC WGII TSU)	ES is revised and does not include this phrase
150	72659	8	4	10	4	11	This last sentence is confusing the way it's crafted. The part after the comma implies that institutional and ecological adaptation with long-term resilience building potential is a matter of concern. But so is infrastructural adaptation. The way the sentence is crafted its trying to contrast infrastructural efforts with all others but the sentence doesn't achieve that goal. (UNITED STATES OF AMERICA)	Addressed
151	64459	8	4	13	4	15	high agreement' with 'medium evidence' should be added (Maruf Sanni, National Centre for Technology Management)	Addressed
152	56571	8	4	20	0	0	Separate words "urban and" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
153	69028	8	4	20	4	22	In ExSum, the non linear increase in vulnerability has been attributed in general to coastal cities, particularly in Asia. While in Section 8.3.3.1 (page 39, lines 20-23), only India and China are mentioned. (NETHERLANDS)	8.3.3.1 notes: Many cities in Asian high growth economies are located in low-elevation coastal zones undergoing rapid urbanisation and economic transformation. city examples other than those from China and India are also given
154	61192	8	4	22	4	23	Text states flooding caused by heavy rainfall is common in some urban centres, but Chapter 4, section 4.3.3.5.4, page 53, lines 10-13 says that the evidence for this is limited. These two statements need to be rephrased so they do not partially contradict each other. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	The revision to Chapter 4 section 4.3.3.5.4, page 53, lines 10-13 needs to be co-ordinated. The ES mentions urban /inland flooding in 2.1 and the argument that extreme precipitation can result in urban floods is made in the chapter in 8.2.3.1
155	72660	8	4	23	4	43	This key message is much less developed than the others. It was hard to navigate and in the end, it wasn't clear what the authors wanted to the reader to walk away with. (UNITED STATES OF AMERICA)	Addressed
156	66338	8	4	24	0	0	(after properties) : leads to failure of water supply and sewer infrastructure (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
157	64460	8	4	24	4	25	Another sentence on the urban poor who stays in vulnerable caostal low lying areas should be added. The fact that their livelihood (such as fishing and crop farming) may be affected should also be mentioned (Maruf Sanni, National Centre for Technology Management)	This is covered in detail in the chapter. Livelihoods are mentioned in ES in 1.3 and 2.1
158	72661	8	4	27	4	35	This statement is not fully supported by the section it references. There are not any references to support a citie's ability to affect the region's climate. Also, surface run-off is not a climate effect. (UNITED STATES OF AMERICA)	surface run-off is not the climate effect referred to, rather it is UHI that the authors are eluding to
159	66339	8	4	28	0	0	(after large cities) : reduction of forest areas (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
160	82275	8	4	28	4	28	Following the uncertainties guidance for authors, "robust evidence" is the summary term that should be used in place of "high evidence." (Katharine Mach, IPCC WGII TSU)	changed
161	66340	8	4	29	0	0	(after energy consumption) : rise in temperature due to anthropegenic activities like industrialisation , traffic (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
162	72662	8	4	31	4	32	Run off is not a city microclimate nor is it a localized region's climate. Why is it here? (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
163	56572	8	4	32	0	0	Separate words "include the" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
164	66341	8	4	32	0	0	(after runoff) : changed wind character and wind speed (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
165	59384	8	4	32	0	35	collated words (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Addressed
166	62536	8	4	32	4	34	There is no spacing between the 'include' and 'the' on line 32. Likewise for 'mesoscale' and 'changes' in line 33 as well as the words 'inturn' 'modifying' and 'the' in line 34. (INDIA)	Addressed
167	56573	8	4	33	0	0	Separate words "mesoscale changes" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
168	56574	8	4	34	0	0	Separate words "in turn modifying the" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
169	57662	8	4	37	4	38	I don't know what this means. In my experience, cities don't bounce in any direction. (Richard S.J. Tol, Vrije Universiteit Amsterdam)	The word bounce is not in the ES text and when used later, it is explained
170	72663	8	4	37	4	49	The meaning of the term "bounce forward" is unclear. Could this header be rephrased to say something like "Increasing city resilience to climate change and building adaptive capacity [aside: which includes having adequate resourcing] could enable cities to improve their quality of life even in the face of climate change events." (UNITED STATES OF AMERICA)	As above
171	78054	8	4	38	4	38	The uncertainty qualification should read "limited evidence" (instead of "low evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	changed
172	82276	8	4	38	4	38	Following the uncertainties guidance for authors, it would be preferable to use a phrase such as "based on" rather than "supported by" in communicating the summary terms for evidence and agreement that serve as the basis for and underpin the assigned level of confidence. Additionally, the phrase "limited evidence" should be used in place of "low evidence." (Katharine Mach, IPCC WGII TSU)	changed
173	59385	8	4	40	0	41	the sentence does not make sense (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Addressed
174	66342	8	4	49	0	0	(after intervention) : on basis of risk study , preventive measures could be made integral part of physical planning options (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
175	59386	8	4	51	0	0	What is meant by "sound development"? Be precise. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	ES is revised and does not include this phrase
176	72664	8	4	51	4	52	Widespread assumption? This is an awkward construction. More importantly, there is no evidence that sound development is not both necessary and sufficient. A lack of evidence does not mean that the conclusion has been demonstrated. (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
177	82277	8	4	51	4	52	Following the uncertainties guidance for authors, it would be preferable to use a phrase such as "based on" rather than "supported by" in communicating the summary terms for evidence and agreement that serve as the basis for and underpin the assigned level of confidence. (Katharine Mach, IPCC WGII TSU)	changed
178	72665	8	4	51	5	7	This header statement is unsupported by the text below and seems to be at odds with some of the other points (e.g., point 12 on page 6, lines 5-6 and point 13 on page 6, lines 18-19). Also, the text below is quite hard to follow logically. It would be more accurate to have the header say "More research is needed to understand the full role that sound development plays in promoting urban climate resilience." (UNITED STATES OF AMERICA)	ES is revised and does not include this statement
179	72666	8	4	51	5	7	This section is missing a key point - although providing infrastructure, like access to water and sanitation services, can help reduce the vulnerability of some human populations, we need to also increase the resilience of that infrastructure, otherwise it is vulnerable to climate threats and will not help the populations that it is intended to serve. (UNITED STATES OF AMERICA)	Resilience of infrastructure is covered in key statement 3.7
180	66343	8	5	3	0	0	(aftermitigation with) : vulnerable sectors and areas (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
181	82278	8	5	10	5	10	Following the uncertainties guidance for authors, it would be preferable to use the phrase "based on" and to not additionally use the phrase "supported by." (Katharine Mach, IPCC WGII TSU)	changed
182	66344	8	5	12	0	0	(after storm surge) :variation n wind character and rainfall pattern (Alka Bharat, M.A.National Institute of technology)	Same as comment 164
183	72667	8	5	13	5	13	The term "novel compound" is used. It is not clear from the context what this means and it should be explained or replaced with a more common or self-evident term. (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
184	59387	8	5	14	0	15	Consider revising. Sentence too long, etc. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Addressed
185	64461	8	5	18	5	21	Sentence clumsy. Could be reworked (Maruf Sanni, National Centre for Technology Management)	Addressed
186	72668	8	5	18	5	21	Do you have any evidence that implementation of disaster risk reduction will be insufficient? (UNITED STATES OF AMERICA)	Aro
187	72669	8	5	18	5	21	This sentence needs clarification and perhaps would benefit from becoming two sentences. The second half would be clearer if the subject is restated, such as: "Such a foundation would then target the convergence of development and disaster risk reduction policies..." (UNITED STATES OF AMERICA)	ES is revised
188	56575	8	5	20	0	0	Separate words "investment mobilisation" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
189	62537	8	5	20	5	20	No spacing between words 'inventment' and 'mobilization' in line 20 (INDIA)	Addressed

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190	66345	8	5	21	0	0	(after goals) : Hyogo Framework for Action (HFA , by UNISDR is a ten year plan 2005 - 2015 to make the world safer from natural hazards . Guidelines should be followed to achieve resilient city (Alka Bharat, M.A.National Institute of technology)	Addressed in main text
191	72670	8	5	23	5	23	The term "agglomeration economies" is introduced and would benefit from having a brief definition following it here. (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
192	72671	8	5	23	5	43	Text was mostly incomprehensible and especially likely to be so for most executives for whom this is written. Avoid jargon such as "agglomeration" (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
193	72672	8	5	23	5	43	This point has many problems, one of them being the phrase "agglomeration." This term should be defined, or another term used whose meaning is clear to the reader without having to define it. Also, the paragraph itself needs to be rewritten to be clearer. Lines 39-43 could be deleted, as they are not central to the point being made. (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
194	78055	8	5	24	5	24	The uncertainty qualification should read "limited evidence" (instead of "low evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	changed
195	82279	8	5	24	5	24	Following the uncertainties guidance for authors, the phrase "limited evidence" is the summary term that should be used here in place of "low evidence." (Katharine Mach, IPCC WGII TSU)	changed
196	66346	8	5	29	0	0	(after lack) : proper planning concerns , low quality or absence of basic infrastructure (Alka Bharat, M.A.National Institute of technology)	Addressed
197	66347	8	5	31	0	0	(after safer sites) :have vulnerable section of society (Alka Bharat, M.A.National Institute of technology)	Addressed
198	72673	8	5	31	5	31	The comment that sites are settled because residents can't afford access to safer sites is misleading and partial. In many cases residents choose such sites because of proximity to work, access to key services, etc. Literature following the Asian Tsunami and the reluctance of coastal dwellers (particularly fishermen) to relocate inland should be available. (UNITED STATES OF AMERICA)	The reference here is to unsafe locations in cities, more because they are unattractive to even developers, in addition to being proximate to economic opportunities.
199	66348	8	5	34	0	0	(after economic activity) :all theses factors should be incorporating while suggesting long term planning proposal (Alka Bharat, M.A.National Institute of technology)	Addressed
200	56576	8	5	39	0	0	Remove word "take" so that the sentence is "There is also the need to recognize potential..." (Archis Ambulkar, Brinjac Engineering Inc.)	ES is revised and does not include this word
201	66349	8	5	39	0	0	(afterbetween the) :preventive (Alka Bharat, M.A.National Institute of technology)	Addressed
202	72674	8	5	42	5	42	"cross thresholds of acceptable biodiversity change" might better read "correspond to changes in biodiversity that exceed thresholds of ecological community resilience". (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
203	77091	8	5	45	0	0	How does "ecosystem-based adaptation" differ from normal adaptation? The paragraph here does not make that clear; no matter where people live they will need ecosystem services, and the current list of examples including "sustainable water management" just seem to use "ecosystem-based adaptation" as a synonym for sustainability approaches. How does this "type" of adaptation really differ in process or outcome? (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	The difference between ecosystem based adaptation and normal adaptation is that in the former, the starting point is the ecosystem and how restoration and conservation of ecosystems can contribute to food security, urban development, water purification and waste water treatment. And yes, ecosystem based adaptation does promote sustainability, but within the context of climate change.
204	64462	8	5	45	5	46	land-use management' should be added as part of the foci for ecosystem-based adaptation (Maruf Sanni, National Centre for Technology Management)	In the full text it does
205	72675	8	5	45	5	54	The conclusion seems not well supported when "There are considerable knowledge gaps in determining...other adaptation measures." (UNITED STATES OF AMERICA)	ES is revised and does not include this phrase
206	56577	8	5	47	0	0	Separate words "more cost-effective" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
207	62538	8	5	47	5	47	No spacing between words 'more' and 'cost-effective' in line 47 (INDIA)	Addressed
208	56578	8	5	52	0	0	Join words to "wastewater" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
209	66350	8	5	54	0	0	(after measures) :knowledge of relation between built up and open space to be achieved (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase / argument
210	56579	8	6	2	0	0	Separate words "events on" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
211	77092	8	6	5	6	16	I suggest emphasizing heat waves further in this paragraph, particularly noting the structural adjustments that can reduce vulnerability to heat waves and the locational considerations to enable access to cooling shelters or parks. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	This is not expanded in the ES

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
212	62613	8	6	5	6	29	This two paragraphs can be integrated and concise as one. (yan zheng , Chinese Academy of Social Sciences (CASS))	Addressed
213	78056	8	6	6	6	6	The uncertainty qualification should read "robust evidence" (instead of "high evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	Addressed
214	82280	8	6	6	6	19	On lines 6 and 19, it would be preferable to use the phrase "based on" rather than "supported by," given the framing of the uncertainties guidance for authors. Additionally, the phrase "robust evidence" should be used in place of "high evidence," following the same guidance for authors. (Katharine Mach, IPCC WGII TSU)	Addressed
215	56580	8	6	7	6	8	Remove extra "and" so the sentence is "appropriate health, safety and climate-resilient building..." (Archis Ambulkar, Brinjac Engineering Inc.)	ES is revised and does not include this phrase
216	56581	8	6	11	0	0	Separate words "effective land-use" (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
217	66351	8	6	11	0	0	(after loses and damages) :relation between builtup and openspaces should be balanced to achieve comfortable microclimatic conditions (Alka Bharat, M.A.National Institute of technology)	shortened ES does not include this argument
218	66352	8	6	12	0	0	(after children) : aged and poor persons (Alka Bharat, M.A.National Institute of technology)	ES is revised and does not include this phrase
219	56582	8	6	13	0	0	Word "interventions" seem to be repeating - the sentence need to be revised. (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
220	72676	8	6	17	0	0	Also include the National Wildlife Federation's Climate-Smart Communities Program (US-focused). The Urban Sustainability Director's Network in another entity that could be included (US-focused). EU Cities Adapt is European program that could also be included. (UNITED STATES OF AMERICA)	Can be included in full chapter, not in ES
221	72677	8	6	18	6	29	This section is very similar to and can be combined with p4 line 51 ("Sound Development is Necessary, but not sufficient") (UNITED STATES OF AMERICA)	Addressed
222	77093	8	6	18	6	29	The role of redundancy in infrastructure could be mentioned here, particularly in reducing the risk of disaster. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	ES is revised and shortened
223	78057	8	6	19	6	19	The uncertainty qualification should read "robust evidence" (instead of "high evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	addressed
224	72678	8	6	27	6	29	The authors should include a reference to the literature. (UNITED STATES OF AMERICA)	addressed
225	72680	8	6	31	0	0	For all conclusions, please be consistent and state the "level of confidence" (UNITED STATES OF AMERICA)	addressed
226	64463	8	6	31	6	31	high confidence' 'low evidence' (Maruf Sanni, National Centre for Technology Management)	changed high to medium in combination with limited evidence
227	72679	8	6	31	6	43	Could this point be combined with the first point on page 3, lines 14-22? (UNITED STATES OF AMERICA)	addressed
228	72681	8	6	35	6	35	Consider adding maintenance to this list. It's not just about development planning and new investments, its also about integrating the concept into regular maintenance efforts. In fact, this is one of the more affordable ways to integrate climate considerations into local efforts. (UNITED STATES OF AMERICA)	changed
229	72682	8	6	41	6	43	This is a confusing sentence, consider reworking. (UNITED STATES OF AMERICA)	addressed
230	79514	8	6	45	6	50	This is a very generic statement. The reality of facts in many cities around the world however is much more varied and a large number of cities (most of which are in developing countries) do not have in place any of the measures described. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	ES revised
231	72683	8	6	45	7	3	Could this point be combined with point 16 on page 7, lines 5-22? (UNITED STATES OF AMERICA)	addressed
232	72684	8	6	45	7	22	This section could be combined into one finding - there is much overlap. (UNITED STATES OF AMERICA)	addressed
233	69029	8	6	49	6	50	The process has been modelled in existing literature and coined as "learning alliances" concerning the development of interpretation among stakeholders (understand why they need to engage with adaptation) and "learning active alliances" concerning developing intervention with stakeholders (initiate measures). Ashley, R., Blanskby, J., Newman, R., Gersonius, B., Poole, A., Lindley, G., Smith, S., Ogden, S., Nowell, R., 2012. Learning and action alliances to build capacity for flood resilience. Journal of Flood Risk Management 5, 14 - 22. Van Herk, S., Zevenbergen, C., Ashley, R., Rijke, J., 2011. Learning and Action Alliances for the integration of flood risk management into urban planning: a new framework from empirical evidence from The Netherlands. Environmental Science & Policy 14, 543 - 554. (NETHERLANDS)	This has to appear in the full chapter, to be referred to in the ES (section 8.4)

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234	66353	8	7	2	0	0	(after risk management) : achieving resilience (Alka Bharat, M.A.National Institute of technology)	Revised ES does not contain risk management
235	64464	8	7	5	7	6	high confidence' 'low evidence' (Maruf Sanni, National Centre for Technology Management)	changed
236	66354	8	7	22	0	0	(after adaptation action) :Adaptation in strategy , policy , institutional structure and governance (Alka Bharat, M.A.National Institute of technology)	addressed
237	72685	8	7	24	7	28	Repetitive. Also, how do we know there are adaptation plans and data are important when information and assessment is generally lacking? (UNITED STATES OF AMERICA)	addressed
238	58815	8	7	28	0	0	national and international standards can and do account for local conditions. For example see ASCE 7-10, Minimum Design Loads of Buildings and Other Structures (http://www.asce.org/codes-standards/ASCE7-10/) (Richard Wright, Retired, U.S. National Institute of Standards and Technology)	addressed
239	56583	8	7	29	0	0	Separate words "often rooted" (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
240	69030	8	7	29	7	30	"actions are often rooted in local circumstances, involve multiple stakeholders, are cross-sectoral, multi scalar and multi-synchronous, and include a high level of uncertainty. [8.5]". Here the high level of uncertainty implies no clear reason for extrapolation. (NETHERLANDS)	Uncertainty wrt climate projections is clarified in the ES
241	56584	8	7	38	0	0	Separate words "projections both" (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
242	69031	8	7	42	7	43	"Improved feedback, monitoring and reporting capacity" Lacks the distinction between positive and negative feedbacks, i.e. those that bring systems beyond tipping points (positive feedbacks) and therefore have a negative impact and those that have capacity to restore equilibriums (negative feedback) and therefore have a positive impact . (NETHERLANDS)	governance in 4.6 will include monitoring and feedbacks
243	66355	8	7	47	0	0	(after recommended) :factor of dynamism in terms of population and demand and also vulnerability in terms of demography , physical components and economics should be part of basic concerns (Alka Bharat, M.A.National Institute of technology)	characteristics of vulnerability explained in full chapter
244	72686	8	7	49	8	12	The header is difficult to understand as worded. A better title would be "Poverty reduction and enabling community-led adaptation can make low-income households and vulnerable communities more resilient to climate change." (UNITED STATES OF AMERICA)	wording changed
245	77094	8	7	49	8	12	In addition, local community groups are essential for urban disaster risk reduction, in light of the increasing risk of climate-related disasters. Local community-based disaster risk reduction groups are first responders to disaster risk. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	The section on community-led adaptation deals with this point at length.
246	72687	8	7	52	7	52	Unable or unwilling ? (UNITED STATES OF AMERICA)	wording changed
247	82281	8	7	53	7	53	Use of the word "necessary" here could be reconsidered and potentially reworded, as it could perhaps be interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	word no longer in the ES
248	82282	8	8	6	8	6	Casual usage of the word "unlikely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	word no longer in the ES
249	66356	8	8	10	0	0	(after leadership) :importance and priority of issues (Alka Bharat, M.A.National Institute of technology)	Not included because of space constraints
250	77096	8	8	11	0	0	Urban communities do differ from rural communities; urban programming for adaptation needs to take this into account. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	As explored in sections 8.3 and 8.4
251	82283	8	8	14	8	14	Use of the word "requires" here could be considered, with potential rewording, as it could be interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	word no longer in the ES
252	82284	8	8	15	8	15	Given the framing of the uncertainties guidance for authors, it would be preferable to present the summary terms for evidence and agreement in parallel as "medium agreement, medium evidence." (Katharine Mach, IPCC WGII TSU)	addressed
253	82285	8	8	23	8	23	Use of the word "requiring" here could be considered, with potential rewording, as it could be interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	word no longer in the ES
254	56585	8	8	29	0	0	Separate words "impacts which" (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
255	66357	8	8	30	0	0	(after attention) : microclimatic variations at local level due to climatic variations causes discomfort and should be addressed (Alka Bharat, M.A.National Institute of technology)	Not included in ES because of space constraints
256	56586	8	8	33	0	0	Separate words "improve outcomes" (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
257	64465	8	8	45	8	46	low evidence' (Maruf Sanni, National Centre for Technology Management)	comment?
258	82286	8	8	46	8	46	Given the framing of the uncertainties guidance for authors, it would be preferable to present the summary terms for evidence and agreement in parallel as "high agreement, medium evidence." (Katharine Mach, IPCC WGII TSU)	addressed
259	77095	8	8	50	0	0	Add "early warning systems" after "land-use planning". (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Not included in ES because of space constraints

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
260	72688	8	8	54	0	0	It is also important to avoid subsidization of urban development, transport, electrification, or other services that increase movement into highly vulnerable areas. (UNITED STATES OF AMERICA)	addressed in full chapter, ES incorporates it in 4.2 as a characteristic of well governed cities
261	63543	8	9	0	33	0	The chapter currently discusses observed and anticipated (future) impacts of climate change, general sensitivity to weather, climate extremes, and other environmental factors, as well as vulnerability to various conditions alongside each other, without a clear structure. This makes the chapter very hard to read, and the information scattered and hardly accessible. we recommend the use of tables to summarize, e.g., observed impacts, or outcomes of studies of projected future impacts. (GERMANY)	risk tables to be included
262	59388	8	9	1	0	2	The sentence needs editing and revision. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	addressed
263	56587	8	9	3	0	0	Remove extra "and" so the sentence is "domestic, external public and private sources." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
264	78058	8	9	3	9	3	The uncertainty qualification should read "limited evidence" (instead of "low evidence") for consistency with the rest of the report. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	addressed
265	59389	8	9	10	0	11	The private funding is mentioned that it will be the most promising source of funding for adaptation. What about public funding which is mentioned later on? The overall summary of the finance section is poorly written. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Text changed
266	82287	8	9	15	9	15	Use of the words "needed" and "need" here could be considered for potential rewording, as they could be interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	addressed
267	82288	8	9	31	0	0	Section 8.1. In revising the section, the chapter team should aim to reduce its length by more than 50%. (Katharine Mach, IPCC WGII TSU)	The length was reduced
268	65549	8	9	33	10	16	It would be worth including a definition of urban resilience in the key issues section: this is very definitely a key issue and the term is used throughout the rest of the chapter, however there is no definition of this term offered. (Jo da Silva, Arup)	See 8.1.4.2
269	72689	8	9	35	9	35	How do we define successful adaptation? Unless more support for successful adaptation can be defined and substantiated, consider removing. (UNITED STATES OF AMERICA)	Text adjusted, successful removed
270	82289	8	9	35	9	36	Support for this statement should be clarified, either through citations or through line-of-sight references to supporting chapter sections (paired with calibrated uncertainty language). (Katharine Mach, IPCC WGII TSU)	The key point in here does not need references
271	72690	8	9	35	10	16	Need better support (evidence and citations) for the conclusions in this section -- currently, there are none. (UNITED STATES OF AMERICA)	references added
272	56588	8	9	36	0	0	It might help to add "As section 8.4 emphasizes..." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
273	82290	8	9	37	9	37	Use of the word "needs" here could be considered for potential rewording, as it could be interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	Changed
274	56589	8	9	38	0	0	Separate words "impacts of" (Archis Ambulkar, Brinjac Engineering Inc.)	done
275	59390	8	9	38	0	0	Correct sentence as it is collated. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	done
276	62539	8	9	38	9	38	No spacing between words 'impacts' and 'of' in line 38 (INDIA)	corrected
277	82291	8	9	39	9	41	Support for this statement should be clarified, either through citations or through line-of-sight references to supporting chapter sections (within chapter 8 or in the working group 3 contribution). (Katharine Mach, IPCC WGII TSU)	done
278	56590	8	9	40	0	0	Separate words "especially future" (Archis Ambulkar, Brinjac Engineering Inc.)	done
279	72691	8	9	45	9	47	The two sentences are contradictory. If investments come from small-scale decisions, how can level of funding needed exceed the capacities of local, national, and international entities. (UNITED STATES OF AMERICA)	Point made here is that governments and international agencies will not be able to fund all needed adaptation - eg for firms and for owners of houses/flats.
280	82292	8	9	45	9	54	It would be preferable to provide more specific line-of-sight references to the sections within 8.4 that support these statements, also presenting calibrated uncertainty language to characterize the chapter team's degree of certainty in the statements. Additionally, the sentences on lines 45-46 and 49-50 are seemingly a bit contradictory, which could be clarified. (Katharine Mach, IPCC WGII TSU)	There is no contradiction; governments need to provide the framework that encourages and supports investments in adaptation by households and firms
281	72692	8	9	45	10	16	Points made in final paragraph of section are contradictory to the points made in the second paragraph. (UNITED STATES OF AMERICA)	Cannot see contradiction; see note above

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
282	65550	8	9	46	9	48	This sentence is not very clear in the context of the rest of the chapter which seems to suggest quite the opposite. If it's a statement that the chapter aims to disprove it should be clearly signposted thus. (Jo da Silva, Arup)	text clarified
283	56591	8	9	47	0	0	Remove extra "and" so the sentence is "local, national governments and international agencies." (Archis Ambulkar, Brinjac Engineering Inc.)	Not clear why this change is needed
284	66358	8	9	54	0	0	(after services) :and systems (Alka Bharat, M.A.National Institute of technology)	done
285	82293	8	10	2	10	9	Line 2 asserts that 2 key conclusions will be presented, but the text that follows does not clearly articulate the conclusions. It would be preferable to further emphasize conclusions, with calibrated uncertainty language and line-of-sight references, given the framing of the paragraph. Also, use of the word "requires" on line 8 could be interpreted as prescriptive; rewording to avoid such interpretation would be preferable. (Katharine Mach, IPCC WGII TSU)	text adjusted
286	66359	8	10	3	0	0	(after depends on) :resources available , demographic character (Alka Bharat, M.A.National Institute of technology)	Cannot see relevance of this
287	66360	8	10	7	0	0	(after importance) :institutional structure and governance system (Alka Bharat, M.A.National Institute of technology)	added
288	72693	8	10	21	13	21	Many more citations are needed here. Where the text is descriptive, using a source such as UN report is OK. However, there are a number of places where conclusions are drawn and citations are needed. (UNITED STATES OF AMERICA)	citations added
289	56592	8	10	23	0	0	Provide space i.e. "this. Both..." (Archis Ambulkar, Brinjac Engineering Inc.)	dne
290	82294	8	10	23	10	23	Use of the word "needed" here could be interpreted as prescriptive, and rewording to avoid this interpretation would be beneficial. (Katharine Mach, IPCC WGII TSU)	removed
291	72694	8	10	28	10	48	There is far too much discussion about the difficulty associated with a lack of agreement on the definition of an urban area. If this is a material issue, there should be a discussion of how this affect the evaluation of climate change risks, impacts, and adaptation of urban area. Other than noting the size cutoff and level of urbanization varies, not much more is needed. (UNITED STATES OF AMERICA)	This text has been cut substantially
292	77922	8	10	28	10	48	In some European countries cities are defined by speciallaw declaration (status), independently on number of citizens or city area. (POLAND)	Not included because of space constraints
293	82295	8	10	28	10	48	It would be helpful to clarify if all of the statements in this paragraph are directly supported by the citation provided on lines 28 and 32. (Katharine Mach, IPCC WGII TSU)	The point about no agreed definition for what constitutes a city is a point known by all urban specialists
294	72695	8	10	28	13	21	This whole section should be reduced to a page (UNITED STATES OF AMERICA)	the text has been shortened
295	56593	8	10	33	0	0	Sentence needs to be improved gramatically "Many nations define as urban centres all..." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
296	65551	8	10	46	10	48	Maybe it would be more appropriate to say that 'what constitutes 'a city' has been debated for many years, however no single definition is commonly applied.' Would it also be worth adding some definition to be used in this chapter for the sake of clarity? (Jo da Silva, Arup)	Lack of space for this
297	56594	8	10	53	0	0	Separate words "living in" (Archis Ambulkar, Brinjac Engineering Inc.)	done
298	56595	8	10	54	0	0	Separate words "world's urban" (Archis Ambulkar, Brinjac Engineering Inc.)	done
299	56596	8	11	3	0	0	Avoid word "within" twice, may be revise sentence as "It is within urban centres of most nations..." (Archis Ambulkar, Brinjac Engineering Inc.)	text changed
300	69032	8	11	3	11	4	"it is within urban centers within most nations and globally that most GDP is generated and most new invesment has concentrated". I would ommit "globally" and change investement has to "investements have" (NETHERLANDS)	text adjusted
301	56597	8	11	4	0	0	Provide space i.e. "2010). Clearly..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
302	82296	8	11	5	11	6	Use of "needs" here could be interpreted as prescriptive, and rewording the sentence would be preferable. Additionally, citations for the sentence could be clarified. (Katharine Mach, IPCC WGII TSU)	changed
303	66361	8	11	6	0	0	(after attention) :reference to growth rate of urban centres and urbanisation will be helpful in giving a more realistic scenario (Alka Bharat, M.A.National Institute of technology)	This is given in table 8.1

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
304	62614	8	11	12	11	13	Fast growing countries like BRIC,BASIC can be mentioned here as a specific group since their increasing economic importance and prominent process of urbanization. Some literatures relevant: (1)Virmani, A. (2012). Accelerating And Sustaining Growth: Economic and Political Lessons, 2012 International Monetary Fund, IMF Working Paper. http://www.imf.org/external/pubs/ft/wp/2012/wp12185.pdf . (2) World Bank, 2012, "Global Economic Prospects: Managing growth in a volatile world", (3) Adapting to climate change in urban areas: possibilities and constraints in low and middle income countrirs, Satterthwait 2007,2008. (yan zheng , Chinese Academy of Social Sciences (CASS))	Space constraints prevent us elaborating on this
305	56598	8	11	13	0	0	Term "ibid" is used for the first time in this chapter here, so should be defined. (Archis Ambulkar, Brinjac Engineering Inc.)	? ; does ibid need explanation when it is part of the most common academic referencing system?
306	56599	8	11	14	0	0	Does the sentence mean "Most of the world's largest cities are their largest economies..." (Archis Ambulkar, Brinjac Engineering Inc.)	Its refers to the world
307	72696	8	11	14	11	15	This sentence implies that wealthy countries have invested in adaptation because they have greater economic success. But is this really the case? (UNITED STATES OF AMERICA)	text adjusted
308	62615	8	11	14	11	18	Shanghai is a typical vulnerable megcities in China, some references like: (1) Balica et al, 2012, A flood vulnerability index for coastal cities and its use in assessing climate change impacts, Natural Hazards. (2)Pan,Zheng and Markandya,2011,Adaptation Approaches to Climate Change in China: An Operational Framework", Economia Agrariay recursos naturales, and also other coastal developing cities about flooding vulerability. (yan zheng , Chinese Academy of Social Sciences (CASS))	With thanks, the first reference suggsted was valuable
309	69033	8	11	15	11	15	"ibid". Does it refer to World Bank 2008, or to Satterthwaite et al 2010, both of which are on line 4? (NETHERLANDS)	both
310	65552	8	11	22	11	24	How are 'economically successful' cities defined? (Jo da Silva, Arup)	? Rapidly growing economies surely
311	58013	8	11	23	11	28	Is there any reference to this statement? (Marcia Real, Universidade Federal Fluminense)	see reference on line 29
312	69034	8	11	27	11	27	"Of the world's cities with". The total number of cities is missing. (NETHERLANDS)	text adjusted
313	72697	8	11	37	0	0	Statement needs a reference citation. (UNITED STATES OF AMERICA)	Note statement and reference for paragraph in line 29
314	72698	8	11	39	11	44	It is worth mentioning here that the accelerated growth of many large cities in emerging economies has been driven by the concentrated manufacturing of export goods (UNITED STATES OF AMERICA)	This is implied in the sentence about globalization
315	72699	8	11	41	0	0	add: Low lying coastal cities are most at risk (8.2.3.4) as is critical infrastructure found in these areas. (UNITED STATES OF AMERICA)	this does not seem the appropriate place for this; point added later
316	56600	8	11	42	0	0	Provide space i.e. "exchange). One..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
317	56601	8	11	43	0	0	Sentence needs to be revised as "Another is that many large cities are now centre..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
318	56602	8	11	46	11	52	Sentence is too long to comprehend. Please split it into more than one sentence. (Archis Ambulkar, Brinjac Engineering Inc.)	done
319	65553	8	11	46	11	52	Overlong sentence - meaning is lost! (Jo da Silva, Arup)	done
320	58014	8	11	50	11	51	What kind of transformation is expected? (Marcia Real, Universidade Federal Fluminense)	Transformation is not mentioned here.
321	72700	8	11	52	0	0	The description of Table 8.2 and the typology the chapter develops need to be sharpened. (UNITED STATES OF AMERICA)	we have tried to sharpen it
322	66362	8	12	8	0	0	(after population) :demographic and social character (Alka Bharat, M.A.National Institute of technology)	Not clear what this suggestion adds.
323	66363	8	12	9	0	0	(after human development) :physical and infrastructure development of urban settlement (Alka Bharat, M.A.National Institute of technology)	done
324	77923	8	12	18	10	18	You write "Greenhouse gas emissions per person vary by more than 100" - what units you thinking about. It seems the sentence is shortered. (POLAND)	units added
325	56603	8	12	20	0	0	Provide space i.e. "tourism). There..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
326	66364	8	12	24	0	0	(after government) :and institutional structure (Alka Bharat, M.A.National Institute of technology)	government implies institutional structure
327	56604	8	12	26	0	0	Separate words "the world's" (Archis Ambulkar, Brinjac Engineering Inc.)	done
328	72701	8	12	26	12	26	The authors should consider revising the text to read: Recent analyses of disaster impacts show that a high proportion of the world's population most affected by extreme weather events is concentrated in urban centres.." (UNITED STATES OF AMERICA)	done
329	56605	8	12	27	0	0	Change to "mostly affected by..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
330	56606	8	12	29	0	0	Change to "are needed to do so." (Archis Ambulkar, Brinjac Engineering Inc.)	original is OK

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
331	82297	8	12	36	12	36	Is "successful" needed here? It seems that all urban centers have to adapt or cope, irrespective of the degree to which they have been successful in various metrics. (Katharine Mach, IPCC WGII TSU)	successful is needed
332	77166	8	12	42	0	0	In chapter 8.1. (p. 12, row 42), with regard to the incidence of urbanized land, it is stated that "only in Western Europe did they cover more than 1 per cent" of the land surface. The CORINE land cover figure (http://www.eea.europa.eu/data-and-maps/figures/corine-land-cover-types-2006) is 4.4%, which by the way may be a rounded down one because of the pixel dimension; the actual figure is around 5%, excluding dispersed settlements. (ITALY)	There are different estimates and different methodologies for this. We do not have room to discuss these. Note that the text says that Schneider et al suggested...
333	77167	8	12	42	0	0	This figure is certainly higher than 1% (as the report states), but not implying that it is much higher may induce the reader to underestimate the European data. It is therefore suggested to report that in Western Europe urbanized land has a nearly 5% incidence. (ITALY)	see above
334	59391	8	12	42	0	43	The sentence does not make sense or it gives the opposite sense than the one tha should be given. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	do not understand why the sentence makes no sense
335	72702	8	12	44	12	45	After "decline in the share of wild and semi natural areas from about 70 per cent to under 50 oer cent of the land area" the authors should add something about the fragmentation that is happening to much of the remaining natural areas "with considerable fragementation of the remaining natural areas, which compromises the self-regenerating abilities of the ecological community and ecosystem". (UNITED STATES OF AMERICA)	Valuable suggestion - new wording introduced
336	56607	8	12	50	0	0	Provide full stop i.e. (...16083)." (Archis Ambulkar, Brinjac Engineering Inc.)	introduced
337	72703	8	12	50	12	50	Clarify the text to read: as well as increasing the exposure of population and assets to higher levels of risk (UNITED STATES OF AMERICA)	suggested text added
338	59392	8	13	1	0	3	Rephrase 1st paragraph. Very poorly written. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Difficult to act on such a general point
339	56608	8	13	2	0	0	Change to "also provide potential..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
340	72704	8	13	13	13	21	In this section there is a speculation "...and these may rely on supply chains that climate change will disrupt." Provide a citation or drop this sentence -- equally true is that "these may not rely...". The last sentence is not demonstrated, nor is any citation/evidence provided, i.e., it is an assertion. The authors should drop it unless evidence or citations are provided. (UNITED STATES OF AMERICA)	acted on
341	56609	8	13	19	0	0	Separate words "of a..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
342	72705	8	13	26	16	30	Need more citations. (UNITED STATES OF AMERICA)	added
343	66365	8	13	30	0	0	(after impacts) :or economic level like poors are more vulnerable to risk (Alka Bharat, M.A.National Institute of technology)	added
344	65554	8	13	36	13	37	The issue of adaptation in one place having negative impact on another place/its inhabitants appears to be overlooked here. Suggest mentioning this to provide balance. For example, 'Whilst adaptation in a particular area or settlement may have clear benefits for the inhabitants in this location, it should be noted that adaptation activities can have knock-on effects on the wellbeing of inhabitants in other areas. For example, whilst diverting a river course may prevent flooding in one location, flooding may then occur in another location instead.' (Jo da Silva, Arup)	added
345	69035	8	13	39	13	39	"Although there are many definitions of vulnerability (see for instance Füssel 2007), these agree that it centers on an....". We would rephrase it to ", the consensus is that vulnerability centers on an". (NETHERLANDS)	added
346	72706	8	13	39	13	44	The definiton of vulnerability included here is not quite accurate. IPCC defines vulnerability as "The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. It is a function of the sensitivity of a particular system to climae changes, its exposure to those changes, and its capacity to adapt to those changes." IPCC. 2007a. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing team, R.K. Pachauri, and A. Reisinger (eds.) Intergovernmental Palnel on Climate Change, Geneva, Switzerland. Indeed, the Glossary to the WG2 report has a different definition, as well. (UNITED STATES OF AMERICA)	aDDED

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
347	72707	8	13	39	14	5	The vulnerability of natural systems/ecosystems (eg., mangroves, coastal wetlands, urban tree canopy, etc.) should also be included as systems that can be vulnerable to the impacts of climate change. At the same time, if the adaptive capacity of these systems is increased, they can provide natural protection from the impacts of climate change in urban areas (eg., from coastal flooding, urban heat, stormwater flooding, etc.) (UNITED STATES OF AMERICA)	text added
348	65555	8	13	42	13	44	this statement is dependent on the definition/conceptualisation of resilience assumed. 'Ecological resilience' thinking would support a movement forwards, whilst 'engineering resilience' would assume a return to an existing equilibrium. See Davoudi (2012) 'Resilience: A bridging concept or a dead end?' Planning Theory & Practice 13(2), pp.299-307 for further details. (Jo da Silva, Arup)	Not sure this points needs adding
349	72708	8	13	42	13	44	Mixing definition of vulnerability with a statement about adaptation. Consider deleting the last sentence. (UNITED STATES OF AMERICA)	deleted
350	56610	8	13	46	0	0	Separate words "include food..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
351	59393	8	13	46	0	0	Collated words. This is a problem that appears in various areas of the document. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	addressed
352	62540	8	13	46	13	46	No spacing between words 'include' and 'food' in line 46 (INDIA)	addressed
353	56611	8	13	48	0	0	Separate words "tourism is sensitive..." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
354	62541	8	13	48	13	48	No spacing between words 'tourism' 'is' and 'sensitive' in line 48 (INDIA)	addressed
355	72709	8	13	49	13	50	Consider removing the sentence "oil price changes will affect travel costs". It doesn't make sense where it currently is and just confuses the reader. (UNITED STATES OF AMERICA)	deleted
356	72710	8	13	49	13	50	What do "oil prices affecting travel costs" have to do with this paragraph? (UNITED STATES OF AMERICA)	deleted
357	69036	8	13	52	13	53	"Certain types of infrastructure on which urban centres rely are more at risk: e.g. most transport, drainage and electricity transmission systems and many water supply abstraction and treatment work". We have 3 comments here. First, they are more at risk compared to what? Second, at risk from what? From floods, droughts? extreme weather events in general? Thirdly, who says so? Where is the reference to support this claim? (NETHERLANDS)	This is a summary introductory paragraph; the evidence and references for this are in 8.2
358	60641	8	14	1	0	0	Increased intensity, frequency, and duration of extreme events, as climate change becomes more extensive, means that adaptation based only on recent experience or extrapolation of historical trends could be largely ineffective. [15.3.2.2] (George Backus, Sandia National Laboratories)	added
359	72711	8	14	1	14	1	It might help to qualify what "increase reserve margins" specifically refers to here. (UNITED STATES OF AMERICA)	example added
360	69037	8	14	2	14	5	The last sentence is inconclusive. We would rephrase it, adding a conclusion or recommendation. For example "cities as complex (...) systems are vulnerable to intersectoral connections (...) (Solecki 2012a) and adaptation should therefore take these intersecotral connections into consideration" (NETHERLANDS)	too prescriptive
361	59395	8	14	10	0	14	Consider revising the 1st paragraph of 8.1.4.1 The meaning is lost due to poor English. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	edited
362	59394	8	14	10	14	12	The statement that urban centres where "virtually all buildings meet health and safety standards" is rather misleading. The entire sentence should be edited / revised for clarification. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	edited
363	72712	8	14	10	14	26	This section has no citations. It must have them, or delete this entirely. (UNITED STATES OF AMERICA)	This is an introductory text whose points are amplified and referenced in later sections

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
364	79515	8	14	10	14	26	Although this section describes some aspects of the realities of urban life it does ignore some important ones. More specifically it tends to divide urban centres between those where there is universal provision of infrastructure and basic services and those where there is not. This is a very simplistic and inaccurate picture of vulnerability to the effect of climate change in urban areas and there are a number of factors different scenarios that are not considered. For examples urban contexts such as those of Hong Kong or Singapore which have highly developed economies and a good provision of basic services but contain sections of the population that are high vulnerable to climate extreme (especially heat) because of overcrowding and inadequate housing supply due to speculation. Similar scenarios are to be found in some major cities in OECD countries (e.g. London) where uncontrolled speculation in the housing sector is rapidly deteriorating the living conditions of many vulnerable people putting them at risk during the occurrence of climate extremes episodes. This was tragically confirmed in 2003 when the summer heatwave in Europe caused an unprecedented number of death (mostly in OECD countries with highly developed economies and public services delivery systems). (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	This paragraph and later sections do not minimize the adaptation challenges for high-income nations. But the scale of the deficiencies in provision for risk-reducing infrastructure and in the settlement of land at high risk by low income groups living in shacks is so large in low income and many middle income countries - and most of the world's urban population now lives in low and middle income nations. To get a sense of the differentials, the Philippines has 20 times the mortality of Japan, when hit by a cyclone of the same intensity. Table 8.2 is designed to highlight the spectrum within which cities can be located so it goes beyond the high income' nations and the rest
365	82298	8	14	10	14	26	Supporting citations for all statements in these paragraphs must be provided. (Katharine Mach, IPCC WGII TSU)	ADDRESSED
366	69038	8	14	12	14	14	Sentence "Although low-income.....to climate change", needs a reference. It is quite a strong statement and should be supported by at least a study conducted that proves this. (NETHERLANDS)	references added
367	72713	8	14	14	14	16	The way that the term "exposure" is used is not accurate, as vulnerability includes sensitivity, exposure, and adaptive capacity. More accurate would be: "typically the larger the deficit in infrastructure and service provision, the larger the differentials in sensitivity and adaptive capacity to most climate impacts by impact group." The exposure to climate impacts, however, would likely be the same across income levels. (UNITED STATES OF AMERICA)	The point the text is trying to make here is that good infrastructure and services reduces exposure - including reducing exposure for vulnerable groups.
368	56612	8	14	22	0	0	Provide space i.e. "8.4). Here..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
369	65556	8	14	24	14	26	It is unclear who/what 'Their effectiveness' refers to (similarly 'they recognize' in the next paragraph) (Jo da Silva, Arup)	text changed
370	69039	8	14	24	14	26	Sentence "Their effectiveness depends on understanding the specific vulnerabilities, needs and priorities of different income-groups, age groups and groups that face discrimination, including that faced by women and by particular social or ethnic group". We would either delete the last part of the sentence since "groups that face discriminations" is not limited to these categories listed here (it could be disabled people, LGBT, religious minorities etc), or at least reference it. (NETHERLANDS)	the examples given here do not pretend to be a complete list. Gender based discrimination also needs highlighting as it affects seriously such a large proportion of the population
371	69040	8	14	31	14	31	Reference not listed at the end of chapter-Reid and Vogel 2006. (NETHERLANDS)	added
372	72714	8	14	32	14	33	This paragraph could be stronger with inclusion of a sentence about cascading risks in urban context, as illustrated by the recent (2011) Japan experience (UNITED STATES OF AMERICA)	Text on cascading impacts strengthened; see 8.2.4
373	59397	8	14	34	0	0	The paragraph 8.1.4.2 needs revising and editing by a native English speaker. The reader cannot follow the meaning and understand clearly the statements. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	not quite sure what was wrong with this - but hopefully the editing has made it clearer
374	58015	8	14	34	14	36	All sources cited are not listed at References (Marcia Real, Universidade Federal Fluminense)	Hopefully all sources cited in references
375	59396	8	14	34	16	30	The section needs to be edited. Writing style is rather awkward and even confusing some times. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	Section text has been edited to give greater clarity
376	65559	8	14	36	16	30	accumulated resilience' is an odd phrase, not much used in resilience theory or practice literature; this is because much resilience thinking places the emphasis on resilience being a process, a continual evolution, rather than an end point or an asset in itself, as this section vaguely suggests. If it is to be used here it needs to appear with a clear definition. (Jo da Silva, Arup)	Both accumulated resilience and resilience as process now made clear
377	72715	8	14	38	14	39	The authors claim that resilience is the opposite of vulnerability but there is a lot of research demonstrating that this is not true. In fact, the vast majority of new research points that this concept is way too simplistic. Encourage the authors to think critically about whether they want to portray resilience and vulnerability as complete opposites. (UNITED STATES OF AMERICA)	The text makes clear how vulnerability is not the opposite of resilience
378	58016	8	14	47	0	0	Rosenzweig et al., 2009 is not identified at References (Marcia Real, Universidade Federal Fluminense)	it is in references
379	69041	8	14	47	14	47	"that were noted above". Should clearly indicate where "above" is. In this case "that were noted above (see section 8.1.4)" (NETHERLANDS)	text changed
380	56613	8	14	51	0	0	Provide space i.e. "seasons). During..." (Archis Ambulkar, Brinjac Engineering Inc.)	done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
381	58017	8	14	51	14	54	All sources cited are not listed at References (Marcia Real, Universidade Federal Fluminense)	Hopefully all sources now cited in references
382	59398	8	14	52	14	53	Rephrase "energy-efficient building materials"; not evident what this refers to. "Passive design technologies" probably refers to "passive design principles". Altogether, these are difficult, if not impossible, to implement in existing cities. Reference to active solar thermal systems for heating, domestic hot water and even solar air-conditioning, are ignored. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	Cannot find text that this comment wants changed. Reference to importance of incorporating solar and other renewable energy sources in various places - but note that this is a chapter on adaptation not on mitigations
383	72716	8	14	53	16	30	Define 'bounce back' more succinctly and give concrete examples throughout this section. (UNITED STATES OF AMERICA)	Addressed (see text and table 8.2
384	72717	8	14	53	16	30	Define 'bounce back' more succinctly and give concrete examples with citations throughout this section. (UNITED STATES OF AMERICA)	as above
385	56614	8	15	1	0	0	Provide space i.e. "2012). The..." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
386	72718	8	15	1	15	53	This is a long and rambling page that could be substantially shortened. (UNITED STATES OF AMERICA)	this has been edited down
387	72719	8	15	5	16	30	Very few citations are in this section, with many statements that must be supported by citations. (UNITED STATES OF AMERICA)	more citations added
388	65557	8	15	7	0	0	reduce rural demand for urban services' - the link between this and the earlier statement in the sentence is unclear. How is this linked to slow onset impacts which may be outside the jurisdiction of urban govts? (Jo da Silva, Arup)	drought impacting on agriculture which lowers farmers' incomes which lowers demand for services within urban areas
389	72720	8	15	7	15	7	It's unclear what is meant at the end of this sentence (reduce rural demand for urban services). Consider clarifying or removing. (UNITED STATES OF AMERICA)	see redraft
390	79516	8	15	9	15	11	Statement that cities in high-income nations and many middle-income nations have become more resilient to extreme weather is too generic and is not indicative of specific conditions in the field. Also it is not backed by evidence and would be easily contradicted by reality on the ground (i.e. there are still a surprisingly large number of cities that are highly vulnerable to extreme weather and still lagging behind in their efforts to adapt. A glaring example was the city of Rome, which recently grinded to a halt because of a cold winter spell that generated very unusual amounts of snow). (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	This statement is supported by the very large concentration of deaths from extreme weather disasters in low income nations and in the reduction in mortality from extreme weather in what are today high income nations. There may be cities in high income nations that are particularly vulnerable but any assessment of where are the urban populations that lack risk reducing infrastructure and live on dangerous sites in poor quality housing shows this to be heavily concentrated in low or lower-middle income nations
391	56615	8	15	15	0	0	Provide space i.e. "Argentina). What..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
392	69042	8	15	15	15	16	"the quality of buildings (homes and workplaces)". We would delete "(homes and workplaces)". What about other type of buildings, like schools, hospitals, train stations? (NETHERLANDS)	addressed
393	72721	8	15	16	15	17	Consider adding to "the effectiveness of land-use planning and regulation to control development in flood-prone and other high risk areas" the following: "and maintain ecosystems that support settlements". (UNITED STATES OF AMERICA)	added
394	59399	8	15	20	0	0	What is after Please use etc. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	done
395	72722	8	15	26	0	0	Most developing country construction standards for formal sector structures are not of the same quality as those in developed countries or the standards are not enforced. Informal sector structure quality is extremely poor. (UNITED STATES OF AMERICA)	this point is emphasized in 8.3
396	65558	8	15	28	15	32	It should be noted here that measurement of resilience is a key challenge which a range of actors is currently exploring; from civil society organisations and NGOs to urban governments. The challenge lies in the identification of proxy indicators which can be used to measure the multiple characteristics (of a city or a community etc.) which help operationalise or demonstrate resilience in practice. (Jo da Silva, Arup)	text on this has been strengthened
397	82299	8	15	28	15	53	Supporting citations for all statements in these paragraphs must be provided. (Katharine Mach, IPCC WGII TSU)	Some references added.
398	72724	8	15	31	0	32	Structural adaptation for earthquake damage protection is very effective and governments can have a role in making this a requirement. (UNITED STATES OF AMERICA)	text adjusted
399	72723	8	15	31	15	32	City governments cannot reduce earthquake hazards but can reduce exposure to such risks, and can certainly contribute to reducing GHG emissions, beyond global action (UNITED STATES OF AMERICA)	the point about GHGs here is that a specific city cannot reduce the climate change related risks it faced by reducing emissions; text adjusted

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
400	59400	8	15	32	15	32	Earthquakes here is not a good example. The magnitude range and frequency of earthquakes can be predicted based on historic data. This is all that it is important in order to establish adequate building standards. Enforcement of building standards can be achieved via spatial planning and that way resilience can be built. Earthquakes are not random events that we can do nothing about.(Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	The point made in the text is that city governments cannot reduce or stop the earthquake - even if they can build resilience to it; text has been adjusted
401	59401	8	15	34	0	35	The sentence does not make any sense. What the authors are stating? What are those components? What is the web of institutions and finance? (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	text adjusted
402	58018	8	15	35	0	0	Laquian 2011 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Laquian 2011 taken out
403	56616	8	15	44	0	0	Provide space i.e. "change. They..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
404	59402	8	15	45	0	47	Insert references. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	reference to 8.4 added
405	72725	8	15	45	15	45	The term "bounce forward" is used again and would benefit from a very brief definition here. (UNITED STATES OF AMERICA)	explained in 8.1.4
406	72726	8	15	45	15	47	Not sure why the strategies listed are framed as transformative actions as opposed to incremental actions? (UNITED STATES OF AMERICA)	text adjusted
407	58019	8	15	50	0	0	There is something wrong with this source (OTHER REF Hoorweg et al 2011) (Marcia Real, Universidade Federal Fluminense)	There is no source on line 50; Hoorweg et al 2011 is in references
408	82300	8	16	1	16	14	Supporting citations for all statements in these paragraphs must be provided. (Katharine Mach, IPCC WGII TSU)	Some citations added - but this text is also supported by Table 8.2
409	59403	8	16	3	0	3	The term resilience as a process should be explained in detail. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	It is explained in the text in lines 2 to 4
410	56617	8	16	4	0	0	Provide space i.e. "this). For..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
411	56618	8	16	12	0	0	Change to "an increase in price of..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
412	69043	8	16	12	16	14	The last part of the sentence says "and thus hunger and reduced capacity to work and to resist infections". We believe this whole sentence needs rephrasing as to become more coherent. For example, how is reduced capacity to work linked to the capacity to resist infections? (NETHERLANDS)	reduced capacity to work and to resist infections are the result of hunger.
413	72727	8	16	19	16	21	Perhaps an example of an NGO or community where this has occurred. Gram Vikas of Orissa, India comes to mind as a perfect example, led by Joe Madiath. (UNITED STATES OF AMERICA)	This organization has a rural focus
414	56619	8	16	20	0	0	Change to "grassroot organizations..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
415	72728	8	16	22	16	22	The concept of resilience to transformation is presented - but what does this mean? The authors discuss transformative adaptation but this sentence seems to imply that there is a hierarchy of adaptation. Is this the point the authors are trying to convey? Regardless, consider reworking. (UNITED STATES OF AMERICA)	Reworked. Note that transformation is defined and discussed in other parts of the report and also defined in the glossary
416	72729	8	16	22	16	22	This notion of "shift from resilience to transformation" is lofty and would benefit from some unpacking in situ. (UNITED STATES OF AMERICA)	This is explained in Table 8.2
417	56620	8	16	24	0	0	Change to "In each case, it..." (Archis Ambulkar, Brinjac Engineering Inc.)	text changed
418	72730	8	16	24	16	30	Introducing the concepts of anticipatory vs reactive adaptation could strenghten this section, and there is literature to draw from, including IPCC Fourth Assessment Report: Climate Change 2007/ 17.2.2 Examples of adaptation practices (UNITED STATES OF AMERICA)	This distinction added to the text
419	56621	8	16	28	0	0	Provide space i.e. "adaptation. For..." (Archis Ambulkar, Brinjac Engineering Inc.)	addressed
420	58020	8	16	33	0	0	Seto et al., 2012 is not identified at References (Marcia Real, Universidade Federal Fluminense)	it is now in references
421	72732	8	16	33	0	0	Section 8.1.5: Why is such a long statement about AR4 necessary? Suggest shorten this considerably. (UNITED STATES OF AMERICA)	Shortened a little
422	82301	8	16	33	0	0	Section 8.1.5. For all statements communicating conclusions from the 4th assessment report, specific chapter references (using the recommended citation format from the 4th assessment report) should be provided, along with calibrated uncertainty language where it is relevant. Where possible, reference to specific chapter sections should be provided. And especially in the introductory text, spanning from page 16, line 35, through page 17, line 19, the text originating from the 4th assessment report as compared to framing for this chapter should be clarified, statement by statement. (Katharine Mach IPCC WGII TSU)	addressed
423	72731	8	16	33	16	33	Which are the new issues raised by this chapter? They are not clearly identified (UNITED STATES OF AMERICA)	8.1.5.1 and 8.1.5.2

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
424	82302	8	16	39	16	39	The temporal framing for "not dominant issues" should be clarified--historically, currently, or in the future across possible levels of climate change? (Katharine Mach, IPCC WGII TSU)	This is in the present tense so it means currently. 'currently' added
425	72733	8	17	1	17	19	This section is really choppy and hard to tie together. (UNITED STATES OF AMERICA)	Difficult to produce a summary of a chapter that is itself a summary'; we thought that these were key points from AR4 that needed listing
426	63544	8	17	7	17	8	This statement requires clarification, e.g. what is meant by "current access to finance" in this context? (GERMANY)	current access to finance - i.e. current possibilities for getting finance for adaptation
427	82303	8	17	22	0	0	Section 8.1.5.1. It is not clear whether these key uncertainties and research priorities were conclusions of the 4th assessment report, or if they reflect the judgment of this author team. If they are associated with the current assessment in chapter 8, these key uncertainties should be moved the end of the chapter, so that the entirety of the chapter's assessment can support their assertions. (Katharine Mach, IPCC WGII TSU)	headings changed
428	72734	8	17	22	17	35	Section 8.1.5.1. is misplaced (as it notes uncertainties and priorities from recent literature); perhaps this should be interchanged with section 8.1.5.2? (UNITED STATES OF AMERICA)	headings changes
429	72735	8	17	24	17	25	Consider reviewing & citing this publication on barriers to adaptation: Moser, S. C. and Julia Ekstrom. (2010). A framework to diagnose barriers to climate change adaptation, PNAS, 107 (51): 22026-22031, DOI:10.1073/pnas.1007887107 (UNITED STATES OF AMERICA)	have drawn heavily on work of S.C. Moser on this point
430	72736	8	17	24	17	35	Consider adding metrics of success to the list of key uncertainties and research priorities. (UNITED STATES OF AMERICA)	added
431	77168	8	17	25	0	0	Chapter 8.1. starts the discussion on the difficulty in estimating climate change at a local scale, and the theme is resumed in other passages (i.e. p. 17, row 49; para 8.2.5.1.). The theme of the downscaling of climate projections is deemed extremely important for each urban area, because knowing in more detail how climate change will probably occur will be useful not only in order to decide what actions need to be taken, but also to inform citizens. As downscaling of climate models implies scientific skills that are not available in every city, one could add a reference to the role of countries or international scientific organisations in making this information available. Chapter 8.1. (p. 17, row 25) starts the discussion on the difficulty in estimating climate change at a local scale, and the theme is resumed in other passages (i.e. p. 17, row 49; para 8.2.5.1.). The theme of the downscaling of climate projections is deemed extremely important for each urban area, because knowing in more detail how climate change will probably occur will be useful not only in order to decide what actions need to be taken, but also to inform citizens. As downscaling of climate models implies scientific skills that are not available in every city, one could add a reference to the role of countries or international scientific organisations in making this information available. (ITALY)	the text on what is being done to address need for downscaling climate projections has been enhanced with new references too (eg Walsh et al 2013); see 8.4.1.5, ALSO faq 8.4
432	66366	8	17	31	0	0	(after geophysical) : hydrological , geographical , demographic (Alka Bharat, M.A.National Institute of technology)	Not considered necessary as these are included in the terms already given
433	80056	8	17	36	0	0	Additional bullet: - Inadequate knowledge on vulnerability of the built enviroment, buildings, building components and builoding materials to changes in wheather induced actions (Niels-Jørgen Aagaard, Danish Building Research Institute)	included
434	72737	8	17	40	17	43	Whenever a statement is made that there is larger, more diverse, new, emerging, etc. literature on a topic, it needs to be supported with some example citations. This section needs example citations to support the statements. (UNITED STATES OF AMERICA)	But this is a summary paragraph to introduce the later sections which give the detail to support this statement and the references.
435	82304	8	17	40	17	43	The support for these statements should be clarified. Did the chapter team complete literature searches for relevant key terms, can references to studies of the available literature be provided, etc.? (Katharine Mach, IPCC WGII TSU)	Box 8.1 lists the literature published on these points since 2007
436	72738	8	17	44	17	45	Same comment as above -- need example citations to support this statement. (UNITED STATES OF AMERICA)	some references added - but see comment above, this is an introductory paragraph for 8.2, 8.3 and 8.4
437	56622	8	17	45	0	0	Change to "books that focus specifically on climate..." (Archis Ambulkar, Brinjac Engineering Inc.)	we do not understand the reason for this
438	72739	8	17	45	0	0	Insert 'assessment and' before books, and describe ARC3 assessment process. (UNITED STATES OF AMERICA)	This study is drawn on heavily and quoted heavily in this chapter; not clear why its assessment process should be included here in what is an introductory paragraph

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
439	77459	8	17	46	17	47	Another book that is worth mentioning is the state-of-the-art review on "Impacts of climate change on rainfall extremes and urban drainage systems". It has a focus on urban areas and includes an adaptation chapter. Ref: • Willems, P., Olsson, J., Arnbjerg-Nielsen, K., Beecham, S., Pathirana, A., Bülow Gregersen, I., Madsen, H., Nguyen, V-T-V. (2012), 'Impacts of climate change on rainfall extremes and urban drainage', IWA Publishing, 252p., Paperback Print ISBN 9781780401256; Ebook ISBN 9781780401263 (Patrick Willems, KU Leuven)	Added
440	82305	8	17	47	17	47	This statement could be reconsidered. The goal of the chapter should be to provide a comprehensive and concise assessment. (Katharine Mach, IPCC WGII TSU)	We need to acknowledge that the literature has grown so much that a concise and comprehensive summary is difficult
441	66367	8	17	49	0	0	(after process) :parameters , indicators (Alka Bharat, M.A.National Institute of technology)	point about indicators in new separate point
442	59404	8	17	49	17	49	Sentence should read as "A more detailed understanding of key urban climate processes, including drivers of climatic change in urban areas, and improved. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	added
443	77460	8	17	49	18	13	referring to previous comment: More detailed understanding of urban drainage related risks, such as sewer flow risks (as opposed to river flood risks) (Patrick Willems, KU Leuven)	Too specific for here; incorporated in later text
444	82306	8	17	49	18	13	The specific chapter section supporting these statements should be indicated through line-of-sight references. (Katharine Mach, IPCC WGII TSU)	addressed
445	59405	8	17	53	17	53	"nations" and "countries" are used in all the chapter as if their meaning is the same. But it is not. Only countries have an explicit geographic reference. A county can built resilience for example because it has the jurisdiction in its territory. A nation can sometimes be spread in several countries. Not easy to built resilience. I would only use "countires" in the text. (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	this consistency needs to be addressed at copy-editing stage. There is constant reference in the text of all chapters to national policies and practices
446	72740	8	18	1	18	10	Lines 1-10: this repeats material already covered earlier. We recommend deletion (UNITED STATES OF AMERICA)	These are pointers to what is to come in 8.2, 8.3 and 8.4
447	72741	8	18	6	18	6	What is 'blue' infrastructure? (UNITED STATES OF AMERICA)	water (text changed)
448	72742	8	18	13	0	0	Add more info on UNFCCC Durban Adaptation Charter (UNITED STATES OF AMERICA)	more detail added
449	66368	8	18	14	0	0	many countries are making stringent Acts / rules for environment protection , signing treaties and are becoming parties to many international treaties & agreements (Alka Bharat, M.A.National Institute of technology)	This is beyond the scope of this chapter
450	81332	8	18	16	0	0	A small table to synthesize key messages on impacts of climate change on urban areas would be most effective. At present these findings are buried in the text of different sections. (Monalisa Chatterjee, IPCC WGII TSU)	This is in table 8.2
451	82307	8	18	16	0	0	Section 8.2. In preparing the final draft of the chapter, the chapter team should aim to reduce the length of this section by more than 50%. (Katharine Mach, IPCC WGII TSU)	Length has been reduced substantially
452	56623	8	18	22	0	0	Separate words "may lead..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
453	61193	8	18	30	18	30	We can never say 'will' when referring to model projections - no model is perfect and we cannot verify projections. Better to say 'is likely to' or something similar. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Cannot find reference within the text to which the reviewer is referring
454	72743	8	18	35	18	44	Lines: 35-44: this paragraph reads like a dump from a contributing author inserted at this location. Also, reference Landsberg, 1970 is mis-quoted here as it is not a modeling study; in any case, this reference is not listed in the reference list. The authors should consider deleting this. (UNITED STATES OF AMERICA)	reworked paragraph - believe the reference is to page 19 of the SOD not 18
455	81333	8	18	40	0	0	Authors should consider condensing this section considerably and placing summary findings on how urban processes interact with climate processes and produce unique climate change and variability risks. (Monalisa Chatterjee, IPCC WGII TSU)	Good suggestion; attempted several steps to reduce and consolidate text
456	61194	8	18	40	18	40	One aspect of urban centres that should be discussed here is the effect it has on downwind locations, such as raising temperatures and on air quality. A key reference is: Bohnenstengel, S. I., Evans, S., Clark, P. A. and Belcher, S. E. (2011) Simulations of the London urban heat island. Quarterly Journal of the Royal Meteorological Society, 137 (659). pp. 1625-1640 (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	added reference - believe the reference is to page 19 of the SOD not 18
457	61195	8	18	45	18	45	The ability of low income groups to afford food wasn't discussed explicitly earlier - and is this statement a little off-track for this chapter? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	eliminated text and restructured introduction to the section

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
458	56624	8	19	2	0	0	Separate words "to regional..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
459	56625	8	19	3	0	0	Separate words "Given the..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
460	72744	8	19	7	19	8	Add numbers on urban growth rates in various developing regions. Also, how do the urbanization rates compare to the population growth rates in these countries? (UNITED STATES OF AMERICA)	elements of these data will be included in the map products that the chapter will include in the TOD
461	57926	8	19	12	19	13	Urban heat islands do not necessarily intensify with the climate change (see the first comment above) (Kristina Trusilova, Deutscher Wetterdienst)	tightened the wording to be more clear
462	72745	8	19	12	19	24	This section should more explicitly mention how urbanization has altered temperatures, for example, "the conversion of once-natural spaces to urban areas has created a high percentages of impervious and artificial surfaces in cities (i.e. buildings, roads, railways) retain more of the sun's energy, raising temperatures. The high energy usage in cities also produces waste heat. Climate change is exacerbating the higher temperatures in urban areas, which are likely to experience dangerous, record-setting temperatures with increased frequency in years to come. " (UNITED STATES OF AMERICA)	valid points; reworked the section to include elements without lengthening the text.
463	77924	8	19	18	19	19	The sentence "Climate change can influence the dynamic of the microclimate associated with a given city ... " is not clear (POLAND)	Not sure what the confusion is - sentence seems perfectly clear to me - but made a small wording change anyway.
464	72746	8	19	18	19	24	Spell out UHI and provide citations for these statements. (UNITED STATES OF AMERICA)	Spelled out UHI and included acronym. Citations requested in 465 and 467.
465	61196	8	19	19	19	24	References are needed for these statements - I'd be very surprised if an urban centre could really alter the position of a synoptic-scale high pressure system. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	tightened the wording to be more clear
466	65560	8	19	21	0	0	UHI' is used here without explanation - the first appearance of this term in the chapter should be with the acronym for clarity throughout the chapter. (Jo da Silva, Arup)	included a brief definition of UHI
467	67862	8	19	22	19	23	An appropriate scientific paper(s) should be cited here to ensure the description of this part "modifying synoptic scale meteorology (e.g. changes in the position of high pressure systems in relation to UHI events". Otherwise, it is recommended to remove this part. (JAPAN)	Chapter team agreed that this should stay in; it is a summary of issues raised by the literature
468	67863	8	19	30	19	30	Ichinose et al.(1999) is not listed in the reference of this chapter. (JAPAN)	Full reference added to end of chapter.
469	72747	8	19	32	0	0	Ten degrees of urban heat island effect is quite large. What are the assumptions and has this statement been validated by other studies? (UNITED STATES OF AMERICA)	Deleted statement.
470	77925	8	19	32	19	32	There must be considered the range of UHI. The term "large city" is not precise. The value of 10 deg Celsjus can occur in city with 1 mln population and with city of 8-10 mln population. It depend on the location of the city in specific climate region as well as on air mass, which bring clear sky and weak winds, e.g. in central Europe the highest UHI effect is observed in subtropical air mass. (POLAND)	Deleted statement.
471	57481	8	19	32	19	41	Some reference cited is too early, such as 1970, 1982. (Luliu Liu, National Climate Center, CMA)	Deleted references.
472	59406	8	19	35	0	35	Define megacities in terms of population and/or size. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Added basic definition
473	69044	8	19	35	19	37	"In a review of relationships between coastal megacities and environmental change, Grimmond (2011) found increasing evidence that cities can influence weather (e.g. rainfall, lightning) through complex urban land use weather climate feedbacks" Lacks the distinction between positive and negative feedbacks, i.e. those that bring systems beyond tipping points (positive feedbacks) and therefore have a negative impact and those that have capacity to restore equilibriums (negative feedback) and therefore have a positive impact . (NETHERLANDS)	this is a good point but too nuanced to develop in this chapter. There will be case by case positive and negative feedbacks. Added text to illustrate feedbacks will have important implications
474	63545	8	19	44	0	0	Trusilova et al. 2008 is missing in the list of references (pp. 78). (GERMANY)	Full reference added to end of chapter.
475	57925	8	19	46	19	47	Most studies that found some rain intensification in the lee of cities were conducted in the USA. Does the same hold for Europe and other regions? References needed here. (Kristina Trusilova, Deutscher Wetterdienst)	text reworked
476	72748	8	19	46	19	48	The sentence refers to a "positive impact," however, the positive nature of the impact was not established yet. To rectify this, the first sentence could have added to the end [rainfall over large cities, "which can help ameliorate some of the heat effect". This would require a careful balance, however, so as not to imply incorrectly that climate change is beneficial in this regard. (UNITED STATES OF AMERICA)	Deleted statement.
477	77926	8	19	47	19	47	It is not true that additional warming only marginally increase rainfall over the cities. The increase is significant. (POLAND)	Deleted statement.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
478	62759	8	19	47	19	48	I don't understand this sentence. Is there a way to clarify what is meant? Which positive effect is meant? (Heike Hebbinghaus, North-Rhine Westphalian State Agency for Nature, Environment and Consumer Protection)	Deleted statement.
479	78059	8	19	47	19	49	The statement "The replacement of 48 vegetation with urban surface outweighs this positive impact to reduce the overall land carbon sink (Grimmond, 49 2011)" is unclear. In particular "this positive impact" does not seem to refer to any previously mentioned positive impact. Also, there is no talk of "the overall land carbon sink" before in the text. Please clarify the relationship of this sentence with the surrounding text or correct it so that it connects with the rest. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	Deleted statement.
480	56626	8	19	54	0	0	Provide space i.e. "runoff (Hamdi..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
481	77461	8	19	54	0	0	Urbanization and climate change also will lead to other ... increased levels of surface runoff: add ref. Willems, P., Olsson, J., Arnbjerg-Nielsen, K., Beecham, S., Pathirana, A., Bülow Gregersen, I., Madsen, H., Nguyen, V-T-V. (2012), 'Impacts of climate change on rainfall extremes and urban drainage', IWA Publishing, 252p., Paperback Print ISBN 9781780401256; Ebook ISBN 9781780401263 (Patrick Willems, KU Leuven)	Done
482	72749	8	20	5	20	7	These two sentences would perhaps work better as the following "The spatial pattern of urban settlement is a critical factor in the interactions among urbanization, climate-related risks, and vulnerability. One aspect of this is the density of urban development, which ranges from concentrated to dispersed, with most planned urban settlements decreasing in population density with distance from the core (refs)." (UNITED STATES OF AMERICA)	Done
483	77507	8	20	5	20	43	This section (8.2.2.2) seems the best placed to elaborate on urban - rural interaction and the consequences of alternative rank size curves of city sizes in a country. (Adriaan Perrels, Finnish Meteorological Institute FMI)	This is a valid point but not included because not relevant to the overall structure of the chapter and page constraints.
484	72750	8	20	19	20	20	Uni-polarity and multi-polarity would benefit from context; it is not evident what these terms refer to. (UNITED STATES OF AMERICA)	eliminated text and restructured the section
485	56627	8	20	28	0	0	Separate words "Water allocation..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
486	72751	8	20	28	0	30	The last sentence of the paragraph needs a reference, as otherwise it is an unsubstantiated assertion. (UNITED STATES OF AMERICA)	Deleted text; not because of missing reference but because it was not germane to the section
487	62542	8	20	28	20	28	No spacing between words 'water' and 'allocation' in line 28 (INDIA)	Done
488	62616	8	20	28	20	30	No references for the case of Beijing and Delhi. (yan zheng , Chinese Academy of Social Sciences (CASS))	Same as comment 486.
489	78340	8	20	37	0	0	you could cite here Burby, R. J, A. C Nelson, D. Parker, et J. Handmer. 2001. « Urban Containment Policy and Exposure to Natural Hazards: Is There a Connection? » Journal of Environmental Planning and Management 44 (4): 475–490. and Burby, R.J., E. L Birch, et S. M Wachter. 2006. « The problems of containment and the promise of planning. » In Rebuilding urban places after disaster: lessons from Hurricane Katrina. University of Pennsylvania Press. (Vincent Viguie, CIRED)	Done
490	78338	8	20	43	0	0	you could also cite here Viguie and Hallegatte 2012 (Vincent Viguie, CIRED)	Done
491	56628	8	20	46	0	0	Add "and" to the title as "Slow Onset and Production Cycles" (Archis Ambulkar, Brinjac Engineering Inc.)	Done
492	72752	8	21	1	0	3	The authors should consider deleting the sentence concerning sub-Saharan Africa as it is not ascribed to any reference. This statement could be challenged as in sub-Saharan Africa, non-urbanized human population may also face increasing exposure to risks and hazards related to climate change. (UNITED STATES OF AMERICA)	added reference to illustrate case
493	72753	8	21	3	0	0	Would be good to add a chart or graph of urbanization projections for various future years by region. (UNITED STATES OF AMERICA)	Table 8.1 and figures 8.1 and 8.2 do this
494	56629	8	21	6	0	0	Separate words "worsens as..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
495	56630	8	21	6	0	0	Provide space i.e. "2007). Overlying..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
496	62543	8	21	6	21	6	No spacing between words 'worsens' and 'as' in line 6 (INDIA)	Done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
497	57927	8	21	13	21	20	An study by Trusilova et al, 2008 analyses the urbanization-induced disturbances of the carbon cycle in Europe through the land use change, local climate modification, and atmospheric pollution. This study shows that urban effects spread far beyond the city boundaries and trigger complex feedbacks/responses in the biosphere. (Citation: Trusilova, K. and Churkina, G.: The response of the terrestrial biosphere to urbanization: land cover conversion, climate, and urban pollution, Biogeosciences, 5, 1505-1515, doi:10.5194/bg-5-1505-2008, 2008.) (Kristina Trusilova, Deutscher Wetterdienst)	Added adjusted version of this text
498	72754	8	21	13	21	20	This paragraph would benefit from the addition of "Urbanization changes land use cover, generally reducing the amount of ecologically intact land and causing fragmentation of the remaining land, which reduces habitat value and increases the likelihood of further ecological degradation." MBC (UNITED STATES OF AMERICA)	Added adjusted version of this text
499	72755	8	21	13	21	30	Seems somewhat duplicative of section 8.2.2.4 -- can these be combined? (UNITED STATES OF AMERICA)	They bring up different points and should be kept separate
500	56631	8	21	18	0	0	Provide space i.e. "2006) and..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
501	72756	8	21	20	0	0	The authors should add: 'Urban environments can reap multiple benefits by integrating ecological systems and biodiversity into their planning and development; and doing so, strive towards greater sustainability of natural habitats and essential urban resources.' Secretariat of the Convention on Biological Diversity (2012) Cities and Biodiversity Outlook. Montreal, 64 pages. (UNITED STATES OF AMERICA)	Added adjusted version of this text
502	72757	8	21	30	21	30	This paragraph would benefit from the addition at the end with the following sentence or something to this effect: "Changes in precipitation, temperatures, and extremes will also further strain ecological systems in many parts of the globe [NEED REF]." (UNITED STATES OF AMERICA)	Note directly germane to the urban chapter focus. Because of space limitation will need to exclude
503	72758	8	21	31	0	0	The authors should add: The use of green infrastructure and ecosystem applications offers mitigation and adaptive benefits to address the climate challenges of urban flooding and heat island effects. Natural processes like evaporation, infiltration, and plant transpiration, generated by rain gardens, bioswales, street trees, can complement traditional "grey" infrastructure by providing more effective stormwater systems often overwhelmed during periods of high precipitation. Similarly, green roofs, facades and city parks are other green infrastructure applications that can provide natural cooling and water retention benefits. Banking on Green: A Look at How Green Infrastructure Can Save Municipalities Money and Provide Economic Benefits Community-wide A Joint Report by American Rivers, the Water Environment Federation, the American Society of Landscape Architects and ECONorthwest April 2012 (UNITED STATES OF AMERICA)	Added adjusted version of this text
504	72759	8	21	35	0	0	Not very informative to just mention "diverse challenges" without specifying some key ones. (UNITED STATES OF AMERICA)	Added physical and societal between diverse and challenges.
505	72760	8	21	52	0	0	Explain how adaptation has improved in Latin America. (UNITED STATES OF AMERICA)	Deleted statement because not germane to this section
506	72761	8	22	1	22	10	Lines 1-10: Introductory stuff that does not belong here and not relevant to the header for the section. (UNITED STATES OF AMERICA)	Some of the text is unique but eliminated text between "differ" and Many...
507	72762	8	22	7	0	8	The authors should add/change the text: "they often have less access to transport modes and resources." and consider deleting: "e.g., women.... physically weak" (UNITED STATES OF AMERICA)	Added text but did not delete other text as it is relevant to issue
508	60642	8	22	13	0	0	Change "occurrences and intensity" to "frequency, intensity, and duration?" (George Backus, Sandia National Laboratories)	Done.
509	63546	8	22	13	0	0	Section 8.2.3. In addition to expected changes in urban temperatures and UHIs it should be mentioned that changes in heat load experienced by city dwellers have to be based on bioclimatic indices such as the Physiological Equivalent Temperature (PET, Höppe 1999, Int. J. Biometeorol. 43, 71-75) or Perceived Temperature (PT, Staiger et al. 2011, Int. J. Biometeorol., DOI 10.1007/s00484-011-0409-6). (GERMANY)	this is a detailed point more germane to conditions of how heat is perceived. Because of space limitations it was not included
510	72763	8	22	13	22	13	The distinction between primary and secondary impacts is not clear in the section (UNITED STATES OF AMERICA)	deleted subtitle - not really needed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
511	63422	8	22	13	30	40	Impacts of urban heat island can be used to predict air temperature increase impact by global warming. There are many cause-effect chains from urban heat island to various kinds of impact. (Shimoda Y. Narumi D., Mizuno M., 2005: Environmental Impact of Urban Heat Island Phenomena -Cause-effect chain and evaluation in Osaka City, Journal of Life Cycle Assessment, Japan Vol 1, No.2 pp.144-148) This paper will be sent as supporting material "ShimodaPaper.pdf". There are cross relationships between impacts. For example, tap water use in Osaka City is increased by air temperature increase since water is consumed by water-cooled chillers. (Yoshiyuki Shimoda, Osaka University)	this is a detailed point more germane to conditions of how heat is perceived. Because of space limitations it was not included
512	72764	8	22	13	30	40	These sections could be combined so that the discussion impacts is integrated with exposure and sensitivity and discussed by sector -- urban temperature, heat island, drought, flooding, and air pollution impacts would be discussed by sector where relevant. This has the benefit of removing any overlapping discussion between the two sections, making the flow clearer to the reader (e.g.,the reader may not understand the distinction between "impacts" and "exposure and sensitivity" and find it confusing to have those separated; or may not understand why there are two health sections). (UNITED STATES OF AMERICA)	Sector specific follows this introductory discussion. Other reviewers saw value in the separate discussions
513	63547	8	22	15	0	0	"CC will lead to increased occurrence...." give the level of confidence. (GERMANY)	because a set of extreme weather events are stated each with different levels of confidence a general statement as is seems most appropriate. Did not change text
514	82308	8	22	15	22	15	It would be more accurate to use "and/or" here instead of "and," given the findings of the special report on extremes, as well as the working group 1 contribution to the 5th assessment report. (Katharine Mach, IPCC WGII TSU)	Changed wording and combined with comment 508.
515	80395	8	22	15	22	16	Although SREX is now referenced, no specific calibrated language for listed projected changes is applied. Reference to WGI AR5 missing still. Make sure wording/likelihood is consistent with the findings of SREX Ch3 and WGI AR5 for each extreme listed in the opening sentence. Avoid general, overarching statements that are not supported by the underlying physical science. (Gian-Kasper Plattner, IPCC WGI TSU)	changed the text to be more consistent with SREX ch3 and WGI language
516	72765	8	22	15	22	20	Lines 15-20: Some of the references quoted assume that the occurrence and severity of extreme weather events will change rather than demonstrating that this will be so (e.g., Romero-Lankao and Dodman, 2011)! Also this paragraph repeats previous material already stated earlier. (UNITED STATES OF AMERICA)	changed the text and deleted extra repetitive text
517	63548	8	22	16	22	16	The reference "Campbell-Lendrum and Corvalán, 2007" is missing in the reference list. (GERMANY)	Reference added.
518	72766	8	22	17	22	18	The sentence reads "Physical factors....typically differentiate variations..." should be reworded. Consider writing instead "Physical factors...typically influence" or something that otherwise clarifies the intended idea. (UNITED STATES OF AMERICA)	Reworded as suggested.
519	59407	8	22	23	22	32	8.2.3.1 is overlapping with other subsections (8.2.3.2 and 8.2.3.6) without providing any significant new insight. The part of it referring to air pollution is not relevant and could be removed altogether. The remaining should be expanded or integrated into 8.2.3.2. (Dimitrios Melas, Department of Physics, Aristotle University of Thessaloniki, Greece) (GREECE)	restructured and shortened text
520	63550	8	22	25	0	0	Section 8.2.3.1 Simulated trends in future temperature threshold exceedance for the area of Frankfurt by Früh et al. (2011, J. Appl. Meteorol. Climatol., DOI: 10.1175/2010JAMC2377.1) showed no significant differences between the city and the rural surroundings. E.g. the yearly number of days with maximum temperature exceeding 25°C will increase by the same amount inside and around the city. (GERMANY)	included ref and made slight revision to the task
521	72767	8	22	25	22	25	Line 25: The authors should reword as " heatwaves and warm spells will exacerbate urban heat island effects..." (UNITED STATES OF AMERICA)	Done.
522	78060	8	22	25	22	27	It is strange to mention "increased air pollution" before "heat-related health problems", in particular as the section is titled "Urban Temperature Variations: Means and Extremes". My suggestion is to either move the "increased air pollution" to second position (yielding: "Heat waves and warm spells will connect with urban heat island effects to cause heat-related health problems (Hajat et al., 2010; see also 8.2.3.7) and may result in increased air pollution (Blake et al., 2011; Campbell-Lendrum and Corvalan, 2007)") or leave it out of this section entirely. (Erik Min, Royal Netherlands Meteorological Institute (KNMI))	Changed wording as suggested.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
523	63549	8	22	25	22	28	Section 8.2.3.1 Besides reduced energy demand for heating in the cold season it should be mentioned that in a warming climate many regions will also have an increase of energy demand for cooling in the warm season. Changes in energy demand for Paris (cold and warm season) have been presented by Lemonsu et al. (2012, Climatic Change, DOI 10.1007/s10584-012-0521-6). (GERMANY)	Added.
524	77927	8	22	25	22	32	Several researvch from Central Europe reports human thermal comfort in the cities, e.g. Blazejczyk K., 2011, Mapping of UTCI in local scale (the case of Warsaw), Prace i Studia Geograficzne WGSR UW, 47, p. 275-283. (POLAND)	Added citation and reference.
525	60409	8	22	26	0	0	Reference Campbell-Lendrum and Corvalan 2007 is missing. Possibly doi: 10.1007/s11524-007-9170-x (David Parker, Met Office Hadley Centre)	Reference added.
526	59408	8	22	26	22	26	Campbell-Lendrum and Corvalan (2007) is missing in the references. (Dimitrios Melas, Department of Physics, Aristotle University of Thessaloniki, Greece) (GREECE)	Reference added.
527	72768	8	22	27	22	27	"Cold waves" is not a common term and would benefit from the brief defining contrast at first appearance of "cold waves, periods of very cold weather" or something to that effect. (UNITED STATES OF AMERICA)	Added.
528	72769	8	22	28	22	29	This sentence is confusing. The addition of the text on thermal comfort level muddles the sentence. (UNITED STATES OF AMERICA)	made some edits; human comfort level is an important concept to include
529	63551	8	22	31	0	0	Give reference to the chapters. (GERMANY)	Added in phrase "Chapters 21-30 in".
530	72770	8	22	31	22	32	Oleson report is discussed in next paragraph. The sentence can be deleted here. (UNITED STATES OF AMERICA)	Deleted sentence.
531	72771	8	22	31	22	32	This statement is contradicted by the paragraph that follows, lines 37-52 (UNITED STATES OF AMERICA)	Deleted statement.
532	78332	8	22	32	0	0	The exact same idea (and the same citation: Oleson et al.) is repeated in lines 32 and 38 (Vincent Vigi��, CIRED)	Deleted sentence.
533	60410	8	22	32	22	38	Oleson et al. 2012 should probably be Oleson 2012. (David Parker, Met Office Hadley Centre)	Changed to Oleson 2012.
534	72772	8	22	33	22	33	Line 33: The authors should insert a sentence about important changes (increases) in night time minimum temperatures that will impact health, energy, and food production. (UNITED STATES OF AMERICA)	edited text
535	78331	8	22	35	0	0	Why is section 8.2.3.2 "Urban heat islands" separated from section 8.2.3.1 "urban temperature variation"? to my sense, urban heat islands are not an impact per se, they are simply a local effect that contributes to making heatwaves have a bigger impact in cities than in the surrounding countryside (especially since it increases night temperature). I would rather say that the important point, here, is the increase in the number and the intensity of heatwaves, magnified by the existence of urban heat islands in cities. Focusing during one whole subsection on whether urban heat islands will be increased or not therefore does not seem particularly relevant to me. I would rather focus more on the increase in heatwaves risk. (Vincent Vigi��, CIRED)	sections have revised and merged; tried to highlight heatwaves more
536	72773	8	22	35	23	12	State reasons for urban heat island results and explain differences. (UNITED STATES OF AMERICA)	have reduced and sharpened the text of UHI
537	59409	8	22	37	0	0	Urban heat islands are not difficult to quantify; as a matter of fact surface urban heat islands can be easily detected in medium and large scale urban areas with the use of satellite data (see Stahopoulou, M. and C. Cartalis, 2007:Use of Satellite Remote Sensing in Support of Urban Heat Island Studies, Advances in Building Energy Research, 1(1), 203-212). In addition valuable information and findings on heat islands may be found in: Santamouris M., 2007: Heal island Research in Europe: The State of the Art, 1(1), 124-150; Mihalakakou, G., M. Santamouris, N. Papanikolaou, C. Cartalis and A. Tsangrassoulis, 2004: Simulation of the Urban Heat Island Phenomenon in Mediterranean Climates, Pure and applied geophysics, 161(2), 429-451). (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	have reduced and sharpened the text of UHI
538	72774	8	22	37	22	38	The first sentence says that defining and quantifying UHI is still debated. The second sentence states that studies indicate that UHI will decrease. Perhaps add some segue such as "Despite [this lack of agreement], results from studies that have looked at UHI suggest that...." (UNITED STATES OF AMERICA)	have reduced and sharpened the text of UHI
539	72775	8	22	37	23	12	The organization of this section is confusing. Recommend keeping London content together as opposed to breaking it up like it currently is. Also, in one part of this section you say that UHI in London by 2050 won't change, but then later, the text says it will. It's quite confusing. (UNITED STATES OF AMERICA)	edited the text to make more clear.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
540	63552	8	22	38	0	0	Section 8.2.3.2 The unclear trend in future UHIs is a very important statement, but the citation of studies finding positive, negative or no trend in UHIs should be accompanied by the major (physical) reasons for the findings. For example Lemonsu et al. (2012, Climatic Change, DOI 10.1007/s10584-012-0521-6) calculated that the UHI of Paris will slightly weaken because longer or more pronounced dry summer spells will lead to very low soil moisture content and therefore to stronger heating of the lower atmosphere in rural areas. (GERMANY)	Discussion of UHI redone, Lenonsu 2013 drawn on and in references.
541	72777	8	22	38	0	0	Explain why Oleson argues that urban heat island effect will decrease or remain constant, rather than increasing. (UNITED STATES OF AMERICA)	Removed statement. See comment 543 below.
542	59410	8	22	38	22	38	I don't think that the conclusions of the study by Oleson (2012) are interpreted correctly. This study shows mixed results about the intensity of the UHI and the main conclusion is that the unique aspects of the urban environment should be considered when making projections about the effects of climate change on UHI intensity. (Dimitrios Melas, Department of Physics, Aristotle University of Thessaloniki, Greece) (GREECE)	Removed line 38 to eliminate the conflicting interpretation.
543	72776	8	22	38	22	45	Unclear whether Oleson and Oleson et al are the same references. If so, lines 44-45 contradict line 38. (UNITED STATES OF AMERICA)	The reference is only Oleson 2012. Deleted line 38 to eliminate the contradiction.
544	77928	8	22	48	23	6	Not only intensity of UHI will change. Growing cities produce also spatial extent of areas where UHI is significantly manifested. (POLAND)	good point. This is raised earlier in section 8.2
545	56632	8	22	49	0	0	GCM term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	Spelled out.
546	60411	8	22	51	22	52	Adachi et al. 2012 project the UHI intensity to increase from 1.0°C to 1.5°C, not from 1.5°C to 2.0°C. (David Parker, Met Office Hadley Centre)	Corrected to 1.0 - 1.5 deg C.
547	69045	8	22	51	22	52	"As a result, total UHI intensity is projected to increase from 1.5 C to 2.0 C through the 2070s (Adachi et al., 2012)." the figures on the statement do not generate this cumulative conclusion. (NETHERLANDS)	Corrected in comment 546 above.
548	72778	8	23	15	23	15	This section does not refer to the very important issue of water resources allocation to different user groups, while evidence from many countries shows the dominance of urban over rural usage, which does to a large extent offset the overall water scarcity (UNITED STATES OF AMERICA)	It not clear what the comment is recommending with respect to additional text
549	72779	8	23	19	23	19	Line 19: It is unclear how droughts (lack of water) can lead to an increase in water-related diseases (UNITED STATES OF AMERICA)	add some details
550	56633	8	23	21	0	0	Separate words "changing scenarios..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
551	72780	8	23	22	0	0	Explain where the additional 100 million are located. (UNITED STATES OF AMERICA)	Added "across the globe".
552	56634	8	23	25	23	45	Term "ibid" is referred in italics and non-italics in these sentences on lines 25 and 45. Please use same format unless any specific reasons - and also throughout the chapter wherever it is referred. (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
553	72781	8	23	26	23	31	Lines 26-31: Not relevant to urban context as this is purely national level information. Suggest delete. (UNITED STATES OF AMERICA)	Done.
554	69046	8	23	30	23	31	"over the 40 years" should be "over the next 40 years". Also, we don't think this study by Backus et al (2012) is very relevant with the sub-chapter that deals with Droughts and Water Scarcity, or if it is, the connection is not clearly conveyed to the reader. (NETHERLANDS)	text was deleted
555	85209	8	23	34	24	5	Local relative sea level is the only basis for local planning. Global sea level, particular when based on models is largely irrelevant. No mention of any actual measurements of relative sea level. It mentions only isostasy as one of the many reasons why past measurements are unreliable. You should also mention measures to change local level, such as harbour development, dredging and erosion, changes in land level from buildings, removal of ground water and minerals, and changes in equipment from storm damage and inaccuracies in levelling. Only recent measurements with GPS levelling could be used for assessing "trends" and most of these show that sea level is not currently rising in many places (Vincent Gray, Climate Consultant)	these are important points. The essence that detailed local studies are needed was included.
556	72782	8	23	36	24	5	The effect that Superstorm Sandy had on the NE coast of the United States should be referenced here, including the costs, number of people impacted, etc. (UNITED STATES OF AMERICA)	added a brief reference here
557	72783	8	23	43	23	44	What are the current populations of Lagos, Mumbai, Mombasa, and Shanghai living in low-lying areas? (UNITED STATES OF AMERICA)	This information is not known
558	65561	8	23	45	23	46	Add example here? Dhaka for e.g. (Jo da Silva, Arup)	Added Dhaka as example.
559	59411	8	23	51	0	52	The specific statement is not clear. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	refused to make more clear

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
560	59412	8	23	54	0	54	Insert reference for the specific statement. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	I feel this common knowledge derived from basic population data
561	72784	8	24	1	24	5	What are the current populations and asset values at risk in these locations? (UNITED STATES OF AMERICA)	This information is not known
562	72785	8	24	1	24	5	While recognizing the importance of that study, the accuracy of its results are mitigated by the lack of Digital Elevation Models for many of the cities, which makes its flooding predictions unreliable. We were able to check that on Alexandria. (UNITED STATES OF AMERICA)	This is a valid point. Lack of data availability, unreliability and uncertainty are present throughout this data
563	59413	8	24	4	0	5	Revise sentence. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	edited the text
564	56635	8	24	8	0	0	Remove extra "and" i.e. "Inland Flooding, Hydrological and Geo-Hydrological..." (Archis Ambulkar, Brinjac Engineering Inc.)	edited the text
565	72786	8	24	8	24	8	This section should also refer to glacial lake outburst as significant risk to some cities such as Khatmandu and other Himalayan cities. (UNITED STATES OF AMERICA)	Good point but would need references on this.
566	72787	8	24	8	24	20	Section 8.2.3.5. Weak paragraph that could be deleted without detracting from the rest of the message. (UNITED STATES OF AMERICA)	Other commentors seemed to approve the contribution of the paragraph
567	72788	8	24	8	25	6	Paragraphs on this page appear to be cobbled together from inputs from several contributors and lack coherence. Please revise to improve the flow of the document and provide a consistent voice. (UNITED STATES OF AMERICA)	these sections have been significantly edited
568	72789	8	24	10	24	20	This section should be broken out to discuss flooding along rivers and in floodplains as one kind of flooding and then stormwater flooding as another kind of inland flooding. Currently, flooding along rivers and in flood plains is missing, but it is a significant impact for many cities. (UNITED STATES OF AMERICA)	some text added and attempted to make coherent
569	77462	8	24	20	0	0	Add: "The review on the world-wide impacts of climate change on rainfall extremes and urban drainage by Willems et al. (2012) has shown that typical increases in rainfall intensities at small urban hydrology scales range between 10% and 60% from historical control periods in the recent past (typically 1961-1990) up to 2100. These climate change impacts on extreme short-duration rainfall events may have significant impacts in terms of surcharge of urban drainage systems and pluvial flooding. Results so far indicate more problems with sewer surcharging, sewer flooding and more frequent CSO spills. o Extreme rainfall changes in the range 10-60% may lead to changes in flood and CSO frequencies and volumes in the range 0-400% depending on the system characteristics. This is because floods and overflows are due to exceedance of runoff or sewer flow thresholds and react to rainfall (changes) in a highly non-linear way (Willems et al., 2012). Ref: Willems, P., Olsson, J., Arnbjerg-Nielsen, K., Beecham, S., Pathirana, A., Bülow Gregersen, I., Madsen, H., Nguyen, V-T-V. (2012), 'Impacts of climate change on rainfall extremes and urban drainage', IWA Publishing, 252p., Paperback Print ISBN 9781780401256; Ebook ISBN 9781780401263 (Patrick Willems, KU Leuven)	Added into text as new paragraph and added to reference list.
570	77463	8	24	20	0	0	Other references are: • Willems, P. (2013). 'Revision of urban drainage design rules after assessment of climate change impacts on precipitation extremes at Uccle, Belgium', Journal of Hydrology, 10.1016/j.jhydrol.2013.05.037 • Willems P., Vrac M. (2011), 'Statistical precipitation downscaling for small-scale hydrological impact investigations of climate change', Journal of Hydrology, 402, 193–205 • Arnbjerg-Nielsen, K., Willems, P., Olsson, J., Beecham, S., Pathirana, A., Bülow Gregersen, I., Madsen, H., Nguyen, V-T-V. (2013). 'Impacts of climate change on rainfall extremes and urban drainage systems: a review', Water Science and Technology, doi: 10.2166/wst.2013.251 (Patrick Willems, KU Leuven)	References added.
571	59414	8	24	21	0	0	Check this paragraph for collated words. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Done.
572	61197	8	24	23	24	33	What are these "effects"? On health, damage to buildings via acid rain etc? This section is too brief and needs expanding. Should also mention changes in urban morphology on air quality - larger numbers of high-rise buildings may change rate of dispersal of pollutants. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	made the statement more clear; space limitation constrain the ability to add more discussion
573	72790	8	24	23	24	33	Section 8.2.3.6. Weak paragraph that could be deleted without detracting from the rest of the message. Lines 28-30 make a general statement that is not urban-context specific. (UNITED STATES OF AMERICA)	Other commentors seemed to approve the contribution of the paragraph and wanted more content
574	56636	8	24	25	0	0	Separate words "with implications..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
575	62544	8	24	25	24	27	No spacing between words 'with' and 'implications' in line 25; similarly between 'and' & 'transportation' in line 27 (INDIA)	Done.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
576	72791	8	24	25	24	33	Effects on air pollution are very important and are barely touched on in this short paragraph. This needs to be expanded. (UNITED STATES OF AMERICA)	this is true; however space constraints require a focus on urban related issues
577	56637	8	24	27	0	0	Separate words "and transportation..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
578	63553	8	24	27	24	27	Since transportation is more important than industry as a source of air pollution in most urban areas, it is recommended to replace "air pollution from industry and transportation" by "air pollution from transportation and industry". (GERMANY)	Done.
579	56638	8	24	28	0	0	Separate words "around structures..." (Archis Ambulkar, Brinjac Engineering Inc.)	Statement deleted.
580	63554	8	24	28	24	28	"Air quality can be adversely affected by limited ventilation within and around structures": It is not clear how this statement is connected to climate change. If there are good reasons to assume that future urban planning is associated with efforts to increase ventilation to mitigate the UHI this should be stated here. The increased ventilation will than reduce local air pollution. (GERMANY)	Statement deleted.
581	59415	8	24	28	24	31	No reference is given to support this statement. The following recent studies could be used for Europe and USA, respectively: Katragkou E., P. Zanis, I. Kioutsioukis, I. Tegoulas, D. Melas, B.C. Krüger, E. Coppola, Future climate change impacts on surface ozone from regional climate-air quality simulations over Europe, Journal of Geophysical Research, 116, D22307, doi:10.1029/2011JD015899, 2011. Lam, Y.F., Fu, J.S., Wu, S., Mickley, L.J., Impacts of future climate change and effects of biogenic emissions on surface ozone and particulate matter concentrations in the United States, Atmospheric Chemistry and Physics, Volume 11, Issue 10, Pages 4789-4806, 2011. (Dimitrios Melas, Department of Physics, Aristotle University of Thessaloniki, Greece) (GREECE)	Citations added to support line 29-31.
582	72792	8	24	28	24	31	Needs a citation to support this statement. (UNITED STATES OF AMERICA)	Statement deleted.
583	72793	8	24	34	0	0	The authors should consider adding: The transportation sector has a huge impact on natural resource consumption as well as quality of life and health. Air pollution is set to become the world's top environmental cause of premature mortality, overtaking dirty water and lack of sanitation. Air pollution concentrations in some cities, particularly in Asia, already far exceed World Health Organization safe levels, and they are projected to deteriorate further to 2050 (OECD 2012). Promoting transit systems such as BRT (bus rapid transit) can be an important positive contribution to growing cities, particularly in the developing world. (UNITED STATES OF AMERICA)	this is important material but not directly germane to the focus of the section
584	72794	8	24	36	25	6	Cite Ligeti and Barata, et al. in ARC3. (UNITED STATES OF AMERICA)	Citation of Barata et al., 2011 was added
585	78335	8	24	38	0	49	This whole paragraph is about heat stress: it could be moved to section 8.2.3.1 (Vincent Viguié, CIRED)	good thought but section 8.2.3.1 focuses more on the impact on the energy regime and not specifically the health impacts
586	65562	8	24	45	0	0	Suggest reword to avoid repetition of 'high': 'In urban settings where child mortality is high, extreme temperatures...' (Jo da Silva, Arup)	Reworded as suggested.
587	72795	8	24	45	24	46	Line 45: fix poor English "In urban settings where child mortality is high..." should be reworded simply as "in urban areas high and low temperatures..." (UNITED STATES OF AMERICA)	Changed text.
588	72796	8	24	51	25	4	These air pollution issues should be regrouped under section 8.2.3.6 (UNITED STATES OF AMERICA)	this was done
589	72797	8	24	53	25	11	The word "affected" is used repeatedly without indicating whether expected changes are increases or decreases. (UNITED STATES OF AMERICA)	did some basic to illustrate the meaning of affect
590	63234	8	25	4	25	5	Might want to add a sentence about Urbanisation and malaria with a citation to Tatem et al. Malaria Journal 2013, 12:133 (Torleif Markussen Lunde, University of Bergen)	Added statement, citation and reference.
591	72798	8	25	20	0	0	The authors should delete/add at end to read: services and "people" (UNITED STATES OF AMERICA)	Correct. And people. This section focuses on infrastructure and service and not people specifically
592	72799	8	25	28	25	31	Quantify the economic effects of the supply chain disruption vs. other economic costs. (UNITED STATES OF AMERICA)	specific and detailed economic numbers not available
593	56639	8	25	30	0	0	Provide space i.e. "2012). Urban..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
594	72800	8	25	34	0	0	The authors should consider adding: "Of the Low Elevation Coastal Zones (LECZ) approximately 50% are in urban areas with a population of 360 million inhabitants, of which 15 percent are the urban poor of least development countries. " (UNITED STATES OF AMERICA)	There is no reference for this statement. Also I don't think it belongs at the end of this paragraph - it doesn't fit it with the content above.
595	72801	8	25	38	25	40	Consider adding communications to the list of systems that are effected by climate change (UNITED STATES OF AMERICA)	Done.
596	56640	8	25	39	0	0	Separate words "transport sectors..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
597	62545	8	25	39	25	39	No spacing between 'transport' and 'sector' in line 39 (INDIA)	Done.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
598	78336	8	25	49	0	49	"since without this, making the short to long-term trade-off to improve resilience is difficult" I do not understand this sentence very well (Vincent Viguié, CIRED)	Changed wording to clarify.
599	72802	8	25	51	25	53	This sentence argues that it is more difficult for cities such as New York with dense aging infrastructure to withstand stresses from climate change. While true, these cities also have an opportunity when the aging infrastructure will be replaced to integrate climate considerations into the new infrastructure decision making processes. This potential opportunity isn't acknowledged. (UNITED STATES OF AMERICA)	Edited to reflect this change.
600	56641	8	25	52	0	0	Separate words "projected strains..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
601	66369	8	25	53	0	0	(after Faris, 2010) : lots of economic and livelihood activities also get damaged and disrupted which have long lasting or never ending effect on society (Alka Bharat, M.A.National Institute of technology)	A valid point but not included because not relevant to overall structure of the chapter
602	59418	8	26	0	28	0	A significant number of parts of 8.2.4 are repeated elsewhere. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	working on trimming and editing throughout
603	65563	8	26	3	26	4	What unit/metric has been used to calculate this? (Jo da Silva, Arup)	This is a proportional increase so Figure 9 showing the 60-fold increase is without units. Previous figures in the paper have calculated the value of exposed assets in millions and billions of USD. See http://eprints.soton.ac.uk/183087/1/Hanson_etal_ClimaticChange_2011.pdf
604	58021	8	26	5	26	6	All sources cited are not listed at References (Marcia Real, Universidade Federal Fluminense)	Can't find edit. No citations in lines 5 and 6.
605	56642	8	26	10	0	0	Provide space i.e. "balance (Gober..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
606	56643	8	26	11	0	0	Provide space i.e. "2008). Among..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
607	59416	8	26	12	0	0	The same impacts are mentioned over and over again. The overall chapter needs restructuring to avoid repetitions. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	working on trimming and editing throughout
608	56644	8	26	15	0	0	Provide space i.e. "2011). Local..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
609	66370	8	26	17	0	0	(after 2008) :two major effects ; one rise in temperature reducing water availability and other raised demand of water due to population growth & development should be taken in consideration , simultaneously (Alka Bharat, M.A.National Institute of technology)	A valid point but not included because not relevant to overall structure of the chapter and page constraints
610	58022	8	26	24	0	0	Braman et al., 2010 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Added full reference to the end of chapter.
611	56645	8	26	26	0	0	Separate words "rapidly developing..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
612	62546	8	26	26	26	26	No spacing between 'rapidly' and 'developing' in line 26 (INDIA)	Done.
613	59417	8	26	31	0	0	The reduction of rainfalls now is considered a problem. The overall analysis is very poor and confuses the reader. Is it possible to have phenomena that the one cancels the effect of the others? This should be underlined. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Edited text to make more clear
614	58023	8	26	33	0	0	Pelling 2012 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Can't seems to find the Pelling reference citation in the chapter to which the reviewer is referring
615	72803	8	26	33	26	39	Lines 33-39: contains assertions that are either presumptions in the reference quoted (de Sherbin et al, 2007:60), or presumption that wealth means greater adaptive capacity. This is not so for Shanghai and many other major urban zones where the poor have no access to the so-called greater wealth enjoyed by a few. (UNITED STATES OF AMERICA)	Deleted text because it is misleading and not appropriate in this section
616	72804	8	26	38	26	39	Which cities? What was the magnitude of the effect? (UNITED STATES OF AMERICA)	Added three city names and added the citations to the reference section.
617	58024	8	26	39	0	0	Ford et al. 2010 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Added full reference to the end of chapter.
618	58025	8	26	40	0	0	McLeman and Hunter 2010 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Added full reference to the end of chapter.
619	56646	8	26	48	0	0	Provide space i.e. "2012). Floods..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
620	65564	8	27	9	0	0	not just where there is 'no waste collection service' but where there is 'inadequate waste collection' (Jo da Silva, Arup)	Changed wording to reflect this.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
621	72805	8	27	10	27	12	Which countries? What is the population of people in cities without drains or sewers? (UNITED STATES OF AMERICA)	space limitations don't allow for listed representative countries; cities with limited drainage range from small to very large, megacities
622	72806	8	27	28	27	29	Awkward and confusing sentence. Suggest removing or reworking the content around "often flood protection measures." (UNITED STATES OF AMERICA)	Removed section of statement.
623	72807	8	27	37	27	40	Quantify. (UNITED STATES OF AMERICA)	Space constraints, not enough room to elaborate with quantitative values because each category of the energy sector will experience changes that vary regionally - i.e., Northern Europe will decrease their energy demand while Southern Europe will increase their energy demand. There are no broad brush quantitative statistics.
624	72808	8	27	38	27	40	This sentence is confusing: is efficiency of cooling really dropping?? Rather are not power systems becoming more technologically efficient, yet overwhelmed by demand for power, eg: AC units, etc. increasing in Europe and with growing middle class worldwide. (UNITED STATES OF AMERICA)	edited the text to make reference more clear
625	59419	8	27	48	27	48	I am thinking that not only "climate change will alter the patterns of urban energy consumption" but also the patterns of energy production will change predominantly in the light of photovoltaic systems (and also wind and other). Perhaps a mention of the most essential statistics in this sector would provide another dimension needed in this section. (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	A valid point but not included because not relevant to overall structure of the chapter and page constraints
626	63420	8	27	53	28	2	Comparison between cooling energy increase and heating energy decrease by global warming strongly depending the climate of the city. Energy consumption for hot water use is also affected by global warming since the temperature of tap water depends outdoor air temperature. (Yoshiyuki Shimoda, Osaka University)	A valid point but not included because not relevant to overall structure of the chapter and page constraints
627	59420	8	28	0	29	0	It should be interesting to include in "8.2.4.3 Transportation and telecommunications" a reference to the following review paper: Uherek, E., T. Halenka, J. Borken-Kleefeld, Y. Balkanski, T. Berntsen, C. Borrego, M. Gauss, P. Hoor, K. Juda-Rezler, J. Lelieveld, D. Melas, K. Rypdal and S. Schmid (2010): Transport Impacts on Atmosphere and Climate: Land Transport. Atmospheric Environment Volume 44, Issue 37, Pages 4772-4816. This review includes both urban and regional scale impacts and is highly relevant to the aforementioned section. For example, section "5.5. Scenarios of future road transport exhaust emissions" of the review paper includes very interesting material to support the AR. (Dimitrios Melas, Department of Physics, Aristotle University of Thessaloniki, Greece) (GREECE)	this is a great review. There is a small urban focused section but there does not seem to be any extensive discussion on the connections between urban transport issues and climate change specifically
628	56647	8	28	5	0	0	Separate words "change reduces..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
629	56648	8	28	15	0	0	Provide space i.e. "conditioning, resulting..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
630	56649	8	28	16	0	0	Provide space i.e. "2007). Cities..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
631	72809	8	28	18	28	20	The structure of this sentence makes is extremely hard to understand. Consider reworking. (UNITED STATES OF AMERICA)	Reworded to clarify.
632	56650	8	28	19	0	0	Provide space i.e. "poor, increased..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
633	72810	8	28	25	29	27	Recommend including information on U.S. Department of Transportation funded projects with several state departments of transportation, metropolitan planning organizations, and public transportation agencies to study impacts of climate change on transportation. See http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/vulnerability_assessment_pilots/index.cfm and www.fta.dot.gov/adaptation (UNITED STATES OF AMERICA)	the references are interesting but seem somewhat specific and not clearly peer reviewed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
634	72811	8	28	25	29	27	The authors should consider including: Sea level rise and storm surge significantly impact transportation infrastructure. For instance, in the Gulf Coast region of the United States, 27 percent of the major roads, 9 percent of the rail lines, and 72 percent of the ports are at or below 122 cm (4 ft) in elevation. With storm surge at 7 m (23 ft), more than half of the area's major highways (64 percent of Interstates; 57 percent of arterials), almost half of the rail miles, 29 airports, and virtually all of the ports are subject to flooding. CCSP, 2008: Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [Savonis, M. J., V.R. Burkett, and J.R. Potter (eds.)]. Department of Transportation, Washington, DC, USA, 445 pp. (UNITED STATES OF AMERICA)	Added text, citation, and reference.
635	72812	8	28	25	29	27	The title of this section is "Transportation and Telecommunications", but the section currently only covers transportation, and does not provide any information on telecommunications. Recommend deleting telecommunications from the title. If the chapter authors do want to cover telecommunications, suggest covering transportation and telecommunications in separate sections, since it is not clear that they are directly related or would have similar impacts. (UNITED STATES OF AMERICA)	Changed section title.
636	72813	8	28	25	29	27	This section does not currently but definitely should summarize the main impacts of climate change on transportation: - Flooding of road, rail, port, airport, and transit facilities from increases in intense rainfall, storm surge, and sea level rise. - Track buckling, road rutting, materials degradation, and worker and passenger safety and comfort issues from increases in very hot days and heat waves - Wind damage and debris from increases in hurricane intensity - Landslides from increases in heavy precipitation and rain on snow events - Interruptions to river barge traffic due to decreases in water levels during droughts or increases during floods - Permafrost thaw at far northern latitudes undermining road beds - Opening of Arctic shipping routes (UNITED STATES OF AMERICA)	Valid issues but most of these are covered in the other IPCC chapter looking at infrastructure.
637	72814	8	28	28	28	28	Include tunnels. (UNITED STATES OF AMERICA)	Done.
638	56651	8	28	28	28	29	Remove extra "and" i.e. "data sensors, wire and wireless networks..." (Archis Ambulkar, Brinjac Engineering Inc.)	text is correct as is
639	72815	8	28	34	28	49	Page 28 line 34 to Page 28 Line 49. This paragraph states that there has not been much literature on transportation adaptation. It neglects to mention significant work that has been completed since AR4. This section should cite key findings from transportation adaptation literature new since the AR4, including: CCSP, 2008: Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [Savonis, M. J., V.R. Burkett, and J.R. Potter (eds.)]. Department of Transportation, Washington, DC, USA, 445 pp. http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/index.cfm Transportation Research Board (TRB), Special Report 290: Potential Impacts of Climate Change on U.S. Transportation, 2008. http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf Federal Highway Administration, Climate Change and Extreme Weather Vulnerability Assessment Framework, December 2012. http://www.fhwa.dot.gov/environment/climate_change/adaptation/resources_and_publications/vulnerability_assessment_framework/index.cfm Meyer, Michael, "Design Standards for U.S. Transportation Infrastructure: The Implications of Climate Change," 2011. http://onlinepubs.trb.org/onlinepubs/sr/sr290Meyer.pdf Federal Transit Administration, "Flooded Bus Barns and Buckled Rails: Public Transportation and Climate Change Adaptation," 2011. http://www.fta.dot.gov/documents/FTA_0001_-_Flooded_Bus_Barns_and_Buckled_Rails.pdf In particular, recommend authors include key points from the executive summaries of the first two citations. (UNITED STATES OF AMERICA)	adjusted text to make the issue more clear. Choose not to include the adaptation discussion because this is more germane to the next section of the chapter
640	82309	8	28	42	28	42	The formulation here with "it will be necessary" could be interpreted as prescriptive, and rewording the sentence accordingly would be beneficial. (Katharine Mach, IPCC WGII TSU)	Changed wording.
641	56652	8	28	44	0	0	Separate words "weather related..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
642	61198	8	28	44	28	44	Two papers to appear in Climatic Change assess climate change effects on UK rail network: "Future projections of temperature-related climate change impacts on the railway network of Great Britain", EJ Palin et al., and "Projections of the future frequency of flooding affecting the rail network of Great Britain", H.T. Thornton et al. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Added citation and reference for Palin. The second paper by Thornton isn't yet published so I did not include it.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
643	72816	8	28	51	29	2	This paragraph would fit better under 8.3.3.5, adapting electric power and energy systems (UNITED STATES OF AMERICA)	agreed - deleted and recommend switch be made
644	56653	8	28	52	0	0	Separate words "larger and..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
645	56654	8	28	52	0	0	Provide space i.e. "cities. For..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
646	59422	8	29	0	30	0	82.4.4 Title should be revised. Moreover a lot of different aspects, buildings, recreation and heritage are discussed in one paragraph. These can be separated and analysed. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	given space constraints it was not seen as possible to separate
647	78339	8	29	2	0	0	you could also cite here Viguie and Hallegatte 2012 (Vincent Viguie, CIRED)	Cited.
648	56655	8	29	13	0	0	Separate words "transport are..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
649	72817	8	29	14	29	16	Compare some numbers for direct effects vs. indirect costs. (UNITED STATES OF AMERICA)	reliable comparative numbers are currently not available
650	56656	8	29	21	0	0	Provide space i.e. "Boston). Implementing..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
651	65565	8	29	22	0	0	This quote needs a page number in the reference in line 23 (Jo da Silva, Arup)	revisited cited paper and failed to find the quoted phrase; left the wording of the phrase in but removed the quotation marks so it's no longer a direct quote.
652	56657	8	29	30	0	0	Remove extra "and" i.e. "Built Environment, Recreation and Heritage Sites" (Archis Ambulkar, Brinjac Engineering Inc.)	Done.
653	72818	8	29	30	0	0	This is an odd juxtaposition of built environment with recreation and heritage sites. (UNITED STATES OF AMERICA)	agreed. Yet they face many similar issues and as a result were combined
654	58026	8	29	31	0	0	It will be better " Latin American regions " instead of nations (Marcia Real, Universidade Federal Fluminense)	Made change. Edit was on page 36 line 23.
655	59421	8	29	32	29	32	I believe that the definition of what "good quality housing" means in the context of this section should be given. This definition perhaps should be extended to include the thermal properties of the housing that are linked to energy demands. Not just good quality in the conventional meaning (stability, endurance etc). (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	expanded the definition of good quality housing
656	65566	8	29	36	29	38	The link here is unclear - clarify how these two things (displacement and disruption of household income) are related (Jo da Silva, Arup)	revised text to make objective more clear
657	72819	8	29	38	0	0	The authors should consider adding: Proper siting of residential and permanent structures is fundamental to minimizing exposure and risk to climate changes. Land use planning and building codes based on climate data and coupled with proper enforcement can help increase resiliency of the built environment and local populations. (UNITED STATES OF AMERICA)	A valid point but not included because not relevant to overall structure of the chapter and page constraints
658	72820	8	29	46	0	0	What was the relatively modest increase in wind speeds and how was the increased damage compared to the counterfactual or baseline? (UNITED STATES OF AMERICA)	Added text. See http://eau.sagepub.com/content/24/2/597.full.pdf+html
659	72821	8	29	52	0	0	Why are parks and playgrounds defined as critical infrastructure? (UNITED STATES OF AMERICA)	They have been identified in several major assessments as such. Convention.
660	72822	8	30	2	30	9	The authors should consider whether the risks to urban cultural heritage deserve more detailed coverage. (UNITED STATES OF AMERICA)	A valid point but not included because not relevant to overall structure of the chapter and page constraints
661	72823	8	30	12	30	24	Green infrastructure needs to be defined earlier in the chapter - Although there is a definition on p 48, it is referenced earlier in the chapter and so either a definition should be included earlier or this section should point to page 48. (UNITED STATES OF AMERICA)	Added a note to see reference in section 8.3.3.7 Box 1
662	72824	8	30	12	30	24	Section 8.2.4.5. This material is at best a weak "assessment" rather than just reporting what is contained in the references cited. Shouldn't the IPCC report attempt an assessment of whether the material in the references have validity and a measure of confidence could be ascribed to the references? (UNITED STATES OF AMERICA)	Yes agreed on what the IPCC should do; limited literature exists on ecosystem based adaptation that has the level of confidence and uncertainty measures
663	77467	8	30	12	30	24	Green infrastructure also plays an important role in urban water management; see previous comment (Patrick Willems, KU Leuven)	A valid point but not included because not relevant to overall structure of the chapter and page constraints

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
664	72825	8	30	14	30	14	The authors should consider deleting this first sentence. (UNITED STATES OF AMERICA)	Removed sentence, but doing so deletes the term "green infrastructure" to which we want to direct the reader to an earlier section. For this reason I have put the redirect in the section heading.
665	72826	8	30	14	30	16	Needs a citation to support these statements. (UNITED STATES OF AMERICA)	deleted statement, not really needed and explained in greater detail in text below
666	82310	8	30	15	30	15	The phrase "ecosystem functions" does not serve very effectively as an umbrella for all of the examples that follows. The phrase could be revised, or an insertion could be made: "ecosystem functions affected by changes in temperature and precipitation regimes..." (Katharine Mach, IPCC WGII TSU)	Made insertion.
667	72827	8	30	16	30	17	After "air quality", the authors should consider adding: Similarly, it will accentuate the need and value of ecosystems services and green infrastructure can bring to adaptation measures. (UNITED STATES OF AMERICA)	Added sentence.
668	72828	8	30	23	0	0	Explain what is meant by the idea of an ecosystem "migrating". (UNITED STATES OF AMERICA)	Added text to explain concept.
669	72830	8	30	27	0	0	Add Ligeti and Barata et al. in ARC3 to health and social services section. (UNITED STATES OF AMERICA)	Added citation.
670	72829	8	30	27	30	27	There is an overlap with section 8.2.3.7. (UNITED STATES OF AMERICA)	true, but the logic was that 8.2.3.7 deals with impacts; while this section focused on the health system provision
671	72831	8	30	37	30	37	Should this read "the very old and children" or is it correct the way it's worded? (UNITED STATES OF AMERICA)	Made change.
672	56658	8	30	40	0	0	Provide full stop i.e. (...Chapter 11)." (Archis Ambulkar, Brinjac Engineering Inc.)	Made change.
673	81335	8	30	43	0	0	Chapter should coordinate with other chapters like 11, 13, covering related topics. Cross refering to some of their discusiion could assist in reducing text in this chapter. (Monalisa Chatterjee, IPCC WGII TSU)	Did some extensive editing
674	72832	8	30	43	33	32	Since the subsections under 8.2.5 are about factors that enable transitioning to resilience and sustainability, it might be good to make that connection more clear by making the titles of these subsections be more active, e.g., "Incorporate uncertainty and surprise"; Address extreme event probability; Plan for transitions, etc. (UNITED STATES OF AMERICA)	Did some extensive editing
675	56659	8	30	48	0	0	Separate words "by heightening..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
676	62547	8	30	48	30	48	No spacing between 'long' and 'standing' in line 48 (INDIA)	done
677	59423	8	31	0	28	0	The title of the paragraph "extreme event probability" is preparing the reader to see the work performed to anticipate the extreme events and not the plans of various cities that integrate possible actions to face different extreme conditions. This can be "elaboration of adaptation plans"? (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	text deleted and consolidated
678	58027	8	31	5	0	0	Berger 2003 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
679	80057	8	31	5	0	7	Planning and design has so far been based on historical data, in the light of climate changes we will have to plan and design based on expectations for the future, thereby introducing a new degree of uncertainty. (Niels-Jørgen Aagaard, Danish Building Research Institute)	text deleted and consolidated
680	58028	8	31	9	0	0	Mcgranahan, Balk and Anderson 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
681	72833	8	31	11	31	12	Consider citing the work of Mattias Ruth on the costs of action versus inaction (UNITED STATES OF AMERICA)	text deleted and consolidated
682	65567	8	31	12	31	13	obvious' is a bit strong here! This sentence could do with further explanation of why this is such a key issue. (Jo da Silva, Arup)	text deleted and consolidated
683	72834	8	31	12	31	13	Explain more on the risks associated with urban waste repositories. (UNITED STATES OF AMERICA)	text deleted and consolidated
684	56660	8	31	13	0	0	Separate words "repositories around..." (Archis Ambulkar, Brinjac Engineering Inc.)	text deleted and consolidated
685	82311	8	31	18	31	19	Use of "will need" and "need" could be interpreted as prescriptive here, and rewording could be beneficial. (Katharine Mach, IPCC WGII TSU)	text deleted and consolidated
686	72835	8	31	20	31	24	Define the terms "no-regret" and "soft adaptation". Also, urban areas will be encroaching on agricultural areas. (UNITED STATES OF AMERICA)	text deleted and consolidated

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
687	64466	8	31	24	31	25	There is the need to also discuss about making decision under climate uncertainties by Dessai and Hulme (Maruf Sanni, National Centre for Technology Management)	text deleted and consolidated
688	60643	8	31	33	0	0	Increased intensity, frequency, and duration of extreme events, as climate change becomes more extensive, means that adaptation based only on recent experience or extrapolation of historical trends could be largely ineffective. [15.3.2.2] (George Backus, Sandia National Laboratories)	text deleted and consolidated
689	56661	8	31	35	0	0	Separate words "Conversely Jakarta..." (Archis Ambulkar, Brinjac Engineering Inc.)	text deleted and consolidated
690	62548	8	31	35	31	35	No spacing between 'Conversely' and 'Jakarta' in line 35 (INDIA)	text deleted and consolidated
691	58029	8	31	38	0	0	Fergutz et al. 2011 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
692	72836	8	31	46	31	46	Are they really climate extremes or are they weather extremes? (UNITED STATES OF AMERICA)	text deleted and consolidated
693	58030	8	31	50	0	0	sde Sherbini et al. 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
694	58031	8	32	7	0	0	Mcgranahan, Balk and Anderson 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	added reference
695	58032	8	32	11	0	0	Mcgranahan, et al 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	added reference
696	59424	8	32	13	0	15	The statement should be accompanied with an example. The examples that are used in this paragraph deal mainly with the disasters and not normal situations, while the specific statement can refer to any city that does not suffer from an extreme event. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	text deleted and consolidated
697	58033	8	32	14	0	0	Mcgranahan, Balk and Anderson 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	added reference
698	56662	8	32	19	0	0	Separate words "context of..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
699	65568	8	32	21	0	0	the paradigm shift towards resilience focusses far more on adaptation than mitigation; the bracket here confuses the rest of the sentence (Jo da Silva, Arup)	good points; made appropriate edits
700	58034	8	32	28	0	0	Ahmed et al. 2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	added reference
701	58035	8	32	31	0	0	Cohen and Garrett, 2011 is not identified at References (Marcia Real, Universidade Federal Fluminense)	added reference
702	72837	8	32	34	0	0	What are McGranahan's definitions of sanitary city and sustainable city? (UNITED STATES OF AMERICA)	believe reviewer is references page 33; line 3; added text to make more clear
703	56663	8	32	36	0	0	Separate words "human security (Siddiqi..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
704	69047	8	32	37	32	38	"Climate change could potentially contribute to violent conflicts and spur mitigation". Spur mitigation from where to where? Mitigation irrespectively of income-level of country/urban center? (NETHERLANDS)	added some additional explanation
705	58036	8	32	48	0	0	Tacoli, 2003 is not identified at References (Marcia Real, Universidade Federal Fluminense)	it does seem to be in the references
706	59425	8	33	6	6	54	I understand that this is a hot topic currently but I do not see how privatization will by itself advantage some groups. I don't see why a private management system can not built resilience whereas a community-based will builds resilience by default. I would say that public or private can fail if badly managed. This statement may constadict the notion of mobilizing the private secotor mentioned latter in this chapter. (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	text deleted and consolidated
707	62332	8	33	10	0	0	There is an emerging body of research on the social dynamics of urban areas and their relationship to resilience to climate change. A study was done in eight cities of the United States with the aim of determining the relationship between social aspects of the urban population and their resilience to climate change. Results indicate that there is a positive relationship between the level of cultural diversity, social capital, open-minded thinking, and risk-taking attitude of people in the cities and performance on climate change issues in those cities, considering city actions on both, mitigation and adaptation to climate change (Saavedra, Budd, & Lovrich, 2012). Full citation: Casilda Saavedra, William Budd, and Nicholas Lovrich. 2012. Assessing Resilience to Climate Change in US Cities. Urban Studies Research, Volume 2012, Article ID458172, doi:10.1155/2012/458172. Alternatively, you may directly access the article at: http://www.hindawi.com/journals/usr/2012/458172/ (PANAMA)	text deleted and consolidated

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
708	63421	8	33	15	33	23	The impacts of the urban heat island have been obvious in many cities in the world. Impacts of air temperature increase by global warming can be predicted by observing existing urban heat island impacts. (Shimoda Y., 2003: Adaptation measures for climate change and urban heat islands in Japan, Building Research and Information Vol. 31 No.3-4, pp.222-230) (Yoshiyuki Shimoda, Osaka University)	text deleted and consolidated
709	58037	8	33	16	0	0	Soares et al, 2010 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
710	58038	8	33	18	0	0	Revi, 2009 is not identified at References (Marcia Real, Universidade Federal Fluminense)	text deleted and consolidated
711	72838	8	33	29	33	30	It states that well governed cities demonstrate capacity to learn from crises? Does this mean that less well governed cities or badly governed cities are doomed to having no adaptive capacity and not learn from crises, as might be the case for many mid income and perhaps all low income cities? (UNITED STATES OF AMERICA)	text deleted and consolidated
712	81336	8	33	35	0	0	Chapter should coordinate with chapter 14, 15, 16 and 20 to coordinate on framings of policy options, planning experience, constraints and limits and climate resilient pathways. (Monalisa Chatterjee, IPCC WGII TSU)	We have acted on this
713	82312	8	33	35	0	0	Section 8.3. In developing the final draft of the chapter, the chapter team should strive to reduce the length of this section by more than 50%. (Katharine Mach, IPCC WGII TSU)	This section has been cut
714	72839	8	33	37	0	0	Cite ARC3 in introduction to urban adaptation. (UNITED STATES OF AMERICA)	This paragraph is not listing the literature; ARC3 was mentioned as one of the key new works on urban adaptation in 8.1, it is also listed in Box 8.1 and is cited in many places
715	65569	8	33	39	33	44	the relationship between resilience and adaptation (discussed in the second type of literature) needs to be more clearly explained here (Jo da Silva, Arup)	this was discussed in 8.1
716	65570	8	33	47	33	48	most climate models function at a lower resolution than most cities'; what does this actually mean? Unclear (Jo da Silva, Arup)	wording changed
717	82313	8	34	6	34	7	The framing of this sentence could be interpreted as prescriptive, and rewording it would be beneficial. (Katharine Mach, IPCC WGII TSU)	wording changed
718	58039	8	34	7	0	0	Melbourne 2009 is not identified at References (Marcia Real, Universidade Federal Fluminense)	in references
719	72840	8	34	20	34	21	Where are the good examples in developed and developing countries of controlling development in vulnerable areas? What were the contexts that allowed this to happen? (UNITED STATES OF AMERICA)	We did not find good examples of this in the literature
720	72841	8	34	21	0	0	The authors should consider adding: A better understanding of the the increasing number of natural disasters, such as Hurricane Sandy in the NY metro area, that generate high economic losses may result in new prioritization of development patterns based on regulatory and/or market forces. (UNITED STATES OF AMERICA)	Material on Sandy and its costs added
721	56664	8	34	29	0	0	Separate words "adaptation implementation..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
722	62549	8	34	29	34	29	No spacing between 'adaptation' and 'implementation' in line 29 (INDIA)	done
723	56665	8	34	32	0	0	Change to term "socio-ecological" (Archis Ambulkar, Brinjac Engineering Inc.)	done
724	72842	8	34	38	34	38	This statement is contradicted by the ones on page 35, lines 15 and 29: there is either a growing literature, or a lack of detailed attention, but not both. (UNITED STATES OF AMERICA)	There is a lack of attention to urban climate change adaptation in low and middle income nations even if there is a growing discussion on the green economy (and much of the literature on the green economy does not address urban issues - which is also stated)
725	72843	8	34	38	34	54	Listing a whole slew of references without summarizing any important information is uninformative. (UNITED STATES OF AMERICA)	See comment below
726	72844	8	34	38	34	54	The citations in this paragraph are good but would be more effective if they were cited in relation to key points made elsewhere in the text that aren't supported by citations. In many areas the authors give only one citation on an issue or point that could be supported by several other citations (including many listed in this paragraph). Clustering citations around general issues dilute's the impact of the points they each make individually. (UNITED STATES OF AMERICA)	These citations are the proof that more attention is being given to urban adaptation. There is more detail from most of these citations in the text elsewhere.
727	71311	8	34	54	34	54	It's not clear which nations are "these nations" in this sentence. Are we referring to each of the countries in all of the continents described in the above paragraph, or only certain ones that are alluded to after the first few sentences. The fact the most of the paragraph consists of citations in brackets makes it difficult to follow. (CANADA)	text changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
728	72845	8	35	15	35	27	The argument that the lack of attention to urban adaptation is related to national policy gaps misses the point that this gap relates to deeper factors including:(1) the relatively obvious and immediate implications of climate change for agriculture; (2) the traditional focus of most development agencies on rural areas; and (3) the fact that CC has been conventionally classified as an environmental issue and located, as a result, within environment ministries - most of which evolved from ministries that historically were focused on forests or water issues. As a result, the rural bias at the policy level reflects a long history of orientation for the organizations involved. (UNITED STATES OF AMERICA)	The point about most development assistance agencies ignoring urban issues is in; so too is the fact that climate change is usually assigned to environment ministries. Issues raised in this comment also in part addressed by FAQ 8.3
729	66371	8	35	27	0	0	(after 2011) :prevention and adaptation concerns should be in built in policies , planning and governance (Alka Bharat, M.A.National Institute of technology)	Cannot see how this relates to this text
730	58040	8	35	28	0	0	Major et al 2011 is not identified at References (Marcia Real, Universidade Federal Fluminense)	Now in the list
731	62617	8	35	29	35	30	some reference make comparable analysis on city level, See: Broto V C, Harriet Bulkeley, (2012) A survey of urban climate change experiments in 100 cities, Global Environmental Change, 23(1), 92-102. (yan zheng , Chinese Academy of Social Sciences (CASS))	reference added
732	60644	8	35	54	0	0	Adaptation efforts will need to consider the increased intensity, frequency, and duration of extreme events due to future climate change, or else such efforts will have limited benefit. (George Backus, Sandia National Laboratories)	That is stated in the paragraph so no change was made.
733	72846	8	36	8	0	0	UNDP's conclusion is flawed by multicollinearity. It is probably not urbanization, but incomes, that is responsible for lower extreme weather mortality. (UNITED STATES OF AMERICA)	agreed - and text changed
734	65571	8	36	40	0	0	what does 'these' refer to here? Unclear (Jo da Silva, Arup)	Text changed to clarify this
735	56666	8	37	3	0	0	ISDR term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	added
736	65572	8	37	3	37	4	the network referred to should be referred to as the Making Cities Resilient campaign network, not the 'Resilient City network'. There is also inconsistency throughout the chapter in referring to UN ISDR / UNISDR / ISDR - the organisation should be referred to consistently throughout. (Jo da Silva, Arup)	Addressed
737	56667	8	37	4	0	0	ICLEI term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	Addressed
738	72847	8	37	7	37	15	This is not necessarily the case in the US - cities that create hazard mitigation plans can access federal emergency relief funds from FEMA (Federal Emergency Management Agency) and cities, like Baltimore, MD, are creating hazard mitigation and adaptation plans. (UNITED STATES OF AMERICA)	we realize that this is a generalization that has exceptions but we lack the space to be able to discuss this
739	65573	8	37	9	0	0	Local governments do not get recognition for the disasters their programmes prevented'; unclear. Suggest rephrase thus 'Local government efforts which lead to reduced disaster impacts are seldom recognised' (Jo da Silva, Arup)	Rephrased
740	56668	8	37	19	0	0	Separate words "Tegucigalpa and..." (Archis Ambulkar, Brinjac Engineering Inc.)	Done
741	81337	8	37	26	0	0	Chapter should coordinate with chapters 10 and 7 to coordinate and cross refer and reduce text in this section. (Monalisa Chatterjee, IPCC WGII TSU)	We have acted on this
742	72848	8	37	26	37	26	This critical section fails to include an assessment of adaptation measures related to coastal defense infrastructure, such as dikes, sea-walls, barriers, erosion and storm surge protections. Having stated in section 8.2.3.4. that SLR is one of the primary impacts it is surprising that the possible responses to it are not assessed. Ports are not even mentioned under 8.3.3.6. adapting transport and telecommunication systems (UNITED STATES OF AMERICA)	additional material included on ports and on sea level rise; issue also raised in new city key risk tables
743	72849	8	37	26	47	22	The chapter is far too long in general. Is it possible to reduce much of this section to a table and cut 9 pages in the process? (UNITED STATES OF AMERICA)	The section has been shortened
744	72850	8	37	34	37	34	The reference Vugrin and Turnquist is missing in the bibliography (UNITED STATES OF AMERICA)	Reference added in the bibliography
745	58041	8	37	43	0	0	Huang 2008 is not identified at References (Marcia Real, Universidade Federal Fluminense)	NO Huang 2008 reference in the text.
746	58042	8	37	53	0	0	Fankhauser 2009 is not identified at References (Marcia Real, Universidade Federal Fluminense)	No Fankhauser 2009 in the text
747	59426	8	38	8	0	22	If adaptation incorporates greenfield sites around urban regions then the biophysical properties of these sites will change and anthropogenic heat will be released. This will exacerbate the urban heat island mentioned. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	OK

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
748	63555	8	38	10	38	10	Please add at the end of the para: "As existing settlements represent large investments of the past into buildings and infrastructures which can't be given up without considerable financial losses, it is of utmost importance to find intelligent strategies and not to expensive measures to adapt as many existing settlements to climate change as possible. In general it might be easier to adapt settlements to rising temperatures than to rising flood risks. Before using valuable Greenfield sites for climate adaptation, the use of existing Brownfield sites, which often have infrastructure available, is to be studied." reference: German Adaptation Strategy to Climate Change (2008), p.49. http://www.bmu.de/service/publikationen/downloads/details/artikel/deutsche-anpassungsstrategie-an-den-klimawandel/?tx_ttnews%5BbackPid%5D=216 (GERMANY)	Key points in this suggestion are in the new draft
749	58043	8	38	14	0	0	Bioregional and London Sustainable Development Comission 2010 is not identified at References (Marcia Real, Universidade Federal Fluminense)	It is no longer quoted in the text
750	58044	8	38	37	0	0	Regmi and Hanaoka 2011 is not identified at References (Marcia Real, Universidade Federal Fluminense)	It is no longer quoted in the text
751	59427	8	38	37	0	0	Discussion on the importance of "green economy" should be enhanced. Successful examples from cities around the world should be provided along with related details. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	Not possible given space constraints; much of the green economy literature is also weak on urban aspects
752	58980	8	38	37	38	39	The sentence does not make sense: "green economy", "green infrastructure" are non-defined concepts. They are vague and political, not scientific, concepts. Besides, the notion of "global ecological and resources limits" can not be defined or measured, and proceeds from a Malthusian assumption, which is ideological, not scientific. (Drieu Godefridi, Cogito)	there is a large literature on global ecological and resource limits that has nothing to do with Malthusian assumptions. See also Rockström, J., W. Steffen, K. Noone, Å. Persson, F.S. Chapin III, E. Lambin, T.M. Lenton, M. Scheffer, C. Folke, and H.J. Schellnhuber, 2009: Planetary boundaries: exploring the safe operating space for humanity. Ecology and Society, 14(2).
753	58045	8	38	45	0	0	Jollands et al.2007 is not identified at References (Marcia Real, Universidade Federal Fluminense)	It is no longer in the text.
754	72851	8	38	50	39	2	In cities of 1m population or more, waste to energy systems can offer significant benefits for both energy production, waste management and environmental protection. OECD cities such as Vienna, Copenhagen, Osaka have implemented waste-energy models, whereby household waste is incinerated for heat production. The authors should consider reflecting this fact - if lessons can be translated to developing cities, as well. (UNITED STATES OF AMERICA)	This section is about adapting the economic base of cities not energy; the waste economy was raised because of the scale of 'green' employment it can imply
755	58046	8	39	8	0	0	Lindgren et al.2009 is not identified at References (Marcia Real, Universidade Federal Fluminense)	NO longer in the text
756	65574	8	39	11	39	13	Worth clarifying that this is the CURRENT situation - Rio has not always been focussed on this hosting issue, and it will not be once these events are over. (Jo da Silva, Arup)	Added "currently" to the argument
757	72852	8	39	11	39	13	Lines 11-13: irrelevant information; delete hat sentence as it sounds like unfair finger pointing at a cohort within the urban society. (UNITED STATES OF AMERICA)	Sentence removed
758	65575	8	39	17	0	0	Unclear what 'They' is referring to (Jo da Silva, Arup)	clarified
759	65576	8	39	19	0	0	inconsistent spelling of 'urbanisation' - elsewhere it appears to be spelt in the American English way (Jo da Silva, Arup)	this is task for copy editor
760	56669	8	39	26	0	0	Provide full stop i.e. (...Spain)." (Archis Ambulkar, Brinjac Engineering Inc.)	done
761	69048	8	39	32	39	33	"Compounding the climate change induced flooding risks are the cities rapid coastal construction, destruction of mangrove swamps". A possible observation is that Mangroves are generally endangered in urban areas because (1) is easy reclaimed ground and (2) in certain climates, mangroves are found responsible for the spread of dengue and malaria. There is however investigation (Thangam & Kathiresan) that sustains that some mangrove vegetation species have larvicidal activity and are actually mosquito repellent. Apparently in such climates, a stagnated water container on a balcony is potentially a bigger exposure to malaria or dengue infections than living near a mangrove composed of the mosquito repellent vegetation species. At the same time, in urban expansion, ground reclamation initiatives should be restricted to minimum. Floodable spaces are likely to be necessary and needed green spaces are for more suitable in the form of mangroves than conventional gardens and parks on specifically landscaping purposed reclaimed ground. (NETHERLANDS)	Importance of protecting mangroves and why appears several times in the text. Issue of mangroves' possible association with dengue and malaria a bit beyond the scope of this chapter

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
762	72853	8	39	37	40	32	Section 8.3.3.2. Need to include here a statement about urban-rural linkages, especially the role of periurban food production and dissemination/use. In cities within many developing and low income countries, such food systems are a major source of household income, especially for the urban poor and the vitality of this sector is an important matter for adaptation and resilience. (UNITED STATES OF AMERICA)	Rural-urban linkages are covered; so too is urban and peri urban agriculture
763	69049	8	39	40	39	40	Montgomery et al. 2004. Reference not listed at the end of chapter. Also, the year is incorrect. The correct reference is: Montgomery, M. R., Stren, R., Cohen, B. and Reed, H. E. (2003). Cities Transformed: Demographic Changes and Its Implications in the Developing World. The National Academics Press. (NETHERLANDS)	ref corrected
764	69050	8	39	43	39	43	Wrong reference year: Cohen and Garrett 2011. The reference year is 2010. (NETHERLANDS)	ref corrected
765	72854	8	39	44	0	0	Replace "food price inflation" with "real increases in long-term food prices or temporary spikes" associated with disasters. (UNITED STATES OF AMERICA)	added
766	63556	8	39	52	39	54	To be added: "...necessitates radical changes in food production, transport chain, storage, processing, distribution, access and to consumers' treatment of food to reduce food waste." (GERMANY)	added
767	80058	8	40	0	42	0	Research needs; The build environment represents extremely valuable assets to society. These assets are threatened by climate changes in many different ways, clustering into 3 areas: (1) Extreme climate incidents calling for preparedness, (2) changes in day-to-day impact on materials and function calling for revised standards and (3) unpredictability and delays calling for preventing precautions in construction processes. We need knowledge and innovation for both existing and new build environment on Ad (1) local climate changes, magnitude/character of extreme climate incidents, principles for resilient and robust build environment as wells as methods for design of 'controlled disasters' including readiness for reconstruct on after extreme climate incidents and rehabilitation of consequential damage. Ad (2a) the impact of climate changes to every aspect of functions in the build environment; e.g. indoor climate in housing, durability of materials and technical solutions, structural safety, geotechnical conditions as wells as moisture and temperature conditions in the building envelopes; especially if they are highly insulated. Ad (2b) design methods, design criteria and decision support systems based on uncertain forecast/scenarios rather than historical statistical data for impact and response of technical systems. Ad (3a) robust construction methods in terms of precaution methods on building site, independency of weather conditions by increased prefabrication and improved quality management systems/cultures taking account of sudden external climate incidents. Ad (3b) risk management and distribution by financial and insurance related instruments; both public and private. Particular cross-sectional research effort is necessary on (a) Societal cost-benefit of spontaneous adaptation, strategic adaptation or combinations hereof, and (b) adaptation and protection of the cultural heritage part of the build environment against climate changes (Niels-Jørgen Aagaard, Danish Building Research Institute)	Key points drawn from this now in 8.3.3.3
768	69051	8	40	6	40	6	Wrong reference year: Tacoli 2003. The correct reference year is 2009. (NETHERLANDS)	The reference year is correct. This is for Tacoli, Cecilia (2003), "The links between urban and rural development", Environment and Urbanization, Vol. 15, No. 1, pages 3-12.
769	59428	8	40	25	40	25	some would also include vertical farming in this list. (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	References for this?
770	69052	8	40	28	40	28	Wrong reference year: Lee-Smith 2011. The reference year is 2010. (NETHERLANDS)	year changed
771	72855	8	40	28	40	29	Cheaper food may imply government price controls or monopsonistic buyers that work to the detriment of farmers and reduce local supply incentives. Or, they may be due to on-budget subsidies that are unsustainable and harmful to fiscal deficits. Cash transfers may not translate into increased purchases of foods or the most nutritious alternatives. (UNITED STATES OF AMERICA)	A bit too specialist for this chapter. Evaluations of cash transfers in brazil have shown a strong impact on reducing malnutrition
772	69053	8	40	30	40	30	Soares et al 2010: Reference missing at end of chapter. Two references found on internet for Soares et al 2010: 1. Soares, S., Ribas, R. P. and Soares, F.V. (2010). 'Targeting and Coverage of the Bolsa Família Programme: Why Knowing What You Measure Is Important In Choosing the Numbers' in IPC Working Paper Series , No. 71. Brasília, IPC. Available at: < http://www.ipc undp.org/pub/IPCWorkingPaper71.pdf >. 2. Soares, S., de Souza, P. H. G. F., Osório, R. G. and Silveira, F. G. (2010) 'Os Impactos do Benefício do Programa Bolsa Família Sobre a Desigualdade e Pobreza' in de Castro, J. A. and Modesto, L. (eds), Bolsa Família 2003 –2010: Avanços e Desafios – Volume 2 . Brasília, Ipea , 27–52. (NETHERLANDS)	reference added

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
773	58047	8	40	31	0	0	What it means at the paragraph beginning? "5: The promotion....." (Marcia Real, Universidade Federal Fluminense)	Cannot see how this relates to this text
774	80054	8	40	37	0	39	Additional areas of importance should be mentioned along with structural integrity; e.g. healthy indoor environment and the importance of maintaining functionality during extreme weather events (Niels-Jørgen Aagaard, Danish Building Research Institute)	Additional material to 8.3.3.3
775	58048	8	40	45	0	0	There is something wrong: The authors are Zhang, Geng and Siu or Zhang, Jeng and Sui as stated at line 7 page 92? (Marcia Real, Universidade Federal Fluminense)	Cannot see how this relates to this text
776	65577	8	40	46	40	47	Can an example of these political challenges be given? (Jo da Silva, Arup)	where is providing good quality housing for low income groups not politically challenging!
777	61199	8	40	47	40	47	Costs of adaptation are also likely to be very high. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	added
778	80055	8	41	1	0	16	Pls see 'Climate and Environment' of City of Copenhagen at http://subsite.kk.dk/sitecore/content/subsites/cityofcopenhagen/subsitefrontpage/livingincopenhagen/climateandenvironment.aspx (Niels-Jørgen Aagaard, Danish Building Research Institute)	not clear what needs to be added from this
779	56670	8	41	18	0	0	Provide space i.e. "heat: More..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
780	57572	8	41	18	41	19	This two studies are good examples - Matzarakis and Ender is published 2010 (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	done
781	63423	8	41	18	41	51	To protect human health under extreme heat, dissemination of mechanical cooling system is inevitable for adaptation measure. At least, making public shelters with cooling system should be planned in city. (Yoshiyuki Shimoda, Osaka University)	This has been added
782	72856	8	41	18	41	51	These two sections are an excellent opportunity to integrate mitigation and adaptation considerations further (UNITED STATES OF AMERICA)	Point is made in text
783	82314	8	41	20	41	23	The word "needed" on line 20 and 23 could be interpreted as prescriptive, and adopting more information-rich wording would be beneficial. (Katharine Mach, IPCC WGII TSU)	have replaced the first needed, the second one seems appropriate
784	56671	8	41	25	0	0	Provide space i.e. roofs). Chicago's..." (Archis Ambulkar, Brinjac Engineering Inc.)	text reworked
785	59430	8	41	36	0	51	In passive cooling extensive discussions are made for the contribution of cool materials (cool roofs and cool pavements) for the reduction of the energy demand as well as for their contribution in the mitigation of urban heat island (see A. Synnefa and M. Santamouris, "Advances on technical, policy and market aspects of cool roof technology in Europe: The Cool Roofs project," Energy and Buildings. 2012. and D. Kolokotsa, C. Diakaki, S. Papantoniou, and A. Vlissidis, "Numerical and experimental analysis of cool roofs application on a laboratory building in Iraklion, Crete, Greece," Energy and Buildings, vol. 55, pp. 85–93, 2012. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	The issue of cool roofs and the different forms these can take is covered in some detail in 8.3.3.7
786	59429	8	41	36	41	51	One should also recognize the limitations of passive cooling in an urban environment. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	some examples of limits are given
787	63424	8	41	36	41	51	It should be noted that some kinds of passive cooling technologies such as natural ventilation and night purge lose its effect when outdoor temperature exceeds thermal comfort level. (Yoshiyuki Shimoda, Osaka University)	need more detail and ref for this
788	56672	8	41	38	0	0	Should it be "Passive Haus" (Archis Ambulkar, Brinjac Engineering Inc.)	text changed
789	59431	8	41	41	41	45	clarify that this refers to "natural" or "hybrid" ventilation and replace "promote cooling" with "enhance cooling" (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	enhanced cooling introduced; the source for this does not clarify whether it is natural or hybrid ventilation
790	56673	8	41	53	0	0	Provide space i.e. "measures: If..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
791	82315	8	42	10	42	10	The word "need" could be interpreted as prescriptive, and adopting more information-rich wording would be beneficial. (Katharine Mach, IPCC WGII TSU)	changed
792	82316	8	42	13	42	13	The word "should" could be interpreted as prescriptive, and rewording would be beneficial. (Katharine Mach, IPCC WGII TSU)	changed
793	81338	8	42	19	0	0	Chapter should coordinate with regional chapters and reduce text in this section. (Monalisa Chatterjee, IPCC WGII TSU)	text has been reduced

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
794	77464	8	42	19	42	48	Suggestions for additions from Willems et al., 2012: o Urban planners and designers of urban drainage infrastructure can use the projected changes in precipitation and other key input to start accounting for the effects of future climate change. The sections of the urban drainage system with insufficient capacity to convey future design flows can be upgraded over the next few decades as part of a program of routine and scheduled replacement and renewal of aging infrastructure. o The large uncertainties that currently exist should not be an argument for delaying climate change impact investigations or adaptation actions. Instead, uncertainties should be accounted for and flexible and sustainable solutions aimed at. An adaptive approach has to be established that both provides inherent flexibility and reversibility and also avoids closing off options. This is different from the traditional engineering approach, which is rather static and is often based on design rules set by engineering communities without much public debate. o This adaptive approach involves active learning, hence recognizing that flexibility is required as understanding increases. (Patrick Willems, KU Leuven)	Key points from this incorporated into 8.3.3.4; some of the points raised here are also covered in 8.3.3.7
795	77465	8	42	19	42	48	Suggestions for additions from Willems & Arnbjerg-Nielsen, 2013: Many highly developed regions already realise that their urban design and planning processes urgently need to incorporate more sustainable approaches. In many cities in the world, the rate of renewal of urban infrastructure is currently low, but this may need to change in the future, in order for communities to cope with deteriorating pipe networks, population growth and climate change. At the same time the changes need to be consistent with an increasing awareness of the environmental stress the end-of-pipe solution puts on the ecosystem of the city. There will be a need for more natural urban drainage approaches and installation of "blue-green" stormwater infrastructure, all of which requires a change in design philosophy. There will be an increasing need to incorporate roads and parks into the active urban drainage system. This may be a new situation within parts of Europe, but this is common practice in tropical regions. It also is fast becoming mainstream practice in Australia, where the concept of rainwater harvesting is a driver for innovation within the urban drainage community. In the presence of climate change induced uncertainty, urban water systems also need to be more resilient and multi-sourced. An adaptive approach has to be established that both provides inherent flexibility and reversibility and also avoids closing off options. This is different from the traditional engineering approach, which is rather static and is often based on design rules set by engineering communities without much public debate and an ever increasing optimization towards achieving the design criteria. Adaptive approaches mainly originate from the ecological sector where high uncertainties in the knowledge of processes and responses are inherent, even beyond the climate change context. In ecology, traditional engineering design approaches are often not applicable because of scientific uncertainties. This also involves challenging modifications to the roles of the water scientist, the water manager and the water engineer, but also of the property owner and user, the insurer, the city and green area planner, the socio-economist and the politician. Adaptive approaches also involves active learning, hence recognizing that flexibility is required as understanding increases and that solutions must be identified that are good for all stakeholders rather than being the optimal solution for just one stakeholder. The higher awareness of future changes hence can be seen as a driver to rethink the concepts of urban drainage. Climate change impacts on precipitation clearly show that a business-as-usual approach is not feasible in many regions of the world. The issues raised here point out that it is in many situations necessary to re-evaluate the entire concept of urban drainage rather than "just" upgrading the technical solutions we have implemented over the last 150 years. It is necessary to establish and maintain hygienic barriers and to build cities that interact with water in a healthy, environmentally friendly, and cost-efficient way. This will in general include the use of sewer systems, but in the future the sewer systems will be part of a greater and more complex infrastructure governing the collection, storage, use, and reuse of water in cities to meet many different objectives that the citizens will all benefit from. Ref: • Willems, P., Arnbjerg-Nielsen, K. (2013), 'Climate change as a driver for urban drainage paradigm change', Water21, February 2013, 23-24 (Patrick Willems, KU Leuven)	As above
796	82317	8	42	36	42	36	Casual usage of "likely" should be avoided, as it is a reserved likelihood term in the guidance for authors. (Katharine Mach, IPCC WGII TSU)	removed
797	72857	8	42	51	44	35	USA EPA has developed a Climate-Smart Water Utilities guidebook that could be referenced here. Here is a link to the guide: http://water.epa.gov/infrastructure/watersecurity/climate/upload/epa817k... (UNITED STATES OF AMERICA)	Link does not work; we looked at the EPA site and found a guidebook with almost this title - and this was referenced as it contains much material of relevance to this topic
798	56674	8	43	2	0	0	Separate words "common place..." (Archis Ambulkar, Brinjac Engineering Inc.)	done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
799	72858	8	43	4	43	17	On mixed approaches that combine supply and demand side management, you may want to look at the literature on the AMA (active management areas) for Phoenix and other cities in Arizona. These are important examples also because they involve very active management of groundwater and groundwater storage as well as extensive demand side measures. Sustainability Indicators for Long-Term Water Supply: Case Studies of Tucson Active Management Area by Doosun Kang, (Department of Civil Engineering and Engineering Mechanics, The University of Arizona, Tucson, AZ 85721, USA. E-mail: doosun74@email.arizona.edu) and Kevin Lansey, (Department of Civil Engineering and Engineering Mechanics, The University of Arizona, Tucson, AZ 85721, USA. E-mail: lansey@email.arizona.edu) Section: Water Distribution System Modeling Issues, pp. 1270-1278, (doi: http://dx.doi.org/10.1061/41203(425)114). See: Arizona Water Policy: Management Innovations in an Urbanizing, Arid Region, edited by Bonnie G. G. Colby, Katharine L. L. Jacobs. See also: Journal of Water and Climate Change Vol 2 No 4 pp 288-312 © IWA Publishing 2011 doi:10.2166/wcc.2011.017 Water-demand management: assessing impacts of climate and other changes on water usage in Central Arizona, Netra B. Chhetri, School of Geographical Sciences and Urban Planning and Consortium for Science, Policy, Outcomes, Arizona State University, PO Box 875302, Tempe, AZ 85287, USA E-mail: netra.chhetri@asu.edu (UNITED STATES OF AMERICA)	Example added to existing text on Phoenix
800	77101	8	43	10	0	0	Early warning systems are particularly important, and further work is needed to obtain accurate, reliable, and timely information that is well-disseminated before the possible heat wave. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	? Does not refer to text; if this is meant to refer to page 40, the point is made here
801	56675	8	43	20	0	0	Separate words "1950s but..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
802	56676	8	43	43	0	0	Provide space i.e. 370). Quito's..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
803	72859	8	43	51	43	51	The authors may want to cite the extensive literature on water harvesting in urban areas of India. This has been going on in locations such as Ahmedabad as part of urban architecture since the early 1990s. (UNITED STATES OF AMERICA)	done
804	59977	8	43	51	43	53	The sentence "In Sydney, new houses are required under a 2004 law to save 40% of reticulated water for use in gardens and toilets and subsidies were available to install household roof tanks" is inaccurate and should be replaced with the following sentence: "Since 2004 in New South Wales, Australia, homeowners have been required to ensure that newly built houses use 40% less potable water than an established benchmark level of consumption, through water-saving measures like water-efficient shower heads, dual-flush toilets, rainwater tanks and grey water treatment systems". Suggest deleting the reference to rainwater tank subsidies as these subsidies ceased in 2011. (AUSTRALIA)	done
805	77466	8	44	5	44	36	Suggestions to add; see previous comment (Patrick Willems, KU Leuven)	done
806	56677	8	44	7	0	0	Separate words "the adaptations..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
807	62760	8	44	7	44	9	Is there already a sufficient high confidence concerning the precipitation changes due to climate change that it can be said that existing drainage systems "will often need to be increased substantially"? After all, assuming that existing drainage systems are well equipped to deal also with (now) seldom occurring precipitation events, an increase (let alone a substantially one) would only be necessary, if climate change causes stronger precipitation events than ever planned for, e.g. out of the range of expected ones so far. A simple increase in frequency (e. g., how often they occur) would not be cause for adaption in that respect. (Heike Hebbinghaus, North-Rhine Westphalian State Agency for Nature, Environment and Consumer Protection)	wording changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
808	72860	8	44	7	44	10	The authors may want to look at the publication on "Catalyzing Climate and Disaster Resilience: Processes for Identifying Tangible and Economically Robust Strategies, Final Report of the Risk to Resilience Study Team, ISET, March 2009. Islamabad case. Also working paper 9 in the Risk to Resilience series has tangible cost benefit information on returns from investments in improving urban solid waste management. (UNITED STATES OF AMERICA)	See range of ISET papers drawn on in text and included in references: Moench, M., S. Tyler, and J. Lage, 2011: Catalyzing urban climate resilience: applying resilience concepts to planning practice in the ACCCRN program (2009–2011) ISET, Boulder, Colorado; Khan, F., D. Mustafa, D. Kull, and The Risk Resilience Team, 2008: Evaluating the Costs and Benefits of Disaster Risk Reduction under Changing Climatic Conditions: Pakistan Case Study. From Risk to Resilience Working Paper No. 7 ProVention Consortium, Institute for Social and Environmental Transition, and ISET-Nepal, Kathmandu, pp. 24; Saroch, E., M. Palaniappan, D. Singh, and L. Seraydarian, 2011: Climate Change and Urbanisation: Building Resilience in the Urban Water Sector - A Case Study of Indore, India, ISET and the Pacific Institute in collaboration with Taru Leading Edge, Boulder, Colorado, pp. 92; Tyler, S., S.O. Reed, K. Macclune, and S. Chopde, 2010: Planning for Urban Climate Resilience: Framework and Examples from the Asian Cities Climate Change Resilience Network (ACCCRN). Climate Resilience in Concept and Practice: ISET Working Paper 3 ISET, Boulder, Colorado, pp. 60.
809	56678	8	44	15	0	0	Separate words "measures and..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
810	56679	8	44	16	0	0	Provide space i.e. ibid). City..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
811	82318	8	44	20	44	20	The phrase "will need" could be interpreted as prescriptive, and rewording the sentence would be preferable. (Katharine Mach, IPCC WGII TSU)	done
812	72861	8	44	27	0	0	The authors should consider adding this to the end: "eg: green infrastructure and ecosystem applications. (UNITED STATES OF AMERICA)	Green infrastructure mentioned in the next paragraph
813	82319	8	44	32	44	36	Citations should be provided for these statements. Additionally, the phrase "will need" on line 34 could be interpreted as prescriptive, and rewording the sentence would be preferable. (Katharine Mach, IPCC WGII TSU)	these are summary statements of what is important but also well known.
814	59432	8	44	39	45	15	The role of smart grids in urban and regional scale is not included in the paragraph. This should be considered an adaptation technique as creates small networks which are more easily manageable. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	this is for chapter 10
815	82320	8	45	1	45	8	The use of "need" on line 1 and line 3, as well as "needed" on line 8, could be interpreted as prescriptive, and alternative wording may be preferable. (Katharine Mach, IPCC WGII TSU)	it says suggests the need in line 1.
816	62618	8	45	4	0	0	This sentence can be replaced as "distributed renewable energy production is an important way to keep the balance of the local energy distribution. " It's positive and feasible in some cases of China's using this technology. See the references: (1)H Ren, W Zhou, K Nakagami, W Gao, Q Wu. (2010).Multi-objective optimization for the operation of distributed energy systems considering economic and environmental aspects. Applied Energy. (2)K Alanne, A Saari. (2006). Distributed energy generation and sustainable development[J]. Renewable and Sustainable Energy Reviews. (3) Moné, C.D.; Chau, D.S; Phelan, P.E.(2001). Economic feasibility of combined heat and power and absorption refrigeration with commercially available gasturbines. Energy Conversion and Management, 42(13),1559~1573. (yan zheng , Chinese Academy of Social Sciences (CASS))	this is too detailed for a summary and is more chapter 10 territory
817	56680	8	45	14	0	0	Provide space i.e. undertaken. There..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
818	71312	8	45	14	45	15	Suggest expanding on the co-benefits. (CANADA)	considered
819	77169	8	45	20	0	0	Para 8.3.3.6. "adapting transport and telecommunication systems" could be completed with a specific reference to the adaptation demands of ports – which will be affected by sea level rise – in order to highlight that construction of new ports, structures that have a very long lifespan, will necessarily have to take climate change into account. (ITALY)	New paragraph on ports introduced

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
820	72862	8	45	20	46	54	This section currently focuses on climate impacts on transportation (the same topic as section 8.2.4.3) rather than on adapting transport systems to climate change. It should be re-worked to focus on adaptation rather than impacts so as to differentiate it from section 8.2.4.3. Also, recommend separating telecommunications into a separate section since it is not clear why transport and telecom are linked together in this section. Here is information that should be included: State and local governments and private infrastructure providers should incorporate climate change into their long-term capital improvement plans, facility designs, maintenance practices, operations, and emergency response plans. Transportation Research Board Special Report 290 http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf There are four broad categories of overall adaptation strategies for transportation: maintain and manage, strengthen and protect, enhance redundancy, and abandon infrastructure in extremely vulnerable areas. For examples of transportation adaptation see pp36-39 of Federal Highway Administration, Climate Change and Extreme Weather Vulnerability Assessment Framework, December 2012. http://www.fhwa.dot.gov/environment/climate_change/adaptation/resources_and_publications/vulnerability_assessment_framework/fhwahep13005.pdf Eligibility of Activities to Adapt To Climate Change and Extreme Weather Events Under the Federal-Aid and Federal Lands Highway Program, FHWA, 2012. This memo clarifies that Federal-aid and Federal Lands highway funding may be used for climate change adaptation work. The memo notes that creating a more resilient transportation system is a priority for the FHWA and provides some examples of eligible uses of Federal-aid and Federal Lands highway funds to consider the potential impacts of climate change and extreme weather events and apply adaptation strategies. http://www.fhwa.dot.gov/federalaid/120924.cfm National Cooperative Highway Research Program, Climate Change, Extreme Weather Events and the Highway System: A Practitioner's Guide. (2-12-13) http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-83(05)_AdaptationGuidanceDoc.pdf . (UNITED STATES OF AMERICA)	Key point about four categories introduced into the text; Some of what is recommended here is too prescriptive
821	65578	8	45	21	0	0	repetition of 'more' ('more or more') (Jo da Silva, Arup)	taken out
822	61200	8	45	24	45	25	There may be lessons learned from the flooding of New York by Hurricane Sandy which could be useful for climate change adaptation, specifically resilience to flooding risks. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Material added
823	72863	8	45	24	45	25	P45 line 24-25. "Many cities depend on underground electric rail systems which may be at considerable risk from flooding including New York and London." This was probably written before Hurricane Sandy. If you are keeping this sentence, it would make sense to mention, "...as evidenced by storm surge flooding from hurricane Sandy that flooded eight under river subway tunnels, severely impacting mobility and economic activity." (UNITED STATES OF AMERICA)	material added
824	65579	8	45	28	45	29	where is London's food 'imported' from? Does this refer to food coming from beyond the city boundaries or beyond the UK in this case? (Jo da Silva, Arup)	Imported implies from other countries
825	56681	8	45	37	0	0	Provide space i.e. "systems: Cities..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
826	56682	8	45	48	0	0	Provide space i.e. "roads: Climate..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
827	62619	8	46	31	46	38	May I suggest to add some examples here for clarifying the (potential) vulnerability of transit system in degveloping countries' urban areas, for example, According to China statistical yearbook 2011, the total length of underground rail system is 1471km distributed in 10 cities by the end of 2010, in which Beijing has 336km, Shanghai has 453km and Guangdong Province has 300km (China Statistical Yearbook 2011) (yan zheng , Chinese Academy of Social Sciences (CASS))	some additional text added about the importance of underground rail for many major cities

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828	72864	8	46	39	46	40	Page 46 lines 39-40. This information is incorrect. Recommend deleting the sentence, "Pumps have been installed throughout the subway system and these helped to cope with severe floods in August 2007 during the morning commute." The pumps have been there for a very very long time and on dry days pump out massive amounts of water that seep into the tunnels. The problem during the August 2007 storm is that extraordinarily heavy downpours (which are becoming more common for the US northeast with climate change) exceeded the pumps' capacity. Metropolitan Transportation Authority, "Appendix 3: Discussion of Storm Impacts, Summary of Findings, prepared by Region II University Transportation Research Center," in August 8, 2007 Storm Report, 2007. http://www.mta.info/mta/pdf/storm_report_2007.pdf Since the 2007 Flood Report: - 25 priority locations addressed - Over 5,300 linear feet of ventilation gratings raised - 30 stair pads installed at entrances - \$89.8 million allocated - Installing check valves to reduce backflow of sewer water into tracks and stations at locations with direct output drain systems Citation: Presentation from NY MTA: http://www.fta.dot.gov/documents/MTA_Ritter.pdf See also: New York State Metropolitan Transportation Authority, MTA Adaptations to Climate Change: A Categorical Imperative, October 2008. http://www.mta.info/sustainability/pdf/Jacob_et%20al_MTA_Adaptation_Final_0309.pdf (UNITED STATES OF AMERICA)	text deleted as recommended
829	72865	8	46	40	0	0	Update with information on NY subway flooding and other impacts of Hurricane Sandy in NY and NJ. (UNITED STATES OF AMERICA)	note added on sandy
830	56683	8	47	2	0	0	Provide space i.e. "Telecommunications: 8..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
831	72866	8	47	7	48	6	This whole section [8.3.3.7] starts off discussing ecosystem-based adaptation [here, EBA]. The current first paragraph [lines 9-22] do not define the term EBA. However, the first paragraph [lines 28-37] in Box 8-1 has an excellent description of this. Consider modifying this 2nd paragraph (remove the "In Durban") and inserting it after the first sentence [into line 10]. Then introduce the Durban box with "Durban has adopted an ecosystem-based adaptation approach as part of its climate adaptation strategy." Follow with the current Line 39 and onward. (UNITED STATES OF AMERICA)	done
832	72867	8	47	9	47	10	Consider adding rural and natural to urban and peri-urban areas or perhaps not distinguishing any of these since EBA can apply to all in support of the urban areas they support either nearby or in the distance. (UNITED STATES OF AMERICA)	We discussed this and felt that it was better to keep urban and peri-urban in
833	72868	8	47	12	47	12	The term "development co-benefits" is introduced and needs a very brief definition here. (UNITED STATES OF AMERICA)	suggested to add this to the glossary.
834	59433	8	48	8	0	0	Please comment green facades also. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	We lacked papers in peer reviewed journals on this
835	59434	8	48	8	0	0	The role of green areas in urban areas needs a more quantitative description (for instance cooling effect of parks as a function of distance from parks, influence of green areas in local circulation patterns, impact on urban fluxes and urban metabolism). See Chrysoulakis, N., Lopes, M., San José, R., Grimmond, C.S.B., Jones, M.B., Magliulo, V., Klostermann, J.E.M., Synnefa, A., Mitraka, Z., Castro, E., González, A., Vogt, R., Vesala, T., Spano, D., Pigeon, G., Freer-Smith, P., Staszewski, T., Hodges, N., Mills, G. and Cartalis, C., 2013. Sustainable urban metabolism as a link between bio-physical sciences and urban planning: the BRIDGE project. Landscape and Urban Planning, 112, 100 - 117. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	text added, needs checking
836	59435	8	48	8	0	0	The relationship of climate change in urban areas to energy demand deserves a detailed description. See Cartalis, C, A. Synodinou, M. Proedrou, A. Tsangrassoulis and M. Santamouris (2001), "Modifications in energy demand in urban areas as a result of climate changes: an assessment for the southeast Mediterranean region", Energy Conversion and Management, 42 (14), 1647–1656. See also several publications of H. Akbari and H. Taha. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	But this is a section on green infrastructure. This comment relevant for chapter 10
837	72869	8	48	8	48	11	Consider modifying: "...transforming the built environment through the use of plants on urban surfaces that will perform photo-remediation..." Consider removing "techniques and by introducing productive landscapes." (UNITED STATES OF AMERICA)	Wording changed to make point clear and more concise
838	56684	8	48	12	0	0	Separate words "address water..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
839	72870	8	48	20	48	20	Add "storage" to storm water [storage] capacity. (UNITED STATES OF AMERICA)	was noted for inclusion but was not incorporated; will be incorporated in final version

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840	72871	8	48	26	48	28	Consider adding the bracketed words in this sentence if it is indeed correct: "This includes city ownership of land [outside the city] that allows crucial... To this has been added an ambitious green infrastructure plan [within the city]..." (UNITED STATES OF AMERICA)	as above
841	72872	8	48	29	0	0	Define green and blue roofs. (UNITED STATES OF AMERICA)	defined the first time they are used in 8.1.5
842	65580	8	48	30	0	0	Why is 'the Program' capitalised? And which program(me) is this referring to? Unclear (Jo da Silva, Arup)	changed
843	69054	8	48	39	48	39	"Barriers to action included short-term planning horizons" probably refers to political office terms. On the other hand models on adaptation suggest short-term plan increments as way to monitor developments and cope with uncertainty (chapter 8, page 31, line 21 TS page 25, line 9). Suggest clarification. (NETHERLANDS)	The barriers to action here are in relation to linkages between spatial planning and biodiversity
844	72873	8	48	43	48	45	It is not clear how a small quarry restoration in Mombasa can have significant climate change adaptation benefits. (UNITED STATES OF AMERICA)	the paper cited explains these and also notes their limitations.
845	56685	8	48	53	0	0	Separate words "forerunners London..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
846	56686	8	49	8	0	0	Provide space i.e. "reduced (TEEB..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
847	59978	8	49	10	42	11	Suggest that clarification and more detail is needed to convey the breadth and depth of the impact in the following sentence: "Burley et al (2011) review of the wetlands of South East Queensland, Australia indicates that adaptations focused on wetland and biodiversity conservation may impact urban forms in coastal areas". (AUSTRALIA)	added
848	72874	8	49	11	49	11	Urban form has a particular meaning and it is not clear that this sentence should be using it because the text does not actually specify how the impacts may affect urban form. If "urban form" is used, it should be defined, at least briefly. Consider removal or clarification. (UNITED STATES OF AMERICA)	urban form is a widely used term to refer to the physical layout of an urban centre
849	56687	8	49	13	0	0	Provide space i.e. "2011). A..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
850	72875	8	49	19	49	21	The assertion that increasing urbanization is necessary or sufficient for climate change adaptation is highly debatable. It is likely to increase carbon emissions. Whether it increases vulnerability depends on the location and quality of the urban development and most of the rapid urbanization in developing countries is unplanned or poorly planned. The authors should consider deleting "It is generally agreed" as this presumes there is consensus on the statement and good evidence to support it. (UNITED STATES OF AMERICA)	There was no intention to assert here that increasing urbanization is necessary for climate change adaptation.. Wording changed to make this clearer
851	72876	8	49	19	49	23	If using the term "urban form" it would greatly benefit from some definition. MBC (UNITED STATES OF AMERICA)	urban form is a widely used term to refer to the physical layout of an urban centre
852	78337	8	49	21	0	11	"But adaptation requires an urban form that favours green infrastructure and requires provision of open space for " I would suggest writing that "adaptation may require an urban form that favours..." as there is no proof that green infrastructures are an absolute requirement for adaptation (Vincent Viguié, CIRED)	done
853	82321	8	49	21	49	21	Use of "requires" could be interpreted as prescriptive, and alternative wording would be preferable. (Katharine Mach, IPCC WGII TSU)	replaced with may require
854	56688	8	49	22	0	0	Separate words "migration and..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
855	78341	8	49	23	0	0	you could add that another dimension of this "density conundrum" comes from the link between high density and exposure to natural hazards, cf. Burby, R. J, A. C Nelson, D. Parker, et J. Handmer. 2001. « Urban Containment Policy and Exposure to Natural Hazards: Is There a Connection? » Journal of Environmental Planning and Management 44 (4): 475–490. and Burby, R.J., E. L Birch, et S. M Wachter. 2006. « The problems of containment and the promise of planning. » In Rebuilding urban places after disaster: lessons from Hurricane Katrina. University of Pennsylvania Press. (Vincent Viguié, CIRED)	With apologies but need to cut length of the chapter meant this could not be added
856	56689	8	49	25	0	0	Separate words "increase energy..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
857	56690	8	49	26	0	0	Provide space i.e. "use, further..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
858	56691	8	49	31	0	0	Provide space i.e. "roofs: Green..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
859	59436	8	49	31	50	28	Clarification for the effectiveness of cool roofs for multi- and single-storey buildings is only used once in the text. It needs to be clarified and elaborated, since it currently appears as not being a factor. (Costas Balaras, Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece) (GREECE)	Sadly the severe constraints on chapter length mean we cannot cover this in detail
860	72877	8	49	31	50	28	Cite Gaffin et al. 2012 in this section. (UNITED STATES OF AMERICA)	added

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
861	56692	8	49	32	0	0	Provide space i.e. "adaptation. Rooftop..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
862	65581	8	49	42	49	47	brackets in this sentence seem to have got confused! (Jo da Silva, Arup)	changed
863	72878	8	49	54	0	0	What is the difference in cost between a green roof and typical alternatives? Is a white roof just a conventional roof painted white or is it made of certain types of materials? (UNITED STATES OF AMERICA)	we found the green roof white roof comparisons focused on performance and not on cost
864	61201	8	50	8	50	15	Modelling study by Bohnenstengel et al. (2011) suggests that very large green fractions would be needed in urban areas before the UHI could be reduced. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	This point is in the text
865	59437	8	50	8	50	20	Description of the role of cool roofs or reflective roofs is incomplete, whereas limited referral is made to excessive research on the field (see Akbari H., S. Menon and A. Rosenfeld, 2009: Global cooling: increasing world-wide urban albedos to offset CO ₂ , 94 (3-4), 275-286.) (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	given the very serious space constraints and the very large literature on cool roofs, we could never be complete or comprehensive on this topic
866	82322	8	50	33	51	12	Citations should be provided in full support of all statements in these paragraphs. (Katharine Mach, IPCC WGII TSU)	As this chapter says, it draws on the citations listed in box 8.1. We cannot meet the space limits if we have to list all these sources here and elsewhere
867	65583	8	50	39	0	0	either refer to 'Red Cross Red Crescent national societies' or the 'Red Cross Red Crescent movement' (Jo da Silva, Arup)	done
868	82323	8	50	46	50	47	Citations are needed for this example. Additionally, casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	As this chapter says, it draws on the citations listed in box 8.1. We cannot meet the space limits if we have to list all these sources here and elsewhere
869	77098	8	50	49	0	0	Include more information here not only on preparedness to respond to extreme events, but increased monitoring of early warning information, investment in receiving and disseminating early warning information, and increased action before disasters happen. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	coverage of early warning and other measures increased
870	77099	8	51	3	0	0	Not only the health risks of Climate Change, but also the short-term health risks in real time. This monitoring is a key aspect of adapting to the changing risks. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	text modified
871	65584	8	51	5	0	0	refer to 'shelters' rather than 'safe centres' (Jo da Silva, Arup)	done
872	77100	8	51	9	0	0	Change to "For cities without a robust early warning system or emergency response network..." (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	done
873	81339	8	51	22	0	0	Chapter should coordinate with chapter 14, 15, and 16 to coordinate and reduce text in this section. (Monalisa Chatterjee, IPCC WGII TSU)	have done so
874	82324	8	51	22	0	0	Section 8.4. In developing the final draft of the chapter, the author team should reduce the length of this chapter by more than 50%. (Katharine Mach, IPCC WGII TSU)	The chapter length has been cut significantly
875	65534	8	52	2	0	0	Section 8.4.1: It is recommended to add reference to the problem that in many respects universal norms of adaptation or resilience currently debated in the literature meet with very different institutional and cultural background or context conditions, potentially causing conflict and prompting the need for adjusting conceptual and normative (!) principles of adaptation and resilience governance -- or at least to critically ask for their transferability in certain contexts. Using a perspective of institutional and organizational theory, Garschagen (2013), [Garschagen, M. (2013). Resilience and Organisational Institutionalism from a Cross-Cultural Perspective – An Exploration based on Urban Climate Change Adaptation in Vietnam. In Natural Hazards, 67(1): 25-46.] for example, shows in detail how the propositions published under the label of general resilience or adaptation governance can be at odds with current management paradigms in certain institutional contexts. For example, Garschagen shows how the normative claims for flexible and open management principles and the notion of self-regulation in adaptation literature is in conflict with top-down, centralistic and control-oriented management approaches currently prevailing in urban management and disaster risk management in Vietnam. This is not to mean that the propositions published in the adaptation/resilience discourse are wrong. However, one needs to acknowledge that they in fact constitute irreconcilable antipodes to existing institutional structures -- hence, making the entry points for institutional change ever more difficult. It is recommended to add reference to this aspect along with the above indicated reference. (Matthias Garschagen, United Nations University)	reviewed, text edited and reference incorporated

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
876	72879	8	52	2	55	18	This section is much too long and repetitive. Suggest to reduce it significantly (UNITED STATES OF AMERICA)	Done
877	65536	8	52	4	52	7	Birkmann et al. 2010 provide a list of criteria for 'adaptive urban governance'. These criteria could provide additional entry points to the discussion in 8.4.1 on urban adaptation governane. [Birkmann, J., Garschagen, M., Kraas, F., and N. Quang (2010). Adaptive Urban Governance: New Challenges for the Second Generation of Urban Adaptation Strategies to Climate Change. In Sustainability Science. vol. 5, no. 2, pp. 185-206.] (Matthias Garschagen, United Nations University)	reviewed and included
878	65535	8	52	22	52	23	Garschagen and Kraas (2011) is suggested as additional reference. The paper discusses in detail the opportunities but also constraints for local urban governments to moderate and implement successful urban climate change adaptation, specifically paying attention to the conditions in transition countries experiencing decentralization. [Garschagen, M., and F. Kraas (2011). Urban Climate Change Adaptation in the Context of Transformation – Lessons Learned from Vietnam. In Zimmermann, K. (ed.): Cities and Adaptation to Climate Change. Springer. Local Sustainability, Volume 1: 131-139.] (Matthias Garschagen, United Nations University)	reference reviewed and included
879	65585	8	52	38	0	0	key interests' of what/whom? Unclear (Jo da Silva, Arup)	term 'interests' changes to 'actors' to prevent this lack of clarity.
880	72880	8	52	41	52	45	Separating groups into 'inner circle' and 'outer circle' is not a useful construct, since interactions in cities are more multidimensional. This should be represented in Figure 8.1 as well. (UNITED STATES OF AMERICA)	agree - edited
881	69055	8	52	45	52	47	The process has been modelled in existing literature and coined as "learning alliances" concerning the development of interpretation among stakeholders (understand why they need to engage with adaptation) and "learning active alliances" concerning developing intervention with stakeholders (initiate measures). Ashley, R., Blanskby, J., Newman, R., Gersonius, B., Poole, A., Lindley, G., Smith, S., Ogden, S., Nowell, R., 2012. Learning and action alliances to build capacity for flood resilience. Journal of Flood Risk Management 5, 14 - 22. Van Herk, S., Zevenbergen, C., Ashley, R., Rijke, J., 2011. Learning and Action Alliances for the integration of flood risk management into urban planning: a new framework from empirical evidence from The Netherlands. Environmental Science & Policy 14, 543 - 554. (NETHERLANDS)	this is an appropriate reference, and is now included.
882	56693	8	53	3	0	0	Separate words "decision making..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
883	72881	8	53	5	53	7	The authors should include examples of local adaptation decisions/local authorities , like land-use planning, zoning, tax incentives, etc. (UNITED STATES OF AMERICA)	agree - edited
884	65586	8	53	7	0	0	Date of Arup/C40 report is 2012 (ammend reference) (Jo da Silva, Arup)	addressed
885	72882	8	53	30	53	32	This sentence's meaning is obscured by jargon. (UNITED STATES OF AMERICA)	text edited for clarity
886	72883	8	53	45	0	0	Unplanned or poorly planned development may not even have short-term net economic benefits. (UNITED STATES OF AMERICA)	the point being made is rather different - on process rather than outcomes.
887	77491	8	54	0	0	8	There should just be a note in this section to mention the need to be careful not to seek to mainstream where the existing practice or procedure is not sustainable (refer to Maria Lemos U of Michigan, from Adaptation Futures conference Arizona 2012). (Caroline Larrivee, Ouranos inc.)	agreed, this point is inferred in several places in the section and has now been made explicitly.
888	56694	8	54	3	0	0	Separate words "accountable leadership..." (Archis Ambulkar, Brinjac Engineering Inc.)	text deleted
889	62550	8	54	3	54	3	No spacing between 'accountable' and 'leadership' in line 3 (INDIA)	text deleted
890	72884	8	54	26	0	0	The authors should consider refelcting the thought that for covering the initial capital investments of the physical infrastructure and not the continuing operation, maintenance, and replacement costs, there can be biasing in the types of investment decisions preferred by recipients of donor support. (UNITED STATES OF AMERICA)	comment now included in this section.
891	65587	8	54	31	0	0	specify which 'key sectors' are being referred to (Jo da Silva, Arup)	List given earlier in document
892	72885	8	54	36	55	18	A dsicussion of sector-based approach to mainstreaming (eg., mainstreaming adaptation into water utility operations) vs. mainstreaming into top-down or cross-sector plans) should be included as options, along with examples of cities that have tried the diffetet approaches. (UNITED STATES OF AMERICA)	discussed now in 8.4.1.2

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
893	65140	8	54	38	55	18	This section would benefit from a discussion about the Australian Resilience Taskforce in Australia. The Australian Resilience Taskforce is an insurance industry organisation that has been developing mechanisms to rate the resilience of individual houses and using those rating to better price premiums. A resilient house will then get a preferable insurance premium and pay less, thus offering an economic incentive for resilience to the householder. This is being scaled up and work is underway with local governments to establish regulatory mechanisms to improve land use planning and improved building standards in risk prone areas. It is important to recognise this progress as most of the references are in the era of 2007 - 2010. The Resilience agenda is moving much quicker than the reporting process can acknowledge, so citing this leading practice is vital. (Tom Davies, Edge Environment)	This is an interesting example but this chapter needed to be cut very substantially and this meant cutting out examples. the tool recommended is fairly standard (similar work in the Caribbean has been active for over a decade) and site is also not peer reviewed literature so not something yet that can be easily considered for inclusion.
894	78343	8	54	40	0	0	you could also cite here Viguie and Hallegatte 2012 (Vincent Vigiú, CIRED)	reference cited
895	82325	8	54	53	54	53	The phrase "imperative of adaptation" here could be interpreted as prescriptive, and alternative wording would be preferable. (Katharine Mach, IPCC WGII TSU)	word taken out
896	65588	8	55	21	0	0	co-benefits' should be defined somewhere in this sub-section (Jo da Silva, Arup)	done
897	72886	8	55	21	55	21	This section should also cover co-benefits of adaptation and mitigation - or perhaps more appropriately, a cross-reference to elsewhere in the WG report that covers this issue. (UNITED STATES OF AMERICA)	done
898	77170	8	55	31	0	0	Para 8.4.1.4. "urban vulnerability and risk assessment practices" could be amended by citing the research work of some international organisations (i.e. ICLEI, 2007, Preparing for climate change, a guidebook for local, regional and state governments, or ICLEI, 2010, Changing climate, Changing communities, Guide and workbook for municipal climate adaptation) aimed at developing methodologies and processes for the preparation of Adaptation Plans. Such methodologies specify the role and sequence of the various passages. (ITALY)	reviewed and included in text.
899	72887	8	55	47	55	47	This section should be significantly shortened (UNITED STATES OF AMERICA)	done
900	77489	8	55	53	53	0	Missing references for Bourque et al. 2007 in References section (Caroline Larrivee, Ouranos inc.)	reference in
901	72888	8	55	54	0	0	The authors should consider deleting 'need to'. (UNITED STATES OF AMERICA)	text deleted
902	72889	8	56	8	56	18	Cite Blake et al. 2011 in this section. (UNITED STATES OF AMERICA)	cited
903	82326	8	56	15	56	15	Use of "requires" could be interpreted as prescriptive, and alternative wording would be preferable. (Katharine Mach, IPCC WGII TSU)	text deleted
904	77490	8	56	20	24	0	Missing reference Bourque, A., A. Musy, C. Larrivé, 2009, Ouranos: un modèle original pour le développement de connaissances menant à l'adaptation aux changements climatiques, in Liaison Énergie Francophonie, # 85, pp. 61-66. in the references section (Caroline Larrivee, Ouranos inc.)	reference added
905	72890	8	56	46	56	48	Cite Mehrotra et al. 2011a for assessments and vulnerability. (UNITED STATES OF AMERICA)	cited in 8.4.1.5
906	72891	8	57	4	0	0	Explain "local Agenda 21s" (UNITED STATES OF AMERICA)	changed to Local Agenda 21 plans
907	62551	8	57	11	57	11	No spacing between 'vulnerable' and 'population' in line 11 (INDIA)	done
908	70764	8	57	11	57	13	The following references can be used to underline the importance of vulnerability mapping: - review of 20 vulnerability assessments in regard to its spatial, temporal and thematic characteristics: Kienberger, S., Blaschke, T., Zaidi, R.Z., (2012). A framework for spatio-temporal scales and concepts from different disciplines: the 'vulnerability cube'. Natural Hazards (online). http://dx.doi.org/10.1007/s11069-012-0513-x - Spatial vulnerability mapping including participatory approaches in rural Mozambique: Kienberger, S., 2012. Spatial modelling of social and economic vulnerability to floods at the district level in Búzi, Mozambique. Natural Hazards 64(3), 2011-2019. http://dx.doi.org/10.1007/s11069-012-0174-9 - Method to model spatial vulnerability under the frame of climate change: Kienberger, S., Lang, S., Zeil, P., 2009. Spatial vulnerability units – expert-based spatial modelling of socio-economic vulnerability in the Salzach catchment, Austria, Nat. Hazards Earth Syst. Sci., 9, 767-778. http://www.nat-hazards-earth-syst-sci.net/9/767/2009/nhess-9-767-2009.html (Stefan Kienberger, University of Salzburg)	Reviewed and first ref is included, the others are too generic or rural focused for inclusion in this chapter.
909	78344	8	57	18	0	0	you could include here a reference to section 17.3.6.4, as this section provides many examples of Multi-Metrics Decisionmaking for Adaptation (Vincent Vigiú, CIRED)	done
910	82327	8	57	20	57	20	Use of "need" here could be interpreted as prescriptive, and alternative wording could be preferable. (Katharine Mach, IPCC WGII TSU)	done
911	59438	8	57	25	57	28	In many cities, indicators are defined (either single or aggregate ones) for monitoring in a dynamic manner and in relation to the prevailing social and economic conditions, risks and resilience capacities. Such discussion is missing. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	the point has been considered and is relevant but given space constraints and the absence of supporting references behind this proposal it has not been brought into the text.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
912	77351	8	57	25	57	31	Relative differences of vulnerability and adaptive capacity are demonstrated at the level of households (Sietz et al. 2012) and global drylands (Sietz et al. 2011). The validation of results has strengthened the credibility and suitability of findings for decision-making pertaining to the reduction of vulnerability. Validation has received particular attention in investigating smallholder vulnerability at the household level in the Peruvian Altiplano (Sietz et al. 2012). REFERENCES: Sietz, D., Lüdeke, MKB. and Walther, C. (2011) Categorisation of typical vulnerability patterns in global drylands. Global Environmental Change 21(2): 431-440. ; Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2012) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Regional Environmental Change 12(3): 489 - 505. (diana sietz, Wageningen University)	the proposed text concerns rural contexts and so while interesting is not the focus of this chapter.
913	72892	8	57	25	57	34	Are these urban-specific tools and studies or of broader applicability (and therefore also should be mentioned in the rural chapter or other chapters)? (UNITED STATES OF AMERICA)	These are tools for which there is a clear urban experience and are an important indicator of the state of the art in urban vulnerability monitoring and management
914	70765	8	57	29	57	34	Kienberger et al 2012 reviewed specifically vulnerability assessment case studies in regard to their consideration of spatial, temporal and thematic characteristics. One recommendation of their work is to consider scale specific issues. The refer to the concept of 'kinds of scale' which need to be in line (intrinsic scale of a phenomena, modelling scale, observational scale, policy scale): Full reference: Kienberger, S., Blaschke, T., Zaidi. R.Z., (2012). A framework for spatio-temporal scales and concepts from different disciplines: the 'vulnerability cube'. Natural Hazards (online). http://dx.doi.org/10.1007/s11069-012-0513-x (Stefan Kienberger, University of Salzburg)	paper reviewed and included in the text with a comment on the importance of methods to work across scales.
915	72893	8	57	47	57	48	Cite ARC3 here as well for assessment of climate change and urban spatial scales. (UNITED STATES OF AMERICA)	added
916	64467	8	58	7	58	7	System of innovation framework could be employed to engage all the key stakeholders (Maruf Sanni, National Centre for Technology Management)	insufficient information is provided in this comment to determine the appropriateness of this framework.
917	62621	8	58	7	58	39	Engaging citizens in urban planning is a good topic for adaptation, if there any cases for developing countries? (yan zheng , Chinese Academy of Social Sciences (CASS))	Agreed and there is substantive discussion of citizen engagement in urban adaptation planning in this section.
918	72894	8	58	9	61	37	This section should be significantly shortened (UNITED STATES OF AMERICA)	done
919	56695	8	59	10	0	0	Provide full stop i.e. (...2011b)." (Archis Ambulkar, Brinjac Engineering Inc.)	done
920	56696	8	59	17	0	0	Not sure if ")" is needed after "homes" in this sentence. (Archis Ambulkar, Brinjac Engineering Inc.)	edit made
921	65589	8	59	39	0	0	original location' - should this be 'homes'? (Jo da Silva, Arup)	text changed
922	58981	8	59	40	59	42	What strenghtens, universally and generally, the asset base of low-income households is first and foremost economical development. It should be mentioned. (Drieu Godefridi, Cogito)	At least in urban contexts, where is the evidence for this? Why is it that nations with rapidly growing economies have seen so little evidence of increased asset base among low income households.
923	65590	8	59	40	59	42	See also IFRC/Arup (2011) Characteristics of a safe and resilient community. Geneva: IFRC (Jo da Silva, Arup)	Reviewed
924	72895	8	59	52	59	53	"A range of studies ...mitigate their vulnerabilities" This statement is not informative because it does not say anything about what the studies have specifically shown. Also, the word "mitigate" should be replaced with "adapt to reduce" since mitigation has other meanings in climate change. (UNITED STATES OF AMERICA)	Text adjusted to address this
925	72896	8	60	2	0	0	No reference provided for statistic. (UNITED STATES OF AMERICA)	Reference given for this
926	65591	8	60	18	60	19	Another key limiting factor for collective action in urban settings is the primary motivation amongst immigrants for living in cities is usually economic. Profit/personal wealth is therefore given a higher priority than community cohesion/collective wellbeing in these environments therefore. Similarly, people who have moved to urban areas have less historic ties to where they currently live, (unlike many residents in rural communities); this also affects the level of community cohesion and collective action. (See Arup (2013) Key determinants of a successful CBDRR programme in Latin America and the Caribbean. London: Arup) (Jo da Silva, Arup)	This is a contested view. There is abundant evidence of the range and depth of community organisation and of local informal social capital ties even amongst recent migrants, who often move to places where relatives or friends already live
927	56697	8	60	21	0	0	DRR term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	DRR now spelt out

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
928	72897	8	60	21	0	0	Spell out acronym DRR (UNITED STATES OF AMERICA)	DRR now spelt out
929	82328	8	60	42	60	42	Use of "requires" could be interpreted as prescriptive, and alternative wording could be preferable. (Katharine Mach, IPCC WGII TSU)	text deleted
930	56698	8	61	2	0	0	Not sure if "]" is needed at the end of this sentence. (Archis Ambulkar, Brinjac Engineering Inc.)	edit made
931	56699	8	61	21	0	0	Remove extra full stop at the end of sentence i.e. "2011)..". (Archis Ambulkar, Brinjac Engineering Inc.)	edit made
932	65141	8	61	40	63	13	A discussion about how insurance industry can collaborate with stakeholders at all levels, building owners, governments and developers for win win outcomes in building resilient buildings. Is missing - refer to Australian Resilience Taskforce. (Tom Davies, Edge Environment)	Ok edit made
933	72898	8	61	40	64	12	There is some good information in the private sector engagement and insurance section. This could be strengthened by some sub-sections, so that information on the different topics could be found more easily. (UNITED STATES OF AMERICA)	We were discouraged from having too many sub sections
934	59979	8	62	7	62	13	The World Economic Forum's 'Global Risks Report 2013' provides more updated figures: http://www.weforum.org/reports/global-risks-2013-eighth-edition (AUSTRALIA)	Have reviewed this and drawn from it in the chapter text (and referenced it)
935	65592	8	62	7	62	19	The key point to make here, which reference to the Aon report suggests, is that the way to make private sector see value in undertaking DRR / adaptation is to speak their language. Talk to businesses about 'ensuring business continuity' rather than 'climate-proofing' and they recognise the importance of risk reduction. This needs to be more explicitly highlighted here. (Jo da Silva, Arup)	Ok language edited to include this point and the reference
936	72899	8	62	51	0	0	Also, transaction costs of selling and administering many small policies for low-income people may be high and the client group may lack ability to pay for insurance. As disaster risks rise, it may be difficult to get companies interested in underwriting the risk. (UNITED STATES OF AMERICA)	Ok fits with para above - edit done
937	72900	8	63	10	63	13	Perhaps an explicit example might be useful here such as Gram Vikas in Orissa, India and its director Joe Madiath on how everyone in the community contributes something to lift the quality of life for everyone in the community. (UNITED STATES OF AMERICA)	Gram Vikas works almost entirely in rural areas
938	59439	8	63	19	0	0	Information provided in Box 8-2 is important. Some expansion may be considered. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	No room to expand this - as this chapter draft has to be cut in length
939	72901	8	63	27	0	0	Microcredit does not reduce risks and generally supports small income-generating activities rather than climate change adaptation. Micro-insurance projects have been pilot scale and donor funded and geared to farmers weather-related crop risk in rural areas. They are unlikely to be replicated on a large scale by the private sector or extended to urban areas. (UNITED STATES OF AMERICA)	Shortened text, which reflects the material in the references cited suggesting that micro-finance could be relevant to urban adaptation
940	72902	8	65	1	65	2	What are the Hyogo Framework and ISDR? (UNITED STATES OF AMERICA)	Hyogo framework explained
941	59440	8	65	30	0	0	Discussion on the need to reform existing University curricula towards mitigation/adaptation of climate change should be included along with specific examples. (Constantinos Cartalis, Environmental Physics, University of Athens, Greece) (GREECE)	edit made
942	72903	8	65	36	65	39	Describe role of UCCRN in creating an assessment process for cities here. (UNITED STATES OF AMERICA)	This initiative is covered elsewhere in chapter
943	56700	8	65	47	0	0	IDRC term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	Ok edit done
944	56701	8	65	48	0	0	"START programme" term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	Ok edit done
945	72904	8	66	5	0	0	Spell out FLACSO (UNITED STATES OF AMERICA)	OK done
946	59441	8	66	11	0	0	The Global Cool Cities Alliance also. V (GREECE)	OK sentence and reference added
947	72905	8	66	34	70	18	Great care needs to be taken with this section as it is veering away from being a science and policy-relevant document and becoming a policy-prescriptive document. Describing existing funding arrangements is OK, calling for new funds or mechanisms is not appropriate. For example, on page 69, line 23-25 it says "...for new dedicated climate change funds." (UNITED STATES OF AMERICA)	OK section was reworked based on comments and new literature/data; relevant language on p 69 was struck as there is limited evidence/data on these dedicated climate funds.
948	62620	8	67	15	67	18	it could be revised as:"...e.g., more than 60% of total fiscal income of local governments in China comes from land sales (Long et al., 2012) which in turn". references : Long, H., Y. Li, Y. Liu, M. Woods, and J. Zou, 2012: Accelerated restructuring in rural China fueled by 'increasing vs. decreasing balance' land-use policy for dealing with hollowed villages. Land Use Policy, 29(1), 11-22. (yan zheng , Chinese Academy of Social Sciences (CASS))	Ok reference added to sentence as proposed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
949	56702	8	67	31	0	0	ICMS term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	No change - ICMS is explained in the box. It is in parenthesis in first instance to show that it refers to the value-added tax being described in the box.
950	72906	8	68	3	0	0	Clean Development Mechanism per se is about over. The authors should refer more generically to international private or public sector funding transfers. CDM was also intended for developed, not developing countries. (UNITED STATES OF AMERICA)	This is still a source of revenue for some places/projects. This statement is historical, referring to a fund in Brazil that was established with revenues from CDM project. This is documented in the cited reference.
951	72907	8	68	9	0	0	Spell out KfW (UNITED STATES OF AMERICA)	Edited to say what KfW is
952	65593	8	68	24	68	25	Yes, the scope at which the humanitarian community is now expected to work during urban disasters is extensive, but terming its response so far as 'impressive' may be slightly overstating past experience; in fact, the community itself is keenly aware that it requires new skills to handle urban disasters. See 'Jo da Silva (2012) From Response to Resilience. London: ICE' on this. (Jo da Silva, Arup)	Ok - text edited so this sentence was removed and this reference added
953	72908	8	68	43	68	45	Has a more recent GFDRR strategy been issued? (UNITED STATES OF AMERICA)	GFDRR 2013 now included in text and in references
954	72909	8	69	11	69	11	There should be an assessment of what multilateral banks are doing in the area of urban resilience and climate change adaptation, given the large amount of funding invested (UNITED STATES OF AMERICA)	Yes agreed and have now included a new reference from the WB - see WB 2013. Also included latest overview from the bilateral donor agencies using OECD DAC CRS database.
955	80128	8	69	11	70	18	Excellent text! (Jochen Harnisch, KfW)	:)
956	56703	8	69	15	0	0	Separate words "funds for..." (Archis Ambulkar, Brinjac Engineering Inc.)	ok done
957	72910	8	69	22	0	0	Spell out SREX (UNITED STATES OF AMERICA)	SREX now referenced property as IPCC, 2012
958	56704	8	69	30	0	0	ODA term is not defined or elaborated in this chapter prior to being used in this sentence (Archis Ambulkar, Brinjac Engineering Inc.)	ODA spelt out in first use in the chapter
959	63557	8	69	46	0	0	The statement is biased, "a donor tendency to control" is necessary given that governments of donor countries are responsible to their parliaments and taxpayers. This aspect should be taken into account. (GERMANY)	Text edited to reflect this point
960	56705	8	70	3	0	0	Provide space i.e. "projects. UN..." (Archis Ambulkar, Brinjac Engineering Inc.)	Ok done
961	72911	8	70	23	70	33	Cite Rosenzweig and Solecki 2010 here for New York. (UNITED STATES OF AMERICA)	Ok reference added
962	82329	8	70	47	70	47	Use of "need" here could be interpreted as prescriptive, and alternative wording could be explored. (Katharine Mach, IPCC WGII TSU)	OK text edited
963	72912	8	71	1	71	15	The authors should consider adding the following text: In conjunction with the National Climate Assessment, the US Global Change Research Program is overseeing a project to develop adaptation indicators. (UNITED STATES OF AMERICA)	OK comment taken on
964	82330	8	71	3	71	4	Use of "needed" and "requires" could be interpreted as prescriptive, and alternative wording could be explored. (Katharine Mach, IPCC WGII TSU)	Partly - removed the word "need" but left the word "requires" as it is justified in the literature cited.
965	59442	8	71	19	0	0	The BOX 8-4 provides a significant contribution to the overall monitoring discussion. The parameters monitored and the procedures used in NY could be a good starting point for other regions. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Agree - No change required
966	65594	8	72	23	0	0	No mention of the need to involve greater private sector action to effectively reduce urban risk/undertake adaptation. This is a key future need; and has already been recognised as an area for focus in the updated framework for DRR which will replace the Hyogo Framework for Action in 2015 (see UNISDR for more details) (Jo da Silva, Arup)	role of private sector much discussed in other sections
967	82331	8	72	23	0	0	Section 8.5. Calibrated uncertainty language should be provided for all key assessment findings presented in this section, in order to indicate the chapter team's degree of certainty in the findings. Additionally, line-of-sight references to specific supporting sections of chapters could be used in addition to citations provided. (Katharine Mach, IPCC WGII TSU)	text from 8.5 has been moved - either into the ES (with calibrated uncertainty language) or into the other sections

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
968	85118	8	72	23	0	0	Section 8.5: This section somewhat confusingly overlaps with the executive summary, and I would recommend that material that overlaps be deleted here, ensuring that the executive summary presents the major conclusions of the chapter. For any material retained, please ensure clear line of sight to other chapter sections where this material is discussed, and consistent usage of calibrated uncertainty language. Conclusions of the chapter should not be presented here without such language. (Michael Mastrandrea, IPCC WGII TSU)	text from 8.5 has been moved - either into the ES (with calibrated uncertainty language) or into the other sections
969	72913	8	72	23	73	18	Another potential conclusion to include: Implementing adaptation strategies in urban areas not only prepares communities for the impacts of climate change, but also helps build resilience to economic shocks (UNITED STATES OF AMERICA)	8.5 now out; this point is made elsewhere
970	82332	8	72	25	0	0	Section 8.5.1. It would be preferable to have a more precise title characterizing the conclusions presented in this section. Additionally, calibrated uncertainty language should be presented to characterize the chapter team's degree of certainty in all key findings. (Katharine Mach, IPCC WGII TSU)	As above
971	57482	8	72	25	77	30	Add "research gaps", and suggest to use "key conclusions and research gaps" not "conclusions" . (Lulu Liu, National Climatic Center, CMA)	8.5 now out; key conclusions and research gaps now in 8.1.5
972	82333	8	72	27	72	27	Use of "need" here is prescriptive, and the sentence should be reworded. (Katharine Mach, IPCC WGII TSU)	8.5 now out; prescriptive language cut
973	58049	8	72	28	0	0	Berger 2003 information is not available (Marcia Real, Universidade Federal Fluminense)	Berger 2003 in
974	56706	8	72	42	0	0	Separate words "resolve in..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
975	72914	8	72	46	73	5	Framing of this conclusion sets up a false conflict. Actions benefiting existing work streams can be, in fact, transformative. Further, stand-alone climate change actions run the risk of being isolated pilots with little effect. The authors should consider deleting use of 'interventionist and reactive'. These can in fact be important pathways to transformation. (UNITED STATES OF AMERICA)	deleted as suggested
976	72915	8	73	7	73	18	Again, use of negative language is not effective here, e.g., 'tool of last resort' or 'end of the pipe'. Such actions by cities incorporating climate change can indeed be the beginning of transformation in actual practice. (UNITED STATES OF AMERICA)	deleted as suggested
977	58050	8	73	8	0	0	Boyd et al 2009 information is not available (Marcia Real, Universidade Federal Fluminense)	Boyd et al 2009 no longer in
978	56707	8	73	18	0	0	Provide space i.e. "systems (IPCC..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
979	82334	8	73	21	0	0	Section 8.5.2. Calibrated uncertainty language should be presented for all key assessment findings in this section, in order to characterize the chapter team's degree of certainty in the findings. (Katharine Mach, IPCC WGII TSU)	8.5 key points moved to ES with calibrated uncertainty
980	72916	8	73	21	77	30	Consider reviewing & citing this publication on barriers to adaptation: Moser, S. C. and Julia Ekstrom. (2010). A framework to diagnose barriers to climate change adaptation, PNAS, 107 (51): 22026-22031, DOI:10.1073/pnas.1007887107 (UNITED STATES OF AMERICA)	We have drawn on other work by S.C. Moser in the chapter
981	56708	8	73	33	0	0	Provide space i.e. "changes. (Lowe..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
982	82335	8	73	36	73	37	It would be helpful to briefly indicate the metrics relevant to "most at risk" here--presumably, for example, loss of life and livelihoods is meant more than monetized economic damages. (Katharine Mach, IPCC WGII TSU)	the text on the criteria used for who is most at risk has been expanded
983	56709	8	73	48	0	0	Provide space i.e. "authorities (with..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
984	56710	8	73	50	0	0	Provide space i.e. "adaptation (Shaw..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
985	56711	8	74	12	0	0	Separate words "often cross..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
986	56712	8	74	13	0	0	Provide spaces i.e. "timelines, rooted..." and "contexts, involve..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
987	56713	8	74	17	0	0	Separate words "are immediate..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
988	56714	8	74	19	0	0	Separate words "vulnerabilities and..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
989	56715	8	74	20	0	0	Separate words "benefits such..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
990	72917	8	74	22	0	0	Add reference to Rosenzweig and Solecki 2010. (UNITED STATES OF AMERICA)	added
991	72918	8	74	27	0	0	First priority should be better adaptation to current weather if that is not already in place. (UNITED STATES OF AMERICA)	agreed
992	72919	8	74	33	74	35	Not clear that density is necessary and sufficient for mitigation. Is there more than 1 study supporting this assertion? (UNITED STATES OF AMERICA)	Issue of how density influences mitigation and adaptation discussed in more detail

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
993	56716	8	74	37	0	0	Separate words "densification and..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
994	59443	8	74	49	0	0	Another contribution can be made by promotion of interdisciplinary research and integrative planning. (Denia Kolokotsa, Environmental Engineering Department, Technical University of Crete, Greece) (GREECE)	Point now in 8.1
995	82336	8	74	49	0	0	Section 8.5.3. Calibrated uncertainty language should be presented to characterize the chapter team's degree of certainty in key findings presented in this section. (Katharine Mach, IPCC WGII TSU)	points from this now in ES with calibrated uncertainty language
996	65595	8	74	49	77	30	Confusing italicised topic headings - if they are 'What Contributes to the Development of Effective Transformative Adaptation Plans?' then 'Poorly Developed Monitoring and Evaluation systems' should be 'Effective Monitoring and Evaluation systems', for example. (Jo da Silva, Arup)	text changed
997	72920	8	74	51	74	53	Which UN population growth scenario and what does the range of UN and other projections show in comparison? (UNITED STATES OF AMERICA)	There are no ranges given by UN Population Division for future urban populations
998	56717	8	75	23	0	0	Provide space i.e. "vulnerability (UN..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
999	56718	8	75	31	0	0	Provide space i.e. "disasters, while..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1000	72921	8	76	5	76	6	The authors should consider deleting the unhelpful and unnecessary quote on bureaucratic black holes and obfuscation (UNITED STATES OF AMERICA)	Cut
1001	78342	8	76	17	0	0	You could add that mainstreaming adaptation policies into municipal planning and land-use management systems also enables to take advantage from synergies between different urban policy goals, as shown in Viguie and Hallegatte 2012 (Vincent Viguie, CIRED)	Point now included in 8.4.1.3
1002	56719	8	76	26	0	0	Separate words "building broader..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1003	56720	8	76	29	0	0	Separate words "continuity as..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1004	56721	8	76	30	0	0	Separate words "or leave..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1005	56722	8	76	34	0	0	Separate words "and an..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1006	72922	8	76	34	76	45	Cite ARC3 and the initiation of the ARC3 assessment process, and the need for it to continue and grow. (UNITED STATES OF AMERICA)	This is heavily quoted and cited in the chapter
1007	56723	8	76	35	0	0	Provide space i.e. "2011): Despite..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1008	56724	8	76	40	0	0	Provide space i.e. "rely more..." (Archis Ambulkar, Brinjac Engineering Inc.)	done
1009	58051	8	76	40	0	0	GDF 2011 information is not available (Marcia Real, Universidade Federal Fluminense)	GDF 2011 no longer cites
1010	72923	8	76	51	0	0	What constitutes substantial spending? Is this relative to local govt budgets or the local economy size? How do these expenditures compare to what is needed? (UNITED STATES OF AMERICA)	no longer in chapter
1011	82337	8	77	12	77	12	Casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	addressed
1012	72924	8	77	16	77	22	The authors should consider adding the role of knowledge providers and the ARC3 process here. (UNITED STATES OF AMERICA)	ARC 3 already heavily quoted and cited
1013	58052	8	77	31	0	0	Reference is incomplete (Marcia Real, Universidade Federal Fluminense)	addressed
1014	81244	8	77	35	0	0	FAQ 8-1 The author team may wish to highlight the tensions in addition to synergies between the DRR and CCA policies. The tone of the answer needs to be policy relevant but not policy prescriptive. (Monalisa Chatterjee, IPCC WGII TSU)	reworded to respond to this
1015	58053	8	77	45	0	0	Hallegatte 2009 information is not available (Marcia Real, Universidade Federal Fluminense)	Reference no longer in the chapter
1016	82338	8	77	45	77	45	Use of "needs" here could be interpreted as prescriptive, and alternative wordings could be explored. (Katharine Mach, IPCC WGII TSU)	wording changed
1017	81246	8	77	49	0	0	FAQ 8-2 There should be some discussion on what is good and bad development. That way the answer can address the maladaptive aspects as well and highlight under what conditions, based on what factors does a development strategy have positive results. (Monalisa Chatterjee, IPCC WGII TSU)	this issue is addressed in the text
1018	72925	8	77	50	78	2	Incorrectly gives the impression that only good development is needed and no special adaptation efforts. (UNITED STATES OF AMERICA)	Text is clear about why good development is not enough
1019	66372	8	78	2	0	0	(after past) :good , appropriate and accommodating are three different types of provisions . So, good need not cover adaptation (Alka Bharat, M.A.National Institute of technology)	wording changed
1020	81247	8	78	4	0	0	FAQ 8-3 An example of extreme event that caused an exodus to urban areas would be helpful. Perhaps the relationship between migration and multiple stressors should be mentioned here. (Monalisa Chatterjee, IPCC WGII TSU)	wording changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1021	82339	8	78	9	78	9	Use of "the need" here could be interpreted as prescriptive, and alternative wordings should be explored. (Katharine Mach, IPCC WGII TSU)	sentence made less prescriptive
1022	66373	8	78	13	0	0	(after these) : level and type of infrastructure is also one of the reason for migration (Alka Bharat, M.A.National Institute of technology)	Agreed but we cannot include full and detailed coverage of this issue with space constraints
1023	81248	8	78	15	0	0	FAQ 8-4 Authors may wish to use response mechanisms terms such as co-benefits, low regrets to connect the answer with other chapters of the report. (Monalisa Chatterjee, IPCC WGII TSU)	Cannot see how this relates to this text
1024	66374	8	78	24	0	0	(after decision) : as there are proved evidences as well as cases suggests climate change impacts are being experienced and should be addressed , now . System should also be prepared to handle extremeties (Alka Bharat, M.A.National Institute of technology)	Point covered in text of chapter
1025	58054	8	79	14	0	0	Hewit 2009 information is not avaiable (Marcia Real, Universidade Federal Fluminense)	reference removed
1026	58055	8	79	23	0	0	Huang 2008 information is not avaiable (Marcia Real, Universidade Federal Fluminense)	reference removed
1027	58056	8	79	45	0	0	IPCC SREX 2012 information is not avaiable (Marcia Real, Universidade Federal Fluminense)	in as IPCC (2012)
1028	58057	8	82	1	0	0	Major at al 2011 information is not avaiable (Marcia Real, Universidade Federal Fluminense)	in now
1029	72926	8	82	31	82	33	Updated version of this paper can be found at http://eau.sagepub.com/content/25/1/139.full.pdf+html (UNITED STATES OF AMERICA)	thanks
1030	57483	8	106	0	0	0	In Table 8-1, the data of population in China are different from offical publicaton (http://www.stats.gov.cn/tjsj/ndsj/2011/html/D0301e.htm). They should be "millions of inhabitants of China should be 62, 144, 302 and 670 in 1950, 1970, 1990 and 2010, respectively"; and corresponding percent of the population in urban areas should be 11.2, 17.4, 26.4 and 49.9 in 1950, 1970, 1990 and 2010, respectively. (Lulu Liu, National Cliamte Center, CMA)	Data in Table 8.1 is drawn from the official UN source for urban populations; for almost all nations, there are other figures that can be given. There is also the complication for China of many changes in how urban areas or populations are defined.
1031	80591	8	106	0	0	0	Table 8-1, Urban population in China reaches 665.57 (about 666) millions in 2010, and occupies 49.68% of total population, instead of "660" and "49.2". (chaozong xia, academy of forest inventory and planning)	See above
1032	81331	8	106	0	0	0	Table 8-1 Instead of a table a spaghetti diagram would be more effective way of showing growth of urban population. (Monalisa Chatterjee, IPCC WGII TSU)	Other comments commended the use of this table
1033	82340	8	107	0	0	0	Table 8-2. Supporting citations should be provided for all entries within this table. (Katharine Mach, IPCC WGII TSU)	References have been added - but this table is a synthesis of key issues drawn from all the sources this chapter draws on
1034	81340	8	107	0	108	0	Table 8-2 Authors may wish to add the sources of these findings in the table as well. (Monalisa Chatterjee, IPCC WGII TSU)	See above
1035	81341	8	109	0	0	0	Table 8-3 It would be more effective if sources that support these findings are provided in a separate column. Moreover, places where these cases are applicable should also be listed. Color coding or other way of depicting different sets of finding is useful and TSU can help in developing this further. (Monalisa Chatterjee, IPCC WGII TSU)	Now colour coded. Like Table 8.2, this is a synthesis of what we know from all the papers on this topic
1036	82341	8	109	0	0	0	Table 8-3. Supporting citations should be provided for all entries within this table. (Katharine Mach, IPCC WGII TSU)	see above
1037	58086	8	109	0	109	0	Table 8-3. Perhaps watershed management and micro-basin management is not appropriate for this table because the table is focusing on Community based adaptation. Watershed management can be community based but normally is following a national/regional or local policy. It is worth highlighting both somewhere. It is already mentioned in the text with examples from cities, perhaps it could be made more evident as watershed management will be the baseline for many urban areas, both because of increasing floods and droughts. (Carmen Lacambra Segura, Grupo La era)	Not appropriate for this table that is focused on urban. Mention is made of watershed management is made elsewhere
1038	72927	8	110	0	0	0	Table 8-4 seems to suggest that little or no funding instruments are available to middle and low income cities and informal settlements that are estimated to number over 1 billion people. Moreover, this seems inconsisistent with the text in places. (UNITED STATES OF AMERICA)	We reviewed the table and could not see any fault with it.
1039	81342	8	110	0	0	0	Table 8-4 Sections from where these conclusions are drawn should be given in a separate column. (Monalisa Chatterjee, IPCC WGII TSU)	again, this is a synthesis drawn from many of the references and from the knowledge of the chapter participants
1040	82342	8	110	0	0	0	Table 8-4. Supporting citations should be provided for all entries within this table. (Katharine Mach, IPCC WGII TSU)	See above

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1041	81343	8	111	0	0	0	Figure 8-1 Chapter 2, 17, 25 have different figures on decision making. Please coordinate and develop this idea further. It would be great to have a consistent synthesized figure on decision making. (Monalisa Chatterjee, IPCC WGII TSU)	this is a figure specifically for urban
1042	81400	8	111	0	113	0	Figure 8-1 and Figure 8-4: Neither of these figures is depicted particularly specific to the "Urban Areas" chapter. The author team may wish to consider developing these figures further to convey the main concept discussed in the chapter. (Yuka Estrada, IPCC WGII TSU)	Figure 8,4 has been dropped, 8.1 improved
1043	81344	8	112	0	0	0	Figure 8-2 Please describe further the measures to cope in the caption. (Monalisa Chatterjee, IPCC WGII TSU)	the text has been made more specific and the title changed
1044	58157	8	112	0	112	0	Figure 8-2 for household adaptaion needs to be repeated by usual engineering drawing format. (Mounir Wahba Labib, Third National Communication (TNC) Project)	this is the original done by the researchers who did the study in Korail
1045	57484	8	113	0	0	0	Delete Figure 8-4 due to no closy relationship with t "urban". (Luliu Liu, National Cliamte Center, CMA)	figure 8,4 has been dropped
1046	81345	8	113	0	0	0	Figure 8-4 Chapter should coordinate with chapter 16 and 20 regarding soft and hard limits and transformational change. (Monalisa Chatterjee, IPCC WGII TSU)	figure has been dropped
1047	81401	8	113	0	0	0	Figure 8-3: What are x- and y-axes showing? (Yuka Estrada, IPCC WGII TSU)	this has been clarified.
1048	59444	8	113	0	113	0	Figure 8-3 The source data for this figure would perhaps make a good map (this chapter has no map at all) (Dimitris Stathakis, Urban and Regional Planning, University of Thessaly, Greece) (GREECE)	we believe the point is made better in the graphic as it is
1049	62758	8	113	0	113	0	For figure 8-3, the unit of the ordinate is missing. The abscissa should be labelled in more detail - I assume, that it is for high per capita income, upper-middle per capita income and so on. That is not clear at first glance. (Heike Hebbinghaus, North-Rhine Westphalian State Agency for Nature, Environment and Consumer Protection)	the 100 is per cent. We have made this clear now
1050	66244	8	134	0	137	0	The chapter clearly points out the gaps and indicates some solutions to fill them in the future. (Leopold Some, Centre National de la Recherche Scientifique Technologique)	thanks