

**Summary of Main Science Advisory Board (SAB) and Public Comments and EPA Responses:
Technical Guidance for Assessing Environmental Justice in Regulatory Analysis (EJTG)**
October 7, 2015

Comments	EPA Response
<i>Topic: Human Health Risk Assessment</i>	
<ul style="list-style-type: none"> • Refer to standard analytical practice for estimating risk currently used by the EPA, thereby eliminating any confusion regarding analytical procedures, and avoiding any tendency for non-technical readers to conclude that risk analysis included as part of an EJ analysis is done differently. • A critical piece of information for decision-makers is the inclusion of information about cumulative impacts in the assessment. However no definition, method, or approach is provided in the EJTG to guide analysts about how to include cumulative impact analysis in their assessments. The SAB emphasizes the importance of including cumulative impacts from multiple stressors (chemical and non-chemical) and conditions and urges the agency to provide clearer guidance. • There is some inconsistency with regard to the use of exposure assessment statistics in section 2.4 compared to other sections in the EJTG. • Traditional HHRA approach may not be suitable for assessing complex environmental justice concerns both technically and as a vehicle to work with and communicate analytical findings to affected communities. If risk assessment continues to be the model of choice for the EPA, then there should be a subsection in the EJTG to present the technical limitations. • EPA should consider adopting a Health Impact Assessment (HIA) or other holistic approach for conducting EJ analysis 	<ul style="list-style-type: none"> • Have taken care to not duplicate other guidance documents on HHRA, instead referencing them as appropriate in Section 5. • Section 4.2.4 and 5.2.2 discuss exposure to multiple stressors and cumulative risk assessment. Refer readers to the Framework for Cumulative Risk Assessment for guidance on planning and undertaking an assessment of cumulative impacts relevant to EJ concerns; reference places where the EPA has taken into account multiple stressors (e.g. mixtures). Section 5 notes that guidance on cumulative risk assessment is still underway at the Agency and that the EJTG will be update when new guidance on this topic becomes available. • This inconsistency has been resolved – section 2.4 no longer contains this discussion. • Section 5.2.4 now discusses the potential challenges of applying HHRA in an EJ context drawn from the literature • Section 5.2.5 has been added to discuss HIA, EPA work and its potential application for EJ analysis.
<i>Topic: Analysis of Potential EJ Concerns</i>	
<ul style="list-style-type: none"> • SAB recommends a table of alternative analytical methods with citations of examples, key assumptions, summary of strengths and weaknesses. • More information on selection comparison populations. • The SAB recommends that the EJTG provide a list of “best geospatial practices” as guidance for analysts. 	<ul style="list-style-type: none"> • Strengths and weaknesses for each analytic approach discussed added to section 6.4. • The discussion of comparison populations has been consolidated into one place in the document (section 6.5.2) and expanded. • Section 6.5.3 discusses how to spatially identify and aggregate effects; expanded discussion of methodological issues that may arise in this context.

<ul style="list-style-type: none"> • Recommends better guidance on the selection of a baseline. • Sensitivity analyses should be emphasized more. They should be done for all key assumptions and should not be limited to demographic data resolution or comparison group definitions. • Present quantitative and qualitative data/methods separately, with examples and more detailed guidance. The EJTG should provide more guidance about incorporating qualitative data into EJ analysis. 	<ul style="list-style-type: none"> • Section 6.2 has been expanded to discuss baseline relative to regulatory alternatives but also emphasizes the importance of consistency with other analyses in baseline assumptions and refers the reader to EPA's Economic Guidelines. • We emphasize the importance of sensitivity analyses throughout the document and call it out in the list of best practices in section 3. • While the guidance maintains a recommendation to use quantitative information when available. Throughout the guidance we made sure qualitative methods were included as an option. Section 6 more explicitly discusses the use of qualitative information.
<p><i>Topic: Best Practices</i></p>	
<ul style="list-style-type: none"> • Include table of best practices; include strengths/ weaknesses of each and appropriateness of using a given method. • Analysts should note which populations are in high-end tail of exposure distribution • Recommends that analysts be instructed to document why an EJ analysis is not feasible or appropriate or relevant. • Recommendations are appropriate and reasonable but too broad. The EJTG should give more specifics on how to apply them. • The recommendation should state that 'Analysts should follow best practices appropriate to the question at hand. If infeasible, explain'; Analysts should explain why recommendations are not followed; EJTG should include a checklist of how and why certain items were or were not addressed in an analysis. • Sensitivity analyses should be emphasized more. They should be done for all key assumptions. Analysts should document why sensitivity analyses were not performed. • Provide best practices for geospatial data. 	<ul style="list-style-type: none"> • Expanded list of best practices in section 3.3. Strengths and weaknesses of analytic approaches are not included here but added to section 6.4. • Added to the list of best practices in section 3.3 • Encourage documentation when a best practice cannot be followed in section 3. • While we did not expand the recommendations to include more prescriptive advice on when and how to apply them, we expanded the list of best practices in section 3.3. • Added overarching EJTG recommendation: "Analysts should follow best practices appropriate to the analytic questions at hand. Text Box 3.1 outlines current best practices that may be helpful for evaluating potential EJ concerns. If it is not feasible for analysts to follow these best practices, they are encouraged to explain why." • Have a best practice that states: When possible, conduct sensitivity analysis for key assumptions or parameters that may affect findings. This is also emphasized and discussed in section 6. • Added a best practice that states: "Carefully select and justify the choice of the geographic unit of analysis and discuss any particular challenges or aggregation issues related to the choice of spatial scale."

	Section 6 also discusses geographic considerations.
Topic: Community Engagement	
<ul style="list-style-type: none"> • Emphasize that state, local, and community-level data and assistance are essential for an accurate EJ analysis. • Analyses and resulting decisions must be transparent and understandable to the general public. • Incorporate public participation practices discussed in published literature 	<ul style="list-style-type: none"> • Emphasize the importance of meaningful engagement in the rulemaking process in section 2.3 • We emphasize the importance of transparency to the public engagement process throughout and state in section 2.3: "if the analysis of potential EJ concerns is explained in plain language, then key assumptions, methods, and results will be more transparent and easier to understand." • We did not do this, but instead summarize key elements of meaningful involvement in the regulatory process from final EJ ADP Guide and emphasize the ways in which meaningful involvement may specifically inform and improve EJ analysis
Topic: Costs	
<ul style="list-style-type: none"> • Clarify what costs EJTG refers to in overall recommendation: "Analysts should consider the distribution of costs associated with implementing a regulatory option from an EJ perspective when appropriate and relevant." • Some SAB members felt that the recommendation to consider costs on a case-by-case basis be removed or that costs be discussed more throughout the EJTG. 	<ul style="list-style-type: none"> • We clarify that we are referring to economic costs, specifically compliance and social costs, not dis-benefits. • The EJTG retains flexibility regarding when to consider costs (still case by case determination) but add information from EPA's Economic Guidelines on this topic as well as describe potential complications of evaluating costs in the EJ context
Topic: Data	
<ul style="list-style-type: none"> • Replace "most recent data" with "highest quality data" • Consider adding an additional statement reinforcing the concept that the use of good data, either quantitative or qualitative, is important. • EJ analyses should serve to highlight data gaps. Explanations of limitations of current data may be helpful to future analyses. Also, EJTG should give better guidance on handling uncertainty (due to data limitations, etc.). 	<ul style="list-style-type: none"> • Have done this throughout the document as appropriate. • Added statements to this effect in sections 2.1, 3.1, and 3.3. • Added statements in section 3 encouraging analysts to highlight inherent limitations and uncertainties that could be useful for identifying and filling data and methodological gaps going forward. Also added a best practice in section 3.3 that states: Discuss key sources of uncertainty or bias in the data (e.g., sample size, using proximity as a surrogate for exposure) and how they may influence results.
Topic: Definitions	
<ul style="list-style-type: none"> • The terms "differential impacts" and 	<ul style="list-style-type: none"> • This discussion now appears in section 2.1.

<p>“disproportionate impacts” should be introduced earlier in the document where the purpose of the guidance is presented.</p> <ul style="list-style-type: none"> • Providing a brief definition or description of the terms “differential” and “disproportionate” impact, including how they are evaluated and by whom, is appropriate to retain because analysts will be required to provide relevant information to decision-makers. However, further detailed discussion and reference to disproportionate impact should be removed from the EJTG to avoid confusion • Clarify that the analyst should leave decisions about disproportionality to decision and policy makers. • Be clear and consistent in use of the terms susceptibility and vulnerability when referring to population and individual differences. These are not interchangeable terms. For example, according to the EPA Framework on Cumulative Risk Assessment, a subpopulation is vulnerable if it is more likely to be adversely affected by a stressor than the general population. There are four basic ways in which a population can be vulnerable: susceptibility/sensitivity, differential exposure, differential preparedness, and differential ability to recover. 	<p>Also expanded the initial sections to 3 (instead of 2) to better highlight key information.</p> <ul style="list-style-type: none"> • We limit discussion of disproportionate impacts and risk to section 2.1 and focus the remainder of the document on evaluating differential impacts. • This is stated explicitly in section 2.1. • We have defined both terms directly in the document (not just in the appendix) and have searched for these terms throughout the document to ensure they are used appropriately.
<p><i>Topic: Hot Spots</i></p>	
<ul style="list-style-type: none"> • In some situations, a hot spot analysis could be useful. While the term “hot spot” can be used in several different ways in spatial analysis, the hot spots of most concern for EJ will be those specific locations with multiple risks. Rather than analyzing large geographic areas for specific risks, an analyst might analyze a few specific locations for multiple risks. 	<ul style="list-style-type: none"> • Added a discussion of identifying and analyzing potential hotspots to section 6.5; identified which analytic methods may be more or less useful for evaluating hotspots in section 6.4; section 3.2 discusses the need to identify the potential for hotspots early on in the analytic process.
<p><i>Topic: Contributors to EJ</i></p>	
<ul style="list-style-type: none"> • The SAB recommends clarifying the section on Contributors and Drives of EJ (previously Section 3). A framework would be helpful. 	<ul style="list-style-type: none"> • This section (now Section 4) has been modified to clarify that its purpose is to highlight factors that can give rise to EJ. As such the title can be modified and the discussion of the literature has been strengthened. In addition we added a conceptual framework.