ITSSD
INSTITUTE FOR TRADE, STANDARDS, AND SUSTAINABLE DEVELOPMENT

June 30, 2014

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Re: New ITSSD FOIA Request Superseding
Withdrawn FOIA Request No. EPA-HQ-2014-004938

Dear Mr. Gottesman,

This new ITSSD FOIA Request is a follow-up to the conference call of May 27, 2014 with Ms. Dana Hyland and Rona Birnbaum of EPA's Office of Air and Radiation and Ms. Quoc Nguyen of EPA's Office of General Counsel.

The purpose of this call was to clarify EPA's confusion concerning the scope and focus of the current ITSSD FOIA Request,[1] notwithstanding the subsequent filing of two ITSSD FOIA Request Clarifications,[2] that we submit, satisfied EPA's concerns.[3]

Consequently, ITSSD hereby files this new FOIA Request to supersede current ITSSD FOIA Request No. EPA-HQ-2014-004938, as supplemented by two ITSSD FOIA Request Clarifications, which are all hereby simultaneously withdrawn (without prejudice).

To further assist EPA national and regional FOIA officials in identifying and locating the requested records, this new ITSSD FOIA Request also includes and incorporates by reference an Annotated Addendum and several Appendices (I-VI) that provide additional relevant and supporting historical and contextual information.

In addition, ITSSD will file under separate cover, by close of business today, a new annotated ITSSD FOIA Fee Waiver Request relating to this new ITSSD FOIA Request. When filed, the new FOIA Fee Waiver Request will supersede ITSSD's current FOIA Fee Waiver Request and Clarification[4] which will then be simultaneously withdrawn (without prejudice).

ITSSD hereby requests and shall look forward to receiving a response to this new FOIA Request and to the accompanying Fee Waiver Request to be filed later today within twenty (20) working days as provided by law. If ITSSD's request is denied in whole or in part, it requests disclosure of segregable portions and a *Vaughn v. Rosen* index justifying the withholding of non-segregable information.

We thank you for your prompt attention to this matter.

Very truly yours,

Lawrence A. Kogan

Lawrence A. Kogan

CEO
ITSSD

Cc: Dana Hyland, EPA Office of Air & Radiation

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ITSSD FOIA Request

I. Scope and Focus of this FOIA Request – Four Categories of EPA Records Requested

This new ITSSD EPA FOIA Request is filed with the clear understanding that EPA's Peer Review Handbook obligates the Agency to release information regarding a peer review if it receives a Freedom of Information Act request, unless such information satisfies the criteria for a FOIA exemption.[5]

This FOIA Request seeks disclosure of all "EPA climate science-related peer review files" (hereinafter referred to as "EPA Peer Review Records" and defined in Section III of this FOIA Request) created, transmitted, stored and/or archived between January 1, 2005 through December 31, 2011, substantiating the specific measures EPA had taken, consistent with the highest and most rigorous standards applicable to highly influential scientific assessments ("HISAs") imposed by the Information Quality Act ("IQA") [6] and the Office of Management and Budget ("OMB")[7] and EPA[8] IQA-implementing guidelines, to ensure the quality, integrity and reliability of all EPA- and third-party- developed and peer reviewed climate science-related assessments and reports upon which the Administrator primarily relied in reaching its 2009 positive Greenhouse Gas ("GHG") Endangerment and Cause or Contribute Findings under Clean Air Act ("CAA") Sec. 202(a)(1).[9]

Clearly, multiple agencies, parties and levels of scientific peer review had been employed by EPA and third parties in vetting the HISAs used to support the EPA Administrator's CAA Section 202(a)(1) Findings. As a result, EPA had been legally required to ensure the IQA compliance of such processes at *four* different levels:

- EPA was obliged to validate the IQA compliance of EPA-developed and reviewed HISAs supporting EPA GHG Endangerment Findings;
- EPA was obliged to validate the IQA compliance of third-parties' peer review of third party-developed HISAs which the EPA Administrator had embraced, adopted and disseminated as its own, in support of EPA's GHG Endangerment Findings;
- EPA was obliged to validate the IQA compliance of an interagency panel's peer review of the EPA-developed Technical Summary Document ("EPA-TSD") which contained a summary *and* synthesis of the twenty-eight individual HISAs designated as "core reference documents" supporting EPA's GHG Endangerment Findings; **and**
- EPA was obliged to validate the IQA compliance of the administrative mechanisms EPA and third parties had employed to ensure that affected persons may seek and obtain correction or reconsideration of scientific information EPA and such third parties had disseminated in violation of OMB Guidelines.

These *four* levels of EPA IQA peer review responsibility roughly translate into *four* different categories of records the comprehensive disclosure of which ITSSD seeks pursuant to this FOIA Request. ITSSD elaborates upon these four categories of requested records below:

1. EPA Records Category #1: *Records focusing on EPA-developed and reviewed HISAs supporting EPA GHG Endangerment Findings*

   a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information regarding specific measures EPA had taken to ensure that EPA-developed and *internally* peer reviewed HISAs supporting the EPA Administrator's 2009 CAA Sec. 202(a)(1) Findings had satisfied U.S. IQA HISA peer review standards;
   b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information regarding specific measures EPA had taken to ensure that EPA-developed and *externally* peer reviewed HISAs supporting the EPA Administrator's 2009 CAA Sec. 202(a)(1) Findings had satisfied U.S. IQA HISA peer review standards; *and*
   c. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information about the specific entities and persons that/who had developed and conducted internal and external peer reviews of EPA-developed HISAs supporting the EPA Administrator's CAA Sec. 202(a)(1) Findings.

2. EPA Records Category #2: *Records focusing on third-parties' review of third party-developed HISAs which the EPA Administrator had embraced, adopted and disseminated as its own, in support of EPA's GHG Endangerment Findings*

   a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information regarding specific measures EPA had taken to ensure that third-party-developed and *internally* peer reviewed HISAs supporting the EPA Administrator's 2009 CAA Sec. 202(a)(1) Findings had satisfied U.S. IQA HISA peer review standards;
   b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information regarding specific measures EPA had taken to ensure that third-party-developed and *externally* peer reviewed HISAs supporting the EPA Administrator's 2009 CAA Sec. 202(a)(1) Findings had satisfied U.S. IQA HISA peer review standards; *and*
   c. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information about the specific entities and persons that/who had developed and conducted internal and external peer reviews of third party-developed HISAs supporting the EPA Administrator's CAA Sec. 202(a)(1) Findings.

3. EPA Records Category #3: *Records focusing on an interagency panel's review of the EPA-developed summary and synthesis of the combined twenty-eight HISAs designated as "core reference documents" supporting EPA's GHG Endangerment Findings*

   a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 and December 31, 2011, disclosing information regarding the

specific measures EPA had taken to ensure that EPA's synthesized combination of the summaries of twenty-eight individual HISAs designated as "core reference documents" by the Technical Summary Document accompanying the EPA Administrator's 2009 CAA Section 202(a)(1) Findings, which also included the EPA Administrator's judgment of endangerment based thereupon, had been properly and rigorously peer reviewed as a separate HISA in satisfaction of U.S. IQA HISA peer review standards.

4. EPA Records Category #4: *Records focusing on EPA and third party administrative mechanisms employed to ensure that affected persons may seek and obtain correction or reconsideration of scientific information EPA and such third parties had disseminated in violation of OMB Guidelines*

   a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, disclosing information substantiating how EPA had ensured and validated, respectively, the IQA compliance of the administrative mechanisms EPA and third parties had employed to ensure that affected persons may seek and obtain correction or reconsideration of scientific information EPA and third parties had disseminated in violation of OMB Guidelines (i.e., the public notice and comment periods provided pursuant to the Administrative Procedure Act to review the draft and final versions of the EPA Administrator's CAA Sec. 202(a)(1) Findings).

II. Specific EPA Peer Review Records Requested Substantiating EPA IQA Compliance

1. EPA Records Category #1: *Records focusing on EPA-developed and reviewed HISAs supporting EPA GHG Endangerment Findings*

This FOIA request seeks specific disclosure of:

All "EPA climate science-related peer review files" (as defined in Section III of this FOIA Request, and hereinafter referred to as "EPA Peer Review Records") created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focused on substantive and procedural peer reviews conducted, managed or overseen by EPA, an EPA-established federal advisory committee(s), and/or an EPA-hired third-party contractor(s) (private parties, other federal agencies or interagency entities) of EPA-developed highly influential scientific assessments ("HISAs"), studies and reports, including those containing EPA and third party-developed computer models and related datasets and specific applications thereof, designated as "core reference documents" and referenced at Table 1.1, p. 6[10] of the EPA-developed Technical Summary Document ("EPA-TSD") supporting the Administrator's 2009 GHG Endangerment and Cause or Contribute ("CAA Section 202(a)(1)") Findings.[11] Such files include *inter alia*:

   a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of:

i. Specific and detail peer review charges, instructions and disclosures issued by EPA to EPA-established federal advisory committee members, EPA-hired third-party contractors, individual peer reviewers and/or peer review panel members, including:
   A. Disclosure of information about EPA's peer reviewer selection process, including credentials, transparency and conflict-of-interest requirements;
   B. Disclosure to prospective and selected peer review panelists of EPA's requirement to prepare and deliver a peer review report describing the nature and scope of their review and their findings and conclusions, and containing the name of each peer reviewer and a brief description of his or her organizational affiliation, credentials and relevant experiences; and
   C. Identification of scientific issues for and in-depth discussion of scientific issues with each peer reviewer and peer review panel;

ii. Peer reviewer comments EPA received from EPA-established federal advisory committees (or committee members), EPA-hired third-party peer review contractors, other federal agencies[12], interagency entities (e.g., U.S. Global Change Research Program/Climate Change Science Program ("USGCRP/CCSP)) and White House Executive Offices (Office of Management and Budget ("OMB"), Office of Science and Technology Policy ("OSTP"), Council on Environmental Quality ("CEQ"), National Economic Council ("NEC")),[13] or other peer reviewers concerning *inter alia*:
   A. Methods and approaches EPA could use to address scientific uncertainties and discuss the precautionary principle or precautionary approach within the individual EPA-developed USGCRP/CCSP climate science-related assessments, reports, studies, etc.;
   B. Methods and approaches EPA, together with other U.S. federal agencies and the USGCRP/CCSP, could use to address scientific uncertainties and discuss the precautionary principle or precautionary approach within the individual EPA and other federal agency-developed USGCRP/CCSP climate science-related assessments, reports, studies, etc. The records herein requested are in addition to those already reflected in Docket ID Nos. EPA-HQ-OAR-2009-0171-0122 and EPA-HQ-OAR-2009-0171-0124 which concern OMB's first and second round (March, April, etc. 2009) comments focusing on EPA's proposed[14] and final endangerment findings (which docket files are currently available to the public);

iii. All EPA responses to peer reviewer comments EPA received from peer reviewers of EPA-developed HISAs referred to in (ii) above;

iv. All peer review reports, in summary and full versions, issued by peer reviewers of EPA-developed HISAs referred to in (ii) above;

v. Public comments received in response to federal register notices that DOC-NOAA had issued on EPA's behalf for the purpose of soliciting public

comments on EPA-developed HISAs (which notices are identified below and/or in the accompanying Addendum);

vi. Records describing EPA interim and final conclusions concerning the IQA compliance of EPA revisions of EPA-developed HISAs consistent with peer reviewer comments.

b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of climate science-related agreements, contracts and other arrangements into which EPA had entered to facilitate the internal and/or external peer review of EPA-developed HISAs;

c. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA-established federal advisory committee, and/or EPA-hired third-party contractor peer reviewer and peer review panel selection processes actually utilized in connection with EPA-developed HISAs, including the criteria EPA, EPA-established federal advisory committees and/or EPA-hired third-party contractors employed to evaluate peer reviewer professional credentials, relevant experience, affiliations and apparent and actual conflicts-of-interest and lack of independence/bias, both during and after the peer reviewer selection process.[15] Such files include *inter alia*:

i. EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor review and testing performed of the adequacy of peer review candidates' prior peer reviews;

ii. EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor peer reviewer independence reviews conducted to assess the eligibility of individual peer reviewer candidates to participate if employed by EPA, or if participating in an EPA-funded program, in whole or in part, and documentation of EPA-employee peer reviewer participation due to special circumstances – i.e., unique or indispensable expertise, or subject participation of agency-funded university and/or consulting firm scientists to close oversight;

iii. EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor peer reviewer (and family) financial and non-financial conflict-of-interest reviews [16] conducted, at the time of peer reviewer selection and also throughout the entire course of peer review work until its completion, to reveal:

A. Significant investments, consulting arrangements, employer affiliations, grants/contracts, potential financial ties to regulated entities, other stakeholders, and regulatory agencies;

B. Work as an expert witness; and/or

C. Consulting arrangements, honoraria and sources of grants and contracts;

iv. EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor determinations concerning panel composition and balance based on the expertise and diversity of subject-relevant scientific perspectives of prospective and actual panel members;

v. EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor measures employed to avoid the repeated use of the same reviewer in multiple assessments;

d. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor procedures actually followed to address situations of actual or perceived conflict-of-interest and lack of impartiality (bias) issues arising before and after panel selection, and to publicly disclose such apparent and actual conflicts of interest;

e. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA, EPA-established federal advisory committee and/or EPA-hired third-party contractor procedures for reviewing and validating the accuracy and clarity of peer review report contents, including:

i. Peer reviewer comments and/or summaries produced consistent with and in satisfaction of specific peer review panel charges;

ii. Rationales supporting individual peer reviewer and peer review panel findings;

iii. EPA responses to individual peer reviewer and peer review panel comments and to peer review panel report findings;

f. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA, EPA-established federal advisory committees and/or EPA third-party contractor safeguards, if any, employed to ensure the verification of peer reviewer credentials and reputations, and the objectivity and credibility of the EPA, EPA-established federal advisory committee and/or EPA third-party contractor process for selecting, managing and monitoring peer reviewers and peer review panels in connection with such assessments, from inception to completion, including:

i. EPA contractual measures requiring EPA-established federal advisory committees and/or EPA-hired third-party contractor peer review managers and overseers to engage in practices that ensure against or otherwise substantially minimize peer reviewer conflicts-of-interest and biases, including:

A. Mandatory vetting of prospective peer review candidates via internet background searches to identify potential conflicts of interest and appearances of bias or partiality;

B. Mandatory use of similar procedures for identifying any changes in selected panelists' conflict of interest status;

C. Mandatory disclosure by peer review candidates of nationality, past and present foreign government affiliation, and service on prior, ongoing and ad hoc agency-established federal advisory committees;

D. Mandatory written recertification from panelists before a peer review panel is convened, stating that their responses to the questionnaire have not changed;

E. Mandatory self-reporting by peer reviewers of any changes that may impact their conflict of interest status or lack of impartiality status at any point in the process;

F. Mandatory EPA oversight of EPA-established federal advisory committees and/or EPA-hired third-party contractor peer review management and oversight practices to ensure they follow EPA peer review contractual guidelines;

g. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA website plans and actual EPA website use to provide the public with an opportunity to participate in EPA's peer review process, including inter alia by means of assuring that peer reviewers receive public comments with respect to such assessments that address significant scientific issues with ample time to consider them in their review;

- Explanation:

This FOIA Request seeks disclosure of EPA Peer Review Records ("EPA climate science-related peer review files", as defined in Section III of this FOIA Request) identified in EPA Records Category #1 above. Disclosure of these records is necessary because many of these records remain publicly unavailable and inaccessible with respect to the HISAs developed by EPA.

The Information Quality Act ("IQA")[17] directed OMB to issue guidelines "that provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies in fulfillment of the purposes and provisions of…the Paperwork Reduction Act."[18] The IQA also required OMB to ensure that such guidelines "*shall* apply to the sharing by Federal agencies of, and access to, information disseminated by Federal agencies" (emphasis added),[19] *and* that such guidelines "*require* that each Federal agency issue [their own] guidelines ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by the agency" (emphasis added).[20]

Detailed OMB IQA-implementing Guidelines[21] have interpreted this directive as requiring U.S. federal agencies, *including EPA*, to issue their own guidelines that ensure the peer review of all scientific information[22] it uses and disseminates to the public that qualifies as "influential scientific information" (ISI)[23] or "highly influential scientific assessments" (HISAs),[24] [25] [26] particularly if EPA may use such scientific information as the basis for regulatory action. HISAs are subject to a higher and more robust level of peer review, conflict-of-interest, independence/bias, balance and transparency standards than is ISI.[27] OMB's IQA Guidelines, which were issued through the Administrative Procedure Act's notice and comment process,[28] authoritatively interpret the IQA. EPA's IQA Guidelines, Peer Review Handbook and Peer Review Policy largely mirror this distinction.[29]

Section III.2 of OMB's IQA Guidelines, in particular, provides that federal agencies, *including EPA*,

> "*shall* develop a process for reviewing the quality (including the objectivity, utility, and integrity) of information *before* it is disseminated. Agencies *shall treat information quality* as *integral to every step* of an agency's development of information, including creation, collection, maintenance, and dissemination. This process *shall enable the agency to substantiate* the quality of the information it has disseminated through documentation or other means appropriate to the information" (emphasis added).[30]

OMB has interpreted the objectivity of disseminated scientific and economic information as an indispensable element of data quality that EPA is required to substantiate. Section V.3.b of OMB's IQA Guidelines defines "objectivity" as

> "involv[ing] a focus on ensuring accurate, reliable, and unbiased information. In a scientific, financial, or statistical context, the original and supporting data *shall* be generated, and the analytic results *shall* be developed, using sound statistical and research methods" (emphasis added).[31]

According to Section V.3.b.i of the OMB IQA Guidelines, while an agency's ostensible peer review of scientific or technical information prior to its dissemination shall be presumed to fulfill the data quality element of objectivity, such presumption may be rebutted with persuasive contrary evidence.

> "If data and analytic results have been subjected to formal, independent, external peer review, the information *may generally be presumed* to be of acceptable objectivity. However, *this presumption is rebuttable* based on a persuasive showing by the petitioner in a particular instance" (emphasis added).[32]

Arguably, such presumption may be rebutted if, for example, it can be demonstrated that the peer review an agency, its contractors or other third party actually performed of HISAs developed or otherwise endorsed by that agency as its own was compromised.

Furthermore, Section V.3.b.ii of the OMB IQA Guidelines requires agencies to ensure public transparency of the data and methods supporting disseminated influential scientific or technical information.

> "If an agency is responsible for disseminating influential scientific, financial, or statistical information, agency guidelines shall include a high degree of transparency about data and methods to facilitate the reproducibility of such information by qualified third parties."[33]

Yet, not all disseminated data must be made publicly transparent.

> [While] "reproducibility of data is an indication of transparency about research design and methods…all disseminated data [need not] be subjected to a reproducibility requirements[; rather, a]gencies may identify, in consultation with the scientific and

> technical communities, those particular types of data that can practicabl[y] be subjected to a reproducibility requirement, given ethical, feasibility, or confidentiality constraints."[34]

Nevertheless,

> "[w]ith regard to *analytic results* [related to data and methods from either a single study or from multiple studies], agency guidelines *shall* generally require sufficient transparency about data and methods that an independent reanalysis could be undertaken by a qualified member of the public" (emphasis added).[35]

While other compelling interests, such as privacy, trade secrets, other intellectual property and confidentiality protections, override this transparency requirement,[36]

> "Agency guidelines *shall*, however, *in all cases*, require a disclosure of the specific data sources that have been used and *the specific quantitative methods and assumptions* that have been employed" (emphasis added).[37]

OMB's Peer Review Bulletin[38] provides additional guidelines that further interpret the IQA. Since OMB's Peer Review Bulletin, like OMB's IQA Guidelines, was issued through the Administrative Procedure Act's notice and comment process,[39] it, too, authoritatively interprets the IQA.[40]

The Preamble of OMB's Peer Review Bulletin reaffirms the importance of peer review to ensure the quality of scientific and technical information that federal agencies publicly disseminate.

> "Peer review is *one of the important procedures* used to ensure that the quality of published information meets the standards of the scientific and technical community. It is a form of deliberation involving an exchange of judgments about the appropriateness of methods [,assumptions, modeling parameters, etc.] and the strength of the author's inferences. Peer review involves the review of a draft product for quality by specialists in the field *who were not involved in producing the draft*" (emphasis added).[41]

The Preamble of OMB's Peer Review Bulletin also describes the nature and purpose of a peer review report and the integral role that it serves in the IQA's data quality framework.

> The *peer reviewer's report* is an evaluation or critique that is used by the authors of the draft to improve the product. *Peer review typically evaluates* the clarity of hypotheses, the validity of the research design, the quality of data collection procedures, the robustness of the methods employed, the appropriateness of the methods for the hypotheses being tested, the extent to which the conclusions follow from the analysis, and the strengths and limitations of the overall product" (emphasis added).[42]

Furthermore, Section II.B of the OMB Peer Review Bulletin prescribes the following requirements for creating and publishing peer review reports which specific records fall within the scope of the records identified in Records Category #1 above.

> "The agency -- or entity managing the peer review -- *shall* instruct peer reviewers to prepare a report that describes the nature of their review and their findings and conclusions. The peer review report *shall* either (a) include a verbatim copy of each reviewer's comments (either with or without specific attributions) or (b) represent the views of the group as a whole, including any disparate and dissenting views. The agency *shall* disclose the names of the reviewers and their organizational affiliations in the report. Reviewers shall be notified in advance regarding the extent of disclosure and attribution planned by the agency. The agency *shall* disseminate the final peer review report on the agency's website along with all materials related to the peer review (any charge statement, the peer review report, and any agency response). The peer review report *shall* be discussed in the preamble to any related rulemaking and included in the administrative record for any related agency action" (emphasis added).[43]

Section III.6 of the OMB Peer Review Bulletin subjects all agencies not only to these records requirements, but also to the following additional peer review records requirements:

> "In addition to the requirements specified in II(5), which *shall* apply to all reviews conducted under Section III, the peer review report *shall* include the charge to the reviewers and a short paragraph on both the credentials and relevant experiences of each peer reviewer. The agency *shall* prepare a written response to the peer review report explaining (a) the agency's agreement or disagreement with the views expressed in the report, (b) the actions the agency has undertaken or will undertake in response to the report, and (c) the reasons the agency believes those actions satisfy the key concerns stated in the report (if applicable). The agency *shall* disseminate its response to the peer review report on the agency's website with the related material specified in Section II(5)" (emphasis added).[44]

Unfortunately, EPA has failed to publicly disclose how it substantiated its compliance with any of these IQA peer review objectivity, transparency and records requirements.

Moreover, Section III.3.a of OMB's Peer Review Bulletin sets forth certain requirements relating to the review and selection of prospective peer reviewers and the establishment of peer review panels with respect to HISAs that must be made publicly available and accessible. For example,

> "[p]eer reviewers *shall* be selected based on expertise, experience and skills, including specialists from multiple disciplines, as necessary. The group of reviewers *shall* be sufficiently broad and diverse to fairly represent the relevant scientific and technical perspectives and fields of knowledge" (emphasis added).[45]

EPA has not publicly substantiated how it and the federal advisory committees it established satisfied this IQA requirement.

In addition, Section III.3.b of OMB's Peer Review Bulletin sets forth standards to ensure peer reviewer independence and to prevent conflicts-of-interest:

> "[t]he agency – or the entity selecting the peer reviewers – *shall* (i) ensure that those reviewers serving as federal employees (including special government employees) comply with applicable federal ethics requirements; (ii) in selecting peer reviewers who are not government employees, adopt or adapt the National Academy of Sciences' *policy for committee selection with respect to evaluating the potential for conflicts* (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income). For scientific assessments relevant to specific regulations, a reviewer's financial ties *to* regulated entities (e.g., businesses), other stakeholders, and the agency *shall* be examined" (emphasis added).[46]

EPA also has not publicly substantiated how it and the federal advisory committees it established satisfied these IQA requirements.

According to Sections II.3.c, III.2 and II.3.d, the OMB Peer Review Bulletin, not only[47] must Agencies ensure that "peer reviewers *shall not* have participated in development of the work product" (emphasis added),[48] but Agencies also "*shall* avoid repeated use of the same reviewer on multiple assessments unless his or her participation is essential and cannot be obtained elsewhere" (emphasis added).[49] EPA also has not publicly substantiated how it and the federal advisory committees it established satisfied this IQA requirement.

Indeed, Section III.3.c of the OMB Peer Review Bulletin provides that, "the agency -- or entity selecting the reviewers -- *shall* bar participation of scientists employed by the sponsoring agency unless the reviewer is employed only for the purpose of conducting the peer review (i.e., special government employees)."[50] EPA also has not publicly substantiated how it and the federal advisory committees it established satisfied this IQA requirement, in general, or by qualifying for the narrow exception available.[51]

Section III.4 of the OMB Peer Review Bulletin also requires that,

> "[t]he agency -- or entity managing the peer review -- *shall* provide the reviewers with sufficient information -- including background information about key studies or models -- to enable them to understand the data, analytic procedures, and assumptions used to support the key findings or conclusions of the draft assessment" (emphasis added).[52]

Unfortunately, EPA has not publicly substantiated how it and the federal advisory committees it established satisfied this IQA transparency requirement.

Lastly, Section III.5 of the OMB Peer Review Bulletin provides that

> "Whenever feasible and appropriate, the agency *shall* make the draft scientific assessment available to the public for comment at the same time it is submitted for peer review (or during the peer review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the peer reviewers by interested members of the public. When employing a public comment process as part of the peer review, the agency *shall*, whenever practical, provide peer reviewers with access to public comments that address significant scientific or technical issues. To ensure that public participation does not unduly delay agency activities, the agency shall clearly specify time limits for public participation throughout the peer review process" (emphasis added).[53]

Unfortunately, EPA has failed to publicly disclose how it and the federal advisory committees it established substantiated the Agency's compliance with these IQA requirements.

This requirement, in effect, also serves to highlight, with respect to the Agency's evaluation of draft scientific assessments, the important distinction between the process of scientific peer review and the process of public review and comment discussed in greater detail in the Explanation following EPA Records Category #4 below.

As noted above, EPA has issued its own IQA Guidelines,[54] Peer Review Handbook[55] and Peer Review Policy[56] in an effort to implement the IQA's mandates *as interpreted by OMB*.

Section 2.5.3 of EPA's Peer Review Handbook prescribes the types of peer review records that the Agency must create and retain, which fall within the scope of the records identified in Records Category #1 above. For example, it provides that,

> "[t]he peer review record should include all materials considered by the individual peer reviewers, the peer review report, and other input. *Such materials include, at a minimum*: a) *The draft work product submitted for peer review*; b) *Materials and information* (including the charge) *given to the peer reviewers*; c) *The peer review report, which summarizes the peer review findings and contains information about the peer reviewers* (such as reviewers' names, affiliations, and a statement concerning potential conflicts and their resolution, if applicable); d) Logistical information about conduct of the peer review (such as times and locations meetings); e) *A memorandum, or other written record, approved by the Decision Maker, responding to the peer review comments specifying acceptance or, where thought appropriate, rebuttal and non-acceptance. The Office should prepare a written response to the peer review report addressing each comment*; f) The final work product" (underlined emphasis in original; italicized emphasis added).[57]

Section 2.5.4 of EPA's Peer Review Handbook requires EPA to:

> "post or provide a link to the peer review reports on the Science Inventory website (http://cfpub.epa.gov/si/) along with all materials related to the peer review (charge statement and Agency response). The credibility of the final work product is likely to be enhanced if the public understands how the Agency addressed the specific concerns raised by the peer reviewers…*For highly influential scientific assessments, the OMB Bulletin explicitly calls for* Offices to prepare a written response to the peer review report explaining (a) the agency's agreement or disagreement with the views expressed in the report, (b) the actions that have or will be und Office believes those actions satisfy any key concerns or recommendations in the report. *These responses* ***will*** *also be posted on the Science Inventory website*" (emphasis added).[58]

And, Section 2.5.5 of EPA's Peer Review Handbook provides that,

> "If EPA relies on influential scientific information *or a highly influential scientific assessment* to support a regulatory action, the preamble should include a discussion of how EPA implemented provisions *of the OMB Bulletin*" (emphasis added).[59]

Unfortunately, EPA has, to date, apparently failed to publicly disclose this information and to substantiate how it satisfied these IQA requirements. This strongly suggests EPA believes that the Administrator is vested with more discretion in deciding whether to produce these records than the OMB IQA Guidelines and Peer Review Bulletin provides. Indeed, it is EPA's view, generally, that "[t]he IQA does not impose its own standard of 'quality' on agency information; instead, it requires only that an agency 'issue guidelines' ensuring data quality."[60] Consequently, EPA has argued that, it is EPA's consistency with its own IQA-implementing guidelines which "describe thorough mechanisms under which the Agency may review data quality", and not with OMB's IQA-implementing guidelines, that should be measured.[61]

2. EPA Records Category #2: *Records focusing on third parties' peer review of third-party-developed HISAs which the EPA Administrator had embraced, adopted and disseminated as its own, in support of EPA's GHG Endangerment Findings*

All EPA climate science-related peer review files (as defined in Section III of this FOIA Request, and hereinafter referred to as "EPA Peer Review Records") created, transmitted, stored and/or archived between January 1, 2005 through December 31, 2011, focused on EPA's validation of the IQA compliance of the substantive and procedural peer reviews conducted, managed or overseen by non-EPA third parties, including other federal agencies and agency-established federal advisory committees, agency-hired third-party peer review contractors (e.g., National Academies of Science/National Research Council hired by DOC-NOAA), and interagency entities (e.g., USGCRP/CCSP), *of* non-EPA third-party-developed highly influential scientific assessments ("HISAs"), reports and studies (e.g., HISAs, etc. developed by other federal agencies and agency-established federal advisory committees, interagency entities (e.g., USGCRP/CCSP), the IPCC, and the National Academies of Science/National Research Council), including those containing third party-developed computer models and related datasets and specific applications thereof, designated as "core reference documents" and referenced at Table 1.1, p. 6 of the EPA-developed Technical

Summary Document ("EPA-TSD") supporting the Administrator's 2009 GHG Endangerment and Cause or Contribute ("CAA Section 202(a)(1)") Findings. Such files include *inter alia*:

a. All EPA peer review records created, transmitted, stored and/or archived between January 1, 2005 and December 31, 2011, validating the IQA compliance, with respect to each non-EPA third-party-developed HISA supporting the EPA Administrator's CAA Section 202(a)(1) Findings, of:

   i. Specific and detail peer review charges, instructions and disclosures issued by HISA-developing federal agencies, the IPCC and the NAS/NRC to federal agency-established federal advisory committees, federal agency-hired third-party peer review contractors (e.g., peer review charges issued by DOC-NOAA to its contractor, NAS/NRC, and the latter's established committee of peer reviewers of DOC-NOAA-developed HISAs), including:

      A. Disclosure of information about the third party's peer reviewer selection process, including credentials, transparency and conflict-of-interest requirements;

      B. Disclosure to prospective and selected peer review panelists of the third party's requirement to prepare and deliver a peer review report describing the nature and scope of their review and their findings and conclusions, and containing the name of each peer reviewer and a brief description of his or her organizational affiliation, credentials and relevant experiences; and

      C. Identification of scientific issues for and in-depth discussion of scientific issues with each peer reviewer and peer review panel;

   ii. Peer reviewer comments each third-party HISA-developer (e.g., federal agencies, IPCC, NAS/NRC) received from agency-established federal advisory committee members, hired third-party peer review contractors, interagency entities (e.g., U.S. Global Change Research Program/Climate Change Science Program ("USGCRP/CCSP)) and White House Executive Offices (Office of Management and Budget ("OMB"), Office of Science and Technology Policy ("OSTP"), Council on Environmental Quality ("CEQ), National Economic Council ("NEC"), and other peer review panels, concerning *inter alia*:

      A. Methods and approaches each third-party could use to address scientific uncertainties and discuss the precautionary principle or precautionary approach within such third party-developed HISAs;

   iii. Each third-party's (e.g., other federal agency, IPCC, NAS/NRC) responses to the peer reviewer comments received with respect to third-party-developed HISAs from the peer reviewers identified in (ii) above;

   iv. All peer review reports, in summary and full versions, issued to third parties by the peer reviewers identified in (ii) above;

   v. Inclusions within third party-developed HISAs of public comments received in response to federal register notices issued for the purpose of soliciting public comments on third party-developed HISAs;

vi. Interim and final conclusions regarding the consistency of third party revisions to third party-developed HISAs with peer reviewer comments;

b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, validating the IQA compliance of all climate science-related agreements, contracts and other arrangements into which third party HISA-developers had entered to facilitate the internal and/or external peer review of third party-developed HISAs;

c. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on validation of IQA compliance of third party federal advisory committee, and/or third-party hired contractor peer reviewer and peer review panel selection processes actually utilized in connection with the peer review of third party-developed HISAs, including criteria employed to evaluate peer reviewer professional credentials, relevant experience, affiliations and apparent and actual conflicts-of-interest and lack of independence/bias, both during and after the peer reviewer selection process.[62] Such files include *inter alia*:

i. Third party, third party-established federal advisory committee and/or third party-hired contractor review and testing performed of the adequacy of peer review candidates' prior peer reviews;

ii. Third party, third party-established federal advisory committee and/or third party-hired contractor peer reviewer independence reviews conducted to assess the eligibility of individual peer reviewer candidates to participate if employed by that same third party (e.g., DOC-NOAA), or if participating in a third party-funded climate science research program (e.g, DOC-NOAA-funded climate science research programs), and documentation of third party (e.g., federal agency) employee peer reviewer participation due to special circumstances – i.e., unique or indispensable expertise, or subject participation of agency-funded university and/or consulting firm scientists to close oversight;

iii. Third party, third party-established federal advisory committee and/or third party-hired peer review contractor peer reviewer (and family) financial and non-financial conflict-of-interest reviews[63] conducted, at the time of peer reviewer selection and also throughout the entire course of peer review work until its completion, to reveal:

A. Significant investments, consulting arrangements, employer affiliations, grants/contracts, potential financial ties to regulated entities, other stakeholders, and regulatory agencies;

B. Work as an expert witness; and/or

C. Consulting arrangements, honoraria and sources of grants and contracts;

d. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on validation of IQA compliance of third party, third party-established federal advisory committee and/or third party-hired peer reviewer contractor procedures actually followed to address situations of actual or perceived conflict-of-interest and lack of impartiality (bias)

issues arising before and after panel selection, and to publicly disclose such apparent and actual conflicts of interest;

e. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on validation of IQA compliance of third party, third party-established federal advisory committee and/or third party-hired contractor procedures for reviewing and validate the accuracy and clarity of peer review report contents, including:
   i. Peer reviewer comments and/or summaries produced consistent with and in satisfaction of specific peer review panel charges;
   ii. Rationales supporting individual peer reviewer and peer review panel findings;
   iii. Third party responses to individual peer reviewer and peer review panel comments and to peer review panel report findings;

f. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on validation of IQA compliance of third party, third party-established federal advisory committees and/or third party-hired contractor safeguards employed to ensure the verification of peer reviewer credentials and reputations, and the objectivity and credibility of the third party, third party-established federal advisory committee and/or third-party hired contractor process for selecting, managing and monitoring peer reviewers and peer review panels in connection with third party-developed HISAs, from inception to completion, including:
   i. Third party contractual measures requiring third party-established federal advisory committees and/or third party-hired peer review contractors to engage in practices that ensure against or otherwise substantially minimize potential peer reviewer conflicts-of-interest and biases, including:
      A. Mandatory vetting of prospective peer review candidates via internet background searches to identify potential conflicts of interest and appearances of bias or partiality;
      B. Mandatory use of similar procedures for identifying any changes in selected panelists' conflict of interest status;
      C. Mandatory disclosure by peer review candidates of nationality, past and present foreign government affiliation, and service on prior, ongoing and ad hoc agency-established federal advisory committees;
      D. Mandatory written recertification from panelists before a peer review panel is convened, stating that their responses to the questionnaire have not changed;
      E. Mandatory self-reporting by peer reviewers of any changes that may impact their conflict of interest status or lack of impartiality status at any point in the process;
      F. Mandatory third party oversight of third party-established federal advisory committees and/or third party-hired peer review contractor peer review management and oversight practices to ensure they follow third party peer review contractual guidelines;

g. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on validation of IQA compliance of third party website plans and actual third party website use to provide the public with an opportunity to participate in such third party's peer review process, including *inter alia* by means of assuring that peer reviewers receive public comments with respect to such assessments that address significant scientific issues with ample time to consider them in their review;

h. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on interagency climate science-related agreements entered into between EPA and other federal agencies or between EPA and interagency entities, such as the U.S. Global Change Research Program ("USGCRP"), for the purpose of securing such other parties' climate science for use by EPA,[64] subject to EPA's compliance with the Information Quality Act, pursuant to:

   i. EPA's cooperation authority under Clean Water Act Section 104(b)(2) and/or Clean Air Act Section 103(b)(2);[65]

   ii. Economy Act (31 U.S.C. §1535) agreements;[66]

- Explanation:

This FOIA Request also seeks disclosure of EPA Peer Review Records ("EPA climate science-related peer review files", as defined in Section III of this FOIA Request) identified in EPA Records Category #2 above.

Disclosure of these records is necessary because the Administrator's CAA Section 202(a)(1) Findings stated that they had been primarily based on "the scientific assessments of the IPCC, the USGCRP, and the NRC [which] were "the best reference materials for determining the general state of knowledge on the scientific and technical issues before the agency in making an endangerment decision".[67] Unfortunately, many of these records remain publicly unavailable and inaccessible with respect to such third party-developed HISAs, which EPA had embraced and relied upon as Agency climate science supporting the Administrator's CAA Section 202(a)(1) Findings.

In other words, EPA is obliged to substantiate how it ensured that the third party organizations' peer reviews of third party-developed HISAs which supported EPA's CAA Section 202(a)(1) Findings had been IQA compliant. As discussed in greater detail in the Explanation following Section III.4 below, EPA must demonstrate its *validation* of such IQA compliance by disclosing the types of records requested in EPA Records Category #2 above, as elaborated upon in the Explanation following EPA Records Category #1 above.

The Administrator's GHG Endangerment Findings explicitly proclaimed that,

> "[t]hese assessments therefore *essentially represent the U.S. government's view* of the state of knowledge on greenhouse gases and climate change. *For example, with regard to government acceptance and approval of IPCC assessment reports*, the

> USGCRP Web site states that: *'When governments accept the IPCC reports and approve their Summary for Policymakers, they acknowledge the legitimacy of their scientific content.'[fn] It is the Administrator's view* that such review and acceptance by the U.S. Government lends further support for placing primary weight on these major assessments" (emphasis added).[68]

The Preamble to OMB's Peer Review Bulletin also provides that, although the Bulletin "does not directly cover information supplied to the government by third parties (e.g., studies by private consultants, companies and private, non-profit organizations, or research institutions such as universities),[69] such third party studies shall fall subject to OMB Peer Review Bulletin requirements if an agency plans to disseminate such third party information as its own and the dissemination is "influential".[70]

Furthermore, Section 5.3 of EPA's IQA Guidelines helps to explain when an agency is deemed to disseminate third party information as its own. It provides that, "[f]or purposes of these Guidelines, EPA disseminates information to the public when EPA initiates or sponsors the distribution of information to the public".[71] Pursuant to these guidelines, EPA is deemed to have initiated a distribution of information to the public if:

> "EPA distributes information prepared or submitted by an outside party *in a manner that reasonably suggests that EPA endorses or agrees with it*[;] EPA indicates in its distribution that the information supports or represents EPA's viewpoint[;] and/or EPA in its distribution proposes to use or uses the information to formulate or support a regulation, guidance, policy, or other Agency decision or position" (emphasis added).[72]

Alternatively, Section 5.8 of EPA's IQA-implementing guidelines provides that,

> "If a particular distribution of information is not covered by these Guidelines, the Guidelines may still apply to a subsequent dissemination of the information *in which EPA adopts, endorses, or uses the information to formulate or support a regulation, guidance, or other Agency decision or position*" (emphasis added).[73]

Furthermore, Section 6.5 of EPA's IQA Guidelines also holds EPA responsible for ensuring the quality of third party information that EPA uses. It provides that, where EPA obtains information from third parties "for use in developing a policy, regulatory, or other decision,"[74] EPA must cooperate with "other governments, the scientific and technical community, and other interested information providers to develop and publish factors that EPA would use to assess the quality of this type of information."[75]

Moreover, Section 2.2.17 of EPA's Peer Review Handbook sets forth the high standard of *external* peer review with which EPA had been charged to ensure EPA and third-party IQA HISA compliance:

> "Any scientific and/or technical work product that is used in Agency decision making and is considered influential scientific information or *a highly influential scientific assessment* be a candidate for peer review regardless of whether the work product is produced by the Agency or another organization. Therefore, *all work products* important to EPA environmental decision making that are *independently generated by other organizations (e.g., other Federal agencies, interagency groups*, State and Tribal bodies, environmental groups, industry, educational institutions, *international bodies*) need to be considered as candidates for peer review…*It is hoped* that if the other organization has the work product independently peer reviewed, the peer review will meet the intent of the Agency's Peer Review Policy and EPA's proposed use of the product (i.e., the peer review is basically equivalent to what EPA would do). Agency staff from the appropriate office(s) should examine closely the particulars of the peer review to ensure independence and a conscious effort to incorporate the peer reviewers' comments into the final work product. *If there are perceived, or real, conflicts of interest, this may preclude the use of that peer review and, in those instances, another peer review would be needed*" (underlined emphasis in original; emphasis in italics added).[76]

Thus, the OMB and EPA IQA-implementing guidelines indicate that EPA also was legally responsible for validating the IQA compliance of each and every third party-developed and -reviewed HISA designated as a "core reference document" supporting the EPA Administrator's 2009 GHG Endangerment Findings. To recall, these Findings had identified such HISAs as "represent[ing] the U.S. government's view of the state of knowledge on greenhouse gases and climate change".[77] EPA bore this legal IQA obligation notwithstanding that all other federal agency-developed HISAs contained an IQA compliance certification.

Consequently, if other federal agencies' or the IPCC's peer review practices did not satisfy IQA requirements due to identified apparent or actual conflicts-of interest or other incidents of demonstrated IQA noncompliance, EPA would be required, at the very least, to ensure, pursuant to Section 2.2.17 of EPA's Peer Review Handbook, that another peer review of those assessments was performed. For example, Section II.2 of the annotated Addendum accompanying this new FOIA Request reveals that two DOI-USGS-developed SAPs (SAP 2.1a and SAP 3.4) supporting the Administrator's CAA Section 202(a)(1) Findings may need to be peer reviewed once again if EPA does not disclose sufficient records disproving ITSSD's identification of apparent conflicts-of-interest. Similarly, Sections B.5.a-B.5.b of ITSSD's soon-to-be superseded Clarification of FOIA Request No. DOC-NOAA-2014-000714 reveals that, six DOC-NOAA-developed HISAs (SAP 1.3, SAP 2.4, SAP 3.2, SAP 3.3, SAP 5.2 and SAP 5.3) supporting the Administrator's GHG Endangerment Findings also may need to peer reviewed once again if DOC-NOAA and EPA fail to disclose sufficient records disproving ITSSD's identification of apparent conflicts of interest.[78]

3. EPA Records Category #3: *Records focusing on an interagency climate panel's summary and synthesis of twenty-eight individual HISAs designated as "core reference documents" supporting EPA's GHG Endangerment Findings*

All "EPA climate science-related peer review files" (as defined in Section III of this FOIA Request, and hereinafter referred to as "EPA Peer Review Records") created, transmitted, stored and/or archived between January 1, 2005 through December 31, 2011, focused on the substantive and procedural peer review of the summary and synthesis of twenty-eight EPA-TSD-designated "core reference documents" the EPA-TSD identified as supporting the Administrator's 2009 GHG Endangerment and Cause or Contribute ("CAA Section 202(a)(1)") Findings, which had been conducted on EPA's behalf by an OMB-selected interagency peer review climate panel, including:

a. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of:
   i. Specific and detail peer review charges, instructions and disclosures issued by EPA to the OMB-selected interagency peer review climate panel, including:
      A. Disclosure of information about OMB's peer reviewer selection process, including credentials, transparency and conflict-of-interest requirements;
      B. Disclosure to prospective and selected peer review panelists of EPA's requirement to prepare and deliver a peer review report describing the nature and scope of their review and their findings and conclusions, and containing the name of each peer reviewer and a brief description of his or her organizational affiliation, credentials and relevant experiences; and
      C. Identification of scientific issues for and in-depth discussion of scientific issues with each peer reviewer;
   ii. OMB-selected interagency peer review climate panel and peer reviewer comments received by EPA, including methods and approaches EPA could use to address scientific uncertainties and discuss the precautionary principle or precautionary approach within the EPA-TSD;
   iii. EPA responses to OMB-selected interagency peer review climate panel and peer reviewer comments;
   iv. OMB-selected interagency peer review climate panel reports in summary and full versions;
   v. Records describing EPA interim and final conclusions concerning the IQA compliance of EPA-TSD revisions made consistent with OMB-selected interagency peer review climate panel recommendations;

b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of climate science-related agreements, contracts and other arrangements into between EPA and OMB to coordinate and manage the interagency peer review climate panel's peer review of the EPA-TSD;

c. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of the OMB interagency peer review climate panel selection process actually utilized, including the criteria OMB employed to evaluate peer reviewer professional credentials, relevant experience, affiliations and apparent and actual conflicts-of-

interest and lack of independence/bias, both during and after the peer reviewer selection process. Such files include *inter alia*:

i. OMB review and testing performed of the adequacy of the interagency peer review climate panelists' prior peer reviews;

ii. OMB peer reviewer independence reviews conducted to assess the eligibility of prospective interagency peer review climate panel candidates to participate if employed by EPA, and documentation of EPA-employee peer reviewer participation due to special circumstances – i.e., unique or indispensable expertise, or subject participation of agency-funded university and/or consulting firm scientists to close oversight;

iii. Peer reviewer (and family) financial and non-financial conflict-of-interest reviews OMB conducted at the time of peer reviewer selection and also throughout the entire course of peer review work until its completion to reveal, with respect to prospective interagency peer review climate panel candidates:

A. Significant investments, consulting arrangements, employer affiliations, grants/contracts, potential financial ties to regulated entities, other stakeholders, and regulatory agencies;

B. Work as an expert witness; and/or

C. Consulting arrangements, honoraria and sources of grants and contracts;

iv. OMB determinations, shared with EPA, concerning interagency peer review climate panel composition and balance based on the expertise and diversity of subject-relevant scientific perspectives of prospective and actual panel members;

v. OMB measures employed to avoid the repeated use of reviewers that EPA and other federal agencies had previously used to review any of the twenty-eight summarized and synthesized HISAs designated as "core reference documents";

d. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of OMB procedures actually followed to address situations of actual or perceived conflict-of-interest and lack of impartiality (bias) issues arising before and after the interagency peer review climate panel's selection, and to publicly disclose such apparent and actual conflicts of interest;

e. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of OMB procedures for reviewing and validate the accuracy and clarity of peer review report contents, including:

i. Peer reviewer comments and/or summaries produced consistent with and in satisfaction of specific peer review panel charges;

ii. Rationales supporting individual peer reviewer and peer review panel findings;

iii. EPA responses to individual peer reviewer and peer review panel comments and to peer review panel report findings;

f. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of OMB safeguards, if any, employed to ensure the verification of peer reviewer credentials and reputations, and the objectivity and credibility of the OMB process for selecting, managing and monitoring peer reviewers and peer review panels in connection with such assessments, from inception to completion, including:

   i. EPA contractual measures requiring OMB to engage in practices that ensure against or otherwise substantially minimize peer reviewer conflicts-of-interest and biases, including:

      A. Mandatory vetting of prospective peer review candidates via internet background searches to identify potential conflicts of interest and appearances of bias or partiality;

      B. Mandatory use of similar procedures for identifying any changes in selected panelists' conflict of interest status;

      C. Mandatory disclosure by peer review candidates of nationality, past and present foreign government affiliation, and service on prior, ongoing and ad hoc agency-established federal advisory committees;

      D. Mandatory written recertification from panelists before a peer review panel is convened, stating that their responses to the questionnaire have not changed;

      E. Mandatory self-reporting by peer reviewers of any changes that may impact their conflict of interest status or lack of impartiality status at any point in the process;

      F. Mandatory EPA oversight of OMB peer review management and oversight practices to ensure they follow EPA peer review contractual guidelines;

g. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on the IQA compliance of EPA website plans and actual EPA website use to provide the public with an opportunity to participate in EPA's peer review process, including *inter alia* by means of assuring that the peer reviewer members of the interagency peer review climate panel receive public comments with respect to such assessments that address significant scientific issues with ample time to consider them in their review;

h. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on collaborative and/or cooperative climate science-related research, data-sharing, information, adaptation, etc. programs arising from international climate science-related agreements entered into between EPA and the United Nations Environment Program ("UNEP")[79] *or* between the U.S. Global Change Research Program/Climate Change Science Program (in which the EPA participated) and UNEP, the World Meteorological Organization, IPCC, World Climate Research Programme, United Nations Educational, Scientific and Cultural Organization ("UNESCO"), Intergovernmental Oceanographic Commission ("IOC"), and/or International Council for Science ("ICSU") which agreements had been treated as legally binding executive agreements (treaties) under Article II of the U.S. Constitution *not* requiring a two-thirds super-

majority vote in the U.S. Senate*[80] and had been subject to U.S. federal agency reporting under the Case-Zablocki Act (1 U.S.C. §112b), pursuant to which: [81]

i. EPA had:
   A. Been provided information directly or indirectly assisting its development of the Administrator's 2009 CAA Section 202(a)(1) Findings and the EPA-TSD, which legal instruments had been subject to EPA's validation of IQA compliance; and/or
   B. Assisted IPCC and UNEP/WMO in the development and review of the 4th Assessment Report;[82]
   C. Assisted UNESCO, IOC, ICSU and other international climate science-related programs funded by EPA and/or the USGCRP;[83]

ii. The EPA-UNEP Memorandum of Understanding executed on February 21, 2011[84] followed, which *inter alia* provided for the temporary assignment of EPA and UNEP personnel to the other, including:
   A. To the EPA, for purposes of contributing, directly or indirectly, to the development of the Third U.S. National Climate Assessment; and/or
   B. To the IPCC, for purposes of contributing, directly or indirectly, to the development and review of the IPCC 5th Assessment Report.

- Explanation:

This FOIA Request also seeks disclosure of EPA Peer Review Records ("EPA climate science-related peer review files", as defined in Section III of this FOIA Request) identified in EPA Records Category #3 above. Disclosure of these records is necessary because many such records remain publicly unavailable and inaccessible.

The EPA-developed Technical Summary Document ("EPA-TSD") accompanying the Administrator's CAA Section 202(a)(1) Findings qualified as a highly influential scientific assessment ("HISA") for two reasons.

First, Section I.7 of the OMB Peer Review Bulletin indicates that the IQA covers scientific assessments which, by definition, include syntheses of "multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information."[85]

Second, the EPA-TSD constitutes a highly influential scientific assessment because the twenty-eight (28) or more highly influential scientific assessments ("HISAs") it summarized and synthesized "(i) could have a potential impact of more than $500 million in any year and (ii) [are] novel, controversial, or precedent-setting or has significant interagency interest",[86] within the meaning of Section III.1 of the OMB Peer Review Bulletin.

The EPA-TSD synthesized the summarized information and conclusions from at least twenty-eight (28) individual HISAs developed mostly by third parties into a cohesive document.[87] The EPA-TSD's summary and synthesis of the 28 HISAs, however, was *not* identical, word for word, to any

one or more of the twenty-eight assessments discussed. The EPA-TSD, which was novel, controversial and precedent-setting, was used as technical support for a major EPA action/ruling (i.e., the Administrator's GHG Endangerment Findings). These Findings had been anticipated to[88] and had actually triggered EPA's enactment of mobile and stationary source GHG emissions control regulations bearing a potential economic impact of over USD $1 billion dollars.[89] The GHG Endangerment Findings also served as the legal foundation for EPA's very recent issuance of proposed GHG emissions performance standards (regulations) for energy-generation facilities.[90]

EPA's collective acts of summarizing and synthesizing the twenty-eight "core reference documents" (each of which had been characterized as HISAs) into a cohesive single EPA-TSD that was not identical to any one or more such assessments effectively transformed the EPA-TSD, itself, into a highly influential scientific assessment (HISA), within the meaning of the IQA. As a result, the IQA required EPA to ensure both that the draft and final EPA-TSD summary and synthesis had been substantively peer reviewed for scientific accuracy *and* that the peer review process so employed had satisfied the highest and most rigorous level IQA conflict-of-interest, independence/bias and transparency standards applicable to HISAs.

As EPA-OAR previously conceded, "OMB had coordinated the interagency review process for the TSD and had cleared the document as part of EPA's endangerment finding."[91] OMB's management of the EPA-TSD peer review process, however, did not absolve EPA of its responsibility to ensure that the process had satisfied the highest and most rigorous level IQA requirements applicable to HISAs.

In September 2011, the EPA Office of Inspector General ("EPA-OIG") issued a report concluding that, "EPA's TSD [p]eer [r]eview [m]ethodology [d]id [n]ot [m]eet OMB [r]equirements *for [h]ighly [i]nfluential [s]cientific [a]ssessments*" (emphasis added).[92] EPA-OIG based this conclusion, in part, on the explanation offered by an OMB Assistant General Counsel. As OMB's Counsel explained, a "document summarizing the 'state of the science' would be…considered a scientific assessment…as it implicitly or explicitly weighs the strength of the available evidence."[93] EPA-OIG similarly reasoned that,

> "by providing a summary of existing findings and conclusions from IPCC, USGCRP/CCSP, NRC, and other reports, OAR implicitly and explicitly weighed the strength of the available science by its choices of information, data, studies, and conclusions included in and excluded from the TSD. Also, in our judgment the TSD synthesizes multiple factual inputs, data, models, and assumptions." [94]

Contrary to EPA-OAR's theory,[95] the EPA-OIG concluded that the EPA-TSD qualified as a HISA. As a result, EPA had been legally obligated to ensure that the interagency peer review of the EPA-TSD had satisfied the IQA's highest level and most rigorous peer review, conflict-of-interest, independence and transparency standards applicable to HISAs. Notwithstanding EPA's assertion that the information contained in the EPA-TSD "ha[d] been developed and prepared in a manner that [was] consistent with EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency* (U.S.

EPA 2002)",[96] the EPA-OIG report set forth a number of instances of *IQA noncompliance* with those very requirements.

1) "the same [panel of] 12 [climate change] experts were used for…three [levels of] review" (a technical review, internal EPA review and interagency review);[97]
2) although EPA maintained a record of all reviewer comments, and of its response and disposition of the reviewers' comments "to the initial draft TSD that accompanied the 2007 Office of Transportation and Air Quality rulemaking", "EPA did not maintain a record of its response and disposition of comments for the two TSDs that accompanied the proposed and final rules" (to the best of ITSSD's knowledge, no reviewer comments or EPA's disposition of such comments have yet been made available or accessible to the public);[98]
3) "the panel's results and EPA's response to the panels results were not made available to the public as is required for a peer review of a highly influential scientific assessment";[99]
4) "this panel did not fully meet the *independence* requirements for reviews of highly influential scientific assessments because one of the panelists was an EPA employee [Anne Grambsch]".[100]

In addition to these EPA-OIG findings, ITSSD research, moreover, reveals that the interagency review of the EPA-TSD also had been inflicted with at least seven instances of *apparent conflicts-of-interest*.[101] Thus, EPA's assertion that "…the [12] federal experts[102] were not involved with developing the TSD or Findings *in any way other than their review roles*" (emphasis added)[103] was *not* true.

EPA's statement was untrue because the EPA-TSD is best viewed as the interagency peer review panel's synthesis of the summaries of twenty-eight (28) "core reference documents" upon which the Administrator's Endangerment Findings had primarily relied. Since this synthesis could have taken place only after these twenty-eight (28) assessments had already been summarized (otherwise there would have been far too much to synthesize), it becomes quite apparent that at least seven of twelve (7/12) peer reviewers of the HISAs summarized and synthesized in the EPA-TSD had *also* coauthored them.[104] The evidence strongly suggests that EPA inadvertently overlooked and/or intentionally failed to *publicly* resolve these apparent conflicts-of-interest, by relying upon its assertion that, "[t]he federal experts were ideal candidates because they have contributed significantly to the body of climate change literature and played active roles in IPCC and CCSP…"[105] In doing so, EPA appears to have violated its IQA obligations concerning the EPA-TSD. Only EPA's public disclosure of the records the EPA-OIG report and this new FOIA Request identify can respond to the multiple instances of documented EPA *IQA noncompliance* with respect to the EPA-TSD.

4. <u>EPA Records Category #4</u>:

   a. All "EPA climate science-related peer review files" (as defined in Section III of this FOIA Request, and hereinafter referred to as "EPA Peer Review Records") created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on EPA's validation of the IQA compliance of *EPA's* disposition of information quality issues (e.g., stakeholder requests for correction and/or reconsideration) arising with respect to EPA-developed HISAs through general public

notice and comment proceedings pursuant to the U.S. Administrative Procedure Act rather than pursuant to separate more science-focused and technically oriented proceedings the IQA calls for.

b. All EPA peer review records created, transmitted, stored and/or archived from January 1, 2005 through December 31, 2011, focusing on EPA's validation of the IQA compliance of third parties' (other federal agencies' IPCC's NRC's) disposition of information quality issues (e.g., stakeholder requests for correction and/or reconsideration) arising with respect to HISAs developed by such third parties through general public notice and comment proceedings (e.g., pursuant to the U.S. Administrative Procedure Act) rather than pursuant to the separate and more science-focused and technically oriented proceedings the IQA calls for.

- Explanation:

This FOIA Request also seeks disclosure of EPA Peer Review Records ("EPA climate science-related peer review files", as defined in Section III of this FOIA Request) identified in EPA Records Category #4 above. This is necessary because the administrative record does not reflect that EPA had substantiated how the administrative review mechanism(s) it and third parties had chosen for addressing public stakeholder IQA requests for correction or reconsideration ("RFCs", "RFRs") of contested scientific or statistical information contained in federal agency disseminated climate science reports and assessments underlying EPA's proposed Clean Air Act ("CAA") Section 202(a)(1) Findings had satisfied the relevant statutory and administrative requirements of the IQA and OMB and EPA IQA-implementing guidelines.

Section 515(b)(2)(B) of the IQA (Public Law 106-554, 44 U.S.C. § 3516, note) required EPA

> "to establish administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency that does not comply with the [OMB] guidelines".[106]

Section III.3 of OMB's IQA Guidelines explain that,

> "To facilitate public review, agencies *shall establish* administrative mechanisms allowing affected persons to seek and obtain, where appropriate, timely correction of information maintained and disseminated by the agency that does not comply with OMB or agency guidelines. These administrative mechanisms *shall be* flexible, appropriate to the nature and timeliness of the disseminated information, and *incorporated into agency* information resources management and *administrative practices*" (emphasis added).[107]

Section III.3.i of OMB's IQA Guidelines required EPA to limit its review of stakeholder IQA RFCs to an appropriate time period (generally, 60 calendar days), and to notify stakeholders of any corrections made.[108] If stakeholders disagreed with EPA's initial decisions regarding their RFCs, Section III.3.ii required EPA to provide those stakeholders with the opportunity to appeal (i.e., to

secure EPA's reconsideration of) those Agency decisions and to obtain resolution of their requests within an appropriate limited period of time[109] (generally 60 calendar days).[110]

Therefore, Section III.3 of OMB's IQA Guidelines directed EPA to ensure that such an administrative review mechanism would be readily available and accessible to stakeholders following the Agency's "dissemination" (i.e., "initiated or sponsored distribution") to the public[111] of the HISAs EPA had developed and the HISAs third parties (including other federal agencies) had developed that EPA had endorsed and adopted (used) as its own. In other words, Congress had intended for this mechanism to serve as a specialized *post*-dissemination review mechanism offering stakeholder protections above and beyond ordinary APA notice and comment procedures.

The availability of this *post*-dissemination review mechanism was especially critical since stakeholders had not ordinarily been afforded the opportunity to contest the accuracy of the scientific information contained in the *final* versions of HISAs that EPA and third parties (including other federal agencies) had developed but had not yet disseminated to the public.[112] Up until the moment of dissemination, the *pre*-dissemination exemption provided by OMB IQA Guideline Section III.2[113] and OMB Peer Review Bulletin Section I[114] [115] had continued to apply. This effectively shielded such HISAs from IQA challenge in order to facilitate the completion of the scientific peer review process which, in part, entailed the solicitation of public comments, agency and author responses, and HISA revision, if necessary.[116] Indeed, as discussed below, none of the HISAs that supported the Administrator's CAA Section 202(a)(1) Findings, a major rulemaking, had been challengeable under the IQA until *after* EPA's April 2009 release of its Proposed CAA Section 202(a)(1) Findings.[117]

An OMB memorandum issued approximately seven months following the release of OMB's IQA Guidelines clarified the special nature of the *post*-dissemination review mechanism. It provided that,

> "[only] "where existing public comment procedures – for rulemakings, adjudications other agency actions…provide well-established procedural safeguards that allow affected persons to contest information quality on a timely basis", may agencies "use those [notice and comment] procedures to respond to information quality complaints."[118]
>
> "Recommended Language: 'In cases where the agency *disseminates* a study, analysis, or other information *prior* to the final agency action or information product, requests for correction will be considered *prior* to the final agency action or information product in those cases where the agency has determined that an earlier response would not *unduly* delay issuance of the agency action or information product *and* the complainant has shown a reasonable likelihood of suffering actual harm *from the agency's dissemination* if the agency dos not resolve the complaint prior to the final agency action or information product'" (emphasis added).[119]

Section 8.5 of EPA's IQA Guidelines appears to replicate, in part, and permissively interpret this recommendation. It states that

> "[W]hen EPA issues a notice of *proposed* rulemaking supported by *studies and other information* described in the proposal or included in the rulemaking docket, *it disseminates* this information within the meaning of the Guidelines. The public may then raise issues in comments regarding the information. If a group or an individual raises a question regarding information supporting a proposed rule, EPA generally *expects to treat it procedurally like a comment to the rulemaking*, addressing it in the response to comments *rather than through a separate response mechanism*" (emphasis added).[120]
>
> "In cases where the Agency *disseminates* a study, analysis or other information *prior* to the final Agency action or information product, it is EPA policy to consider requests for correction *prior* to the final Agency action or information product in those cases where the Agency has determined that an earlier response would not unduly delay issuance of the Agency action or information product and the complainant has shown a reasonable likelihood of suffering actual harm from the Agency dissemination if the Agency does not resolve the complaint *prior* to the final Agency action or information product. *EPA does not expect this to be the norm in rulemakings that it conducts*, and will usually address information quality issues *in connection with the final Agency action* or information product" (emphasis added).[121]

Section 8.5 of the EPA IQA Guidelines, as drafted, clearly interprets the above-referenced OMB policy memorandum as permitting EPA to treat the Administrator's Proposed CAA Section 202(a)(1) Findings supported by numerous HISAs as a "dissemination" *prior* to a final Agency action or information product, for purposes of determining whether it need utilize the special separate *post*-dissemination administrative review mechanism the IQA requires. Apparently, EPA believed it need not have stakeholder challenges to these HISAs via this separate review mechanism if it had determined either that: 1) doing so would have caused undue delay in the issuance of the Final CAA Section 202(a)(1) Findings; or 2) stakeholders had failed to show a reasonable likelihood of suffering actual harm if EPA had not addressed their complaints prior to the issuance of the Final CAA Section 202(a)(1) Findings. The administrative record, however, does not reveal that EPA had made either of these determinations.

What the administrative record does reveal is that EPA's actual use of APA notice and comment procedures for two distinctly different purposes had effectively denied stakeholders the ability to have their comments adequately addressed *prior to* EPA's issuance of the Administrator's Final CAA Section 202(a)(1) Findings.

First, EPA and other federal agencies had invoked the APA notice and comment procedures to secure public comments on each of the individual HISAs they had developed as 'lead' agency participants in the USGCRP/CCSP interagency initiative.[122] This was presumably done to facilitate the completion of the *pre*-dissemination peer review process noted above with respect to each individual HISA noted below. While stakeholders, at this juncture, may likely have had the opportunity to review and respond to the scientific information, including computer and mathematical models, datasets, assumptions, etc. contained in each of these HISAs standing alone, their substantive input would *not* likely have reflected any specific foreknowledge that EPA had

intended to rely upon such HISAs collectively as support for a future Agency Clean Air Act-related rulemaking.

In fact, at the *pre*-dissemination phase, DOC-NOAA, on EPA's behalf (i.e., as EPA's *de facto* interagency contractor), had solicited public comments on the drafts of each of the three (3) HISAs for which EPA had 'lead agency' USGCRP/CCSP development responsibilities:[123] SAP4.6/CCSP(2008b),[124] SAP4.1/CCSP(2009b),[125] and SAP 4.4/CCSP(2008).[126] In addition, DOC-NOAA had solicited public comments on drafts of each of the nine (9) HISAs for which *it* had 'lead agency' USGCRP/CCSP development responsibilities: SAP1.1/CCSP(2006),[127] SAP1.3/CCSP(2008g),[128] SAP2.4/CCSP(2008h),[129] SAP3.2/CCSP(2008d),[130] SAP3.3/CCSP(2008i),[131] USGCRP/GCCI/2009,[132] SAP2.2/CCSP(2007),[133] SAP5.2/CCSP(2009),[134] and SAP5.3/CCSP(2008).[135] Furthermore, DOC-NOAA, on DOI-USGS' behalf (i.e., as DOI-USGS' *de facto* interagency contractor), had solicited public comments, on the drafts of each of the three (3) HISAs for which DOI-USGS had 'lead agency' USGCRP/CCSP development responsibilities:[136] SAP1.2/CCSP(2009c),[137] SAP 3.4/CCSP(2008a)[138] and SAP4.2/CCSP(2009d).[139] It is not unreasonable to assume that DOC-NOAA also had likely engaged in a similar pattern of invoking APA notice and comment procedures to solicit comments on the HISAs that NASA, DOE, DOT and USDA had developed as 'lead agency' USGCRP/CCSP participants.

All but three (3)[140] of the federal register notices DOC-NOAA had filed with respect to these fifteen (15) USGCRP/CCSP SAPs contained the following IQA "*pre*-dissemination" disclaimer language:

> "This draft report is being released solely for the purpose of *pre-dissemination* peer review under applicable information quality guidelines. This document has not been formally disseminated by NOAA. It does *not* represent and should not be construed to represent any Agency policy or determination."

This *pre*-dissemination phase disclaimer was significant because it prevented the triggering of the IQA statute, and consequently, stakeholder's ability to challenge the correctness of the scientific information, including computer and mathematical models, datasets, assumptions, etc., contained in each of the individual agency-developed HISAs while they had, presumably, remained subject to public review and comment as part of EPA's (and other federal agencies') overall peer review process. And, presumably, the authors of each of these HISAs had thereafter considered and incorporated the public comments received into the final *pre*-dissemination versions these agencies had approved. However, this is not certain due to EPA's failure to publicly disclose records capable of confirming whether and how such revisions had actually occurred. Furthermore, EPA has provided no demonstrative evidence, to date, showing that the NRC and IPCC HISAs which EPA had ultimately adopted and endorsed as its own as primary support for the Administrator's CAA Section 202(a)(1) Findings had been subject to equivalent *pre*-dissemination public notice and comment procedures (or, for that matter, whether the peer review processes employed by such organizations had actually satisfied the IQA's strict HISA peer review process requirements, as previously discussed in Section II.2 of this FOIA Request).

Section IV of the OMB *Peer Review Bulletin* admonishes EPA and other federal agencies not to treat the typical APA public notice and comment process, at the *pre*-dissemination phase, as an approved alternative to scientific peer review.

> "The mere existence of a public comment process (e.g., notice-and-comment procedures under the Administrative Procedure Act) does not constitute adequate peer review or an 'alternative process,' [under Section IV of the OMB-PRB] because it does not assure that qualified, impartial specialists in relevant fields have performed a critical evaluation of the agency's draft product."[141]

Sections 1.2.8 and 1.2.9 of EPA's *Peer Review Handbook* appear to reinforce this notion insofar as they distinguish between the objectives of the peer review and notice and comment processes.

> "[Public comment] does not necessarily draw the kind of independent, expert information and in-depth analyses expected from the peer review process…[which]…is limited to consideration of specified technical issues…[and therefore]…does not substitute for peer review."[142]

> "…Unlike stakeholder involvement which is concerned with the outcome of an agency's technical work product or regulatory position, peer review is concerned with the scientific quality and technical credibility of the work product supporting a policy or decision."[143]

The important distinction here drawn, at the *pre*-dissemination phase, between the nature and purpose of the ordinary APA notice and comment procedure and the character of stakeholder comments it attracts, on the one hand, and the more technical and complex issues and inquiries engendered by the scientific peer review process, on the other hand, is instructive in understanding Congress' rationale for directing OMB to ensure that federal agencies establish a separate specialized *post*-dissemination IQA administrative review mechanism.

Second, EPA also utilized the APA's notice and comment procedures at the *post*-dissemination phase to solicit public comments on the Administrator's Proposed CAA Section 202(a)(1) Findings[144] *and* the specific scientific evidence summarized and synthesized in the EPA-developed Technical Support Document ("EPA-TSD") that had accompanied and supported those Findings. As previously discussed in Section II.3 of this FOIA Request and subsequently discussed in Section II.1 of the accompanying Addendum, the EPA-TSD consisted of the summaries and syntheses of twenty-eight "core reference documents", including many of the fifteen (15) HISAs noted above.[145] It is *this* EPA *use* of APA notice and comment procedures which violated the letter and spirit of the IQA because it did not adequately take into account the distinct purpose and character of IQA stakeholder RFCs.

The administrative record shows that EPA and other federal agencies did *not* make readily available and accessible a separate specialized *post*-dissemination IQA administrative review mechanism to address the RFCs/RFRs that stakeholders had filed contesting the accuracy and validity of the scientific information, including computer models, datasets and underlying theories, assumptions,

extrapolations, judgments, etc. contained in the HISAs the EPA-TSD had summarized and synthesized that supported the Administrator's CAA Section 202(a)(1) Findings.*[146] Apparently, the Agency had taken comfort in at least one IQA stakeholder's ostensible acknowledgement that Section 8.5 of EPA's IQA Guidelines had granted the Agency discretion to effectively side-step the IQA,[147] notwithstanding the objections of other stakeholders,[148] and the more considered reading the statute deserved. Indeed, a more thoughtful reading of the IQA and interpretive OMB guidelines strongly suggests a contrary conclusion; namely, that the IQA and OMB guidelines did *not* vest the Agency with broad discretion to invoke APA notice and comment procedures *in lieu of* the IQA's special *post*-dissemination administrative mechanism, especially where they did *not* "provide well-established procedural safeguards that allowed affected persons to contest information quality on a timely basis." [149] To date, EPA has not publicly disclosed any records substantiating how its specific use of the APA notice and comments procedure to address stakeholder RFCs concerning the science supporting the Administrator's Proposed CAA Section 202(a)(1) Findings was any different than any ordinary APA notice and comment procedures.

Surely, Congress did not intend to impose upon OMB the directive set forth in IQA Section 515(b)(2)(B) to ensure federal agency establishment of a special IQA RFC/RFR administrative mechanism to review stakeholder challenges to scientific and technical information underlying major agency actions only to see such mechanism later supplanted by EPA's expansive, and potentially abusive, exercise of agency discretion. It would be illogical to construe this Information Quality Act provision evidencing Congress' explicit directive to OMB, whose guidelines interpreting the IQA are entitled to authoritative deference under *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*,[150] [151] as permitting EPA to effectively override them by selectively invoking the Administrative Procedure Act's generic public notice and comment procedure to avoid addressing the more technical questions these stakeholders had raised. Clearly, the Agency's use of EPA and third party-developed HISAs as primary support for the Administrator's CAA Section 202(a)(1) Findings was subject to the OMB/EPA IQA-implementing guidelines' highest and *least discretionary* peer review, transparency and independence/conflict-of-interest standards ("peer review standards").

Consistent with the U.S. Supreme Court's recent holding in *Utility Air Regulatory Group v. EPA*,[152] such an interpretation of the IQA would contravene "the core administrative-law principle that an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate."[153] Furthermore, such a statutory interpretation would create its own absurd result,[154] whereby the numerous scientific and technical IQA petitions stakeholders had filed seeking correction and substantiation of how EPA had addressed the substantial scientific uncertainties and validated the numerous complex computer models supporting the HISAs underlying the Administrator's CAA Section 202(a)(1) Findings (a major Agency rule with dramatic national downstream legal[155] and economic[156] [157]impacts) would be treated (reviewed and resolved) similarly to comments submitted by members of the public not conversant in climate modeling and statistical methods & other technical issues. Thus, pursuant to the Court's reasoning in *Utility Air Regulatory Group v. EPA*, EPA may not unreasonably interpret the IQA's mandate to establish a specialized *post*-dissemination administrative review mechanism as imposing an undue burden to justify its preferred alternative use of APA notice and comment procedures to mitigate such interpreted unreasonableness.[158]

As previously stated, the administrative record nowhere reflects that EPA had determined that addressing stakeholder challenges to the HISAs supporting the Administrator's Proposed CAA Section 202(a)(1) Findings would have caused undue delay in the issuance of the Final Findings. The administrative record also does not reflect EPA's determination that stakeholders had not adequately established a reasonable likelihood of suffering actual harm from the Agency's dissemination of such HISAs if EPA had failed to address their comments pursuant to a separate administrative review mechanism prior to the Agency's issuance of the Final Findings. Given the significant national, regional and local economic consequences that experts had estimated would flow from the issuance of the HISA-based Findings, EPA had never likely reached the second determination.

This FOIA Request, therefore, seeks disclosure of EPA records substantiating how EPA's decision *not* to employ a separate *post*-dissemination administrative mechanism to address numerous stakeholders' more technical and scientific IQA RFCs/RFRs apart from the more general (nontechnical) comments submitted during the APA notice and comment period EPA had provided to review the Administrator's Proposed CAA Section 202(a)(1) Findings had ensured EPA's compliance with the relevant IQA statutory and OMB and EPA IQA-implementing administrative guideline requirements.

EPA's approach in soliciting public comments during the 60-day period beginning on April 24, 2009 and ending on June 23, 2009, which in part, included public meetings, further demonstrates the more generic nature and purpose of APA notice and comment procedures and the personal and nontechnical character of the comments they typically attract. For example, EPA had scheduled "two public hearings in Arlington, Virginia and Seattle, Washington"[159] for May 19, 2009 and May 21, 2009, respectively.[160] The Arlington hearing had been convened by five EPA officials,[161] each of whom had been EPA-TSD coauthors, while three of the four EPA officials who had convened the Seattle hearing had been EPA-TSD coauthors.[162]

The transcripts from EPA's May 2009 Virginia and Washington State public hearings reveal that their purpose was solely "to receive oral testimony from interested parties regarding EPA's Proposed Endangerment and Cause and Contribute Findings".[163] These hearings apparently were not intended to and did not entertain questions or discussions of climate science issues or regarding the quality, objectivity, and integrity of the HISAs supporting EPA's Endangerment Findings. As Dina Kruger, Director of EPA's Climate Change Division and presiding official at both hearings emphatically stated, "*We will not be engaging in a back-and-forth discussion with speakers*, but we may ask clarifying questions…*There are not going to be any overheads or PowerPoint presentations*" (emphasis added).[164] How, then, did EPA intend to afford stakeholders the ability to be adequately 'heard' *and* 'responded to' with respect to their technical questions concerning the correctness of the climate science assessments supporting EPA's Endangerment Findings, as the IQA required?

Moreover, the transcripts of EPA's May 2009 Virginia and Washington State public hearings reveal that a number of high profile likeminded federal, state and local officials,[165] scientists affiliated with universities likely participating in EPA[166] and/or DOC-NOAA climate science research grant-funded programs,[167] and representatives from internationally recognized environmental nongovernmental

organizations (advocacy groups)[168] had been scheduled as designated "preregistered speakers", each allocated a five-minute presentation. In addition, two representatives from the National Association of Clean Air Agencies ("NACAA"), a "non-profit association of air pollution control agencies in 42 states, the District of Columbia, four territories and 116 metropolitan areas",[169] also had been scheduled as "preregistered speakers".[170] Interestingly, the NACAA representatives' virtually identically worded presentations reaffirmed: 1) the IPCC Fourth Assessment Report's "conclu[sion] that the evidence that global warming is already affecting our planet is 'unequivocal'"; 2) that "EPA catalogs much of these data in its technical support documents" which need not be repeated at the hearings; and 3) that "EPA's scientific information [had] come from reports from the Nobel Prize-winning IPCC…"[171]

Reasonable persons may conclude from these hearing transcripts that such speakers had been strategically and tactically 'present' at these hearings. Arguably, their role had not only been to frame the discussion for as broad a (national and international) public audience as possible, but also to dominate the hearings' limited discussion time. Indeed, at the beginning of each hearing, the presiding EPA official informed the participants that, "[i]n order to increase public access to th[ese] hearing[s], [EPA has]…provid[ed] audio webstreaming [and]…also a call-in line for listening only…the number [to which [was] posted on [EPA's] website."[172]

As noted above, the administrative record strongly suggests that EPA had failed to validate the IQA compliance of the APA process it had invoked to address stakeholders' RFCs/RFRs with respect to both the individual HISAs supporting the Administrator's CAA Section 202(a)(1) Findings *and* the accompanying EPA-TSD's summaries and syntheses of them. And, if EPA did not fulfill this most important of direct IQA obligations, it would be reasonable to conclude that EPA also failed to validate the IQA compliance of the IPCC's and NRC's public comment solicitation and response mechanisms, especially in the absence of any available or accessible public records indicating to the contrary.

Lastly, the administrative record reveals that EPA had decided that it was not obligated to "obtain and publicize the data underlying all the [USGCRP, IPCC, and NRC] assessments on which they rel[ied]…as the primary scientific and technical basis of [the] endangerment decision."[173] EPA noted how it had placed within its website docket for downloading information about each of these HISAs and all supporting models, datasets and studies.[174] However, the Agency had chosen not to provide website access to the thousands of climate-related studies that supported them. Apparently, EPA had reasoned that many such studies would have otherwise been inaccessible to the public via this medium due to copyright restrictions.[175] Instead, it merely directed public stakeholders to contact the EPA public reading room to determine whether the particular studies sought could be viewed or obtained.[176]

In summary, the administrative record raises serious questions regarding whether EPA had ensured the IQA compliance of the administrative mechanisms it utilized to afford public stakeholders the ability to be adequately 'heard' and 'responded to' with respect to their more technical requests for correction and reconsideration of the HISAs supporting EPA's CAA Section 202(a)(1) Findings.

III. Definition of "EPA Climate Science-Related Peer Review Files" (shorthand – "EPA Peer Review Records")

Sections I and II of this FOIA Request have used the term "EPA Peer Review Records" as shorthand for the term "EPA climate science-related peer review files". The four constituent elements of the term "EPA climate science-related peer review files" have been defined below.

1. "EPA" -

The term "EPA" as referred to in (II) above, includes *inter alia*:

a. EPA National Headquarters Office ("EPA-HQ") Offices, including:
   i. Office of the EPA Administrator ("the Administrator");
   ii. Science Advisory Board ("SAB"), including committees and subcommittees;
   iii. Office of Research and Development ("ORD") (including its research program for Air, Climate, and Energy ("ACE") and its National Center for Environmental Assessment ("NCEA"));
   iv. Office of Air and Radiation ("OAR");
   v. Office of Water ("OW");
   vi. All current EPA National Headquarters Office employees (including directors, associate/assistant directors, program directors, staff, etc.), as well as, all former EPA National Headquarters Office employees previously employed from January 1, 2005 through December 31, 2011.

b. EPA Regional ("EPA: R-2, R-3, R-4, R-5, R-6, R-8, R-9, R-10) Offices, including:
   i. All Regional and related local branch offices with offices, departments and programs corresponding to those of the EPA-HQ Offices identified above;
   ii. All current Regional office and related local branch office employees (including directors, associate/assistant directors, program directors, staff, etc.), as well as all former Regional Office (and related local office) employees previously employed from January 1, 2005 through December 31, 2011.

c. EPA-appointed members, including chairs and secretariats, of climate science-related advisory boards and federal advisory committees EPA had established, operated and/or terminated during the period spanning from January 1, 2005 through December 31, 2011, *including, but not limited to*:
   i. Human Impacts of Climate Change Advisory Committee ("HICCAC") (established 2007 and terminated 2008);
   ii. Coastal Elevations and Sea Level Rise Advisory Committee ("CESLAC") (established 2006 and terminated 2009);
   iii. Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee ("ACSERAC") (established 2007 and terminated 2008);

d. EPA and other federal agency-hired third-party peer review contractors that provided climate science-related peer review services (substantive peer review, peer review management and/or peer review oversight) during January 1, 2005 through December 31, 2011, including:

i. Private parties (including internet/cloud service providers);
ii. Other federal government agencies; (e.g., DOC-NOAA,[177] DOE,[178] DOI-USGS,[179] DOT,[180] NASA,[181] USDA),[182] etc.;
iii. U.S. interagency entities (e.g., USGCRP/CCSP);
iv. Foreign government agencies (e.g., the UK Met Office);
v. Intergovernmental bodies (e.g., IPCC);
vi. Nongovernmental organizations (e.g., The Nature Conservancy, Environmental Defense, etc.).

2. "Climate Science-Related" -

The term "climate science-related", as used above, refers:

Directly or indirectly to assessments, reports, studies, literature, information, files, etc. explaining observations of past, current and projected future changes in the Earth's climate, the impacts of such climate change on humans and the environment, and approaches for adapting and mitigating such change.[183]

3. "EPA Climate Science-Related Files" -

"EPA Climate science-related files" include *inter alia*:

All EPA climate science-related records, data, statistics and models (including inputs, assumptions, scientific theories, calculations, extrapolations, alternate interpretations, methodologies, acceptance criteria, and/or conclusions pertaining from a model or its application), judgments relating thereto, correspondences and communications (including *inter alia* those between current and former EPA employees and former EPA-established federal advisory committee members and all peer reviewers and EPA STAR Program grant recipients) and including finals, drafts and notes, whether in current, stored and/or archived printed, digital, electronic (emails including attachments), magnetic, internet or other form, originated, transmitted (dispatched and/or received), stored and/or archived by means of office email, personal email, internet, etc. accounts, that were originated, transmitted, stored and/or archived by EPA during the period spanning from January 1, 2005 through December 31, 2011, wherever held, including:

a. By EPA-HQ and EPA Regional Offices at EPA office premises and at other EPA on-site locations;
b. By current and former EPA employees (including employee-advisory board members and federal advisory committee members) at:
   i. EPA office premises and other EPA on-site locations;
   ii. Non-EPA office premises and other non-EPA off-site locations (including, but not limited to, their personal premises);
c. By current and former EPA third-party records retention, internet, and/or cloud service providers at:
   i. EPA third-party service provider owned or leased business premises and other EPA third-party service provider on-site locations;

ii. Other non-EPA off-site locations;

d. By current and former non-EPA employee-advisory board members at EPA office premises and at other EPA on-site locations;

e. By current and former non-EPA-employee federal advisory committee members at EPA office premises, at other EPA on-site locations, and non-EPA off-site locations.

4. "EPA Climate Science-Related Peer Review Files"

"EPA climate science-related peer review files" include all EPA climate science-related files focusing on peer reviews conducted by EPA or EPA-hired contractors, or peer reviews conducted by third parties that EPA subsequently adopted, embraced and disseminated (used) as its own, of:

a. EPA and third party-developed highly influential scientific assessments ("HISAs") the EPA-TSD designated (in Table 1.1 thereof) as "core reference documents" upon which the Administrator's CAA Section 202(a)(1) Findings primarily and heavily relied,[184]including peer reviews conducted by such parties of globally, regionally and/or locally focused simple and integrated assessment deterministic, stochastic and/or dynamic system simulation science and econometric computer models and related datasets, or specific applications of such models and datasets, described therein which supported the findings of such "core reference documents", and which computer models and related datasets or specific applications of such models and datasets were developed individually and/or jointly by the IPCC, EPA, other federal agencies, EPA- and other federal agency-funded universities, and other third parties.

i. For example, such computer models and related datasets, or specific applications of such models and datasets include, but are not limited to, those discussed in the EPA-TSD (and described in SAP1.3/CCSP2008g),[185] SAP2.1a/CCSP(2007b),[186] SAP2.4/CCSP(2008h),[187] SAP3.1/CCSP(2008c),[188] SAP3.2/CCSP(2008d),[189] SAP3.3/CCSP(2008i),[190] SAP3.4/CCSP(2008a),[191] SAP4.1/CCSP(2009b),[192] SAP4.5/CCSP(2007a),[193] SAP4.6/CCSP(2008b),[194] EPA *Impacts of Global Change on Regional U.S. Air Quality*,[195] DOC-NOAA *The State of the Climate in 2008*,[196] NRC(2001a),[197] Arctic Council *Arctic Climate Impact Assessment*,[198] IPCC(2007a),[199] IPCC(2007d),[200] IPCC(2000),[201] etc.,) which models and datasets and applications of such models and datasets had been individually and/or jointly developed by IPCC, EPA, DOC-NOAA, NASA, NSF/NCAR, DOI-USGS, DOE, USACE,[202] USEIA,[203] and/or EPA-funded university computer models addressing atmospheric, oceanic, air quality, land, water, and/or sea ice interactions established pursuant to EPA's Climate Impact on Regional Air Quality (CIRAQ) program,[204] and other federal agency-funded programs, *inter alia*:

A. The DOE-funded World Climate Research Programme Coupled Model Intercomparison Project (CMIP3)[205]

B. The NASA Goddard Institute for Space Studies (GISS) Model II' (two prime) model assuming the IPCC Special Report on Emission

Scenarios (SRES) A1B 'business as usual' emission scenario[206] and the GISS Model E;[207]

C. The NASA Modern Era-Retrospective Analysis for Research and Applications (MERRA);[208]

D. The DOC-NOAA Geophysical Fluid Dynamics Laboratory (GFDL) AM2.0 and AM2.1 models;[209]

E. The National Corporation for Atmospheric Research (NCAR)/Department of Energy (DOE) Community Climate System Model (CCSM3);[210]

F. The Pennsylvania State/National Center for Atmospheric Research (NCAR) Mesoscale Model (MM5);[211]

G. The Weather Research and Forecasting (WRF) Model[212]

H. The Environ Corp. Comprehensive Air Quality Model With Extensions (CAMx) (open source)[213]

I. The Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC);[214]

J. The DOE Energy Information Administration (EIA)[215] National Energy Modeling System (NEMS)[216]

K. The EPA Community Multiscale Air Quality (CMAQ) modeling system.[217] [218]

L. University modeling funded by the EPA National Center for Environmental Assessment STAR Program.[219] [220].

b. EPA and third party-developed highly influential scientific assessments ("HISAs") and influential scientific information ("ISI") referenced in the EPA-TSD which did not qualify as "core reference documents",[221] the conclusions of which relied, in whole or in part, upon computer models and related datasets and/or specific applications thereof, as described therein, including, but not limited to, those identified in (a) above;

c. EPA and third party-developed highly influential scientific assessments ("HISAs") and influential scientific information ("ISI") incorporated by reference within EPA-TSD designated "core reference documents" not otherwise expressly referenced in the EPA-TSD, the conclusions of which relied, in whole or in part, upon computer models and related datasets and/or specific applications thereof, as described therein, including, but not limited to, those identified in (a) above.[222]

- Explanation

The EPA-TSD refers to the computer models and related datasets, and applications thereof, discussed in a number of "core reference documents" supporting the Administrator's CAA Section 202(a)(1) Findings. It also refers to the uncertainties surrounding the assumptions and judgments underlying these models, related datasets and applications thereof, and, consequently, to their reliability.[223]

Clearly, the OMB Peer Review Bulletin, EPA's Peer Review Handbook, and EPA guidelines governing the use of environmental modeling in regulatory decision making required EPA to have ensured that the computer models and related datasets, and applications thereof, incorporated within *all* HISAs supporting the Administrator's CAA Section 202(a)(1) Findings, as summarized and synthesized in the EPA-TSD, had been strictly peer reviewed in conformance with the Information Quality Act.

As previously discussed in the Explanation following EPA Records Category #1, OMB Peer Review Bulletin Section 1.5 provides that, "the term 'scientific information' means *factual inputs, data, models, analyses*…in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms" (emphasis added).[224] OMB Peer Review Bulletin Section I.7 provides that, "the term 'scientific assessment' means an evaluation of a body of scientific or technical knowledge, which typically *synthesizes multiple factual inputs, data, models, assumptions*, and/or applies best professional judgment to bridge uncertainties in the available information…*includ[ing]…integrated assessment models*" (emphasis added).[225]

The OMB Peer Review Bulletin's Preamble explains that, "*[t]ypically, the data and models used in scientific assessments have already been subject to some form of peer review* (e.g., refereed journal peer review or peer review under Section II of this Bulletin)" (emphasis added).[226] Nevertheless, it highlights that, "the need for rigorous peer review is greater when the information contains *precedent-setting* methods or *models*, presents conclusions that are likely to change prevailing practices, or is likely to affect policy decisions that have a significant impact" (emphasis added).[227] OMB Peer Review Bulletin Section IX.4 and the Preamble also explain that agencies must ensure that data and analytical models used in regulatory impact analysis and regulatory flexibility analysis are peer reviewed[228] – i.e., "[t]his Bulletin covers original data and formal analytic models used by agencies in Regulatory Impact Analyses (RIAs)".[229]

OMB Peer Review Bulletin Section III.4 and the Preamble provide that, as a matter of transparency,

> "The agency -- or entity managing the peer review -- *shall* provide the reviewers with sufficient information -- *including background information about key studies or models* -- to enable them to understand the data, analytic procedures, and assumptions used to support the key findings or conclusions of the draft assessment" (emphasis added).[230] "In this respect, the peer review envisioned in Section III is more rigorous than some forms of journal peer review, where the reviewer is often not provided *access to underlying data or models*" (emphasis added).[231]

The OMB Peer Review Bulletin's Preamble also requires agencies to ensure that peer reviewers of models possess the requisite expertise: "expertise in applied mathematics and statistics is essential in the review of *models*, thereby allowing an audit of calculations and claims of significance and robustness based on the numeric data" (emphasis added).[232]

Similarly, Section 2.2.1 of EPA's Peer Review Handbook, which defines "[t]he term scientific and/or technical work products [as] generally consistent with the term 'scientific information' in the OMB Bulletin", provides that "analytical methods, scientific database designs [and] *technical*

models" are to be included within the category of covered "work products" (emphasis added).[233] Section 2.2.2 of EPA's Peer Review Handbook provides that, "[t]he principle underlying the Peer Review Policy is that all influential scientific and technical work products used in decision making *will be peer reviewed*" (italicized emphasis added).[234]

Section 2.2.3 of EPA's Peer Review Handbook provides that "[g]enerally, scientific and/or technical work products that are used to support a regulatory program or policy position *and* that…[e]stablishes a significant precedent, *model*, or methodology" (emphasis added) will be considered "influential scientific information"[235] and subject to peer review. "Influential scientific information may be novel or innovative, precedential, controversial, or emerging ('cutting edge')".[236] Section 2.2.3 of EPA's Peer Review Handbook also provides, that peer review may be "appropriate" where either "[a]n application of an existing, adequately peer-reviewed methodology or model to a situation [] departs significantly from the situation it was originally designed to address" or "a modification of an existing, adequately peer-reviewed methodology or model [] departs significantly from its original approach".[237]

Furthermore, Section 2.2.9 of EPA's Peer Review Handbook states that, where "EPA provides funds to another agency for that agency to use for a specific purpose" pursuant to an interagency agreement, the "receiving agency's guidance for peer review [is]…different from EPA Peer Review Policy" *and* "EPA plans to use any work products from that agreement, EPA should decide whether those documents need review under EPA Peer Review Policy."[238]

In sum, Section 2.2.16 of EPA's Peer Review Handbook provides that environmental regulatory models should be peer reviewed, consistent with agency guidelines promulgated by EPA's Council for Regulatory Environmental Modeling (CREM) which had been established in 2000.[239] [240]

EPAs' CREM published its guidelines for the peer review of environmental regulatory models in March 2009.[241] [242] The CREM Guidelines generally call for transparency of the science underlying model-based decision making vis-à-vis "comprehensive documentation of all aspects of a modeling project" and "effective communication between modelers, analysts, and decision makers" to "ensure[] that there is a clear rationale for using a model for a specific regulatory application."[243] The CREM Guidelines recommend that

> "model developers and users: (a) *subject their model to credible, objective peer review*; (b) assess the quality of the data they use; (c) corroborate their model by evaluating the degree to which it corresponds to the system being modeled; and (d) perform sensitivity and uncertainty analyses. Sensitivity analysis evaluates the effect of changes in input values or assumptions on a model's results. Uncertainty analysis investigates the effects of lack of knowledge and other potential sources of error in the model (e.g., the 'uncertainty' associated with model parameter values)."[244]

Section 4 of the CREM Guidelines require EPA to engage in "model evaluation" to determine "when a model, despite its uncertainties, can be appropriately used to inform a decision."[245] The process of model evaluation seeks to assess: 1) "the soundness of the science underlying a [chosen] model"; 2) "the quantity and quality of available data" supporting a chosen model; 3) "the degree" to

which the chosen model corresponds with observed conditions; and 4) "the appropriateness [and effectiveness] of a model for a given application."[246]

Section 4.2 of the CREM Guidelines recommends use of the following specific tools to ensure a model's appropriateness in regulatory decision making: "*peer review of models*; QA project planning, including data quality assessment; model corroboration (qualitative and/or quantitative evaluation of a model's accuracy and predictive capabilities); and sensitivity and uncertainty analysis" (emphasis added).[247] Section 4.2.1 of the CREM Guidelines emphasizes that, "*[p]eer review provides the main mechanism for independent evaluation and review of environmental models used by the Agency*" (emphasis added).[248]

Section 4.2.1 of the CREM Guidelines identifies four objectives that the peer review of environmental models serves. First, it helps to "evaluate whether the assumptions, methods, and conclusions derived from environmental models are based on sound scientific principles."[249] Second, it helps to "check the scientific appropriateness of a model for informing a specific regulatory decision".[250] Third, it is "helpful for choosing among multiple competing models for a specific regulatory application."[251] Fourth, peer review is "useful to identify the limitations of existing models."[252] However, "[p]eer review is *not* a mechanism to comment on the *regulatory decisions* or policies that are informed by models (EPA 2000c)" (emphasis in original).[253] To this end, the CREM Guidelines are consistent with Section VII and the Preamble of OMB's Peer Review Bulletin and Sections 1.2.8-1.2.9 of EPA's Peer Review Handbook which distinguish between the overall purposes of peer review and the Administrative Procedure Act ("APA") notice and comment process.[254]

According to Section 4.2.1 of the CREM Guidelines, EPA officials should incorporate "[p]eer review charge questions and corresponding records for peer reviewers to answer those questions…into the quality assurance project plan developed during assessment planning."[255] These questions may include "whether a model meets the objectives or specifications that were set as part of the quality assurance plan".[256] While "a new model should be scientifically peer reviewed prior to its first application", subsequent applications of a model may also require peer review depending on "the scientific/technical complexity and/or the novelty of the particular circumstances".[257]

Section 4.2.1 of the CREM Guidelines, furthermore, emphasizes that "[a]ll models that inform *significant* regulatory decisions [within the meaning of Section 2(f) of Executive Order 12866 (58 FR 51735)[258]] are candidates for peer review" (emphasis in original).[259] This action is recommended because: 1) such models' "results will be used a basis for major regulatory or policy/guidance decision making"; 2) such "decisions likely involve significant investment of Agency resources"; and 3) such "decisions may have inter-Agency or cross-agency implications/applicability".[260] It also is consistent with Section 2.4.2 of EPA's Peer Review Handbook, which indicates that technical work "products with large impacts (e.g., those that support Tier 1 and Tier 2 rulemakings" and "highly influential scientific assessments are expected to undergo external peer review."[261]

More specifically, Section 4.2.1 of the CREM Guidelines stipulates that the "following aspects of a model should be peer-reviewed to establish scientific credibility: [1] Appropriateness of input data[; 2] Appropriateness of boundary condition specifications[; 3] Documentation of inputs and

assumptions[; 4] Applicability and appropriateness of selected parameter values[; and 5] Documentation and justification for adjusting model inputs to improve model performance (calibration)."[262]

Since peer review involves significant time and resources, "**external** peer review should begin as early in the model *development* phase as possible [and] these allocations must be incorporated into components of the project planning and any related contracts" (italicized emphasis in original; boldfaced emphasis added).[263] "External peer review of the applicability of a model to a particular set of conditions should be considered well in advance of any decision making, as it helps avoid inappropriate applications of a model for specific regulatory purposes".[264] External peer review may be accomplished via use of "an ad hoc panel of scientists", "an established external peer review mechanism such as the SAB" or "a technical workshop".[265]

Each of these external peer review mechanisms, however, is subject to guidelines for "determining the qualifications and number of reviewers needed for a given modeling project."[266] Section D.2 of Appendix D of the CREM Guidelines reaffirms that "EPA policy states that major science-based and technical products related to Agency decisions should normally be peer-reviewed", and describes in greater detail "peer review mechanisms, the relationship of external peer review to the process of environmental regulatory model development and application, documentation of the peer review process, and specific elements of what could be covered in an external peer review of model development and application."[267]

The final EPA CREM Guidelines had been finalized during March 2009, approximately one month prior to EPA's release for public comment of the Administrator's Proposed CAA Section 202(a)(1) Findings,[268] and approximately nine months prior to EPA's release of the Administrator's Final CAA Section 202(a)(1) Findings.[269] Therefore, consistent with EPA's Peer Review Handbook and OMB's Peer Review Bulletin, EPA was required to ensure the external peer review of the computer models that EPA, other federal agencies, federal agency-funded universities, and non-U.S. third parties had developed, used and incorporated into the HISAs the EPA-TSD had designated as "core reference documents" upon which those Findings had primarily and heavily relied.

Even if the CREM Guidelines are found not to apply to the HISAs in question, Section 1.3.3 of EPA's Peer Review Handbook would have already required EPA to develop and secure approval of a Quality Assurance Project Plan ("QA Project Plan"). A QA Project Plan would have been required "for work products that involve the collection of new environmental data or the use of existing environmental data" before EPA could collect any new data or use existing data.[270]

According to EPA's 2002 Quality Assurance ("QA") Project Plan Guidelines,[271] a "QA Project Plan describes the activities of an environmental data[272] operations project involved with the acquisition of environmental information whether generated from direct measurements activities, collected from other sources, or compiled from computerized databases and information systems."[273] These guidelines indicate that "modeling projects [and] geospatial information projects" are among the many activities involving the development of a QA Project Plan.[274]

EPA's QA Project Plan Guidelines provide that a QA Project Plan should be submitted for *peer review*, input, and approval [and] revis[ed]…as needed" (emphasis added).[275] Section 2.3.1 of the QA Project Plan Guidelines provides that,

> "[f]or *model* performance evaluations, assessments may be made to qualitatively and quantitatively assess model performance, for example, uncertainty analyses, model verification tests, *and internal and external peer reviews. Model assessments may also involve peer review on the mathematical basis for the model, algorithm checks, code verification, model evaluation, data quality assessment of input data, and evaluation of model output uncertainty and variability*" (emphasis added).[276]

EPA's QA Project Plan Guidelines also refer to a companion document known as "EPA's QA Project Plans for Modeling (EPA/QA G-5m) (EPA, 2002e)".[277] According to EPA's Guidance for Quality Assurance ("QA") Project Plans for Modeling,[278]

> "In order to be able to use model output for anything from regulatory purposes to research [EPA officials] should be sure that the model is scientifically sound, robust, and defensible. The way to ensure this is by following a thorough planning process that incorporates [among other factors]…*peer reviewed theory and equations*" (emphasis added).[279]

In other words, the peer review of computer models is an essential element of model quality control.

> "*Quality control include peer review of theory and approach, code evaluation, and/or procedures for model calibration. Quality assurance of input data and parameter values are important to model quality*. Because the input data will most likely be obtained from other sources, data quality procedures for secondary data use should be followed" (emphasis added).[280]

Section 3.2 of EPA's QA Project Plans for Modeling states that, "[p]eer review can be incorporated in many different parts of the model development, as appropriate for the level of complexity of the model and the degree of confidence needed in the model output."[281] Peer review can be undertaken, for example, during the model design, model coding and model testing phases.[282]

During the model design phase, peer review can assess the "scientific concepts supporting model design…A science peer review would evaluate the soundness of the theoretical approach, the relevance of the theory to the problem at hand, and the appropriateness of the translation of the theory in to mathematical formulation."[283] Science formulations are converted to model code only "after any science peer review has been completed and any necessary changes (corrective actions) have been completed."[284]

During the model coding phase, a code must be tested and externally peer reviewed "to ensure that the code is error free and achieves all requirements specified in Elements A7 (Quality Objectives and Criteria for Model Inputs/Outputs) and B10 (Data Management and Hardware/Software Configuration) of the QA Project Plan."[285]

During the model testing phase, it is recommended that the model as tested be peer reviewed "to assess how well the model design specifications were actually implemented."[286] This is to occur after "the model design team determines that the model will be able to achieve the overall performance criteria listed Element A7 (Quality Objectives and Criteria for Model Inputs/Outputs)".[287]

Section 4.1.9 of EPA's Guidance for QA Project Plans for Modeling requires that documentation be maintained regarding "how a model was selected, developed, evaluated, and applied (as relevant) on a given project…so that sufficient information is available for model testing and assessment, *peer review*, and future model application" (emphasis added).[288] In particular, "peer reviewers need access to model evaluation records in order to address the following types of peer review charge questions" including, *inter alia*, "• What databases were used to provide an adequate test? • What were key assumptions and the model's sensitivity to them? • Is the documentation of model code and verification testing adequate? • How well does the model report variability and uncertainty in its output?"[289] Therefore, the "QA Project Plan should specify the types of documentation that will be necessary for peer review and how such information will be generated, maintained, and distributed."[290]

In addition, Section 4.3.1 of EPA's Guidance for QA Project Plans for Modeling provides that the QA Project Plan also should specify "the organizations and individuals that are expected to participate in assessments, including peer reviews".[291] Furthermore, it also recommends that the QA Project Plan specify all criteria that a modeling process must meet if certain aspects of that modeling have been subject to mandatory contractual or regulatory peer review requirements.

> "*If EPA contractual or regulatory requirements specify that peer reviews of certain aspects of the modeling process are necessary on the project* (e.g., on the theoretical basis for the model, the mathematical model structure, model algorithms and methods of solution of the model code, model predictions and alternative interpretations, model calibration data, uncertainty and sensitivity analysis methods, data quality assessment methods, conclusions), the QA Project Plan should specify criteria that the peer review will meet [e.g., EPA's peer review policy (EPA 2000e) and guidance given in Guidance for Conducting External Peer Review of Environmental Regulatory Models (EPA, 1994)]."[292]

Furthermore, it recommends that

> "*when peer review is to be performed on the project*, the QA Project Plan implementation file should include the names, titles, and positions of the peer reviewers, their report findings, the project management's documented responses to their findings (or reference to where responses to peer review comments are located)" (emphasis added).[293]

Finally, Section 6.5 of EPA's IQA Guidelines provides that, the Agency's use of third party-developed environmental data, literature, "results from computer or mathematical models of

environmental processes and conditions" and related datasets also would have been governed by EPA's *Quality Manual for Environmental Programs* ("QMEP") a/k/a the "Agency's Quality System".[294] QMEP Section 1.3.1 imposes "the minimum specifications for quality management functions and activities necessary to support EPA environmental programs and satisfy the requirements of EPA Order 5360.1 CHG 2," which *mandates* that EPA follow ANSI quality standard E4-1994 for data collection.[295] Environmental programs covered by the QMEP include

> "activities encompassing…*use of environmental data collected* for other purposes or *from other sources* (also termed "secondary data"), including literature, industry surveys, compilations from computerized data bases and information systems, *results from computerized or mathematical models of environmental processes and conditions*" (emphasis added).[296]

Agency Quality System requirements apply, as well, to non-EPA organizations, such as "[o]ther [g]overnment [a]gencies receiving assistance from EPA through interagency agreements…as defined by terms and conditions in EPA-funded extramural agreements".[297] According to the QMEP, "non-EPA quality systems [must]…provide objective evidence (such as a Quality Management Plan, quality manual, or audit report acceptable to EPA) of complying fully with the specifications of ANSI/ASQC E4-1994", to be compliant with EPA policy.[298] The QMEP considers EPA's quality review of documentation as a *complement to*, rather than as a substitute for, *the peer review process*.[299] Agency Quality System requirements, however, do not seem to apply non-EPA organizations if *EPA* is receiving assistance from other federal agencies through interagency agreements.

The administrative record shows that EPA had received numerous comments regarding computer model and dataset information during the Administrative Procedure Act public notice and comment period provided for the Administrator's Proposed CAA Section 202(a)(1) Findings. Several stakeholders' argued that EPA had failed to comply with the IQA because it "did not make publically available the data, models, and other relevant information used in the studies upon which the endangerment determination was made."[300] In particular, they argued that, with respect to the studies summarized and synthesized in the EPA-TSD, EPA

> "did *not* provide "[r]aw datasets used in the analysis of the observational record[; a]lgorithms used to correct, transform, or otherwise modify observational datasets[; m]issing data algorithms for all datasets[; m]odel calibration results for models[; and a]djustments made to models as a result of calibration" (emphasis added).[301]

In response to this first point, EPA indicated that since it

> "did not conduct new research or modeling in developing the EPA-TSD, and instead relied upon the findings of the assessment literature, including data and modeling studies presented in those reports[, t]he information…can be accessed by consulting these assessment reports and the underlying studies."[302]

In EPA's view, it had satisfied its IQA obligations because the EPA-TSD had comprehensively referenced the assessment literature, transparently conveyed the source of the data used, and had indicated the "assumptions (e.g., emissions scenarios), analytical methods, and statistical procedures *where that information was necessary* in describing the conclusions" (emphasis added).[303]

Numerous other stakeholder comments argued that EPA had not met IQA requirements because the Agency had failed to validate the accuracy, validity and reliability of the third party-generated observational and future projection-based modeling and datasets, and specific applications thereof incorporated within the HISAs summarized and synthesized by the EPA-TSD.[304]

In response to this second point, EPA indicated that, consistent with Section 6.5 of EPA's IQA Guidelines, the Agency would "continue to take steps to ensure that the quality and transparency of information provided by external sources are sufficient for the intended use."[305] According to EPA, this approach of "thoroughly reviewing and evaluating the author selection, report preparation, expert review, public review, information quality, and approval procedures of IPCC, USGCRP/CCSP, and NRC to ensure the information adhered 'to a *basic standard* of quality, including objectivity, utility, and integrity'" (emphasis added), as called for by the Agency Quality System, was consistent with EPA IQA Guidelines, and thus, IQA-compliant.[306]

EPA's position, notwithstanding, the administrative record still does not reflect that EPA had demonstrated *how*, by ensuring that the models and datasets supporting the major assessments underlying the Administrator's CAA Section 202(a)(1) Findings had generally adhered to a "basic standard of quality", EPA also had *validated* that each such model and dataset had been adequately *peer reviewed* in conformance with the IQA's highest and most stringent requirements applicable to HISAs.[307] In other words, the review (or verification) of an organization's designed data quality control management processes and procedures on paper does not qualify as a validation (or testing) of such actual processes and procedures in action,[308] [309]* and thus, is *not* synonymous with and does *not* replace the need to perform an actual peer review of a HISA developed by that organization. Thus, if EPA did not also actually test (and demonstrate that it had tested) the peer review processes and procedures of IPCC, USGCRP/CCSP, and NRC with respect to particular HISAs, its mere *pro forma* review of such processes and procedures, as designed, failed to comply with IQA requirements.

In EPA's view, D.C. Circuit case law did not require such a result, and neither the IQA nor the more recent OMB and EPA IQA-implementing guidelines are sufficiently authoritative to override it. Instead, EPA claimed that prior D.C. Circuit case law had governed its treatment of the numerous computer models and related datasets incorporated within the EPA-TSD summarized and synthesized HISAs designated as "core reference documents" that supported the Administrator's CAA Section 202(a)(1) Findings. In other words, D.C. Circuit case law did not mandate that the Agency identify and comprehensively discuss all models used in such HISAs.

> "[O]ne commenter (3702.1) argues that legal case history requires that EPA explain assumptions and methodologies of all models used in rulemaking and that therefore the EPA must identify and comprehensively discuss all models used in the underlying synthesis reports."[310] [311]

> "We note that the code for several major climate models is indeed public, such as GISS ModelE and the Community Climate System Model, and therefore it is possible for outside agencies to perform their own, independent verification of these models. **Cases cited by commenters do not indicate that…EPA is required to identify and comprehensively discuss all models used in the underlying synthesis reports**. In fact, the cases confirm that agencies are granted an 'extreme degree of deference' when they are 'evaluating scientific data' *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052 (D.C. Cir. 2001). In that case, the court specifically noted the value of models in regulations under the Clean Air Act, holding that the agency's use of models would only be arbitrary and capricious 'when the model bears no rational relationship to the characteristics of the data to which it is applied.' *Id.* (citations omitted). The court also noted that they can overturn the model only when it is 'so oversimplified that the agency's conclusions from it are unreasonable.' *Id.* (citations omitted). *Appalachian Power* **does not mandate a line-by-line annotated defense of agency choice of science—it merely calls for an 'actual reason articulated by the agency at some point in the rulemaking process.'** *Id.* at 1053-1054. **EPA has fully explained and justified its use of the assessment literature and therefore the models used in that literature; its use of these reports is very reasonable**. See Volume 1 for explanation of the use of the assessment literature in the TSD and the Finding"" (boldfaced emphasis added).[312]

Arguably, EPA's response to stakeholder comments set forth in Volume 1, as discussed above, did not constitute the reasonable response required by D.C. Circuit case law. It bears repeating that, the review (or verification) of an organization's designed data quality control management processes and procedures on paper does *not* qualify as a validation (or testing) of such actual processes and procedures in action, and thus, is *not* synonymous with and does *not* replace the need to perform an actual peer review of a HISA developed by that organization. Thus, if EPA did not also actually test the peer review processes and procedures of IPCC, USGCRP/CCSP, and NRC with respect to particular HISAs, its mere *pro forma* review of them, as designed, failed to comply with IQA requirements.

EPA's response, to date, therefore, does not sufficiently explain or otherwise demonstrate vis-à-vis records disclosure, *how* it had actually validated the IQA compliance of the peer reviews undertaken by such third party organizations of the model and dataset-incorporating HISAs that had supported the Administrator's CAA Section 202(a)(1) Findings. As Sections II.1-II.2 of the Addendum accompanying this FOIA Request discuss, this distinction is especially significant given the flaws that have since been discovered in the actual performance of IPCC, USGCRP, NRC and federal agency peer review processes and procedures.

EPA's reading of D.C. Circuit case law, moreover, fails to recognize how the D.C. Circuit Court, since its decision in *Appalachian Power Co. v. EPA,* had granted interested stakeholders jurisdiction to review their IQA-related claims. In *American Petroleum Institute v. EPA*,[313] the Circuit Court, in part, reviewed whether EPA had 'unreasonably' departed from its IQA-implementing guidelines in failing to peer review an internally generated meta-data-based analysis that served as the basis for

the Agency's national ambient air quality standard ("NAAQS").[314] Although no request for correction had been filed,[315] the Court proceeded to ascertain if EPA had acted 'arbitrarily and capriciously' thereby warranting the withdrawal of the analysis the validity of which had been challenged. The Court ultimately found that EPA had not departed from the Agency's peer review guidelines in light of the discretion they vested in the Administrator to peer review such study.[316] While the Court had characterized the particular EPA IQA-implementing guideline that plaintiffs had cited as non-binding, it did not preclude the possibility that other IQA-implementing guidelines could be binding if they imposed specific commitments.[317]

Evidently, this administration's EPA reading of *Appalachian Power* also overlooked the D.C. Circuit Court's other IQA-related ruling in *Prime Time Int'l Co. v. Vilsack*.[318] In *Prime Time*, the interested stakeholder (Prime Time International Company, a manufacturer of small cigars) had challenged USDA's failure to respond to its request for correction ("RFC") (and appeal of USDA's nonresponse) relating to data USDA had utilized to calculate and levy monetary assessments against it under the Fair and Equitable Tobacco Reform Act ("FETRA").[319] The Court ultimately ruled that USDA's determination of Prime Time's assessments qualified as an "adjudication"[320] not falling within the definition of "dissemination" under OMB/USDA IQA-implementing guidelines. This determination exempted USDA from the application of the IQA's (and corresponding OMB guidelines') administrative review procedure intended to address technical IQA RFCs,[321] and permitted USDA to pursue an alternative review procedure available under FETRA.[322]

Apparently, the D.C. Circuit Court had chosen not to rule expressly on whether the IQA authorized judicial review of agency action on an IQA RFC. Nevertheless, in order to undertake the substantive review of the specific OMB and USDA IQA-implementing guidelines needed to resolve this dispute,[323] the Court must first have implicitly decided that USDA's nonresponse to Prime Time International's RFC constituted a "final agency action" *and* that the particular OMB and USDA IQA-implementing guidelines in question provided a "meaningful" standard for judicial review under Section 704 of the Administrative Procedure Act.[324]

For purposes of undertaking its review of the specific OMB and USDA IQA-implementing guideline provisions defining the term "dissemination" as "exclud[ing] distribution limited to…adjudicative processes",[325] the Court held that it would "defer to OMB's reasonable construction of the statute…because Congress [had] delegated authority to OMB to develop *binding* guidelines implementing the IQA" (emphasis added).[326] In granting OMB such broad deference, the Court did not mention but likely recognized that OMB had complied with Congress' intent that it develop guidelines "*with public* and Federal agency *involvement*" by seeking public comments on proposed guidelines[327] that were subsequently incorporated into the final IQA guidelines.[328] Consequently, the Court also held that, since "[t]he IQA was silent on the meaning of 'dissemination', and…OMB…in defining the term…exercised its discretion to exclude documents prepared and distributed in the context of adjudicative proceedings" OMB's exercise of discretion was "a permissible interpretation of the statute".[329] Significantly, the D.C. Circuit Court's holdings in *Prime Time* also confirmed, consistent with the U.S. Supreme Court's holding in *United States v Mead*,[330] that even non-legally binding OMB and agency IQA-implementing guidelines were entitled to judicial deference under *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*,[331] as if

they were legally binding, to the extent of their "reasonableness", "consistency" and "power to persuade".[332]

In light of these latter two D.C. Circuit Court decisions, and the U.S. Supreme Court's recent determination that this administration's "EPA exceeded its statutory authority when it interpreted the Clean Air Act to require PSD and Title V permitting for stationary sources based on their greenhouse-gas emissions",[333] EPA ought to carefully reconsider whether its prior actions would be deemed a reasonable rather than an abusive exercise of administrative discretion. First, EPA should carefully reconsider whether it had acted reasonably and within its statutory discretion when it had invoked general APA notice and comment procedures rather than a special separate IQA administrative review mechanism for purposes of responding to the many technical stakeholder RFCs it had received relating to the computer and mathematical models and datasets, and applications thereof, incorporated within the HISAs that primarily supported the Administrator's CAA Section 202(a)(1) Findings.[334] Second, EPA should carefully reconsider whether it had acted reasonably and within its statutory discretion when it had equated the *pro forma* "data quality control management" review it had undertaken of third party (IPCC, USGCRP/CCSP, and NRC) peer review processes and procedures with the necessary validation it was required to undertake of the performance of such organizations' actual peer reviews of the computer and mathematical model and dataset-bearing HISAs upon which the Administrator's CAA Section 202(a)(1) Findings primarily had relied.

END

ITSSD FOIA Request
Annotated Addendum

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I. Legal Background

In *Massachusetts v. EPA* (2007)[335] the United States Supreme Court held that Congress had delegated to EPA, pursuant to Section 202(a)(1) of the Clean Air Act (CAA) (42 U.S.C. §7521(a)(1)), "the statutory authority to regulate the emission of…[GHGs] from new motor vehicles". In addition, the Supreme Court had held that the text of this statutory provision requires the Administrator, before exercising his/her authority, to form a 'judgment' "relate[d] to whether an air pollutant cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare".[336] According to the Court, *"policy judgments have nothing to do* with whether greenhouse gas emissions contribute to climate change and do not amount to a reasoned justification for declining to form a *scientific judgment* (emphasis added). [337]

In the subsequently decided case of *Coalition for Responsible Regulation, Inc. ("CRR") v. EPA* (2012)[338] the D.C. Circuit Court of Appeals ruled that CAA § 202(a)(1) "requires EPA to answer only two questions: whether particular 'air pollution' [e.g.,] –greenhouse gases– 'may reasonably be anticipated to endanger public health or welfare,' and whether motor-vehicle emissions 'cause, or contribute to' that endangerment."[339] The D.C. Circuit Court also held, reaffirming the Supreme Court in *Massachusetts v. EPA*, that "[t]hese questions require a *'scientific judgment'* about the potential risks greenhouse gas emissions pose to public health or welfare—not policy discussions. *Massachusetts v. EPA*, 549 U.S. at 534" (emphasis added).[340]

CRR v. EPA (and related cases consolidated by the D.C. Circuit Court of Appeals) had arisen, in part, as the result of the EPA Administrator's issuance of positive GHG endangerment and cause or contribute findings,[341] notwithstanding EPA's prior alleged failure to adequately respond to public comments concerning, and to public stakeholder requests for explanation, clarification and necessary correction of, EPA's climate science-related peer review records elucidating the scientific and policy judgments underlying the Administrator's findings.[342] This case also was triggered because, immediately after the Administrator had reached positive GHG endangerment and cause or contribute findings, EPA-HQ promulgated economically significant national GHG tailpipe emissions rules (May 2010)[343] and regulations governing GHG emissions from stationary source facilities under CAA Titles I and V (April and June 2010, respectively).[344] In addition, the Administrator rejected, thereafter, stakeholders' petitions to reconsider the endangerment and cause or contribute findings (August 2010),[345] notwithstanding public stakeholder claims that EPA allegedly had failed to adequately respond to or address beforehand the comments they had submitted under the Administrative Procedure Act[346] and the requests for correction they had filed under the Information Quality Act ("IQA").[347]

The Administrator's CAA Section 202(a)(1) Findings had been, in part, based primarily on the twenty-one (21) climate science-related synthetic assessment products ("SAPs") issued by the United States Global Change Research Program/Climate Change Science Program ("USGCRP/CCSP"). Apparently, the release of the 21 SAPs, which had been intended to fulfill the Global Change Research Act of 1990 requirement for a single integrated national climate change assessment, had been delayed for some time due to interpretational and other administrative complications.[348]

To better understand the context underlying this new ITSSD FOIA Request (and the ITSSD FOIA Request and Clarifications previously filed[1]), it is helpful to recall the pivotal role that these SAPs, which had been heavily based on IPCC findings, had served in informing the Administrator's CAA Section 202(a)(1) Findings. To this end, it also is informative to revisit the early court challenge launched in November 2006 by three environmental nongovernmental organizations ("ENGOs")[349] to ensure and expedite the production of these delayed SAPs. It reveals the quite considerable scheduling constraints and political pressures under which the prior administration had operated and the expedited processes it employed to produce and conduct peer reviews of all twenty-one 21 SAPs (including the scientific literature, modeling, datasets, assumptions, extrapolations, etc. underlying them) in abbreviated record time, which now appear to have violated the IQA's highest and least discretionary peer review, conflict-of-interest, objectivity/bias and transparency standards applicable to HISAs.

In *Center for Biological Diversity et al. v. Brennan et al.* (2007),[350] a case of first impression, the U.S. Federal District Court for the Northern District of California ruled in favor of the three ENGOs that had sought declaratory and injunctive relief to compel executive branch[351] compliance with the relevant provisions of the Global Change Research Act of 1990 (GCRA). In particular, 15 U.S.C. §§2934 and 2936, respectively, require the "periodic preparation and submission of (1) a National

1

Global Change Research Plan…and (2) a Scientific Assessment analyzing the effects of global climate change."[352]

The District Court found that the Bush administration had failed to prepare the required new Research Plan within the statutory timeframe (i.e., at least once every three years). "The last Research Plan issued was in July 2003…The statute [15 U.S.C. §2934] required a revised Research Plan by July 2006. None ha[d] been forthcoming…"[353] The Court also found that defendants had failed to prepare and submit the required new Scientific Assessment within the prescribed statutory period (15 U.S.C. §2936 requires "not less frequently than every 4 years"). According to the Court,

> "The last Scientific Assessment was published on October 31, 2000, and submitted to the Congress in November 2000…A new assessment was due in November 2004…As with the Research Plan, this deadline has lapsed. The Scientific Assessment is now more than two and a half years late."[354]

In their response to plaintiff's complaints, defendants advised that they had already "initiated the process for producing a revised Research Plan",[355] but had not provided a specific date by which they would complete the revised Research Plan.[356] Defendants also responded that they were then "in the process of issuing 21 Assessment and Synthesis reports that [would] fulfill the requirements [to produce a Scientific Assessment],"[357] which they had intended to complete "by end of 2007."[358]

On August 21, 2007, the District Court ordered defendants to publish the revised Research Plan in the Federal Register within the following six months - by "no later than March 1, 2008,"[359] and to produce the new Scientific Assessment, which "must in some manner integrate, evaluate, and interpret the public comments of the Research Plan," by "no later than May 31, 2008."[360] By February 2008, the 21 USGCRP/CCSP SAPs that defendants had claimed were "in progress" in December 2006, had still been "'on the verge of release,'" prompting questions from environmental stakeholders concerning "how the CCSP [would] meet the May 31 court deadline to produce a new climate change assessment" that reflected the findings of each of these reports.[361] On May 29, 2008, the White House National Science and Technology Council's Committee on Environment and Natural Resources[362] finally issued an assessment entitled, *Scientific Assessment of the Effects of Global Change on the United States*,[363] in compliance with the Court Order.

On July 30, 2008, EPA issued a federal register notice announcing the release of and soliciting public comments on an Advanced Notice of Proposed Rulemaking ("ANPR") that "respond[ed] to the U.S. Supreme Court's decision in *Massachusetts v. EPA* and numerous petitions related to the potential regulation of greenhouse gas emissions under the Clean Air Act".[364] The ANPR had been accompanied by a June 21, 2008 draft of the EPA-developed Technical Support Document ("EPA-TSD") that revealed how EPA had then utilized and relied upon the available reports of the IPCC, NRC, interagency USGCRP/CCSP, Arctic Council and the White House Office of Science and Technology Policy ("OSTP")'s Committee on Environment and Natural Resources, which the draft TSD had designated as "core reference documents", as the primary support for the Administrator's CAA Section 202(a)(1) endangerment analysis.[365] [366] Apparently, at the time the draft EPA-TSD and ANPR had been posted to EPA's online docket (July 14, 2008), only five (5) USGCRP/CCSP SAPs authored by four different federal agencies (DOC-NOAA, DOE, USDA and DOT had been

completed.[367] Table 1.1 of this draft EPA-TSD, which had been reviewed by an interagency panel directed by OSTP, unequivocally demonstrates how Bush administration officials from each federal agency that had issued federal register notices during 2007 and 2008 seeking public comments on *pre*-dissemination versions of USGCRP/CCSP HISAs *not then eligible for IQA review* (discussed in Section II.4 of the ITSSD's new FOIA Request and Section II.3 of this Addendum) had likely known that EPA under the next administration would utilize these HISAs, in part, as the primary basis for what would become EPA's Proposed and Final CAA Section 202(a)(1) Findings.

As of August 1, 2008, it was reported that "only eight of the [21] CCSP SAPs ha[d] so far been completed" even though these 'eight' had been represented as serving largely as the scientific foundation for another CCSP assessment referred to as the "Draft Unified Synthesis Product" ("USP"),[368] for which DOC-NOAA had previously sought public comments in a July 17, 2008 federal register notice.[369] DOC-NOAA had previously characterized the USP, which it distinguished from the period scientific assessment subject to the Court Order, as a report that would "integrate and evaluate" CCSP findings "in the context of current and projected global climate change trends…and analyze the effects of current and projected climate change…"[370]

Both the incomplete state of the CCSP SAPs and the unusually short 28-day public comment period provided provoked industry objections regarding the USP's credibility and its compliance with the IQA and DOC-NOAA IQA-implementing guidelines.[371] DOC-NOAA had taken the position in such notice that the USP did not qualify as an Agency "dissemination" within the meaning of the IQA,[372] and that therefore, it is not required to produce the thirteen (13) then-incomplete SAPs underlying it. Clearly, however, "public commentators [could not have] possibly assess[ed] the "objectivity and reliability [of the USP]" at that time in the absence of such foundational documents."[373]

Due to the many public comments it had received and the likely significant revisions the document would thereafter require, DOC-NOAA effectively announced, on December 12, 2008, that the incoming administration would release the amended draft USP for a second 45-day public comment period sometime during January 2009.[374] On January 13, 2009, the Obama administration published a notice in the Federal Register announcing the commencement of a second 45-day public comment period ending on February 27, 2009, to review said document;[375] the USP, entitled, *Global Climate Change Impacts in the United States*, was later released in June 2009.[376] And, by January 16, 2009, it was reported that all of the remaining incomplete USGCRP/CCSP SAPs had been "completed."[377]

II. Factual Context

1. *Observations Concerning EPA Involvement in and Endorsement of IPCC AR4 & USGCRP SAP Development & Peer Review Processes*

On December 7, 2009, EPA issued its Final Technical Summary Document ("EPA-TSD")[378] explaining how the Administrator's CAA Section 202(a)(1) Findings had been reached. The Administrator's Findings stated that the EPA-TSD had been 'peer reviewed' by "12 federal experts [one of whom was an EPA scientist][379] who…had also been involved with the USGCRP/CCSP as well as in the development and/or review of the Working Group II contribution to the IPCC's [Intergovernmental Panel on Climate Change's ("IPCC")[380]] Fourth Assessment Report ("AR4")".[381]

In particular, EPA had taken "part in the approval of the summary for policymakers for the Working Group II volume, *Impacts, Adaptation, and Vulnerability*".[382] According to EPA, "[t]he federal experts were ideal candidates because they ha[d] contributed significantly to the body of climate change literature and played active roles in IPCC and CCSP."[383]

The facts, however, reveal that no EPA personnel either drafted or contributed to the WG II summary for policymakers, whereas, no fewer than eight DOC-NOAA personnel had drafted, contributed to and/or edited said report.[384] The facts also reveal that while nine (9) EPA personnel had served as 'reviewers' of the Working Group II portion of the AR4,[385] no EPA personnel had drafted or contributed to such report. Several of these EPA IPCC reviewers subsequently participated in the preparation and/or review of the three (3) USGCRP/CCSP synthetic assessment products for which EPA had served as 'lead agency' developer.[386]

Furthermore, the facts show that no EPA personnel drafted, contributed to or reviewed the Working Group I portion of the AR4, which task had fallen largely to DOC-NOAA personnel.[387] Apparently, four (4) EPA personnel made contributions to the Working Group III portion of the AR4, while one of these EPA employees, along with three (3) others, had reviewed such report.[388] Clearly, EPA had contributed little, if nothing, to the development of the substantive science portions of the IPCC AR4 report which assessed observed changes in climate supposedly taking into account the ongoing scientific uncertainties surrounding the current state of climate science. Rather, EPA assumed an observational role that monitored and used the science developed by third parties, including federal agencies (particularly, DOC-NOAA), to evaluate the risks engendered by apparent changes in climate as reported by such parties. Therefore, the IPCC documents contained within the EPA-TSD that allegedly support the Administrator's CAA Section 202(a)(1) Findings had been prepared mostly by non-EPA-personnel.

The EPA-TSD lists twenty-eight (28) "core reference documents".[389] [390]

> "These include [: three (3) documents comprising] the 2007 *Fourth Assessment Report* of the Intergovernmental Panel on Climate Change (IPCC)[;] [sixteen (16) of twenty-one (21) documents comprising] the *Synthesis and Assessment Products of the U.S. Climate Change Science Program* (CCSP)[/United States Global Research Change Program ("USGCRP/CCSP")[391]] published between 2006 and 2009[;] the 2009 USGCRP scientific assessment[;][four (4)] National Research Council (NRC) reports under the U.S. National Academy of Sciences (NAS)[/National Research Council (NAS/NRC);[392]] the National Oceanic and Atmospheric Administration's (NOAA's) 2009 *State of the Climate in 2008* report[;] the 2009 EPA annual *U.S. Inventory of Greenhouse Gas Emissions and Sinks*[;] and the 2009 EPA assessment of the impacts of global change on regional U.S. air quality."[393]

These twenty-eight (28) "core reference documents" also include the Arctic Council's 2004 climate impact assessment[394] *inter alia*.

The EPA-TSD states that it:

> "relies most heavily on existing, and in most cases very recent, synthesis reports of climate change science and potential impacts, which have undergone their own peer-review processes, including review by the U.S. government. Box 1.1 describes this process[fn]. The information in this document has been developed and prepared in a manner that is consistent with EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency* (U.S. EPA 2002). In addition to its reliance on existing and recent synthesis reports, which have each gone through extensive peer-review procedures, this document also underwent a technical review by 12 federal climate change experts, internal EPA review, interagency review, and a public comment period."[395]

The EPA-TSD, moreover, stated that EPA relied primarily on these assessment reports

> "because they 1) are very recent and represent the current state of knowledge on GHG emissions, climate change science, vulnerabilities, and potential impacts; 2) have assessed numerous individual, peer-reviewed studies in order to draw general conclusions about the state of science; 3) have been reviewed and formally accepted, commissioned, or in some cases authored by U.S. government agencies and individual government scientists; and 4) they reflect and convey the consensus conclusions of expert authors."[396]

Consequently, the Administrator's GHG Findings asserted that, "the scientific assessments of the IPCC, the USGCRP, and the NRC were "the best reference materials for determining the general state of knowledge on the scientific and technical issues before the agency in making an endangerment decision."[397] In addition, said Findings stated that,

> "*[t]hese assessments therefore essentially represent the U.S. government's view of the state of knowledge on greenhouse gases and climate change*. For example, with regard to *government acceptance and approval of* IPCC assessment reports, the USGCRP Web site states that: 'When governments accept the IPCC reports and approve their Summary for Policymakers, they acknowledge the legitimacy of their scientific content.'[fn] *It is the Administrator's view* that such review and acceptance by the U.S. Government lends further support for *placing primary weight on these major assessments*" (emphasis added).[398]

Apparently, a number of assessments upon which the EPA-TSD had "primarily" and "heavily" relied had not been expressly referenced in the body of the EPA-TSD. Rather, they had been "incorporated by reference" into assessments and reports that had been expressly referenced as "core reference documents". "Incorporation by reference is the act of including a second document within another document by only mentioning the second document…This act, if properly done, makes the entire second document a part of the main document."[399]

For example, the EPA-TSD and its contents had been "incorporated by reference"[400] by EPA into the federal registered-noticed GHG tailpipe emissions rules[401]and the prevention of significant

deterioration and Title V GHG tailoring rules for stationary source facilities.[402] Thereafter, EPA incorporated the EPA-TSD by reference into a recently proposed federal register-noticed new source performance standard for CO2 emissions potentially applicable to new "fossil fuel-fired electric utility generating units."[403]

The record reveals that the USGCRP/CCSP had appointed EPA as 'lead agency' for the development of three (3) USGCRP/CCSP SAPs two (2) of which had been designated as "core reference documents" SAP4.1/CCSP(2009b) and SAP4.6/CCSP(2008b). The "core reference document" designation was significant for several key reasons.

First, the "core reference document" designation reflected the Administrator's "primary" and "heavy" reliance, in part, upon these two USGCRP/CCSP SAPs[404] in having reached positive CAA Section 202(a)(1) Findings that triggered EPA's subsequent issuance of economically significant national mobile and stationary source GHG emissions control regulations. Second, such designation suggested that the Administrator had *not* primarily relied upon the third EPA-developed SAP (SAP4.4/CCSP(2008)) that had *not* been expressly listed in the EPA-TSD as a "core reference document". Nevertheless, the administrative record reflects that the Administrator had actually primarily relied upon this third EPA SAP to the extent it had been "incorporated by reference" within another EPA-TSD-designated "core reference document" (i.e., within a DOC-NOAA-developed climate science assessment entitled, the *Global Climate Change Impacts in the United States* a/k/a Second National Climate Assessment).[405]

Second, the "core reference document" designation was important because of the number of "core reference documents" that referenced IPCC assessments that were not themselves designated as "core reference documents". For example, the EPA-TSD had included only three IPCC assessments as "core reference documents",[406] but had incorporated by reference many more IPCC assessments that were referenced within the sixteen (16) USGCRP/CCSP SAPS, four (4) NRC assessments, and one (1) DOC-NOAA climate assessment designated as "core reference documents".[407]

Third, the "core reference document" designation was significant because of the IQA compliance certification statements that had been included within such documents. The two (2) EPA SAPs designated as "core reference documents" contained a statement classifying them as "highly influential" scientific assessments ("HISAs") for peer review purposes, within the meaning of the IQA and applicable EPA IQA-implementing guidelines. These HISA statements were practically identical to those contained in other federal agency 'led' USGCRP/CCSP SAPs designated as "core reference documents".[408]

The statement provided that,

> "*[f]or purposes of compliance with* Section 515 [...of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554) and the information quality act guidelines issued by the U.S. Environmental Protection Agency pursuant to Section 515...], this CCSP Synthesis and Assessment Product is an "interpreted product" as that term is used in U.S. Environmental Protection Agency guidelines and is *classified as "highly influential*" (emphasis added).[409]

Such statements provided *prima facie* evidence that these two (2) SAPs constituted HISAs, and thus, that they had been ostensibly subjected to the highest and most rigorous level peer review, conflict-of-interest and transparency requirements. The term "interpreted product", however, did not appear either in EPA's IQA-Implementing Guidelines or in EPA's *Peer Review Handbook*. This raises questions concerning how EPA could have used that term for purposes of classification.

Clearly, EPA had borrowed that term from DOC-NOAA's IQA Guidelines, which refer to "interpreted products" as one form of DOC-NOAA (government)-dissemination which is covered by the OMB and DOC-NOAA IQA Guidelines.[410] According to such Guidelines,

> "*Interpreted Products* are those that have been developed through interpretation of original data and synthesized products.[411] In many cases, this information incorporates additional contextual and/or normative data, standards, or information that puts original data and synthesized products into larger spatial, temporal, or issue contexts. This information is subject to scientific interpretation, evaluation, and judgment. Examples of interpreted products include journal articles, scientific papers, technical reports, and production of and contributions to integrated assessments."[412]

If EPA had borrowed that term from DOC-NOAA, which seems most likely, it does not appear EPA had indicated in the administrative record that it had done so.

These two EPA 'lead agency' SAPs also contained a statement certifying that said document had satisfied all relevant and applicable IQA and EPA IQA-implementing guideline requirements.

> "This document, part of the Synthesis and Assessment Products described in the U.S. Climate Change Science Program (CCSP) Strategic Plan, *was prepared in accordance with* Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554) and the information quality act guidelines issued by the U.S. Environmental Protection Agency pursuant to Section 515. *The CCSP Interagency Committee relies on U.S. Environmental Protection Agency certifications regarding compliance with Section 515 and Agency guidelines as the basis for determining that this product conforms with Section 515*" (emphasis added).[413]

The classification of such assessments as HISAs had triggered the application of the IQA's most stringent substantive and procedural peer review standards. Nevertheless, the administrative record does not reflect that EPA has yet demonstrated how it had publicly substantiated its certification of IQA HISA compliance to the CCSP Committee and other federal agencies, as Section VII of the OMB *Peer Review Bulletin* had required.[414]

The administrative record also does not evidence how EPA had validated the truthfulness and reliability of the certifications made by DOC-NOAA, DOI-USGS and other federal agencies with respect to the SAPs for which they had been assigned 'lead' development agency responsibilities. Since EPA well-recognized that the Administrator's CAA Section 202(a) GHG Findings had

primarily relied, in part, on these non-EPA SAPs, the record should have reflected prior EPA efforts to seek more than *pro forma* assurances from the CCSP Committee of such other agencies' IQA HISA compliance.

In addition, the administrative record reflects that EPA had also performed a lesser oversight function[415] in connection with two (2) other DOC-NOAA-developed SAPs,[416] three (3) DOE-developed SAPs,[417] and four (4) other SAPs developed, respectively, by DOI-USGS,[418] NASA,[419] DOT,[420] and USDA.[421] The EPA-TSD designated all nine (9) of these USGCRP/CCSP SAPs as "core reference documents". Since EPA had embraced and publicly disseminated these SAPs as its own,[422] and the EPA Administrator had relied upon them in both reaching positive CAA Section 202(a)(1) Findings and promulgating economically significant national GHG emissions control regulations, EPA had been obliged, as a matter of statute and administrative guidance, to ensure their quality, integrity and reliability.

2. *EPA's Reliance on Proforma USGCRP, NRC and IPCC Peer Review Processes*

The EPA-TSD described "the peer review and publication approval processes of IPCC, CCSP/USGCRP and NRC reports"; however, it offered little or no support for the EPA assertion that, "the comprehensiveness of these assessments and their review processes…provide EPA with assurances that this material has been well vetted by both the climate change research community and by the U.S. government."[423] The EPA-TSD also offered little or no support for the EPA assertion that "this document relies on information that is objective, technically sound and vetted and of high integrity" and that "use of these assessments complies with EPA's information quality guidelines".[424]

The EPA-TSD also outlined the following peer review process employed for each USGCRP/CCSP SAP referenced therein:

> "For each SAP, there was first a prospectus that provided an outline, the proposed authors, and the process for completing the SAP; this went through two stages of expert, interagency, and public review. Authors produced a first draft that went through expert review; a second draft was posted for public review. The designated lead agency ensured that the third draft complied with the Information Quality Act. Finally, each SAP was submitted for approval by the National Science and Technology Council (NSTC), a cabinet-level council that coordinates science and technology research across the federal government."[425]

However, the administrative record contains little, if any, hard evidence demonstrating such EPA IQA compliance. EPA's websites contain little practical information about the original prospectuses, the peer review processes EPA and other federal agencies and interagency entities had employed consistent with the peer reviewer charge contained within such prospectuses to evaluate drafts of the climate science-related assessments, the specific peer reviewer comments received, the author and agency responses thereto, or any discussion of the substantive scientific issues, especially how to address scientific uncertainties of which there were many.

The EPA-TSD recited and reproduced *pro forma* sections of IPCC, USGCRP/CCSP and NRC[426] peer review, conflict-of-interest and transparency rules and procedures without their having been tested in actual practice. Unless EPA decides to disclose records substantiating how such rules and procedures, as actually employed, had satisfied the highest and most rigorous IQA, OMB and EPA IQA-implementing guideline standards applicable to HISAs, the climate science-related assessments each of these organizations produced by virtue of such rules and procedures cannot legitimately be certified as IQA-compliant. Regrettably, as the discussion above reflects, EPA has yet to substantiate how the USGCRP/CCSP peer review procedures, in practice, had been IQA-compliant, other federal agency IQA certifications notwithstanding.

The administrative record also strongly suggests that EPA had not seriously considered the perceived independence and conflict-of-interest issues that had potentially compromised EPA's and other federal agencies' peer review processes and the integrity of the science produced therefrom. Independence issues were alleged to have arisen from EPA's review of the Administrator's CAA Section 202(a) findings. As at least one legal practitioner pointed out,

> "During the Endangerment Finding comment period, a number of commenters questioned the independence and objectivity of the personnel EPA selected to peer review the Endangerment Finding, which is plainly a major scientifically based work product requiring peer review under EPA's IQA guidelines. As these comments pointed out, all of the peer reviewers were government scientists and many had worked directly on the 'assessment literature' on which EPA relied." [427]

A close inspection of the administrative record strongly suggests that the peer review processes that had been employed by certain federal agencies upon whose SAPs the Administrator's CAA Section 202(a)(1) Findings had primarily relied may have been compromised. For example, the peer review agendas of the DOI-USGS- and DOE-established federal advisory committees charged with peer reviewing SAP3.4/CCSP(2008a) for which DOI-USGS had 'lead agency' development responsibility[428] and the final version of SAP 2.1*a*/CCSP(2007b) that DOE had produced,[429] show that different members of the same specially formed advisory committees had been integrally involved in the development and peer review of these SAPs. At the very least, these federal agencies have yet to publicly disclose the criteria their specially formed federal advisory committees had employed to review and select the individual peer reviewers or peer review panels identified (in the peer review agenda by DOI-USGS, and in the final SAP by DOE). Other SAPs developed by these agencies also appear to suffer from such infirmity. As a result, the EPA Administrator had not been ensured by such other agencies that the SAPs for which they had 'lead agency' development responsibility had satisfied the highest and most rigorous level IQA peer review, conflict-of-interest and transparency standards applicable to HISAs.

The high legal benchmark to which EPA had been subject did not permit the Agency to accept at mere face value the nearly identical representations such third parties had tendered stating that the climate science-related HISAs they had developed under the auspices of the USGCRP/CCSP and which had been peer reviewed had satisfied the highest and most rigorous level IQA and OMB, and other federal agency IQA-implementing guideline standards applicable to HISAs. In addition, the high legal benchmark to which EPA had been subject did not permit EPA to accept and rely on,

without more, the *pro forma* peer review and publication approval processes and procedures the EPA-TSD had reproduced that had allegedly been employed in the peer review of the IPCC, and NRC HISAs. Rather, EPA had been obliged to seek some form of tangible demonstrative evidence validating that each federal agency's certification of IQA HISA compliance and that the actual peer review practices engaged in by the IPCC and NRC had actually satisfied that standard.

Indeed, there are indications that EPA would be hard-pressed to show how the IPCC peer review processes and procedures actually employed in the development of the IPCC AR4 had been IQA compliant. If EPA were unable to substantiate how it had validated such IQA compliance, it would most certainly cast doubt on the credibility and reliability of the very IPCC assessments that the EPA-TSD designated as "core reference documents" upon which the Administrator's CAA Section 202(a)(1) Findings primarily relied.

The findings of a 2010 United Nations ("UN") Secretary General and IPCC Chair-commissioned report prepared by the Inter-Academy Council ("IAC") revealed systemic flaws in the IPCC's peer review processes and procedures.[430] The IAC-2010 report found that the Third and Fourth IPCC Assessment Reports ("AR3", "AR4") had been developed amidst numerous systemic IPCC process and procedure failures in the critical areas of peer review, reviewer independence/ conflict-of-interest, lead author selection, assessment scoping, and assessment communication transparency, which required correction.[431] [432] These are precisely the very failures the IQA and the OMB and EPA IQA-implementing guidelines are meant to guard against.

However, despite these findings, the IPCC Review Committee appointed by the IAC Board[433] had somehow managed to conclude that the IPCC AR3 and AR 4 "assessment process ha[d] been successful overall".[434] Reasonable persons are entitled to question this result and to raise additional questions. For example, is it more than possible that DOC-NOAA's funding of universities with which four (4) of twelve (12) IPCC Committee members[435] were then likely affiliated,[436] had influenced the Committee's findings?

In sum, this FOIA Request seeks records demonstrating EPA substantiation of IQA compliance with respect to HISA-applicable standards pertaining specifically to: 1) the substantive peer reviews conducted; 2) the peer reviewer selection processes employed, which include the experience, credentials and competence criteria imposed, individual peer reviewer conflict-of-interest, independence and bias screenings and peer review panel balancing undertaken; and 3) the public transparency practiced by peer review managers and overseers with respect to the charge given to peer reviewers, discussions of the scientific issues, peer reviewer comments, agency and public responses to peer reviewer comments, the draft, interim and final assessments peer reviewed, the peer review panel report issued, discussions between the agency and the peer review panel regarding agency disposition of substantial recommended changes to such HISAs, and the disclosure of ALL apparent as well as actual conflicts-of-interest, bias and lack of independence, once identified and the manner in which they had been resolved.[437]

3. *EPA-Established Federal Advisory Committee Peer Review Processes*

Section 4.2 of EPA's IQA Guidelines provides that

> "major scientifically and technically based work products (including scientific, engineering, economic, or statistical documents) related to Agency decisions should be peer-reviewed…For those work products that are intended to support the most important decisions or that have special importance in their own right, *external* peer review is the procedure of choice. For other work products, *internal* peer review is an acceptable alternative to external peer review" (emphasis added).[438]

Furthermore, Section 2.4.2 of EPA's Peer Review Handbook provides that,

> "In principle, peer review provides the greatest credibility for influential scientific information and *highly influential scientific assessments* when it involves *well-qualified external reviewers*, is intensive in its examination, and operates through a more or less *formal and transparent process…Generally the more novel or complex the science or technology, the greater the cost implications of the impending decision, and the more controversial the issue, then the stronger the indication is for a more extensive and involved peer review and for external peer review* in particular. *Certain work products may clearly lend themselves to extensive external peer review; generally these will be products with large impacts (e.g., those that support Tier 1*[439] *and Tier 2 rulemakings)*…b) *Highly influential scientific assessments are expected to undergo external peer review*. When time and resources allow, panels are preferable…" (emphasis added).[440]

Moreover, Section 2.4.3 of EPA's Peer Review Handbook provides as follows:

> "2.4.3 **What are Some Examples of External Peer Review Mechanisms?**...d) *Review by an established Federal Advisory Committee Act mechanism such as the Science Advisory Board (SAB)*, FIFRA Scientific Advisory Panel (SAP), *ORD's Board of Scientific Counselors (BOSC), or the Clean Air Scientific Advisory Committee (CASAC)* - e.g., a review of a criteria document for a particular chemical risk;…f) *Review by the NAS* (e.g., a review of the state of current knowledge about children's health risks from pesticide exposures" (bold-faced emphasis in original; italicized emphasis added).[441]

The administrative record reflects that EPA was well aware that the three USGCRP SAPs it was responsible for developing under the USGCRP/CCSP program had been characterized as HISAs. In addition, the administrative record reflects that, notwithstanding SAP4.6's characterization as a HISA, EPA violated OMB and EPA IQA guidelines by proceeding to employ *internal* rather than external peer review procedures. To this end, EPA-ORD's Global Change Research Program (GCRP) established three *ad hoc* federal advisory committees for such purpose that have since been terminated. While EPA also *may* have secured some form of interagency CCSP and/or external peer review of these HISAs, this *is not* clear from the records EPA has publicly disclosed to date, and certainly *was not* clear at the time stakeholders had sought such information.

a. Human Impacts of Climate Change Advisory Committee ("HICCAC")

EPA established the Human Impacts of Climate Change Advisory Committee ("HICCAC") in 2007 and terminated it in 2008.[442] [443] It is ITSSD's understanding and belief that the HICCAC had been comprised, at most, of nine (9) members,[444] not all of whom had been in attendance at the two committee meetings (a October 15-16, 2007 Workshop and a January 14, 2008 teleconference) that had been convened[445] and for which federal register notices setting forth meeting agendas had been filed.[446]

"The purpose of this Committee [was] *to provide advice* on the conduct of a study titled *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems* to be conducted as part of the U.S. Climate Change Science Program (CCSP) [SAP 4.6/CCSP(2008b)]" (emphasis added).[447] More specifically, the HICCAC Charter explained the Committee's charge as follows:

> "The primary responsibility of this committee is *to conduct an expert peer review* of a first external review draft report entitled: 'Analyses of the effects of global change on human health and welfare and human systems.' The HICCAC *will provide advice to the EPA Administrator on the conduct of this study*...The Committee will also review Agency responses to the public *and CCSP's peer review panel* comments of the first draft. Specific and detailed review charges will be developed and provided to the Committee to guide their review process...The duties of the HICCAC are solely advisory in nature...*The HICCAC will submit its report on advice and recommendations to the EPA Administrator through the Assistant Administrator, Office of Research and Development*." (emphasis added).[448]

Based on this charter description, it would appear that the HICCAC's rendering of advice had helped to develop SAP 4.6. Additionally, the HICCAC had rendered several different types of peer review-related services in connection with the subject study which had been reported to EPA-ORD. In particular, the HICCAC had been charged with conducting an "expert peer review" by *inter alia* responding to four specific EPA committee charge questions which sought confirmation of the accuracy of SAP4.6 findings and recommendations,[449] and reviewing EPA responses to public comments on a draft of the peer reviewed document. If, as it appears, the HICCAC had actually served in both of these capacities – some or all members in a supplementary "advisory panel" HISA content development role *and* all or other members in a "expert peer review" role[450] – the committee's actions, *as a whole*, would have amounted to a blatant conflict-of-interest jeopardizing the independence and objectivity of the peer review, in clear and direct contravention of IQA HISA requirements.

Indeed, this is what the October 2007 meeting minutes reveal, notwithstanding the comments of one EPA official in attendance (Joanna Foellmer, the Designated Federal Officer) that EPA remained ultimately responsible for revising SAP4.6 in response to HICCAC member comments:

> "Ms. Foellmer thanked the members of the **advisory panel** on behalf of EPA. She then provided some background information regarding HICCAC and her role in the process. HICCAC is a federal advisory committee that **has been convened to provide advice and suggest revisions to the substance of SAP 4.6**; however,

> responsibility for revising the report still lies with EPA…In this meeting, **an expert panel convened to conduct a peer review** of EPA's draft report Synthesis and Assessment Product 4.6: *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems* (SAP 4.6)" (boldfaced emphasis added).[451]

Furthermore, the meeting minutes reveal that SAP4.6's *lead author*, Janet Gamble, an EPA scientist, had, on several occasions, *directed* the dual-role HICCAC concerning how to review the very report for which she bore *lead author* content responsibilities:

> "Background information on the development of the draft report was provided by Dr. Janet Gamble, the convening lead author…*Dr. Gamble highlighted two issues that the advisory panel should address*: the research recommendations made in Chapters 3, 4, and 5, and the report's handling of uncertainty. This was an issue raised in many of the comments from the public. Also, she reminded the panel that EPA is in the process of creating a communication document" (emphasis added).[452]

> "*Dr. Gamble stated that* the intended audience for the report is broad and varied, and that the audience may not necessarily be scientifically trained. Federal agencies will be interested in information regarding the impacts of climate change and the research information. Public health circles will have an interest in the occurrence of extreme events. There may also be state and local interest from entities such as resource managers and transportation departments, as well as private sector interest. *It is important to provide credible science, but the report must also be accessible to a general audience. The purpose of the SAP reports is to capture the state of the science in a synthesis.*"[453]

Since Dr. Gamble did not serve during this meeting only as the recipient of and responder to HICCAC member SAP4.6 advisory/development comments, it is arguable that her behavior jeopardized the independence and objectivity of HICCAC member "expert peer review" of that assessment.

In addition, ITSSD research reveals that two HICCAC members (Eugene Rosa and Jonathan Patz) were professors affiliated with two universities (Washington State Univ. and Univ. of Wisconsin) that had been EPA STAR grant award recipients,[454] which suggests the potential existence of a conflict-of-interest and subject matter bias. However, the meeting minutes neither identify nor address this possibility.

It also appears that an interagency CCSP peer review panel had been convened to review SAP4.6. As the HICCAC charter description above indicated, HICCAC also bore the responsibility of reviewing EPA responses to CCSP's peer review panel comments of the document's first draft. However, *there was then, and there continues to be no* detailed EPA or interagency disclosure of any such activities as the IQA requires, save for a brief mention of an interagency CCSP peer review in a February 5, 2008 federal register notice.[455]

Moreover, a January 7, 2008 federal register notice apparently reflects that the HICCAC had solicited public comments on a draft of SAP4.6 to be submitted during the January 14, 2008 teleconference call meeting.[456] In addition, the final SAP4.6 indicates that public comments also had been provided by officials from other federal agencies during said teleconference.[457] However, as the Explanation following Section II.4 of this new ITSSD FOIA Request discusses, these comments do not constitute a formal peer review within the meaning of the IQA and interpretive OMB and Agency guidelines.[458] It is difficult for a public audience now to see how substantive comments of any quality could have then been produced by public stakeholders within such a short seven-day timeframe that also would have been seriously considered by the HICCAC or EPA. Apparently, EPA had provided such a short timeframe because it had been concerned with satisfying a federal court order's deadline to produce the second U.S. national climate assessment, of which SAP4.6 was an integral part, by May 31, 2008.[459]

Lastly, the HICCAC's January 14, 2008 teleconference meeting was convened "to address EPA's response to the *post panel meeting comments* from the HICCAC meeting held on October 15-16, 2007" (emphasis added).[460] Contrary to IQA requirements, EPA did *not* previously and does *not* currently identify or disclose how the post panel meeting comments set forth in accompanying Appendix B had been developed[461] to which EPA had responded. While Appendix C accompanying the January 14, 2008 meeting minutes sets forth EPA's responses to individual HICCAC member comments,[462] there is *no* explanation regarding how individual HICCAC member comments relate to the post panel meeting comments, and whether the individual comments were more in the nature of "advisory panel HISA development" comments as opposed to "expert peer review panel" comments.

b. Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee ("ACSERAC")

EPA established the Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee ("ACSERAC") in 2007 and terminated it in 2008.[463] [464] It is ITSSD's understanding and belief that the ACSERAC had been comprised of ten (10) members,[465] not all of whom had been in attendance at the several committee meetings (a October 22-23, 2007 Workshop and a January 15, 2008 teleconference) that had been convened[466] and for which federal register notices setting forth meeting agendas had been filed.[467]

"The purpose of this Committee [was] to provide advice on the conduct of a study titled 'Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources' to be conducted as part of the U.S. Climate Change Science Program (CCSP). [SAP 4.4/CCSP(2008)]"[468] More specifically, the ASCERAC Charter explained the Committee's charge as follows:

> "The primary responsibility of this Committee is *to conduct an expert peer review* of the first external review draft report entitled: 'Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources.' *The ACSERAC will provide advice to the EPA Administrator on the conduct of this study*...The Committee also will review Agency responses to the public and CCSP's peer review panel comments on the first draft. *Specific and detailed review charges will be developed and provided* to the Committee to guide their review process... The duties

> of the ACSERAC are solely advisory in nature…*The ACSERAC will submit its report on advice and recommendations to the EPA Administrator through the Assistant Administrator, Office of Research and Development*" (emphasis added).[469]

Based on this charge, it would appear that, like the HICCAC, the ACSERAC's rendering of advice had helped to develop SAP 4.4. Additionally, the ASCERAC had rendered several different types of peer review-related services in connection with the subject study which had been reported to EPA-ORD. In particular, the ASCERAC had been charged with conducting an "expert peer review" *inter alia* by responding to seven specific EPA committee charge questions[470] and reviewing EPA responses to public comments on the peer reviewed document. However, *only two of the seven committee charge questions had* sought to confirm the accuracy of SAP4.4 findings and approaches.[471] *Five of the seven EPA committee charge questions can best be characterized as having instead sought advice on the further development of SAP4.4*.[472] If, as it appears, the HICCAC had actually served in both of these capacities – some or all members in a supplementary "advisory panel" HISA content development role *and* all or other members in an "expert peer review" role, the committee's actions, *as a whole*, would have amounted to a blatant conflict-of-interest jeopardizing the independence and objectivity of the peer review, in clear and direct contravention of IQA HISA requirements.

In addition, ITSSD research reveals that two ASCERAC members (Chair, Dr. Paul Risser and Dr. Elizabeth Malone) were professors affiliated with two universities (Univ. of Oklahoma and Univ. of Maryland) that had been EPA STAR grant award recipients,[473] and that one ASCERAC member (Dr. Elizabeth Malone) was affiliated with the same university (Univ. of Maryland) as one of SAP4.4's authors (Margaret Palmer). Although these relationships suggest the potential existence of a conflict-of-interest and subject matter bias, the meeting minutes neither identified nor addressed this possibility.

It also appears that an interagency CCSP peer review panel had been convened to review SAP4.4. As the ASCERAC charter description above indicated, ASCERAC also bore the responsibility of reviewing EPA responses to CCSP's peer review panel comments of the document's first draft.[474] However, there was then, and there continues to be no detailed EPA or interagency disclosure of any such activities as the IQA requires, save for a brief mention of an interagency CCSP peer review in a February 5, 2008 federal register notice.[475]

Furthermore, a January 7, 2008 federal register notice apparently reflects that the ASCERAC had solicited public comments on a draft of SAP4.4 to be submitted during the January 15, 2008 teleconference call meeting.[476] However, as the Explanation following Section II.4 of this new ITSSD FOIA Request discusses, these comments do not constitute a formal peer review within the meaning of the IQA and interpretive OMB and Agency guidelines.[477] It is difficult for a public audience now to see how substantive comments of any quality could have then been produced by public stakeholders within such a short eight-day timeframe that also would have been seriously considered by the ASCERAC or EPA. Apparently, EPA had provided such a short timeframe because it had been concerned with satisfying a federal court order's deadline to produce the second U.S. national climate assessment, of which SAP4.4 was an integral part, by May 31, 2008.[478]

Lastly, the ASCERAC's January 15, 2008 teleconference meeting was convened "to address EPA's response to the *post panel meeting comments* from the ASCERAC meeting held on October 22-23, 2007" (emphasis added).[479] Contrary to IQA requirements, EPA did *not* previously and does *not* currently identify or disclose how the post panel meeting comments set forth in accompanying Appendix C had been developed[480] to which EPA had responded. While Sections 3.1 and 3.2 of the January 15, 2008 meeting minutes set forth EPA's responses to individual ASCERAC member comments and recommendations,[481] there is *no* explanation regarding how individual ASCERAC member comments relate to the post panel meeting comments, and whether the individual comments were more in the nature of "advisory panel HISA development" comments as opposed to "expert peer review panel" comments.

c. Coastal Elevations and Sea Level Rise Advisory Committee ("CESLAC")

EPA established the Coastal Elevations and Sea Level Rise Advisory Committee ("CESLAC") in 2006 and terminated it in 2009.[482] [483] It is ITSSD's understanding and belief that the CESLAC had been comprised of fifteen (15) members,[484] not all of whom were in attendance at the six committee meetings convened (January 29, 2007, June 8, 2007, July 27, 2007, March 17-18, 2008, July 30, 2008, and October 16, 2008)[485] for which federal register notices had been filed.[486]

"The purpose of this Committee [was] to provide advice on the conduct of a study titled *Coastal Elevations and Sensitivity to Sea Level Rise* to be conducted as part of the U.S. Climate Change Science Program (CCSP) [SAP 4.1/CCSP(2009b)]".[487] More specifically, the CESLAC Charter explained the Committee's charge as follows:

> "CESLAC *will provide advice to the EPA Administrator on the conduct of a study titled Coastal Elevations and Sea Level Rise to be conducted as part of the U.S. Climate Change Science Program*. Within the context of the basic study plan, CESLAC will advise on the specific issues to be addressed, appropriate technical approaches, the nature of information relevant to decision makers, *the content of the final report*, compliance with the Information Quality Act, and other matters important to the successful achievement of the objectives of the study…The duties of the CESLAC are solely advisory in nature…CESLAC will submit advice and report to the EPA Administrator, through the Director of the Office of Atmospheric Programs in the Office of Air and Radiation (OAR)" (emphasis added).[488]

Aside from this charter description, the minutes from the CESLAC's initial January 29, 2007 meeting appear to corroborate that CESLAC's primary objective was to provide the SAP4.1 coordinating and lead authors (EPA, DOC-NOAA and DOI-US Geological Survey officials[489]) with assistance in developing the *substantive content* of SAP4.1. [490] The minutes from the January 2007 [491] [492] and October 2008[493] meetings set forth ten (10) substantive questions that SAP4.1 was intended to answer. This would explain why, the CESLAC Charter description, unlike the HICCAC and ASCERAC Charter descriptions, did *not* expressly indicate whether the "advisory services" which CESLAC had been charged with providing included the conducting of a peer review of such study, responding to public comments to the peer reviewed study, and/or responding to CCSP (interagency) comments made to an earlier study draft.

To the contrary, the minutes from CESLAC's January 27, 2007 and June 8, 2007 federal advisory committee meetings strongly suggested that some form of external peer review of SAP4.1 beyond CESLAC's oversight and control would be provided. As the January 2007 meeting minutes stated,

> "*Carl Hershner voiced concern over basing the study on documents that have not yet been peer reviewed. Karen Scott stated that the peer review will be completed by April [2007]*, any document that is found lacking will have to be addressed at that time and adjustments to the study will need to be made accordingly. Hershner emphasized the challenges associated with this…Carl Hershner inquired about geographic representation *on the peer review panel. Karen Scott explained that there would be peer reviewers with both regional and national expertise*…Mark Monmonier requested a list of the 7 substantive issues in the report identified for consideration in the peer review panel selection" (emphasis added). [494]

And, as the June 2007 meeting minutes stated,

> "[CESCLAC member Carl] Hershner inquired about committee members *providing peer reviews. [Designated Federal Officer (DFO): Jack] Fitzgerald stated that the peer review should remain separate from the committee*, but that issues raised by the committee will be documented and addressed by the authors. The committee report will serve to address issues with SAP 4.1." [495]

The 'Acknowledgements' section of SAP4.1 confirms that a separate technical review of SAP4.1 had been provided by nineteen (19) individuals with backgrounds in science, law, federal, state and local government coastal resources management, nonprofit organizations, and the private sector.[496] Interestingly, however, the profiles of these individuals and the organizations with which they had been affiliated closely correspond instead to those persons described as the peer reviewers of a number of *background documents supporting SAP4.1* that EPA had organized into a 354-page compilation and published in May 2008.[497] The title page to this compilation represents that both the background documents and the EPA compilation of them had peer reviewed consistent with EPA IQA Guidelines.

> "These technical documents were prepared and approved for publication by the U.S. EPA Office of Air and Radiation *in accordance with EPA peer review policies. The draft document underwent peer review by external subject-matter experts*. The comments of all reviewers were carefully considered and incorporated, wherever possible, throughout the revised technical documents. *The information in this document was developed and presented in a manner consistent with EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*" (emphasis added).[498]

Page v of this EPA background document compilation described the process pursuant to which it and its contents had been independently peer reviewed by persons closely corresponding to the description contained in the 'Acknowledgements' section of SAP4.1:

> "In 2006, EPA initiated the review of a series of papers that were written as background for the U.S. Climate Change Science Program (CCSP) Synthesis and Assessment Product 4.1 Coastal Elevations and Sensitivity to Sea-Level Rise. These documents were linked to questions in the SAP4.1 Prospectus. *The reviews were intended to serve as "Level One" peer reviews—short, brief reviews to help the authors ensure that each background paper contained reasonable assumptions, estimates, and conclusions given the available data.* Potential reviewers were identified on the basis of their areas of expertise, including knowledge of the specific coastal areas studied. To accommodate the range of topics explored in the papers (e.g., wetland accretion, GIS mapping, and coastal zone biology), reviewers were sought from a variety of backgrounds. *Candidate reviewers included scientists, engineers, and others involved with mid-Atlantic coastal research, management, and policy in federal, state, and local agencies, nonprofit organizations, and the private sector*" (emphasis added).[499]

Indeed, Part I of SAP4.1 clearly refers to such background documents and EPA's compilation of them which served to support the development of SAP4.1:

> "Chapter 1 provides an overview of the current understanding of climate change and sea-level rise and their potential effects on both natural environments and society, *and summarizes the background information that was used to develop this Product*" (emphasis added).[500]

Furthermore, Chapters 2-5, 7, 10, 13-14 and Appendix I of SAP4.1 discussed and referenced the findings of various background documents identified as distinct sections of EPA's background document compilation.[501]

The administrative record contains no other information that would lead reasonable persons to conclude that SAP4.1 *itself*, incorporating summaries and syntheses of these allegedly peer reviewed background documents, had been externally peer reviewed by the nineteen (19) persons identified in the 'Acknowledgements' section of SAP4.1, as the IQA required.

Moreover, the minutes to CESLAC's July 2008 meeting[502] and the text of the October 10, 2008 draft of the Committee's Final Report[503] strongly suggest that the failure to subject SAP4.1 to an adequate IQA-compliant HISA external peer review had been precipitated by a lack of historical data and peer reviewed literature (i.e., "there is no comprehensive, highly resolved, and well-vetted inventory of coastal elevations") needed to provide "solid numbers" in response to the first of ten questions SAP4.1 was intended to answer: Which lands are currently at an elevation that could lead them to be inundated by the tides without shore protection measures?

Lastly, SAP4.1's development had relied on a series of three public meetings convened in Maryland, New Jersey and North Carolina[504] and a 60-day public notice and comment period initiated via DOC-NOAA's issuance of a February 25, 2008 federal register notice[505] to secure public comments on various drafts of SAP4.1. Although information regarding these public meetings remains largely publicly unavailable, the minutes of the CESLAC's July 2008 meeting indicate that the committee had scheduled to set aside thirty (30) minutes to hear oral statements[506] (and receive written statements[507]) prepared by four members of the public. One of these public commenters was likely an external peer reviewer of the background documents supporting SAP4.1,[508] and *perhaps*, had also peer reviewed an earlier draft of SAP4.1.[509] ITSSD is unable to confirm whether the July 30, 2008 CESLAC meeting was one of the three public meetings referred to above. However, even if it was, the Explanation following Section II.4 of this new ITSSD FOIA Request makes clear that public comments do not constitute a formal peer review within the meaning of the IQA and interpretive OMB and Agency guidelines.[510]

d. Information Gaps Remain For Which This FOIA Request Seeks EPA Disclosure

A close review of these federal advisory committee and peer review activities highlights important information gaps that EPA has failed to publicly address. These include *inter alia* lack of information about the criteria that EPA, EPA federal advisory committees and or the USGCRP/CCSP had actually employed in screening and selecting individual peer reviewers and composing interagency and/or external peer review panels. They also include lack of information about the procedures EPA, EPA federal advisory committees and or the USGCRP/CCSP had actually employed in identifying and resolving apparent and actual conflicts-of-interest, lack of peer reviewer independence/bias, and peer review panel balance issues.

In addition, the administrative record does not reflect that EPA had publicly released full and summary versions of final peer review reports prepared by these three EPA-established federal advisory committees and external peer review panels. For the most part, all that is publicly accessible are HICCAC, ASCERAC and CESLAC federal advisory committee meeting minutes and draft reports. As a result, the public can only speculate whether and how the peer review practices and procedures these federal advisory committees and interagency and external peer review panels employed to ensure the quality, integrity and reliability of these three HISAs upon which the Administrator's CAA Section 202(a) findings relied, actually satisfied the highest and most rigorous level peer review, conflict-of-interest and transparency standards applicable to HISAs, consistent with the IQA and OMB and EPA IQA-implementing guidelines.

The administrative record also does not reflect that EPA had substantiated how the methods chosen by EPA and EPA interagency and/or external peer review contractors for addressing public stakeholder IQA requests for correction ("RFCs")/reconsideration ("RFRs") relating to the three EPA-developed and disseminated HISAs underlying the Administrator's CAA Section 202(a)(1) Findings had satisfied the relevant statutory and administrative requirements of the IQA and OMB and EPA IQA-implementing guidelines.

III. Perceived EPA Climate Science and Peer Review Resources and Abilities

1. *Reports Concerning EPA's Organizational Limitations*

A review of EPA's record reveals a series of reports from various EPA offices documenting difficulties that EPA has long experienced in performing a number of climate science-related development and review functions. These reports raise serious questions about EPA's ability to have expertly undertaken the GHG endangerment analysis required by CAA Section 202(a)(1), and the peer review processes that EPA had employed itself or vis-à-vis third parties to ensure the quality, integrity and reliability of the climate related-science underlying the Administrator's findings, consistent with the highest and most rigorous level IQA and OMB and EPA IQA-implementing guidelines applicable to HISAs.

During 2006, the EPA-ORD Board of Scientific Counselors ("BOSC"), Subcommittee on Global Change Research had documented that one of EPA's long-term goals had been to ensure that "[d]ecision makers in the states and EPA regional and program offices will use scientific information and decision tools from EPA's research and assessment program to protect human health by adapting to global change".[511] However, the BOSC also reported that "[t]he Agency d[id] not have the resources, nor is it EPA's mission…to fully address the data and research needs for public health protection; data resources such as public health surveillance and disease registries are within the purview of the Department of Health and Human Services (HHS) through the Centers for Disease Control and Prevention (CDC)."[512]

In addition, ITSSD is aware of at least one 2009 EPA Office of Inspector General ("EPA-OIG") Report identifying how EPA-ORD had experienced difficulties (during 2005-2011) ensuring the collection, retention and dissemination of useful climate science research information ("research products, technical information, or tools on climate change impacts, adaptation, and mitigation") for the benefit of EPA's regional and local offices.[513]

Based on the 2009 EPA-OIG Report, EPA-ORD's response to the 2006 EPA-ORD BOSC report, and a 2011 joint report from the EPA Science Advisory Board ("SAB") and the EPA-ORD BOSC,[514] ITSSD also recognizes EPA's evolving reorientation. These reports effectively revealed that, since 2008, the EPA-ORD-Global Change Research Program ("ORD-GCRP"),[515] OW[516] and OAR have increasingly directed their focus and proportionately committed more of their limited local and regional budgets and other resources to federal interagency (CCSP/USGCRP) and international climate science initiatives.[517] [518] These EPA offices and entities have emphasized "the importance of aligning an Agency-wide strategy with these interagency programs",[519] and the need to redirect long-term goals from intra-agency regional and local initiatives "toward a more national perspective."[520]

Furthermore, ITSSD is aware of at least one 2011 EPA-OIG Report which focused on EPA-ORD's implementation of its *pro forma* "extensive process for peer review that addresses both internal and external peer reviews, as well as conflicts of interest".[521] As the EPA-OIG found, EPA-ORD (between 2005-2011) "d[id] **not** test its policies and procedures…to address internal control standards, such as:...*Principles of Scientific Integrity* [and] *Peer Review Handbook*…[and

consequently,] ORD c[ould] not assert with certainty the effectiveness of [its] controls…" (boldfaced emphasis added).[522]

Moreover, ITSSD is aware of the important role that the EPA Office of Research and Development's NCEA division serves with respect to scientific assessments and its consequent reliance on scientific peer review. At least one 2009 EPA-OIG Report reveals that EPA-ORD-NCEA "produces highly influential scientific assessments and thus is one of EPA's primary users of peer review services."[523] "NCEA [also] oversees the peer review of EPA's health risk assessments, specifically the peer review panel process",[524] and "may obtain peer review services from the NAS, the SAB, an EPA contract, or under an interagency agreement".[525] Although EPA-OIG deemed EPA-ORD-NCEA's peer review process to be *adequate*, EPA-OIG, nevertheless, concluded that NCEA could "improve its system for populating and managing expert panels by better documenting conflict of interest decisions, establishing guidance for handling conflict of interest issues that arise after the panel has completed its deliberations, and providing more consistency between contractor and other third party procedures for selecting panels."[526]

The administrative record also reveals how EPA's SAB and the EPA-ORD's BOSC had, during 2011, assessed the breadth and strength of EPA's legal authority over climate-related issues in light of the U.S. Supreme Court's decision in *Massachusetts v. EPA*. Their evaluation concluded that, "[a]lthough EPA has little authority related to energy and little authority on climate *other than that provided through the Supreme Court ruling* and the Endangerment Finding, the lack of regulatory responsibilities could free ORD to pursue unfettered, innovative and creative research that supports voluntary and/or information-based programs" (emphasis added).[527]

Finally, ITSSD's attention has been drawn to another 2011 EPA-OIG Report the findings of which shed negative light on EPA's peer review methodology and implementation as applied to the EPA-TSD. In sum, the EPA-OIG found that, "EPA's TSD [p]eer [r]eview [m]ethodology [d]id [n]ot [m]eet OMB [r]equirements for [h]ighly [i]nfluential [s]cientific [a]ssessments."[528]

According to the report,

> "EPA had the TSD…[it] disseminated as part of its endangerment finding…reviewed by a panel of 12 federal climate change scientists. However, the panel's findings and EPA's disposition of the findings were not made available to the public as would be required for reviews of highly influential scientific assessments. Also, this panel did not fully meet the independence requirements for reviews of highly influential scientific assessments because one of the panelists was an EPA employee."[529]

Apparently, the EPA-OIG had found that EPA-OAR officials had "not consider[ed] the TSD a scientific assessment [despite] the influential nature of the Agency's endangerment finding and the supporting technical information" the accompanying TSD contained.[530] Lastly, this same report identified how EPA's

> "development of the endangerment finding did not follow all action development process steps as outlined in EPA's action development process guidance"[531]

> applicable to 'Tier 1'[532] actions. In particular, the analytic blueprint[533]...[which] contained an outline for the endangerment finding...[and] listed the IPCC, CCSP (USGCRP), and NRC reports as core references for the development of OAR's TSD...*did not explain what reviews were needed before accepting the other organizations' data or how the TSD would be peer reviewed*...Although...OAR prepared *nine briefing documents* for EPA senior management that provided details on the Agency's plans for preparing and peer reviewing the TSD...[they]...*did not explain why [the Agency] chose not to have a formal external peer review of the TSD*" (emphasis added).[534]

Section II.3 of ITSSD's new FOIA Request contains further analysis of whether the interagency panel that had peer reviewed the EPA-TSD had satisfied EPA's IQA compliance obligations.

To its credit, EPA has since endeavored to fulfill this 2011 OIG Report's recommendation that the agency revise its *Summary of General Assessment Factors for Evaluating the Quality of Scientific and Technical Information* (EPA, 2003) "'to establish minimum review and documentation requirements for assessing and accepting data from other organizations.'"

2. *EPA's Delayed Compliance With Recent Administration Initiatives*

In January 2012, EPA issued what was likely its first response to the 2011 EPA-OIG report, namely, a guidance document intended to assist in the creation of Quality Assurance Project Plans (QAPPs). The guidance document was

> "designed to assist in the creation of QAPPs that address the specifications listed in Annex B of *Quality Standard For Environmental Data Collection, Production, and Use By EPA Organizations* (EPA CIO 2106-S-01) and *Quality Standard For Environmental Data Collection, Production, and Use By Non-EPA (External) Organizations* (EPA CIO 2106-S-02.0) (current versions). It is intended both for EPA organizations and for **organizations conducting environmental data operations under external agreements with EPA**" (bold-faced emphasis added).[535]

Thereafter, during April 2012, EPA developed a minimum set of requirements for agency scientists to follow in developing a QAPP.[536]

A cursory review of the current version of the *Quality Standard For Environmental Data Collection, Production, and Use By Non-EPA (External) Organizations* (EPA CIO 2106-S-02.0) last reviewed by EPA during February 2012 reveals that it focuses on

> "all non-EPA organizations having *external agreements with EPA* and shall be explicitly applied to all external agreements involving the collection, production, and use of environmental data for EPA. The terms and conditions of applicable external agreements shall include this Standard by reference as the requirements for quality management processes, applications, and personnel responsibilities. Affected organizations may include, but not be limited to:...*contractors; cooperative*

> *agreement holders;…other federal government departments and agencies*; non-governmental organizations; *international governments/organizations*;…" (emphasis added).[537]

This standard encompasses a rather broad scope of environmental data-related activities that includes:

> "*direct and indirect field and/or laboratory measurements*; evaluating the operation and performance of environmental technology (e.g., remediation); inspections; survey development or application; enforcement and compliance monitoring or assessments; *application of environmental management systems*; environmental safety and health monitoring; *scientific research; regulatory development*; *statistical or economic analyses using environmental data*; *use of information technology (e.g., the development and use of models* such as pollutant transport and ground water migration, databases) supporting Agency programs; use of information sources outside of direct EPA management controls or authority (e.g., academic institutions); and use of data obtained from other sources (e.g., literature, Internet)" (emphasis added).[538]

In December 2012, EPA issued "guidance for assessing and accepting existing scientific and technical information [that]…is relevant not only to data from other organizations, but to any existing scientific and technical information used to support Agency decision making."[539] According to said document,

> "EPA uses and disseminates scientific and technical information obtained from a variety of sources, both internal and external. **Information generated by the Agency, or obtained through EPA contracts, grants, and cooperative and interagency agreements, falls under the direct control of the Agency's internal information quality systems** and various Agency-wide and program-specific policies and procedures…**Information generated by or obtained from outside sources**, such as local and state governments, tribes, industry, environmental organizations, **other federal agencies, and the peer-reviewed literature, is evaluated by EPA using the guidance contained in the following documents** to determine whether it meets the quality requirements of the Agency: *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency* (EPA, 2002); FINAL December 2012; *A Summary of General Assessment Factors for Evaluating the Quality of Scientific and Technical Information* (the document to which this Addendum applies; EPA, 2003); *Guidance on Quality Assurance Project Plans* (EPA, 2012c); and *Peer Review Handbook, 3rd Edition* (EPA, 2006) and its Addendum (EPA, 2009c)" (bold-faced emphasis added).[540]

Interestingly, this EPA guidance document did not refer to third-party-generated scientific or technical assessments, reports, studies and other information that EPA obtains from *intergovernmental organizations* such as the UN IPCC. As the Administrator's CAA Section

202(a)(1) Findings reflect, EPA seems to have treated such scientific information either as having been generated by or obtained from an "environmental organization" or as "peer-reviewed literature".[541]

In addition, this EPA guidance document stated that "EPA organizations are expected to develop and use a Quality Assurance Project Plan (QAPP), or an equivalent form of documentation, to document the procedures used in the review and analysis of existing scientific and technical information. Such documentation is part of EPA's mandatory Quality Program."[542] During December 2012, EPA also issued a draft *Handbook for Developing Quality Assurance Project Plans*, which

> "presents non-mandatory guidance intended to help its users prepare Quality Assurance Project Plans (QAPPs) that meet the requirements of the following two Environmental Protection Agency (EPA) Standards: *Quality Standard for Environmental Data Collection, Production, and Use by EPA Organizations*, (CIO 2106-S-01) 'Internal Standard' (EPA 2012a); and *Quality Standard for Environmental Data Collection, Production, and Use by Non-EPA (External) Organizations*, (CIO 2106-S-02), (EPA 2012b). These Standards provide the foundation for the Agency-wide Quality Program for environmental data-related products and services that are disseminated outside the Agency."[543]

Each of these activities conceivably fall under the types of activities that other federal agencies and intergovernmental organizations (e.g., UN IPCC) had undertaken on EPA's behalf or in cooperation with EPA, especially those emphasized.

Regrettably, these recently established external EPA data quality processes, which build upon the IQA and relevant OMB and EPA IQA-implementing guidelines applicable to HISAs were either not in existence or not functioning well at the time the Administrator had reached positive CAA Section 202(a)(1) Findings that triggered EPA's issuance of economically significant mobile and stationary source GHG emissions control regulations. As a result, EPA had not subjected to an equivalently robust and rigorous process of data quality review either the climate science-related assessments developed by the IPCC (and the scientific literature underlying them) or the climate science-related assessments developed by other federal agencies participating in the USGCRP/CCSP (and the non-IPCC scientific literature underlying them) upon which the Administrator's findings had primarily relied.

Early in his administration, the President recognized the importance in securing public trust in "the science and scientific process informing public policy decisions".[544] To this end, in March 2009, he issued a policy memorandum instructing all federal agencies, including EPA, to subject all "scientific or technological information…considered in policy decisions…to well-established scientific processes, including peer review where appropriate", and to "appropriately and accurately reflect that information *in complying with and applying relevant statutory standards*" (emphasis added).[545] The 2010 White House Office of Science and Technology Policy Director's guidelines implementing the principles set forth in the President's memorandum specifically referred to "peer review" as a scientific process that is indispensable to ensuring the scientific integrity of scientific or technological information that agencies such as EPA consider in policy decisions.

> "Scientific and technological information is often a significant contributor to the development of sound policies. Thus, it is important that policymakers involve science and technology experts and that the scientific and technological information and processes relied upon in policymaking be of the highest integrity. *Successful application of science in public policy depends on the integrity of the scientific process* both to ensure the validity of the information itself and to engender public *trust in Government*. For this reason, agencies should develop policies that:..2. Strengthen the actual and perceived credibility of Government research. Of particular importance are: a) ensuring that selection of candidates for scientific positions in the executive branch is based primarily on their scientific and technological knowledge, credentials, experience, and integrity, b) *ensuring that data and research used to support policy decisions undergo independent peer review by qualified experts, where feasible and appropriate, and consistent with law*, c) setting clear standards governing *conflicts of interest*, and, d) adopting appropriate whistleblower protection" (emphasis added).[546]

As the 2012 Scientific Integrity Policy that EPA promptly drafted to implement the OSTP guidelines clearly indicates,

> "This Scientific Integrity Policy *builds upon existing Agency and government-wide policies and guidance documents*, enhancing the EPA's overall commitment to scientific integrity. This commitment is evidenced by the Agency's adherence to the 2002 Office of Management and Budget *(OMB) Information Quality Guidelines*, the 2005 *OMB Information Quality Bulletin for Peer Review*, the *EPA's Quality Policy* for assuring the collection and use of sound scientific data and information, the *EPA's Peer Review Handbook* for internal and external review of scientific products, and the *EPA's Information Quality Guidelines* for establishing the transparency, integrity, and utility of information published on the Agency's websites" (emphasis added).[547]

In December 2010, the Director of the White House Office of Science and Technology Policy ("OSTP") issued its own memorandum providing guidance explaining how federal agencies should implement the President's science integrity policy.[548] Apparently, the White House was concerned that a lack of public confidence in the science and scientific process could serve not only to limit funding for the nation's science and technology research agenda,[549] but also to impede administration-favored environmental and health policies informed by Agency science infected by 'flawed' or 'compromised' scientific peer review practices.[550] Although these White House memoranda were issued in 2009 and 2010, and EPA's implementing policy was drafted in 2012, respectively, *it was not until August 2013 that EPA was found to have been actively pursuing full compliance with the President's scientific integrity policy.*[551]

IV. Comprehensive Disclosure of EPA Peer Review Records ("EPA Climate Science-Related Peer Review Files") is Necessary to Ensure Public Trust in Agency/Administration Climate Science Decisions Supporting EPA's GHG Endangerment Findings

EPA-OAR officials may not recognize that, as the power and scope of the administrative state grows larger and the issues it tackles such as climate change become more abstruse, public confidence in the validity of its decisions becomes more critical. The public's willingness to accept the Agency's decisions is thus predicated on its ability to understand the foundation for those decisions and a principled trust that they are based upon a fair and equitable process fully compliant with applicable law.[552] According to the legal academy, this means that public trust in EPA decisions depends largely on Agency transparency – i.e., deferring to the public on matters of process and procedure, with the goal of enabling meaningful administrative and judicial review of agency actions.[553] In other words, the legitimacy of an EPA ruling such as the Administrator's GHG Endangerment Findings "depends almost entirely on the public's acceptance that…[the Agency] will actually adhere to the processes and procedures that Congress has enacted to afford the public the ability to hold [the Agency] accountable to 'We the People'."[554] EPA transparency, in this regard, is not limited simply to providing physical access to information; rather, it also includes providing "uncomplex information" at low cost that "allows…us…to deduce the facts we want from those that are given to us."[555]

ITSSD research revealing EPA peer review practices preceding the Agency's issuance of the Administrator's positive Final CAA Section 202(a)(1) Findings (described in Sections III.1-.2 of this Addendum and in the Explanations accompanying Sections II.1-.4 and III.4 of ITSSD's new FOIA Request) strongly suggests that EPA had adopted a sustained pattern of demonstrated *minimal* compliance, *non*compliance and/or *delayed* compliance with Information Quality Act and applicable OMB and Agency-implementing guideline requirements. EPA should be cautiously applauded for its ostensible effort to improve its data quality performance since that time in response to multiple EPA-OIG findings and the Administration's more recent initiatives on scientific integrity. However, any recent improvements in EPA practices do not remedy the prior scientific peer review process lapses the Agency suffered while vetting the EPA- and third party-developed HISAs the Agency disseminated and represented as primarily supporting the Administrator's GHG Endangerment and Cause or Contribute Findings ("CAA Section 202(a)(1) Findings)". Consequently, absent EPA's comprehensive disclosure of the "EPA climate science-related peer review files" clearly identified in this new ITSSD FOIA Request, a significant portion of the American public may reasonably conclude it cannot trust that EPA's climate science-related peer review practices had been in conformance with U.S. law.[556]

END

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Appendix 1: EPA-TSD Reviewers Who Authored Summarized "Core Reference Documents" Apparent Conflicts-of-Interest; *Lack of Independence

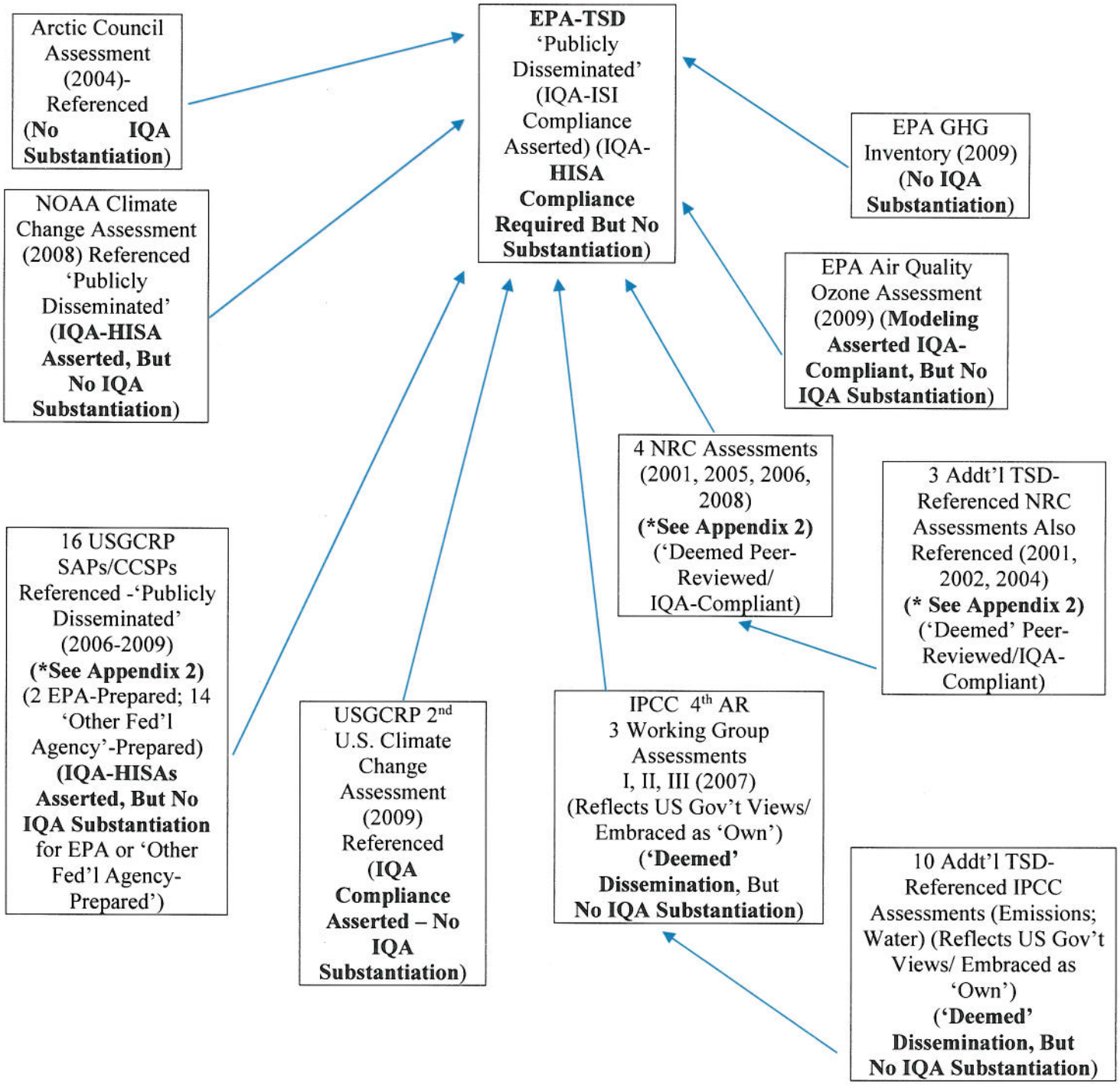
EPA-TSD Peer Reviewer /Federal Agency	'Summarized 'Core Reference Document' Role of Coauthor	Assessment/Report Title
Thomas Karl/ DOC-NOAA	SAP 1.1/CCSP(2006) Chief Editor; Contrib. Author, Preface	SAP 1.1: *Temperature Trends in the Lower Atmosphere* [557]
	USGCRP/CCSP GCCI (2009) Editor-in-Chief	*Global Climate Change Impacts in the United States* [558] (2nd National Climate Assessment)
	IPCC AR4 (2007) Review Editor, Chap. 3; Contributor, Annex II	*Working Group I: The Physical Science Basis* [559]
Susan Solomon/ DOC-NOAA	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
	IPCC AR4 (2007) IPCC WG I Co-Chair; Editor Team WG I; Drafting Author, Summary for Policymakers; Coord. Lead Author, Technical Summary WG I	*Working Group I: The Physical Science Basis*
Thomas Wilbanks/ DOE	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
	SAP 4.6/CCSP(2008b) Lead Author	SAP 4.6: *Analyses of the Effects of Global Change on Human Health* [560]
	SAP 2.2/CCSP(2007) Scientific Coordination & Editorial Teams; Contrib. Author, Chap. 1; Lead Author, Chaps. 4, 6	*The First State of the Carbon Cycle Report (SOCCR)*[561] (Incorporated by Reference into GCCI (2009))
	SAP5.2/CCSP(2009) Contrib. Author	SAP 5.2: *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking* (Incorporated by Reference into GCCI (2009))
*Anne Grambsch/ EPA	SAP 4.6/CCSP(2008b) Lead Author	SAP 4.6: *Analyses of the Effects of Global Change on Human Health*
Anthony Janetos/ DOE	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
Virginia Burkett/ DOI-USGS	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
Jerry Hatfield/ USDA	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
Gavin Schmidt/ NASA	USGCRP/CCSP GCCI (2009) Author Team Member	*Global Climate Change Impacts in the United States* (2nd National Climate Assessment)
	IPCC AR4 (2007) Contrib. Author, Chap. 10	*Working Group I: The Physical Science Basis*

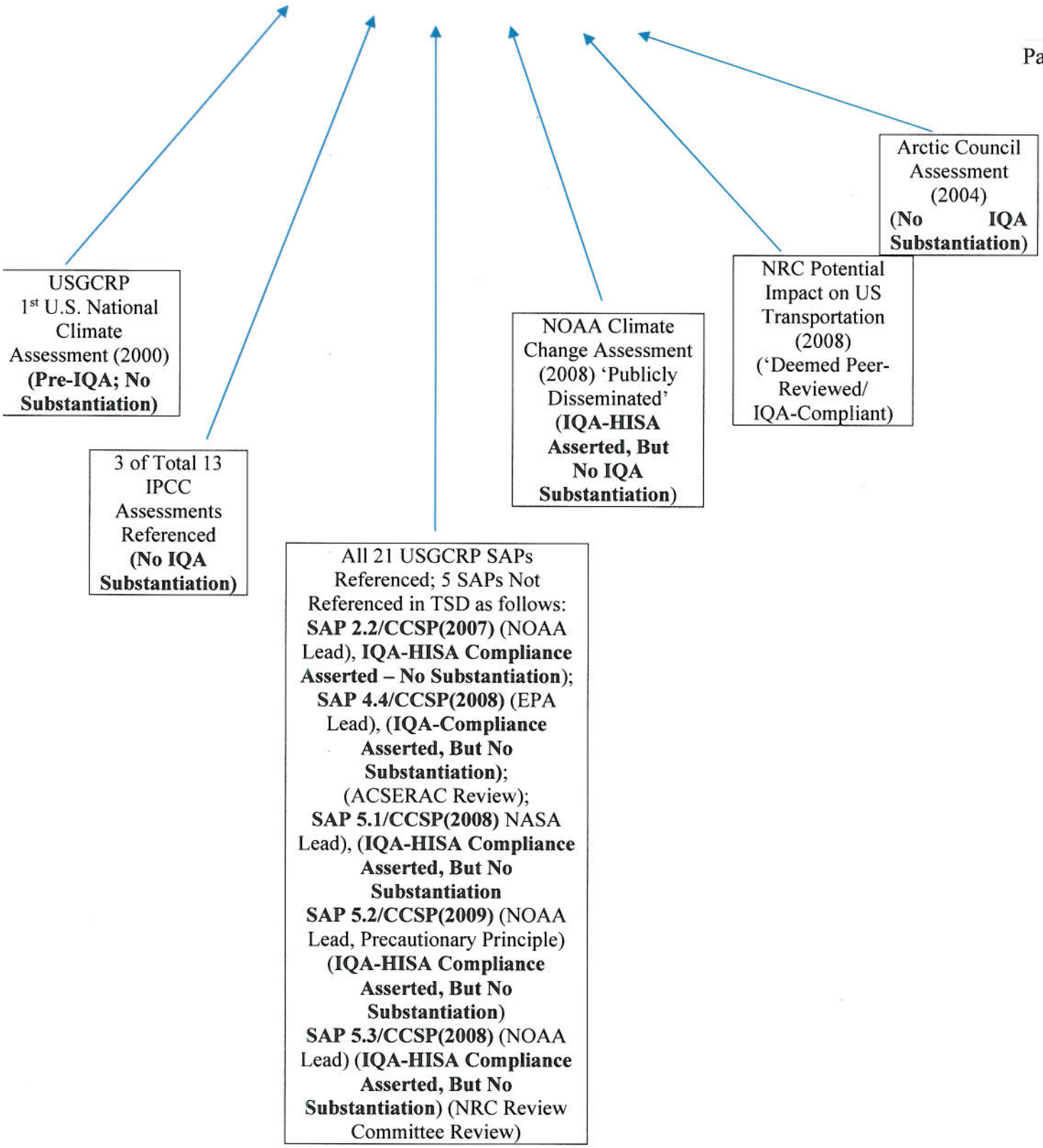
Appendix 2: EPA-TSD Table 1.1 "Core Reference Documents"*

Science Body-Author	U.S. Agency 'Lead'	Assessment/Report Title	Year
DOC-NOAA	DOC-NOAA	*State of the Climate in 2008* [562]	2009
USGCRP/CCSP	DOC-NOAA	*Global Climate Change Impacts in the United States* [563]	2009
IPCC		*Working Group I: The Physical Science Basis* [564]	2007a
IPCC		*Working Group II: Impacts, Adaptation and Vulnerability* [565]	2007b
IPCC		*Working Group III: Mitigation of Climate Change* [566]	2007c
USGCRP/CCSP	DOC-NOAA	SAP 1.1: *Temperature Trends in the Lower Atmosphere* [567]	2006
USGCRP/CCSP	DOI-USGS	SAP 1.2: *Past Climate Variability and Change in the Arctic and at High Latitudes* [568]	2009
USGCRP/CCSP	DOC-NOAA	SAP 1.3: *Re-analyses of Historical Climate Data* [569]	2008
USGCRP/CCSP	DOE	SAP 2.1a: *Scenarios of GHG Emissions and Atmospheric Concentrations* [570]	2007
USGCRP/CCSP	NASA	SAP 2.3: *Aerosol Properties and their Impacts on Climate* [571]	2009
USGCRP/CCSP	DOC-NOAA	SAP 2.4: *Trends in Ozone-Depleting Substances* [572]	2008
USGCRP/CCSP	DOE	SAP 3.1: *Climate Change Models* [573]	2008
USGCRP/CCSP	DOC-NOAA	SAP 3.2: *Climate Projections* [574]	2008
USGCRP/CCSP	DOC-NOAA	SAP 3.3: *Weather and Climate Extremes in a Changing Climate* [575]	2008
USGCRP/CCSP	DOI-USGS	SAP 3.4: *Abrupt Climate Change* [576]	2008
USGCRP/CCSP	**EPA**	SAP 4.1: *Coastal Sensitivity to Sea Level Rise* [577]	2009
USGCRP/CCSP	DOI-USGS	SAP 4.2: *Thresholds of Change in Ecosystems* [578]	2009
USGCRP/CCSP	USDA	SAP 4.3: *Agriculture, Land Resources, Water Resources, and Biodiversity* [579]	2008
USGCRP/CCSP	DOE	SAP 4.5: *Effects on Energy Production and Use* [580]	2007
USGCRP/CCSP	**EPA**	SAP 4.6: *Analyses of the Effects of Global Change on Human Health* [581]	2008
USGCRP/CCSP	DOT	SAP 4.7: *Impacts of Climate Change and Variability on Transportation Systems* [582]	2008
NRC		*Climate Change Science: Analysis of Some Key Questions* [583]	2001a
NRC		*Radiative Forcing of Climate Change* [584]	2005
NRC		*Surface Temperature Reconstructions for the Last 2,000 Years* [585]	2006b
NRC		*Potential Impacts of Climate Change on U.S. Transportation* [586]	2008
	EPA	*Impacts of Global Change on Regional U.S. Air Quality* [587] (EPA/600/R-07/094F)	2009
	EPA	*Inventory of U.S. Greenhouse Gas Emissions and Sinks* [588]	2009
ACIA		*Arctic Climate Impact Assessment* [589]	2004

* This table reproduces and annotates Table 1.1 on p. 6 of the EPA-TSD.

Appendix 3: EPA-TSD "Core Reference Documents" and Assessments 'Incorporated By Reference' Therein




USGCRP 1st U.S. National Climate Assessment (2000) **(Pre-IQA; No Substantiation)**
3 of Total 13 IPCC Assessments Referenced **(No IQA Substantiation)**
All 21 USGCRP SAPs Referenced; 5 SAPs Not Referenced in TSD as follows: **SAP 2.2/CCSP(2007)** (NOAA Lead), **IQA-HISA Compliance Asserted – No Substantiation**); **SAP 4.4/CCSP(2008)** (EPA Lead), **(IQA-Compliance Asserted, But No Substantiation)**; (ACSERAC Review); **SAP 5.1/CCSP(2008)** NASA Lead), **(IQA-HISA Compliance Asserted, But No Substantiation** **SAP 5.2/CCSP(2009)** (NOAA Lead, Precautionary Principle) **(IQA-HISA Compliance Asserted, But No Substantiation)** **SAP 5.3/CCSP(2008)** (NOAA Lead) **(IQA-HISA Compliance Asserted, But No Substantiation)** (NRC Review Committee Review)
NOAA Climate Change Assessment (2008) 'Publicly Disseminated' **(IQA-HISA Asserted, But No IQA Substantiation)**
NRC Potential Impact on US Transportation (2008) ('Deemed Peer-Reviewed/ IQA-Compliant)
Arctic Council Assessment (2004) **(No IQA Substantiation)**

Appendix 4: USGCRP/CCSP "Core Reference Documents" 'Lead' Agency Burdens

'Lead' Federal Agency Role *EPA Lead-Author Role **EPA Lesser Role	USGCRP/CCSP SAP/TSD Reference
EPA	SAP 4.6/CCSP(2008b)
	SAP 4.1/CCSP(2009b)
DOC/NOAA	SAP 1.1/CCSP(2006)
	SAP 1.3/CCSP(2008g)
*Jeff Cohen, USEPA Lead Author, Chap. 2; Exec Summ *Terry Keating, USEPA Lead Author, Chap. 3; Exec Summ ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 2.4/CCSP(2008h)
** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 3.2/CCSP(2008d)
** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 3.3/CCSP(2008i)
	USGCRP/GCCI/2009
DOE ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 2.1b/CCSP(2007b)
** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 3.1/CCSP(2008c)
** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 4.5/CCSP(2007a)
DOI/USGS ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 1.2/CCSP(2009c)
	SAP 3.4/CCSP(2008a)
**EPA Designated Contributing Agency ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 4.2/CCSP(2009d)
NASA ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 2.3/CCSP(2009a)
DOT ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 4.7/CCSP(2008f)
USDA ** Michael W. Slimak, USEPA SAP Advisory Group Chair	SAP 4.3/CCSP(2008e)

Appendix 5: USGCRP/CCSP Documents Referencing IPCC Assessment Reports

USGCRP/CCSP SAPs *EPA-TSD Core Reference Documents ! EPA-TSD Non-"Core Reference Documents" (But Incorporated by Reference in TSD)	Referenced IPCC Assessment Reports
CCSP(2009a)	1990, 1992, 1995, 1996, 2007
*CCSP(2009b)/SAP4.1 **(EPA Lead Agency)**	1990, 1992, 1996, 2001, 2007
CCSP(2009c)	1990, 2000, 2007
CCSP(2009d)	1996, 2007, 2007a, 2007b
CCSP(2008a)	2001, 2005, 2007
*CCSP(2008b)/SAP4.6 **(EPA Lead Agency)**	1994, 1995, 1996, 2000, 2001, 2001a, 2001b, 2001c, 2005, 2007, 2007a, 2007b, 2007c
CCSP(2008c)	1990, 2000, 2001, 2007, 2007a, 2007b
!SAP 4.4/CCSP(2008)[590] **(EPA Lead Agency)**	2000, 2001, 2001a, 2001b, 2007, 2007a, 2007b, 2007c, IPCC-TGIC 2007
*SAP 3.2/CCSP(2008d) **NOAA Lead Agency**	1990, 1992, 1996, 2001, 2001b, 2007, 2007a, 2007b
CCSP(2008e)	1990, 2000, 2001, 2007
CCSP(2008f)	1996, 2000, 2001, 2007
*SAP 1.3/CCSP(2008g) **NOAA Lead Agency**	2001, 2007, 2007a, 2007b
*SAP 2.4/CCSP(2008h) **NOAA Lead Agency (EPA Contributing Author)**	1999, 2001, 2005, 2007
*SAP 3.3/CCSP(2008i) **NOAA Lead Agency**	2001, 2007, 2007a, 2007b
CCSP(2007a)	2001, 2001a, 2005a, 2005b, 2007
CCSP(2007b)	1990, 1992, 1996a, 1996b, 1999, 2001, 2001a, 2001b, 2001c
*SAP 1.1/CCSP(2006) **NOAA Lead Agency**	1990, 2001
! SAP 2.2/CCSP(2007)[591] **NOAA Lead Agency**	2000, 2001, 2007
! SAP 5.2/CCSP(2009) **NOAA Lead Agency**	2001, 2001a, 2001b, 2004, 2005, 2007
! SAP 5.3/CCSP(2008) **NOAA Lead Agency**	2007, 2007a, 2007b
*USGCRP/GCCI/2009 **NOAA Lead Agency**	2000, 2007a, 2007b, 2007c, 2007d, 2008(Water)

Appendix 6: NRC Reports Referencing IPCC Assessment Reports

NRC Reports * EPA-TSD "Core Reference Documents" ! Non-TSD "Core Reference Documents" (But Incorporated by Reference in EPA-TSD)	Referenced IPCC Assessment Reports
*NRC(2008)	2005, 2007a, 2007b
!NRC(2006a)	2001
*NRC(2006b)	1990, 2001, 2001
*NRC(2005)	1990, 1992, 1996, 2001
!NRC(2004)	2001
!NRC(2002)	2001a, 2001b
*NRC(2001a)	2001
!NRC(2001b)	1996

ENDNOTES

[1] *See* Institute for Trade, Standards and Sustainable Development, *Re: FOIA Request No. EPA-HQ-2014-004938* (March 21, 2014), available at: http://nebula.wsimg.com/082c300589af39a59e396ea11703d13a?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1. This request was one of nine FOIA requests ITSSD originally had filed with EPA Headquarters and EPA Regions 2, 3, 4, 5, 6, 8, 9 and 10. EPA-HQ subsequently consolidated these nine FOIA requests into a single "consolidated" FOIA Request. *See* United States Environmental Protection Agency Office of Air and Radiation, *Correspondence from Dana Hyland, EPA-OAR Climate Change Division to ITSSD President, Lawrence Kogan Re: FOIA Request No. EPA-HQ-2014-004938* (April 1, 2014), available at: http://nebula.wsimg.com/8d8aa120746d530d075c6b4e689d2961?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1.

[2] *See* Institute for Trade, Standards and Sustainable Development, *Re: ITSSD FOIA Request Clarification - FOIA (Consolidated) Request No. EPA-HQ-2014-004938* (filed April 28, 2014), available at: http://nebula.wsimg.com/33da6f79b3db7f61ddb60acab86fed80?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1; Institute for Trade, Standards and Sustainable Development, *Re: Second ITSSD FOIA Request Clarification - FOIA (Consolidated) Request No. EPA-HQ-2014-004938* (filed May 15, 2014), available at: http://nebula.wsimg.com/43574caf2ab99de885c84749c3ad9411?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1.

[3] *See* Institute for Trade, Standards and Sustainable Development, *Email Correspondence From Dana Hyland, EPA-OAR Climate Change Division to ITSSD President Lawrence Kogan Re: EPA-HQ-2014-004938* (May 8, 2014), available at: http://nebula.wsimg.com/da67710568aceea472bd64141b5001d1?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1; Institute for Trade, Standards and Sustainable Development, *Correspondence From ITSSD President Lawrence Kogan to Dana Hyland, EPA-OAR Climate Change Division Re: ITSSD FOIA Request Clarification; FOIA Fee Waiver Request Clarification FOIA (Consolidated) Request No. EPA-HQ-2014-004938* (May 9, 2014), available at: http://nebula.wsimg.com/177229e10ccacafba1e1e180447f26c5?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1; Institute for Trade, Standards and Sustainable Development, *Email Exchange Between Dana Hyland, EPA-OAR Climate Change Division and ITSSD President Lawrence Kogan Re: RE: EPA-HQ-2014-004938* (May 12-13, 2014), available at: http://nebula.wsimg.com/bf5a2dbdeae27b2ad185bf92dbeedd6f?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1 (concerning the scheduling of a meeting or conference call to resolve EPA concerns regarding the scope and focus of ITSSD's FOIA Request and Clarifications).

[4] *See* Institute for Trade, Standards and Sustainable Development, *Re: FOIA Request No. EPA-HQ-2014-004938* (March 21, 2014), *supra*; Institute for Trade, Standards and Sustainable Development, *Re: ITSSD FOIA Fee Waiver Request Clarification - FOIA (Consolidated) Request No. EPA-HQ-2014-004938* (filed April 28, 2014), available at: http://nebula.wsimg.com/b6699885fdfe52abadc02e74efe88f10?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1.

[5] *See* United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)"), at Sec. 4.3.3, available at: http://www.epa.gov/peerreview/pdfs/peer_review_handbook_2012.pdf; ("Information regarding a peer review…is subject to release if EPA receives a Freedom of Information Act (FOIA) request, unless the peer review information meets the criteria for an exemption under the FOIA"). *Id.*

[6] *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554, 114 Stat. 2763, 2763A-153-154 (2000), §515, codified at 44 U.S.C. § 3516 note, available at: http://www.gpo.gov/fdsys/pkg/PLAW-106publ554/pdf/PLAW-106publ554.pdf; http://codes.lp.findlaw.com/uscode/44/35/I/3516/notes.

[7] *See* Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* ("OMB IQA Guidelines") 67 FR 8452 (Feb. 22, 2002), available at: http://www.whitehouse.gov/sites/default/files/omb/fedreg/reproducible2.pdf; *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), available at: http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-03.pdf.

[8] *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 ("EPA

IQA Guidelines") (Oct. 2002) at §6.2, available at: http://www.epa.gov/quality/informationguidelines/documents/EPA_InfoQualityGuidelines.pdf; United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)") at §2.2.4, available at: http://www.epa.gov/oamcinc1/1200015/handbook.pdf; United States Environmental Protection Agency, *Peer Review Policy and Memorandum* ("EPA-PRP&M") (Jan. 31, 2006) at p. 1, available at: http://www.epa.gov/peerreview/pdfs/peer_review_policy_and_memo.pdf. *See also* United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)") at Modified Figures 1 and 3, available at: http://www.epa.gov/peerreview/pdfs/peer_review_handbook_2012.pdf; http://www.epa.gov/peerreview/pdfs/Modified_Figures_1_and_3.pdf.

[9] United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496 (Dec. 15, 2009), available at: http://www.gpo.gov/fdsys/pkg/FR-2009-12-15/pdf/E9-29537.pdf.

[10] *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), at Table 1.1 p.6, available at: http://www.epa.gov/climatechange/Downloads/endangerment/Endangerment_TSD.pdf.

[11] As the EPA-TSD clearly states, "Table 1.1 lists the core reference documents for this TSD." *See* EPA-TSD, *supra* at p. 7. Indeed, Table 1.1 is labeled "Core references *relied upon most heavily* in this document" (emphasis added). *Id.*, at Table 1.1, p. 7. "This version of the TSD, as well as previous versions of the TSD dating back to 2007, have taken the approach of *relying primarily on these assessment reports* because they 1) are very recent and represent the current state of knowledge on GHG emissions, climate change science, vulnerabilities, and potential impacts; 2) have assessed numerous individual, peer-reviewed studies in order to draw general conclusions about the state of science; 3) *have been reviewed and formally accepted, commissioned, or in some cases authored by U.S. government agencies and individual government scientists*; and 4) they reflect and convey the consensus conclusions of expert authors" (emphasis added). *Id.*, at p. 6. *See also* Appendix 1:EPA-TSD Table 1.1 "Core Reference Documents".

[12] These federal agencies include the U.S. Departments of Commerce/National Oceanic and Atmospheric Administration ("DOC-NOAA"), Defense ("DOD"), Energy ("DOE"), Interior (U.S. Geological Survey) ("DOI-USGS"), State ("DOS"), Transportation ("DOT") and Agriculture ("USDA"), the National Aeronautics and Space Administration ("NASA"), the National Science Foundation ("NSF"), the Smithsonian Institution, and the US Agency for International Development ("USAID").

[13] It is ITSSD's understanding and belief that a number of executive offices had been involved in the production and peer review of the 21 synthetic assessment products ("SAPs") referenced in the EPA-TSD. These include, in addition to the OMB Office of Information and Regulatory Affairs ("OMB-OIRA") the White House Office of Science and Technology Policy ("OSTP"), the OSTP Environment, Natural Resources and Sustainability Committee, the White House Council on Environmental Quality ("CEQ"), the US Global Climate Research Program Subcommittee on Global Change Research and its Interagency Working Groups (especially its Interagency National Climate Assessment (INCA) Working Group and International Research and Cooperation IWG), the National Science and Technology Council and its Committee on Environment, Natural Resources and Sustainability, and the President's Interagency Climate Change Adaptation Task Force, co-organized by CEQ and OSTP. "The CCSP is sponsored by thirteen federal agencies and is overseen by the Office of Science and Technology Policy, the Council on Environmental Quality, the National Economic Council, and the Office of Management and Budget." *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Summary of Committee Input for Consideration in its Final Report* (Draft of 10/10/08), available at: http://www.environmentalinformation.net/CESLAC/files/CESCLAC_mad2.pdf.

[14] *See, e.g.,* "First (1st) Round of Office of Management and Budget (OMB) Comments to USEPA on the Proposed Findings", EPA-HQ-OAR-2009-0171-0124 (April 24, 2009), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-0124; "Second (2nd) Round of Office of Management and Budget (OMB) Comments to USEPA on the Proposed Findings", EPA-HQ-OAR-2009-0171-0122 (April 24, 2009), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-0122.

[15] For example, a close inspection of the composition of the federal advisory committees EPA established to advise on the development of and to peer review the three HISAs for which EPA had 'lead agency' development responsibilities, shows that apparent conflicts-of-interest had arisen as the result of having certain members of a EPA-established federal advisory committee draft such assessments while having other members from the same federal advisory committee peer

review them. *See also* "Analytical and Process Flaws in EPA's Greenhouse Gas Endangerment Finding", Prepared Statement of Mr. Peter Glaser, Partner, Troutman Sanders, LLP, at *Climate Change: Examining the Processes Used to Create Science and Policy*, Hearing Before the Committee on Science, Space and Technology, House of Representatives, 112th Cong., 1st Sess., Rept. 112–09 (March 30, 2011), at pp. 13-14, available at: http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg65306/pdf/CHRG-112hhrg65306.pdf.

[16] EPA, however, appears to have developed such practices only recently. *See* United States Environmental Protection Agency, *Conflicts of Interest Review Process for Contractor-Managed Peer Reviews of EPA HISA and ISI Documents* (March 21, 2013), available at: http://www.epa.gov/osa/pdfs/epa-process-for-contractor.pdf; United States Environmental Protection Agency, *EPA Strengthens Conflict of Interest Review Process for Science Review Panels*, Press Release (May 3, 2013), available at: http://yosemite.epa.gov/opa/admpress.nsf/0/D5E1E226AFB31F7185257B60004B7958; United States Environmental Protection Agency, Office of Inspector General, *Special Report: Review of Conflict of Interest Allegations Pertaining to the Peer Review of EPA's Draft Report, "Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster"*, Report No. 2005-S-00003 (Nov. 4, 2004), available at: http://www.epa.gov/oig/reports/2005/20041104-2005-S-00003.pdf. *See also* InsideEPA.com, EPA Seeks To Strengthen 'Conflict' Policies For Contractor Peer Reviews, Superfund Report (1/21/13), available at: http://insideepa.com/Superfund-Report/Superfund-Report-01/21/2013/epa-seeks-to-strengthen-conflict-policies-for-contractor-peer-reviews/menu-id-1094.html.

[17] *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554, 114 Stat. 2763, 2763A-153-154 (2000), §515, codified at 44 U.S.C. § 3516 note, *supra*.

[18] *Id.,* at Sec. 515(a). "The Director of the Office of Management and Budget *shall*, by not later than September 30, 2001, and with public and Federal agency involvement, issue guidelines under sections 3504(d)(1) and 3516 of title 44, United States Code, that provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies in fulfillment of the purposes and provisions of chapter 35 of title 44, United States Code [44 USCS § § 3501 et seq.], commonly referred to as the Paperwork Reduction Act" (emphasis added). *Id.*

[19] *Id.*, at Sec. 515(b)(1).

[20] *Id.*, at Sec. 515(b)(2)(A).

[21] *See* Office of Management and Budget, Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies ("OMB IQA Guidelines") 67 FR 8452 (Feb. 22, 2002), *supra. See also* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), *supra.*

[22] "[T]he term 'scientific information' means factual inputs, data, models, analyses, technical information, or scientific assessments based on the behavioral and social sciences, public health and medical sciences, life and earth sciences, engineering, or physical sciences. This includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms." *Id.,* at Sec. I.5.

[23] "[T]he term 'influential scientific information' means scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions… Information dissemination can have a significant economic impact even if it is not part of a rulemaking. For instance, the economic viability of a technology can be influenced by the government's characterization of its attributes. Alternatively, the federal government's assessment of risk can directly or indirectly influence the response actions of state and local agencies or international bodies." *Id.*, at Preamble, Sections I, p. 11, II, p. 12; Sec. I.6.

[24] HISAs are defined as "influential scientific information [ISI] that the agency or the Administrator determines to be a scientific assessment that…(i) could have a potential impact of more than $500 million in any year, or (ii) is novel, controversial, or precedent-setting or has significant interagency interest". *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004) *supra* at §III.1. Since similar factors are used "in determining if a scientific assessment is [influential or] highly influential", OMB/EPA IQA-implementing guidelines instruct EPA officials to treat scientific assessments that meet the criteria of both as highly influential (i.e., as HISAs). *Id.* at p. 2 and §III.2

[25] "[T]he term 'scientific assessment' means an evaluation of a body of scientific or technical knowledge, which typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to

bridge uncertainties in the available information. These assessments include, but are not limited to, state-of-science reports; technology assessments; weight-of-evidence analyses; meta-analyses; health, safety, or ecological risk assessments; toxicological characterizations of substances; integrated assessment models; hazard determinations; or exposure assessments." *Id.*, at Sec. 1.7, pp. 36-37.

[26] "A scientific assessment is considered 'highly influential' if the agency or the OIRA Administrator determines that the dissemination could have a potential impact of more than $500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest. One of the ways information can exert economic impact is through the costs or benefits of a regulation based on the disseminated information. The qualitative aspect of this definition may be most useful in cases where it is difficult for an agency to predict the potential economic effect of dissemination." *Id.*, at Preamble, Sec. III, p. 23; Sec. III.1, p. 39.

[27] "To the extent permitted by law, each agency *shall* conduct peer reviews on all information subject to this Section. The peer reviews shall satisfy the requirements of Section II of this Bulletin, *as well as the additional requirements found in this Section*" (emphasis added). *Id.,* at Sec. III.2, p. 39. (particularly, Preamble, pp. 23-26; Sections I-VII). "Section III requires a more rigorous form of peer review for highly influential scientific assessments…If information is covered by Section III, an agency is required to adhere to the peer review procedures specified in Section III" (emphasis added). *Id.*, at Preamble, Sec. III, p. 23.

[28] *See* Office of Management and Budget, *Proposed Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies – [Notice and Request for Comment]*, 66 FR 34489 (June 28, 2001), available at: http://www.gpo.gov/fdsys/pkg/FR-2001-06-28/pdf/01-16227.pdf ("This notice requests comment on proposed guidelines for implementing Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554). Section 515 directs the Office of Management and Budget (OMB) to issue government-wide guidelines that 'provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies.'"). *Id.*

[29] "Scientific work product is "considered [ISI] if it "support[s] a regulatory program or policy position and it: "support[s] top Agency actions (i.e., rules, substantive notices, policy documents, studies, guidance; and/or its preparation demands ongoing Administrator and extensive cross-Agency involvement; and/or it addresses issues that could potentially result in major cross-Agency policies"; and/or it addresses highly novel or controversial issues; and/or "it could significantly advance the Administrator's priorities"; and/or it "ha[d] an annual effect on the economy of $100 million or more". *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 ("EPA IQA Guidelines") (Oct. 2002), *supra* at §6.2; United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496, 66545 (Dec. 15, 2009), *supra*. Since similar factors are used "in determining if a scientific assessment is [influential or] highly influential", EPA IQA-implementing guidelines instruct EPA officials to treat scientific assessments that meet the criteria of both as highly influential (i.e., as HISAs). *See* United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)") *supra* at §2.2.3-2.2.4; United States Environmental Protection Agency, *Peer Review Policy and Memorandum* ("EPA-PRP&M") (Jan. 31, 2006) *supra* at p. 1; United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)"), *supra* at Modified Figures 1 and 3.

[30] *See* Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* ("OMB IQA Guidelines") 67 FR 8452 (Feb. 22, 2002), *supra* at Sec. III.2, p. 8459.

[31] *Id.*, at Sec. V.3.b.

[32] *Id.*, at Sec. V.3.b.i.

[33] *Id.*, at Sec. V.3.b.ii, p. 8460.

[34] *Id.*, at Sec. V.3.b.ii.A.

[35] *Id.*, at Sec. V.3.b.ii.B.

[36] *Id.*, at Sec. V.3.b.ii.B.i.

[37] *Id.*, at Sec. V.3.b.ii.B.ii.

[38] *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004) *supra*.

[39] *See* Office of Management and Budget, *Proposed Bulletin on Peer Review and Information Quality - Notice and request for comments*, 68 FR 54023 (Sept. 15, 2003), available at: http://www.gpo.gov/fdsys/pkg/FR-2003-09-15/pdf/03-23367.pdf ("OMB requests comments on a proposed bulletin under Executive Order No. 12866 and supplemental information quality guidelines. As part of an ongoing effort to improve the quality, objectivity, utility, and integrity of information disseminated by the Federal Government to the public, the Office of Management and Budget (OMB), in coordination with the Office of Science and Technology Policy (OSTP), proposes to issue *new guidance to realize the benefits of meaningful peer review of the most important science disseminated by the Federal Government regarding regulatory topics. The proposed bulletin would be issued under the authority of Section 515* of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658); 44 U.S.C. 3504(d)(1), 3506(a)(1)(B); Executive Order No. 12866, as amended" (emphasis added). Id., at 54023-54024.

[40] OMB had, once, again, complied with Congress' intent, as expressed in IQA Section 515(a), that it develop guidelines "with *public* and Federal agency involvement" (emphasis added) by seeking public comments on proposed guidelines that were subsequently incorporated into the final IQA guidelines.

[41] *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), *supra* at Preamble, p. 3.

[42] *Id.*, at pp. 3-4.

[43] *See* OMB-PRB, *supra* at Sec. II.5.

[44] *Id.*, at Sec. III.6.

[45] *Id.*, at Sec. III.3.a.

[46] *Id.*, at Sec. III.3.b.

[47] *Id.*, at Sec. III.2 ("The peer reviews shall satisfy the requirements of Section II of this Bulletin, as well as the additional requirements found in this Section.").

[48] *Id.*, at Sec. II.3.c.

[49] *Id.*, at Sec. III.3.d.

[50] *Id.*, at Sec. III.3.c. ("In addition to the requirements of Section II (3)(c), which shall apply to all reviews conducted under Section III…") *Id.*

[51] "*The only exception to this bar* would be the rare case where the agency determines, using the criteria developed by NAS for evaluating use of 'employees of sponsors,' that a premier government scientist is (a) not in a position of management or policy responsibility and (b) possesses essential expertise that cannot be obtained elsewhere. Furthermore, to be eligible for this exception, the scientist must be employed by a different agency of the Cabinet-level department than the agency that is disseminating the scientific information. The agency's determination shall be documented in writing and approved, on a non-delegable basis, by the Secretary or Deputy Secretary of the department prior to the scientist's appointment" (emphasis added). *Id.*

[52] *Id.*, at Sec. III.4.

[53] *Id.*, at Sec. III.5.

[54] *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 ("EPA IQA Guidelines") (Oct. 2002), *supra*.

[55] *See* United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)") *supra*.

[56] *See* United States Environmental Protection Agency, *Peer Review Policy and Memorandum* ("EPA-PRP&M") (Jan. 31, 2006) *supra*.

[57] *See* United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)"), supra at Sec. 2.5.3, p. 50, *supra*; United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)") Sec. 2.5.3, p. 50 supra.

[58] *Id.*, at Sec. 2.5.4, p. 51.

[59] *Id.*, at Sec. 2.5.5.

[60] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues ("RTCs Vol. 1")* (April 17, 2009), at Response (1-60), available at: http://www.epa.gov/climatechange/endangerment/comments/volume1.html.

[61] "EPA has fully complied with the requirements of the IQA (also referred to as the Data Quality Act) and the CAA. The IQA requires the Office of Management and Budget and federal agencies to issue guidelines that 'ensur[e] and maximize[e] the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies' (Public Law 106-554; 44 U.S.C. 3516, note). The IQA does not impose its own standard of "quality" on agency information; instead, it requires only that an agency 'issue guidelines' ensuring data quality. Following guidelines issued by the Office of Management and Budget, EPA released its own guidelines to implement the IQA…These guidelines describe thorough mechanisms under which the Agency may review data quality. In addition to complying with the requirements of the IQA, EPA has acted consistently with the applicable information quality guidelines." *Id.*

[62] For example, a close inspection of the composition of DOC-NOAA-established federal advisory committees and the peer review committees of DOC-NOAA-hired peer review contractors such as NAS/NRC shows that apparent conflicts-of-interest had arisen as the result of having certain members of a EPA-established federal advisory committee draft such assessments while having other members from the same federal advisory committee peer review them.

[63] EPA, however, appears to have developed such practices only recently. *See* United States Environmental Protection Agency, *Conflicts of Interest Review Process for Contractor-Managed Peer Reviews of EPA HISA and ISI Documents* (March 21, 2013), available at: http://www.epa.gov/osa/pdfs/epa-process-for-contractor.pdf; United States Environmental Protection Agency, *EPA Strengthens Conflict of Interest Review Process for Science Review Panels*, Press Release (May 3, 2013), available at: http://yosemite.epa.gov/opa/admpress.nsf/0/D5E1E226AFB31F7185257B60004B7958; United States Environmental Protection Agency, Office of Inspector General, *Special Report: Review of Conflict of Interest Allegations Pertaining to the Peer Review of EPA's Draft Report, "Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster"*, Report No. 2005-S-00003 (Nov. 4, 2004), available at: http://www.epa.gov/oig/reports/2005/20041104-2005-S-00003.pdf. *See also* InsideEPA.com, EPA Seeks To Strengthen 'Conflict' Policies For Contractor Peer Reviews, Superfund Report (1/21/13), available at: http://insideepa.com/Superfund-Report/Superfund-Report-01/21/2013/epa-seeks-to-strengthen-conflict-policies-for-contractor-peer-reviews/menu-id-1094.html.

[64] "*EPA relies on USGCRP to develop high-quality scientific data and understanding about physical, chemical, and biological changes to the global environment and their relation to drivers of global change*. EPA's Global Change Research Program connects these results to specific human and ecosystem health endpoints in ways that enable local, regional, and national decision makers to develop and implement strategies to protect human health and the environment. In turn, EPA's research provides USGCRP agencies with information about the connections between global change and local impacts and how local actions influence global changes. *Research activities include efforts to connect continental-scale temperature and precipitation changes to regional and local air quality and hydrology models* to better understand the impacts of climate change on air quality and water quality, and to examine how watersheds will respond to large-scale climate and other global changes to inform decisions about management of aquatic ecosystems and expand understanding of the impacts of global change. *Satellite and other observational efforts conducted by USGCRP are crucial to supporting EPA's efforts to understand how land use change, climate change, and other global changes are affecting watersheds and ecosystems, and the services they provide*" (emphasis added). *See* U.S. Global Change Research Program, *Agencies - Environmental Protection Agency*, available at: http://www.globalchange.gov/agency/environmental-protection-agency.

[65] "An Office of General Counsel (OGC) memorandum dated July 26, 2007, indicates that the two types of statutory authorities (SAs) for IAs that EPA uses most often are the Economy Act (31 U.S. Code 1535) and EPA's cooperation authorities, such as Clean Water Act Section 104(b)(2) and Clean Air Act Section 103(b)(2). 'The Economy Act is the authority for an IA when one agency acquires goods or services from another federal agency and the performing agency does not have an interest in providing the goods or services, apart from its interest in performing the work for the requesting agency. In contrast, EPA's cooperation authorities generally authorize the Agency to cooperate with other entities, including federal agencies, in a broad range of specified activities. The cooperation authorities themselves are silent with respect to payments between agencies for these particular types of costs. However, the fact that the cooperation authorities are silent with respect to payments between agencies for these types of costs does not mean that such payments are unauthorized.' The OGC memorandum also refers to other SAs that provide for reimbursement of the Agency's costs. There are statutory authorities that expressly contemplate the use by EPA of another agency's personnel, services, or other resources, referred to as utilization authorities. Certain utilization authorities expressly authorize EPA

to pay for the personnel and associated indirect costs, as well as for travel, supplies, and equipment costs directly related to the IA project. In addition, the memorandum says that 'some utilization authorities contemplate the use by EPA of another agency's personnel and associated resources but do not address reimbursement of the other agency.' Further, 'if EPA did not reimburse the agency providing assistance to EPA, the other agency would be using its appropriation to perform functions under EPA's statutes and would augment the EPA appropriation that supports the activities in question.' OGC's opinion is "the silence of the statutes regarding reimbursement does not foreclose reimbursement and, in fact, the better argument is that reimbursement is required." *See* United States Environmental Protection Agency Office of Inspector General, *EPA Could Recover More Indirect Costs Under Reimbursable Interagency Agreements*, Report No. 12-P-0835 (Sept. 19, 2012), at p. 2, available at: http://www.epa.gov/oig/reports/2012/20120919-12-P-0835.pdf.

[66] *Id.* The Economy Act (31 U.S.C. §1535), which established "the first government-wide statutory authorization for federal agencies to provide work, services, or materials to other federal agencies on a [contractual and] reimbursable basis", generally presumes interagency redelegations are invalid. Act of June 30, 1932, ch. 314, 47 Stat. 382; 31 U.S.C. §1535(d). Although the Economy Act is silent on the issue of redelegation, it "does not give a performing agency any authority which it would not otherwise have". GAO OGC Fed'l Appropriations Law, 3rd Ed., Vol. III, p. 12-28, citing Comp. Gen. 262, 266 (1938). The Comptroller General has permitted interagency redelegations, provided "the ordering agency retains control over the redelegated tasks which must not involve significant decision-making authority or an agency's primary administrative functions". *See* Jason Marisam, *The Interagency Marketplace*, 96 Minn. Law Review 886, 901, 908 (2012), available at: http://www.minnesotalawreview.org/wp-content/uploads/2012/05/Marisam_MLR.pdf (citing B-163758, 1971 WL 7556 (Comp. Gen. May 6, 1971)).

[67] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, s 74 FR 66496, 66511 (Dec. 15, 2009), supra.

[68] *Id.*

[69] *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB Peer Review Bulletin" or OMB-PRB") (Dec. 16, 2004) *supra* at Preamble, p. 9.

[70] "[T]he Bulletin does not directly cover information supplied to the government by third parties (e.g., studies by private consultants, companies and private, non-profit organizations, or research institutions such as universities). However, if an agency plans to disseminate information supplied by a third party (e.g., using this information as the basis for an agency's factual determination that a particular behavior causes a disease), the requirements of the Bulletin apply, if the dissemination is 'influential'". *Id.*

[71] *See* U.S. Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by EPA* (2002), *supra* at Sec. 5.3 pp. 15-16.

[72] *Id.*

[73] *Id.*, at Sec. 5.5 p. 18.

[74] *Id.*, at Sec. 6.5.

[75] *Id.*

[76] *See* United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)"), *supra* at Sec. 2.2.17.

[77] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, s 74 FR 66496, 66511 (Dec. 15, 2009), *supra*.

[78] *See* Institute for Trade, Standards and Sustainable Development, *FOIA Request Clarification of Consolidated FOIA Request No. DOC-NOAA-2014-000714* (May 5, 2014), at Addendum, Sec. B.5.b, available at: http://nebula.wsimg.com/c25e625aa81981536c980ec0f3307791?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1.

[79] *See Memorandum of Understanding Between the United Nations Environment Programme and the World Meteorological Organization on the Intergovernmental Panel on Climate Change (IPCC)* (May 8, 1989), available at: https://www.ipcc.ch/docs/MOU_between_UNEP_and_WMO_on_IPCC-1989.pdf.

[80]* *See* Hannah Chang, *International Executive Agreements on Climate Change*, 35 Columbia Journal of Environmental Law 337 (2010), available at: http://www.columbiaenvironmentallaw.org/assets/pdfs/35.2/Chang_Final.pdf. "…[T]here has been some suggestion that because EPA now has authority to regulate greenhouse gases under the CAA,[fn] the President may exercise his duty to 'take care' that the laws are faithfully executed *and rely on implicit "general authority provided by the Clean Air Act," as legal grounds for entering executive agreements relating to climate*

change.[fn] This approach is probably not well-supported, however…A more legally sound approach would rely on any implicit authorization from the CAA as mere ancillary authority for executive agreements that rest on other more sound legal bases…*Where the EPA itself has not yet promulgated regulations that produce emissions targets*, the President's binding international commitment that the EPA will effectuate some specified target may impermissibly overstep the agency's mandate. This view may differ depending on whether one subscribes to a presidentialist theory of administration that understands the President to be in full control of administrative activity[fn] or to a view that resists presidential control of agency rulemakings[fn]" (emphasis added). *Id.*, at pp. 363-364, citing *inter alia*, Nigel Purvis, *The Case for Climate Protection Authority*, 49 VA. J. INT'L L. 1007, 1049–50 (2009) and Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245 (2001). "*The United States should classify new international agreements to protect the Earth's climate system as executive agreements rather than as treaties*. Unlike treaties, which require the advice and consent of two-thirds of the Senate, executive agreements are entered into either solely by the President based on previously delegated constitutional, treaty, or statutory authorities, or by the President and Congress together pursuant to a new statute. *Although limits exist on the types of climate agreements the President could enter into without the approval of Congress, the President's authorities are broader than many policymakers realize and could be relied on if Congress fails to craft a strong bipartisan policy*" (emphasis added). *See* Nigel Purvis, *The Case for Climate Protection Authority*, *supra* at Executive Summary, available at: http://works.bepress.com/cgi/viewcontent.cgi?article=1000&context=nigel_purvis.

[81] "The Case-Zablocki Act of August 22, 1972, 1 U.S.C. §112b (the Act) requires that all international agreements entered into by the U.S. Government receive prior approval by the Secretary of State. 'Notwithstanding any other provision of law, an international agreement may not be signed or otherwise concluded on behalf of the United States without prior consultation with the Secretary of State. Such consultation may encompass a class of agreements rather than a particular agreement.' 1 U.S.C. § 112b(c). The Act clearly applies to government agencies and 'the fact that an agreement is concluded by and on behalf of a particular agency of the United States Government, rather than the United States Government, does not mean that the agreement is not an international agreement.' 22 C.F.R. § 181.2(a)5)b)." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Office of General Counsel, *Case-Zablocki Act (C-Z)*, available at: http://www.gc.noaa.gov/gc_case_zablocki.html.

[82] Although EPA had not been involved in the preparation of either the Working Group ("WG") I or II portions of the AR4, it had been involved in the development of the WG III portion of the AR4. In addition, EPA had been involved in the review of the WG II and III portions of the AR4. The following EPA personnel served as 'peer reviewers' of the WG II portion of the AR4: Ben DeAngelo, John Furlow, Mary Grant, Jane Leggett, Steven Rose, Joel Scheraga, James Titus, Allen Solomon, Darrell Winner and Roger Pulwarty. The following four (4) EPA personnel had contributed to the WG III portion of the AR4: Christa Clapp, Kenneth Andrasko, Francisco De La Chesnaye and Steven Rose. Similarly, only four (4) EPA personnel served as 'peer reviewers' of the WG III portion of the AR4, one of whom also reviewed the WG II portion of AR4: Mark Heil, **Steven Rose**, Dina Kruger and Robert Larson.

[83] *See* Institute for Trade, Standards and Sustainable Development, *Why Should Congress Continue to Fund the U.S. Global Change Research Program ("USGCRP") and Federal Agency Climate Science-related Research Producing U.S. and International Climate Assessments Not Peer Reviewed in Accordance With U.S. Law (The Information Quality Act)?* (June 3, 2014), available at: http://nebula.wsimg.com/0baa4f08132c24c2fc9cd650501bbc66?AccessKeyId=39A2DC689E4CA87C906D&disposition=0&alloworigin=1.

[84] *See, e.g., Memorandum of Understanding Between the United Nations Environment Programme and The Environmental Protection Agency of the United States of America* (Feb. 21, 2011), available at: http://www.epa.gov/international/io/epaunepmou.pdf.

[85] *See* OMB-PRB, *supra* at Sec. 1.7, p. 36.

[86] *Id.*, at Sec. III.1, p. 39.

[87] As the EPA-TSD itself states, it did "not convey any judgment or conclusion regarding the question of whether GHGs may be reasonably anticipated to endanger public health or welfare, as this decision [was] ultimately left to the judgment of the Administrator." *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra* at Executive Summary, p. 6.

[88] "In 2007, EPA initiated its assessment of the science and other technical information to use in addressing the endangerment and cause or contribute issues before it under CAA section 202(a). This scientific and technical

information was developed in the form of a TSD in 2007. An earlier draft of this document was released as part of the ANPR published July 30, 2008 (73 FR 44353)." *Id.*, at p. 17.

[89] *See* Margo Thorning, *Impact of CAA GHG Regulations on U.S. Investment and Job Growth*, Testimony Before the Subcommittee on Energy and Power, Committee on Energy and Commerce, U.S. House of Representatives (2/9/11), available at: http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/Thorning_Testimony.pdf.

[90] *See* United States Environmental Protection Agency, *Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, EPA-HQ-OAR-2013-0602 (June 2, 2014), available at: http://www2.epa.gov/sites/production/files/2014-05/documents/20140602proposal-cleanpowerplan.pdf.

[91] *See* United States Environmental Protection Agency Office of Inspector General, *Procedural Review of EPA's Greenhouse Gases Endangerment Finding Data Quality Processes*, Report No. 11-P-0702 (Sept. 26, 2011), at p. 18, available at: http://www.epa.gov/oig/reports/2011/20110926-11-P-0702.pdf.

[92] *See* United States Environmental Protection Agency Office of Inspector General, *Procedural Review of EPA's Greenhouse Gases Endangerment Finding Data Quality Processes*, Report No. 11-P-0702 (Sept. 26, 2011), *supra* at pp. 13-14. "*OAR had the TSD reviewed by a panel of climate change scientists. This review did not meet all of OMB's peer review requirements for highly influential scientific assessments*. The methodology that OAR employed for this review was within the discretion afforded by OMB guidance for peer reviews of influential scientific information, but not for highly influential scientific assessments. In our opinion, the TSD is a highly influential scientific assessment and thus it required a peer review as described in Section III of OMB's *Final Information Quality Bulletin for Peer Review*" (emphasis added). *Id.*, at pp. 15-16.

[93] *Id.,* at p. 17.

[94] *Id.* "The Agency stated in its endangerment finding that it 'gave careful consideration to all the scientific and technical information in the record.' EPA's TSD referenced multiple sources (some cited within the assessment reports, and some not), including "up-to-date" data from sources other than the 'major scientific assessments.' In evaluating the scientific information, the Agency stated that it 'placed limited weight on the much smaller number of individual studies that were not considered or reflected in the major assessments.' EPA reviewed such studies "largely to see if they would lead EPA to change or place less weight on the judgments reflected in the assessment report." The Agency stated in the endangerment finding that 'the studies did not change the various conclusions or judgments EPA would draw based on the assessment reports.' Thus, in our opinion, the TSD is a scientific assessment." *Id.*

[95] "OAR officials explained that, in their view, a more formal review of the TSD was not needed because: [1.] They did not consider the TSD to be a scientific assessment because it only summarized existing findings and conclusions and provided no new findings or conclusions[; and 2.] The core references relied upon for the TSD had been peer reviewed in a manner consistent with OMB's bulletin. OAR pointed out that the information had been reviewed and vetted by the scientific community through the IPCC, USGCRP/CCSP, and NRC review procedures." *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra* at p. 16.

[96] "In addition to its reliance on existing and recent synthesis reports, which have each gone through extensive peer-review procedures, this document also underwent a technical review by 12 federal climate change experts, internal EPA review, interagency review, and a public comment period." *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra* at p. 4.

[97] *See* United States Environmental Protection Agency Office of Inspector General, *Procedural Review of EPA's Greenhouse Gases Endangerment Finding Data Quality Processes*, Report No. 11-P-0702 (Sept. 26, 2011), *supra* at p. 18.

[98] *Id.*

[99] *Id.*

[100] *Id.* "EPA did not conduct a peer review of the TSD that met all recommended steps in the Peer Review Handbook for peer reviews of influential scientific information or highly influential scientific assessments. EPA's peer review policy states that 'for influential scientific information intended to support important decisions, or for work products that have special importance in their own right, external peer review is the approach of choice' and that 'for highly influential scientific assessments, external peer review is the expected procedure.' According to the policy, external peer review involves reviewers who are 'independent experts from outside EPA.' The handbook provides examples of 'independent

experts from outside EPA,' that include NAS, an established Federal Advisory Committee Act mechanism (e.g., Science Advisory Board), and an ad hoc panel of independent experts outside the Agency. The handbook lays out a number of procedural steps involved in an external peer review. EPA had the TSD reviewed by 12 federal climate change experts. While all but one of the experts was from outside EPA, this review did not follow all recommended steps of an external peer review outlined in the handbook." *Id.*, at Sec. 4, p. 36.

[101] *See* Appendix 1: "EPA-TSD Reviewers Who Authored Summarized 'Core Reference Documents' Apparent Conflicts-of-Interest; *Lack of Independence", *infra*.

[102] These "12 federal experts" included the following U.S. federal agency personnel: "Federal expert reviewers [-]Virginia Burkett, USGS; Phil DeCola; NASA (on detail to OSTP); William Emanuel, NASA; Anne Grambsch, EPA; Jerry Hatfield, USDA; Anthony Janetos, DOE Pacific Northwest National Laboratory; Linda Joyce, USDA Forest Service; Thomas Karl, NOAA; Michael McGeehin, CDC; Gavin Schmidt, NASA; Susan Solomon, NOAA; and Thomas Wilbanks, DOE Oak Ridge National Laboratory." *Id.*, at p. ii.

[103] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues ("RTCs Vol. 1")* (April 17, 2009), *supra* at Response (1-10).

[104] *See* Appendix 1: "EPA-TSD Reviewers Who Authored Summarized 'Core Reference Documents'", *infra*. This appendix clearly shows that such peer reviewers were from six different federal agencies: EPA, DOC-NOAA, DOE, DOI-USGS, USDA and NASA.

[105] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues ("RTCs Vol. 1")* (April 17, 2009), *supra* at Responses (1-5), (1-10) at pp. 4-5 and 7 ("*We did not develop new science to support the finding*, but rather relied primarily on the conclusions of the major assessment reports of USGCRP/CCSP, IPCC, and NRC and the evaluation of the public comments received. *See* Section III.A. (PDF) (52 pp, 307K) of the Findings, "The Science on Which the Decisions Are Based," for our response to comments on the rationale for our use of the assessment literature. The use of the assessment literature capitalizes on the substantial expertise and experience that went into the development of those reports. No other source of information provides such a comprehensive and in-depth analysis across such a large body of scientific studies") (emphasis added). *Id.*, at Response (1-5). *See also Id.* ("The decision to have 12 federal experts review the TSD was reasonable and appropriate and we disagree that the reviewers were not objective as a result of their involvement with the IPCC and CCSP. Given our approach to the scientific literature (described in Section III.A of the Findings), the purpose of the federal expert review was to ensure that *the TSD accurately summarized the conclusions and associated uncertainties from the assessment reports*. The federal experts were ideal candidates because they have contributed significantly to the body of climate change literature and played active roles in IPCC and CCSP—therefore making them experts on various aspects of climate science and very familiar with the underlying literature and state of the science. Furthermore, the federal climate change experts represent a range of technical specialties that span the range of topics covered in the TSD and covered by the range of topics that the Administrator needed to consider. *In addition, the federal experts were not involved with developing the TSD or Findings in any way other than their review roles*. Finally, we note that the federal expert review was only one part of a much larger process of developing the TSD from 2007 until the present. In addition to the three rounds of technical review by the 12 federal experts, the TSD has also gone through three rounds of internal EPA review, and two rounds of public comment."). *Id.*, Response (1-10).

[106] *See* Public Law 106-554, §515(b)(2)(B), codified in 44U.S.C. §3516, note, *supra*; OMB IQA Guidelines, *supra* at Sec. III.3; OMB-PRB, *supra* at Sec. V.3.

[107] *See* Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* ("OMB IQA Guidelines") 67 FR 8452, 8459 (Feb. 22, 2002), *supra*.

[108] "Agencies *shall specify* appropriate time periods for agency decisions on whether and how to correct the information, and agencies *shall notify* the affected persons of the corrections made" (emphasis added). *Id.*, at Sec. III.3.i.

[109] "If the person who requested the correction does not agree with the agency's decision (including the corrective action, if any), the person may file for reconsideration within the agency. The agency *shall establish* an administrative appeal process to review the agency's initial decision, *and specify* appropriate time limits in which to resolve such requests for reconsideration" (emphasis added). *Id.*, at Sec. III.3.ii.

[110] In the interest of maintaining uniformity of federal agency IQA-related administrative practices, OMB subsequently determined that agencies should generally respond to IQA complaints *and* appeals *within sixty (60) calendar days*. "As OMB in its Guidelines did not establish any particular timetable, but left that to the agencies to determine, the agencies in their draft guidelines have included a variety of time periods. However, having reviewed the agencies' draft guidelines, OMB now believes that a *uniform response* period is preferable if practical. Unless there are important reasons for a different time period, agency procedures should provide for *a written response by the agency to complaints and appeals within 60 calendar days*. If the complaint or appeal requires more time to resolve, the agency should so notify the complainant within that period that more time is required, the reasons for delay, and an estimated decision date" (emphasis added). *See* Office of Management and Budget, Administrator, Office of Information and Regulatory Affairs ("OIRA"), *Memorandum, Information Quality Guidelines – Principles and Model Language* (Sept. 5, 2002), at Preamble, pp. 1-2, available at: http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/pmcmemo.pdf.
[111] *Id.*, at Sec. V.8.
[112] *See* discussion, *infra*.
[113] "As a matter of good and effective agency information resources management, *agencies shall develop a process for reviewing the quality* (including the objectivity, utility, and integrity) of information *before it is disseminated*. Agencies shall treat information quality as integral to every step of an agency's development of information, including creation, collection, maintenance, and dissemination. This process shall enable the agency to substantiate the quality of the information it has disseminated through documentation or other means appropriate to the information" (emphasis added). *Id.*, at Sec. III.2.
[114] "The term 'dissemination' also excludes information distributed for peer review in compliance with this Bulletin, provided that the distributing agency includes a clear disclaimer on the information as follows: 'THIS INFORMATION IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PRE-DISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY [THE AGENCY]. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY'." *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), at Sec. I.3, pp. 35-36.
[115] "Accordingly, under this Bulletin, 'dissemination' also excludes information distributed for peer review in compliance with this Bulletin or shared confidentially with scientific colleagues, provided that the distributing agency includes an appropriate and clear disclaimer on the information, as explained more fully below…In cases where a draft report or other information is released by an agency *solely for purposes of peer review*, a question may arise as to whether the draft report constitutes an official 'dissemination' under information-quality guidelines. Section I instructs agencies to make this clear by presenting the following disclaimer in the report: 'THIS INFORMATION IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PRE-DISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY [THE AGENCY]. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.'" *Id.*, at Preamble, pp. 8-9.
[116] Presumably, the authors of each of these HISAs subsequently considered and incorporated the public comments received into the final HISA versions the agencies ultimately disseminated to the public. However, in EPA's case, this is far from certain given EPA's failure to disclose many climate science-related peer review files.
[117] *See* United States Environmental Protection Agency, *Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act – Proposed rule*, 74 FR 18886 (April 24, 2009), available at: http://www.epa.gov/climatechange/Downloads/endangerment/EPA-HQ-OAR-2009-0171-0001.pdf.
[118] *See* Office of Management and Budget, Administrator, Office of Information and Regulatory Affairs ("OIRA"), *Memorandum, Information Quality Guidelines – Principles and Model Language* (Sept. 5, 2002), at p. 2, available at: http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/pmcmemo.pdf.
[119] *Id.*
[120] "When EPA provides opportunities for public participation by seeking comments on information, the public comment process should address concerns about EPA's information. For example, *when EPA issues a notice of proposed rulemaking supported by studies and other information described in the proposal or included in the rulemaking docket, it disseminates this information within the meaning of the Guidelines*. The public may then raise issues in comments regarding the information. *If a group or an individual raises a question regarding information supporting a proposed rule, EPA generally expects to treat it procedurally like a comment to the rulemaking, addressing it in the response to*

comments rather than through a separate response mechanism… EPA believes that the thorough consideration provided by the public comment process serves the purposes of the Guidelines, provides an opportunity for correction of any information that does not comply with the Guidelines, and *does not duplicate or interfere with the orderly conduct of the action*" (emphasis added). *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 (Oct. 2002), *supra* at Sec. 8.5, p. 32.

[121] *Id.*

[122] The administrative record shows that EPA and other federal agencies bore 'lead agency' U.S. Global Change Research Program/Climate Change Science Program ("USGCRP/CCSP") responsibilities for the development of sixteen (16) HISAs designated as "core reference documents" supporting the Administrator's CAA Section 202(a)(1) Findings.

[123] *See* Appendix 4: "USGCRP/CCSP 'Core Reference Documents' - 'Lead' Agency Burdens", *infra*; Appendix 5: "USGCRP/CCSP Documents Referencing IPCC Assessment Reports," *infra* (listing each of the USGCRP/CCSP SAPs for which each federal agency had 'lead agency' development responsibilities, including SAPs that the EPA-TSD did not designated as "core reference documents").

[124] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 4.6 - Notice of availability and request for public comments*, 72 FR 39798-39799 (July 20, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-07-20/pdf/E7-14091.pdf.

[125] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 4.1: ''Coastal Elevation and Sensitivity to Sea Level Rise" - Notice of availability and request for public comments*, 73 FR 10005-10006 (Feb. 25, 2008), available at: http://69.175.53.20/federal_register/2008/feb/25/E8-3513.pdf.

[126] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 4.4: "Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources", Notice of availability and request for public comments*, 72 FR 46610-46611 (Aug. 21, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-08-21/pdf/E7-16356.pdf.

[127] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Climate Change Science Program (CCSP) Product Development Committee (CPDC) for Synthesis and Assessment Product 1.1 - Notice of open meeting*, 71 FR 3053 (Jan. 19, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-01-19/pdf/E6-513.pdf.

[128] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 1.3 ''Re-analyses of Historical Climate Data for Key Atmospheric Features. Implications for Attribution of Causes of Observed Change'' notice of availability and request for public comments*, 73 FR 20034 (April 14, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-04-14/pdf/E8-7896.pdf.

[129] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 2.4 "Trends in Emissions of Ozone Depleting Substances, Ozone Layer Recovery, and Implications for Ultraviolet Radiation Exposure" - Notice of availability and request for public comments*, 73 FR 14457 (March 18, 2008), available at: http://www.federalregister.com/Browse/AuxData/74FFCA3E-237F-4AAC-B07D-51E24DB524C2.

[130] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 3.2 "Climate projections for research and assessment based on emissions scenarios developed through the CCTP" - Notice of availability and request for public comments*, 72 FR 68571 (Dec. 5, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-12-05/pdf/E7-23595.pdf.

[131] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 3.3: "Weather and Climate Extremes in a Changing Climate, Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands" - notice of availability and request for public comments*, 72 FR 46611 (Aug. 21, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-08-21/pdf/E7-16369.pdf.

[132] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change in the United States - notice of availability and request for public comments*, 73 FR 41042 (July 17, 2008), available at:

http://www.gpo.gov/fdsys/pkg/FR-2008-07-17/pdf/E8-16386.pdf; United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change in the United States - Notice of revision of the production schedule*, 73 FR 75678 (Dec. 12, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-12-12/pdf/E8-29495.pdf; United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change in the United States - Notice of availability and request for public comments*, 74 FR 1666 (Jan. 13, 2009), available at: http://www.gpo.gov/fdsys/pkg/FR-2009-01-13/pdf/E9-371.pdf.

[133] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 2.2 - Notice of availability and request for public comments*, 71 FR 54800-54801 (Sept. 19, 2006), available at: http://www.federalregister.com/Browse/AuxData/4D0CCCA4-49D7-4E13-AEEC-D1B938FEAC9C.

[134] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 5.2 "Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking – notice of availability and request for public comments"*, 73 FR 21912 (April 23, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-04-23/pdf/E8-8829.pdf.

[135] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 5.3 ''Decision Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data'- Notice of availability and request for public comments*, 73 FR 14457 (March 18, 2008), available at: http://www.federalregister.com/Browse/AuxData/74FFCA3E-237F-4AAC-B07D-51E24DB524C2.

[136] *See* Appendix 4: "USGCRP/CCSP 'Core Reference Documents' - 'Lead' Agency Burdens", *infra*; Appendix 5: "USGCRP/CCSP Documents Referencing IPCC Assessment Reports," *infra* (listing each of the USGCRP/CCSP SAPs for which each federal agency had 'lead agency' development responsibilities, including SAPs that the EPA-TSD did not designated as "core reference documents").

[137] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 1.2 "Past Climate Variability and Change in the Arctic and at High Latitudes" - Notice of availability and request for public comments*, 73 FR 46596 (Aug. 11, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-08-11/pdf/E8-18405.pdf.

[138] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 3.4 "Abrupt Climate Change" - Notice of availability and request for public comments*, 73 FR 23427 (April 30, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-04-30/pdf/E8-9473.pdf.

[139] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 4.2 "Thresholds of Change in Ecosystems" - Notice of availability and request for public comments*, 73 FR 51277 (Sept. 2, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-09-02/pdf/E8-20275.pdf.

[140] The federal register notices issued with respect to the following three USGCRP/CCSP SAPs did not include this IQA disclaimer statement: EPA-developed SAP4.6/CCSP(2008b); and DOC-NOAA-developed SAP1.1/CCSP(2006) and SAP2.2/CCSP(2007).

[141] *See* OMB-PRB, *supra* at Preamble (discussing Sec. IV – "Alternative Procedures"), at p. 28.

[142] *See* United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (June 2006), *supra* at §1.2.8, p. 14.

[143] *Id.*, at §1.2.9.

[144] *See* United States Environmental Protection Agency, *Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act – Proposed rule*, 74 FR 18886 (April 24, 2009), *supra*.

[145] *See* Appendix 2: "EPA-TSD Table 1.1 'Core Reference Documents'", *infra*.

[146] For example, "[o]ne commenter (3747.1) argues that EPA has not complied with the IQA and submits 13 separate information quality concerns (labeled 'requests for correction' by the commenter) related to the following topics: peer review; treatment of uncertainty and ranges; selection of cited studies; transparency of available data; transparency in observational data; transparency in model limitations; baseline assumption errors; adaptation/mitigation; defining likelihood; misapplication of IPCC storylines; availability of data; precipitation; and sea level rise. *For each topic, the*

commenter provides an argument, along with specific information quality concerns regarding the data and information used in the TSD and Findings" (emphasis added). *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues* (April 17, 2009), at Comment 1-61, p. 53, available at: http://www.epa.gov/climatechange/endangerment/comments/volume1.html (*setting forth EPA's summary of one stakeholder's comments). *See* American Petroleum Institute, *American Petroleum Institute's Comments on the U.S. Environmental Protection Agency's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act - Docket ID No. EPA-HQ-OAR-2009-017* (June 22, 2009), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-3747 (for this stakeholder's actual comments). "Consistent with the statement of the commenter (3747.1), Section 8.5 of EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency, describes that if a group or an individual raises a question regarding information supporting a proposed rule, EPA generally expects to treat it procedurally like a comment to the rulemaking, addressing it in the response to comments rather than through a separate response mechanism. When EPA provides opportunities for public participation by seeking comments on information, the public comment process will generally address concerns about EPA's information. EPA believes that the thorough consideration provided by the public comment process for these Findings serves the purposes of the Guidelines, provides an opportunity for correction of any information that does not comply with the Guidelines, and does not duplicate or interfere with the orderly conduct of the action." *Id.,* at Response 1-61, p. 53 (*setting forth EPA's response to its own summary of one stakeholder's comments, rather than the stakeholder's acquiescence to EPA's decision to *liberally* interpret its guidelines to permit it to generally not subject stakeholder RFCs/RFRs to separate IQA administrative review procedures specifically tailored to address more technical and scientific concerns than those which are generally addressed through APA notice and comment procedures).

[147] "In their submission, the commenter (3747.1) states: 'We recognize that EPA has the right to respond to these findings with its response to comments as these RFCs [requests for correction] are being submitted within an open comment period. *[The commenter] is willing to forego an individual response and, to the contrary, believes that stakeholders and the public would benefit from EPA's responses and corrections*'" (emphasis added). *Id.*, at Comment 1-61, p. 53.

[148] "As a preliminary matter, other commenters, such as 3394.1, suggest that the comments were filed as 'requests for correction' (RFCs) during this proposal. Any such RFCs in this instance have been treated as comments on the proposed rule and have been considered and addressed as such. The comments will not be assigned an RFC number by EPA." *Id.*, at Response 1-61, p. 53.

[149] *See* Office of Management and Budget, Administrator, Office of Information and Regulatory Affairs ("OIRA"), *Memorandum, Information Quality Guidelines – Principles and Model Language* (Sept. 5, 2002), at p. 2, *supra.*

[150] *See Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), available at: http://scholar.google.com/scholar_case?case=14437597860792759765&q=Chevron+U.S.A.+Inc.+v.+Natural+Resources+Defense+Council,+Inc.,+467+U.S.&hl=en&as_sdt=6,31&as_vis=1.

[151] *See* discussion, infra at Explanation following Section III.4 of this FOIA Request.

[152] *See Utility Air Regulatory Group v. Environmental Protection Agency, et al.*, __ U.S. __, 2014 BL 172973, 78 ERC 1585 (U.S. June 23, 2014), available at: http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf

[153] "We reaffirm the core administrative-law principle that an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate. EPA therefore lacked authority to 'tailor' the Act's unambiguous numerical thresholds to accommodate its greenhouse-gas-inclusive interpretation of the permitting triggers. Instead, the need to rewrite clear provisions of the statute should have alerted EPA that it had taken a wrong interpretive turn. Agencies are not free to 'adopt…unreasonable interpretations of statutory provisions and then edit other statutory provisions to mitigate the unreasonableness.'" App. 175, [2012 BL 337546], 2012 WL 6621785 , *16 (Kavanaugh, J., dissenting from denial of rehearing en banc); Slip Op at 23-24.

[154] The D.C. Circuit Court has held that, "[i]n statutory interpretation it is a given that statutes must be construed reasonably so as to avoid absurdities — manifest intent prevails over the letter." *See In re Nofziger*, 925 F.2d 428, 435 (D.C. Cir. 1991), available at: https://www.casetext.com/case/in-re-nofziger#.U6dQ6_mwJcQ, citing *Holy Trinity Church v. United States*, 143 U.S. 457, 459-460, 12 S.Ct. 511, 512, 36 L.Ed. 226 (1893) ("It is a familiar rule, that a thing may be within the letter of the statute and yet not within the statute, because not within its spirit, nor within the intention of its makers…If a literal construction of the words be absurd, the Act must be construed as to avoid the

absurdity"). *Cf. Utility Air Regulatory Group v. Environmental Protection Agency, et al.*, *supra* at Slip Op at 5 ("[T]he Court reads the statute as defining 'major emitting facility' to mean 'stationary sources that have the potential to emit two hundred fifty tons per year or more of any air pollutant except for those air pollutants, such as carbon dioxide, with respect to which regulation at that threshold would be impractical or absurd or would sweep in smaller sources that Congress did not mean to cover.' See ante, at 15–16 ('[T]here is no insuperable textual barrier to EPA's interpreting 'any air pollutant' in the permitting triggers of PSD and Title V to encompass only pollutants emitted in quantities that enable them to be sensibly regulated at the statutory thresholds, and to exclude those atypical pollutants that, like greenhouse gases, are emitted in such vast quantities that their inclusion would radically transform those programs and render them unworkable as written')").

[155] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496 (Dec. 15, 2009), *supra* at Sec. I.C.1.b-c, at 66501-66503, Sec. II.A.1, pp. 66505-66506; Robert Meltz, *Legal Consequences of EPA's Endangerment Finding for New Motor Vehicle Greenhouse Gas Emissions*, Congressional Research Service Report for Congress ("CRS") - R40984 (Dec. 15, 2009), available at: http://www.cnie.org/NLE/CRSreports/10Jan/R40984.pdf; James McCarthy and Larry Parker, *EPA Regulation of Greenhouse Gases: Congressional Responses and Options*, Congressional Research Service Report for Congress ("CRS") - R41212 (June 8, 2010), available at: http://fas.org/sgp/crs/misc/R41212.pdf; James E. McCarthy, *EPA Standards for Greenhouse Gas Emissions from Power Plants: Many Questions, Some Answers*, Congressional Research Service Report for Congress ("CRS") - R43127 (Nov. 15, 2013), available at: http://fas.org/sgp/crs/misc/R43127.pdf; James E. McCarthy and Brent D. Yacobucci, *Cars, Trucks, and Climate: EPA Regulation of Greenhouse Gases from Mobile Sources*, Congressional Research Service Report for Congress ("CRS") - R40506 (March 13, 2014, available at: http://fas.org/sgp/crs/misc/R40506.pdf.

[156] *See, e.g.,* Roger H. Bezdek, *Potential Economic Impact of the EPA Endangerment Finding on Low Income Groups and Minorities*, 16 Business Review 127 (Cambridge, Dec. 2010), available at: http://www.misi-net.com/publications/BRC-V16N1-1210.pdf; Margo Thorning, *Impact of CAA GHG Regulations on U.S. Investment and Job Growth*, Testimony Before the Subcommittee on Energy and Power, Committee on Energy and Commerce, U.S. House of Representatives (2/9/11), available at: http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/Thorning_Testimony.pdf; Benjamin Goad, *Chamber: Costs of EPA Climate Rule Could Top $50 Billion a Year*, The Hill (May 28, 2014), available at: http://thehill.com/regulation/207384-chamber-epas-climate-rules-cost-could-top-50b-a-year; Institute for 21st Century Energy, *Assessing the Impact of Potential New Carbon Regulations in the United States*, United States Chamber of Commerce (May 28, 2014), available at: http://www.energyxxi.org/sites/default/files/file-tool/Assessing_the_Impact_of_Potential_New_Carbon_Regulations_in_the_United_States.pdf. *Cf.* United States Environmental Protection Agency, Assessment and Standards Division Office of Transportation and Air Quality, *Draft Regulatory Impact Analysis Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards - EPA-420-D-09-003* (Sept. 2009), available at: http://www.epa.gov/otaq/climate/regulations/420d09003.pdf; United States Environmental Protection Agency, Assessment and Standards Division Office of Transportation and Air Quality, *Draft Regulatory Impact Analysis Proposed Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards - EPA-420-D-11-004* (Nov. 2011), available at: http://www.epa.gov/otaq/climate/documents/420d11004.pdf; United States Environmental Protection Agency Office of Air Quality Planning and Standards Air Benefits and Cost Group, *Regulatory Impact Analysis for the Proposed Greenhouse Gas Tailoring Rule – Final Report* (prepared by RTI Institute) (Sept. 2009), available at: http://nepis.epa.gov/Exe/ZyPDF.cgi/P10083E4.PDF?Dockey=P10083E4.PDF; United States Environmental Protection Agency Office of Air Quality Planning and Standards Air Benefits and Cost Group and RTI Institute, *Regulatory Impact Analysis for the Final Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule – Final Report* (prepared by RTI Institute) (May 2010), available at: http://www.epa.gov/ttnecas1/regdata/RIAs/riatailoring.pdf.

[157] EPA stated that it submitted its Final CAA Section 202(a)(1) Findings to OMB-OIRA for economic cost-benefit analysis pursuant to Executive Order 12866, Sec. 2(f)(4), having concluded that "such action [was] a 'significant regulatory action' because it raise[d] novel policy issues". *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496, 66545 (Dec. 15, 2009), *supra*. *See also* The White House, *Executive Order 12866 - Regulatory Planning and Review* (Sept. 30, 1993), at Sec. 2(f)(4), 58 FR 51735 (Oct. 4, 1993), available at:

http://www.reginfo.gov/public/jsp/Utilities/EO_Redirect.jsp; http://www.reginfo.gov/public/jsp/Utilities/EO_12866.pdf. Apparently, EPA did not conclude that its CAA Section 202(a)(1) Findings was a 'significant regulatory action' because it had "an annual effect on the economy of $100 million or more or adversely affect[ed it or a sector of the economy] in a material way…" *See* 58 FR 51735, *supra* at Sec. 2(f)(1). For this reason, EPA also stated that its CAA Section 202(a)(1) Findings would take effect on the 30th day (Jan. 14, 2010) following its issuance (Dec. 15, 2009). It reasoned that, since such "action [was] not a 'major rule' as defined by 5 U.S.C. 804(2)" of the Congressional Review Act (5 U.S.C. 801 et seq.), it would not delay the effective date of the Findings as required by (5 U.S.C. 801(a)(3) - i.e., until the latter of 60 days following Congress's receipt of the report EPA was required to issue under 5 U.S.C. 801(a)(1)(A) or following the rule's publication in the federal register). *Id.* at 66546.

[158] *See Utility Air Regulatory Group v. Environmental Protection Agency, et al., supra* at Slip Op at 24.

[159] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act – Background*, available at: http://www.epa.gov/climatechange/endangerment/; United States Environmental Protection Agency, *Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Proposed rule*, 74 FR 18886 (April 24, 2009), *supra*.

[160] *Id.*

[161] *See United States Environmental Protection Agency, PUBLIC HEARING: Proposed Rulemaking for EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under the Clean Air Act, Transcript of the May 18, 2009 Public Hearing in Arlington, Virginia*, Docket No. EPA-HQ-OAR-2009-0171-2818 (9:01 a.m. through 8:14 p.m. Monday, May 18, 2009), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-2818.

[162] *See* United States Environmental Protection Agency, *PUBLIC HEARING: Proposed Rulemaking for EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under the Clean Air Act, Transcript of the May 21, 2009 Public Hearing in Seattle, Washington*, Docket No. EPA-HQ-OAR-2009-0171-2895 (9:00 a.m. Thursday, May 21, 2009, 2211 Alaskan Way, Pier 66 Bell Harbor Conference Center, Seattle, Washington), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-2895.

[163] *See* Docket No. EPA-HQ-OAR-2009-0171-2818, *supra* at p. 6. *See also* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra* at p. 10.

[164] *See* Docket No. EPA-HQ-OAR-2009-0171-2818, *supra* at pp. 8, 285. *See also* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra* at p. 10.

[165] For example, at the Seattle, Washington hearing, EPA had scheduled the following public officials or their representatives to speak: Washington Governor Christine Gregoire (D) (transcript pp. 16-20), Seattle Mayor Greg Nickels (D) (transcript pp. 116-119), U.S. Congressman Jim McDermott (D) (transcript pp. 29-32), U.S. Congressman Jay Inslee (D) (transcript pp. 32-34), Washington State Senator Phil Rockefeller (D-Chairman of the Senate Environment, Water & Energy Committee) (transcript pp 20-24), State Representative Dave Upthegrove (D-Chairman of the House Ecology & Parks Committee) (transcript pp. 24-26), Elizabeth Wilmott (D-King County Climate Change Program Coordinator) (transcript pp. 27-29), Matthew Kuharic (D-King County Department of Natural Resources) (transcript pp. 63-65). *See* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra*. At the Arlington, Virginia hearing, EPA had scheduled the following public officials to speak: Navis Bermudez (D-Former associate director for Federal Policy, New York State Office of the Governor – Governor David A. Patterson) (transcript pp. 14-19) and Cindy Patterson (D-Prince William County Soil & Water Conservation District) (transcript pp. 227-232).

[166] *See* reference to the EPA STAR Program in Section II.4 *infra* and accompanying footnotes.

[167] For example, at the Seattle, Washington hearing, EPA had scheduled panel speaking engagements for the following scientists affiliated with the University of Washington which participates in the DOC-NOAA grant-funded Cooperative Institutes and Regional Integrated Sciences and Assessments (RISA) programs. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Climate Program Office – Cooperative Institutes*, NOAA website, available at: http://cpo.noaa.gov/Partnerships/CooperativeInstitutes.aspx; United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, NOAA website, available at: ftp://ftp.oar.noaa.gov/lci/Documents/ci-profiles.pdf (Univ. of Washington hosts the Joint Institute for the Study of the Atmosphere and Ocean (JISAO)); United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *RISA Program - Climate Impacts Research Consortium (CIRC)*, available at:

http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CIRC.aspx. These university scientists included: Cecilia Bitz, professor of atmospheric sciences at University of Washington (transcript pp. 65-67); Sonya Remington, former post-doctoral Environmental Studies Teaching Fellow in the Univ. of Washington's Program on the Environment (transcript pp. 169-171), William Calvin, Seattle author, lecturer and professor emeritus at the Univ. of Washington Medical School affiliated with the program of climate change (transcript pp. 175-178), Conway Leovy, professor emeritus of atmospheric sciences and geophysics at the Univ. of Washington (transcript pp. 352-354). *See* Washington Higher Education Sustainability Conference, *2014 Keynote Speakers* (Feb. 6-7, 2014), available at: http://wahesc.org/speakers/ ; UW Medicine, *Events & Programs – Meatless Mondays*, available at: http://www.uwmedicine.org/uw-medical-center/patient-resources/nutrition-services/events-programs.

[168] For example, at the Arlington, Virginia hearing, EPA had scheduled panel speaking engagements for the following representatives of well-known environmental nongovernmental organizations (advocacy groups): Brenda Ekwrzel, Union of Concerned Scientists (transcript pp. 24-29), Amanda Staudt, National Wildlife Federation (transcript pp. 29-34), John Balbus, Environmental Defense Fund (transcript pp. 38-42), Glenda Booth, Virginia Chapter of the National Audubon Society (transcript pp. 45-49), Peter Wilk, Physicians for Social Responsibility (transcript pp. 52-56), Glen Besa, Ivy Main, Kent Baake, Alice Wahl, Sierra Club (transcript pp. 42-45, 98-102, 110-113, 167-170), Curt Davies, Greenpeace USA (transcript 162-167). At the Seattle Washington hearing, EPA had scheduled panel speaking engagements for the following representatives of well-known environmental nongovernmental organizations (advocacy groups): Mark Heckert, National Wildlife Federation (transcript pp. 70-72), Dan Ritzman, Jordan Macha, Sajanie Werake, Kathy Taylor Albert, Sierra Club (transcript pp. 72-75, 341-343, 343-344, 344-348), Sofia Gidlund, Dezi Siler, Pual Pripusich, Greenpeace USA (transcript pp. 111-113, 137-139, 139-142).

[169] *See* National Association of Clean Air Agencies, *About NACAA, Board of Directors; Staff*, available at: http://www.4cleanair.org/about. "NACAA's 17-member Board of Directors includes a state agency representative from each of the 10 EPA regions across the country and seven local agency representatives". *Id.*

[170] The scheduled NACAA speaker for the Washington hearing was Stuart Clark, NACAA Board of Directors Co-chair, while the scheduled speaker for the Virginia hearing was NACAA Deputy Director, Nancy Kruger. *See* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra* at pp. 57-60; *See* Docket No. EPA-HQ-OAR-2009-0171-2818, *supra* at pp. 19-24.

[171] "On behalf of NACAA, I thank you for this opportunity to present our testimony on the proposal under Section 202(a) of the Clean Air Act, to first find that greenhouse gases endanger public health and welfare, and second, that the combined emissions of four specific GHGs from new motor vehicles and engines contribute to the mix of GHGs in the atmosphere, that in turn contributes to air pollution that endangers public health and welfare. We commend and support EPA for this proposal, these findings are long overdue. The evidence is overwhelming that GHGs from human activities cause global warming and that this warming is endangering public health and welfare. In 2007, the Intergovernmental Panel on Climate Change concluded that the evidence that global warming is already affecting our planet is, 'unequivocal, as is now evident from the observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.' EPA catalogs much of these data in its technical support documents, and I won't repeat them here, but I will note that EPA's scientific information does come from reports from the Nobel Prize-winning IPCC, which consists of thousands of esteemed scientists from around the world and from reports generated by the U.S. Climate Change Science Program. We agree with EPA that GHGs endanger both public health and welfare. While GHGs, at current and projected concentrations in the atmosphere, don't directly affect public health, they most certainly do so indirectly" (emphasis added). *See* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra* at pp. 57-58; *See* Docket No. EPA-HQ-OAR-2009-0171-2818, *supra* at pp. 19-20.

[172] *See* Docket No. EPA-HQ-OAR-2009-0171-2818, *supra* at p. 7. *See also* Docket No. EPA-HQ-OAR-2009-0171-2895, *supra* at p. 9.

[173] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues* (April 17, 2009), *supra* at Response 1-62, p. 54, quoting *American Trucking Ass'n v. EPA*, 293 F.3d 355, 372 (D.C. Cir. 2002).

[174] "Where EPA used or described any data in the TSD, for example the GHG emissions data, the source of the data is listed, including where it can be accessed and downloaded. Further, each report, study, or dataset we relied upon has been placed in the Docket 6 for this Action. Information regarding the underlying data, models, and studies used by IPCC, USGCRP, CCSP, and NRC in developing their assessment reports can be accessed by consulting these reports.

Given that some of these reports relied upon thousands of underlying studies, supplying every underlying study in the Docket would be unreasonable and unnecessary." *Id.* at Response (1-62).

[175] *Id.*, at p. 55 ("we acknowledge that more than half of the scientific literature that EPA references in the TSD has copyright protections and is therefore unavailable for download from the Docket at regulations.gov".).

[176] *Id.* ("The online Docket provides the public with an explanation of why certain copyrighted material is not available for download and provides information on how to receive copies of the copyright protected material. The following message is posted for each copyrighted publication in the Docket: This document is not available in Regulations.gov since it is a copyrighted publication and may not be reproduced without consent of the copyright holder. Contact the EPA Docket Center, Public Reading Room to view or receive a copy of this document.").

[177] "DOC-NOAA" means "United States Department of Commerce-National Oceanic and Atmospheric Administration.

[178] "DOE" means United States Department of Energy.

[179] "DOI-USGS" means United States Department of Interior, U.S. Geological Survey.

[180] "DOT" means United States Department of Transportation.

[181] "NASA" means National Aeronautics and Space Administration.

[182] "USDA" means United States Department of Agriculture.

[183] *See* U.S. Global Change Research Program, Climate Literacy Framework, *A Guide for Individuals and Communities*, USGCRP website (last visited April 4, 2014), available at: http://www.globalchange.gov/resources/educators/climate-literacy.html; U.S. Global Change Research Program, *Climate Literacy: The Essential Principles of Climate Science*, (March 2009), available at: http://cpo.noaa.gov/sites/cpo/Documents/pdf/ClimateLiteracyPoster-8_5x11_Final4-11.pdf (Climate Literacy: The Essential Principles of Climate Science presents information that is deemed important for individuals and communities to know and understand about Earth's climate, impacts of climate change, and approaches to adaptation or mitigation.") *Id.*, at inside cover.

[184] *See* "Appendix 1: EPA-TSD Table 1.1 "Core Reference Documents"".

[185] *See e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Reanalysis of Historical Climate Data for Key Atmospheric Features: Implications for Attribution of Causes of Observed Change* (SAP1.3/CCSP(2008g)), National Oceanic and Atmospheric Administration, National Climatic Data Center (Randall Dole, Martin Hoerling, and Siegfried Schubert (eds.)) (2008), at Sec. 2.5.2, p. 43, available at: http://library.globalchange.gov/sap-1-3-reanalysis-of-historical-climate-data-for-key-atmospheric-features-implications-for-attribution-of-causes-of-observed-change.

[186] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Scenarios of Greenhouse Gas Emissions and Atmospheric Concentrations* (SAP2.1a/CCSP(2007b)), Department of Energy, Office of Biological & Environmental Research 2007), at Executive Summary, p. 1, available at: http://downloads.globalchange.gov/sap/sap2-1a/sap2-1a-final-all.pdf.

[187] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Trends in Emissions of Ozone-Depleting Substances, Ozone Layer Recovery, and Implications for Ultraviolet Radiation Exposure* SAP 2.4/CCSP(2008h), National Oceanic and Atmospheric Administration, National Climatic Data Center (Ravishankara, A.R., M.J. Kurylo, and C.A. Ennis (eds.)), at Sections 4.3 and 4.3.1, pp. 120, 121, available at: http://downloads.globalchange.gov/sap/sap2-4/sap2-4-final-all.pdf.

[188] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Climate Models: An Assessment of Strengths and Limitations* (SAP3.1/CCSP(2008c)), Department of Energy, Office of Biological and Environmental Research, at Executive Summary, p. 1, p. 9, available at: http://science.energy.gov/~/media/ber/pdf/Sap_3_1_final_all.pdf.

[189] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Climate Projections Based on Emissions Scenarios for Long-Lived and Short-Lived Radiatively Active Gases and Aerosols* (SAP 3.2/CCSP(2008d)), National Oceanic and Atmospheric Administration, National Climatic Data Center (H. Levy II, D.T. Shindell, A. Gilliland, M.D. Schwarzkopf, L.W. Horowitz, (eds.)), at Sec. 2.1, p. 17, Sec. 2.2, p. 19, Sec. 2.3, p. 20, available at: http://downloads.globalchange.gov/sap/sap3-2/sap3-2-final-report-all.pdf.

[190] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands* (SAP3.3/CCSP(2008i)), Department of Commerce, NOAA's National Climatic Data Center (Thomas R. Karl, Gerald A. Meehl, Christopher D. Miller, Susan J. Hassol, Anne M. Waple, and William L. Murray (eds.)), at Sec. 3.2.4.3.1, pp. 95, 97, Sec. 3.3.9, p. 106, available at: http://downloads.globalchange.gov/sap/sap3-3/sap3-3-final-all.pdf

[191] *See, e.g.,* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Abrupt Climate Change* (SAP3.4/CCSP(2008a)), Department of Interior U.S. Geological Survey, at Sec. 6.1, p. 22, available at: http://downloads.globalchange.gov/sap/sap3-4/sap3-4-final-report-all.pdf.

[192] *See, e.g.,* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* (SAP4.1/CCSP(2009b)), U.S. Environmental Protection Agency (James G. Titus, Jessica Blunden and Anne M. Waple (eds.) Jan. 2009), at Sec. 2.1, p. 28, available at: http://downloads.globalchange.gov/sap/sap4-1/sap4-1-final-report-all.pdf.

[193] *See, e.g.,* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Effects of Climate Change on Energy Production and Use in the United States* (SAP4.5/CCSP(2007a)), Department of Energy, Office of Biological & Environmental Research, at Sec. 2.21, p. 9, Tables 2.3, 2.4, 2.5, pp. 13-15, Table 2.6, p. 17, Table 2.7, p. 19, Sections 2.51-2.52, pp. 21-22, Box 3.3, p. 37, , Sections 3.24-3.24, pp. 44-45, available at: http://downloads.globalchange.gov/sap/sap4-5/sap4-5-final-all.pdf. "

[194] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems* (SAP4.6/CCSP(2008b)), U.S. Environmental Protection Agency (Gamble, J.L. (ed.), at Sec. 1.21, p. 18, Sections 2.32-2.33, pp. 53, 58-60, Table 3.1, p. 99, Sec. 4.3.4, p. 134, 4.7 Appendix, p. 167, available at: http://downloads.globalchange.gov/sap/sap4-6/sap4-6-final-report-all.pdf.

[195] *See, e.g.,* United States Environmental Protection Agency, Office of Research & Development Global Change Research Program and National Center for Environmental Assessment, *Assessment of the Impacts of Global Change on Regional U.S. Air Quality: A Synthesis of Climate Change Impacts on Ground-Level Ozone* (EPA/600/R-07/094F) (2009), at Executive Summary, pp. viii, xx, xxii, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=491176.

[196] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *State of the Climate in 2008*, Bulletin of the Meteorological Society Vol. 90, No. 8 (T.C. Peterson and M.O. Baringer, Eds. 2009), at Figure 2.33, p. S40, p. S47-S48, S52, S65, S67, S71, S104, S110-S111, S113, available at: http://www1.ncdc.noaa.gov/pub/data/cmb/bams-sotc/climate-assessment-2008-lo-rez.pdf.

[197] *See* National Research Council Committee on the Science of Climate Change, *Climate Change Science: An Analysis of Some Key Questions* (2001a), at pp. 1, 3-4, 15, available at: http://www.gcrio.org/NRC/NRCclimatechange.pdf.

[198] *See* Arctic Council, *Arctic Council Climate Impact Assessment (ACIA)* (2004), at pp. 18, 26-30, 32-33, 41-42, 47-48, 51-52, 56, 82-83, 88, 100-101, 112-113, available at: http://www.amap.no/arctic-climate-impact-assessment-acia.

[199] *See* Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge Univ. Press 2007a), at Chap. 8, pp. 591-661, Chap. 10, pp. 749-845, Chap. 11, pp. 848-940, available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm.

[200] *See* Intergovernmental Panel on Climate Change, *Summary for Policymakers In: Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge Univ. Press 2007d), at pp. 2, 4, 10-17, available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

[201] *See* Intergovernmental Panel on Climate Change, *Special Report on Emissions Scenarios*, A Special Report of Working Group III of the Intergovernmental Panel on Climate Change (Cambridge Univ. Press 2000), at p. 3, Figure 1, p. 4, 5, 11, available at: https://www.ipcc.ch/pdf/special-reports/spm/sres-en.pdf.

[202] "USACE" means US Army Corps of Engineers.

[203] "USEIA" means US Energy Information Administration.

[204] "EPA's scientists initiated the Climate Impact on Regional Air Quality (CIRAQ) project in 2002 to develop a pilot modeling study to incorporate regional-scale climate effects into air quality modeling. The project involved collaboration across multiple federal agencies and with academic groups that had global-scale modeling expertise and, who were supported through EPA's Science To Achieve Results (STAR) grant program. The Goddard Institute for Space Studies (GISS) global climate model (GCM) version 2' was used to simulate the period from 1950-2055 at 4° degrees latitude by 5° degrees longitude resolution. Historical values for greenhouse gases (as CO2 equivalents) were used for 1950-2000, with future greenhouse gas forcing following the Intergovernmental Panel on Climate Change's A1B scenario. Colleagues at the Pacific Northwest National Laboratory downscaled GCM outputs using the Penn State and National

Center for AtmosphericResearch (NCAR) mesocale model (MM5) to simulate meteorology over the continental U.S. at 36 kilometers resolution for two 10-year periods centered on 2000 and 2050. For the first phase of this project, the effect of climate change alone was considered, without accounting for changes in emissions of ozone and PM precursors…As the next step, EPA is investigating the combined effect of climate change together with emission changes on air quality. Emission projections for different scenarios of economic growth and technological utilization have been developed. Air quality simulations using these emissions projections and the climatological meteorology described above has been conducted using CMAQ version 4.7." *See* United States Environmental Protection Agency Atmospheric Modeling and Analysis Research, *Climate Impact on Regional Air Quality (CIRAQ)*, available at: http://www.epa.gov/AMD/Research/Climate/ciraq.html.

[205] "Under the World Climate Research Programme (WCRP) the Working Group on Coupled Modelling (WGCM) established the Coupled Model Intercomparison Project (CMIP) as a standard experimental protocol for studying the output of coupled atmosphere-ocean general circulation models (AOGCMs). CMIP provides a community-based infrastructure in support of climate model diagnosis, validation, intercomparison, documentation and data access. This framework enables a diverse community of scientists to analyze GCMs in a systematic fashion, a process which serves to facilitate model improvement. Virtually the entire international climate modeling community has participated in this project since its inception in 1995…Coupled atmosphere-ocean general circulation models allow the simulated climate to adjust to changes in climate forcing, such as increasing atmospheric carbon dioxide…The Program for Climate Model Diagnosis and Intercomparison (PCMDI) archives much of the CMIP data and provides other support for CMIP. PCMDI's CMIP effort is funded by the Regional and Global Climate Modeling (RGCM) Program of the Climate and Environmental Sciences Division of the U.S. Department of Energy's Office of Science, Biological and Environmental Research (BER) program… Phase three of CMIP (CMIP3) included 'realistic' scenarios for both past and present climate forcing. The research based on this dataset provided much of the new material underlying the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4)." *See* World Climate Research Programme, CMIP Coupled Model Intercomparison Project, *CMIP - Coupled Model Intercomparison Project – Overview*, available at: http://cmip-pcmdi.llnl.gov/.

[206] Global climate simulations have been derived from the NASA Goddard Institute for Space Studies (GISS) version II' (two prime) model assuming the IPCC Special Report on Emission Scenarios (SRES) A1B 'business as usual' emission scenario." *See* E. Cooter, R.C. Gilliam, A. Gilliland, W.G. Benjey, J. Wall and C. Nolte, *Examining the Impact of Climate Change and Variability of Regional Air Quality Over the United States*, Presented at "Climate Science in Support of Decision-Making", Arlington, VA (Nov. 14-16, 2005), Environmental Protection Agency Exposure Research website, available at: http://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=143744&fed_org_id=770&SIType=PR&TIMSType=&showCriteria=0&address=nerl/pubs.html&view=citation&personID=510&role=Author&sortBy=pubDateYear&count=100&dateBeginPublishedPresented=.

[207] "The most recent version of the GISS atmospheric GCM, Model E, resulted from a substantial reworking of the previous version, Model II'. Although model physics has become more complex, execution by the user is simplified as a result of modern software engineering and improved model documentation embedded within the code and accompanying web pages. The model, which can be downloaded from the GISS website by outside users, is designed to run on myriad platforms ranging from laptops to a variety of multiprocessor computers, partly because of NASA's rapidly shifting computing environment. The most recent (post-AR4) version can be run on an arbitrarily large number of processors." *See* SAP3.1/CCSP(2008c), *supra* at Sec. 2.5.3, p. 25.

[208] "The Modern Era-Retrospective Analysis for Research and Applications supports NASA's Earth science objectives, by applying the state-of-the-art GEOS-5 data assimilation system that includes many modern observing systems (such as EOS) in a climate framework. The MERRA project supports NASA's Earth science interests by: [1] utilizing the NASA global data assimilation system to produce a long-term (1979-present) synthesis that places the current suite of research satellite observations in a climate data context[; 2] providing the science and applications communities with state-of-the-art global analyses, with emphasis on improved estimates of the hydrological cycle on a broad range of weather and climate time scales. The MERRA time period covers the modern era of remotely sensed data, from 1979 through the present, and the special focus of the atmospheric assimilation is the hydrological cycle." *See* National Aeronautics and Space Administration, Goddard Flight Center Global Modeling and Assimilation Office, *MERRA: Modern Era-Retrospective Analysis for Research and Applications – Introduction to MERRA*, available at: http://gmao.gsfc.nasa.gov/research/merra/intro.php.

[209] "The new atmospheric models developed at GFDL for global warming studies are referred to as AM2.0 and AM2.1 (GFDL Atmospheric Model Development Team 2004). Key points of departure from previous GFDL models are the adoption of a new numerical core for solving fluid dynamical equations for the atmosphere, the inclusion of liquid and ice concentrations as prognostic variables, and new parameterizations for moist convection and cloud formation." *See* SAP3.1/CCSP(2008c), *supra* at Sec. 2.5.1, pp. 22-23.

[210] "CCSM3 is a coupled climate model with components representing the atmosphere, ocean, sea ice, and land surface connected by a flux coupler. CCSM3 is designed to produce realistic simulations over a wide range of spatial resolutions, enabling inexpensive simulations lasting several millennia or detailed studies of continental-scale dynamics, variability and climate change…The new CCSM3 version incorporates several significant improvements in physical parameterizations. Enhancements in model physics are designed to reduce several systematic biases in mean climate produced by previous CCSM versions. These enhancements include new treatments of cloud processes, aerosol radiative-forcing, land-atmosphere fluxes, ocean mixed-layer processes, and sea-ice dynamics." *Id.*, at Sec. 2.5.2, at pp. 24-25. "The Community Atmosphere Model (CAM) is the latest in a series of global atmosphere models developed at NCAR for the weather and climate research communities. CAM also serves as the atmospheric component of the Community Climate System Model (CCSM). *See* NCAR-UCAR Community Earth System Model, *CESM Models - CCSM3.0 Community Atmosphere Model (CAM)*, available at: http://www.cesm.ucar.edu/models/atm-cam/. "CESM is sponsored by the National Science Foundation (NSF) and the U.S. Department of Energy (DOE). Administration of the CESM is maintained by the Climate and Global Dynamics Division (CGD) at the National Center for Atmospheric Research (NCAR)." *See* NCAR-UCAR Community Earth System Model, *About CESM*, available at: https://www2.cesm.ucar.edu/about.

[211] "The PSU/NCAR mesoscale model (known as MM5) is a limited-area, nonhydrostatic, terrain-following sigma-coordinate model designed to simulate or predict mesoscale atmospheric circulation. The model is supported by several pre- and post-processing programs, which are referred to collectively as the MM5 modeling system. The MM5 modeling system software is mostly written in Fortran, and has been developed at Penn State and NCAR as a community mesoscale model with contributions from users worldwide. The MM5 modeling system software is freely provided and supported by the Mesoscale Prediction Group in the Mesoscale and Microscale Meteorology Division, NCAR." *See* Pennsylvania State University / National Center for Atmospheric Research, *MM5 Community Model*, available at: http://www.mmm.ucar.edu/mm5/mm5-home.html.

[212] "The Weather Research and Forecasting (WRF) Model is a next-generation mesoscale numerical weather prediction system designed to serve both atmospheric research and operational forecasting needs. It features two dynamical cores, a data assimilation system, and a software architecture allowing for parallel computation and system extensibility. The model serves a wide range of meteorological applications across scales ranging from meters to thousands of kilometers…WRF allows researchers the ability to produce simulations reflecting either real data (observations, analyses) or idealized atmospheric conditions. WRF provides operational forecasting a flexible and computationally efficient platform, while offering advances in physics, numerics, and data assimilation contributed by the many research community developers…There are two dynamical core versions of WRF, each with its own web page. The Advanced Research WRF (ARW) is supported to the community by the NCAR Mesoscale and Microscale Meteorology Division: http://www.mmm.ucar.edu/wrf/users. The WRF-NMM (NMM) is supported to the community by the Developmental Testbed Center (DTC): http://www.dtcenter.org/wrf-nmm/users." *See* The Weather Research and Forecasting Model (WRF), *Introduction*, available at: http://www.wrf-model.org/index.php. "The WRF system is in the public domain and is freely available for community use… The Mesoscale and Microscale Meteorology Division of NCAR is currently maintaining and supporting a subset of the overall WRF code (Version 3)." *See WRF Model Users Page*, available at: http://www2.mmm.ucar.edu/wrf/users/. "WRF-NMM was developed by the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Prediction (NCEP)…The NOAA/NCEP and the Developmental Testbed Center (DTC) are currently maintaining and supporting the WRF-NMM portion of the overall WRF code (Version 3)". *See* Development Testbed Center, *WRF-NMM Users Page*, available at: http://www.dtcenter.org/wrf-nmm/users/. "DTC is a distributed facility where the NWP community can test and evaluate new models and techniques for use in research and operations…[The f]undamental [pu]rpose of DTC [is t]o serve as a bridge between research and operations to facilitate the activities of both halves of the NWP [numerical weather prediction] Community." *See* Development Test Best Center, *About DTC*, available at: http://www.dtcenter.org/. "National Oceanic & Atmospheric Administration (NOAA)[,] Air Force Weather Agency (AFWA) [and] National Science Foundation (NSF)" serve as the DTC's sponsors. *Id.*

[213] CAMx is "[a]n open-source modeling system for multi-scale integrated assessment of gaseous and particulate air pollution." See CAMx Ozone, Particulates Toxics, *Home*, available at: http://www.camx.com/home.aspx. "CAMx is an Eulerian photochemical dispersion model that allows for integrated 'one-atmosphere' assessments of gaseous and particulate air pollution (ozone, particulate matter, air toxics) over spatial scales ranging from neighborhoods to continents. It is designed to unify all of the technical features required of 'state-of-the-science' air quality models into a single open-source system that is computationally efficient, flexible, and publicly available. CAMx can be supplied environmental input fields from many meteorological models (specifically WRF, MM5, and RAMS are supported) and emission inputs developed using many emissions processors (SMOKE, CONCEPT, EPS, EMS)." *See* CAMx, *CAMx Overview*, available at: http://www.camx.com/about/default.aspx.

[214] *See MAGICC – The Climate System in a Nutshell*, available at: http://www.magicc.org/. "MAGICC stands for 'Model for the Assessment of Greenhouse Gas Induced Climate Change'. It is a prime reduced-complexity model, often used by IPCC, for key scientific publications and by a number of Integrated Assessment Models." *Id.* "MAGICC was originally developed by Tom Wigley (National Centre for Atmospheric Research, Boulder, US, and University of Adelaide, Australia) and Sarah Raper (Manchester Metropolitan University, UK) in the late 1980s and continuously developed since then. It has been one of the widely used climate models in various IPCC Assessment Reports. The latest version, MAGICC6, is co-developed by Malte Meinshausen (Potsdam Institute for Climate Impact Research, Germany, and the University of Melbourne, Australia)." *See* MAGICC Wiki, *Model Description*, available at: http://wiki.magicc.org/index.php?title=Model_Description.

[215] "The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment." *See* U.S. Energy Information Administration, *About EIA*, available at: http://www.eia.gov/about/mission_overview.cfm.

[216] "The National Energy Modeling System (NEMS) is a computer-based, energy-economy modeling system of U.S. through 2030. NEMS projects the production, imports, conversion, consumption, and prices of energy, subject to assumptions on macroeconomic and financial factors, world energy markets, resource availability and costs, behavioral and technological choice criteria, cost and performance characteristics of energy technologies, and demographics. NEMS was designed and implemented by the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE)…Energy resources and prices, the demand for specific energy services, and other characteristics of energy markets vary widely across the United States. To address these differences, NEMS is a regional model. The regional disaggregation for each module reflects the availability of data, the regional format typically used to analyze trends in the specific area, geology, and other factors, as well as the regions determined to be the most useful for policy analysis." *See* U.S. Energy Information Administration, *The National Energy Modeling System: An Overview*, available at: http://www.eia.gov/oiaf/aeo/overview/.

[217] "For more than a decade, the U.S. EPA's Community Multi-scale Air Quality (CMAQ) Model has been a powerful computational tool used by EPA and states for air quality management. The National Weather Service uses the model to produce daily U.S. forecasts for ozone air quality. CMAQ is also used by states to assess implementation actions needed to attain National Ambient Air Quality Standards…The CMAQ system includes emission, meteorology, and chemical modeling components…*In addition to air quality research and regulation, the CMAQ system is also being developed to address interactions between air pollutant concentrations and climate forcing* through 2-way coupling between CMAQ and the Weather Research and Forecast (WRF) model. Since its inception, CMAQ has been designed as a modular system able to incorporate data from related models that have alternate mathematical processes. This capability has allowed for inclusion of new science in the model to address increasingly complex air pollution issues. Thus, CMAQ has multi-pollutant capabilities to address diverse air quality issues such as photochemical ozone, airborne particulate matter, acid deposition, nutrient deposition and eutrophication, and air toxics." *See* United States Environmental Protection Agency, Atmospheric Modeling and Analysis Research, *Research In Action - Community Multi-scale Air Quality Model (CMAQ)*, available at: http://www.epa.gov/AMD/Research/RIA/cmaq.html.

[218] Within the EPA Global Change Research Program's "intramural effort, the National Exposure Research Laboratory (NERL) is the primary developer of the Community Multiscale Air Quality (CMAQ) model that predicts air quality pollutant transport and fate (Byun and Schere, 2006). CMAQ, which, as of December 2006, has undergone three external peer reviews, is being used by the Office of Air Quality Planning and Standards (OAQPS) within OAR for current rulemakings, as well as by the research community for a range of research applications including climate and air quality

interactions. Via a partnership between EPA and NOAA, a team at NERL is charged under this assessment with leading the development of a series of regional-scale air quality simulations using CMAQ under current and future climate scenarios. This effort, the Climate Impacts on Regional Air Quality (CIRAQ) project, was initiated in 2002…This team provides the air quality modeling expertise to develop these simulations, to interpret the sensitivity of air quality to the future climate changes simulated, and to consider regulatory implications of potential changes in air quality." *See* United States Environmental Protection Agency, Office of Research & Development Global Change Research Program and National Center for Environmental Assessment, *Assessment of the Impacts of Global Change on Regional U.S. Air Quality: A Synthesis of Climate Change Impacts on Ground-Level Ozone* (EPA/600/R-07/094F) (2009), *supra* at pp. 2-7-2-8.

[219] "The assessment effort benefits substantially from a strong collaboration with the extramural research community. The EPA's National Center for Environmental Research (NCER), through its competitive Science To Achieve Results (STAR) grants program, funded a number of leading university research groups through the following Requests for Applications (RFAs): • 2000: *Assessing the Consequences of Interactions between Human Activities and a Changing Climate* • 2002: *Assessing the Consequences of Global Change for Air Quality: Sensitivity of U.S. air quality to climate change and future global impacts* • 2003: *Consequences of Global Change for Air Quality: Spatial Patterns in Air Pollution Emissions* • 2004: *Regional Development, Population Trend, and Technology Change Impacts on Future Air Pollution Emissions* • 2005: *Fire, Climate and Air Quality* • 2006: *Consequences of Global Change for Air Quality*. These RFAs… encompass roughly 25 projects, totaling over $20 million, covering topics including projection of population, development, and transportation trends; observations of biosphere-air quality interactions; coupled climate and air quality modeling; and human health effects" *See* United States Environmental Protection Agency, Office of Research & Development Global Change Research Program and National Center for Environmental Assessment, *Assessment of the Impacts of Global Change on Regional U.S. Air Quality: A Synthesis of Climate Change Impacts on Ground-Level Ozone* (EPA/600/R-07/094F) (2009), *supra* at pp. 2-8-2-9.

[220] For example, twenty-eight (28) professors affiliated with eighteen (18) universities coauthored ten (10) studies for which $900,000 STAR grants had been awarded in-part, in connection with the 2006 *Consequences of Global Change for Air Quality* RFA. *See* United States Environmental Protection Agency Extramural Research, *Research Project Search- Consequences of Global Change For Air Quality*, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/recipients.display/rfa_id/434/records_per_page/ALL. See United States Environmental Protection Agency Extramural Research, *Study the Impact of Global Change on Air Quality Using the Global-Through-Urban Weather Research and Forecast Model with Chemistry - EPA Grant Number: R833376*, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8434/report/0 (Professor Zhang Yang of North Carolina State Univ., was one of three STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Effects of Global Change on the Atmospheric Mercury Burden and Mercury Sequestration Through Changes in Ecosystem Carbon Pools - EPA Grant Number: R833378*, at Abstract available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8435/report/0 (Professors Dale Johnson and Steve Lindberg of Univ. of Nevada and Yiai Luo of Univ. of Oklahoma were three of four STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Global Change and Air Pollution (GCAP) Phase 2: Implications for U.S. Air Quality and Mercury Deposition of Multiple Climate and Global Emission Scenarios for 2000-2050 - EPA Grant Number: R833370*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8431/report/0 (Professors Daniel Jacob and Loretta Mickley of Harvard Univ., Daeowon Byun of Univ. of Houston, Joshua Fu of Univ. of Tennessee and John Seinfeld of Calif. Inst. of Technology were five of seven STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Impacts of Global Climate and Emissions Changes on U.S. Air Quality (Ozone, Particulate Matter, Mercury) and Projection Uncertainty - EPA Grant Number: R833373*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8433/report/0 (Professors Zin-Zhong Liang, Hao He and Sue Senjian of Univ. of Maryland, and Michael Coughey, Kenneth Kunkel, Hang Lei, Allen Williams and Donal Weubbles of Univ. of Illinois Urbana-Champaign were the sole STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Impact of Global Change on Urban Air Quality via Changes in Mobile Source Emissions, Background Concentrations, and Regional Scale Meteorological Feedbacks -*

EPA Grant Number: R833372, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8432/report/0 (Professors Michael Kleeman and Shu-Hwa Chen of Univ. of Calif., Davis and James Schauer of Univ. of Wisconsin were the sole STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Changes in Climate, Pollutant Emissions, and US Air Quality: An Integrating Modeling Study - EPA Grant Number: R833374*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8436/report/0 (Professors Peter Adams and Spyros Pandis of Carnegie Mellon Univ. were the sole STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Sensitivity of Heterogeneous Atmospheric Mercury Processes to Climate Change - EPA Grant Number: R833375*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8428/report/0 (Professors James Schauer, Tracey Holloway and Martin Shafer of Univ. of Wisconsin and Robert Griffin of Univ. of New Hampshire were the sole four STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Impact of Climate Change on Air Quality in the U.S.: Investigations With Linked Global- and Regional-Scale Models - EPA Grant Number: R833377*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8355/report/0 (Professors Sanford Sillman, Gerald Keeler and Joyce Penner of Univ. of Michigan were the sole STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Effects of Future Emissions and a Changed Climate on Urban Air Quality - EPA Grant Number: R833371*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8429/report/0 (Professor Mark Jacobson of Stanford Univ. was one of two STAR grant award recipients); United States Environmental Protection Agency Extramural Research, *Ensemble Analyses of the Impact and Uncertainties of Global Change on Regional Air Quality in the U.S. - EPA Grant Number: R833369*, at Abstract, available at: http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/8437/report/0 (Professors Brian Lamb of Washington State Univ., Clifford Mass and Eric Salathe of Univ. of Washington and David Theobold of Colorado State Univ. were four of five of seven STAR grant award recipients).

[221] "Table 1.1 lists the core reference documents for this TSD…Throughout this document, when these various assessments are referred to in general or as a whole, the full reports are cited. For example, a general reference to the CCSP report Weather and Climate Extremes in a Changing Climate is cited as "CCSP, 2008i" (the "i" differentiates the report from other CCSP reports published that same year). *When specific findings or conclusions from these larger assessment reports are referenced, citations are given for the relevant individual chapter or section.* For example, a finding from CCSP, 2008i, Chapter 5 "Observed Changes in Weather and Climate" by Kunkel et al., is cited as "Kunkel et al., 2008." *In some cases, this document references other reports and studies in addition to the core references of IPCC, CCSP/USGCRP, NRC, and, for GHG emissions, EPA. These references are primarily for major reports and studies produced by U.S. federal and state government agencies*" (emphasis added). *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra* at pp. 5, 8. *See also* Appendix 3: "Appendix 1 - EPA-TSD 'Core Reference Documents' and Assessments Incorporated Therein Upon Which EPA Administrator's Endangerment and Cause or Contribute Findings Primarily Rely", *infra*.

[222] *See* Appendix 2 – "EPA-TSD 'Core Reference Documents' and Assessments Incorporated Therein Upon Which EPA Administrator's Endangerment and Cause or Contribute Findings Primarily Rely, *infra*.

[223] *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra* (referring to modeling in SAP1.3/CCSP(2008g) on p. 50; SAP2.1a/CCSP(2007(b) on p. 58; SAP2.4/CCSP(2008h) on p. 79; SAP3.1/CCSP(2008c) on pp. 63, 68; SAP3.2/CCSP(2008d) on pp. 25, 72; SAP3.3/(2008i) on p. 53; SAP3.4/CCSP(2008a) on pp. 68, 78; SAP4.1/CCSP(2009b) on p. 68; SAP4.5/CCSP(2007a) on pp. 122-125; SAP4.6/CCSP(2008b) on pp. 92-93; EPA *Impacts of Global Change on Regional U.S. Air Quality* (2009a) on pp. 90-91; DOC-NOAA *The State of the Climate in 2008* on p. 67; Arctic Council *Arctic Climate Impact Assessment* on pp. 107-108; NRC *Climate Change Science: An Analysis of Some Key Questions* (2001a) on p. 64; IPCC(2007a) on p. 47; IPCC(2007d) on pp. 23, 63-64, 67, 79; IPCC(2000) on p. 57.

[224] *See* Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), *supra* at Sec. I.5.
[225] *Id.,* at Sec. I.7.
[226] *Id.*, at Preamble, pp. 11-25.
[227] *Id.*, at p. 12.
[228] *Id.*, at Sec. IX.4.
[229] *Id.*, at Preamble, p. 33.
[230] *Id.*, at Sec. III.4.
[231] *Id.*, at Preamble, p. 25.
[232] *Id.*, at Preamble, p. 16.
[233] *See* United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)"), *supra* at Sec. 2.2.1.
[234] *Id.*, at Sec. 2.2.2.
[235] *Id.*, at Sec. 2.2.3.
[236] *Id.*
[237] *Id.*
[238] *Id.*, at Sec. 2.2.9.
[239] *Id.*, at Sec. 2.2.16. "**Should Environmental Regulatory Models be Peer Reviewed?** Generally, yes. Specific guidelines for the peer review of environmental regulatory models have been published by the Agency. These can be found on the EPA web site under the Science Policy Council home page (http://www.epa.gov/osa/spc/). In 2000, the Science Policy Council established the Agency's Council for Regulatory Environmental Modeling (CREM) which promotes consistency and consensus among environmental modelers and users" (boldfaced emphasis in original). *Id.*
[240] "A review by the Science Advisory Board (SAB) thirty years ago recognized the importance of sound modeling to EPA. In 1989, the SAB recommended a central body examine best modeling practices. This led to the formation of the Agency Task Force on Environmental Regulatory Modeling in 1992, which produced guidance on model peer review and quality, and proposed a charter for the formation of CREM. The CREM was established in 2000 by the EPA Administrator, after some additional guidance from the SAB received in 1999. The CREM has gone through several organizational changes with the support and urging of several EPA Administrators and the Office of the Science Advisor (OSA). The most recent charter was approved by the Science and Technology Policy Council (STPC) in 2012…" *See* United States Environmental Protection Agency Council for Regulatory Environmental Modeling, *History*, available at: http://www.epa.gov/crem/history.html; United States Environmental Protection Agency Council for Regulatory Environmental Modeling, *Information about the Council for Regulatory Environmental Modeling for the Science Advisory Board*, available at: http://www.epa.gov/crem/crem_sab.html.
[241] *See* United States Environmental Protection Agency Office of the Science Adviser, Council for Regulatory Environmental Modeling, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (March 2009), available at: http://epa.gov/crem/library/cred_guidance_0309.pdf. Apparently, this CREM Guidance document, which had been "produced in draft form in November 2003…ha[d] undergone a rigorous process of internal and external peer review", and had been based "on the recommendations of the [EPA] Science Advisory Board review panel and the National Research Council report on Models in Environmental Regulatory Decision Making", had been subject to public notice and comment during August 2008. *See* United States Environmental Protection Agency, *Guidance on the Development, Evaluation and Application of Environmental Models – Notice of public comment period*, 73 FR 47162 (Aug. 13, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-08-13/pdf/E8-18740.pdf.
[242] EPA's CREM Guidelines had been subject to public notice and comment procedures consistent with the requirements of Executive Order No. 13422. See Executive Order No. 13422, Further Amendment to Executive Order 12866 on Regulatory Planning and Review (Jan. 18, 2007), 72 FR 2763, available at: http://www.gpo.gov/fdsys/pkg/FR-2007-01-23/pdf/07-293.pdf. E.O. 13422, in amending Executive Order No. 12866, substantively required federal agencies "to (1) 'base guidance documents on the "best reasonably obtainable scientific, technical, economic and other information'; (2) tailor the guidance documents to impose the least burden on society, taking into account the costs of cumulative regulations; and (3) draft guidance to be 'simple and easy to understand.'" *See* Stephen M. Johnson, *Good Guidance, Good Grief!,* 72 Missouri Law Review 695, 725 (2007), available at: http://law.missouri.edu/lawreview/files/2012/11/Johnson.pdf, *citing* Exec. Order No. 12,866, 58 Fed. Reg. 51,735,

§1(b)(7), (1993) (as amended by Exec. Order No. 13,442, 72 Fed. Reg. 2763, §(1)(b) (2007)); Exec. Order No. 12,866, 58 Fed. Reg. 51,735, §1(b)(11) (as amended by Exec. Order No. 13,422, 72 Fed. Reg. 2763, §1(d)); and Exec. Order No. 12,866, 58 Fed. Reg. 51,735,§1(b)(12) (as amended by Exec. Order No. 13,422, 72 Fed. Reg. 2763, §1(e)). "The Order also requires agencies to avoid guidance documents that are 'inconsistent, incompatible, or duplicative with. . . other regulations' and guidance documents, 'or those of other Federal agencies.' *Id. citing* Exec. Order No. 12,866, 58 Fed. Reg. 51,735, §1(b)(10) (as amended by Exec. Order No. 13,422, 72 Fed. Reg. 2763, §1(c)). "More significantly, though, the Order requires agencies to provide OMB with advance notice of significant guidance documents [fn] and provides for OMB review of those documents before the agency finalizes them." *Id.,* at fn 165, *citing* Exec. Order No. 13,422, 72 Fed. Reg. 2763, 2764, §7; Exec. Order No. 13,422, 72 Fed. Reg. 2763, 2764 §3(h).

[243] *See* United States Environmental Protection Agency Office of the Science Adviser, Council for Regulatory Environmental Modeling, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (March 2009), *supra*, at Executive Summary, p. vii.

[244] *Id.*

[245] *Id.*, at Sec. 4, p. 20.

[246] *Id.*, at Sec. 4, pp. 20-21.

[247] *Id.*, at Sec. 4.2, p. 21.

[248] *Id.*, at Sec. 4.2.1, p. 23.

[249] *Id.*

[250] *Id.*

[251] *Id.*

[252] *Id.*

[253] *Id.*

[254] *See* Explanation following Sec. II.4 (EPA Records Category #4), *infra*.

[255] *See* United States Environmental Protection Agency Office of the Science Adviser, Council for Regulatory Environmental Modeling, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (March 2009), *supra* at Sec. 4.2.1, p. 23.

[256] *Id.*

[257] *Id.*, at p. 24. "Models used for secondary applications (existing EPA models or proprietary models) will generally undergo a different type of evaluation than those developed with a specific regulatory information need in mind. Specifically, these reviews may deal more with uncertainty about the appropriate application of a model to a specific set of conditions than with the science underlying the model framework." *Id.*

[258] Section 2(f) of E.O. 12866 provides that "(f) 'Significant regulatory action' means any regulatory action that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impacts of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in [the] Order." *See* The White House, *Executive Order 12866 - Regulatory Planning and Review* (Sept. 30, 1993), at Sec. 2(f), 58 FR 51735 (Oct. 4, 1993), available at: http://www.reginfo.gov/public/jsp/Utilities/EO_Redirect.jsp; http://www.reginfo.gov/public/jsp/Utilities/EO_12866.pdf.

[259] *See* United States Environmental Protection Agency Office of the Science Adviser, Council for Regulatory Environmental Modeling, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (March 2009), *supra* at Sec. 4.2.1, p. 24.

[260] *Id.*

[261] *See* Section II.3 of the Annotated Addendum, *infra*.

[262] *See* United States Environmental Protection Agency Office of the Science Adviser, Council for Regulatory Environmental Modeling, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (March 2009), *supra* at Sec. 4.2.1, p. 24.

[263] *Id.*, at pp. 24-25.

[264] *Id.*, at p. 25.

[265] *Id.*

[266] *Id.*
[267] *Id.*, at Appendix D: Best Practices for Model Evaluation, at Sec. D.2, p. 62.
[268] *See* United States Environmental Protection Agency, *Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act – Proposed rule*, 74 FR 18886 (April 24, 2009), *supra*.
[269] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496 (Dec. 15, 2009), *supra*.
[270] *See* United States Environmental Protection Agency, *Peer Review Handbook* (3rd ed.), EPA/100/B-06/002 (2006) ("EPA-PRH(2006)"), *supra* at Sec. 1.3.3.
[271] *See* United States Environmental Protection Agency Office of Information, *Final Guidance for Quality Assurance Project Plans - EPA QA/G-5*, EPA/240/R-02/009 (Dec. 2002), available at: http://www.epa.gov/QUALITY/qs-docs/g5-final.pdf.
[272] The QA Project Plan Guidelines define "environmental data" as "any measurements or information that describe environmental processes, location, or conditions; ecological or health effects and consequences; or the performance of environmental technology. For EPA, environmental data include information collected directly from measurements, *produced from models* [and c]ompiled from other sources such as data bases or the literature." *Id.*, at Appendix B: Glossary of Quality Assurance and Related Terms, p. B-3.
[273] *Id.*, at Sec. 1.1, p. 1.
[274] "Many activities involve developing a QA Project Plan: modeling projects, geospatial information projects, projects solely using existing information, and those involved with the collection of new information, e.g., the sampling and analysis type of project". *Id.*, at Introduction, p. 1. *See also* United States Environmental Protection Agency Office of Information, *Guidance for Geospatial Data Quality Assurance Project Plans - EPA QA/G-5G*, EPA/240/R-03/003 (March 2003), available at: http://www.epa.gov/QUALITY/qs-docs/g5g-final.pdf. "The following is a description of various types of assessment activities available to managers of geospatial projects for evaluating the effectiveness of project implementation… F. Peer review is primarily an external scientific review…Peer reviews ensure that the project activities: • were technically adequate • were competently performed • were properly documented • satisfied established technical specifications • satisfied established quality assurance criteria. In addition, peer reviews can assess the assumptions, calculations, extrapolations, alternative interpretations, methods, acceptance criteria, and conclusions documented in the project's report." *Id.*, at Sec. 3.3.1, pp. 50, 52.
[275] *Id.*, at Sec. 1.1, p. 2.
[276] *Id.*, at Sec. 2.3.1, p. 41.
[277] *Id.*, at Introduction, p. 1.
[278] *See* United States Environmental Protection Agency Office of Information, *Guidance for Quality Assurance Project Plans for Modeling - EPA QA/G-5M*, EPA/240/R-02/007 (Dec. 2002), available at: http://www.epa.gov/QUALITY/qs-docs/g5m-final.pdf.
[279] *Id.*, at Sec. 1.3, p. 2.
[280] *Id.*, at Sec. 1.7, pp. 6-7.
[281] *Id.*, at Sec. 3.2, pp. 18-19.
[282] *Id.*, at Figure 4, p. 20.
[283] *Id.*, at Sec. 3.2.1, p. 19.
[284] *Id.*, at Sec. 3.2.2, p. 20.
[285] *Id.*, at p. 21.
[286] *Id.*, at Sec. 3.2.3, p. 23. "Although a formal peer review process is preferred, this may not always be possible due to project constraints." *Id.*
[287] *Id.*
[288] *Id.*, at Sec. 4.1.9, p. 36.
[289] *Id.*, at p. 38.
[290] *Id.*
[291] *Id.*, at Sec. 4.3.1, p. 61.
[292] *Id.*, at pp. 65-66.
[293] *Id.*, at p. 66.
[294] *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-

008 ("EPA IQA Guidelines") (Oct. 2002), *supra* at Sec. 6.5, *citing EPA Quality Manual for Environmental Programs* 5360 A1. May 2000, Section 1.3.1, available at: http://www.epa.gov/quality/qs-docs/5360.pdf.

[295] *See* United States Environmental Protection Agency, Office of Environmental Information Quality Staff, *EPA Quality Manual for Environmental Programs - CIO 2105-P-01-0 (formerly 5360 A1)* (May 5, 2000), available at: http://www.epa.gov/irmpoli8/policies/2105P010.pdf. "EPA Order 5360.1 CHG 2, *Policy and Program Requirements for the Mandatory Agency-wide Quality System*, provides requirements for the conduct of quality management practices, including quality assurance (QA) and quality control (QC) activities, for all environmental data collection and environmental technology programs performed by or for this Agency. The primary goal of the Agency-wide Quality System is to ensure that environmental programs and decisions are supported by data of the type and quality needed and expected for their intended use..." *Id.*, at Sec. 1.1. "In accordance with EPA Order 5360.1 CHG 2, EPA *requires* that environmental programs be supported by a quality system that complies with the American National Standard ANSI/ASQC E4-1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*, incorporated herein by reference" (emphasis added). *Id.*

[296] *Id.*, at Sec. 1.3.1.

[297] *Id.*, at Sec. 1.4.2.

[298] *Id.*

[299] *Id.*, at Sec. 2.2.2.9.

[300] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues ("RTCs Vol. 1")* (April 17, 2009), *supra* at Comment (1-62).

[301] *Id.*, at Comment (1-63).

[302] *Id.*, at Response (1-63).

[303] *Id.*

[304] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act - EPA's Response to Public Comments Volume 2: Validity of Observed and Measured Data* (April 24, 2009), *supra* at Comments (2-37), (2-38), (2-39), (2-62), (2-65), and (2-68). *See also* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act - EPA's Response to Public Comments Volume 4: Validity of Future Projections* (April 24, 2009), e.g., at Comments (4-1) thru (4-25), (4-26), (4-36), (4-37), (4-41), (4-45), (4-46), etc., available at: http://www.epa.gov/climatechange/Downloads/endangerment/rtc_volume_4.pdf.

[305] *Id.*, at Response (1-64).

[306] *Id.*

[307] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act - EPA's Response to Public Comments Volume 2: Validity of Observed and Measured Data* (April 24, 2009), *supra* at Responses (2-37), (2-38), (2-39), (2-62), (2-65), and (2-68); United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act - EPA's Response to Public Comments Volume 4: Validity of Future Projections* (April 24, 2009), *supra* at Responses (4-25), (4-36), (4-41).

[308]* The QMEP glossary clearly makes this distinction in the way it defines the terms "validation" and "verification". Validation is defined as the "confirmation by examination and provision of objective evidence *that the particular requirements for a specific intended use* are fulfilled. In design and development, validation concerns the process of *examining a product or result to determine conformance to user needs*" (emphasis added). *See* United States Environmental Protection Agency, Office of Environmental Information Quality Staff, *EPA Quality Manual for Environmental Programs - CIO 2105-P-01-0 (formerly 5360 A1)* (May 5, 2000), *supra*, at Appendix A – Glossary, p. A-6. Verification is defined as the "confirmation by examination and provision of objective evidence *that specified requirements have been fulfilled*. In design and development, verification concerns the process of *examining a result of a given activity to determine conformance to the stated requirements for that activity*" (emphasis added). *Id.*

[309] "Probably the most misunderstood concept in the design requirements of ISO9001 [which sets out the requirements of a quality management system], if not the entire standard, is *the difference between Design Verification and Design Validation. These two steps are distinctly different*, and important in a good design process. *One step is used to make sure that the design has addressed every requirement, while the other is used to prove that the design can meet the requirements set out for it...Verification is strictly a paper exercise*. It starts with taking all the design inputs:

specifications, government and industry regulations, knowledge taken from previous designs, and any other information necessary for proper function. With these requirements in hand you compare to your design outputs: drawings, assembly instructions, test instructions, and electronic design files…*Validation is the step where you actually build a version of the product, and would be done against the requirements as modified after verification.* This does not necessarily mean the first production unit, but it can. It can also be an engineering model, which some companies use to prove the first run of a complicated new design, or it can be a portion of the design which is different from a previous model, when the design is a modification of an already-proven design. *Once you decide what representative product you will build to prove the design, you fully test it to make sure that the product, as designed, will meet all the necessary requirements defined in the Design Inputs*" (emphasis added). *See* Mark Hammar, *ISO9001 Design Verification vs Design Validation*, The ISO 9001 Blog, 9001 Academy (Nov. 12, 2013), available at: http://www.9001academy.com/blog/iso9001-design-verification-vs-design-validation/.

[310] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act - EPA's Response to Public Comments Volume 4: Validity of Future Projections* (April 24, 2009), *supra* at Comment and Response (4-25). "EPA has not employed any models firsthand to support its Proposed Findings. Rather, the agency relies on a series of synthesis reports – including some conducted by the IPCC, the U.S. Climate Change Science Program ('CCSP'), and the National Research Council ('NRC') – which, in turn, assess various individual studies that employ different models. EPA has 'undoubted power to use predictive models'. . . provided it 'explain[s] the assumptions and methodology used in preparing the model[s]' and 'provides a complete analytic defense should the model[s] be challenged.' *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052 (D.C. Cir. 2001) (internal quotations omitted); *Eagle-Pitcher Industries, Inc. v. EPA*, 759 F.2d 905, 921 (D.C. Cir. 1985); *Small Refiner Lead Phase-down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983). Moreover, while courts generally defer to agency modeling, 'model assumptions must have a rational relationship to the real world.' *West Virginia v. EPA*, 362 F.3d. 861, 866-7 (D.C. Cir. 2004)." *See* National Petrochemical & Refiners Association, *National Petrochemical & Refiners Association's Comments on the Environmental Protection Agency's ("EPA's") Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act Proposed Rule, 78 Fed. Reg. 18,886 (Apr. 24, 2009)*, **EPA-HQ-OAR-2009-0171-3702**, (June 29, 2009) at Sec. B, p. 2, available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-3702.

[311] "EPA has not set forth in a detailed and transparent manner the assumptions and possible limitations of models used in the reports on which it relies most heavily. For example, in Section 5 of the TSD on endangerment, which focuses on attribution of observed climate change, EPA cites conclusions from IPCC reports on the "linkage between greenhouse gases and temperatures," but does not adequately address limitations of the methods and models used to make those findings. EPA has 'undoubted power to use predictive models'…provided it 'explain[s] the assumptions and methodology used in preparing the model' and 'provides a complete analytic defense should the model be challenged.' *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052 (D.C. Cir. 2001) (internal quotations omitted); *Eagle-Pitcher Industries, Inc. v. EPA*, 759 F.2d 905, 921 (D.C. Cir. 1985); *Small Refiner Lead Phase-down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983). While courts generally defer to agency modeling, 'model assumptions must have a rational relationship to the real world.' *West Virginia v. EPA*, 362 F.3d. 861, 866-7 (D.C. Cir. 2004). Some have raised important concerns that the models on which IPCC relies do not, in fact, bear a relationship to the real world because they do not consider solar dimming and brightening, do not accurately model the role of clouds, do not simulate a possible negative feedback from water vapor, do not explain many features of the Earth's observed climate, and cannot produce reliable predictions of regional climate change. If EPA cannot analytically defend the models it uses or if the results of such models are contradicted by the 'real world,' then reliance on such models would be arbitrary and capricious. *See* National Petrochemical & Refiners Association, *National Petrochemical & Refiners Association's Comments on the Environmental Protection Agency's Advanced Notice of Proposed Rulemaking for Greenhouse Gases Under the Clean Air Act,* 73 Fed. Reg. 44354 (July 30, 2008), **EPA-HQ-OAR-2009-0171-3702**, (Nov. 25, 2008), at Sec. II.A, p. 3, available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0171-3702.

[312] *Id.*, at Response (4-25).

[313] *See American Petroleum Institute v .EPA*, 2012 WL 2894566, (DC Circuit July 17 2012), available at: http://www.cadc.uscourts.gov/internet/opinions.nsf/D610504626F2AB7C85257A3E004EC0C4/$file/10-1079-1383974.pdf.

[314] *Id.*, at Slip Op., pp. 8, 10.

[315] This case was brought under Section of the Clean Air Act and did not involve a cause of action brought under the Information Quality Act.
[316] *Id.*, at Slip Op., p. 10.
[317] *Id.*
[318] *See Prime Time Intern. Co. v. Vilsack*, 599 F.3d 678 (D.C. Cir. 2010), available at: http://www.leagle.com/decision/in%20fco%2020100326168, pet. for rehearing denied per curiam (2010), available at: http://thecre.com/pdf/20100603_Government_DQA_Appeal_to_Court.abrev.pdf. Unlike the *API* case, the *Prime Time* case was brought under FETRA, the Information Quality Act, 44 U.S.C. § 3516 note, and the Due Process Clause of the Constitution.
[319] "In 2004 Congress enacted the Fair and Equitable Tobacco Reform Act ("FETRA"), 7 U.S.C. § 518 et seq., repealing a system of quotas and price supports for tobacco production and providing for payments for ten years to producers and persons who had established marketing quotas to ease the transition. These payments are funded by quarterly assessments on manufacturers and importers of tobacco products." *See Prime Time Intern. Co. v. Vilsack*, 599 F.3d 678, 679.
[320] The Court looked to the APA (5 U.S.C. §551(7) (defining "adjudication")) and to FETRA (7 U.S.C. §518d(i), (j) (describing procedures for challenging an assessment and initiating judicial review) for the definition of "adjudication"). According to one legal commentator, it is arguable that the Court wrongly determined that the USDA FETRA procedure qualified as a formal adjudication under the APA that was eligible for exemption from the IQA. *See* William S. Jordan III, *D.C. Circuit – Is the Information Quality Act Ready for Prime Time?*, 35 Administrative and Regulatory Law News 17, American Bar Association (Summer 2010), available at: http://www.americanbar.org/content/dam/aba/migrated/sections/adminlaw/PublicDocuments/69034_ABA_Summer2010_FINAL.authcheckdam.pdf.
[321] *See* 44 U.S.C. §3516 (note), P.L. 106-554 (2000), §515(a), (b)(2)(A);
[322] *See Prime Time Intern. Co. v. Vilsack*, 599 F.3d 678, 686.
[323] *Id.*
[324] This decision is significant because the IQA does not expressly provide for judicial review of agency actions.
[325] *See* Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* ("OMB IQA Guidelines") 67 FR 8452 (Feb. 22, 2002), *supra* at Sec. V.8 and Preamble, p. 8454; Office of Management and Budget, *Final Information Quality Bulletin for Peer Review* ("OMB-PRB") (Dec. 16, 2004), *supra* at Sec. I.3; USDA Information Quality Guidelines, Definitions, §2.
[326] *See Prime Time Intern. Co. v. Vilsack*, 599 F.3d 678, 685. *See also* Public Law 106-554, 44 U.S.C. § 3516, note (2000), *supra* at Section 515(a) ("The Director of the Office of Management and Budget *shall*, by not later than September 30, 2001, and with public and Federal agency involvement, *issue guidelines* under sections 3504(d)(1) and 3516 of title 44, United States Code, *that provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies* in fulfillment of the purposes and provisions of chapter 35 of title 44, United States Code, commonly referred to as the Paperwork Reduction Act" (emphasis added). *Id.*, at Sec. 515(a). In particular, The guidelines under subsection (a) *shall*...(2) *require that each Federal agency* to which the guidelines apply...(B) *establish* administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency that does not comply with the guidelines issued under subsection (a)..." *Id.*, at Sec. 515(a)(2)(B).
[327] *See* Office of Management and Budget, *Proposed Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies – [Notice and Request for Comment]*, 66 FR 34489 (June 28, 2001), *supra*.
[328] *See* Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* ("OMB IQA Guidelines") 67 FR 8452 (Feb. 22, 2002), *supra* at 8453-8458.
[329] *See Prime Time Intern. Co. v. Vilsack*, 599 F.3d 678, 685-686. The D.C. Circuit Court also indirectly concluded that, if §2 of USDA's IQA-implementing guidelines faithfully replicated OMB's interpretation of the statute, then USDA's definition of the term "dissemination" likewise deserved an equal amount of deference.
[330] *See United States v Mead*, 533 U.S. 218 (2001), available at: http://supreme.justia.com/cases/federal/us/533/218/case.pdf.

[331] *See Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), available at:
[332] *See United States v Mead*, 533 U.S. 218, 235, citing *Skidmore v. Swift & Co.*, 323 U. S. 134, 140 (1944) (holding that, "[a]lthough [agency] rulings, interpretations, and opinions…do not control judicial decision, they do constitute a body of experience and informed judgment to which courts and litigants may properly resort for guidance".) *Id.* According to one legal commentator, "the court apparently held that the OMB interpretation was entitled to *Chevron*-level deference (as opposed to a lower level of deference under *Skidmore*), because the OMB guidelines have the force of law, having been promulgated under a specific statute. If so, then the *Prime Time* court may have implicitly concluded that OMB"s [IQA] Guidelines are binding on all federal agencies." *See* William S. Jordan III, *D.C. Circuit – Is the Information Quality Act Ready for Prime Time?*, 35 Administrative and Regulatory Law News 17, American Bar Association (Summer 2010), *supra*.
[333] *See Utility Air Regulatory Group v. Environmental Protection Agency, et al.*, __ U.S. __, 2014 BL 172973, 78 ERC 1585 (U.S. June 23, 2014), *supra* at Slip Op, p. 29.
[334] *See* Sec. II.4, Explanation following EPA Records Category #4, *supra*.
[335] *See Massachusetts v. EPA*, 549 U.S. 497 (2007), 127 S.Ct. 1438 (2007), available at: http://scholar.google.com/scholar_case?case=16923241216495494762&hl=en&as_sdt=6&as_vis=1&oi=scholarr. Said endangerment evaluation must "relate to whether an air pollutant 'cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare.'" *Id.,* at 532–33.
[336] *Id.*, at 526-527 (2007). Said endangerment evaluation must "relate to whether an air pollutant 'cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare.'" *Massachusetts v. EPA*, 549 U.S. at 532–33.
[337] *Id.*, at 534. "If the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment, it must say so. The statutory question is whether sufficient information exists for it to make an endangerment finding. *Id.*
[338] 684 F.3d 102, 117 (DC Cir. 2012).
[339] *Id.*, at 117.
[340] *Id.*, at 117-118.
[341] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* 74 FR 66496 (Dec. 15, 2009).
[342] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments Volume 1: General Approach to the Science and Other Technical Issues* (April 17, 2009), available at: http://www.epa.gov/climatechange/Downloads/endangerment/rtc_volume_1.pdf; United States Environmental Protection Agency, *EPA's Response to the Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, Volume 2: Issues Raised by Raised by Petitioners on EPA's Use of IPCC* (Aug. 13, 2010), available at: http://www.epa.gov/climatechange/Downloads/endangerment/rtc_volume_2.pdf; United States Environmental Protection Agency, *EPA's Response to the Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, Volume 3: Process Issues Raised by Petitioners* (Aug. 13, 2010), available at: http://www.epa.gov/climatechange/Downloads/endangerment/rtc_volume_3.pdf.
[343] *See* United States Environmental Protection Agency, *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule*, 75 FR 25324 (May 7, 2010), available at: http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf.
[344] *See* 75 FR 25324, 25402, *supra*; *See also* 42 U.S.C. § 7475; 7479(1); § 7602(j); United States Environmental Protection Agency, *Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs* ("Timing Rule"), 75 FR 17004 (Apr. 2, 2010), available at: http://www.gpo.gov/fdsys/pkg/FR-2010-04-02/pdf/2010-7536.pdf; United States Environmental Protection Agency, *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Final Rule*, 75 FR 31514, 31,534-36 (June 3, 2010), available at: http://www.gpo.gov/fdsys/pkg/FR-2010-06-03/pdf/2010-11974.pdf. In addition, EPA has since relied upon the Administrator's positive endangerment and cause or contribute findings to issue a proposed new source performance standard for GHG emissions of stationary source electric utility generating units. *See* United States Environmental Protection Agency, *Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units*; Proposed Rule, 79 FR 1430 (Jan. 8, 2014), available at: http://www.gpo.gov/fdsys/pkg/FR-2014-01-08/pdf/2013-28668.pdf.

[345] *See* United States Environmental Protection Agency, *EPA's Denial of the Petitions to Reconsider the Administrator's Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a)of the Clean Air Act; Final Rule*, 75 FR 49556 (Aug. 13, 2010), available at: http://www.gpo.gov/fdsys/pkg/FR-2010-08-13/pdf/2010-19153.pdf.

[346] *See* Administrative Procedure Act (APA), Pub.L. 79–404, 60 Stat. 237 (June 11, 1946), codified at 5 U.S.C. 551et seq.

[347] *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554, 114 Stat. 2763 (2000), §515.

[348] *See* Rick Piltz, *U.S. National Climate Change Assessment Strategic Planning Kicks Off in Chicago Meeting*, Climate Science Watch (April 4, 2010), available at: http://www.climatesciencewatch.org/2010/04/04/u-s-national-climate-change-assessment-strategic-planning-kicks-off-in-chicago-meeting/ ("In 2003, in the absence of any intention to produce an integrated national climate change assessment, the U.S. Climate Change Science Program announced that, during the next four years, it would produce a series of 21 climate science-related synthesis reports on various topics. However, production of the reports bogged down in interminable and dubious Bush Administration political and bureaucratic procedure, which delayed the originally scheduled release of many of the reports by years, until the last 5 were cleared on the final working day of the Administration."). *Id.*

[349] These organizations included the Center for Biological Diversity, Greenpeace and Friends of the Earth.

[350] See *Center for Biological Diversity v. Brennan*, 571 F. Supp. 2d 1105 (DC ND Calif. 2007), available at: http://www.biologicaldiversity.org/programs/climate_law_institute/fighting_climate_science_suppression/enforcing_national_assessment_of_climate_change/pdfs/CCSP-order-08-21-2007.pdf; and https://www.courtlistener.com/cand/8Ef6/center-for-biological-diversity-v-brennan/.

[351] The stated defendants included: 1) Dr. William Brennan, Acting Director of U.S. Climate Change Science Program ("CCSP"); 2) John Marburger, III, Director of the Office of Science Technology Policy ("OSTP"), and Chairman of the Federal Coordinating Council on Science, Engineering and Technology; 3) U.S. Climate Change Science Program ("CCSP"); 4) White House Office of Science Technology Policy; and 5) Federal Coordinating Council on Science, Engineering and Technology.

[352] See *Center for Biological Diversity et al. v. Brennan et al.*, Complaint for Declaratory and Injunctive Relief, Case No. CO6-7061 (Nov. 14, 2006), available at: http://www.biologicaldiversity.org/programs/climate_law_institute/fighting_climate_science_suppression/pdfs/Complaint-national-assessment.pdf.

[353] *See Center for Biological Diversity v. Brennan*, 571 F. Supp. 2d 1105, Slip Op. at p. 2.

[354] Slip. Op., at pp. 2-3.

[355] Slip. Op., at p. 3.

[356] Slip. Op., at p. 36.

[357] Slip. Op., at pp. 3-4.

[358] Slip. Op., at p. 4.

[359] Slip. Op., at p. 37. In addition, the Court ordered defendants to submit the proposed Research Plan "to Congress not later than 90 days thereafter. This date allows the defendants six months to prepare the summary of the Plan, and then 90 days for public comment and revision provided for by the GCRA. *See* 15 U.S.C. § 2934(f)." *Id.*

[360] *Id.*

[361] *See* Anne Polansky, *A Strategy Session on the Future of the US Global Change Research Program*, Climate Science Watch (Feb. 5, 2008), available at: http://www.climatesciencewatch.org/2008/02/05/a-strategy-session-on-the-future-of-the-us-global-change-research-program/ (making observations concerning, and referring to the remarks of former CCSP Office Director Peter Schultz made during, a January 17, 2008 conference organized by the nonprofit National Council on Science and the Environment (NCSE) to explore "the process for developing a set of [US Global Change Research Program-related] recommendations to the next administration and Congress in January 2009.").

[362] In addition to the thirteen federal agencies that participate in the U.S. Global Change Research Program, the National Science and Technology Council Committee on Environment and Natural Resources is comprised of representatives from the U.S. Departments of Justice and Homeland Security, as well as from six White House Offices, including the Council on Environmental Quality, Council of Economic Advisers, Domestic Policy Council, National Economic Council, Office of Management and Budget and Office of Science and Technology Policy. *See* The White House, Office of Science and Technology Policy, *NSTC Committee on Environment, Natural Resources, and Sustainability*, OSTP

website (last visited April 11, 2014), available at: http://www.whitehouse.gov/administration/eop/ostp/nstc/committees/cenrs.

[363] *See* The White House, National Science and Technology Council Committee on the Environment and Natural Resources, *Scientific Assessment of the Effects of Global Change on the United States* (May 2008), available at: http://downloads.globalchange.gov/ccsp/CCSP_Scientific_Assessment_Full.pdf. *See also* Anne Polansky, *Draft Synthesis Report on US Climate Impacts From Lame Duck Bush Administration Raises Questions*, Climate Science Watch (Aug. 18, 2008), available at: http://www.climatesciencewatch.org/2008/08/18/draft-synthesis-report-on-us-climate-impacts-from-lame-duck-bush-administration-raises-questions/.

[364] *See* United States Environmental Protection Agency, *Regulating Greenhouse Gas Emissions Under the Clean Air Act – Advanced Notice of Proposed Rulemaking*, 73 FR 44354 (July 30, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-07-30/pdf/E8-16432.pdf.

[365] *See* United States Environmental Protection Agency, *Technical Support Document for Endangerment Analysis for Greenhouse Gas Emissions under the Clean Air Act; Sixth Order Draft June 21, 2008) - EPA-HQ-OAR-2008-0318-0082* (July 14, 2008), at p. 4 and Table 1.1, available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2008-0318-0082. "These core reference (Table 1.1) documents include the 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Synthesis and Assessment Products of the U.S. Climate Change Science Program (CCSP) completed and publically released to date, National Research Council (NRC) reports under the U.S. National Academy of Sciences (NAS), and the EPA annual report on U.S. greenhouse gas emission inventories. EPA is relying most heavily on these synthesis reports…" *Id.* "This document provides technical support for the endangerment analysis concerning greenhouse gas (GHG) emissions that may be addressed under the Clean Air Act." Id., at Executive Summary, p. ES-1. "The purpose of this document is to provide scientific and technical support for an endangerment analysis regarding greenhouse gas (GHG) emissions under the Clean Air Act. This is a final internal EPA draft which has undergone initial EPA review as well as federal expert review…" *Id.*, at p. 1.

[366] The July 2008 draft of the EPA-TSD had been apparently accompanied by its own support documents. *See* United States Environmental Protection Agency, *Technical Support Document for the Advanced Notice of Proposed Rulemaking for Greenhouse Gases; Stationary Sources, Section VII - EPA-HQ-OAR-2008-0318-0081* (June 5, 2008, Final Draft), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2008-0318-0081; United States Environmental Protection Agency, *Technical Support Document – Section 202 Greenhouse Gas Emissions - Roadmap to Annex -EPA-HQ-OAR-2008-0318-0083* (July 14, 2008), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2008-0318-0083; United States Environmental Protection Agency, *Vehicle Technical Support Document: Evaluating Potential GHG Reduction Programs for Light Vehicles (Draft LD TSD 6/16/08) - EPA-HQ-OAR-2008-0318-0084* (July 14, 2008), available at: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2008-0318-0084.

[367] These five (5) SAPs included: SAP1.1/CCSP(2006) authored by DOC-NOAA; SAP2.1a/CCSP(2007b) and SAP4.5/CCSP(2007a) authored by DOE; SAP4.3/CCSP(2008e) authored by USDA; and SAP4.7/CCSP(2008f) authored by DOT.

[368] "On July 17, 2008, the National Oceanic and Atmospheric Administration published a Synthesis Report notice of availability and request for public comment in the Federal Register and announced a 28-day public comment period. The Synthesis Report is an integrative summary of the 21 Synthesis and Assessment Products (SAPs) of the Climate Change Science Program (CCSP), as well as the recent IPCC Fourth Assessment Report, and other recent results that have appeared in the scientific literature. However, as many of the underlying SAPs have not yet been produced, the public cannot presently judge the reliability and objectivity of Synthesis Report, because the public cannot access the underlying documents on which the Synthesis Report is based…[T]he Synthesis Report is heavily dependent on the findings and information contained in the CCSP SAPs. However, only eight of the CCSP SAPs have so far been completed." *See* Letter from William L. Kovacs to William J. Brennan, *Comments on USP Draft: Kovacs* (Aug. 1, 2008), at pp. 1, 2-3, available at: https://www.uschamber.com/sites/default/files/legacy/CO2/files/080108wkCOMMENTSCommentsonUSPFileKovacs.pdf.

[369] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change in the United States*, 73 FR 41042 (July 17, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-07-17/html/E8-16386.htm.

[370] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Notice of establishment of Climate Change Science Program (CCSP) Unified Synthesis Product Development Committee (USPDC) and Announcement of Public Meeting*, 73 FR 14442 (March 18, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-03-18/pdf/E8-5440.pdf.

[371] "This problem clearly raises the question of how the public can possibly assess the reliability and objectivity of the Synthesis Report when in fact many of the major reports on which the Synthesis Report relies have not yet even been completed—some of the SAPs are not even scheduled to be completed until October 2008. For this reason, the Synthesis Report lacks transparency, and therefore it does not comply with the Information Quality Act or Guidelines—for as the SAPs on which it relies have not yet been produced, there is no way for public commenters to assess the objectivity of the report as the underlying information is not available…In sum, the Synthesis Report lacks transparency owing to the unavailability of the underlying documents on which it relies and therefore fails to comply with objectives that are set out in the Information Quality Act and Information Quality Guidelines." *See* Letter from William L. Kovacs to William J. Brennan, *Comments on USP Draft: Kovacs* (Aug. 1, 2008), *supra* at p. 3.

[372] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change in the United States*, 73 FR 41042 (July 17, 2008), *supra*.

[373] *See* Letter from William L. Kovacs to William J. Brennan, *Comments on USP Draft: Kovacs* (Aug. 1, 2008), *supra* at p. 4.

[374] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product: Global Climate Change Impacts in the United States - Notice of revision of the production schedule for the U.S. Climate Change Science Program Unified Synthesis Product*, 73 FR 75678 (Dec. 12, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-12-12/pdf/E8-29495.pdf.

[375] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Draft Unified Synthesis Product Report: Global Climate Change Impacts in the United States - Notice of availability and request for public comments*, 74 FR 1666 (Jan. 13, 2009), available at: http://www.gpo.gov/fdsys/pkg/FR-2009-01-13/html/E9-371.htm.

[376] *See* "Appendix 1: EPA-TSD Table 1.1 "Core Reference Documents"".

[377] "As of January 16, 2009, the CCSP had completed 21 synthesis and assessment products (SAPs) that address the highest priorities for U.S. climate change research, observation, and decision support needs." *See* EPA-TSD, *supra* at Box 1.1, p. 4. It had been previously reported, as of January 10, 2009, that 5 remaining SAPs had not been released. They included: "*Past Climate Variability and Change in the Arctic and at High Latitudes*, U.S. Climate Change Science Program Synthesis and Assessment Product (SAP) 1.2, Lead Agency: U.S. Geological Survey[;]…*Thresholds of Change in Ecosystems*, U.S. Climate Change Science Program Synthesis and Assessment Product (SAP) 4.2, Lead agency: U.S. Geological Survey[;]…SAP 4.1, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* [Lead agency: EPA;]…SAP 5.2, *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking* [Lead agency: DOC-NOAA;]…SAP 2.3, *Aerosol Properties and their Impacts on Climate*, [Lead agency: NASA]." *See* Rick Piltz, *White House Science Office Finally Clears Two Delayed Climate Science Reports for Release*, Climate Science Watch (Jan. 10, 2009), available at: http://www.climatesciencewatch.org/2009/01/10/white-house-science-office-finally-clears-two-delayed-climate-science-reports-for-release/.

[378] *See* United States Environmental Protection Agency, *Technical Support Document ("EPA-TSD") For Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, EPA–HQ–OAR–2009–0472–11292 (Dec. 7, 2009), *supra*.

[379] These "12 federal experts" included the following U.S. federal agency personnel: "Federal expert reviewers [-]Virginia Burkett, USGS; Phil DeCola; NASA (on detail to OSTP); William Emanuel, NASA; Anne Grambsch, EPA; Jerry Hatfield, USDA; Anthony Janetos, DOE Pacific Northwest National Laboratory; Linda Joyce, USDA Forest Service; **Thomas Karl, NOAA**; Michael McGeehin, CDC; Gavin Schmidt, NASA; **Susan Solomon, NOAA**; and Thomas Wilbanks, DOE Oak Ridge National Laboratory." *Id.*, at p. ii. *See* ITSSD FOIA Request (June 12, 2014), at Sec. II.3, Explanation.

[380] *See* United Nations Intergovernmental Panel on Climate Change (IPCC), *Organization*, IPCC website (last visited March 31, 2014), available at: http://www.ipcc.ch/organization/organization.shtml. "The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It was established by the

United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts." *Id.*

[381] *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues ("RTCs Vol. 1")* (April 17, 2009), at Responses (1-5), (1-10) at pp. 4-5 and 7, available at: http://www.epa.gov/climatechange/endangerment/comments/volume1.html.

[382] *Id.*

[383] *Id.*, at Response (1-10), at p. 7.

[384] The following DOC-NOAA personnel had either drafted, contributed to, and/or edited the Summary for Policymakers for the WG II portion of the AR4: Drafters – Martin Manning, Venkatachalam Ramaswamy, Susan Solomon, Ronald Stouffer; Contributors – David Fahey; Editors – Martin Manning, Melinda Marquis, Kristen Averyt, Henry LeRoy Miller.

[385] The nine (9) EPA personnel who had reviewed the Working Group II portion of the AR4 assessment included: Ben DeAngelo, John Furlow, Mary Grant, Jane Leggett, Steven Rose, Joel Scheraga, James Titus, Allen Solomon and Darrell Winner.

[386] For example, James Titus served as "Lead Coordinating Author for SAP 4.1: *Coastal Sensitivity to Sea Level Rise*, and as a "Reviewer of SAP 4.4: *Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources*. And, Ben DeAngelo served as "Reviewer" for both SAP 4.4 and SAP 4.6: *Analyses of the Effects of Global Change on Human Health.*

[387] At least forty-seven (47)) DOC-NOAA scientists had served either as "Lead Authors", "Contributing Authors" or "Coordinating Lead Authors" for the Working Group I portion of the AR4. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: Climate Change 2007, *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, at pp. 955-968, available at: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/annexessannex-ii.html; http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf. At least thirty-seven (37)) DOC-NOAA scientists had 'peer reviewed' the final Working Group I portion of the IPCC AR4. *Id.*, at pp. 969-979.

[388] ITSSD is aware of only four EPA personnel who had made a contribution to the AR4, and such contribution was only to the WG III portion of the report. They included: Christa Clapp, Kenneth Andrasko, Francisclo De La Chesnaye and Steven Rose. In addition Steven Rose, three additional EPA personnel had reviewed that portion of the report: Mark Heil, Dina Kruger and Robert Larson.

[389] As the EPA-TSD clearly states, "Table 1.1 lists the core reference documents for this TSD." *See* EPA-TSD, *supra* at p. 7. Indeed, Table 1.1 is labeled "Core references *relied upon most heavily* in this document" (emphasis added). *Id.*, at Table 1.1, p. 7. "This version of the TSD, as well as previous versions of the TSD dating back to 2007, have taken the approach of *relying primarily on these assessment reports* because they 1) are very recent and represent the current state of knowledge on GHG emissions, climate change science, vulnerabilities, and potential impacts; 2) have assessed numerous individual, peer-reviewed studies in order to draw general conclusions about the state of science; 3) *have been reviewed and formally accepted, commissioned, or in some cases authored by U.S. government agencies and individual government scientists*; and 4) they reflect and convey the consensus conclusions of expert authors" (emphasis added). *Id.*, at p. 6. *See also* "Appendix 1: EPA-TSD Table 1.1 'Core Reference Documents'".

[390] Another EPA sources states the EPA-TSD contains thirty-two "core reference documents", which include an additional four National Research Council reports that the EPA-TSD references but does not include in Table 1.1. *See* United States Environmental Protection Agency, *Core References to the Final Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act*, available at: http://www.epa.gov/climatechange/endangerment/core-refs.html.

[391] *See* U.S. Global Change Research Program, *About*, USGCRP website (last visited March 31, 2014), available at: http://www.globalchange.gov/about.html. "The U.S. Global Change Research Program (USGCRP) is a Federal program that coordinates and integrates global change research across 13 government agencies to ensure that it most effectively and efficiently serves the Nation and the world. USGCRP was mandated by Congress in the Global Change Research Act of 1990 and has since made the world's largest scientific investment in the areas of climate science and global change research." *Id.*

[392] *See* Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 FR 66496, 66510. .

[393] *See* EPA-TSD, *supra*, at p. 5; Appendix 4: "USGCRP/CCSP 'Core Reference Documents' - 'Lead' Agency Burdens".

[394] *See* Appendix 2: "EPA-TSD Table 1.1 'Core Reference Documents'".

[395] *See* EPA-TSD, *supra* at p. 4.

[396] *See* EPA-TSD, *supra* at p. 5. *See also* Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, supra at 74 FR 66511.

[397] *Id.*

[398] *Id.* *See also* "Analytical and Process Flaws in EPA's Greenhouse Gas Endangerment Finding", Prepared Statement of Mr. Peter Glaser, Partner, Troutman Sanders, LLP, at *Climate Change: Examining the Processes Used to Create Science and Policy*, Hearing Before the Committee on Science, Space and Technology, House of Representatives, 112th Cong., 1st Sess., Rept. 112–09 (March 30, 2011), (pp. 84-96), at p. 89, available at: http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg65306/pdf/CHRG-112hhrg65306.pdf. ("Importantly, although EPA says it relied on reports of the USGCRP, the IPCC, and the NRC, EPA relied almost exclusively on the work of the IPCC on the critical 'attribution' issue: whether changes to the climate system that EPA says are occurring and will accelerate in the future can be attributed to anthropogenic GHG emissions and not natural forces. Most of the TSD examines observed and projected climate and the effect on public health and welfare. Only eight pages of the TSD are devoted to the attribution issue. [fn] I count 67 citations in this section, with 47 to the IPCC. All the graphics in this section are taken from the IPCC, as is the introduction. Plainly, the principal authority for EPA's central conclusion that anthropogenic GHG emissions are causing deleterious climate change is the IPCC."). *Id.*

[399] *See* US Legal, *Incorporate by Reference Law & Legal Definition*, USLegal.com, available at: http://definitions.uslegal.com/i/incorporate-by-reference/. "Incorporation by reference (IBR) allows Federal agencies to comply with the requirement to publish rules in the Federal Register by referring to materials already published elsewhere. The legal effect of incorporation by reference is that the material is treated as if it were published in the Federal Register. This material has the force and effect of law, just like regulations published in the CFR. Congress authorized incorporation by reference in the Freedom of Information Act to reduce the volume of material published in the Federal Register and Code of Federal Regulations (CFR). Incorporation by reference is only available if the regulations are published in the CFR." See National Archives and Records Administration, The Office of the Federal Register, *Federal Register Document Drafting Handbook* (Jan. 2011 rev.) at p. 6-1, available at: http://www.archives.gov/federal-register/write/handbook/chapter-6.pdf. *See also* U.S. Government Printing Office, Electronic Code of Federal Regulations, *Incorporation by Reference*, e-CFR website (last visited April 14, 2014), available at: http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=ibr.tpl. "As a centralized depository of regulatory commands, the CFR provides citizens with actualnotice of legal requirements. In this context, incorporation by reference is a term of art for the practice of codifying material published elsewhere by simply referring to it in the text of a regulation. It is permitted only if the incorporated material is 'reasonably available to the class of persons affected' and the promulgating agency secures the 'approval of the Director of the Federal Register.' The legal effect is that the material is treated as if it were set out fully in the regulation." *See* Emily S. Bremer, *Incorporation Buy Reference in an Open-Government Age*, 36 Harvard Journal of Law & Public Policy 131 (2013) at 133-134.

[400] "Incorporation by reference (IBR) allows Federal agencies to comply with the requirement to publish rules in the Federal Register by referring to materials already published elsewhere. The legal effect of incorporation by reference is that the material is treated as if it were published in the Federal Register. This material has the force and effect of law, just like regulations published in the CFR. Congress authorized incorporation by reference in the Freedom of Information Act to reduce the volume of material published in the Federal Register and Code of Federal Regulations (CFR). Incorporation by reference is only available if the regulations are published in the CFR." See National Archives and Records Administration, The Office of the Federal Register, *Federal Register Document Drafting Handbook* (Jan. 2011 rev.) at p. 6-1, available at: http://www.archives.gov/federal-register/write/handbook/chapter-6.pdf. *See also* U.S. Government Printing Office, Electronic Code of Federal Regulations, *Incorporation by Reference*, e-CFR website (last visited April 14, 2014), available at: http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=ibr.tpl. "As a centralized depository of regulatory commands, the CFR provides citizens with actualnotice of legal requirements. In this context, incorporation by reference is a term of art for the practice of codifying material published

elsewhere by simply referring to it in the text of a regulation. It is permitted only if the incorporated material is 'reasonably available to the class of persons affected' and the promulgating agency secures the 'approval of the Director of the Federal Register.' The legal effect is that the material is treated as if it were set out fully in the regulation." *See* Emily S. Bremer, *Incorporation Buy Reference in an Open-Government Age*, 36 Harvard Journal of Law & Public Policy 131 (2013) at 133-134.

[401] *See* 75 FR 25324 (May 7, 2010), *supra* at 25326, 25328, 25362, 25373, 25397, 25491, 25541, fn#s 6, 8, 149-150, 159, 298, 502.

[402] *See* 75 FR 31514 (June 3, 2010), *supra* at 31519, 31591.

[403] *See* 79 FR 1430 (Jan. 8, 2014), *supra* at 1438, 1456, fn# 20.

[404] *See* EPA-TSD, at Table 1.1, p. 7, *supra*.

[405] *See* "Appendix 1: EPA-TSD Table 1.1 "Core Reference Documents"".

[406] *Id.*

[407] *See* "Appendix 4: USGCRP/CCSP Documents Referencing IPCC Assessment Reports"; "Appendix 5: NRC Reports Referencing IPCC Assessment Reports".

[408] The only practical distinction between these certification statements was the portion reflecting the title of the IQA guidelines relating to the specific federal agency which had served as the 'lead' development agency for that SAP.

[409] *See, e.g.*, SAP4.1/CCSP(2009b) and SAP4.6/CCSP(2008b), *supra* at inside cover.

[410] "NOAA disseminates a wide variety of information that is subject to the OMB Guidelines. This dissemination could occur through a variety of mechanisms, including analyses and assessments supporting a rulemaking. To facilitate development of information quality standards and procedures, NOAA's disseminated information is grouped into the following categories: 1) Original Data; 2) Synthesized Products; 3) Interpreted Products; 4) Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories; 5) Natural Resource Plans; 6) Experimental Products; and 7) Corporate and General Information." *See* United States Department of Commerce, Office of the Chief Information Officer & High Performance Computing and Communications, *National Oceanic and Atmospheric Administration Information Quality Guidelines*, at Part II, available at: http://www.cio.noaa.gov/services_programs/IQ_Guidelines_011812.html.

[411] *Synthesized Products* are those that have been developed through analysis of original data. This includes analysis through statistical methods; model interpolations, extrapolations, and simulations; and combinations of multiple sets of original data. While some scientific evaluation and judgment is needed, the methods of analysis are well documented and relatively routine. Examples of synthesized products include summaries of fisheries landings statistics, weather statistics, model outputs, data display through Geographical Information System techniques, and satellite-derived maps" *Id* (emphasis in original).

[412] *Id* (emphasis in original).

[413] *See, e.g.*, SAP4.1/CCSP(2009b) and SAP4.6/CCSP(2008b), *supra* at inside cover.

[414] *See* OMB-PRB, *supra* at Sec. VII. For example, NOAA has not yet substantiated in the administrative record whether the USGCRP/CCSP peer review process, as described by EPA, had actually been followed, and whether the CCSP Interagency Committee had actually scrutinized NOAA's IQA compliance certifications on more than a pro forma basis.

[415] *See* "Appendix 2 –'Lead' Agency Burdens USGCRP/CCSP "Core Reference Documents"".

[416] EPA performed a lesser oversight function in connection with the following DOC-NOAA-developed SAPs: SAP3.2/CCSP(2008d) and SAP3.3/CCSP(2008i). *Id.*

[417] EPA performed a lesser oversight function in connection with the following DOE-developed SAPs: SAP2.1b/CCSP(2007b); SAP3.1/CCSP(2008c) and SAP 4.5/CCSP(2007a). *Id.*

[418] EPA performed a lesser oversight function in connection with the following DOI-USGS-developed SAPs: SAP1.2/CCSP(2009c) and SAP4.2/CCSP(2009d). *Id.*

[419] EPA performed a lesser oversight function in connection with the following NASA-developed SAP: SAP2.3/CCSP(2009a).

[420] EPA performed a lesser oversight function in connection with the following DOT-developed SAP: SAP 4.7/CCSP(2008f).

[421] EPA performed a lesser oversight function in connection with the following USDA-developed SAP: SAP 4.3/CCSP(2008e).

[422] "For purposes of these Guidelines, EPA disseminates information to the public when EPA initiates or sponsors the distribution of information to the public…EPA initiates a distribution of information if EPA distributes information prepared or submitted by an outside party in a manner that reasonably suggests that EPA endorses or agrees with it; if EPA indicates in its distribution that the information supports or represents EPA's viewpoint; or if EPA in its distribution proposes to use or uses the information to formulate or support a regulation, guidance, policy, or other Agency decision or position." *See* U.S. Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by EPA* (2002), at Sec. 5.3 pp. 15-16, available at: http://www.epa.gov/quality/informationguidelines/documents/EPA_InfoQualityGuidelines.pdf. "If a particular distribution of information is not covered by these Guidelines, the Guidelines may still apply to a subsequent dissemination of the information in which EPA adopts, endorses, or uses the information to formulate or support a regulation, guidance, or other Agency decision or position." *Id.*, at Sec. 5.5 p. 18.

[423] "Peer review and transparency are central to each of these research organizations' report development process. Given the comprehensiveness of these assessments and their review processes, these assessment reports provide EPA with assurances that this material has been well vetted by both the climate change research community and by the U.S. government." *See* EPA-TSD, *supra* at p. 5; United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, supra at 74 FR 66511. *See also* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act EPA's Response to Public Comments Volume 1: General Approach to the Science and Other Technical Issues*, *supra* at Response (1-14) ("The evidence is clear that the IPCC's procedures are sufficient and effective for ensuring quality, transparency, and consideration of multiple and diverse perspectives. Because the assessment reports EPA used in developing the TSD represent the best available science, and because supporting studies were conducted in accordance with sound and objective scientific practices, were peer reviewed, and adhered to standards of quality based on objectivity, utility, and integrity, we find that IPCC's information quality process is consistent with EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*.") *Id.*

[424] "Furthermore, use of these assessments complies with EPA's information quality guidelines, as this document relies on information that is objective, technically sound and vetted, and of high integrity." *See* EPA-TSD, *supra* at p. 5.

[425] *Id.*, at Box 1.1, p. 4.

[426] ITSSD accepts that, pursuant to Section IV of the OMB Peer Review Bulletin, agencies need not follow the peer review procedures of Section III applicable to HISAs if they "(i) rely on the principal findings, conclusions and recommendations of a report produced by the National Academy of Sciences", considering that the NRC is a unit of the National Academy of Sciences. In other words, NRC peer review processes are presumed to be IQA HISA-compliant. However, this presumption of IQA HISA compliance does *not* extend to the principal findings, conclusions and recommendations of a report produced by the USGCRP or the IPCC, or by another source.

[427] *See* "Analytical and Process Flaws in EPA's Greenhouse Gas Endangerment Finding", Prepared Statement of Mr. Peter Glaser, Partner, Troutman Sanders, LLP, at *Climate Change: Examining the Processes Used to Create Science and Policy*, Hearing Before the Committee on Science, Space and Technology, House of Representatives, 112th Cong., 1st Sess., Rept. 112–09 (March 30, 2011), supra, at p. 90. "In responding to this comment, the Administrator recognized that she was obligated to provide for independent peer review. She nevertheless maintained that her near complete reliance on the 'assessment literature' meant that she was justified in selecting peer reviewers not on the basis of their independence from EPA or the 'assessment literature' but on the basis of their familiarity with that literature. As she stated, '[g]iven our approach to the scientific literature…the purpose of the federal expert review was to ensure that the TSD accurately summarized the conclusions and associated uncertainties from the assessment reports.' [fn] In other words, it was not important to the Administrator that she receive an independent critique of her own Endangerment Finding; her concern was merely to ensure that she had accurately summarized the conclusions of the 'assessment literature' on which she was relying." *Id.*

[428] For example, the lead and contributing authors of all portions (Executive Summary and Chapters 1-5) of SAP 3.4 entitled, *Synthesis and Assessment Product 3.4: Abrupt Climate Change*, were also members of the specially formed federal advisory committee charged with reviewing said assessment. *See* United States Geological Survey, Peer Review Summary Document - Synthesis and Assessment Product 3.4: Abrupt Climate Change (May 22, 2008), available at: http://www.usgs.gov/peer_review/docs/sap3-4_pr_results.pdf. *See also* United States Geological Survey, *Peer Review Plan for Synthesis and Assessment Product 3.4: Abrupt Climate Change*, available at:

http://www.usgs.gov/peer_review/docs/sap3-4_climate_change.pdf; United States Geological Survey, *Instructions for Peer Review of U.S. Climate Change Science Program (CCSP) Synthesis and Assessment Product (SAP) 3.4 Abrupt Climate Change*, available at: http://www.usgs.gov/peer_review/docs/SAP_3.4_charge_letter.pdf; United States Geological Survey Federal Advisory Committee for Peer Review of *U.S. Climate Change Science Program (CCSP) Synthesis and Assessment Product (SAP) 3.4 Abrupt Climate Change – Draft Executive Summary, Draft Chapter 1, Draft Chapter 2, Draft Chapter 3, Draft Chapter 4, and Draft Chapter 5*, available at: http://www.usgs.gov/peer_review/docs/SAP_3.4.es_pr_draft.pdf;
http://www.usgs.gov/peer_review/docs/SAP_3.4.1_pr_draft.pdf;
http://www.usgs.gov/peer_review/docs/SAP_3.4.2_pr_draft.pdf;
http://www.usgs.gov/peer_review/docs/SAP_3.4.3_pr_draft.pdf;
http://www.usgs.gov/peer_review/docs/SAP_3.4.4_pr_draft.pdf;
http://www.usgs.gov/peer_review/docs/SAP_3.4.5_pr_draft.pdf.

[429] For example, six members of the federal advisory committee charged with peer reviewing USGCRP/CCSP SAP 2.1a entitled, *Scenarios of Greenhouse Gas Emissions and Atmospheric Concentrations*, appear to have been integrally involved in the peer review of this assessment. *See* SAP 3.4, at Appendix 1, *infra*, at pp. iv and vi.

[430] *See* InterAcademy Council, *Climate Change Assessments Review of the Processes and Procedures of the IPCC* ("IAC-2010 Report") (10/1/10), available at: http://www.interacademycouncil.net/24026/26050.aspx.

[431] *See*, IAC-2010 Report, *supra* at iii, 59-65. The report found that, although "the IPCC has heightened public awareness of climate change, raised the level of scientific debate, and influenced the science agendas of many nations…*some fundamental changes to the process and the management structure are essentia*l" (emphasis added). *Id.*, at 59.

[432] The IAC-2010 Report disclosed that established IPCC processes for flagging, critically assessing and listing unpublished or non-peer-reviewed sources were often ignored, leading to AR4 lead-author review errors. *See* IAC-2010 Report, *supra* at xiii-xiv, 16-17, Box 2.1, 22. The Report also revealed that 16%, 41%, and 64% of the approximately 14,000 IPCC references that Working Groups ("WG") I, II and III, respectively, cited in AR3 consisted of non-peer-reviewed journal articles. IAC-2010 Report at 16, citing the findings of Bjurström, A., and M. Polk, *Physical and Economic Bias in Climate Change Research: A Scientometric Study of IPCC Third Assessment Report*, Climatic Change (2010), §3.2, available at: http://gaia.jhuapl.edu/sites/default/files/Bjurstrom_IPCC_bias.pdf. These authors estimate that AR4 reflects roughly similar rates of reliance upon non-peer-reviewed "gray" literature. *See* Roger Pielke Jr., Blog, *Gray Literature in the IPCC TAR, A Guest Post by Andreas Bjurström* (3/5/10) available at: http://rogerpielkejr.blogspot.com/2010/03/gray-literature-in-ipcc-tar-guest-post.html. This estimate appears reasonable, especially with respect to WG-III whose AR3 contribution had relied mostly on gray literature. Two of the three editors of WG-III's AR4 report (Metz and Davidson) had been lead-authors in WG III's AR3 report, strongly suggesting that no significant change in the use of non-peer-reviewed sources had taken place. *See* IPCC (2001), *Climate Change 2001: Mitigation, A Report of Working Group III of the Intergovernmental Panel on Climate Change* ("IPCC AR3 WG-III Report"), at §10.4.2.2, available at: http://www.ipcc.ch/ipccreports/tar/wg3/index.php?idp=437; IPCC (2007) *Climate Change 2007 - Mitigation of Climate Change, Contribution of Working Group III to the Fourth Assessment Report of the IPCC*, B. Metz, eds., Cambridge University Press ("IPCC AR4 WG-III Report"), available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4_wg3_full_report.pdf. These systemic peer review process flaws go beyond the specific errors previously identified by stakeholders. *See* United States Environmental Protection Agency, Office of Atmospheric Programs, Climate Change Division, *EPA's Response to the Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act* (July 29, 2010), at Comments/Responses 2-17, 2-19 ("EPA-RTPs, Vol.2"), available at: http://digital.library.unt.edu/ark:/67531/metadc29357/;
http://www.epa.gov/climatechange/endangerment/petitions/volume2.html. The IAC-2010 Report also found that the IPCC lacks institutional and scientific independence. As an intergovernmental subsidiary panel of the World Meteorological Organization ("WMO") and the United Nations Environment Program ("UNEP"), the IPCC is overseen by WMO and UNEP and must report to the UNEP, the WMO, the UN Framework Convention on Climate Change, and the UN General Assembly. *See* IAC-2010 Report, *supra* at 44. Indeed, the WMO Secretary-General and UNEP Executive Director signed the Forewords to the AR3 and AR4 assessments. *See* IPCC (2001), *Climate Change 2001: The Scientific Basis, Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Foreword, M. Noguer, et al., (Cambridge University Press), available at:

http://www.grida.no/climate/ipcc_tar/wg1/pdf/WG1_TAR-FRONT.pdf; IPCC (2007), *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, at Foreword (Solomon, S., et al., eds.), Cambridge University Press, available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-frontmatter.pdf. The IAC-2010 Report, furthermore, expressed concern about the "lack of a conflict-of- interest and disclosure policy for IPCC leaders and Lead Authors". *See* IAC-2010 Report, *supra* at 52-53. The IPCC "does not have a conflict-of-interest or disclosure policy for its [own] senior leadership (i.e., IPCC Chair and Vice Chairs), Working Group Co-chairs and authors, or the staff of the Technical Support Units". *Id.*, p. 52. Rather, "IPCC Secretariat...professional staff members...are employees of WMO and/or UNEP and are subject to their disclosure and ethics policies." *Id.* However, the report also revealed that "WMO and UNEP have not established conflict-of- interest or disclosure policies for experts who serve on most WMO and UNEP assessment teams." *Id.* This strongly suggests that IPCC senior leadership was not subject to any conflict-of-interest rules at all. Given "the nature of the IPCC's task (i.e., in presenting a series of expert judgments on issues of great societal relevance)", the Report's authors emphasized the need for the IPCC to "pay special attention to issues of independence and bias to maintain the integrity of, and public confidence in, its results." *Id.*, at p. 53. These systemic independence/conflict-of-interest flaws go beyond the specific errors previously raised by Petitioners. *See* EPA-RTPs Vol. 2, *supra* at Comments/Responses 2-25, 2-30. IPCC peer review processes, moreover, suffered from transparency failures. The author selection process lacked formal criteria which rendered the AR4 susceptible to political influence. *See* IAC-2010 Report, *supra* at 14-15. And, IPCC leaders and spokespersons often strayed into policy advocacy in violation of the organization's mandate. *Id.*, at 54-55. These systemic transparency flaws go beyond the specific errors previously raised by stakeholders. *See* EPA-RTPs Vol. 2, *supra* at Comments/Responses 2-17, 2-18, 2-25. These numerous systemic IPCC process and procedure failures raise serious doubts about the quality of the IPCC assessments and the NOAA-generated USGCRP/CCSP assessments that reference and incorporate them, upon which the EPA Administrator's Final endangerment and cause or contribute Findings primarily rely. *See* United States Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA's Response to Public Comments, Volume 1: General Approach to the Science and Other Technical Issues* ("EPA-RTCs Vol. 1") (April 17, 2009), *supra* at Responses 1-14-to-1-15, 1-20. Such misplaced reliance on flawed IPCC processes, however, severely undermined NOAA's, and by extension, the EPA Administrator's ability to satisfy the IQA's statutory mandate and the OMB/NOAA and OMB/EPA IQA-implementing guidelines' highest and most rigorous level peer review standards for HISAs.

[433] "[T]he United Nations Secretary-General and the Chair of the Intergovernmental Panel on Climate Change (IPCC) [had asked]...the IAC...to establish an ad hoc review committee of experts from relevant fields to conduct the review and to present recommendations on possible revisions of IPCC processes and procedures for strengthening the capacity of IPCC to respond to future challenges and ensuring the ongoing quality of its reports." *Id.*, at Foreword, p.3. *See also Id.*, at "Committee to Review the Intergovernmental Panel on Climate Change", p. vi; "Appendix E - Committee biographies", at pp. 99-102.

[434] *See* IAC Report, *supra* at Executive Summary at pp. xii, 59.

[435] The following four (4) IAC IPCC Review Committee members had worked for organizations that participating in DOC-NOAA Cooperative Institute programs: Harold Shapiro, Princeton Univ.; Maureen Cropper, Univ. of Maryland; Syukuro Manabe, Princeton, Univ.;, and Mario Molino, UC-Irvine & Scripps Inst. *See* discussion *supra*.

[436] The following four (4) IAC IPCC Review Committee members had worked for organizations that likely participated in DOC-NOAA-funded Cooperative Institute programs: **Harold Shapiro, Princeton Univ.; Maureen Cropper, Univ. of Maryland; Syukuro Manabe, Princeton, Univ.; and Mario Molino, UC-Irvine & Scripps Institute**. *See* National Oceanic Atmospheric Administration, *Cooperative Institute Program Office Fact Sheet*, NOAA website, available at: ftp://ftp.oar.noaa.gov/lci/1pgFactSheets/CIFAS.pdf. "Cooperative Institutes are non-federal organizations supported by the National Oceanic and Atmospheric Administration (NOAA). Cooperative Institutes have outstanding research programs in one or more areas relevant to the NOAA mission. NOAA's Cooperative Institutes collaborate in a large portion of NOAA's research and play a vital role in increasing NOAA's research capacity and expertise." *Id.* As of 2012, there appears to have been eighteen (18) Cooperative Institutes managed by three NOAA lines offices: National Environmental Satellite, Data and Information Service (NESDIS), National Marine Fisheries Services (NMFS), and Oceanic and Atmospheric Research (OAR). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, NOAA website, available at: ftp://ftp.oar.noaa.gov/lci/Documents/ci-profiles.pdf.

[437] *See, e.g.,* OMB-PRB, Section III; EPA Peer Review Handbook, Foreword p. xiii, Fig. 1 (updated), Sections 1.2.10, 1.2.14, 1.4, 1.5.3(h), 1.5.9, 2.2.2, 2.2.4, 2.2.5, 2.2.17, 2.4.1, 2.4.3, 4.2; EPA Peer Review and Peer Involvement Policy Statement, p. 1.

[438] *See* United States Environmental Protection Agency, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008 ("EPA IQA Guidelines") (Oct. 2002), *supra* at §4.2, p. 11.

[439] "Tier 1: 'Administrator's Priority Actions'… will include top actions that demand the ongoing involvement of the Administrator's office and extensive cross-Agency involvement on the part of the AAs/RAs…Your Action should be placed in Tier 1 if...science issue(s) are precedent setting and controversial; it is economically significant per E.O. 12866 (i.e., > $100 million). It should be placed in Tier 1 unless the program office can justify placement in Tier 2; economics issue(s) are precedent setting and controversial." *See* United States Environmental Protection Agency Office of Policy, *EPA's Action Development Process: Guidance for EPA Staff on Developing Quality Actions* (Rev. March 2011), at p. 25, available at: http://yosemite.epa.gov/sab%5CSABPRODUCT.NSF/5088B3878A90053E8525788E005EC8D8/$File/adp03-00-11.pdf.

[440] *See* United States Environmental Protection Agency, *Peer Review Handbook (3rd ed.)*, EPA/100/B-06/002 (6/29/12) ("EPA-PRH(2012)"), *supra* at Sec. 2.4.2.

[441] *Id.*, at Sec. 2.4.3.

[442] *See* United States Environmental Protection Agency, *Notice; Establishment of the Human Impacts of Climate Change Advisory Committee (HICCAC)*, 72 FR 26628 (May 10, 2007), available at: http://docs.regulations.justia.com/entries/2007-05-10/E7-9023.pdf and http://www.gpo.gov/fdsys/pkg/FR-2007-05-10/html/E7-9023.htm. *See also* US General Services Administration, *Terminated Federal Advisory Committees – Environmental Protection Agency*, USGSA website (last visited March 31, 2014), available at: http://www.gsa.gov/portal/content/249033.

[443] *See* United States Environmental Protection Agency, EPA Science Inventory, *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems (SAP 4.6)*, available at: http://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryID=175644.

[444] To the best of ITSSD's knowledge and belief, these eight (8) HICCAC members consisted of the following persons bearing the following affiliations: 1) **Roger Pulwarty** (U.S. Department of Commerce, NOAA, Boulder, CO); 2) Peter Gleick (Pacific Institute, Studies in Development, Environment, Security, Oakland, CA); 3) **Jonathan Patz** (University of Wisconsin at Madison, Nelson Institute for Environmental Studies, Madison, WI); 4) Barbara Entwisle, Co-Chair (University of North Carolina, Carolina Population Center, Chapel Hill, NC); 5) Eugene Rosa (Washington State University, Department of Sociology, Pullman, WA); 6), Thomas Dietz, Co-Chair (Michigan State University, Environmental Science and Policy Program, East Lansing, Michigan); 7) Susan Stonich (University of California, Environmental Studies Program, Santa Barbara, CA); 8) Howard Frumkin (U.S. Centers for Disease Control & Prevention, Atlanta, GA); and 9) Kristen Shrader Frechette (University of Notre Dame).

[445] *See* The Human Impacts of Climate Change Advisory Committee, *MEETING MINUTES*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Alexandria, VA, Oct. 15-16, 2007), at Appendix A – List of Attendees, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475687; The Human Impacts of Climate Change Advisory Committee, *Draft Minutes* prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Teleconference, Jan. 14, 2008), at Appendix A – List of Attendees, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475689.

[446] *See, e.g.*, United States Environmental Protection Agency Human Impacts of Climate Change Advisory Committee, *Notification of Meeting of the U.S. Environmental Protection Agency's Human Impacts of Climate Change Advisory Committee (HICCAC) on October 15 and 16, 2007, in Alexandria, Virginia*, 72 FR 52877 (Sept. 17, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-09-17/html/E7-18262.htm ("The proposed agenda for the face-to-face meeting includes, but is not limited to, presentations by the convening lead author and by the lead authors on the impacts and adaptation of global change on human dimensions, on human health, on human settlements, and human welfare. *In addition, there will be extensive discussion by the HICCAC panel* ***with respect to their individual and collective assessment of the SAP 4.6 report****. Finally, the panel will evaluate the external comments received during the public comment period*") (emphasis added). *Id. See also* United States Environmental Protection Agency Human Impacts of Climate Change Advisory Committee, *Notice of a public conference call meeting of the U.S. Environmental Protection*

Agency's Human Impacts of Climate Change Advisory Committee (HICCAC) on January 14, 2008, at 12 noon until 2 pm, 73 FR 1222 (Jan. 7, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-01-07/pdf/E8-22.pdf.

[447] *See* United States Environmental Protection Agency, *Notice; Establishment of the Human Impacts of Climate Change Advisory Committee (HICCAC)*, *supra* at 72 FR 26628-26629.

[448] *See* United States Environmental Protection Agency - *Charter, Human Impacts of Climate Change Advisory Committee* (May 29, 2007), at Sections 3-5, p. 1, available at: available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475678. "[W]ithin the context of the basic study plan, HICCAC will advise on: a. The specific issues to be addressed[;] b. Appropriate technical approaches[;] c. Type and usefulness of information provided to decision makers[;] d. The content of the final report[;] e. Compliance with the Information Quality Act[;] and f. Other matters important to the successful achievement of the objectives of the study." *Id.*, at Sec. 3. "Within EPA…the Office of Research and Development, The National Center for Environmental Assessment (Global Change Research Program)…will be responsible for financial and administrative support." *Id.*, at Sec. 6. More generally, "The HICCAC supports the Environmental Protection Agency (EPA) in its participation in the Interagency U.S. Climate Change Science Program (CCSP), specifically in implementation of Goal 4 of the Strategic Plan for the CCSP, and in completing its goal of conducting periodic assessments of climate change and variability under the Global Change Research Act of 1990." *Id.*, at Sec. 2.

[449] The October 15-16, 2007 workshop meeting minutes reflect four specific EPA questions to which the committee was charged with responding: 1) "Does the Committee agree that Chapters 3, 4, and 5 accurately describe the key findings and recommendations with respect to climate change impacts and adaptation on human health, human settlements, and human welfare?" 2) "Do the Introductory Chapter (Chapter 1) and the Summary Chapter (Chapter 2) accurately and adequately describe the background issues related to the characterization of global change on human dimensions?" 3) "Does the Committee find that recommendations for adaptation strategies and for ongoing study are adequately supported by the evidence, analysis, and sound science?" and 4) "Are the advantages and disadvantages of various adaptation options, including the status quo, adequately considered and examined?" *See* The Human Impacts of Climate Change Advisory Committee, *MEETING MINUTES*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Alexandria, VA, Oct. 15-16, 2007), *supra* at Sections 2.2.2-2.2.5, pp. 4-11.

[450] In fact, HICCAC Chair, Professor Thomas Dietz of Michigan State Univ., stated that, "the focus of the *advisory panel* should be on improving their specific portion of the full report… He sees the task of the advisory panel as being a tiered task. Once everyone has made comments on specific chapters, those comments become part of the panel's input. Also, the panel needs to address the charge questions posed by EPA" (emphasis added). *See* The Human Impacts of Climate Change Advisory Committee, *MEETING MINUTES*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Alexandria, VA, Oct. 15-16, 2007), *supra* at p. 2.

[451] *Id.*, at p. 1.

[452] *Id.*, at pp. 1, 2.

[453] *Id.*, at pp. 3-4.

[454] The **Univ. of Wisconsin** had been the recipient of two sizable EPA STAR grant awards during 2006, for its role in sponsoring two studies co-authored by Professors James Schauer, Tracey Holloway and Martin Shafer. *See* United States Environmental Protection Agency Extramural Research, *Changes in Climate, Pollutant Emissions, and US Air Quality: An Integrating Modeling Study - EPA Grant Number: R833374*, at Abstract, *supra*; United States Environmental Protection Agency Extramural Research, *Impact of Climate Change on Air Quality in the U.S.: Investigations With Linked Global- and Regional-Scale Models - EPA Grant Number: R833377*, at Abstract, *supra*. **Washington State Univ**. also had been the recipient of a portion of one sizable EPA STAR grant award during 2006, for its role in sponsoring a study co-authored by Professor Brian Lamb. *See* United States Environmental Protection Agency Extramural Research, *Ensemble Analyses of the Impact and Uncertainties of Global Change on Regional Air Quality in the U.S. - EPA Grant Number: R833369*, at Abstract, *supra*.

[455] There is no mention of any CCSP interagency peer review in the final SAP4.6. However, a February 5, 2008 federal register provides that, "In the Federal Register of January 7, 2008, in FR Doc. 38-22, on page 1222, in the second column, change the last two sentences before the Public Participation section to read: The CCSP expects that the scientific assessment will be completed by May 31, 2008. The scientific assessment will undergo an external peer review consistent with the OMB peer review guidance for a Highly Influential Scientific Assessment (HISA)." *See* United States Environmental Protection Agency, *Human Impacts of Climate Change Advisory Committee (HICCAC) - Notice of*

a public conference call meeting; Correction, 73 FR 6725 (Feb. 5, 2008), available at: http://www.epa.gov/fedrgstr/EPA-MEETINGS/2008/February/Day-05/m492.pdf.

[456] *See* United States Environmental Protection Agency, Human Impacts of Climate Change Advisory Committee (HICCAC), *Notice of a public conference call meeting of the U.S. Environmental Protection Agency's Human Impacts of Climate Change Advisory Committee (HICCAC) on January 14, 2008, at 12 noon until 2 pm (EST)*, 73 FR 1222 (Jan. 7, 2008), available at: http://www.epa.gov/fedrgstr/EPA-MEETINGS/2008/January/Day-07/m022.htm.

[457] Page iii of SAP4.6 indicates that public commenters, including officials from other federal agencies had also played a role in 'reviewing' the contents of SAP4.6.

[458] The Preamble and Section VII of OMB's Peer Review Bulletin and Sections 1.2.8-1.2.9 of EPA's Peer Review Handbook distinguish public comments obtained during an Administrative Procedure Act notice and comment procedure, which do *not* qualify as external peer review under the IQA, from the more scientific review to be performed through an IQA administrative mechanism.

[459] "The U.S. District Court for the District of Northern California has ordered the interagency U.S. Climate Change Science Program (CCSP) to produce the periodic scientific assessment of climate change required by the Global Change Research Act of 1990 by May 31, 2008 (Center for Biological Diversity v. Brennan, et al., 2007 WL 2408901 [No. 06-7062, Aug. 21, 2007]). Synthesis and Assessment Product 4.6, which is being reviewed by the HICCAC, is an integral component of this assessment. The CCSP has directed EPA to complete and submit a final draft of Product 4.6 to the CCSP by January 31, 2008. To meet this deadline, the HICCAC is holding this conference call meeting to review its final report on this product. This notice is being published less than 15 days before the teleconference. Product 4.6 is a large document that has been developed under an unusually short time frame, with impacts on the authors' and committee members' schedules. January 14 is the only date that the Committee is available to hold this conference call meeting. Since EPA will likely have to make changes to the document following the teleconference, delaying this meeting would cause EPA to be late in submitting this product to the CCSP." *See* United States Environmental Protection Agency Human Impacts of Climate Change Advisory Committee, *Notice of a public conference call meeting of the U.S. Environmental Protection Agency's Human Impacts of Climate Change Advisory Committee (HICCAC) on January 14, 2008, at 12 noon until 2 pm*, 73 FR 1222 (Jan. 7, 2008), *supra*.

[460] *See* The Human Impacts of Climate Change Advisory Committee, *Draft Minutes* prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Teleconference, Jan. 14, 2008), *supra* at p. 1.

[461] *Id.*, at Appendix B – "Response to Comments of the Human Impacts of Climate Change Advisory Committee (HICCAC)".

[462] *Id.*, at Appendix C – "FACA Panel Individual Comments on the SAP 4.6".

[463] *See* United States Environmental Protection Agency, Notice; Establishment of the Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC) (May 10, 2007), 72 FR 26628, available at: http://www.gpo.gov/fdsys/pkg/FR-2007-05-10/pdf/E7-9024.pdf; *See also* US General Services Administration, *Terminated Federal Advisory Committees – Environmental Protection Agency*, *supra*.

[464] *See* United States Environmental Protection Agency, EPA Science Inventory, *Synthesis and Assessment Product 4.4: Preliminary Review of Adaptation Options for Climate Sensitive Ecosystems and Resources*, available at: http://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryID=194523.

[465] To the best of ITSSD's knowledge and belief, these ten (10) ACSERAC members consisted of the following persons bearing the following affiliations: 1) Daniel Tufford (University of South Carolina); 2) Reed Noss (University of Central Florida); 3) Robert Van Woesik (Florida Institute of Technology); 4) Joseph Arvai (Michigan State University); 5) Eric Gilman (The World Conservation Union); 6) George Hornberger (University of Virginia); 7) Elizabeth Malone (Pacific Northwest National Laboratory and University of Maryland Joint Global Change Research Institute); 8) David Patton (Northern Arizona University); 9) **Carl Hershner** (Virginia Institute of Marine Science); and 10) Paul Risser (Smithsonian Institute).

[466] *See* The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee, *Minutes for Meeting*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Bethesda, MD, Oct. 22-23, 2007), at Appendix A – List of Attendees, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475666; The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee, *Draft Minutes for Meeting*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (by Teleconference, Jan. 15, 2008), at Appendix A – List of Attendees, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475671.

[467] *See* United States Environmental Agency Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC), *Notice of Meeting of the U.S. Environmental Protection Agency's Adaptation for Climate-Sensitive Resources Advisory Committee on October 22 and 23, 2007, in Bethesda, Maryland*, 72 FR 52875 (Sept. 17, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-09-17/pdf/E7-18261.pdf ("The proposed agenda for the face-to-face meeting includes, but is not limited to, presentations by the SAP 4.4 report's Lead authors and the chapter Lead Authors on adaptation options for selected climate-sensitive ecosystems and resources. In addition, there will be extensive discussion by the ACSERAC with respect to their individual and collective assessment of the SAP 4.4 report. Finally, the ACSERAC will evaluate the external comments received during the public comment period") *Id.*; United States Environmental Agency Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC), *Notice of a public conference call meeting of the U.S. Environmental Protection Agency's Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee on January 15, 2008, from 2 p.m. until 4 p.m.*, 73 FR 1221 (Jan. 7, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-01-07/html/E8-17.htm; United States Environmental Agency Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC), *Notice of a public conference call meeting; correction*, 73 FR 6724-6725 (Feb. 5, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-02-05/pdf/E8-2091.pdf.

[468] *See* United States Environmental Protection Agency, Notice; *Establishment of the Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC)* (May 10, 2007), *supra* at 72 FR 26628.

[469] United States Environmental Protection Agency – *Charter, Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee* (ACSERAC) (May 29, 2007), at Sections 3-5, available at: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475661. "[W]ithin the context of the basic study plan, HICCAC will advise on: a. The specific issues to be addressed[;] b. Appropriate technical approaches[;] c. Type and usefulness of information provided to decision makers[;] d. The content of the final report[;] e. Compliance with the Information Quality Act[;] and f. Other matters important to the successful achievement of the objectives of the study." *Id.*, at Sec. 3. "Within EPA…the Office of Research and Development, The National Center for Environmental Assessment (Global Change Research Program)…will be responsible for financial and administrative support." *Id.*, at Sec. 6. More generally, "[t]he ACSERAC supports the Environmental Protection Agency (EPA) in its participation in the Interagency U.S. Climate Change Science Program (CCSP), specifically in implementation of Goal 4 of the Strategic Plan for the CCSP, and in completing its goal of conducting periodic assessments of climate change and variability under the Global Change Research Act of 1990. The ACSERAC is in the public interest and supports EPA in performing its duties and responsibilities. *Id.*, at Sec. 2.

[470] The October 22-23, 2007 workshop meeting minutes reflect seven EPA questions to which the committee was charged with responding: "1. Does the Committee agree with the focus on six management systems from across federally owned and managed lands and waters as an effective way to review adaptation options for climate-sensitive ecosystems and resources? 2. Does the Committee agree that the report provides useful information for managers on the state of knowledge regarding ecosystem management decisions sensitive to climate change, the types of adaptation options available, and approaches for implementing adaptation options? If the usefulness of the report could be improved, what specific improvements does the Committee recommend? 3. Does the Committee agree that the case studies are effective at demonstrating adaptation approaches and specific issues related to implementation? If the case studies could be improved to better demonstrate adaptation approaches, what specific improvements does the Committee recommend? 4. Does the Committee agree that the major conclusions and synthetic themes of the Synthesis chapter are supported by, and representative of the underlying chapters? 5. Does the Committee agree that the key findings and recommendations presented in the Executive Summary are the most important and appropriate to bring forward to executive level managers and Congress? 6. Does the Committee agree that EPA effectively followed the CCSP Guidance on characterizing confidence levels for the proposed adaptation approaches presented in the Executive Summary and Synthesis? 7. Does the Committee agree with the decision to use information from a series of stakeholder workshops in addition to the published literature to identify and assess adaptation options and implementation issues for climate-sensitive ecosystems?" *See* The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee, *Minutes for Meeting*, prepared for the U.S. Environmental Protection Agency and Global Change Research Program (Bethesda, MD, Oct. 22-23, 2007), *supra* at Sec. 1.3, p. 2.

[471] The following two questions actually had sought confirmation of the accuracy of SAP4.4 findings. To recall, question 4 asked: Does the Committee agree that the major conclusions and synthetic themes of the Synthesis chapter *are supported by, and representative of* the underlying chapters?" (emphasis added). And, question 6 asked: Does the

Committee agree that EPA *effectively followed* the CCSP Guidance *on characterizing confidence levels* for the proposed adaptation approaches presented in the Executive Summary and Synthesis?" (emphasis added). *Id.*

[472] Committee charge questions 1,2,3,5 and 7 can best be characterized instead as having sought advice on further development of SAP4.4. To recall: 1. Does the Committee *agree with the focus on* six management systems from across federally owned and managed lands and waters *as an effective way to review* adaptation options for climate-sensitive ecosystems and resources? 2. Does the Committee *agree that the report provides useful information* for managers on the state of knowledge regarding ecosystem management decisions sensitive to climate change, the types of adaptation options available, and approaches for implementing adaptation options? *If the usefulness of the report could be improved, what specific improvements does the Committee recommend*? 3. Does the Committee agree that the case studies *are effective at demonstrating* adaptation approaches and specific issues related to implementation? *If the case studies could be improved to better demonstrate adaptation approaches, what specific improvements does the Committee recommend*? 5) Does the Committee agree that the key findings and recommendations presented in the Executive Summary *are the most important and appropriate to bring forward* to executive level managers and Congress? 7. Does the Committee *agree with the decision to use* information from a series of stakeholder workshops in addition to the published literature to identify and assess adaptation options and implementation issues for climate-sensitive ecosystems?" (emphasis added). *Id.*

[473] The **Univ. of Oklahoma** had been the recipient of a portion of one sizeable EPA STAR grant award during 2006, for its role in sponsoring a study co-authored by Professor Yiqi Luo. *See* United States Environmental Protection Agency Extramural Research, *Global Change and Air Pollution (GCAP) Phase 2: Implications for U.S. Air Quality and Mercury Deposition of Multiple Climate and Global Emission Scenarios for 2000-2050 - EPA Grant Number: R833370*, *supra* at Abstract. The **Univ. of Maryland** had been the recipient of a portion of one sizable EPA STAR grant award during 2006, for its role in sponsoring a study co-authored by Professors Zin-Zhong Liang, Hao He and Sue Senjian of Univ. of Maryland. *See* United States Environmental Protection Agency Extramural Research, *Impact of Global Change on Urban Air Quality via Changes in Mobile Source Emissions, Background Concentrations, and Regional Scale Meteorological Feedbacks - EPA Grant Number: R833372*, *supra* at Abstract.

[474] "Federal Advisory Committee, Adaptation for Climate Sensitive Ecosystems and Resources Advisory Committee (ACSERAC), was established to conduct an external peer review of the draft SAP 4.4…The U. S. Environmental Protection Agency requested that the Adaptation for Climate Sensitive Ecosystems and Resources Advisory Committee (ACSERAC) conduct an expert peer review of the draft report titled Preliminary Review of Adaptation Options for Climate Sensitive Ecosystems and Resources…A public teleconference was held by the Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC) on January 15, 2008. The teleconference was held to address EPA's response to the post panel meeting comments from the ACSERAC meeting that was held on October 23-24, 2007." *See Draft Minutes for: The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee [Teleconference] Meeting* (Jan. 15, 2008) at Preface, p. iv, pp. C-3, 1, available at: http://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=475671. "The Adaptation for Climate Sensitive Ecosystems and Resources Advisory Committee meeting, hosted by the US EPA, was held on October 22 – 23, 2007 in Bethesda, MD. The meeting was held to conduct an external peer review of EPA's Draft Report: *Synthesis and Assessment Product (SAP) 4.4: Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources. See Minutes for: The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee Meeting* (Oct. 22-23, 2007), at p. 1, available at: http://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=475666.

[475] There is no mention of any interagency peer review in the final SAP4.4. However, a February 5, 2008 federal register provides that, "In the Federal Register of January 7, 2008, in FR Doc. E8-17, on page 1221, in the second column, change the last complete sentence to read: The CCSP expects that the scientific assessment will be completed by May 31, 2008. The scientific assessment will undergo an external peer review consistent with the OMB peer review guidance for a Highly Influential Scientific Assessment (HISA)." *See* United States Environmental Protection Agency, *Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC) - Notice of a public conference call meeting; correction*, 73 FR 6724 (Feb. 5, 2008), available at: http://www.epa.gov/fedrgstr/EPA-MEETINGS/2008/February/Day-05/m2091.pdf.

[476] *See* United States Environmental Protection Agency, *Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC) - Notice of a public conference call meeting of the U.S. Environmental Protection Agency's Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee on January 15, 2008, from 2*

p.m. until 4 p.m. (EST), 73 FR 1221 (Jan. 7, 2008), *supra*.

[477] The Preamble and Section VII of OMB's Peer Review Bulletin and Sections 1.2.8-1.2.9 of EPA's Peer Review Handbook distinguish public comments obtained during an Administrative Procedure Act notice and comment procedure, which do *not* qualify as external peer review under the IQA, from the more scientific review to be performed through an IQA administrative mechanism.

[478] "The U.S. District Court for the District of Northern California has ordered the interagency U.S. Climate Change Science Program (CCSP) to produce the periodic scientific assessment of climate change required by the Global Change Research Act of 1990 by May 31, 2008 (Center for Biological Diversity v. Brennan et al., 2007 WL 2408901 [No. 06-7062, Aug. 21, 2007]). Synthesis and Assessment Product 4.4, which is being reviewed by the ACSERAC, is an integral component of this assessment. The CCSP has directed EPA to complete and submit a final draft of Product 4.4 to the CCSP by January 31, 2008. To meet this deadline, the ACSERAC is holding this conference call meeting to review its final report on this product. This notice is being published less than 15 days before the teleconference. Product 4.4 is a very large document that has been developed under an unusually short time frame, with impacts on the authors' and committee members' schedules. January 15 is the only date that the Committee is available to hold this conference call meeting. Since EPA will likely have to make changes to the document following the teleconference, delaying this meeting would cause EPA to be late in submitting this product to the CCSP." *See* United States Environmental Protection Agency Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (ACSERAC), *Notice of a public conference call meeting of the U.S. Environmental Protection Agency's Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee on January 15, 2008, from 2 p.m. until 4 p.m.*, 73 FR 1221 (Jan. 7, 2008), *supra*.

[479] *See Draft Minutes for: The Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee Meeting January 15, 2008* (Jan. 15, 2008), *supra* at p. 1.

[480] *Id.*, at Appendix C – "Draft Summary Comments by the Advisory Committee Following 22-23 October 2007 Meeting".

[481] *Id.*, at Sections 3.1-3.2, pp. 1-5.

[482] *See* United States Environmental Protection Agency, *Notice; Establishment of the Coastal Elevations and Sea Level Rise Advisory Committee* [CESLAC], 71 FR 29333 (May 22, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-05-22/pdf/E6-7757.pdf. *See also* US General Services Administration, *Terminated Federal Advisory Committees – Environmental Protection Agency*, *supra*.

[483] *See Coastal Elevations and Sea Level Rise Advisory Committee ("CESLAC")*, available at: http://www.environmentalinformation.net/CESLAC/documents.html.

[484] To the best of ITSSD's knowledge and belief, these fifteen (15) CESLAC members consisted of the following persons bearing the following affiliations: 1) **Carl Hershner** (Director, Center for Coastal Resources Management); 2) Mark Mauriello (New Jersey Dept. of Environmental Protection); 3) Anthony Pratt (Delaware Dept. of Natural Resources and Environmental Control); 4) Mark Crowell (Federal Emergency Management Agency); 5) Andrew W Garcia (U.S. Army Corps of Engineers); 6) Julie Hunkins (North Carolina Dept. of Transportation); 7) Greg Rudolph (North Carolina Carteret County Government); 8) Sam Pearsall (The Nature Conservancy); 9) Harvey G Ryland (President, Institute for Business and Home Safety); 10) Mark Monmonier (Syracuse University); 11) William Nechamen (New York Dept. of Environmental Conservation); 12) Gwynne Schultz (Maryland Dept. of Natural Resources); 13) Rebecca Beavers (U.S. National Park Service); 14) Alan Belenz (N.Y. State Office of the Attorney General); and 15) Margaret Davidson, Chair (National Oceanic and Atmospheric Administration).

[485] *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (Wash., DC, Jan. 9, 2007), at p. 1, available at: http://www.environmentalinformation.net/CESLAC/files/CESLAC_Meeting_Minutes_01.29.07.PM.FINAL.pdf; Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (June 8, 2007), at p. 1, available at: http://www.environmentalinformation.net/CESLAC/files/Meeting_2_Minutes/CESLAC_Meeting_2_Minutes.pdf; Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 27, 2007), at p. 1, available at: http://www.environmentalinformation.net/CESLAC/files/CESLAC_Meeting3_Minutes.FINAL.pdf; Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency*, (March 17, 2008), at p. 1, available at:

http://www.environmentalinformation.net/CESLAC/files/Final_Minutes_March_17_and_18_2008.pdf; Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 30, 2008), available at: http://www.environmentalinformation.net/CESLAC/files/CESLAC_Meeting5_Final_Minutes.pdf; Coastal Elevations and Sea Level Rise Advisory Committee, *Draft Meeting Minutes prepared for Environmental Protection Agency* (Oct. 16, 2008), at p. 1, available at: http://www.environmentalinformation.net/CESLAC/files/Draft_Minutes_Meeting6_111008.doc.

[486] *See* United States Environmental Protection Agency, Coastal Elevations and Sea Level Rise Advisory Committee, *Notice of meeting [to] be held on Monday, January 29, 2007, from 1:15 p.m. to 5 p.m.*, 72 FR 964-965 (Jan. 9, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-01-09/pdf/E7-90.pdf; United States Environmental Protection Agency, Coastal Elevations and Sea Level Rise Advisory Committee, *Notice of meeting [to] be held on Friday, June 8, 2007, from 8:30 a.m. until 3 p.m.*, 72 FR 26629 (May 10, 2007), available at: http://www.gpo.gov/fdsys/pkg/FR-2007-05-10/pdf/E7-9016.pdf; United States Environmental Protection Agency, Coastal Elevations and Sea Level Rise Advisory Committee, *Notice of meeting [to] be held on Wednesday, July 30, 2008, from 9:30 a.m. until 3:30 p.m.*, 73 FR 37949 (July 2, 2008), available at: http://www.gpo.gov/fdsys/pkg/FR-2008-07-02/pdf/E8-15009.pdf.

[487] *See* United States Environmental Protection Agency, *Notice; Establishment of the Coastal Elevations and Sea Level Rise Advisory Committee* [CESLAC], *supra* at 71 FR 29333.

[488] *See* United States Environmental Protection Agency – *Charter, Coastal Elevations and Sea Level Rise Advisory Committee* (June 7, 2006), available at: http://www.fdlp.gov/file-repository/about-the-fdlp/gpo-projects/web-harvesting/sample-publications-from-pilot/1902-united-states-environmental-protection-agency-charter-coastal-elevation-and-sea-level-rise-advisory/file. Within EPA…the Climate Change Division in the Office of Atmospheric Programs, OAR…will be responsible for financial and administrative support." *Id.*, at Sec. 6.

[489] James Titus of EPA was designated as coordinating lead author, while Stephen Gill of DOC-NOAA and K. Eric Anderson, Donald Cahoon, Dean Gesch, Benjamin Gutierrez, E. Robert Thieler and S. Jeffress Williams of USGS were designated as lead authors. *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* (SAP4.1/CCSP(2009b)), U.S. Environmental Protection Agency (James G. Titus, Jessica Blunden and Anne M. Waple (eds.) Jan. 2009), *supra.*

[490] According to the meeting minutes, the prospectus for SAP4.1, which EPA has not yet made publicly accessible or available, called for SAP4.1 to: "• 'synthesize information from the ongoing mapping efforts by federal and non-federal researchers related to the implications of rising sea level;' • focus on the U.S. coastal zone from New York through North Carolina; • 'also develop a plan for sea level rise research to answer questions that are most urgent for near-term decisionmaking;' [and] • 'provide information that supports the specific goal' in the CCSP Strategic Plan 'to analyze how coastal environmental programs can be improved to adapt to sea level rise while enhancing economic growth.'" *See* Margaret Davidson, Coastal Elevations and Sea Level Rise Advisory Committee (Jan. 29, 2007) at p. 17, *in* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (Wash., DC, Jan. 9, 2007), *supra.*

[491] The heretofore unseen prospectus for SAP4.1 also posed "4 Key Questions and 6 Supplemental Questions to be addressed by the study", which SAP4.1 attempted to answer. *Id.*, at p. 1. "As with other SAPs, *the first step in the process of preparing this Product was to publish a draft prospectus listing the questions that the Product would seek to answer at the local and mid-Atlantic scale. After public comment, the final prospectus listed 10 questions. This Product addresses those 10 questions, and answers most of them with specificity*. Nevertheless, development of this Product has also highlighted current data and analytical capacity limitations. The analytical presentation in this Product focuses on what characterizations can be provided with sufficient accuracy to be meaningful. For a few questions, the published literature was insufficient to answer the question with great specificity. Nevertheless, the effort to answer the question has identified what information is needed or desirable, and current limitations with regard to available data and tools" (emphasis added). *See* SAP4.1/CCSP(2009b), *supra* at p. xiii. "The Synthesis and Assessment Product will examine four key questions. 1. 'Which lands are currently at an elevation that could lead them to be inundated by the tides without shore protection?' 2. 'How does sea level rise change the coastline?' 3. 'What is the plausible range for the ability of wetlands to vertically accrete, and how does this range depend on whether shores are developed and protected, if at all?' 4. 'Which lands have been set aside for conservation uses so that wetlands will have the opportunity to migrate inland; which lands have been designated for uses requiring shore protection; and which lands could realistically be available for either wetland migration or coastal development requiring shore protection?'" *See* Margaret Davidson,

Coastal Elevations and Sea Level Rise Advisory Committee (Jan. 29, 2007) at p. 17, *in* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (Wash., DC, Jan. 9, 2007), *supra* at pp. 18-19.

[492] "Question 5 What are the potential impacts of sea level rise on the coastal floodplains? What issues would FEMA, coastal floodplain managers, and coastal communities face as sea level rises?...Question 6 What are the population, infrastructure, economic activity, and value of property within the area potentially inundated by rising sea level given alternative levels of shore protection?...Question 8 Which species depend on habitat that may be lost due to sea level rise given various levels of shore protection and other response options?... Question 7, 9, 10: Access and Adaptation Public's access to—and use of—the shore? Outcomes sufficiently sensitive to sea level rise to justify doing things differently Adaptation. What options are being considered: environmental land management or regulation? federal, state or local governments? What are the institutional barriers?" *See* Jim Titus, Don Cahoon, Rob Thieler and Steve Gill, *Coastal Elevations and Sensitivity to Sea Level Rise: The Lead Authors Respond to the Prospectus* (Jan. 29, 2007), at pp. 76, 78, 88 and 93, *in* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (Wash., DC, Jan. 9, 2007), *supra.*

[493] "As indicated in Section 1.1, SAP 4.1 was intended to provide a detailed assessment of the effects of sea-level rise ((SLR) on coastal environments and presents challenges that will need to be addressed to adapt to SLR while protecting environmental resources and sustaining economic vitality. More specifically, SAP 4.1 report was intended to address ten primary sets of questions, outlined below: 1. Which lands are currently at an elevation that could lead them to be inundated by the tides without shore protection measures? 2. How does sea level rise change the coastline? Among those lands with sufficient elevation to avoid inundation, which land could potentially erode in the next century? Which lands could be transformed by related coastal processes? 3. What is a plausible range for the ability of wetlands to vertically accrete, and how does this range depend on whether shores are developed and protected, if at all? That is: will sea level rise cause the area of wetlands to increase or decrease? 4. Which lands have been set aside for conservation uses so that wetlands will have the opportunity to migrate inland; which lands have been designated for uses requiring shore protection; and which lands could realistically be available for either wetland migration or coastal development requiring shore protection? 5. What are the potential impacts of sea level rise on coastal floodplains? What issues would FEMA, coastal floodplain managers, and coastal communities face as sea level rises? 6. What are the population, infrastructure, economic activity, and value of property within the area potentially inundated by rising sea level given alternative levels of shore protection? 7. How does sea level rise affect the public's access to—and use of—the shore? 8. Which species depend on habitat that may be lost due to sea level rise given various levels of shore protection and other response options? 9. Which decisions and activities (if any) have outcomes sufficiently sensitive to sea level rise so as to justify doing things differently, depending on how much the sea is expected to rise? 10. What adaptation options are being considered by specific organizations that manage land or regulate land use for environmental purposes? What other adaptation options are being considered by federal, state or local governments? What are the specific implications of each option? What are the institutional barriers to preparing for sea level rise?" *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Summary of Committee Input for Consideration in its Final Report* (Draft of 10/10/08), *supra* at Sec. 3, pp. 3-4.

[494] *See Coastal Elevations and Sea Level Rise Advisory Committee Meeting Minutes: Monday January 29, 2007*, (Jan. 29, 2007), at p. 5, available at: http://www.environmentalinformation.net/CESLAC/files/CESLAC_Meeting_Minutes_01.29.07.PM.FINAL.pdf.

[495] *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes* (June 8, 2007, at p. 6, available at: http://www.environmentalinformation.net/CESLAC/files/Meeting_2_Minutes/CESLAC_Meeting_2_Minutes.pdf.

[496] "Technical expert review was provided by: Fred Anders, New York Department of State; Mark Davis, Tulane University; Lesley Ewing, California Coastal Commission; Janet Freedman, Rhode Island Coastal Resources Council; Vivien Gornitz, NASA; Ellen Hartig, New York City Department of Parks & Recreation; Maria Honeycutt, AGI Congressional Fellow; Kurt Kalb, New Jersey Department of Environmental Protection; Stephen Leatherman, Florida International University; Ken Miller, Maryland Department of Natural Resources; Jim O'Connell, University of Hawaii, Sea Grant; Richard Osman, Smithsonian Institution; Marc Perry, U.S. Census Bureau; Chris Spaur, U.S. Army Corps of Engineers; John Teal, Teal Partners; John Thayer, North Carolina Department of Environment and Natural Resources; Dan Trescott, Southwest Florida Regional Planning Council; John Whitehead, Appalachian State University; Rob Young, Western Carolina University." *See* SAP4.1/CCSP(2009b), *supra* at p. vi.

[497] *See* United States Environmental Protection Agency Office of Air and Radiation, *Background Documents Supporting Climate Change Science Program Synthesis and Assessment Product 4.1: Coastal Elevations and Sensitivity to Sea Level Rise*, J.G. Titus and E.M. Strange (eds.), EPA 430R07004 (2008), available at: http://papers.risingsea.net/federal_reports/Titus_and_Strange_EPA_may2008.pdf; http://research.fit.edu/sealevelriselibrary/documents/doc_mgr/452/US_Coastal_Elevations_&_Sensitivity_to_SLR_Background_Info._-_Titus_&_Strange_2008.pdf.

[498] *Id.*, at p. 1.

[499] *Id.*, at "Summary of the Review Process", p. v. "*For each document*, reviewers were given the paper itself, a review charge, and other background documents as needed to support their review. Many of the papers were relatively brief, and reviewers were often asked to review more than one paper. Comments sent by reviewers were compiled in a comment spreadsheet for use by EPA, and each author was sent verbatim comments on the paper(s) that they wrote. The comments of all reviewers were carefully considered and incorporated, wherever possible, throughout the revised technical documents." *Id.*

[500] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* (SAP4.1/CCSP(2009b)), U.S. Environmental Protection Agency (James G. Titus, Jessica Blunden and Anne M. Waple (eds.) Jan. 2009), *supra* at p. 9.

[501] SAP4.1 references by lead author the following background documents identified as separate sections in EPA's 2008 background document compilation (**most of whom also are lead authors of SAP4.1**): "Chapter 2 References" (under "Titus", Sec. 1.1, pp. 260-261); "Chapter 3 References" (under "Reed", Sec. 2.1, p. 264); "Chapter 4 References" (under "Reed", sec. 2.1, and "Titus", Sec. 2.2, p. 266); "Chapter 5 References" ("under "Strange", Sec. 3, p.269); "Chapter 7 References" (under "Titus", Sections 1.1 and 1.3b, p. 273); "Chapter 10 References" (under "Reed", Sec. 2.1 and "Titus", Sec. 1.1, p. 277); "Chapter 13 References" (under "Reed", Sec. 2.1, p. 282); "Chapter 14 References" (under "Reed", Sec. 2.1, p. 284); "Appendix I References" (under "Jones", Sec. 1.2, and "Kreeger", Sec. 3.7, p. 289), (under "Reed", Sec. 2.1, and "Schellenbarger-Jones", Sections 3.12-3.13, 3.17-3.18, p. 292), (under "Strange", Sections 3, 3.2, 3.4, 3.6, 3.8-3.9, 3.14-3.15, 3.19, p. 293), (under "Titus", Sec. 1.1, p. 294), (under "USEPA", entire document, p. 295).

[502] "*Mark Monmonier questioned whether the report actually answers Question 1.* Carl Hershner pointed out that Jim Titus has done extensive research on this section which has been removed. He found this ironic because the report was initially aimed at answering exactly this question. Margaret Davidson and Rebecca Beavers thought that this was a 'key irony' and 'very disappointing,' given the importance and urgency of the issue. *Margaret Davidson also noted that a standardized methodology did not exist. Carl Hershner argued that without a clear characterization of inundated lands, the report 'really fails.' In Monmonier's view, the report addresses issues related to Question 1, but stops short of providing answers. Carl Hershner said that there wasn't an answer to this question at any level of resolution.* Andrew Garcia added that the Committee needs to explore why this happens. He said that there was no centralized mission to map and identify vulnerable areas. Government agencies have limited mission assignments and don't share their data. Margaret Davidson indicated that different agencies have different mission requirements and thus use different methodologies. But this shouldn't be an issue anymore due to the availability of LiDAR. Data for DEMs was collected at the local level. *What was lacking, though, was an integrated, intergovernmental collaboration, capable of providing data for a comprehensive, nation-wide assessment. Margaret Davidson thought the Committee should mention in Section 4 that the planned scope of the report was ambitious, but that SAP 4.1 was hampered by a lack of data and did not meet expectations. Carl Hershner said that SAP 4.1 ended up where it did because of pervasive adoption of the precautionary principle, an unreasonable fear of uncertainties and letting available information inform policy.* The government was paralyzed by the inability to deal with uncertainty in an effective manner and still provide policy relevant information. He thinks this is a problem since information removed from SAP 4.1 would still have added value for decision making. Margaret Davidson requested that Carl Hershner summarize this concern in Section 4. While agreeing substantially with Hershner, *Tony Pratt suggested that there was a credibility issue, too, in the past with presenting numbers that haven't been solid.* So as a result, appropriations might not be forthcoming. Bill Nechamen said that the government expresses reluctance to act in absence of certainty, but nonetheless acts in the absence of certainty in a lot of areas, e.g., FEMA floodplain map revisions have been criticized because they are based on historical data. *Uncertainties associated with past records are being addressed by peer review.* The authors could make a statement that uncertainties exist, recognizing that decisions will have to be made because the failure to act will have significant adverse impacts" (emphasis added). *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 30, 2008), *supra* at pp. 7-8.

[503] "CESLAC is of the opinion that the SAP 4.1 makes a good start at providing…'a detailed assessment of the effects of sea-level rise on coastal environments'…but ultimately falls short. This opinion arises from the lack of much spatially explicit information in the final report…The committee understands the rationale that led the report authors to excise most of the spatially explicit material from the final document, and the committee believes that the decision underscores one of the principal governmental challenges in dealing with climate change. *The fact that there is no comprehensive, highly resolved, and well-vetted inventory of coastal elevations means analyses of lands at risk suffers from variable resolutions and certainties. This kind of information can be problematic for agency accountability when it is the basis for published analyses. The default is to avoid publication of analyses that might be challenged.* Unfortunately, this means less information and motivation for public decision making. In the case of sea level rise, risks are not static and indecision is an undesirable response. We believe there is a need for government to develop a tolerance for uncertainty in matters like this where the need for timely policy decisions is critical, while also taking required actions to collect the essential high resolution geospatial data for mapping, modeling, and other decision support tools" (emphasis added). *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Summary of Committee Input for Consideration in its Final Report* (Draft of 10/10/08), *supra* at Sec. 4.3, p. 6.

[504] "This report relied heavily on stakeholder involvement that was implemented through a series of three meetings held in the Mid-Atlantic Region (Easton, Maryland; Red Bank, New Jersey; and Plymouth, North Carolina). Many of the comments received and discussion initiated at these meetings helped to define some of the issues addressed in this report. Linda Hamalak of NOAA organized these public meetings and the subsequent author meetings. The author meetings were hosted by the Blackwater National Wildlife Refuge in Maryland; the NOAA National Marine Fisheries Service in Sandy Hook, New Jersey; and the Partnership for the Sounds in Columbia, North Carolina." *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* (SAP4.1/CCSP(2009b)), U.S. Environmental Protection Agency (James G. Titus, Jessica Blunden and Anne M. Waple (eds.) Jan. 2009), *supra* at p. vi.

[505] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Climate Change Science Program Synthesis and Assessment Product Draft Report 4.1: "Coastal Elevation and Sensitivity to Sea Level Rise" - Notice of availability and request for public comments*, 73 FR 10005-10006 (Feb. 25, 2008), *supra*.

[506] *See* Coastal Elevations and Sea Level Rise Advisory Committee, *DRAFT AGENDA*, Fifth Meeting of the Coastal Elevations and Sea Level Rise Advisory Committee July 30, 2008 Teleconference*, available at: http://www.environmentalinformation.net/CESLAC/files/DRAFT_AGENDA_CESLAC_5a.pdf (setting aside thirty minutes to hear the oral statements of P. Glick, D. Trescott, J. Clough and S. Stiles). *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 30, 2008), *supra* at pp. 21-23 (summarizing the oral statements of Patty Glick of National Wildlife Federation, Jonathan Clough of Warren Pinnacle Consulting, Inc., Skip Stiles of Wetlands Watch and Dan Trescott of the Southwest Florida Regional Planning Council).

[507] *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 30, 2008), *supra* at Appendix B, pp. 26-35.

[508] As previously discussed above, although the 'Acknowledgements' section of SAP4.1 lists Dan Trescott of the Southwest Florida Regional Planning Council as an expert technical reviewer (presumably of SAP4.1), the facts reveal that he had likely peer reviewed the background documents supporting SAP4.1.

[509] "My Name is Daniel Trescott, and I am [flood hazard] planner for the Southwest Florida Regional Planning Council. Rising sea level is a concern to us because of our extensive mangroves and estuaries, and because 750,000 people live in the hurricane evacuation zone. I provided comments on the prospectus for this report during 2006, and I was one of the peer reviewers who examined the expert review draft of Coastal Elevations and Sensitivity to Sea Level Rise last October." *See* Coastal Elevations and Sea Level Rise Advisory Committee, *Meeting Minutes prepared for Environmental Protection Agency* (July 30, 2008), *supra* at Appendix B, p. 34.

[510] Although p. vi of SAP4.1 indicates that public commenters had also played a role in 'reviewing' the contents of SAP4.1, the Preamble and Section VII of OMB's Peer Review Bulletin and Sections 1.2.8-1.2.9 of EPA's Peer Review Handbook distinguish public comments obtained during an Administrative Procedure Act notice and comment procedure, which do *not* qualify as external peer review under the IQA, from the more scientific review to be performed through an IQA administrative mechanism.

[511] *See* United States Environmental Protection Agency Board of Scientific Counselors, BOSC Subcommittee on Global Change Research, *Review of the Office of Research and Development's Global Change Research Program at the U.S.*

Environmental Protection Agency – Final Report (March 27, 2006), at pp. 27-28, available at: http://epa.gov/osp/bosc/pdf/glob0603rpt.pdf.

[512] *Id.*, at p. 28. "Recognizing that true impacts of climate change on health in the United States and other developed countries may be secondary effects of either primary climate drivers, like sea level rise (loss of fisheries, population dislocation) and extreme events (secondary infections, population dislocation, loss of employment, etc.) or the secondary effects of adaptation measures (pesticide use, decline in outdoor physical activity, redirection of public resources) is important. Incorporating these complex interactions into primary research and decision support is far more difficult, but offers potentially higher payoffs in terms of producing information of major significance for public policy decisions." *Id.*, at p. 29.

[513] *See* United States Environmental Protection Agency Office of Inspector General, *EPA Needs a Comprehensive Research Plan and Policies to Fulfill its Emerging Climate Change Role*, Evaluation Report No. 09-P-0089 (Feb. 2, 2009), at Executive Summary; p. 10, available at: http://www.epa.gov/oig/reports/2009/20090202-09-P-0089.pdf.

[514] *See* United States Environmental Protection Agency Office of the Administrator Science Advisory Board, *Office of Research and Development (ORD) New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC)* EPA-SAB-12-001 (Oct. 21, 2011), available at: http://yosemite.epa.gov/sab%5CSABPRODUCT.NSF/804D1A3A4A393C028525793000732744/$File/EPA-SAB-12-001-unsigned.pdf.

[515] "ORD's Global Change Research Program has an effective process in place to determine the highest-priority research requirements of EPA programs and regions and of the Climate Change Science Program. GCRP's prioritization process includes the Research Coordination Team, Regional Science Liaisons, Climate Coordinators, weekly cross-Agency conference calls, and other formal and informal mechanisms." *See* United States Environmental Protection Agency Office of Inspector General, *EPA Needs a Comprehensive Research Plan and Policies to Fulfill its Emerging Climate Change Role*, Evaluation Report No. 09-P-0089 (Feb. 2, 2009), *supra*, at Appendix B*: Agency Preliminary Comments and OIG Evaluation*, p. 23.

[516] "It is important to emphasize in the report that ORD is responsible for only a subset of the climate change information developed and used by the Agency. Other EPA program offices conduct work related to GCRP activities that are coordinated with ORD. For example, the Office of Water's (OW) new Climate Change Strategy formally integrates ORD and OW activities to address the implications of climate change for the Agency's statutory, regulatory, and programmatic requirements under the Clean Water Act and Safe Drinking Water Act." *Id.*, at Appendix B*: Agency Preliminary Comments and OIG Evaluation*, p. 27.

[517] "Since the enactment of the Global Change Research Act of 1990, EPA's research on climate change – also known as global warming – has been part of a national and international framework. EPA is 1 of 13 federal agencies that comprise the U.S. Climate Change Science Program (CCSP). The CCSP was launched in 2002. The CCSP incorporated both the U.S. Global Change Research Program (GCRP) and the U.S. Climate Change Research Initiative of 2001. The CCSP Strategic Plan guides federal research on climate change, and the 13 agencies focus their research on areas related to their unique missions in a collaborative effort. CCSP's strategic plan defines EPA's role as having a primary focus on understanding the regional consequences of global change. Within EPA, ORD performs this role. ORD has the responsibility for assessing the potential impacts of climate change and evaluating adaptation options. The Office of Air and Radiation (OAR) has responsibility for activities related to mitigating greenhouse gases. Both ORD and OAR communicate science findings and information about adaptation options... *We focused primarily on ORD because it has the central responsibility for EPA climate change research under the CCSP, and because ORD is the scientific research arm of EPA*" (emphasis added). *Id.*, at pp. 1-2. "ORD manages EPA's climate change research function through its GCRP. ORD's GCRP not only assesses the impacts of global change; it also focuses on the implications of climate change on EPA's ability to satisfy its statutory, regulatory, and programmatic requirements. EPA also has statutory obligations to provide scientific information to organizations other than EPA regional and program offices."). *Id.*, at p. 3 "The report should acknowledge that any EPA policies and procedures for meeting the Agency's information needs must ensure that available resources are directed to their highest-valued uses. Therefore, ORD/GCRP must consider the requests it receives from EPA's program and regional offices along with those of multiple other partners (e.g. other agencies), and GCRP must allocate its resources to meet the highest-priority needs. For example, in Fiscal Years 2007 and 2008, the highest-priority research activity for GCRP was the production of two CCSP Synthesis and Assessment Reports." *Id.*, at Appendix B*: Agency Preliminary Comments and OIG Evaluation*, p. 28.

[518] *See* United States Environmental Protection Agency Office of the Administrator Science Advisory Board, *Office of Research and Development (ORD) New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC)* EPA-SAB-12-001 (Oct. 21, 2011), supra. "Collaboration with other federal agencies and partners in other countries is increasingly important for ORD because of the ambitious scope of ORD's new research frameworks and the limitations of EPA's budget and the budgets of all potential partners." *Id.*, at p. 10. "The vision for the Air, Climate and Energy program includes sustainability as a paradigm for research, but there exists a fundamental disconnect between sustainability and the legislative mandates of the Clean Air Act. ORD should address clearly how it will integrate the two needs for research and how it will trade off between them. This tension will grow and may increasingly need to be addressed if EPA's budget is constrained." *Id.*, at p. 18.

[519] *See* United States Environmental Protection Agency Office of Inspector General, *EPA Needs a Comprehensive Research Plan and Policies to Fulfill its Emerging Climate Change Role*, Evaluation Report No. 09-P-0089 (Feb. 2, 2009), *supra* at *Appendix B: Agency Preliminary Comments and OIG Evaluation* at p. 27. *See also* United States Environmental Protection Agency Office of Research and Development, *Office of Research and Development's (ORD) October 2006 Response to the Board of Scientific Counselors (BOSC) April 2006 Final Report that Reviews ORD's Global Change Research Program* (Oct. 17, 2006), available at: http://epa.gov/osp/bosc/pdf/glob0610resp.pdf. "The Global Program is committed to an ongoing process of synthesizing and communicating its research results—including the results of previous assessments—and making this information available in a timely and useful form to decision makers, resource managers, and other stakeholders. For example, the program is actively engaged in the production of several Synthesis and Assessment Products (SAPs), as part of its commitment to the U.S. Climate Change Science Program (CCSP). The purpose of the SAPs is to respond to the highest-priority CCSP research, observation, and decision support needs, and to provide information to decision makers in a timely and useful way. The Global Program is leading the production of two of the 21 SAPs, and contributing to eight others. *The two SAPs being led by EPA draw heavily upon the results of the Global Program's previous research and assessments, and will make this information and "lessons learned" accessible to the public in a clear and useful way*...The Global Program is also committed to making its research and assessment results (including results produced by grantees and contractors) accessible to the public through an improved website. It is also exploring ways in which the existing website for ORD's STAR program can be improved to make it easier for the public to locate information on global change research, and to sort the information by topic. (emphasis added). *Id.*, at p. 3. "The Global Program is committed to continuing its practice of engaging external advisors at key points in its research activities at which major decisions are made about future Program directions and focus area projects." *Id.*, at p. 4.

[520] *See* United States Environmental Protection Agency Office of Research and Development, Board of Scientific Counselors, BOSC Global Change Mid-Cycle Subcommittee, *Review of the Office of Research and Development's Global Change Research Program at the Environmental Protection Agency* (July 11, 2008), available at: http://epa.gov/osp/bosc/pdf/glob0809rpt.pdf. "Among its accomplishments, *the GCRP's shift in focus toward a more national perspective and its reorganization of its programmatic areas—fundamental recommendations of the 2006 report—have been accomplished fully and effectively*. Its responsibilities to the national Climate Change Science Program (CCSP) have been met and the GCRP has taken on a role in that activity beyond what might be expected given its small portion of the overall CCSP budget. *Consistent with the BOSC recommendations, the Program has become much more embedded "in the woodwork" of the mainstream activities of EPA; it has taken on roles with both the Office of Air and Radiation (OAR) and the Office of Water (OW) in facilitating the inclusion of global change elements in decisions and analyses*. With respect to the latter, the tools it has developed are useful and being used in improving real decisions made elsewhere in the Agency. Further, the regional offices and their state and local counterparts have been sensitized and motivated, and to some extent empowered, by the tools provided by the GCRP to take potential global change into account both in current decisions and in planning for meeting air, water, and health protection requirements in the face of such change" (emphasis added). *Id.*, at p. 3.

[521] *See* United States Environmental Protection Agency Office of Inspector General, *Office of Research and Development Should Increase Awareness of Scientific Integrity Policies*, Audit Report No.11-P-0386 (July 22, 2011), available at: http://www.epa.gov/oig/reports/2011/20110722-11-P-0386.pdf. "Although ORD has internal controls in place, it should improve the way in which it evaluates the effectiveness of its policies and procedures for scientific integrity and research misconduct. Currently, ORD does not test its policies and procedures because ORD asserts that few reported instances of misconduct means that it generally does not occur. However, few identified instances of

research misconduct could signal that staff lacks awareness of key criteria and reporting requirements necessary to identify and report misconduct." *Id.*, at Executive Summary, p. 7.

[522] *Id.*, at p. 8. "However, ORD cannot assert with certainty the effectiveness of controls because ORD does not test its controls. ORD should periodically test controls to ensure staff awareness of how to identify and report instances of research misconduct. Testing controls will help ensure ORD's research is of the highest quality." *Id.* "Periodically testing its controls would help assure that ORD utilizes the right control activities while striving to achieve scientific integrity. Further, raising awareness of key criteria and updating the e-training will help strengthen ORD's internal control environment to address instances of research misconduct. These efforts could improve the credibility of ORD's scientific research." *Id.*, at p. 11.

[523] *See* United States Environmental Protection Agency Office of Inspector General, *EPA Can Improve Its Process for Establishing Peer Review Panels,* Evaluation Report No. 09-P-0147 (April 29, 2009), at Executive Summary, available at: http://www.epa.gov/oig/reports/2009/20090429-09-P-0147.pdf.

[524] *Id.*, at Executive Summary, p. 4.

[525] *Id.*, at p. 3. "The *majority* of assessments are either reviewed under the peer review contract or an interagency agreement with another federal agency" (emphasis added). *Id.*

[526] *Id.*, at p. 5. For example, "[1] Although NCEA strives to select 'impartial' panelists, this concept is vaguely defined by OMB and EPA guidance and is not explained in any NCEA-specific operating guidance. Neither the 2004 OMB Bulletin nor the EPA Handbook defines what constitutes 'impartiality.' According to the Handbook, in general potential panelists who had a predominant influence on an organization's position or have taken a public position or 'taken sides' should be avoided[; 2] There was no clear documentation of authority and responsibility for making final determinations regarding panel selection or how potential conflicts of interest were resolved[;]…[4] NCEA d[id] not have procedures for addressing conflicts of interest or potential biases, or allegations of such that become known or alleged after a panel has begun or completed its deliberations. NCEA does not have a policy or procedures regarding the circumstances under which a panelist's pay may be recouped or withheld when the panelist is dismissed or resigns before completion[; 5] Although NCEA's contractors conduct Internet searches to identify potential conflicts of interest and appearances of bias or partiality, ORISE – the [then] current provider of peer review services under an interagency agreement – does not conduct Internet background searches[;] 6 NCEA's contractors d[id] not use similar procedures for identifying any changes in selected panelists' conflict of interest status[; 7] NCEA can improve its oversight of peer reviews conducted by third parties to better ensure these peer reviews follow contractual guidelines." *Id.*, at pp. 6-7.

[527] *See* United States Environmental Protection Agency Office of the Administrator Science Advisory Board, *Office of Research and Development (ORD) New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC)* EPA-SAB-12-001 (Oct. 21, 2011), *supra* at p. 19.

[528] *See* United States Environmental Protection Agency Office of Inspector General, *Procedural Review of EPA's Greenhouse Gases Endangerment Finding Data Quality Processes*, Report No. 11-P-0702 (Sept. 26, 2011), at p. 13, available at: http://www.epa.gov/oig/reports/2011/20110926-11-P-0702.pdf.

[529] *Id.*, at pp. 13-14. "OAR had the TSD reviewed by a panel of climate change scientists. This review did not meet all of OMB's peer review requirements for highly influential scientific assessments. The methodology that OAR employed for this review was within the discretion afforded by OMB guidance for peer reviews of influential scientific information, but not for highly influential scientific assessments. In our opinion, the TSD is a highly influential scientific assessment and thus it required a peer review as described in Section III of OMB's *Final Information Quality Bulletin for Peer Review*." *Id.*, at pp. 15-16.

[530] *Id.*, at p. 14. "OAR officials…did not consider the TSD to be a scientific assessment because it only summarized existing findings and conclusions and provided no new findings or conclusions", and the "core references relied upon for the TSD had been…reviewed and vetted by the scientific community through the IPCC, USGCRP/CCSP, and NRC review procedures." *Id.*, at p. 16. Interestingly, the EPA-OIG received two different opinions from OMB officials it contacted concerning whether the TSD was a scientific assessment, though both "agreed that the primary underlying assessments that EPA relied upon in developing [and]…identified in…its TSD were scientific assessments." *See Id.*, at pp. 16-18, 24.

[531] *Id.,* at p. 20.

[532] *Id.* "Tier 1: 'Administrator's Priority Actions'… will include top actions that demand the ongoing involvement of the Administrator's office and extensive cross-Agency involvement on the part of the AAs/RAs…Your Action should be placed in Tier 1 if...science issue(s) are precedent setting and controversial; it is economically significant per E.O. 12866

(i.e., > $100 million). It should be placed in Tier 1 unless the program office can justify placement in Tier 2; economics issue(s) are precedent setting and controversial." *See* United States Environmental Protection Agency Office of Policy, *EPA's Action Development Process: Guidance for EPA Staff on Developing Quality Actions* (Rev. March 2011), at p. 25, available at: http://yosemite.epa.gov/sab%5CSABPRODUCT.NSF/5088B3878A90053E8525788E005EC8D8/$File/adp03-00-11.pdf.

[533] "An analytic blueprint (ABP) is a document which spells out a workgroup's plans for the data collection and analyses that will support development of a specific action. The ABP describes how this information will be collected, peer reviewed, and used to craft the action within a specific budget and time frame. In addition, the ABP process serves to expand EPA's opportunities to consider a broad range of possible regulatory (and non-regulatory) strategies, including alternative or innovative approaches that complement traditional methods. ABPs are developed in two phases, a Preliminary ABP (PABP), and a Detailed ABP (DABP)...ABPs are expected for all Tier 1 and Tier 2 actions and are encouraged for Tier 3 actions". *See* Environmental Protection Agency Office of Policy, *EPA's Action Development Process: Guidance for EPA Staff on Developing Quality Actions* (Rev. March 2011), *supra* at p. 33.

[534] *See* Environmental Protection Agency Office of Inspector General, *Procedural Review of EPA's Greenhouse Gases Endangerment Finding Data Quality Processes*, Report No. 11-P-0702 (Sept. 26, 2011), *supra* at p. 21

[535] *See* United States Environmental Protection Agency, *Guidance on Quality Assurance Project Plans* (CIO 2106-G-05 QAPP), Final Draft Jan. 17, 2012), at Foreword, available at: http://www.epa.gov/oeitribalcoordination/2106-G-05%20QAPP%20Final%20Draft%2001-17-12.pdf.

[536] *See* United States Environmental Protection Agency, *Required Elements in a Quality Assurance Project Plan (QAPP)*, EPA Great Lakes website (4/11/12), available at: http://www.epa.gov/grtlakes/fund/qareqs.html; See also United States Environmental Protection Agency, *Elements of a Quality Assurance Project Plan (QAPP) For Collecting, Identifying and Evaluating Existing Scientific Data/Information (a suggested template EPA scientists and contractors)*, available at: http://www.epa.gov/stpc/pdfs/assess4.pdf.

[537] *See* United States Environmental Protection Agency, *Quality Standard for Environmental Data, Collection, Production, and Use by Non-EPA (External) Organizations*, DRAFT FINAL (2106-S-02.0), EPA Office of Environmental Information (Review Date 2-22-12), at Sec. 2.2, p. 3, available at: http://www.epa.gov/oeitribalcoordination/External%20Standard%20with%20Annexes.pdf.

[538] *Id.*, at pp. 2-3.

[539] *See* United States Environmental Protection Agency, *U.S. Environmental Protection Agency Guidance for Evaluating and Documenting the Quality of Existing Scientific and Technical Information, Addendum to: A Summary of General Assessment Factors for Evaluating the Quality of Scientific and Technical Information*, EPA Science and Technology Policy Council Peer Review Advisory Group (Dec. 2012), at p. 1, available at: http://www.epa.gov/stpc/pdfs/assess3.pdf.

[540] *Id.*, at pp. 1-2.

[541] "The final Endangerment Finding was issued on December 7, 2009 and published in the Federal Register shortly thereafter. Despite the requirement of Section 202(a) that the Administrator exercise her own judgment as to whether GHGs endanger public health and welfare, the Endangerment Finding was not the product of the Administrator's or her Agency's independent review of climate science. Instead, as the Administrator readily conceded, the Endangerment Finding was based almost exclusively on reports produced by third parties summarizing their views of global climate change science, reports that the Endangerment Finding referred to as "assessment literature". *See* "Analytical and Process Flaws in EPA's Greenhouse Gas Endangerment Finding", Prepared Statement of Mr. Peter Glaser, Partner, Troutman Sanders, LLP, at *Climate Change: Examining the Processes Used to Create Science and Policy*, Hearing Before the Committee on Science, Space and Technology, House of Representatives, 112th Cong., 1st Sess., Rept. 112–09 (March 30, 2011), (pp. 84-96), *supra* at p. 88.

[542] *Id.* This document then refers to an *EPA Handbook for Developing Quality Assurance Project Plans* (EPA, 2012c)" at p. 3.

[543] *See* United States Environmental Protection Agency, *Handbook for Developing Quality Assurance Project Plans* (December 2012 Agency Review Draft), at p. 1, available at: http://www.chesapeakebay.net/channel_files/19114/draft_qapp_prep-handbook.pdf.

[544] "The public must be able to trust the science and scientific process informing public policy decisions. Political officials should not suppress or alter scientific or technological findings and conclusions. If scientific and technological information is developed and used by the Federal Government, it should ordinarily be made available to the public. To

the extent permitted by law, there should be transparency in the preparation, identification, and use of scientific and technological information in policymaking. The selection of scientists and technology professionals for positions in the executive branch should be based on their scientific and technological knowledge, credentials, experience, and integrity." *See* Presidential Memorandum for the Heads of Executive Departments and Agencies, *Scientific Integrity*, The White House (March 9, 2009), available at: http://www.whitehouse.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09 ("Science and the scientific process must inform and guide decisions of my Administration on a wide range of issues, including improvement of public health, protection of the environment, increased efficiency in the use of energy and other resources, mitigation of the threat of climate change, and protection of national security…Specifically, I direct the following: 1… (c) When scientific or technological information is considered in policy decisions, the information should be subject to well-established scientific processes, including peer review where appropriate, and each agency should appropriately and accurately reflect that information in complying with and applying relevant statutory standards…"). *Id.*

[545] "(c) When scientific or technological information is considered in policy decisions, the information should be subject to well-established scientific processes, including peer review where appropriate, and each agency should appropriately and accurately reflect that information in complying with and applying relevant statutory standards…" *Id.*

[546] *See* Memorandum to the Heads of Executive Departments and Agencies, *Scientific Integrity*, Director of the Office of Science and Technology Policy (Dec. 17, 2010), at pp. 1-2, available at: http://www.whitehouse.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf.

[547] *See* Administrator of the United States Environmental Protection Agency, U.S. Environmental Protection Agency Scientific Integrity Policy (May 2009), at p. 1, available at: http://www.epa.gov/osa/pdfs/epa_scientific_integrity_policy_20120115.pdf.

[548] *See* Memorandum to the Heads of Executive Departments and Agencies, *Scientific Integrity*, Director of the Office of Science and Technology Policy (Dec. 17, 2010), available at: http://www.whitehouse.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf ("to provide further guidance to executive departments and agencies to implement the administration's policies on scientific integrity"). *Id.*

[549] *See, e.g.,* National Science Board, *Science and Engineering Indicators 2012*, at Chap. 7 - *Science and Technology: Public Attitudes and Understanding,* National Science Foundation (2012), available at: http://www.nsf.gov/statistics/seind12/pdf/seind12.pdf.

[550] *See, e.g.,* Union of Concerned Scientists, *The White House's Scientific Integrity Directive*, Union of Concerned Scientists Blog (12/22/10), available at: http://www.ucsusa.org/scientific_integrity/solutions/big_picture_solutions/SI-directive.html.

[551] *See* United States Environmental Protection Agency, Office of Inspector General, *Quick Reaction Report: EPA Must Take Steps to Implement Requirements of Its Scientific Integrity Policy* 13-P-0364 (August 28, 2013), available at: http://www.epa.gov/oig/reports/2013/20130828-13-P-0364.pdf ("Although an agency-wide training program is required by the agency's Scientific Integrity Policy, the EPA has not developed or implemented a program to instruct the EPA's employees on the requirements and standards of scientific integrity. In addition, the EPA has not generated and made publicly available an annual report on the status of scientific integrity within the agency as required by the policy…As a result of the committee's lack of progress in implementing these requirements, the EPA is less equipped to: Provide leadership for the agency on scientific integrity[;] Promote agency compliance with the Scientific Integrity Policy[;] Keep the agency's senior leadership informed on and involved with the agencywide status of scientific integrity[; and] Detect violations of scientific integrity.") *Id.*, at Executive Summary; pp. 5-7.

[552] *See* Lawrence A. Kogan and Richard D. Otis, Jr., *Keeping Junk Science at Bay on Global Warming: EPA's Climate-change Findings Must Comply With U.S. Law*, Washington Times (May 30, 2014), available at: http://www.washingtontimes.com/news/2014/may/29/kogan-otis-keeping-junk-science-at-bay/.

[553] *See* Richard A. Epstein, *Why The Modern Administrative State is Inconsistent With the Rule of Law*, 1 NYU Journal of Law & Liberty 491, 505-515 (2008), available at: http://www.law.nyu.edu/sites/default/files/ECM_PRO_060974.pdf.

[554] *See* Jessica Mantel, *Procedural Safeguards for Agency Guidance: A Source of Legitimacy for the Administrative State*, 61 Administrative Law Review 343, 347 (2009), available at: http://www.law.uh.edu/faculty/jmantel/health-law/MantelProceduralSafeguards.pdf.

[555] *See* Adam Candeub, *Transparency in the Administrative State*, 51 Houston Law Review 385, 387-388, 403 (2013), available at: http://digitalcommons.law.msu.edu/cgi/viewcontent.cgi?article=1505&context=facpubs.

[556] *See, e.g.,* Ron Arnold, *If It's Wet, the EPA Wants to Regulate It*, Washington Examiner (June 10, 2014), available at: http://washingtonexaminer.com/if-its-wet-the-epa-wants-to-regulate-it/article/2549550; Peter Wood and Rachelle DeJong, *Short-Circuiting Peer Review in Climate Science*, National Association of Scholars (June 6, 2010), available at: http://www.nas.org/articles/short_circuiting_peer_review_in_climate_science; Marita Noon, *See How The Obama Administration Could Be Hiding Its Use Of Bad Science*, Western Journalism.com (May 30, 2014), available at: http://www.westernjournalism.com/obama-administration-hides-use-bad-science/; Lawrence A. Kogan and Richard D. Otis, Jr., *Keeping Junk Science at Bay on Global Warming: EPA's Climate-change Findings Must Comply With U.S. Law*, Washington Times (May 30, 2014), *supra*; Marita Noon, Obama Administration Hides Use of Bad Science, RedState (May 26, 2014), available at: http://www.redstate.com/diary/energyrabbit/2014/05/26/marita-noon-obama-administration-hides-use-bad-science/; Rachelle DeJong, *EPA-Gate?*, National Association of Scholars (May 24, 2014), available at: http://www.nas.org/articles/epa_gate; Michael Bastasch, *Does The EPA's CO2 Endangerment Finding Violate Federal Law? The Daily Caller* (May 22, 2014), available at: http://dailycaller.com/2014/05/22/does-the-epas-co2-endangerment-finding-violate-federal-law/.

[557] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences* (SAP1.1/CCSP(2006), National Oceanic and Atmospheric Administration, National Climatic Data Center (Thomas R. Karl, Susan J. Hassol, Christopher D. Miller, and William L. Murray, editors, 2006), available at: http://downloads.globalchange.gov/sap/sap1-1/sap1-1-final-all.pdf.

[558] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Global Climate Change Impacts in the United States* (Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009), available at: http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf.

[559] *See* Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), available at:
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm.

[560] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems* (SAP4.6/CCSP(2008b)), U.S. Environmental Protection Agency (Gamble, J.L. (ed.), available at: http://downloads.globalchange.gov/sap/sap4-6/sap4-6-final-report-all.pdf.

[561] *See* U.S. Department of Commerce National Oceanographic Administration, *The First State of the Carbon Cycle Report (SOCCR): The North American Carbon Budget and Implications for the Global Carbon Cycle*, (SAP2.2/CCSP(2007)), National Oceanic and Atmospheric Administration, National Climatic Data Center (King, A.W., L. Dilling, G.P. Zimmerman, D.M. Fairman, R.A. Houghton, G. Marland, A.Z. Rose, and T.J. Wilbanks (eds.)), available at: http://downloads.globalchange.gov/sap/sap2-2/sap2-2-final-all.pdf.

[562] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *State of the Climate in 2008*, Bulletin of the Meteorological Society Vol. 90, No. 8 (T.C. Peterson and M.O. Baringer, Eds. 2009), available at: http://www1.ncdc.noaa.gov/pub/data/cmb/bams-sotc/climate-assessment-2008-lo-rez.pdf.

[563] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Global Climate Change Impacts in the United States* (Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009), available at: http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf.

[564] *See* Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), available at:
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm.

[565] *See* Intergovernmental Panel on Climate Change, *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), available at:

https://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm.

[566] *See* Intergovernmental Panel on Climate Change, *Climate Change 2007: Mitigation of Climate Change*, Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg3_report_mitigation_of_climate_change.htm

[567] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences* (SAP1.1/CCSP(2006), National Oceanic and Atmospheric Administration, National Climatic Data Center (Thomas R. Karl, Susan J. Hassol, Christopher D. Miller, and William L. Murray, editors, 2006), available at: http://downloads.globalchange.gov/sap/sap1-1/sap1-1-final-all.pdf.

[568] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Past Climate Variability and Change in the Arctic and at High Latitudes* (SAP1.2/CCSP(2009c), United States Department of Interior U.S. Geological Survey, available at: http://downloads.globalchange.gov/sap/sap1-2/sap1-2-final-report-all.pdf.

[569] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Reanalysis of Historical Climate Data for Key Atmospheric Features: Implications for Attribution of Causes of Observed Change* (SAP1.3/CCSP(2008g)), National Oceanic and Atmospheric Administration, National Climatic Data Center (Randall Dole, Martin Hoerling, and Siegfried Schubert (eds.)) (2008), available at: http://library.globalchange.gov/sap-1-3-reanalysis-of-historical-climate-data-for-key-atmospheric-features-implications-for-attribution-of-causes-of-observed-change.

[570] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Scenarios of Greenhouse Gas Emissions and Atmospheric Concentrations* (SAP2.1a/CCSP(2007b)), Department of Energy, Office of Biological & Environmental Research 2007), available at: http://downloads.globalchange.gov/sap/sap2-1a/sap2-1a-final-all.pdf.

[571] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Atmospheric Aerosol Properties and Climate Impacts* (SAP 2.3/CCSP(2009a)), National Aeronautics and Space Administration (Mian Chin, Ralph A. Kahn, and Stephen E. Schwartz (eds.)), available at: http://downloads.globalchange.gov/sap/sap2-3/sap2-3-final-report-all.pdf.

[572] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Trends in Emissions of Ozone-Depleting Substances, Ozone Layer Recovery, and Implications for Ultraviolet Radiation Exposure* SAP 2.4/CCSP(2008h), National Oceanic and Atmospheric Administration, National Climatic Data Center (Ravishankara, A.R., M.J. Kurylo, and C.A. Ennis (eds.)), available at: http://downloads.globalchange.gov/sap/sap2-4/sap2-4-final-all.pdf.

[573] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Climate Models: An Assessment of Strengths and Limitations* (SAP3.1/CCSP(2008c)), Department of Energy, Office of Biological and Environmental Research, available at: http://science.energy.gov/~/media/ber/pdf/Sap_3_1_final_all.pdf.

[574] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Climate Projections Based on Emissions Scenarios for Long-Lived and Short-Lived Radiatively Active Gases and Aerosols* (SAP 3.2/CCSP(2008d)), Department of Commerce, NOAA's National Climatic Data Center (H. Levy II, D.T. Shindell, A. Gilliland, M.D. Schwarzkopf, L.W. Horowitz, (eds.)), available at: http://downloads.globalchange.gov/sap/sap3-2/sap3-2-final-report-all.pdf.

[575] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands* (SAP3.3/CCSP(2008i)), Department of Commerce, NOAA's National Climatic Data Center (Thomas R. Karl, Gerald A. Meehl, Christopher D. Miller, Susan J. Hassol, Anne M. Waple, and William L. Murray (eds.)), available at: http://downloads.globalchange.gov/sap/sap3-3/sap3-3-final-all.pdf.

[576] *See* U.S. Climate Change Science Program and the Subcommittee on Global Change Research, *Abrupt Climate Change* (SAP3.4/CCSP(2008a)), Department of Interior U.S. Geological Survey, available at: http://downloads.globalchange.gov/sap/sap3-4/sap3-4-final-report-all.pdf.

[577] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* (SAP4.1/CCSP(2009b)), U.S. Environmental

Protection Agency (James G. Titus, Jessica Blunden and Anne M. Waple (eds.) Jan. 2009), available at: http://downloads.globalchange.gov/sap/sap4-1/sap4-1-final-report-all.pdf

[578] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Thresholds of Climate Change in Ecosystems* (SAP4.2/CCSP(2009d)), U.S. Geological Survey, available at: http://www.tribesandclimatechange.org/docs/tribes_182.pdf.

[579] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States* (SAP4.3/CCSP(2008e)), U.S. Department of Agriculture, available at: http://downloads.globalchange.gov/sap/sap4-3/sap4.3-final-all.pdf.

[580] *See* United States Climate Change Science Program and the Subcommittee on Global Change Research, *Effects of Climate Change on Energy Production and Use in the United States* (SAP4.5/CCSP(2007a)), Department of Energy, Office of Biological & Environmental Research, available at: http://downloads.globalchange.gov/sap/sap4-5/sap4-5-final-all.pdf.

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