May 5, 2014

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of the Chief Information Officer
High Performance Computing and Communications
Attn: Ms. Wendy Schumacher
NOAA Freedom of Information Officer
Public Reference Facility (SOU1000)
1315 East-West Highway (SSMC3)
Room 9719
Silver Spring, Maryland 20910

Re: **ITSSD FOIA Request Clarification**
Consolidated FOIA Request No. DOC-NOAA-2014-000714

Dear Ms. Schumacher:

As a first-time FOIA request filer, the Institute for Trade, Standards and Sustainable Development ("ITSSD")[1] greatly appreciates your flexibility in granting it extra time (until opening of business on May 5, 2014)[2] to respond to your April 1, 2014 letter correspondence denying the request for a fee waiver contained in ITSSD's seven (7) previously filed FOIA requests.

To recall, on March 17, 2014, Requester ITSSD mailed separate FOIA Requests dated March 14, 2014 to U.S. Department of Commerce-National Oceanic and Atmospheric Administration Headquarters ("DOC-NOAA-HQ") and six different DOC-NOAA Regional Collaboration Team representative offices[3] (hereinafter collectively referred to as "DOC-NOAA"), pursuant to the Freedom of Information Act, 5 U.S.C. §552 and applicable DOC-NOAA Freedom of Information Act-implementing regulations.

Your April 1, 2014 letter correspondence acknowledged that ITSSD's DOC-NOAA-HQ request (singular) had been "entered into FOIAonline on March 27, 2014", strongly suggesting that your office had consolidated all seven (7) previously filed ITSSD DOC-NOAA FOIA Requests for central processing under a single FOIA Request No. DOC-NOAA-2014-000714. The April 1 correspondence also provided information about the six-factor test that must be satisfied under DOC-NOAA's applicable FOIA fee waiver regulations.[4]

In light of your office's consolidation of ITSSD's previously filed DOC-NOAA FOIA requests, and because of ITSSD's concern that its response to your April 1, 2014 correspondence correctly references the particular records sought within such FOIA Requests, ITSSD hereby submits simultaneously in clarification of those documents the following: 1) *this* ITSSD DOC-NOAA **FOIA Request Clarification**; *and* 2) an ITSSD DOC-NOAA **FOIA Fee Waiver Request Clarification** relating thereto, under separate cover.

This annotated ITSSD FOIA Request Clarification seeks disclosure of all DOC-NOAA records ("all DOC-NOAA climate science-related peer review files") substantiating the specific measures DOC-NOAA had taken, consistent with the highest and most rigorous standards applicable to highly influential scientific assessments ("HISAs"[5]) imposed by the Information Quality Act ("IQA")[6] and the Office of Management and Budget ("OMB")[7] and DOC-NOAA IQA-implementing guidelines,[8] to ensure the quality, integrity and reliability of all DOC-NOAA- developed (in whole or in part) and/or reviewed climate science-related assessments and reports which DOC-NOAA *knew or had reason to know* the EPA Administrator would rely upon in reaching positive greenhouse gas ("GHG") endangerment and cause or contribute findings under Clean Air Act Sec. 202(a)(1).[9]

I. DOC-NOAA Climate Science-Related Peer Review Files (Records) Requested -

1. All international, national regional and local agency climate science-related files referring, directly or indirectly, to the substantive and procedural peer reviews conducted, managed or overseen by DOC-NOAA, a DOC-NOAA-established federal advisory committee(s), and/or a DOC-NOAA-hired third-party contractor(s) (federal agencies, or private parties such as the National Research Council ("NRC"[10])) of the assessments, studies and reports referenced within the EPA Technical Summary Document ("EPA-TSD") supporting the EPA Administrator's GHG endangerment and cause or contribute findings, especially all climate science-related files referring directly or indirectly to assessments, studies and reports designated therein (at Table 1.1, p. 6)[11] as "core reference documents"[12] with which DOC-NOAA was involved as 'lead agency' author, co-author and/or reviewer.[13] Such files *include, but are not limited to*:
    a. Climate science-related files containing:
        i. Specific and detail peer review charges issued by DOC-NOAA to: DOC-NOAA-established federal advisory committee members; DOC-NOAA-hired third-party contractors (including private parties and other federal agencies); individual peer reviewers; and/or peer review panel members.
        ii. Peer review comments DOC-NOAA received from: DOC-NOAA-established federal advisory committee members; DOC-NOAA-hired third-party contractors (including private parties such as National Research Council ("NRC") and other federal agencies; interagency entities (e.g., U.S. Global Change Research Program/Climate Change Science Program ("USGCRP/CCSP");[14] executive offices (e.g., Office of Management and Budget ("OMB"), Office of Science and Technology Policy ("OSTP"), etc.);[15] individual peer reviewers; and/or peer review panels. These files include, but are not limited to:
            A. Those relating directly or indirectly to discussions regarding how to address scientific uncertainties and/or reference the precautionary principle or precautionary approach within one or more of the individual USGCRP/CCSP climate science-related assessments, reports, studies, etc. developed by DOC-NOAA as 'lead' agency';

B. Those relating directly or indirectly to discussions within DOC-NOAA, between DOC-NOAA and EPA, and between DOC-NOAA and other federal agencies, between DOC-NOAA and private parties (e.g., NRC), and between DOC-NOAA and executive offices (e.g., OMB, OSTP, etc.) and interagency entities (e.g., USGCRP), regarding how to address scientific uncertainties and/or reference the precautionary principle or precautionary approach in the EPA Administrator's CAA Section 202(a) proposed and final findings.[16]

iii. DOC-NOAA responses addressing peer review comments received from DOC-NOAA-established federal advisory committee members, DOC-NOAA-hired third-party contractors (including private parties such as NRC, other federal agencies, interagency entities (e.g., USGCRP/CCSP), executive offices (e.g., OMB, OSTP, etc.), individual peer reviewers and/or peer review panels, as described in (ii.) above.

iv. DOC-NOAA-established federal advisory committee peer review reports, and DOC-NOAA hired third-party contractor (other than NRC) peer review reports, prepared for DOC-NOAA, in both full and summary versions (in addition to and as referenced in DOC-NOAA-established federal advisory committee meeting minutes), discussing individual peer reviewer and peer review panel comments made (including, but not limited to, those relating to scientific uncertainties and lack of scientific data supporting author text, etc.).

v. Public comments DOC-NOAA received in response to federal register notices the agency issued seeking public comments on:

A. Drafts of USGCRP/CCSP climate science-related assessments for which DOC-NOAA had 'lead' agency development responsibility; and

B. Prospectuses describing then-forthcoming USGCRP/CCSP climate science-related assessments for which EPA had 'lead' agency development responsibility.

vi. Interim and final conclusions drawn by DOC-NOAA, DOC-NOAA-established federal advisory committees, DOC-NOAA-hired third-party contractors (including private parties such as NRC and other federal agencies) and/or interagency entities (e.g., USGCRP/CCSP) and executive offices OMB, OSTP, etc.), regarding the substantive and procedural compliance of the final amended DOC-NOAA-authored assessments, studies and reports with the IQA and OMB and DOC-NOAA IQA-implementing guideline requirements applicable to HISAs.

2. All international, national, regional and local agency climate science-related files to the extent not included above, reflecting directly or indirectly DOC-NOAA's consideration of whether the agency, DOC-NOAA-established federal advisory committees, DOC-NOAA-hired third-party contractors, an interagency entity (e.g., USGCRP/CCSP) or executive offices (OMB, OSTP, etc.) and/or a peer review panel consisting of individual peer reviewers, would undertake the peer review or the management and/or oversight of the peer review of such assessments, and DOC-NOAA's final decisions concerning same, including

all such files relating to DOC-NOAA federal advisory committee and DOC-NOAA-hired third-party contractor selection processes actually utilized.

3. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA's establishment and/or use of government science advisory boards (and committees and subcommittees) and/or specially formed federal advisory committees via third-party contract, interagency agreement, etc. to undertake, manage or otherwise oversee the peer review of such assessments.

4. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA established federal advisory committee and/or DOC-NOAA-hired third-party contractor peer reviewer, second level-reviewer, and peer review panel selection processes actually utilized (*including by NRC*), and the criteria DOC-NOAA, DOC-NOAA-established federal advisory committees and/or DOC-NOAA-hired third-party contractors (including NRC) employed to evaluate professional credentials and relevant experience *and affiliations*, and DOC-NOAA's consideration, during and after the peer reviewer selection process, of perceived and/or actual independence and conflict-of-interest issues arising therefrom.[17] Such files *include, but are not limited to*:
   a. DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor review and testing performed of the adequacy of peer review candidates' prior peer reviews;
   b. DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor peer reviewer independence reviews conducted to assess the eligibility of individual peer reviewer candidates to participate *if employed by the agency or office producing the document, or if participating in an agency-funded program, or if involved in the peer review process of multiple agency-developed USGCRP-SAPs*, in whole or in part, and documentation of 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;
   c. DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor (including NRC) peer reviewer (and family) financial and non-financial conflict-of-interest reviews[18] conducted, at the time of peer reviewer selection and/or appointment to specially purposed federal advisory committees, and also throughout the entire course of peer review work until its completion, to reveal *inter alia*:
      i. Significant investments, consulting arrangements, employer affiliations, grants/contracts, potential financial ties to regulated entities, other stakeholders, and regulatory agencies;
      ii. Work as an expert witness;
      iii. Consulting arrangements, honoraria and sources of grants and contracts.

d. DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor (including NRC) determinations concerning panel composition and balance based on the expertise and diversity of subject-relevant scientific perspectives of prospective and actual panel members;

e. DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor (including NRC) measures employed to *avoid the repeated use of the same reviewer in multiple assessments* developed by DOC-NOAA and/or other federal agencies.

5. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor procedures established and followed for addressing actual or perceived conflict-of-interest and lack of impartiality (bias) issues that arise or are revealed after panel selection.

6. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor disclosure to prospective and selected peer review panelists, of information about the agency's peer reviewer selection process, including credentials, transparency and conflict-of-interest requirements.

7. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor disclosure to prospective and selected peer review panelists of the 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.

8. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor issuance and description of the nature and scope of agency peer review charges communicated to each individual peer reviewer participating on each peer review panel, and each peer review panel manager and overseer.

9. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor identification of scientific issues for each peer review panel/member.

10. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-

established federal advisory committee and/or DOC-NOAA-hired third party contractor facilitation of quality-based, focused and in-depth peer review panel discussions of the issues.

11. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA-hired third-party contractor review and verification of accuracy and clarity of peer review report contents, including:
    a. Peer reviewer comments and/or summaries produced consistent with and in satisfaction of specific peer review panel charges;
    b. Rationales supporting individual peer reviewer and peer review panel findings;
    c. DOC-NOAA responses to individual peer reviewer and peer review panel comments and to peer review panel report findings.

12. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly how DOC-NOAA's chosen method for addressing public stakeholder IQA requests for correction ("RFCs") of disseminated DOC-NOAA climate science-related assessments that DOC-NOAA knew or had reason to know would underlie the EPA Administrator's proposed Clean Air Act ("CAA") Section 202(a)(1) GHG findings had satisfied the relevant statutory and administrative requirements of the IQA and OMB and DOC-NOAA IQA-implementing guidelines.

13. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA website plans and actual DOC-NOAA website use to provide the public with an opportunity to participate in DOC-NOAA'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.

14. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA third-party contractor safeguards, if any, employed by such parties to ensure the verification of peer reviewer credentials and reputations, and the objectivity and credibility of the DOC-NOAA, DOC-NOAA-established federal advisory committee and/or DOC-NOAA third-party contractor process for selecting, managing and monitoring peer reviewers and peer review panels in connection with such assessments, from inception to completion;

15. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly DOC-NOAA contractual measures requiring DOC-NOAA-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 by such third-party contractors of prospective peer review candidates via internet background searches to identify potential conflicts of interest and appearances of bias or partiality;
b. Mandatory use by all such third-party contractors 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 agency oversight of DOC-NOAA-hired third-party contractor peer review management and oversight practices to ensure they follow agency peer review contractual guidelines;

16. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly all climate science-related agreements entered into by DOC-NOAA with the Intergovernmental Panel on Climate Change ("IPCC") to prepare contributions to, or to conduct, manage or oversee peer reviews of, the IPCC Working Groups I and II contributions to the 4th Assessment Report ("4AR"), including the summaries for policymakers.

17. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly the contents of all climate science-related agreements entered into between DOC-NOAA and EPA or between DOC-NOAA and the interagency USGCRP/CCSP in connection with DOC-NOAA's and EPA's participation in the USGCRP/CCSP, pursuant to which DOC-NOAA, as 'lead agency', would develop climate science-related assessments, reports and studies, and have them peer reviewed by DOC-NOAA itself (including a DOC-NOAA-established federal advisory committees), a third party-hired private contractor such as NRC, the interagency USGCRP/CCSP, and/or an executive office (e.g., OMB, OSTP, etc.), which agreement provisions *inter alia*:
    a. Required a certification to USGCRP/CCSP or to EPA via a memorandum or other formal or informal document, communication, etc. that each such DOC-NOAA-developed assessment which DOC-NOAA *knew or had reason to know* the EPA Administrator would rely upon for purposes of making CAA Section 202(a) findings, as reflected in EPA-TSD Table 1.1. (reproduced in Appendix 1 below) complied with and/or conformed to the highest and most rigorous level IQA and corresponding OMB and DOC-NOAA IQA-implementing guidelines applicable to highly influential scientific assessments ("HISAs");
    b. Required DOC-NOAA to ensure the receipt of author responses to individual peer reviewer and peer review panel comments, public comments and lead agency review comments, and required DOC-NOAA to demonstrate that they had informed authors how to comply with such HISA standards;

c. Required DOC-NOAA to substantiate each such certification, including by testing and verifying the reproducibility of the climate science findings authors cited as contained in climate science-related supporting literature;
d. Required EPA, NRC, or the interagency USGCRP/CCSP to verify that DOC-NOAA had substantiated such certification with respect to each such assessment for which it was responsible as 'lead agency' developer.

18. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly all climate science-related agreements entered into between DOC-NOAA and EPA.

19. All international, national, regional and local agency climate science-related files, to the extent not included above, reflecting directly or indirectly all climate science-related agreements entered into between DOC-NOAA and private parties (for-profit companies, non-profit environmental nongovernmental organizations ("ENGOs"), and public and private universities), especially those executed or in force between January 1, 2005 and December 31, 2009, during the development of the IPCC's 4th Assessment Report *and* during the development and peer review of the eight (8) USGCRP/CCSP synthetic assessment products for which DOC-NOAA had served as 'lead agency', setting forth all agreement provisions (*inter alia* identified counterparties, consideration/funding amounts, scope of services to be rendered, duration, renewal conditions, etc.), in connection with DOC-NOAA-funded programs supporting climate research, assessment, adaptation, mitigation, and the development of other climate-related services, etc., *including, but not limited to*:
   i. DOC-NOAA's Cooperative Institutes Program;[19] [20] *and*
   ii. DOC-NOAA's Climate and Societal Interactions ("CSI") Program,[21] including all of its subprograms:[22]
      A. Coastal and Ocean Climate Applications ("COCA") Program,[23] and all funded projects;[24]
      B. Regional Integrated Sciences and Assessments ("RISAs") Program,[25] and all funded projects:[26]
      C. International Research and Applications Project ("IRAP");[27]
      D. Sectoral Applications Research Program ("SARP");[28] and
      E. National Integrated Drought Information System ("NIDIS").[29]
   iii. DOC-NOAA's Modeling, Analysis, Predictions, and Projections ("MAPP") Program;[30] and
   iv. DOC-NOAA's Earth System Science (ESS) Program.[31]

II. Definitions Pertaining to EPA Climate Science-Related Peer Review Files (Records) Requested -

The following definitions apply to and are incorporated by reference within this ITSSD FOIA Request Clarification, and therefore, must be consulted:

1. "DOC-NOAA" -

The term "DOC-NOAA" as referred to above, includes, but is not limited to:

a. DOC-NOAA National Headquarters Office ("DOC-NOAA-HQ") Offices, including:
   i. Office of the DOC-NOAA Administrator ("the Administrator");
   ii. Office of International Affairs ("OIA") and the International Affairs Council
   iii. National Ocean Service ("NOS"), including the NOS Office of Ocean and Coastal Resource Management ("OCRM") and the National Centers for Coastal Ocean Science ("NCCOS");
   iv. Office of Oceanic and Atmospheric Research ("OAR"), including the OAR Climate Program Office ("CPO") and NOAA's eight (8) research laboratories;
   v. National Environmental Satellite, Data and Information Service ("NESDIS"), including its three national data centers and international and interagency affairs division;
   vi. National Marine Fisheries Service ("NMFS"), including its Office of Science and Technology;
   vii. National Weather Service ("NWS");
   viii. All current DOC-NOAA National Headquarters Office employees (including directors, associate/assistant directors, program directors, staff, etc.), as well as, all former National Office employees previously employed from January 1, 2005 through December 31, 2011.

b. DOC-NOAA Regional Collaboration Teams ("NOAA-CRCT", "NOAA-GLRCT", "NOAA-NARCT", "NOAA-PIRT", "NOAA-SECART" and "NOAA-WRCT") Offices, including:
   i. All Regional and related local branches offices with offices, departments, programs corresponding to those of the DOC-NOAA-HQ Offices identified above;
   ii. All current Regional and related local 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. DOC-NOAA-appointed members, including chairs and secretariats, of climate science-related advisory boards and federal advisory committees that DOC-NOAA-OAR had established, operated and/or terminated during the period spanning from January 1, 2005 through December 31, 2011, *including, but not limited to*:
   i. Climate Change Science Program (CCSP) Product Development Committee for Synthesis and Assessment Product 1.1 ("CPDC-S&A 1.1") (established 2005 and terminated 2006);
   ii. Climate Change Science Program CCSP Product Development Committee for Synthesis and Assessment Product 1.3 ("CPDC-S&A 1.3") (established 2006 and terminated 2009);
   iii. Climate Change Science Program (CCSP) Product Development Committee for Synthesis and Assessment Product 3.3 ("CPDC–S&A 3.3") (established and terminated 2008);

iv. CCSP Product Development Committee for Synthesis and Assessment Product 5.3 ("CPDC-S&A 5.3") (established 2006 and terminated 2009); and
v. CCSP Unified Synthesis Product Development Committee ("USPDC") (established 2008 and terminated 2009).

d. DOC-NOAA-established NOAA Science Advisory Board ("SAB")'s[32] *ad hoc* climate science-related working group – the Climate Partnership Task Force – which appears to have operated only during 2011.

e. DOC-NOAA and other federal agency-hired third-party 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., EPA,[33] DOE,[34] DOI-USGS,[35] DOT,[36] NASA,[37] USDA),[38] 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. Environmental nongovernmental organizations ("ENGOs") (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.[39]

3. "DOC-NOAA Climate Science-Related Files" -

"DOC-NOAA Climate science-related files" *include, but are not limited to*:

Any and all DOC-NOAA climate science-related data, records, statistics, models, assumptions, correspondences, communications, etc., including finals, drafts and notes, whether in current, stored and/or archived printed, digital, electronic (email 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, wherever held, *including but not limited to*:

a. By DOC-NOAA-HQ and DOC-NOAA Regional Collaboration Team and correspondent NOAA 'line' offices at DOC-NOAA office premises and at other DOC-NOAA on-site locations;
b. By current and former DOC-NOAA employees (including science advisory board employee members and agency federal advisory committee members) at:

i. DOC-NOAA office premises and other DOC-NOAA on-site locations;
ii. Non-DOC-NOAA office premises and other non-DOC-NOAA off-site locations (including, but not limited to, their personal premises);

c. By current and former DOC-NOAA third-party records retention, internet, and/or cloud service providers at:
   i. DOC-NOAA third-party service provider owned or leased business premises and other DOC-NOAA third-party service provider on-site locations;
   ii. Other non-DOC-NOAA off-site locations;

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

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

Such files shall include all those originated, transmitted, stored and/or archived by DOC-NOAA during the period spanning from January 1, 2005 through December 31, 2011.

4. "DOC-NOAA Climate Science-Related Peer Review Files" -

"DOC-NOAA climate science-related peer review files" include all climate science-related files noted above discussing or referring directly or indirectly to DOC-NOAA or DOC-NOAA-hired third-party contractors, **including those** reflecting that DOC-NOAA had acted pursuant to an "DOC-NOAA climate science-related agreement" to conduct, manage or oversee the peer review of any of the assessments, reports, studies, literature, etc. referenced in the EPA-TSD. The assessments, reports, studies, peer reviewed and 'gray' literature, etc. subject to such agreements *include, but are not limited to*, those:

a. Designated in Table 1.1 of the EPA-TSD as "core reference documents";[40]
b. Not designated in the EPA-TSD as "core reference documents", but otherwise expressly referenced in the EPA-TSD;
c. Not designated in the EPA-TSD as "core reference documents" and not expressly referenced in the EPA-TSD, but expressly referenced in other DOC-NOAA-developed scientific assessments, reports, and studies designated in the EPA-TSD as "core reference documents".

5. "DOC-NOAA Climate Science-Related Agreements" -

"DOC-NOAA Climate science-related agreements" include all:

a. Contractual or other reciprocal arrangements entered into between DOC-NOAA and third parties, including other federal agencies (e.g., EPA), foreign governments (and foreign governmental agencies), and/or intergovernmental organizations/bodies:
   i. Pursuant to which DOC-NOAA performed climate science-related peer review services (substantive peer review, peer review management and/or peer review oversight) jointly or solely on behalf of any such third parties,

with respect to any of the climate science-related assessments, reports and studies referenced in the EPA-TSD, in exchange for some form of consideration; *and*

ii. Pursuant to which any such third party (e.g., NRC) performed climate science-related peer review services (substantive peer review, peer review management and/or peer review oversight) jointly or solely on behalf of DOC-NOAA, with respect to any of the climate science-related assessments, reports and studies referenced in the EPA-TSD, in exchange for some form of consideration.

b. Such agreements *include, but are not limited to*:

i. DOC-NOAA Memorandums of Understanding ("MOUs");[41]

ii. DOC-NOAA Agreements entered into with EPA pursuant to EPA's cooperation authority under Clean Water Act Section 104(b)(2) and/or Clean Air Act Section 103(b)(2);[42]

iii. Economy Act (31 U.S.C. §1535) agreements;[43]

iv. Other more general domestic or international science & technology, research & development, analysis, cooperation, etc. agreements;

v. Arrangements subject to U.S. federal agency reporting pursuant to the Case-Zablocki Act (1 U.S.C. §112b).[44]

b. Contractual or other reciprocal arrangements entered into between DOC-NOAA and private parties, pursuant to which such private parties performed climate science-related observational, assessment, diagnostic or other services supporting the peer review of climate science-related assessments, reports, studies, authored by DOC-NOAA in exchange for some form of consideration *including, but not limited to*, those:

i. Focused on promoting environmental protection or conservation (e.g., The Nature Conservancy, Environmental Defense, etc.);

ii. Focused on promoting the research objectives of DOC-NOAA Regional Integrated Sciences and Assessments Programs ("RISAs"), DOC-NOAA Regional Climate Centers ("RCCs") Programs, or other federal agency programs;

iii. Focused on promoting the research and policy objectives of DOC-NOAA and other federal agencies, including EPA, as part of the DOC-NOAA-funded Cooperative Institute Program.

To further assist DOC-NOAA FOIA officials in identifying and locating the requested records, this ITSSD FOIA Request Clarification also includes and incorporates by reference an Annotated Addendum and several Appendices (I-V) that provide additional relevant and useful historical and contextual information.

In closing, ITSSD wishes to convey its appreciation, once again, for the opportunity to submit this ITSSD FOIA Request Clarification in explanation of its previously filed FOIA Requests which your offices has consolidated into **FOIA Request No. DOC-NOAA-2014-000714**. ITSSD also appreciates the opportunity to submit, under separate cover, the FOIA Fee Waiver Request

Clarification it has prepared explaining how this FOIA Request Clarification satisfies the six-factor fee waiver test of 15 C.F.R. §4.11(k)(1)-(3).

ITSSD hereby requests and shall look forward to receiving a response to this FOIA Request Clarification 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/President
ITSSD

ANNOTATED ADDENDUM
TO ITSSD FOIA REQUEST CLARIFICATION:
LEGAL BACKGROUND; HISTORICAL & CONTEXTUAL INFORMATION

A. Legal Background:

In *Massachusetts v. EPA* (2007)[45] 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".[46] 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).[47]

In the subsequently decided case of *Coalition for Responsible Regulation, Inc. ("CRR") v. EPA* (2012)[48] the DC 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."[49] The DC 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).[50]

CRR v. EPA (and related cases consolidated by the DC 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,[51] 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 EPA Administrator's findings.[52] 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)[53] and regulations governing GHG emissions from stationary source facilities under CAA Titles I and V (April and June 2010, respectively).[54] In addition, the EPA Administrator rejected, thereafter, stakeholders' petitions to reconsider the endangerment and cause or contribute findings (August 2010),[55] notwithstanding public stakeholder claims that EPA allegedly had failed to adequately respond to or address beforehand the comments they submitted under the Administrative Procedure Act[56] and the requests for correction they filed under the Information Quality Act ("IQA").[57]

The EPA 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.[58] EPA had embraced and publicly disseminated these SAPs as its own,[59] and the EPA Administrator had relied upon them in both reaching positive GHG endangerment and cause or contribute findings and promulgating economically significant national GHG emissions control regulations.

To better understand the context underlying the prior ITSSD FOIA Requests and this consolidated ITSSD FOIA Request Clarification, it is helpful to recall the pivotal role that these SAPs, which had been heavily based on IPCC findings, had served in informing the EPA Administrator's findings. To this end, it also is helpful to revisit the early court challenge launched in November 2006 by three environmental nongovernmental organizations ("ENGOs")[60] to ensure and expedite the production of these delayed SAPs is quite enlightening. It reveals the quite considerable scheduling constraints and political pressures under which the prior administration operated to produce and conduct peer reviews of all 21 SAPs (including the scientific literature underlying them) in abbreviated record time.

In *Center for Biological Diversity et al. v. Brennan et al.* (2007),[61] 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[62] 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 Global Change Research Plan…and (2) a Scientific Assessment analyzing the effects of global climate change."[63]

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…"[64] 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."[65]

In their response to plaintiff's complaints, defendants advised that they had already "initiated the process for producing a revised Research Plan",[66] but had not provided a specific date by which they would complete the revised Research Plan.[67] 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],"[68] which they had intended to complete "by end of 2007."[69]

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,"[70] 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."[71] 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.[72] On May 29, 2008, the White House National Science and Technology Council's Committee on Environment and Natural Resources[73] finally issued an assessment entitled, *Scientific Assessment of the Effects of Global Change on the United States*,[74] in compliance with the Court Order.

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"),[75] for which DOC-NOAA had previously sought public comments in a July 17, 2008 federal register notice.[76] DOC-NOAA had previously characterized the USP, which it had 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…"[77]

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.[78] 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,[79] 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."[80]

Due to the many public comments it had received and the likely significant revisions the document thereafter required, 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.[81] 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;[82] the USP, entitled, *Global Climate Change Impacts in the United States*, was later released in June 2009.[83] And, by January 16, 2009, it was reported that all of the remaining incomplete USGCRP/CCSP SAPs had been "completed."[84]

B. Administrative Facts and Context:

1. *The EPA-TSD and DOC-NOAA Involvement in IPCC Fourth Assessment Report*

On December 7, 2009, EPA released a Technical Summary Document ("EPA-TSD")[85] to explain how the EPA Administrator's positive endangerment and cause or contribute findings had been reached. The EPA-TSD and its contents had subsequently been "incorporated by reference"[86] by EPA into the federal registered-noticed GHG tailpipe emissions rules[87] and the prevention of significant deterioration and Title V GHG tailoring rules for stationary source facilities.[88] EPA thereafter also 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."[89]

The EPA Administrator's findings stated that the EPA-TSD had been 'peer reviewed' by "12 federal experts [two of whom were DOC-NOAA scientists][90] 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 Fourth Assessment Report ("AR4")".[91] 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."[92]

During 2007, DOC-NOAA had trumpeted how at least one DOC-NOAA-OAR scientist (Roger Pulwarty) "[was] a lead author of the chapter on adaptation options and practices [Chapter 17], and a contributing author on the freshwater resources and on the small islands chapters [Chapters 3 and 16] for Working Group 2…He was accompanied in Working Group 2 by several contributing authors and reviewers from NOAA."[93] However, it seems that Roger Pulwarty had been the only DOC-NOAA scientist who had contributed to the Working Group II portion of the IPCC AR4.[94] Meanwhile, thirteen (13) DOC-NOAA scientists, including Mr. Pulwarty, had 'peer reviewed' the WG II portion of the IPCC AR4.[95]

The facts also reveal that a considerable number of other scientists (no fewer than twenty-three (23) and fifty-five (55), respectively,) had been affiliated with universities that had likely participated in DOC-NOAA-funded[96] Cooperative Institute programs. These scientists had, respectively, contributed[97] to and/or reviewed[98] the WG II portion of the IPCC AR4, in a manner that can be presumed consistent with DOC-NOAA climate change policy objectives.[99]* Additional scientists that had been affiliated with other U.S. universities that had likely participated in different DOC-NOAA-funded programs (e.g., Regional Integrated Science Assessments ("RISA"),[100] Coastal Ocean Climate Applications ("COCA"),[101] and International Regional Applications Project ("IRAP")[102]) had also made contributions or had reviewed this portion of IPCC AR4.

Furthermore, the facts demonstrate that a large number (at least forty-seven (47)) of DOC-NOAA scientists had served either as "Lead Authors", "Contributing Authors" or "Coordinating Lead Authors" for the Working Group I portion of the AR4.[103] In addition, the facts show that a comparatively large number (at least thirty-seven (37)) of DOC-NOAA scientists had 'peer reviewed' the final Working Group I portion of the IPCC AR4,[104]fifteen (15) of whom had apparently, in part, reviewed their own work (i.e., they served both as contributors to and reviewers of the WG I report).[105] [106] Indeed, five (5) of the eight (8) listed editors of the WG I portion of the IPCC AR4 were DOC-NOAA scientists, two (2) of whom had already both contributed to and reviewed said report.[107] By comparison, EPA had not even been involved in the preparation of either

the Working Group I or II portions of the AR4, and had had only been minimally involved in the review of the Working Groups II and III portions of the AR4.[108]

In addition to U.S. government scientists, a large number of other scientists (approximately fifty-nine (59) and forty-nine (49), respectively,) that had been affiliated with universities which had likely participated in DOC-NOAA-funded[109] RISA, COCA, IRAP and Cooperative Institute programs had also contributed to[110] and/or reviewed[111] the WG I portion of the IPCC AR4. The financial and other interests of these scientists, thirteen (13) of whom had previously served both as contributing authors and reviewers of this portion of the AR4 assessment,[112] can reasonably be presumed to have been coterminous with those of DOC-NOAA climate change policy objectives

Considering how many DOC-NOAA-hired and funded scientists had been involved in authoring and reviewing the WG I report, it is no wonder that DOC-NOAA had chosen not to hail the significant contributions made by these scientists to such efforts. It also is not surprising that EPA, in emphasizing how the EPA Administrator's CAA Section 202(a)(1) findings had primarily relied on the contents of the EPA-TSD, had neglected to mention how significant a contribution DOC-NOAA rather than EPA had directly and indirectly made to the development of the IPCC's physical science report.

Of further interest, is DOC-NOAA's direct and indirect contribution to those portions of the Working Group I and II reports of the AR4 that address known and unknown scientific uncertainties. The WG I report defines "uncertainties" as

> "[a]n expression of the degree to which a value (e.g., the future state of the climate system) is unknown. Uncertainty can result from lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from quantifiable errors in the data to ambiguously defined concepts or terminology, or uncertain projections of human behaviour. *Uncertainty can therefore be represented by quantitative measures, for example, a range of values calculated by various models, or by qualitative statements, for example, reflecting the judgement of a team of experts*."[113]

Chapters 9 and 10 of the WG I report, in particular, discussed the notions of 'known uncertainties' and 'unknown uncertainties' and how they potentially impacted both reported observational climate findings as well as modeled future climate projections. Interestingly, approximately twenty-one DOC-NOAA-employed[114] and funded[115] scientists had made contributions to these chapters.

2. *DOC-NOAA's USGCRP/CCSP Activities Reflect De Facto Primary Role as Provider of National Climate Science*

Clearly, the above analysis reveals that DOC-NOAA had assumed a relatively greater role than had EPA in contributing to the IPCC AR4. As the discussion that follows will show, the DOC-NOAA also had assumed a greater responsibility than had EPA for developing the sixteen (16) USGCRP/CCSP SAPs that the EPA-TSD characterized as "core reference documents", upon which

the EPA Administrator's positive endangerment and cause or contribute findings had, in part, been primarily based. In addition to its involvement in these reports (between 2008 and 2010), NOAA also had "sponsored and participated in…the [2010] America's Climate Choices (ACC) study…conducted by the National Research Council."[116] Indeed, "[b]ased on the leadership roles that NOAA ha[d] held in the past, the White House [has] continue[d] to turn to NOAA to fill leadership appointments on interagency climate committees and working groups."[117]

DOC-NOAA's Science Advisory Board ("SAB")[118] and this Administration have long expressed interest in reorganizing NOAA and installing it as the lead federal agency in a proposed U.S. National Climate Service ("NCS");[119] congressional funding for the formation of an NCS, however, has not yet moved forward due to various ongoing concerns.[120] Since at least 2008, NOAA's SAB had identified NOAA as the most logical candidate to head such an effort because it "has more of the attributes and mandates within the domain of the physical climate system to play the lead role."[121] These attributes and mandates include its: "[p]redictive capacity of atmospheric and oceanic changes and long-term observations, which is already recognized as part of NOAA's mission; [a] mandate to operate at both the domestic and international level; [e]stablished relationships that exist with major stakeholders; [s]ophisticated scientific and computational infrastructure that is already in place; [t]he ability to build on existing capability rather than require a new bureaucracy be developed; [s]trong interest within agency for development of climate service; and [o]ffices well represented regionally, which enhances to ability for extension and outreach, as well as coordination with partners."[122]

3. *The EPA-TSD and "Core Reference Documents"*

The EPA-TSD essentially provided a summary and synthesis of numerous summarized and synthesized scientific reports, assessments and literature upon which the Administrator's findings were primarily based. Such documents were primarily those of the Intergovernmental Panel on Climate Change ("IPCC"),[123] the US Global Climate Research Program/Climate Change Science Program ("USGCRP/CCSP"),[124] and the National Research Council of the National Academies of Science ("NRC/NAS").[125] The EPA-TSD stated 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."[126]

The EPA-TSD, furthermore, listed twenty-eight (28) "core reference documents".[127] "These included [: 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) published between 2006 and 2009[;][128] the 2009 USGCRP scientific assessment[;][four (4)] National Research Council (NRC) reports under the U.S. National Academy of Sciences (NAS)[;] 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."[129] In addition, it also included the Arctic Council's 2004 climate impact assessment.[130]

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."[131]

Consequently, the EPA Administrator's GHG endangerment and cause or contribute 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."[132] 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).[133]

The record reveals that the USGCRP/CCSP had appointed DOC-NOAA as 'lead agency' for the development of eight (8) USGCRP/CCSP SAPs,[134] five (5) of which the EPA-TSD had designated as "core reference documents" (SAP1.1/CCSP(2006); (SAP1.3/CCSP(2008g)); (SAP2.4/CCSP(2008h)); (SAP 3.2/CCSP(2008d)); and (SAP3.3/CCSP(2008i)).[135] In addition, the EPA-TSD designated two (2) other DOC-NOAA-'lead agency'-developed climate science assessments as "core reference documents": *Global Climate Change Impacts in the United States* (2009) ("GCCI") and *State of the Climate in 2008* (2009)[136]

The "core reference document" designation had been significant for several key reasons. First, such designation had confirmed the EPA Administrator's "primary" and "heavy" reliance, in part, upon the five (5) USGCRP/CCSP SAPs *plus* two (2) additional climate assessments[137] in having reached positive GHG endangerment and cause or contribute findings that triggered EPA's subsequent

issuance of economically significant national mobile and stationary source GHG emissions control regulations. Second, such designation had suggested that if the EPA Administrator had primarily relied upon the three DOC-NOAA-developed SAPs (SAP2.2/CCSP(2007)), (SAP5.2/CCSP(2009)), and (SAP5.3/CCSP(2008)) that had *not* been expressly listed in the EPA-TSD as "core reference documents", those assessments would had to have been incorporated by reference within other EPA-TSD-designated "core reference documents" (i.e., within a DOC-NOAA-developed climate science report commonly referred to as the second national climate assessment or the "GCCI").[138]

Third, such designation was also important because of the number of "core reference documents" that had referenced IPCC assessments that had not been themselves designated as "core reference documents". For example, the EPA-TSD included only three IPCC assessments as "core reference documents",[139] but incorporated by reference many more IPCC assessments that had been referenced within the sixteen (16) USGCRP/CCSP SAPS, four (4) NRC assessments, and the one (1) DOC-NOAA climate assessment (GCCI) designated as "core reference documents".[140]

Fourth, such designation placed a heightened significance upon the IQA compliance certification statements appearing in each of the USGCRP/CCSP assessments that DOC-NOAA and other federal agencies had developed. The five (5) DOC-NOAA-developed SAPs and the DOC-NOAA-developed GCCI 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 DOC-NOAA IQA-implementing guidelines. These HISA statements were practically identical to those contained in other federal agency-developed USGCRP/CCSP SAPs designated as "core reference documents", save for a modification reflecting a reference to the IQA guidelines of the specific federal agency which had served as development 'lead' for that particular SAP.

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 Department of Commerce and NOAA pursuant to Section 515…], this CCSP Synthesis and Assessment Product is an "interpreted product" as that term is used in NOAA guidelines and is *classified as "highly influential*" (emphasis added).[141]

Such statements had demonstrated *prima facie* that these five (5) SAPs and the GCCI constituted HISAs, and thus, that they had been subjected to the highest and most rigorous level peer review, conflict-of-interest and transparency requirements.

DOC-NOAA's IQA Guidelines refer to "interpreted products" as one form of DOC-NOAA (government)-dissemination which is covered by the OMB and DOC-NOAA IQA Guidelines.[142] According to such Guidelines,

> "*Interpreted Products* are those that have been developed through interpretation of original data and synthesized products.[143] 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."[144]

These five (5) DOC-NOAA 'lead agency' SAPs and the DOC-NOAA-developed GCCI had also contained a statement certifying that said document *prima facie* satisfied all relevant and applicable IQA and DOC-NOAA IQA-implementing guideline requirements.

> "This Synthesis and Assessment Product, 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 Department of Commerce and NOAA pursuant to Section 515. *The CCSP Interagency Committee relies on the Department of Commerce and NOAA certifications regarding compliance with Section 515 and Agency guidelines as the basis for determining that this product conforms with Section 515*" (emphasis added).[145]

The administrative record, however, does not disclose the reasoning underlying DOC-NOAA's and the USGCRP/CCSP's classification of these documents as HISAs. It also does reflect that DOC-NOAA had publicly substantiated how its certification to the CCSP Committee and other federal agencies (especially to EPA) of DOC-NOAA IQA HISA compliance had actually been satisfied, as Section VII of the OMB *Peer Review Bulletin* requires.[146]

Because of the "core reference document" designation, DOC-NOAA, therefore, knew or had reason to know that the EPA Administrator would place primary weight on the IPCC assessments and the DOC-NOAA-developed USGCRP/CCSP assessments that had relied on them as the bases for the positive CAA Section 202(a)(1) findings that had been reached. As a result, DOC-NOAA had been obliged to ensure that the vetting processes underlying the development of such assessments had satisfied the highest and most rigorous level peer review, conflict-of-interest and transparency standards applicable to HISAs imposed by the IQA and OMB/DOC-NOAA IQA-implementing guidelines.

4. *The IPCC and USGCRP/CCSP Peer Review Processes in Action*

The EPA-TSD described "the peer review and publication approval processes of IPCC, CCSP/USGCRP and NRC[147] reports"; however, it offered little or no support for the EPA assertion that, "the comprehensiveness of these assessments and their review processes…provide[d] EPA with assurances that this material ha[d] been well vetted by both the climate change research community and by the U.S. government."[148] The EPA-TSD also offered little or no support for the EPA

assertion that "this document relie[d] on information that [was] objective, technically sound and vetted and of high integrity" and that "use of these assessments complie[d] with EPA's information quality guidelines".[149]

a. The IPCC Peer Review Processes in Action

Indeed, as the administrative record reflects, there are indications that DOC-NOAA would be hard-pressed to show how the IPCC's peer review procedures had been IQA-compliant, notwithstanding DOC-NOAA's considerable prior involvement in the (preparation and review of the) Working Group I and (the review of the) Working Group II portions of the AR4.[150] These facts cast significant doubt on the IQA-compliance of the many IPCC assessments and reports developed pursuant to them that the EPA-TSD designated as "core reference documents".

For example, the findings of a 2010 United Nations ("UN") Secretary General and IPCC Chair-commissioned report revealed systemic flaws in the IPCC's peer review processes and procedures.[151] 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.[152]

The IAC-2010 Report disclosed that established IPCC processes for flagging, critically assessing and listing unpublished or non-peer-reviewed sources had often been ignored, leading to AR4 lead-author review errors.[153] 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.[154] 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.[155] These systemic peer review process flaws go beyond the specific errors that had previously been identified by stakeholders.[156]

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.[157] The IAC-2010 Report, furthermore, expressed concern about the "lack of a conflict-of- interest and disclosure policy for IPCC leaders and Lead Authors".[158] 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".[159] Rather, "IPCC Secretariat…professional staff members…are employees of WMO and/or UNEP and are subject to their disclosure and ethics policies."[160] 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."[161] 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."[162] These systemic independence/conflict-of-interest flaws go beyond the specific errors previously raised by Petitioners.[163]

IPCC peer review processes, moreover, suffered from transparency failures. The author selection process lacked formal criteria which rendered the AR4 susceptible to political influence.[164] And, IPCC leaders and spokespersons often strayed into policy advocacy in violation of the organization's mandate.[165] These systemic transparency flaws go beyond the specific errors previously raised by stakeholders.[166]

These numerous systemic IPCC process and procedure failures raise serious doubts about the quality of the IPCC assessments and the DOC-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.[167] Such misplaced reliance on flawed IPCC processes, however, severely undermined DOC-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. These are precisely the very failures the IQA and the OMB and EPA IQA-implementing guidelines are meant to guard against.

Notwithstanding these findings, the IAC Board-appointed IPCC Review Committee had found that the IPCC AR3 and AR 4 "assessment process ha[d] been successful overall".[168] Interestingly, four (4) of the twelve (12) members of that Committee had been affiliated with universities that had likely hosted or participated in DOC-NOAA-funded projects.[169] Considering DOC-NOAA's extensive investment and involvement in the Working Group I portion of the IPCC AR4, and perhaps also the IPCC AR3, reasonable persons are compelled to question the extent to which those funding relationships had had any impact on the IPCC Review Committee's ultimate judgment.

b. <u>The USGCRP/CCSP Peer Review Procedures in Action</u>

The EPA-TSD, furthermore, 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."[170]

However, DOC-NOAA has not yet disclosed to the public any readily available and/or accessible evidence substantiating that such USGCRP/CCSP peer review processes and procedures operated in practice in the manner described above.

The following discussion provides a 'best efforts' evaluation, based on the limited information that is currently publicly available, about the peer review processes employed by DOC-NOAA and the USGCRP/CCSP in connection with DOC-NOAA's development of two (2) SAPs[171] and the GCCI.[172] Of the three documents, only the GCCI had been designated as a "core reference document. Each of these documents had been referenced in the EPA-TSD.[173] Only the comprehensive disclosure by DOC-NOAA of the records ITSSD requested in this FOIA Request Clarification is capable of revealing whether such processes had actually satisfied the highest and most rigorous level peer review, conflict-of-interest and transparency standards applicable to HISAs, within the meaning of the IQA and OMB and DOC-NOAA IQA-implementing guidelines.

SAP 1.1

DOC-NOAA established in 2005,[174] pursuant to the Federal Advisory Committee Act ("FACA"),[175] the Climate Change Science Program (CCSP) Product Development Committee for Synthesis and Assessment Product 1.1 ("CPDC-S&A1.1"), which it later terminated in 2006 following the report's completion.[176] It is ITSSD's understanding and belief that CPDC-S&A1.1 had been comprised of twenty-two (22) members, seven (7) of whom had been DOC-NOAA employees.[177] Six (6) of those seven (7) DOC-NOAA employees had previously served as contributors and/or reviewers of the Working Group I portion of the IPCC AR4.[178]

The record suggests that the federal advisory committee had been charged with developing/authoring SAP 1.1.[179] The federal advisory committee had also been comprised of four (4) other federal agency employees[180] and eleven (11) other scientists. Three (3) of those eleven (11) scientists had been foreign nationals (UK Met Office – i.e., foreign government personnel) who had made contributions to and reviewed the Working Group I portion of the IPCC AR4.[181] While it is not illegal for foreign government officials to serve on U.S. federal advisory committees,[182] it does suggest that they wielded considerable professional and political influence with DOC-NOAA and other IPCC members and shared similar views with DOC-NOAA officials concerning climate science-related issues that had persuaded DOC-NOAA officials to secure their assistance in developing SAP1.1. Another four (4) of the remaining eleven (11) committee members had served as contributors to and/or reviewers of the Working Group I portion of the IPCC AR4, and had affiliations with organizations that had likely participated in DOC-NOAA's funded Cooperative Institutes Program.[183]

Although the Peer Review Plan for SAP1.1[184] indicated that a final peer review report evaluating SAP1.1 had been issued, entitled, "Review of the U.S. Climate Change Science Program Synthesis and Assessment Product on Temperature Trends in the Lower Atmosphere", that report and the author(s) of it remain(s) inaccessible to the public. In addition, aside from the short statement on page x of SAP 1.1, there is no publicly available 'federal advisory committee 'charge', no publicly

available DOC-NOAA and/or author responses to such report, and no DOC-NOAA and/or author responses to public comments solicited and received in connection with said report.

SAP 2.2

The administrative record reveals that "the Agency Executive Committee (AEC), a "subcommittee of the interagency [U.S. Climate Change Science Program's Carbon Cycle Interagency Working Group] CCIWG [had] facilitated the development of [SAP 2.2].[185] Apparently, although DOC-NOAA had been designated by the USGCRP/CCSP as the 'lead agency' developer of this report, it was DOE which had been charged with producing it.[186] Among the many government and academic authors that had been selected to prepare this SAP, nineteen authors seem to have been selected notwithstanding their affiliations with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes.[187] The record shows that DOC-NOAA had worked with other agencies to identify and select qualified peer reviewers of the completed draft report.[188] Of the thirty-one (31) individuals who had performed the peer review of SAP 2.2, five (6) (19.4%) had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes.[189]

The peer review report had presumably been prepared by the interagency CCIWG, and it addressed several important issues. For example, Reviewer #1 had focused on the authors' treatment of scientific uncertainties.[190] This reviewer emphasized how the executive summary had "overstate[d] the certainty of the North American carbon budget relative to the global carbon budget" by attributing unsubstantiated significant numbers to the North American sink, failing to provide a reference to a given year, and stating that the global terrestrial sink was "quite uncertain".[191] This Reviewer's comments also indicated that the executive summary's omission, in part, of important information concerning the "temporal variability of the terrestrial sink" could have rendered strategic decision-making with respect to "terrestrial and biological sequestration" "highly risky" given the difficulties that a lack of short-term and long-term stability would have posed for carbon accounting.[192] Reviewers 2[193] and 6 had lodged similar comments regarding the SAP's failure to provide "uncertainty" ranges of the sources and sinks fluxes of carbon in North America", and emphasized that, "sinks…in most cases are *uncertain to within 50-100%*" (emphasis added).[194]

Reviewer 3's comments were somewhat broader, and identified "considerable variation in the treatment of uncertainties in point estimates of carbon sources, fluxes, and sinks among the various sections of the report, and rather questionable handling of estimates and their uncertainties in most sections."[195] Reviewer 24's comments, meanwhile, pointed out how the report had largely omitted any assessment, in technological and scientific terms, of U.S. "measurement and modeling capabilities on continental to global scale as needed to address the issue of management of carbon."[196] According to this reviewer, the report also not only lacked a framework for quantifying scientific uncertainties, but also failed to discuss how North American Carbon Program "NACP-supported [would have] reduced uncertainties."[197] And, Reviewer 25's comments emphasized the report's failure to discuss the scientific uncertainties surrounding the CO2 impact of terrestrial pools adjacent to continents, which "include freshwater inputs, groundwater inputs and coastal waters

exchanged with coastal zone systems (e.g. salt marshes)…[upon] "the atmosphere and open ocean".[198]

Unfortunately, the authors' responses to these comments, to the extent there were any, had been less than comprehensive.[199] Furthermore, although the administrative record does include peer review instructions that DOC-NOAA or the interagency group had supposedly distributed,[200] these disclosures do not reflect the minutes of any meetings held between the peer reviewers themselves and with the authors, or the availability of any detailed publicly accessible agency response to the peer review comments and responses thereto, beyond the abbreviated grid provided. There also is no evidence substantiating the steps outlined in the publicly available "Peer Review Approach"[201] document which indicated that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its September 2006 federal register notice soliciting such comments.[202]

Unified Synthesis Product – Global Climate Change Impacts (GCCI)

DOC-NOAA established in 2008,[203] pursuant to the Federal Advisory Committee Act, the Climate Change Science Program CCSP Unified Synthesis Product Development Committee ("USPDC"), which it then terminated in the following year (2009) following the report's completion.[204] It is ITSSD's understanding and belief that the USPDC had been comprised of twenty-eight (28) members who had been charged with developing the USPDC which eventually became known as the second national climate assessment[205] entitled, *Global Climate Change Impacts in the United States*.[206] It also is ITSSD's understanding and belief that eleven (11) peer reviewers had evaluated the USPDC/GCCI.[207]

The administrative record reveals that the U.S. government authors to this assessment included six (6) DOC-NOAA scientists, five (5) DOE scientists, and one scientist from each of NASA, DOE, DOI-USGS, DOT and USDA.[208] Five (5) of the six (6) DOC-NOAA scientists had served as contributors and/or as reviewers of the Working Group I and II portions of the IPCC AR4.[209] In addition, the record shows that of the fourteen (14) remaining non-government authors, ten (10) had been affiliated with universities that had likely participated in DOC-NOAA funded programs.[210]

Although the DOC-NOAA peer review plan for this assessment indicates that a peer review report had been issued, there is no readily accessible publicly available peer review report; nor is there any information concerning the criteria that had been employed to select the specific peer reviewers identified in this assessment report,[211] which included one (1) DOC-NOAA scientist who had served as both a contributor and reviewer of the Working Group I portion of the IPCC AR4.[212]

DOC-NOAA also has not disclosed any other information to the public about the peer review process related to this assessment. In particular, the public is currently unable to review the minutes of any meetings held between the peer review committee and between the members and the authors, agency responses to the peer reviewer comments and author responses thereto, or any evidence, prior to this assessment's release, that DOC-NOAA had adequately responded to the public comments

submitted during 2008 and 2009 in response to DOC-NOAA's July 2008 and January 2009 federal register notices.[213]

5. *The USGCRP/CCSP and NRC Peer Review Procedures in Action*

a. DOC-NOAA Contracted With NRC to Perform Third-Party Peer Review Services

To fulfill the data quality requirements to which it was subject under the IQA and applicable OMB and DOC-NOAA IQA-implementing guidelines, DOC-NOAA had secured the services and relied upon the expertise of a third-party contractor. In particular, DOC-NOAA had entered into six (6) climate science-related agreements with the National Research Council ("NRC"),[214] a division of the National Academy of Sciences,[215] pursuant to which the NRC had provided peer reviews[216] of the six (6) remaining DOC-NOAA-developed SAPs.[217] The following discussion provides a 'best efforts' evaluation, based on the limited information that is currently publicly available, about the peer review processes that the NRC had employed for this purpose upon which DOC-NOAA's IQA compliance certifications had relied. The EPA-TSD had designated five (5) of these (6) DOC-NOAA-developed SAPs as "core reference documents'.

The OMB Peer Review Bulletin provides that, "[a]s an alternative to complying with Sections II and III of this Bulletin [relating to "influential scientific information" ("ISI") of "highly influential scientific assessments" ("HISAs"), an agency may instead…(2) commission the National Academy of Sciences to peer review an agency draft scientific information product…"[218] The OMB Peer Review Bulletin provides, furthermore, that because "[t]he procedures of the NAS are generally quite rigorous…agencies should presume that major findings, conclusions, and recommendations of NAS reports meet the performance standards of this Bulletin."[219]

Notwithstanding this presumption, commentators have noted how the independent experts the NAS/NRC has commissioned to prepare peer reports of federal agency studies are neither infallible nor always political accountable. For example, allegations of NAS/NRC improprieties have been reported in several cases where politicians and agencies had sought advice on environmental and/or natural resource-related science-policy issues that were politically controversial and divisive.[220] According to one commentator, while "[o]utside peer review should be employed when there is strong reason to doubt the scientific integrity or credibility of an agency decision with important conservation or economic consequences…it should not be considered a panacea."[221]

That the usefulness and reliability of external peer review has remained the subject of ongoing debate[222] only seems to have exacerbated the risk of future episodes of NAS/NRC improprieties or negligence. While external peer review (of the type provided by NRC) can and does help to ensure scientific integrity, commentators have noted that "it is an imperfect tool for that purpose. At its best, peer review bears only an indirect relationship to scientific integrity, which is an individual and unverifiable virtue."[223] The ability of a peer reviewer to discern whether scientists' (authors') judgments fall within acceptable norms depends on whether the peer reviewer devotes sufficient time and effort, possesses "requisite expertise and actively practice[s] the virtues of objectivity and skepticism."[224]

Arguably, NRC Commissioners, upon employing the organization's screening mechanisms, should have been able to discern whether the research interests and agendas of prospective peer reviewers and second-level reviewers of contracted NRC peer review reports, prior to their selection, had been indirectly aligned or otherwise coterminous with those of the subject assessment's authors. However, this would have depended, in turn, on whether sufficient time, effort, expertise and objectivity have been devoted to such endeavors. This, too, is ultimately, an issue of personal integrity. Therefore, in light of the ongoing and divisive debates over both climate change,[225] which has been expressly acknowledged on at least one DOC-NOAA website,[226] and the usefulness of regulatory peer review, therefore, it cannot be said that the NRC's processes had been foolproof. This means that, while the inviolability of the NRC's peer review process can be presumed, that presumption is rebuttable.

Clearly, DOC-NOAA *knew or had reason to know* that the USGCRP/SAPs and other climate science-related assessments for which it had 'lead agency' responsibilities would serve, in part, as the primary basis for the EPA Administrator's then forthcoming CAA Section 202(a)(1) GHG endangerment and cause or contribute findings and result in the subsequent issuance by EPA of quite costly and politically controversial regulations. As a result, DOC-NOAA officials had likely (and should have) felt compelled to secure NRC's external peer review of those SAPs, trusting that, as the research arm of the NAS, NRC had remained "one of the most well respected and trusted scientific institutions in the United States."[227] Such political pressures also likely prompted DOC-NOAA to pursue this course of action even though agency IQA guidelines had already contained peer reviewer conflict-of-interest requirements "adapted [from] the National Academy of Sciences policy for committee selection with respect to evaluating the potential for conflicts" that the agency had committed itself to use.[228]

There is, at least, one relevant NRC conflict-of-interest policy rule that should have applied to the six (6) peer review contracts that DOC-NOAA had entered into with the NRC in the present case. That policy rule provides that,

> "[f]or any committee that will be used by the institution in the development of one or more reports to be provided by the institution to a sponsoring agency *for use in a government regulatory process*, the focus of the conflict of interest inquiry is on the identification and assessment of any interests that may be *directly* affected by the use of such reports in the regulatory process" (emphasis added).[229]

The rationale underlying this rule is apparently the "concern…that if an individual (or others with whom the individual has substantial common financial interests) has specific interests (primarily financial) that could be directly affected by the regulatory process, the individual's objectivity could be impaired."[230]

According to this rule, financial interests 'of concern' include research funding potentially affected by the outcome of the regulatory process or otherwise directly related to the subject matter of the regulatory process and controlled by the sponsor:

> "Receiving current research funding from a party that would be directly affected by the regulatory process would constitute a conflict of interest (1) if the research funding could be directly affected by the outcome of the regulatory process or (2) the research is directly related to the subject matter of the regulatory process and the investigator's right to independently conduct and publish the results of the research is limited or controlled by the sponsor."[231]

Had this policy rule been applied vigorously and actually tested in the present case, it arguably would have revealed that the DOC-NOAA-funded research programs with which many of the NRC Report Review Committee members and second-level reviewers had been involved both directly and indirectly vis-à-vis their affiliated institutions had constituted conflicts-of-interest. If the NRC had properly enforced such policy rule, it arguably would have (and should have) either triggered the disqualification of such reviewers or the divulgement of their financial interests in such funding programs prior to their selection.

As the administrative record demonstrates, below, the peer review procedures actually employed by NRC appear to have overlooked serious issues regarding actual or perceived peer reviewer independence, conflicts-of-interest and panel balance. In addition, the few peer review process-related records that DOC-NOAA has made publicly available preclude informed analyses capable of resolving the questions these issues raise.

Only the comprehensive disclosure by DOC-NOAA of the records ITSSD requested in this FOIA Request Clarification is capable of revealing whether such processes had actually satisfied the highest and most rigorous level peer review, conflict-of-interest and transparency standards applicable to HISAs, within the meaning of the IQA and OMB and DOC-NOAA IQA-implementing guidelines.

b. <u>The Third-Party Contracted Peer Review Services NRC Performed</u>

SAP 1.3

DOC-NOAA established in 2006,[232] pursuant to the Federal Advisory Committee Act, the Climate Change Science Program CCSP Product Development Committee for Synthesis and Assessment Product 1.3 ("CPDC-S&A 1.3"), which it later terminated in 2009 following the report's completion.[233] It is ITSSD's understanding and belief that the CPDC-S&A1.3 had been comprised of twelve (12) members,[234] four (4) of whom (1/3) were DOC-NOAA employees.[235] All six (6) of the remaining members had been affiliated with organizations that either likely hosted or participated in DOC-NOAA-funded Cooperative Institute Programs,[236] and two (2) of the six (6) remaining members had themselves contributed to and/or reviewed the Working Group I portion of the AR4.[237] The record reflects that the federal advisory committee and its members had been charged with developing/authoring SAP1.3, as the SAP report itself[238] and a NOAA webpage entitled "Peer Review Plans"[239], strongly suggest. That four (4) DOC-NOAA employees and six (6) non-government scientists who had worked for organizations affiliated with DOC-NOAA-funded

programs had authored the report raises questions concerning the level of possible "independence" and "financial conflict of interest" issues surrounding the production of this report.

As DOC-NOAA's Peer Review Plan for SAP1.3 reveals,[240] the peer review report for SAP1.3 had been prepared under the auspices of the respected National Research Council,[241] pursuant to "NSF grant number ATM-0455946" on behalf of "the National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA)."[242] NRC had appointed a committee of individuals (the "National Research Council Report Review Committee")[243] to provide a peer review of a draft version of SAP1.3[244] The NRC peer review report was then subsequently reviewed by six (6) other individuals selected by NRC.[245]

Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding several of the NRC Report Review Committee members. Apparently, four (4) of seven (7) Committee members had been affiliated with universities that likely participated in DOC-NOAA-funded Cooperative Institutes.[246] Similar issues arise, as well, with respect to several of the individuals NRC had selected to review the Committee's peer review report. For example, three of those individuals seem also to have been affiliated with organizations that had likely participated in DOC-NOAA-funded Cooperative Institutes,[247] and one of those three had simultaneously worked for DOE.[248]

Although a number of NRC Committee findings are of interest to a broad public audience, there appears to be no publicly available or accessible record that sets forth DOC-NOAA responses to those comments, especially the most major among them. For example, the Committee found that "a significant fraction of the SAP 1.3 results [was] not compared with peer-reviewed literature" and consequently encouraged the authors "to compare their results with the peer-reviewed literature whenever possible,[249] It also reaffirmed author observations that, "substantial efforts are needed to correct biases and discontinuities in various observational data before they are assimilated into reanalysis."[250] In addition, the Committee pointed out that, although "t[]he title and contents of the document…correctly suggests that reanalysis data is useful for attributing the causes of observed climate change…[t]his link [was] often missing and attribution [was] not tied to reanalysis directly."[251]

In particular, the Committee had identified a mismatch between chapters 2 and 3 which could be resolved by amending the document *inter alia* as follows: 1) "stress[ing] that climate science needs a more quantitative way to bring multiple lines of evidence together, and that reanalysis provides an important means to do so"; 2) "clearly explain[ing] why reanalysis is needed and how reanalysis is connected to attribution"; and 3) "highlight[ing] the difficulties in connecting attribution to reanalysis and what data and steps are needed to overcome these challenges." The Committee also noted that, the reviewed draft had been "written largely for a technical audience" though the "intended audiences as outlined in the prospectus include[d] those people engaged in scientific research, the media, policymakers, and the general public."[252]

Furthermore, the Committee suggested using "risk type language" as "better way to attribute causes of climate change", as well as a "probabilistic approach to explain uncertainties."[253] In this regard, it

found that the draft report had "lack[ed]…[d]etails about the methods, data sources and assumptions used," which it found critical to meaningfully interpreting data that had not been "compared to the peer review literature."

> "Specific details about the methods, data and assumptions used in this assessment need to be provided within the document to enable a meaningful interpretation of the data, *especially those that are not compared to the peer-reviewed literature*. The committee suggests that the report be revised *to rely more on the published literature as opposed to the authors' original research. At present there is no discussion about how statistical significance was determined. The statistical significance of certain trends is discussed and judgments are made about the relative significance, yet there is no description of how this was calculated*. This is particularly important for the unpublished results calculated by the authors… *"[T]he document relies too heavily on original, non-peer-reviewed work.* The authors should include more discussion of findings in the scientific literature and how the unpublished findings compare with previously published findings (especially for sections 3.1 through 3.3)" (emphasis added).[254]

The NRC Committee had also recommended that the text or an appendix disclose the "technical details regarding the previously-unpublished calculations and syntheses of climate model output in Chapter 3".[255]

Considering the relatively new method of climate science "reanalysis" that the agency had employed in SAP 1.3,[256] and the need to ensure the public that the scientific process of review underlying the agency's use of such science is reliable, DOC-NOAA should have publicly disclosed more records than are currently available. While there is currently available a peer review agenda and publicly accessible peer review report, there are no publicly available author comments, agency responses to peer reviewer or author comments, minutes of meetings convened among peer reviewers and between peer reviewers and authors, or a committee charge document. In addition, there is no evidence that DOC-NOAA had received, considered or responded to any public comments submitted following the April 2008 federal register notice issued to solicit such comments.[257] Finally, neither DOC-NOAA nor NRC has yet provided any information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

SAP 2.4

The administrative record reflects that, although DOC-NOAA had been designated as the 'lead agency' developer of SAP 2.4, this SAP had been produced by five (5) DOC-NOAA scientists in conjunction with six (6) NASA scientists, with relatively smaller contributions having been made by other federal agencies.[258] While only one (1) of six (6) NASA authors had reviewed the Working Group I portion of the IPCC AR4,[259] all five (5) DOC-NOAA authors had either contributed to and/or reviewed that assessment.[260]

As DOC-NOAA's Peer Review Plan for SAP2.4 reveals,[261] the National Research Council had undertaken to provide DOC-NOAA with an independent peer review of SAP 2.4,[262] pursuant to DOC-NOAA Contract No. DG133R07SE2247.[263] NRC thereafter appointed an *ad hoc* committee of nine (9) individuals (the "National Research Council Report Review Committee") to provide this review.[264] Six (6) other individuals selected by NRC subsequently reviewed a draft of the NRC peer review report.[265]

Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding certain of the NRC Report Review Committee members. Apparently, two (2) of nine (9) Committee members had been affiliated with universities that likely participated in DOC-NOAA-funded Cooperative Institutes.[266] Similar issues arise, as well, with respect to two of the six (6) scientists NRC had selected to review the Committee's peer review report. For example, such individuals also had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes.[267]

With respect to the substance of the peer review report, NRC Review Committee noted how SAP2.4 constituted "the first-ever attempt to assess the specific contribution of the United States to ozone-depleting substances and ozone recovery."[268] Given this noteworthy achievement, the NRC Review Committee emphasized the need to make certain major changes to the report text.

First, the SAP should explain ozone's importance to the climate system and discuss the need to scientifically "treat[]…[] ozone depletion, ozone recovery, and climate change problems" in an integrated manner.[269] According to the Committee, "[t]he issue of climate change and ozone represent[ed] an area where SAP 2.4 [was] severely lacking."[270] It recommended that the "authoring team should provide an equal balance between how climate change might affect ozone (which is treated well in SAP 2.4) and how ozone changes may affect climate (which is lacking in SAP 2.4)."[271] The Committee also suggested that the SAP discuss "how future ozone could be affected by climate policy in the United States and throughout the world" (e.g., the impacts of future growth in methane and nitrous oxide upon the ozone layer).[272]

Second, it highlighted the need to improve the estimates of "U.S. contributions to production, consumption, and emissions of ozone-depleting substances (ODSs)" prior to the mid-1970's and up through the 1990's, despite "the significant uncertainty" arising from "the lack of available data".[273] In this regard, the Committee noted how the draft SAP had failed to "provide enough discussion of uncertainties in current understanding and projections," and recommended that the SAP "emphasize the uncertainty in U.S. emission estimates".[274]

The administrative record, however, does not reflect the minutes of any meetings held between the NRC Review Committee members and between the members and the authors, the availability of any publicly accessible agency response to the peer reviewer comments and author responses thereto, or any evidence that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its March 2008 federal register notice soliciting such comments.[275] Finally, neither DOC-NOAA nor NRC has yet provided any

information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

SAP 3.2

The administrative record reflects that SAP3.2 had been developed predominantly by five (5) DOC-NOAA scientists, three (3) NCAR-NSF scientists and one (1) NASA scientist.[276] Since two (2) of the DOC-NOAA scientists had previously served as contributors to and/or reviewers of the Working Group I portion of the IPCC AR4,[277] SAP3.2, like those discussed above, reflects that substantive and policy input.

As DOC-NOAA's Peer Review Plan for SAP3.2 reveals,[278] SAP3.2 had been peer reviewed by the National Research Council[279] at the National Science Foundation's and DOC-NOAA's request pursuant to grant Contract No. ATM-0455946. NRC thereafter appointed an *ad hoc* committee of eight (8) individuals (the "National Research Council Report Review Committee") to provide this review.[280] NRC also selected five (5) other individuals to review the NRC Committee peer review report.[281]

Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding certain of the NRC Report Review Committee members. Apparently, four (4) of eight (8) (50%) of the Committee's members had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes.[282] Similar issues arise, as well, with respect to two of the five (5) scientists NRC had selected to review the Committee's peer review report. For example, three (3) of these five (5) (66.67%) scientists also had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes, one of whom was from the very same university as one of the peer reviewers (University of Colorado).[283] In addition, one of the NRC Committee's peer reviewers of SAP3.2 had previously reviewed the NRC Committee peer review reports that had been prepared for SAPs 1.3 and 2.4,[284] while one of the NRC-selected reviewers of the NRC Committee peer review report for SAP3.2 had previously served along with such individual in reviewing the NRC Committee peer review report for SAP2.4.[285]

As far as the substantive peer review comments were concerned, the NRC Committee had focused, in part, on two major issues: 1) SAP3.2's lack of details about the models used and statistical methods employed;[286] and 2) its lack of discussion explaining "the state-of-the-science, the problems in methodology adopted in the current models, and the most uncertain factors in the current research regarding the effect of short-lived species on climate."[287]

To address the absence of details concerning the models used in the assessment, the NRC Committee had recommended that it be revised to contain a clearer presentation of "[m]odel resolution, inputs, reactive chemical mechanisms, emissions assumptions,…,removal mechanisms, and residence times".[288] clearly presented. To address the absence of sufficient detail explaining how experiments had been run (e.g., how emissions from radiatively active species had been predicted as compared to prescribed concentrations thereof, and the extent to which such emissions "vary temporally and

spatially"), the NRC Committee recommended the inclusion of more technical details in the text and/or in a descriptive table.[289] And, to address the absence of details concerning applied statistical methods, the NRC Committee peer review report recommended the use of an appendix to "clearly describe the statistical approaches used to determine the relative significance of trends and to explain the reasons and rationales underlying the judgments that had been made."[290]

Based on its review of SAP3.2, the NRC Committee had concluded that two most critical types of uncertainties surrounding short lived species were "emissions and the indirect effect."[291] Consequently, the Committee recommended that, as part of the SAP's discussion of the importance of short-lived GHGs in projecting future climate, the SAP should also discuss the extent of any "differences between uncertainties in processes [which represent the current state of knowledge] and uncertainties in future emissions".[292] In addition, the revised SAP3.2 should mention how, "with further research, uncertainties in chemical and physical processes can be ironed out", while acknowledging that uncertainties surrounding future emissions are likely to remain.[293]

While DOC-NOAA has made the NRC Committee's peer review report readily accessible for public review, the administrative record, however, does not reflect that DOC-NOAA has disclosed any other information to the public about the related peer review process. In particular, the public is currently unable to review the minutes of any meetings held between the NRC Review Committee members and between the members and the authors, agency responses to the peer reviewer comments and author responses thereto, or any evidence that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its December 2007 federal register notice soliciting such comments.[294] Finally, neither DOC-NOAA nor NRC has yet provided any information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

SAP 3.3

DOC-NOAA also established in 2006,[295] pursuant to the Federal Advisory Committee Act, the Climate Change Science Program (CCSP) Product Development Committee for Synthesis and Assessment Product 3.3 ("CPDC–S&A 3.3"), which it later terminated in 2008 following the report's completion.[296] It is ITSSD's understanding and belief that the CPDC–S&A3.3 had been comprised of forty-four (44) members who had been charged with developing SAP 1.3.[297] Thirteen (13) of these member-authors had been DOC-NOAA employees[298] who had served as contributors and/or authors to the Working Group I and II portions of the IPCC AR4.[299] Six (6) of the those authors had been affiliated with organizations that had likely participated in DOC-NOAA-funded Cooperative Institutes,[300] and at least one (1) of those six (6) had served as both a contributing author to and reviewer of the WG I portion of the IPCC AR4, and as a contributing author to SAP 1.3.[301] Furthermore, four (4) other authors had served in foreign (Canada and United Kingdom) governments.[302] These affiliations and work on other SAPs at least, raise the specter of foreign influence, if not, also "independence" and/or "conflict-of-interest" issues.

The peer review report had been prepared under the auspices of the National Research Council,[303] pursuant to a funded "contract from the National Oceanic and Atmospheric Administration under grant number DG133R-04-CQ-009, TO#27."[304] The NRC had appointed a committee of eight (8) individuals (the "National Research Council Report Review Committee")[305] to provide a peer review of a draft version of SAP3.3.[306] The NRC appointed a second group of six (individuals) to review the NRC Committee peer review report.[307]

Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding several of the NRC Report Review Committee members. Apparently, three (3) of eight (8) Committee members had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institutes,[308] one of whom also had served as a reviewer of the WG I portion of the IPCC AR4.[309] Similar issues arise, as well, with respect to one of the individuals NRC had selected to review the Committee's peer review report. For example, such individual also had been affiliated with an organization that had likely participated in DOC-NOAA-funded Cooperative Institutes.[310]

With respect to the substantive peer review of this assessment, the NRC Review Committee noted how SAP3.3's content had been "weighted excessively toward tropical cyclones" even though "they are but one of several types of extreme events with significant socio-economic consequences."[311] In addition, the Committee pointed to "insufficiently supported…[author] claims of trends in extreme events" and to the authors' "loose[] use" of the term "trend" which had been "often interchanged with [the terms] 'variation' or 'increase'".[312] It also emphasized that the "[k]ey issues [to be addressed were] whether a given time series is long enough to infer or deduce a trend, whether the underlying data are of sufficient homogeneity to draw conclusions, and whether the trend is statistically significant."[313] The NRC Review Committee recommended that the terms 'trend', 'variation' and 'increase' "should be associated with precise statistical definitions", and that "when statements are made, authors should indicate whether the claim is based on rigorous statistical analysis of a particular dataset (or datasets), expert elicitation, or the informed judgments of the authors."[314]

In its comments, furthermore, the NRC Review Committee emphasized that the report should elaborate upon "[t]he levels of uncertainty associated with trends (both observed and projected) in various types of extreme events." For example, with respect to each "particular type of extreme event or variable" mentioned, the Committee recommended that the report discuss "the underlying scientific and technical reasons for that uncertainty, and…its implications for projected trends in the extreme event or variable in question."[315]

Moreover, the Committee expressed concern regarding the authors' frequent practice of citing works that would not likely be available before the public release of the SAP, and cautioned them not to draw "too heavily on papers and information that [were] not yet scientifically mature." The Committee recommended that the authors "minimize [their] reliance on 'grey literature' and non-refereed works."[316]

The Committee also recommended that the authors strengthen their discussion of drought and ensure that it is consistent and not in conflict from chapter to chapter. It also noted how the authors had used certain apparent drought-related "trends for particular geographic regions" as the basis for "mak[i]ng] statements on broader geographic trends" that were "not justified".[317] In addition, the Committee recommended that the report "address the uncertainty associated with climate model design (e.g., the model treatment of land-surfaces and parameters) and its impact on model representation of drought conditions."[318]

Although DOC-NOAA has made the NRC Committee's peer review report readily accessible for public viewing, the administrative record, however, does not reflect that DOC-NOAA has disclosed any other information to the public about the related peer review process. In particular, the public is currently unable to review the minutes from any meetings held between the NRC Review Committee members and between the members and the authors, agency responses to the peer reviewer comments and author responses thereto, or any evidence that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its August 2007 federal register notice soliciting such comments.[319] Finally, neither DOC-NOAA nor NRC has yet provided any information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

SAP5.2

SAP5.2 had been peer reviewed by the National Research Council at the request of "the National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA) under NSF grant number ATM-0455946."[320] NRC thereafter appointed an *ad hoc* committee of twelve (12) individuals (the "National Research Council Report Review Committee") to provide this review.[321] NRC also selected seven (7) other individuals to review the NRC Committee peer review report.[322]

Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding certain of the NRC Report Review Committee members. Apparently, six (6) of twelve (12) (50%) of the Committee's members had been affiliated with universities that likely had likely participated in DOC-NOAA-funded Cooperative Institute and RISA programs at that time.[323] In addition, two (2) NRC Report Review Committee members had previously contributed to and/or reviewed the Working Group I,[324] II and/or III[325] portions of the IPCC AR4. Furthermore, four (4) of the twelve (12) (33.33%) Committee members had served previously as reviewers of other NRC Report Review Committee peer review reports.*[326] Moreover, three (3) of the seven (7) (43%) reviewers of this peer review report had been affiliated with universities that had likely participated in DOC-NOAA-funded Cooperative Institute and RISA programs.[327] Finally, one of the reviewers of this peer review report had served previously on the NRC Report Review Committee which had prepared the peer review report for SAP3.3.[328] Considering the NRC Report Review Committee members' affiliations, their prior work on IPCC AR4, and the previous roles they had served for the NRC, it is surprising that the NRC's conflict-of-interest, independence and balanced panel rules were not more strictly invoked.

The substantive comments submitted by the NRC Report Review Committee are notable insofar as they confirmed the unlikelihood that the final version of SAP5.2, as released, would be comparable to the early draft reviewed by the Committee. Apparently, since the draft SAP 5.2 document reviewed by the Committee had "originated before the prospectus itself [had been] finalized", the various goals set forth in the prospectus had not yet been finalized at the time of review and had not been included in the review draft. Consequently, the Committee had been unable to assess whether all of the prospectus' goals (namely, those not yet articulated or finalized at the time of review) had been satisfied.[329] This fact alone renders the NRC peer review of SAP5.2 of questionable value.

The Committee's review focused on the two of the larger goals that had been discernible – the need to "address all of the specified audiences", and the need to provide an "assessment of the full range of 'best practices approaches' for characterizing, incorporating and communicating uncertainty".[330] Yet, even with respect to these two goals, the Committee had decisively concluded that "[i]t [would] take a substantial revision of the current document or the production of a companion document, both of which would require the involvement of additional authors, to address these larger issues and additional audiences."[331]

The most intriguing aspect of the NRC Committee peer review report is its recommendations for broadening the discussion of uncertainty. For example, the report suggests that the authors' discussion move beyond Baynesian inferences of probability[332] to include presumably, precautionary inferences of possibility? In particular, "[t]he committee would like to see a discussion in this chapter about 'surprise'".[333] Generally speaking, Bayesian probability theory provides a mathematical framework for performing inference, or reasoning, using probability. The probability of an event occurring is determined by the hypotheses that are first posited, based on prior knowledge, against which the probability of known or observed data are then compared. In this way, data are employed and considered as they are 'learned' to evaluate the relative truth of the hypotheses which are based on "one's knowledge of how one expects the data to look given that the hypothesis is true."[334] As compared to traditional statistical (frequentist) methods which "have their hidden assumptions and tricks built into them…one of the advantages of Bayesian probability theory is that one's assumptions are made up front, and any element of subjectivity in the reasoning process is directly exposed."[335]

A 'precautionary inference', by comparison has been described as "'inferences to the best explanation,' 'diagnostic induction,' 'diagnostic arguments,' or 'differential diagnosis.'"[336] According to one advocate of this approach

> "An inference to the best explanation involves a process of reasoning. Scientists consider different plausible explanations of the phenomena in question; take into account all the relevant and available evidence that assists explanation, as well as evidence that might help distinguish between explanations; piece the relevant evidence together in the most plausible way; and then judge which of the competing explanations has the best support. Several factors guide a scientists' reasoning process: skill in making plausibility judgments, background knowledge, understanding of possible causes, or explanations of circumstances that need

> explanation. The plausibility of a causal inference depends importantly on an expert's skill, understanding, and knowledge of the evidence in question; there is no set of necessary and sufficient conditions that guide causal inferences." [337]

In other words, it is an approach based on the weight of multiples lines of evidence considered together rather than on the strength of one or more lines of evidence considered alone.[338] Another supporter of precautionary inferences distinguishes between a 'weight-of-the-evidence' ("WOE") and 'strength-of-the-evidence ("SOE") approach as follows:

> " [(SOE] is associated with the gravitas and relevance of information related to a specific indicator, such as the number of tumors produced in animals. In contrast, WOE includes all varieties of evidence, positive and negative, mechanistic and nonmechanistic, in vivo and in vitro, as well as human and animal studies. In risk assessment, the trend has been to widen the lense of relevant empirical and theoretical evidence, thus moving from approaches that utilize 'strength of evidence" to those that utilize WOE."[339]

The final version of SAP5.2 appears to embrace the WOE approach tied to the precautionary inference in situations where data, scientific understanding and the predictive capacity of models is limited. "In such circumstances, the best strategy is to ask a number of leading experts to consider and carefully synthesize the full range of current scientific theory and available evidence and then provide their judgments in the form of subjective probability distributions."[340]

In addition, the report suggests that the authors' discussion move beyond "rational analysis of uncertainty by individuals" to include "group processes of decision making and the role that emotions play".[341] The Committee had reasoned that, when people are faced with complex issues that "involve uncertainty in terms of potential outcomes…[their] decisions are most often made in groups and in institutional settings",[342] which, in turn, can serve to help define their view and emotions toward uncertainty. In other words, since groups typically have their own sets of rules and operating dynamics, "[p]eople's orientations to their groups and their adherence to the rules of the group determine important aspects of their attitudes toward risk and uncertainty."[343] Consequently, "decision making can (and perhaps ought to) be modeled as social rationality."[344]

Indeed, the final SAP5.2's discussion of behavior decision theory appears to have embraced this recommendation and relied upon several of the NRC peer review report references to behavioral decision making (pp. 23-24). It noted that, "most important real-world decision problems…get worked out and implemented through organizations," which have certain positive features that ensure the success of coping with uncertainty, rather than individually. In addition, it provided that, in most such situations, "formal analysis plays a subsidiary role to other factors, and in some cases, emotion and feelings may play an important role."[345] The authors also highlighted the use of the "precautionary principle' as "decision strategy often proposed for use in the face of high uncertainty" that presumably evoke intensified emotions and feelings.[346]

In sum, while the DOC-NOAA and NRC have made the NRC Committee's peer review report readily accessible for public review, the administrative record, however, does not reflect that DOC-NOAA has disclosed any other information to the public about peer review process surrounding the development of this SAP. In particular, the public is currently unable to review the minutes of any meetings held between the NRC Review Committee members and between the members and the authors following the preparation of subsequent drafts. Nor has any information been provided regarding author and agency responses to the peer reviewer comments. In addition, no evidence has been provided showing that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its April 2008 federal register notice soliciting such comments.[347] Finally, neither DOC-NOAA nor NRC has yet provided any information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

SAP5.3

DOC-NOAA established in 2006,[348] pursuant to the Federal Advisory Committee Act, the Climate Change Science Program CCSP Product Development Committee for Synthesis and Assessment Product 5.3 ("CPDC-S&A5.3"), which it later terminated in 2009 following the report's completion.[349] It is ITSSD's understanding and belief that the CPDC–S&A5.3 had been comprised of twenty-six (26) members who had been charged with developing SAP 5.3.[350] The record reflects that the governmental authors had consisted of four (4) NOAA officials and one (1) official from each of DOI-USGS, NASA, DOE and USDA.[351] In addition to a group of four (4) for-profit companies and nonprofit institutes,[352] the record also reflects that fourteen (14) university scientists had served as authors of SAP5.3, twelve (12) of whom were affiliated with universities and/or nonprofit institutes that were likely recipients of DOC-NOAA grant funding.[353]

As DOC-NOAA's Peer Review Plan for SAP5.3 reveals,[354] SAP5.3 had been peer reviewed by the National Research Council at the request of the National Academy of Sciences and the Department of Commerce pursuant to Contract/Grant No. DG133R07SE2248.[355] NRC thereafter appointed an *ad hoc* committee of seven (7) individuals (the "National Research Council Report Review Committee") to provide this review.[356] NRC also selected four (4) other individuals to review the NRC Committee peer review report.[357] Several questions arise, however, concerning the level of independence and possible conflict of interest issues surrounding certain of the NRC Report Review Committee members. Apparently, four (4) of seven (7) (57%) of the Committee's members had been affiliated with universities that likely had likely participated in DOC-NOAA-funded Cooperative Institutes at that time,[358] and one such scientist had previously reviewed the Working Group II portion of the IPCC AR4.[359]

As far as the substantive peer review comments are concerned, the NRC Committee highlighted the authors' need to revise SAP5.3 in order to address Chapter 3's inclusion of "very little discussion of published research on innovation processes", "limited attention to models of innovation other than the one presented", and "scant discussion of how the model presented, or any other model of innovation, might provide useful insight for those attempting to integrate climate information into water resource decision making."[360] Noting that "the issues are mostly based on the experience of

those engaged in the operational units", the NRC Committee recommended that the revised SAP5.3 "[i]ncorporat[e] concepts from…the research literature on innovation processes…[to]…help conceptualize the operational insights and their implications."[361]

In addition the NRC Committee emphasized that "Chapter 4 includes discussions of climate change issues, although the focus of the report is mainly on climate variability, which can pose different issues for modeling and for decision support."[362] The Committee recommended that SAP5.3 be revised to "clarify what it does and does not cover [and to] distinguish clearly between discussions of climate change and of variability."[363] As the Committee had reasoned, "seasonal forecasts provide probabilities and skill assessments based on observations, model predictions, and expert judgment, whereas climate change projections offer ranges based on scenario inputs built up from a set of plausible, coherent narratives that many would like to see revised."[364]

Furthermore, the NRC Committee noted how SAP5.3 had inadequate evidentiary support for findings and recommendations.[365] In particular, the Committee had found that since "[t]he central subject matter of this document—decision-support 'experiments' in the water sector—is one for which very little evidence and analysis are available…findings must necessarily be based on the relatively weak grounding provided by case study evidence, and recommendations must necessarily be based largely on judgment."[366] Despite the weakness of such evidence, the Committee recommended that these points be made more explicit in the revised SAP, and that the authors seek to assess "the strength of the support and reasoning underlying the authoring group's judgments [by]…look[ing] outside the federal government and even outside the U.S. experience for evidence on the effects of decision support activities in the water sector."[367]

Although DOC-NOAA has made the NRC Committee's peer review report readily accessible for public review, the administrative record, however, does not reflect that DOC-NOAA has disclosed any other information to the public about the related peer review process. In particular, the public is currently unable to review the minutes of any meetings held between the NRC Review Committee members and between the members and the authors, agency responses to the peer reviewer comments and author responses thereto, or any evidence that DOC-NOAA had received, considered and responded to public comments submitted on later drafts following the agency's issuance of its December 2006 federal register notice soliciting such comments.[368] Finally, neither DOC-NOAA nor NRC has yet provided any information concerning the criteria that had been employed to select the specific peer reviewers, and the reviewers of the peer reviewers, identified in this assessment report.

6. *DOC-NOAA-Provided Administrative Mechanisms to Ensure Review of Stakeholder IQA Requests for Correction*

The administrative record does not reflect that DOC-NOAA had substantiated how its chosen method for addressing public stakeholder IQA requests for correction ("RFCs") of disseminated DOC-NOAA-developed SAPs and other climate science-related assessments that DOC-NOAA knew or had reason to know would underlie the EPA Administrator'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. The IQA obliged DOC-NOAA

> "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".[369]

Meanwhile, OMB's IQA Guidelines provide that,

> "[Only] if "existing public comment procedures – for rulemakings, adjudications other agency actions [e.g., endangerment findings]…provide well-established procedural safeguards that allow affected persons to contest information quality on a timely basis", may agencies "use those procedures to respond to information quality complaints."[370]

The OMB Peer Review Bulletin, furthermore, admonishes agencies that the typical Administrative Procedure Act notice and comment process will not necessarily assure IQA stakeholders that their specialized peer review-oriented requests for correction will, in fact, be adequately addressed.

> "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 VII 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."[371]

DOC-NOAA's IQA-implementing guidelines appear, at first glance, to provide for such a mechanism because it directs the submission of all IQA RFCs to a dedicated "NOAA Section 515 Officer".[372] However, a closer inspection of such guidelines otherwise make it quite clear that no such alternative process will be provided, if the disseminated information that is the subject of the request may form the record for a proposed rulemaking, or if the request is made as part of and during the comment period associated with a proposed rulemaking.

> "A proper request received concerning information disseminated as part of and during the pendency of the public comment period on a proposed rule, Natural Resource Plan ('plan'), or other action, *including a request concerning the information forming the record of decision for such proposed rule, plan, or action*, will be treated as a comment filed on that proposed rulemaking, plan, or action, and will be addressed in issuance of any final rule, plan, or action" (emphasis added).[373]

As the administrative record shows, DOC-NOAA had solicited stakeholder comments with respect to each of the USGCRP/CCSP SAPs and the GCCI it had developed prior to their public dissemination, as part of an Administrative Procedure Act public notice and comment procedure facilitated through the federal register, rather than as part of a separate IQA RFC procedure. DOC-NOAA, however, has not yet publicly disclosed on any accessible website the stakeholder comments

it had received in response to its federal register notices. DOC-NOAA, furthermore, has yet to publicly disclose on any accessible website whether any of the stakeholder comments it had received pursuant to that administrative mechanism had included within them, or had been separately crafted as IQA "Requests for Correction" of the data contained in any of climate science-related assessments. This FOIA Request Clarification, therefore, seeks disclosure of DOC-NOAA records substantiating how this agency action had ensured DOC-NOAA's compliance with the relevant IQA and OMB and DOC-NOAA IQA-implementing guideline requirements.

In sum, only DOC-NOAA's comprehensive disclosure of the records requested pursuant to this ITSSD FOIA Request Clarification will better enable a broad public audience to understand how the scientific process of peer review that DOC-NOAA had employed to vet the DOC-NOAA- developed assessments in alleged compliance with IQA and corresponding agency requirements had supported or compromised the scientific findings allegedly derived from that process.

Absent DOC-NOAA's full and complete disclosure of the records ITSSD has requested, it would not be unreasonable for the public to conclude that DOC-NOAA-developed climate science-related assessments had failed to satisfy the highest and most rigorous peer review, conflict-of-interest and transparency standards applicable to HISAs, within the meaning of the IQA, and the OMB and DOC-NOAA IQA-implementing guidelines. Such a conclusion would most likely trigger a review of DOC-NOAA's USGCRP/CCSP SAP certifications of IQA compliance that could render them invalid, and thereby raise serious questions about the credibility of the EPA-TSD, the climate science-related assessments referenced therein, and ultimately, the EPA Administrator's CAA Section 202(a)(1) GHG findings.

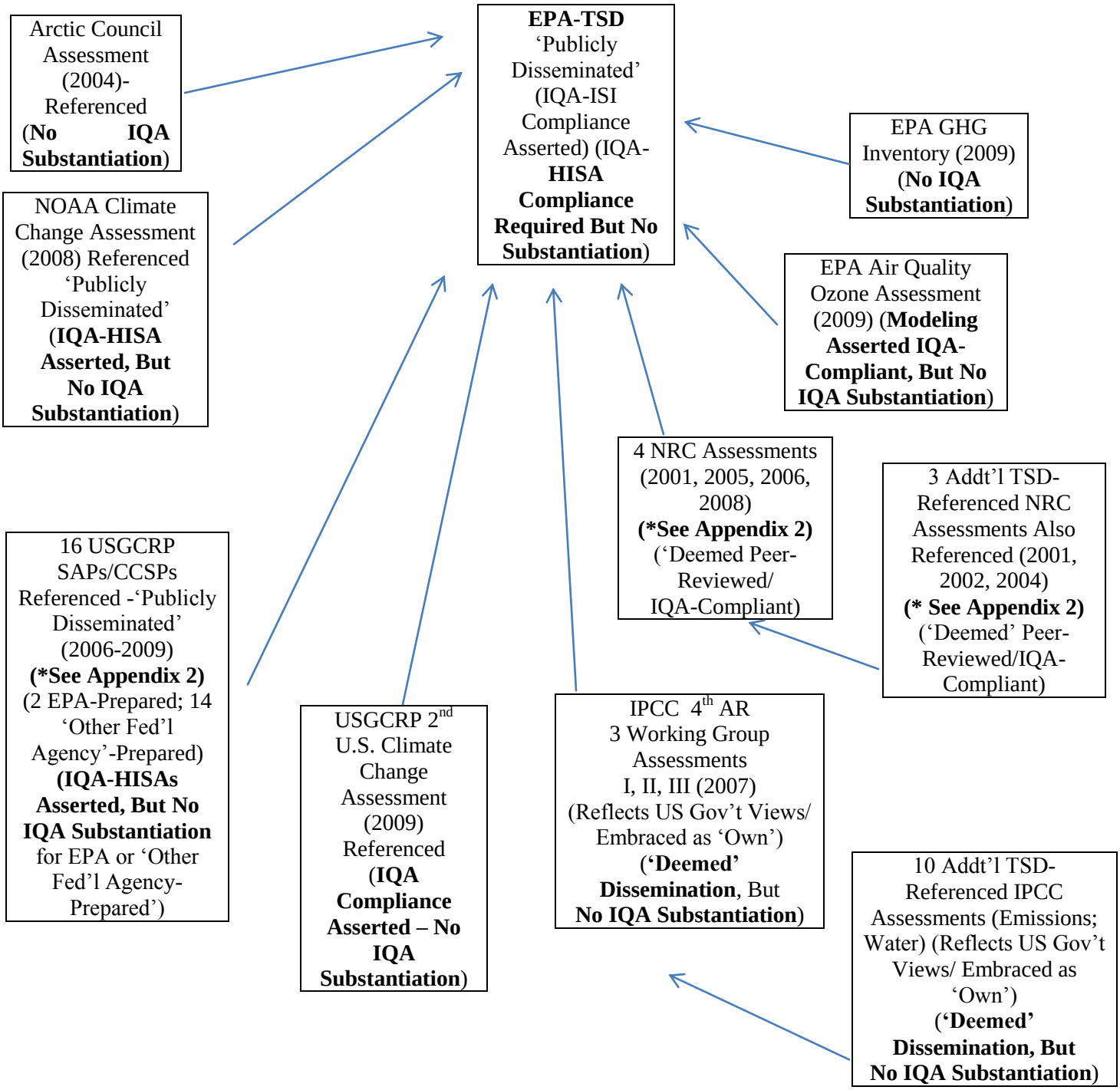
END

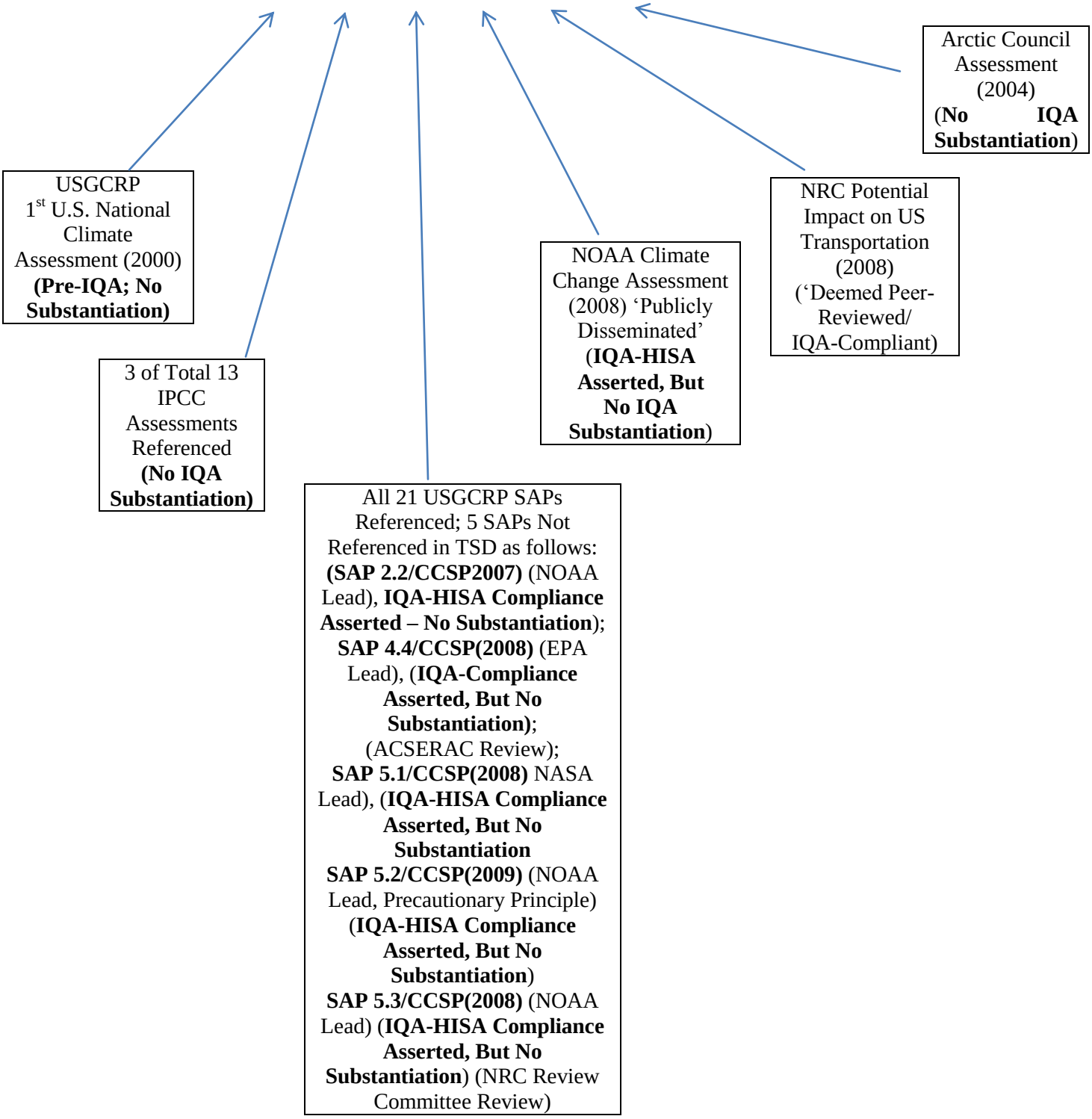
Appendix 1: EPA-TSD Table 1.1 "Core Reference Documents"*

Science Body-Author	U.S. Agency 'Lead'	Assessment/Report Title	Year
DOC-NOAA	DOC-NOAA	*State of the Climate in 2008* [374]	2009
USGCRP/CCSP	DOC-NOAA	*Global Climate Change Impacts in the United States* [375]	2009
IPCC		*Working Group I: The Physical Science Basis* [376]	2007
IPCC		*Working Group II: Impacts, Adaptation and Vulnerability* [377]	2007
IPCC		*Working Group III: Mitigation of Climate Change* [378]	2007
USGCRP/CCSP	DOC-NOAA	SAP 1.1: *Temperature Trends in the Lower Atmosphere* [379]	2006
USGCRP/CCSP	DOI-USGS	SAP 1.2: *Past Climate Variability and Change in the Arctic and at High Latitudes* [380]	2009
USGCRP/CCSP	DOC-NOAA	SAP 1.3: *Re-analyses of Historical Climate Data* [381]	2008
USGCRP/CCSP	DOE	SAP 2.1: *Scenarios of GHG Emissions and Atmospheric Concentrations* [382]	2007
USGCRP/CCSP	NASA	SAP 2.3: *Aerosol Properties and their Impacts on Climate* [383]	2009
USGCRP/CCSP	DOC-NOAA	SAP 2.4: *Trends in Ozone-Depleting Substances* [384]	2008
USGCRP/CCSP	DOE	SAP 3.1: *Climate Change Models* [385]	2008
USGCRP/CCSP	DOC-NOAA	SAP 3.2: *Climate Projections* [386]	2008
USGCRP/CCSP	DOC-NOAA	SAP 3.3: *Weather and Climate Extremes in a Changing Climate* [387]	2008
USGCRP/CCSP	DOI-USGS	SAP 3.4: *Abrupt Climate Change* [388]	2008
USGCRP/CCSP	**EPA**	SAP 4.1: *Coastal Sensitivity to Sea Level Rise* [389]	2009
USGCRP/CCSP	DOI-USGS	SAP 4.2: *Thresholds of Change in Ecosystems* [390]	2009
USGCRP/CCSP	USDA	SAP 4.3: *Agriculture, Land Resources, Water Resources, and Biodiversity* [391]	2008
USGCRP/CCSP	DOE	SAP 4.5: *Effects on Energy Production and Use* [392]	2007
USGCRP/CCSP	**EPA**	SAP 4.6: *Analyses of the Effects of Global Change on Human Health* [393]	2008
USGCRP/CCSP	DOT	SAP 4.7: *Impacts of Climate Change and Variability on Transportation Systems* [394]	2008
NRC		*Climate Change Science: Analysis of Some Key Questions* [395]	2001
NRC		*Radiative Forcing of Climate Change* [396]	2005
NRC		*Surface Temperature Reconstructions for the Last 2,000 Years* [397]	2006
NRC		*Potential Impacts of Climate Change on U.S. Transportation* [398]	2008
	EPA	*Impacts of Global Change on Regional U.S. Air Quality* [399]	2009
	EPA	*Inventory of U.S. Greenhouse Gas Emissions and Sinks* [400]	2009
ACIA		*Arctic Climate Impact Assessment* [401]	2004

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

Appendix 2: 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/CCSP2007)** (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 3: 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 4: 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)[402] **(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) **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 5: 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(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] ITSSD is a globally recognized nonprofit research, analytics and educational institution based in the State of New Jersey which focuses, in part, on international and domestic environmental law and policy research and analysis in the public interest.

[2] This extension of time was granted both verbally and via email correspondence dated April 23, 2014.

[3] In addition to filing a FOIA Request with DOC-NOAA-HQ, ITSSD filed separate FOIA Requests with DOC-NOAA's Central Regional Collaboration Team, Great Lakes Regional Collaboration Team, North Atlantic Regional Collaboration Team, Pacific Island Regional Collaboration Team, Southeast & Caribbean Regional Collaboration Team and Western Regional Collaboration Team, designated as "NOAA-CRCT", "NOAA-GLRCT", "NOAA-NARCT", "NOAA-PIRT", "NOAA-SECART" and "NOAA-WRCT".

[4] Your April 1, 2014 correspondence recognized that ITSSD's previously filed fee waiver requests had referenced in error Environmental Protection Agency ("EPA") FOIA fee waiver regulations.

[5] 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) at §III.1, available at: http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-03.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. 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) at §6.2, available at: http://www.epa.gov/quality/informationguidelines/documents/EPA_InfoQualityGuidelines.pdf; EPA-PRH(2006), *supra* at §2.2.3; 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), available at: http://www.gpo.gov/fdsys/pkg/FR-2009-12-15/pdf/E9-29537.pdf. 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). *See* EPA-PRH(2006), *supra* at §2.2.3, §2.2.4; OMB-PRB, *supra* at p. 2 and §III.2; 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; 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.

[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; OMB-PRB, *supra* (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, p. 23.

[8] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer & High Performance Computing and Communications, *Information Quality*, NOAA website (last visited April 4, 2014), available at: http://www.cio.noaa.gov/services_programs/info_quality.html; United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer &

High Performance Computing and Communications, *Information Quality Overview* (July 30, 2010), available at: http://www.cio.noaa.gov/services_programs/pdfs/IQA_Overview_7-30-10-FINAL.pdf. *See also* United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer & High Performance Computing and Communications, *National Oceanic and Atmospheric Administration Information Quality Guidelines* ("NOAA IQA Guidelines") NOAA website (last visited April 4, 2014), available at: http://www.cio.noaa.gov/services_programs/IQ_Guidelines_011812.html; United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer & High Performance Computing and Communications, *National Oceanic and Atmospheric Administration Policy on Conflicts of Interest For Peer Review Subject to OMB's Peer Review Bulletin* ("NOAA PRB-COI"), NOAA website (last visited April 4, 2014), available at: http://www.cio.noaa.gov/services_programs/NOAA_PRB_COI_Policy_110606.html; United States Department of Commerce, National Oceanic and Atmospheric Administration National Marine Fisheries Service, *National Marine Fisheries Service Policy Directive PD 04-108 - Science and Technology Policy on the Data Quality Act* (June 27, 2012) ("NMFS-STP/DQA"), available at: http://www.nmfs.noaa.gov/op/pds/documents/04/04-108.pdf; United States Department of Commerce, National Oceanic and Atmospheric Administration National Marine Fisheries Service, *National Marine Fisheries Service Instruction 04-108-03 - Science and Technology Information Quality Act Section 515 Pre-Dissemination Review and Documentation Guidelines* (Dec 16, 2004) ("NOAA-ST-IQA/PDR"), NOAA website (last visited April 4, 2014), available at: http://www.nmfs.noaa.gov/op/pds/documents/04/108/04-108-03.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* The National Academies, *About the National Research Council*, The National Academies website (last visited April 14, 2014), available at: http://www.nationalacademies.org/nrc/index.html. "[T]he National Research Council…[is]…the operating arm of the National Academy of Sciences and the National Academy of Engineering…[Its] mission is to improve government decision making and public policy, increase public understanding, and promote the acquisition and dissemination of knowledge in matters involving science, engineering, technology, and health." *Id*

[11] *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.

[12] 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".

[13] *See* Appendix 1: EPA-TSD Table 1.1 "Core Reference Documents", which lists seven (7) "core reference documents" for which DOC-NOAA had 'lead' agency development responsibility.

[14] These 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").

[15] 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. As the previously filed ITSSD FOIA Requests reflect, 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 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 the White House Council on Environmental Quality ("CEQ") and OSTP.

[16] *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, 66506-66509 (Dec. 15, 2009), *supra*.

[17] For example, independence issues were alleged to have arisen from EPA's review of the Administrator's CAA Section 202(a) findings. "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.[fn] 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." *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), at p. 90, available at: http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg65306/pdf/CHRG-112hhrg65306.pdf.

[18] Such files should reflect DOC-NOAA's consideration of the conflict-of-interest difficulties EPA had previously encountered that informed DOC-NOAA's judgment in this regard. The administrative and media records reflect that EPA endeavored to address those difficulties 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.

[19] *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. As of 2012, there had been three DOC-NOAA-NESDIS-managed Cooperative Institutes with the following host and participating universities: (1)(a) Name – Cooperative Institute for Climate and Satellites **(CICS-M)**; (b) Host – Univ. of Maryland College Park; (b) Participants - North Carolina State Univ., Univ. of California-Irvine, Colorado State Univ., Howard Univ., Univ. of Miami, Duke Univ., Univ. of North Carolina-Chapel Hill, Princeton Univ., City Univ. of New York, Columbia Univ.,

Oregon State Univ. and Remote Sensing Systems; (2)(a) Name – Cooperative Institute for Meteorological Satellite Studies **(CIMSS)**; (2)(b) Host – Univ. of Wisconsin-Madison; (2)(c) Participants – none; (3)(a) Name - Cooperative Institute for Oceanographic Satellite Studies **(CIOSS)**; (3)(b) Host - Oregon State Univ.; (3)(c) Participants – none. *Id*. As of 2012, there appears to have been one DOC-NOAA-NMFS-managed Cooperative Institute. (1)(a) Name - Cooperative Institute for the Pacifica Island Region **(CIPIR)**; (1)(b) Host – Univ. of Hawaii; (1)(c) – Participants – none. *Id*. As of 2012, there appears to have been fifteen (15) DOC-NOAA-OAR-managed Cooperative Institutes: (1)(a) Name - Cooperative Institute for Climate Applications Research **(CICAR)**; (1)(b) Host - Columbia Univ.; (1)(c) Participants – none; (2)(a) Name - Cooperative Institute for Climate Science **(CICS-P)**; (2)(b) Host - Princeton Univ.; (2)(c) Participants – none; (3)(a) Name - Cooperative Institute for Alaska Research **(CIFAR)**; (3)(b) Host – Univ. of Alaska - Fairbanks; (3)(c) Participants – none; (4)(a) Cooperative Institute for Limnology and Ecosystem Research **(CILER)**; (4)(b) Host – Univ. of Michigan; (4)(c) Participants - Grand Valley State Univ., Michigan State Univ. Ohio State Univ., Penn State Univ., Stony Brook Univ., Univ. of Illinois at Urbana-Champaign, Univ. of Minnesota, Univ. of Toledo, and Univ. of Wisconsin; (5)(a) Name - Cooperative Institute for Marine and Atmospheric Studies **(CIMAS)**; (5)(b) Host – Univ. of Miami; (5)(c) Participants - Florida Atlantic Univ., Florida Int'l Univ., Florida State Univ., NOVA Southeastern Univ., Univ. of Puerto Rico, Univ. of Florida, Univ. of South Florida, and Univ. of the Virgin Islands; (6)(a) Name - Cooperative Institute for Marine Ecosystems and Climate **(CIMEC)**; (6)(b) Host – Univ. of Calif. San Diego; (6)(c) Participants - Scripps Institution of Oceanography, Calif. State Univ., Los Angeles, Humboldt State, Univ. of Calif., Davis, Univ. of Calif., Los Angeles, Univ. of Calif., Santa Barbara, and Univ. of Calif., Santa Cruz; (7)(a) Name - Cooperative Institute for Mesoscale Meteorological Studies **(CIMMS)**; (7)(b) Host – Univ. of Oklahoma; (7)(c) Participants – none; (8)(a) Name - Cooperative Institute for Marine Resources Studies **(CIMRS)**; (8)(b) Host – Oregon State Univ.; (8)(c) Participants – none; (9)(a) Name - Cooperative Institute for the North Atlantic Region **(CINAR)**; (9)(b) Host - Woods Hole Oceanographic Institution; (9)(c) – Participants – Rutgers Univ., Univ. of Maryland-Center for Environmental Science, Univ. of Maine, and Gulf of Maine Research Institute; (10)(a) Name - Cooperative Institute for Ocean Exploration, Research and Technology **(CIOERT)**; (10)(b) Host – Florida Atlantic Univ.; (10)(c) – Participants – Univ. of North Carolina-Wilmington; (11)(a) Name - Cooperative Institute for Research in the Atmosphere **(CIRA)**; (11)(b) Host – Colorado State Univ.; (11)(c) Participants – none; (12)(a) Name - Cooperative Institute for Research in Environmental Sciences **(CIRES)**; (12)(b) Host – Univ. of Colorado; (12)(c) Participants – none; (13)(a) Name - Joint Institute for Marine and Atmospheric Research **(JIMAR)**; (13)(b) Host – Univ. of Hawaii; (13)(c) Participants – none; (14)(a) Name – Joint Institute for the Study of the Atmosphere and Ocean **(JISAO)**; (14)(b) Host – Univ. of Washington; (14)(c) Participants – none; (15)(a) Name - Northern Gulf Institute **(NGI)**; (15)(b) Mississippi State Univ.; (15)(c) Participants – Univ. of Southern Mississippi, Louisiana State Univ., Florida State Univ., and Dauphin Island Sea Lab.

[20] As of 2014, there are sixteen (16) Cooperative Institutes, indicating that a consolidation of the DOC-NOAA Cooperative Institutes Program had taken place: CICS-M; CIMSS; CICS-P; CIPIR-JIMAR; CIFAR; CILER; CIMAS; CIMEC; CIMMS; CIMRS; CINAR; CIOERT; CIRA; CIRES; JISAO; and NGI. *See* United States Department of Commerce National Oceanic and Atmospheric Administration, *National Oceanic and Atmospheric Administration Cooperative Institutes*, NOAA website, available at: http://ci.noaa.gov/Locations.aspx.

[21] "The Climate and Societal Interactions (CSI) Program's mission is to provide leadership and support for research, assessments and climate services development activities designed to bring sound, interdisciplinary science to bear on climate sensitive resource management and adaptation challenges in key sectors and regions…CSI research and capacity building activities address several societal challenges articulated in the context of the climate adaptation and mitigation objective of the NOAA Next Generation Strategic Plan (NGSP), including: i) water resources; ii) coastal resilience; iii) marine ecosystems; and iv) weather and extreme events." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions.aspx.

[22] The CSI is comprised of the following subprograms: 1) "Coastal and Ocean Climate Applications (COCA) - *supports interdisciplinary applications research* on the impacts of climate variability and change on coastal communities and coastal and marine ecosystems to inform decision making"; 2) "Regional Integrated Sciences and Assessments (RISA) - *supports research teams* that conduct innovative, interdisciplinary, user-inspired, and regionally relevant research that informs resource management, planning, and public policy"; 3) "International Research and Applications Project (IRAP) - *supports activities to link climate research and assessments to practical risk management, development*

and adaptation challenges in key regions throughout the world"; 4) "Sectoral Applications Research Program (SARP) - addresses the needs of a specific stakeholder or set of stakeholder within key socioeconomic sectors (e.g., water resources, agriculture, health, etc.) grappling with pressing climate-related issues. For 2012, SARP will focus on the water resource sector"; and 5) "National Integrated Drought Information System (NIDIS) - provides dynamic and easily accessible drought information for the Nation. NIDIS *supports drought research* focusing on risk assessment, forecasting, management, and development of decision-support resources. 'Coping with Drought,' grants competitions are administered through the RISA and SARP programs" (emphasis added). *Id.*

[23] "The Coastal and Ocean Climate Applications (COCA) program addresses the needs of specific decision makers grappling with pressing climate-related issues in coastal and marine environments. This program strengthens initiatives — initially developed under the Sectoral Applications Research Program — *to support interdisciplinary applications research* aimed at addressing climate-related challenges in coastal communities as well as coastal and marine ecosystems." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions - Coastal and Ocean Climate Applications (COCA) [Program]*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/COCAProgram.aspx.

[24] For example, the following public and private universities had received DOC-NOAA research and other funding during 2008-2009: 1) Ohio State Univ. (2008); 2) Oregon State Univ. (2008); Virginia Inst. Of Marine Science (2008); Univ. Mass. Boston , Tufts Univ. and Univ. of Maryland (2008); Univ. of Wisconsin (2009); Clemson Univ., Coastal Carolina Univ. and Univ. of South Carolina (2009); Dillard Univ. and Tulane Univ. (2009); Oregon State Univ. (2009).

[25] "NOAA's Regional Integrated Sciences & Assessments (RISA) program supports research teams that help expand and build the nation's capacity to prepare for and adapt to climate variability and change." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram.aspx.

[26] "There are currently 11 active RISA projects across the country." *Id.* The Western Water Assessment ("WWA") Project is 'housed' in the University of Colorado which is an "affiliated institution". ." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams - Western Water Assessment*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/WWA.aspx. The WWA program appears to have commenced in 2009. The Southeast Climate Consortium ("SECC") began in 1998, and its "affiliated institutions" include: Auburn Univ.; Clemson Univ.; Florida State Univ.; North Carolina State Univ.; Univ. of Alabama-Huntsville; Univ. of Florida; Univ. of Georgia and Univ. of Miami. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams - Southeastern Climate Consortium*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/SECC.aspx. The Southern Climate Impacts Planning Program ("SCIPP")'s "affiliated institutions" include the Univ. of Oklahoma and Louisiana State Univ. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams - Southern Climate Impacts Planning Program*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/SCIPP.aspx. The "Pacific RISA" is 'housed' in the East-West Center of the Univ. of Hawaii, which is designated as an "affiliated institution". *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Pacific RISA*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/PacificRISA.aspx.
The Great Lakes Integrated Sciences and Assessments Center ("GLISA"), which appears to have commenced in 2010, has the following "affiliated institutions": Univ. of Michigan, Ohio State Univ., and Michigan State Univ. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Great Lakes Integrated Sciences and Assessments Center*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/GLISA.aspx. The California Nevada Applications Program ("CNAP"), which appears to have commenced during 2009 (judging from its

2010 Annual Report), is comprised of the following "affiliated institutions": Univ. of Calif., San Diego; San Diego State Univ.; Univ. of Washington; Univ. of Calif., Merced; Scripps Institution of Oceanography; and Desert Research Institute. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – California Nevada Applications Program*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CNAP.aspx. The Climate Assessment for the Southwest ("CLIMAS"), which has been in operation since 1998, is comprised of the following "affiliated institutions": Univ. of Arizona; and New Mexico State Univ. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Climate Assessment for the Southwest*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CLIMAS.aspx. Carolinas Integrated Sciences and Assessments ("CISA"), which appears to have been in operation since 2003, is comprised of the following "affiliated institutions": East Carolina Univ.; North Carolina State Univ.; Univ. of North Carolina; Univ. of South Carolina. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Carolinas Integrated Sciences and Assessments*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CISA.aspx. The Climate Impacts Research Consortium ("CIRC") appears to have commenced in 2010 and its 'Principal Investigator, Philip Mote, had served as a contributor to and reviewer of the Working Group I portion of the IPCC AR4. The CIRC is comprised of the following "affiliated institutions": Oregon State Univ.; Univ. of Oregon; Univ. of Wash.; and Univ. of Idaho. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Climate Impacts Research Consortium*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CIRC.aspx. (CIRC is a member of The PNW Climate Impacts Research Consortium which includes the Oregon Climate Change Research Institute, and the Oregon Climate Service with which the following institutions are affiliated: Oregon State Univ.; Portland State Univ.; and Southern Oregon Univ. *See* "The PNW Climate Impacts Research Consortium", available at: http://pnwclimate.org/; "Oregon Climate Change Research Institute", available at: http://occri.net/; "Oregon Climate Service", available at: http://www.ocs.orst.edu/.) The Consortium on Climate Risk in the Urban Northeast ("CCRUN"), which appears to have commenced in 2011, is comprised of the following "affiliated institutions": Columbia Univ.; Univ. Mass. Amherst; City College of New York; Rutgers Univ.; Stevens Institute of Technology; Drexel Univ. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Consortium on Climate Risk in the Urban Northeast*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/CCRUN.aspx. The Alaska Center for Climate Assessment and Policy ("ACCAP"), which appears to have commenced during 2011, is 'housed' in the Univ. of Alaska-Fairbanks, a designated "affiliated institution". *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program – RISA Teams – Alaska Center for Climate Assessment and Policy*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram/RISATeams/ACCAP.aspx.

[27] "The International Research and Applications Project (IRAP) is intended to support activities that link climate research and assessments to practical risk management, development and adaptation challenges in key regions throughout the world." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – International Research and Applications Project (IRAP), About About International Research and Applications Project (IRAP)*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/IRAPProgram/AboutIRAP.aspx. Apparently, DOC-NOAA had made a "long-term institutional investment in the International Research Institute for Climate and Society (IRI)" of Columbia University. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – International Research and Applications Project (IRAP)*, NOAA website, available at:

http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/IRAPProgram/MeetingsandEvents.aspx. The IRI website confirms that, "The IRI was established as a cooperative agreement between NOAA's Climate Program Office and Columbia University. It is part of The Earth Institute, Columbia University, and is located at the Lamont Campus." *See* "International Research Institute for Climate and Society (IRI) - Columbia University", available at: http://iri.columbia.edu/portal/server.pt.

[28] "The Sectoral Applications Research Program (SARP) supports interdisciplinary research to advance understanding of how climate variability and change affect key socio-economic sectors, and promotes the application of this new knowledge in climate-related decisions." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – Sectoral Applications Research Program - About the Sectoral Applications Research Program*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPProgram/AboutSARP.aspx. This program appears to have commenced during 2011. Based on the annual 2011 report submitted by NOAA grant recipients, NOAA appears to have funded the following universities: Univ. of North Carolina-Chapel Hill; Penn State Univ.; Texas A&M Univ. *See* "Annual Report to the National Oceanic and Atmospheric Administration's Climate Program Office, Sectoral Applications Research Program (SARP), Portfolio-based Approaches to Managing Climate Uncertainty in Urban Water Planning (Award No. NA11OAR4310144)", NOAA website, available at: http://cpo.noaa.gov/sites/cpo/Projects/SARP/CharacklisAnnualRpt.pdf.

[29] "The National Integrated Drought Information System (NIDIS) provides dynamic and easily accessible drought information for the Nation…NIDIS integrates basic and applied research performed by NOAA and other agencies into an adaptive decision-support environment for resource managers, farmers, and other water users." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – National Integrated Drought Information System (NIDIS), About the National Integrated Drought Information System (NIDIS)*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/NIDISProgram.aspx. The NIDIS program appears to have commenced in 2006. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Office of Oceanic and Atmospheric Research, *Climate Program Office National Integrated Drought Information System Brochure* (Oct. 2012), available at: http://cpo.noaa.gov/sites/cpo/Briefing%20sheets/NIDIS_Oct24v2.pdf. It appears that, during 2010, NOAA had funded a NIDIS research project that involved the following universities: Mississippi State Univ.; Princeton Univ.; and Univ. of Washington. *See* Lifeng Luo, *Research project funded by NOAA Climate Program Office*, Hydroclimatology Research Group at MSU (May 21, 2010), available at: http://drought.geo.msu.edu/news/2010520/.

[30] "The Modeling, Analysis, Predictions, and Projections (MAPP) Program's mission is to enhance the Nation's capability to understand and predict natural variability and changes in Earth's climate system. The MAPP Program supports development of advanced climate modeling technologies to improve simulation of climate variability, prediction of future climate variations from weeks to decades, and projection of long-term future climate conditions. To achieve its mission, the MAPP Program supports research focused on the coupling, integration, and application of Earth system models and analyses across NOAA, among partner agencies, and with the external research community." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Modeling, Analysis, Predictions, and Projections (MAPP)*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/ModelingAnalysisPredictionsandProjections.aspx. "Researchers funded by MAPP refine models' computerized representations of Earth's processes and evaluate their performance… MAPP supports reanalysis projects that are critical to improving model simulations and projections. Reanalysis combines models with historical observations to create a complete and consistent historical record." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Office of Oceanic and Atmospheric Research, *Climate Program Office Modeling, Analysis, Predictions, and Projections Brochure* (Oct. 2012), available at: http://cpo.noaa.gov/sites/cpo/Briefing%20sheets/MAPP_Oct24v2(2).pdf.

[31] "The Earth System Science (ESS) division supports research to provide a process-level understanding of the climate system through observation, modeling, analysis, and field studies." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Climate Program Office – Earth Systems Science*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/EarthSystemScience.aspx. The website reveals at least one ESS-funded project that involved scientists from the following universities: Princeton Univ.; Harvard Univ.; Univ. of Calif.-

Berkeley; Calif. Inst. Of Technology; Univ. of Leicester, Leicester, UK. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, Climate Program Office – Earth Systems Science – ESS Archive, *AC4 funds research that proposes revised mechanism for isoprene chemistry*, NOAA website, available at: http://cpo.noaa.gov/ClimatePrograms/EarthSystemScience/ESSArchive/TabId/541/ArtMID/1399/ArticleID/210/AC4-funds-research-that-proposes-revised-mechanism-for-isoprene-chemistry.aspx. *See also* Jingqiu Mao, Fabien Paulot, Daniel J. Jacob, Ronald C. Cohen, John D. Crounse, Paul O. Wennberg, Christoph A. Keller, Rynda C. Hudman, Michael P. Barkley and Larry W. Horowitz, Ozone and Organic Nitrates Over the Eastern United States: Sensitivity to Isoprene Chemistry, Journal of Geophysical Research: Atmospheres Volume 118, Issue 1(American Geophysical Union 2013), Wiley Online Library, available at: http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50817/abstract.

[32] ITSSD is aware that NOAA-HQ also established at least one (1) climate science-related federal advisory committee – the NOAA Science Advisory Board ("SAB") (established 1997, renewed 2009, 2011 and 2013) that is ongoing. *See* U.S. Department of Commerce, *Charter of the NOAA Science Advisory Board* (July 9, 2009), available at: http://www.sab.noaa.gov/Charter/pdf/SAB_Charter_2009_FINAL_Signed.pdf; U.S. Department of Commerce, *Charter of the NOAA Science Advisory Board* (July 8, 2011), available at: http://www.sab.noaa.gov/Charter/SAB%20charter,%207-8-11_signed_FINAL.pdf; U.S. Department of Commerce, *Charter of the NOAA Science Advisory Board* (June 27, 2013), available at: http://www.sab.noaa.gov/Charter/SAB%20charter,%206-27-13_FInal.pdf.

[33] "EPA" means United States Environmental Protection Agency.

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

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

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

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

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

[39] *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.

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

[41] 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. This cooperative arrangement entered into between the Departments of Commerce and Interior in August 2010 serves as a recent example of a climate change-related MOU. "The two secretaries signed a Memorandum of Understanding (MOU) that provides a framework to build upon existing partnerships that bring together the departments' best available climate science and services to inform adaptation strategies and response decisions to manage America's oceans, coasts, Great Lakes and public lands. This joint effort aims to leverage each department's unique capabilities and stewardship mandates to most efficiently and effectively manage the nation's waters and lands and safeguard the communities and economies that depend on them. This agreement will also draw on national and regional programs and partnerships of each department, including The Department of the Interior's emerging Climate Science Centers and Landscape Conservation Cooperatives and the Department of Commerce/National Oceanic and Atmospheric Administration's climate science and services, Regional Integrated Sciences and Assessments program and Regional Climate Centers. The MOU will also support the ongoing broader interagency coordination efforts through the U.S. Global Change Research Program." *See also* United States Department of Commerce, *U.S. Departments of Commerce and the Interior to Cooperate on Climate-Related Activities*, Press Release (Aug. 3, 2010), available at: http://www.commerce.gov/news/press-releases/2010/08/03/us-departments-commerce-and-interior-cooperate-climate-related-activi. *See also* MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF THE INTERIOR AND THE U.S. DEPARTMENT OF COMMERCE TO COORDINATE AND COOPERATE IN CLIMATE-RELATED ACTIVITIES INVOLVING SCIENCE, SERVICES, MITIGATION, ADAPTATION, EDUCATION, AND COMMUNICATION, entered into on July 30, 2010, available at:

http://www.noaa.gov/climateresources/resources/doidocclimatemoufinal.pdf. "This Memorandum of Understanding (MOU) will enable the seamless coordination of: DOl's climate change impact science and resource-related land, water, wildlife, fish, marine, and tribal and cultural adaptive resource management expertise[;] DOC/NOAA's climate science, climate modeling at appropriate scales, and coastal, marine, and hydrologic expertise to support resource management and resource protection[;] and DOl and DOC's mutual data stewardship responsibilities, and monitoring, assessment, and communication expertise." *Id*., at p. 2.

[42] "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.

[43] *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)).

[44] "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.

[45] See *Massachusetts v. EPA*, 549 U.S. 497 (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.'" *Id.*, at 532–33.

[46] *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.
[47] *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*.
[48] 684 F.3d 102, 117 (DC Cir. 2012).
[49] *Id*., at 117.
[50] *Id*., at 117-118.
[51] *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).
[52] *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); 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); 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).
[53] *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.
[54] *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.
[55] *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.
[56] *See* Administrative Procedure Act (APA), Pub.L. 79–404, 60 Stat. 237 (June 11, 1946), codified at 5 U.S.C. 551 et seq.
[57] *See* Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554, 114 Stat. 2763 (2000), §515.
[58] *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*.
[59] *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.

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

[61] 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/.

[62] 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.

[63] 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.

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

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

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

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

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

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

[70] 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*.

[71] *Id*.

[72] *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.").

[73] 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.

[74] *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/.

[75] "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.

[76] *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.

[77] *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.

[78] "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.

[79] *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*.

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

[81] *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.

[82] *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.

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

[84] "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/.

[85] *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*.

[86] "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.

[87] *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.

[88] *See* 75 FR 31514 (June 3, 2010), *supra* at 31519, 31591.

[89] *See* 79 FR 1430 (Jan. 8, 2014), *supra* at 1438, 1456, fn# 20.

[90] 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.

[91] *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.

[92] *Id*.

[93] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA LEADS CLIMATE IMPACT AND ADAPTATION ACTIVITIES - Agency Contributes to Scientific Foundation of IPCC*, NOAA Magazine (2007), available at: http://www.noaanews.noaa.gov/stories2007/s2832.htm. *See also* 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: http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf.

[94] *Id*., at "Appendix II: Contributors to the IPCC WGII Fourth Assessment Report", p. 894.

[95] These thirteen (13) DOC-NOAA scientists included: Suzanne Bolton, John Calder, Ralph Cantral, Ned Cyr, Anand Gnanadesikan, Jay Lawrimore, David Levinson, Brent Lofgren, Claudia Nierenberg, Roger Pulwarty, Franklin Schwing, Juli Trtanj, and Nathalie Vallette-Silver.

[96] For example, "CIRES is a NOAA Cooperative Institute -- a partnership between a university research organization and NOAA's Office of Oceanic and Atmospheric Research (OAR). CIRES research is guided and sustained by a Cooperative Agreement, reviewed every five years *and funded by Congress through NOAA*" (emphasis added). *See* Cooperative Institute for Research in Environmental Services, *NOAA (National Oceanic and Atmospheric Administration) & CIRES Collaboration*, CIRES website, available at: http://cires.colorado.edu/about/noaa/.

[97] The following scientists had been affiliated with universities that had likely participated in the DOC-NOAA Cooperative Institutes made author contributions to the WG II portion of the IPCC AR4: Patricia Craig, Penn State

Univ.; Dan Cayan, UC-San Diego; Judith Cranage, Penn State Univ.; William Easterling, Penn State Univ.; Adam Finkel, Princeton, Univ.; Mark Dyurgerov, Univ. of Colo.; Alan Hamlet, Univ. of Wash.; Vivien Gornitz, Columbia Univ.; Klaus Keller, Penn State Univ.; Maria-Carmen Lemos, Univ. of Mich.; Nancy Lewis, Univ. of Hawaii; David Major, Columbia Univ.; Elizabeth Malone, Univ. of Maryland; Susan Mann, Penn State Univ.; Peter Neofotis, Columbia Univ.; Michael Oppenheimer, Princeton Univ.; Christopher Pfeiffer, Penn State Univ.; Jonathan Patz, Univ. of Wisc.; Madeleine Thompson, Columbia Univ.; Alexander Todorov, Princeton Univ.; Francesco Tubiello, Columbia Univ.; John Walsh, Univ. of Alaska-Fairbanks; Marta Vicarelli, Columbia Univ.. Penn State University and Columbia University had been well represented.

[98] The following scientists had been affiliated with universities that had likely participated in the DOC-NOAA Cooperative Institutes had undertaken review of the WG II portion of the IPCC AR4: Cheryl Anderson, Univ. of Hawaii; Richard Anyah, Rutgers Univ.; Roger Barry, Univ. of Colo.; David Carr, UC-Santa Barbara; David Campbell, Michigan State Univ.; Rosina Bierbaum, Univ. of Mich.; Terry Chapin, Univ. of Alaska-Fairbanks; Donald Boesch, Univ. of Maryland; Norman Christensen, Duke Univ.; Fitzgerald Booker, North Carolina State Univ.; Dana Coehlo, Univ. of Maryland; Paul Desanker, Penn State Univ.; Stephen De Canio, UC-Santa Barbara; Vivien Gornitz, Columbia Univ.; Mark Dyurgerov, Univ. of Colo; Hallie Eakin, UC-Santa Barbara; Kimberly Hall, Michigan State Univ.; Kathleen Galvin, Colorado State Univ.; Thomas Giambelluca, Univ. of Hawaii; Gabi Hegerl, Duke Univ.; Larry Hinzman, Univ. of Alaska-Fairbanks; Charles Howe, Univ. of Colo.; Pieere-Andre Jacinthe, Ohio State Univ.; Ian Joughin, Univ. of Wash.; Eric Kasischke, Univ. of Maryland; M. Leven Kavvas, UC-Davis; Victor Kennedy, Univ. of Maryland; Patrick Kinney, Columbia Univ.; Greg Knight, Penn State Univ.; Kim Knowlton, Columbia Univ.; David Major Columbia Univ.; Elizabeth Malone, Univ. of Maryland; Edward Miles, Univ. of Wash.; Philip Mote, Univ. of Wash; Maribeth Murray, Univ. of Alaska-Fairbanks; Knute Nadelhoffer, Univ. of Michigan; Alan Robock, Rutgers Univ.; Vladimir Romanovsky, Univ. of Alaska-Fairbanks; Dennis Ojima, Colorado State Univ.; Roger Pieltke, Colorado State Univ.; Joyce Rosenthal, Columbia Univ.; Douglas Southgate, Ohio State Univ.; John Steele, Woods Hole; Mark Schwartz, Univ. of Wisc.; Francesco Tubiello, Columbia Univ.; James Shortle, Penn State Univ.; Kevin Vranes, Columbia Univ.; Laurence Smith, UC-Los Angeles; Soroosh Sorooshian, UC-Irvine; Gunther Weller, Univ. of Alaska-Fairbanks; Justin Wettstein, Univ. of Wash.; Robert Wilkinson, UC-Santa Barbara; Julie Winkler, Michigan State Univ.; Brent Yarnel, Penn State Univ.; Daniel Zarin, Univ. of Florida.

[99] Until DOC-NOAA has demonstrated otherwise, it shall be presumed that DOC-NOAA Cooperative Institute funding influences the views and activities of those *host and participating university scientists* working in the program. Therefore, DOC-NOAA has the burden to demonstrate that any author contributions made to and reviews of the IPCC AR4 undertaken by such university scientists did not compromise the 'peer review' of the IPCC AR4 Working Group I and II reports. *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. "Cooperative Institutes - Through these programs, NOAA Research provides the research and technology development necessary to improve the agency's weather and climate services, solar-terrestrial forecasts, and marine services. T*hese activities provide the scientific basis for national policy decisions in key environmental areas such as climate change*, disaster reduction, air quality, non-indigenous species, and stratospheric ozone depletion" (emphasis added). *Id*. Columbia University, the University of Alaska-Fairbanks and the University of Maryland had been well represented.

[100] *See* discussion *supra*.

[101] *See* discussion *supra*.

[102] *See* discussion *supra*.

[103] *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*, 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. The following forty-seven (47) NOAA scientists are listed as having made **contributions** to the WG I portion of the IPCC AR4 report: John Antonov, John Austin, Tim Boyer, Thomas Conway, Thomas Delworth, Keith Dixon, Ed Dlugokency, David Easterling, **James Elkins**, David Fahey, Richard Feely, Melissa Free, Hernan Garcia, Byron Gleason, Pavel Groisman, Richard Gudgel, Isaac Held, **Thomas Karl**, George Kiladis, Thomas Knutson, John Lanzante, Ngar-Cheung Lau, **Jay Lawrimore**, Ruby Leung, David Levinson, Sydney Levitus, Martin Manning, Ken Masarie, Michael McPhaden, John B. Miller, Robert Molinari,

Steve Montzka, Tsung-Hung Peng, **Thomas Peterson**, **Venkatachalam Ramaswamy**, George Reid, Anthony Rosati, Karen Rosenlof, Christopher Sabine, **Dan Schwarzkopf**, **Susan Solomon**, William Stern, Ronald Stouffer, Russell Vose, Rick Wanninkhof, David Wuertz and Bruce Wyman. *Id*., at pp. 955-968.

[104] The following thirty-seven (37) NOAA scientists are listed as having reviewed the WG I portion of the IPCC AR4 report: Michael Alexander, Kristen Averyt, Timothy Bates, Harold Brooks, John Daniel, Henry Diaz, Keith Dixon, Leo Donner, Elsworth Dutton, David Easterling, David Fahey, Richard Feely, Graham Feingold, Kevin Gallo, Hernan Garcia,, Anand Gnanadesikan, Pavel Groisman, Isaac Held, Thomas, Karl, Thomas Knutson, Istvan Laszlo, Edward Lovejoy, Marin Manning, Melinda Marquis, Laury Miller, Robert Molinari, Daniel Murphy, Venkatachalam Ramaswamy, A.R. Ravishankara, Christopher Sabine, Franklin Schwing, Dian Seidel, Susan Solomon, Ronald Stouffer, Robert Webb, Michael Winton, and Zuepeng Zhao. *Id*., at pp. 969-979.

[105] These fifteen NOAA scientists included: Keith Dixon, David Fahey, Richard Feely, Hernan Garcia, Pavel Groisman, Isaac Held, Thomas Karl, Thomas Knutson, Martin Manning, Robert Molinari, Venkatachalam Ramaswamy, Christopher Sabine, Susan Solomon, and Ronald Stouffer. *Id*.

[106] DOC-NOAA had previously provided eighteen (18) of the thirty (30) U.S Government climate scientists who been integrally involved in the 'peer review' of the second draft of the Working Group I contribution to the IPCC's Fourth Assessment Report ("AR4"). These NOAA officials/scientists included: James Butler, Randy Dole, Kea Duckenfield, Mark Eakin, Dave Easterling, Paul Ginoux, Peter Hildebrand, Martin Hoerling, **Thomas Karl**, Yoram Kaufman, Chet Koblinsky, Arun Kumar, Eric Lindstrom, Matthew Menne, John Ogren, David Rind, Dian Seidel and Robert Webb. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *U.S. Government Review of the Second-Order Draft IPCC* ***Working Group I*** *Contribution to the Fourth Assessment Report (4AR) – "Climate Change 2007: The Physical Science Basis"* (June 2006), available at: http://www.noaa.gov/foia/noaa_useful_websites/US_Government_Review/WGI_USGreview_submitted_comments.pdf.

[107] These five (5) DOC-NOAA scientists included: Susan Solomon, Martin Manning, Melinda Marquis, Kristen Averyt and Henry LeRoy Miller, Jr. *Id*., at iii. As noted above, Susan Solomon and Martin Manning both contributed to and reviewed the WG I portion of the IPCC AR4. Henry LeRoy Miller, Jr. is a DOC-NOAA research scientist. See United States Department of Commerce, National Oceanic and Atmospheric Administration, Earth System Research Laboratory Chemical Science Division, *Henry LeRoy Miller, Jr. – Research Associate*, NOAA website available at: http://www.esrl.noaa.gov/csd/staff/henry.leroy.miller/.

[108] The following EPA personnel served as 'peer reviewers' of the Working Group 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. Only four (4) EPA personnel had contributed to the Working Group III portion of the AR4. They included: Christa Clapp, Kenneth Andrasko, Francisco De La Chesnaye and Steven Rose. Similarly, only four (4) EPA personnel served as 'peer reviewers' of the Working Group III portion of the AR4, one of whom also made contributions thereto: Mark Heil, Steven Rose, Dina Kruger and Robert Larson.

[109] For example, "CIRES is a NOAA Cooperative Institute -- a partnership between a university research organization and NOAA's Office of Oceanic and Atmospheric Research (OAR). CIRES research is guided and sustained by a Cooperative Agreement, reviewed every five years *and funded by Congress through NOAA*" (emphasis added). *See* Cooperative Institute for Research in Environmental Services, *NOAA (National Oceanic and Atmospheric Administration) & CIRES Collaboration*, CIRES website, available at: http://cires.colorado.edu/about/noaa/.

[110] For example, the following fifty-seven (59) scientists from universities participating in NOAA Cooperative Institutes submitted contributions to the WG I portion of AR4: Richard Alley, Penn State Univ.; Cecilia Bitz, Univ. of Wash.; Natalia Andronova, Univ. of Mich.; Roger Barry, Univ. of Colo.; Edmund Chang, SUNY Stony Brook; Jason Box, Ohio State Univ.; Christopher Brethereton, Univ. of Wash.; Anthony Broccoli, Rutgers Univ.; Amy Clement, Univ. of Miami; Edward Cook, Columbia Univ.; Steven Emerson, Univ. of Wash.; Ruth Curry, Woods Hole; Marin Gellar, SUNY Stony Brook; Alex Hall, UC Los Angeles; Larry Hinzman, Univ. of Alaska-Fairbanks; Ralph Keeling, Scripps Inst.; Terrence Joyce, Woods Hole; Eric Leuliette, Univ. of Colo.; Marta Krynytzky, Univ. of Wash.; Michael Lavine, Duke Univ.; Beate Lipert, Columbia Univ.; Carl Mears, Remote Sensing Systems; Ellen Mosely-Thompson, Ohio State Univ.; Philip Mote, Univ. of Wash; Katsumi Matsumoto, Univ. of Minn.; Michael Oppenheimer, Princeton, Univ.; Steven Nerem, Univ. of Colo.; Joyce Penner, Univ. of Mich; Joel Norris, Scripps Inst.; David Pierce, Scripps, Inst., Stephen Piper, Scripps Inst.; Henry Pollack, Univ. of Mich.; Veerabhadvan Ramanathan, Scripps Inst.; Navin Ramankutty, Univ. of Wisc., Michael Prather, UC-Irvine; Ignatius Rigor, Univ. of Wash.; David Randall, Colorado State Univ.; Andrey

Proshutinsky, Woods Hole; Bruce Raup, Univ. of Colo.; Bo Qiu, Univ. of Hawaii; Charles Raymond, Univ. of Wash.; David Robinson, Rutgers Univ.; David Rothrock, Univ. of Wash.; C.K. Shum, Ohio State Univ.; Dan Seidov, Penn State Univ.; Fred Semazzi, North Caroline State Univ.; Brian Soden, Univ. of Miami; Lowell Stott, Univ. of So. Calif.; Lonnie Thompson, Ohio State Univ.; Colm Sweeney, Princeton Univ.; Georgiy Stenchikov, Rutgers Univ.; Lynne Talley, UC-San Diego; Stephen Warren, Univ. of Wash.; Ray Weiss, Scripps Inst.; John Walsh, Univ. of Wash.; Tim Whorf, Scripps Inst.; Bin Wang, Univ. of Hawaii; James Zachos, UC-Santa Cruz; Tingjun Zhang, Univ. of Colo..

[111] For example, the following forty-nine (49) scientists working at universities participating in DOC-NOAA-funded Cooperative Institutes has reviewed the WG I portion of the AR4 report: Becky Alexander, Univ. of Wash.; Richard Alley, Penn State Univ.; Theodore Anderson, Univ. of Wash.; Wilmer Anderson, Univ. of Wisc.; Marcia Baker, Univ. of Wash.; Roger Barry, Univ. of Colo.; Charles Bentley, Univ. of Wisc.; Tami Bond, Univ. of Illinois at Urbana; Anthony Broccoli Rutgers Univ.; David Bromwich, Ohio State Univ.; Thomas Crowley, Duke Univ.; Melanie Fitzpatrick, Univ. of Wash.; Dennis Hartmann, Univ. of Wash.; Qiang Fu, Univ. of Wash.; Sidney Hemming, Columbia Univ.; Menglin Jin, Univ. Of Maryland; Philip Mote, Univ. of Wash.; Terrence Joyce, Woods Hole; Brian Magi, Univ. of Wash.; David Karoly, Univ. of Oklahoma; Michael Mann, Penn State Univ.; David Neelin, UC-Los Angeles; Klaus Keller, Penn State Univ.; Steven Nerem, Univ. of Colo.; Anne Nolin, Oregon State Univ.; Michael Oppenheimer, Princeton Univ.; Michelle Koutnik, Univ. of Wash.; Katsumi Matsumoto, Univ. of Minn.; Kenich Matsuoka, Univ. of Wash.; Eric Lieuliette, Univ. of Colo.; Joyce Penner, Univ. of Mich.; Zhanqing Li, Univ. of Maryland; Verabhadran Ramanathan, Scripps Inst.; Herman Sievering, Univ. of Colo.; James Randerson, UC-Irvine; Brian Soden, Univ. of Miami; Ray Weiss, Scripps Inst.; Konrad Steffan, Univ. of Colo.; Eric Steig, Univ. of Wash.; Alan Robock, Rutgers Univ.; Bjorn Stevens, UC-Los Angeles; Jin-Yi Yu, UC-Irvine; Joyce Terry, Woods Hole; Charles Zender, UC-Irvine; Anne Thompson, Penn State Univ.; David Thompson, Colorado State Univ.; Jeffrey Severinghaus, Scripps Inst.; Konstantin Vinnikov, Univ. of Maryland; Thomas Vonder Haas, Colorado State Univ..

[112] The following thirteen (13) universities scientists participating in DOC-NOAA-funded Cooperative Institutes served both as contributing authors and reviewers of the WG I portion of the AR4 assessment: Richard Alley, Penn State Univ.; Roger Barry, Univ. of Colo.; Anthony Broccoli, Rutgers Univ.; Philip Mote, Univ. of Wash.; Terrence Joyce, Woods Hole; Seven Nerem, Univ. of Colo.; Michael Oppenheimer, Princeton Univ.; Katsumi Matsumoto, Univ. of Minn.; Eric Lieuliette, Univ. of Colo.; Joyce Penner of Univ. of Mich; Veerabhadran Ramanathan, Scripps Inst.; Brian Soden, Univ. of Miami; Ray Weiss, Scripps Inst..

[113] *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*, supra at p. 953.

[114] DOC-NOAA scientists Thomas Delworth and David Levinson had made contributions to Chapter 9, while DOC-NOAA scientists Keith Dixon, Thomas Knutson and Ronald Stouffer had made contributions to Chapter 10.

[115] The following scientists that had been affiliated with universities and/or institutes that likely had participated in DOC-NOAA-funded programs had made contributions to Chapter 9: Joyce Penner, Natalia Andronova and Minghuai Wang had been affiliated with Univ. of Michigan which had hosted (CILER) and participated in RISA-GLISA. Jesse Kenyon, Michael Lavine and Gabrielle Hegerl had been affiliated with Duke Univ. which had participated in (CICS-M). Amy Clement had been affiliated with Univ. of Miami which had participated in (CICS-M). David Karoly had been affiliated with Univ. of Oklahoma which had hosted (CIMMS). David Pierce had been affiliated with Scripps Inst. which had participated in (CIMEC) and RISA-CNAP. The following scientists that had been affiliated with universities and/or institutes that likely had participated in DOC-NOAA-funded programs had made contributions to Chapter 10: Richard Alley, Penn State Univ., which had participated in (CILER). Mark Dyurgerov had been affiliated with Univ. of Colorado which had hosted CIRES and RISA-WWA. Gabrielle Hegerl had been affiliated with Duke Univ. which had participated in (CICS-M). Marta Krynytzky had been affiliated with Univ. of Washington which had hosted (JISAO) and participated in RISA-CIRC and RISA-CNAP. Michael Oppenheimer had been affiliated with Princeton Univ. which had participated in (CICS-M). Jonathan Overpeck had been affiliated with Univ. of Arizona which had received an $800,000 DOC-NOAA grant in 2004, and which had participated in RISA-SARP. Andreas Schmittner had been affiliated with Oregon State Univ. which had hosted (CIOSS) and participated in (CICS-M) and RISA-CIRC.

[116] *See* National Oceanographic and Atmospheric Administration Science Advisory Board, *Responses to Recommendations From the Climate Working Group Related to Climate Services External Review Report and Options for Developing a National Climate Service Report* (Oct. 2010), NOAA SAB website, at p. 6, available at:

http://www.sab.noaa.gov/Reports/RESPONSES%20TO%20RECOMMENDATIONS%20AND%20OPTIONS%20FOR%20NATIONAL%20CLIMATE%20SERVICE_final.pdf.

[117] *Id*. "NOAA agrees…[that it]has been asked by the White House to assume critical leadership roles. These include: NOAA Administrator, Dr. Jane Lubchenco co-chairing both the Interagency Climate Change Adaptation Task Force co-organized by CEQ and OSTP, and the National Science and Technology Council (NSTC) Climate Services Roundtable; the transitional director of NOAA's Climate Service, Thomas Karl, serving as the USGCRP Chair of the Subcommittee on Global Change Research; and NOAA supporting Dr. Katherine Jacobs' role at OSTP to support the National Climate Assessment." *Id*., at p. 7. *See* U.S. Global Change Research Program, *Tom Karl Named Chair of the Subcommittee on Global Change Research*, Agency Science News (May 25, 2010), available at: http://www.globalchange.gov/whats-new/agency-news/413-tom-karl-appointed-as-chair-of-the-subcommittee-on-global-change-research.html. "Tom Karl's appointment as chair of the subcommittee reinforces NOAA's long standing history of contributions to the USGCRP. NOAA is a lead Federal agency in the provision of trusted climate science and information, is a co-chair of the White House Interagency Climate Change Adaptation Task Force, and one of the lead agencies in the ongoing National Assessment process. Tom will take on this new leadership role, while continuing to provide guidance for the development of a proposed Climate Service within NOAA… As director of NOAA's National Climatic Data Center in Asheville, N.C., Tom has helped develop and implement internationally recognized standards for data quality." *Id*.

[118] In July/September 2008, "a 13-member external Review Team under the auspices of" the NOAA Science Advisory Board's Climate Working Group (CWG) issued a report recommending that NOAA "lead an effort, with its partners, to compare and contrast specific national options for the development of climate services". *See* NOAA Science Advisory Board, *A Review of the NOAA Climate Services Strategic Plan Final Report to the National Oceanic and Atmospheric Administration, Final Report* (Sept. 2008), at p. 2, available at: http://www.sab.noaa.gov/Reports/2008/NOAA_SAB_CWG_NCS_Review_Sep08_FINALtoNOAA.pdf. A June 2005 NOAA SAB report had revealed that one of the four options the SAB's Climate Working Group had seriously considered for purposes of creating a National Climate Service called for "a strategic partnership in which NOAA serve[d] as the lead entity." *See* U.S. Department of Commerce National Oceanographic Administration Science Advisory Board Climate Working Group, *Options for Developing a National Climate Service* (June 5, 2009), at p. 53, available at: http://www.sab.noaa.gov/Reports/2009/NCS_Report_FinaltoNOAA_6_5_09-1.pdf. The NCS "would be located in NOAA[] and consistent with NOAA's responsibilities and the perceived comparative advantages of NOAA and that of its expected partners." *Id*.

[119] A "National Climate Service w[ould] assist the nation and the world in understanding, anticipating, and responding to climate, climate change, and climate variability and their impacts and implications. The Service will inform the public through the sustained production and delivery of authoritative, timely, useful information about impacts on local, state, regional, tribal, national, and global scales." *Id*., at p. 54. "On February 8, 2010 the Department of Commerce and NOAA announced their intent to create a Climate Service line office". *See* National Oceanographic and Atmospheric Administration Science Advisory Board, *Responses to Recommendations From the Climate Working Group Related to Climate Services External Review Report and Options for Developing a National Climate Service Report* (Oct. 2010), *supra* at p. 3. Such proposal had been vetted beforehand "with Federal partners and the Administration, including the Office of Science and Technology Policy (OSTP), the Office of Management and Budget (OMB) and the Council on Environmental Quality (CEQ)." *Id*. *See also* National Oceanographic and Atmospheric Administration, *A Climate Service in NOAA: Connecting Climate Science to Decision Making*, Draft Vision and Strategic Framework (Dec. 18, 2010), at Executive Summary, p. 4, available at: http://www.noaa.gov/climateresources/resources/CS_Draft_Vision_Strategic_Framework_v9.0%202010_12_20-1.pdf. *See also* United States Department of Commerce National Oceanographic Administration, *Proposed Climate Service in NOAA* (Feb. 15, 2010), NOAA website, available at: http://www.noaa.gov/climateresources/resources/ProposedClimateServiceinNOAA_Feb15rev.pdf.

[120] *See, e.g.*, Ashley Portero, *Congress Rejects Request for National Climate Service, A Resource for Climate Change Information*, International Business (IB) Times (Nov. 21, 2011), available at: http://www.ibtimes.com/congress-rejects-request-national-climate-service-resource-climate-change-information-373102; David A. Kronig, *House Science Committee Grills NOAA Administrator about Climate Service*, FYI: The AIP Bulletin of Science Policy News, American Institute of Physics (June 30, 2011), available at: http://www.aip.org/fyi/2011/080.html; *Examining NOAA's Climate Service Proposal*, Hearing Before the Committee on Science, Space and Technology of the House of Representatives,

112th Cong. 1, Rpt. No. 112–27 (June 22, 2011), available at: http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg66927/pdf/CHRG-112hhrg66927.pdf; Matthew Berger, *Congress Asks NOAA to Study Setting Up National Climate Service*, InsideClimate News (Dec 16, 2009), available at: http://insideclimatenews.org/print/3803; Roberta Kwok, *US considers a national climate service*, Nature (Feb. 19, 2009), available at: http://www.nature.com/news/2009/090219/full/news.2009.108.html; Rick Piltz, *Congress takes step to create a National Climate Service - but beware of shackles and poison pills*, Climate Science Watch (May 14, 2009), available at: http://www.climatesciencewatch.org/2009/05/14/congress-takes-step-to-create-a-national-climate-service-but-beware-of-shackles-and-poison-pills/.

[121] *See* U.S. Department of Commerce National Oceanographic Administration Science Advisory Board Climate Working Group, *Options for Developing a National Climate Service* (June 5, 2009), *supra* at p. 54.

[122] *Id*., at pp. 54-55.

[123] *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*.

[124] *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*.

[125] *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. .

[126] *See* EPA-TSD, *supra* at p. 4.

[127] 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'".

[128] *See* "Appendix 3: USGCRP/CCSP "Core Reference Documents" - 'Lead' Agency Burdens".

[129] *See* EPA-TSD, *supra*, at p. 5.

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

[131] *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.

[132] *Id*.

[133] *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*.

[134] 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; 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; 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* (SAP2.4/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; *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)), National Oceanic and Atmospheric Administration, 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; 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)), National Oceanic and Atmospheric Administration, 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; 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; U.S. Department of Commerce National Oceanographic Administration, *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking*, (SAP5.2/CCSP(2009)) (M. Granger Morgan (Lead Author), Hadi Dowlatabadi, Max Henrion, David Keith, Robert Lempert, Sandra McBride, Mitchell Small, and Thomas Wilbanks (Contributing Authors)), available at: http://downloads.globalchange.gov/sap/sap5-2/sap5-2-final-report-all.pdf; U.S. Department of Commerce National Oceanographic Administration, *Decision Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data: A Focus on Water Resources*, (SAP5.3/CCSP(2008)) (Nancy Beller-Simms, Helen Ingram, David Feldman, Nathan Mantua, Katharine L. Jacobs, and Anne M. Waple (eds.)), available at: http://downloads.globalchange.gov/sap/sap5-3/sap5-3-final-all.pdf.

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

[136] *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; 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.

[137] *See* EPA-TSD, at Table 1.1, p. 7, *supra*.

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

[139] *Id*.

[140] *See* "Appendix 4: USGCRP/CCSP Documents Referencing IPCC Assessment Reports"; "Appendix 5: NRC Reports Referencing IPCC Assessment Reports".

[141] *See, e.g.*, SAP4.1/CCSP(2009b) and SAP4.6/CCSP(2008b), *supra* at inside cover.

[142] "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.

[143] *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).

[144] *Id* (emphasis in original).

[145] *See, e.g.*, SAP4.1/CCSP(2009b) and SAP4.6/CCSP(2008b), *supra* at inside cover.

[146] *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.

[147] 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.

[148] "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." *Id*., 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.

[149] "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.

[150] ITSSD acknowledges that DOC-NOAA had not been at involved in the preparation or review of the Working Group III portion of the AR4 assessment.

[151] *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.

[152] *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.

[153] *See* IAC-2010 Report, *supra* at xiii-xiv, 16-17, Box 2.1, 22.

[154] 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.

[155] *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.

[156] *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.

[157] *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.

[158] *See* IAC-2010 Report, *supra* at 52-53.

[159] *Id*., p. 52.

[160] *Id*.

[161] *Id*.

[162] *Id*., at p. 53.

[163] *See* EPA-RTPs Vol. 2, *supra* at Comments/Responses 2-25, 2-30.

[164] *See* IAC-2010 Report, *supra* at 14-15.

[165] *Id*., at pp. 54-55.

[166] *See* EPA-RTPs Vol. 2, *supra* at Comments/Responses 2-17, 2-18, 2-25.

[167] *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.

[168] *See* IAC Report, *supra* at Executive Summary at pp. xii, 59.

[169] 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*.

[170] *Id.*, at Box 1.1, p. 4.

[171] *See* (SAP1.1/CCSP(2006); (SAP2.2/CCSP(2007), *supra*.

[172] See *Global Climate Change Impacts in the United States* (2009) ("GCCI"), *supra*.

[173] "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. This document also references data made available by other government agencies, such as NOAA and National Aeronautics and Space Administration (NASA)." *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. 8.

[174] *See* United States Department of Commerce, National Oceanographic and Atmospheric Administration, *Notice; Establishment of Climate Change Science Program (CCSP) Product Development Committee (CPDC) for Synthesis and Assessment Product 1.1 (CPDC–S&A 1.1)*, 70 FR 53636 (Sept. 9, 2005), available at: http://www.gpo.gov/fdsys/pkg/FR-2005-09-09/pdf/05-17942.pdf.

[175] *See* Federal Advisory Committee Act, Pub.L. 92–463 §1, 86 Stat. 770 (Oct. 6, 1972), codified in 5 U.S.C. App, available at: http://www.gpo.gov/fdsys/pkg/USCODE-2010-title5/html/USCODE-2010-title5-app-federalad.htm; http://www.law.cornell.edu/uscode/html/uscode05a/usc_sup_05_5_10_sq1.html.

[176] *See* US General Services Administration, *Terminated Federal Advisory Committees – U.S. Department of Commerce*, available at: http://www.gsa.gov/portal/content/249033.

[177] To the best of ITSSD's knowledge and belief, the CPDC-S&A1.1 consisted of twenty-two (22) members. "The Author Team Convening Lead Authors (CLAs), Lead Authors (LAs), and Chief Editor were constituted as a Federal Advisory Committee that was charged with advising the CCSP on the scientific and technical content of the Report." *See* United States Global Research Program, *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences - Synthesis and Assessment Product 1.1*, Report by the Climate Change Science Program and the Subcommittee on Global Change Research (Thomas R. Karl, Susan J. Hassol, Christopher D. Miller, and William L. Murray, Eds.), (2006), *supra* at p. x. These members included: 1) Thomas R. Karl (NOAA); 2) Tom M. L. Wigley, (NSF, NCAR); 3) V. Ramaswamy (NOAA); 4) John R. Christy (Univ. of Alabama); 5) John R. Lanzante (NOAA); 6) Carl A. Mears (Remote Sensing Systems); 7) Chris Folland (UK Met Office); 8) Benjamin D. Santer (DOE LLNL); 9) James W. Hurrell (NSF NCAR); 10) Gerald A. Meehl (NSF NCAR); 11) Dian Seidel (NOAA); 12) Steven C. Sherwood (Yale Univ.); 13) Thomas C. Peterson (NOAA); 14) Frank J. Wentz (Remote Sensing Systems); 15) Konstantin Y. Vinnikov (Univ. of Maryland); 16) Chris E. Forest (MIT); 17) Roy W. Spencer (Univ. of Alabama); 18) Russell S. Vose (NOAA); 19) Richard W. Reynolds (NOAA); 20) Joyce E. Penner (Univ. of Mich.); 21) Peter W. Thorne (U.K. Met. Office); 22) David E. Parker (U.K. Met. Office).

[178] John Lanzante, Thomas Peterson and Russell Vose had contributed to the WG I portion of the AR4, while Thomas Karl and Dian Seidel had reviewed that assessment. V. Ramaswamy had served both as contributor and reviewer to the WG I portion of the IPCC AR4. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.

[179] "The Author Team Convening Lead Authors (CLAs), Lead Authors (LAs), and Chief Editor were constituted as a Federal Advisory Committee that was charged with advising the CCSP on the scientific and technical content of the Report." *See* United States Global Research Program, *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences - Synthesis and Assessment Product 1.1*, Report by the Climate Change Science Program and the Subcommittee on Global Change Research (Thomas R. Karl, Susan J. Hassol, Christopher D. Miller, and William L. Murray, Eds.), (2006), *supra* at p. x.

[180] The remaining four (4) government agency employees included Ben Santer of DOE and three (3) NCAR/NSF employees: Tom Wigley, James Hurrell and Gerald Meehl. "The National Center for Atmospheric Research (NCAR) is a federally funded research and development center devoted to service, research and education in the atmospheric and related sciences." *See* National Center for Atmospheric Research, *About NCAR*, available at: http://ncar.ucar.edu/about-ncar. NCAR is a program of and is sponsored by the National Science Foundation, an independent federal agency. *Id*. *See also* National Science Foundation, *About the National Science Foundation – NSF at a Glance*, NSF website, available at: http://www.nsf.gov/about/ ("The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950…"). *Id*.

[181] These individuals included Chris K. Folland, Peter W. Thorne and David Parker. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.

[182] *See* U.S. Department of Justice, *Applicability of 18 U.S.C. §219 to Representative Members of Federal Advisory Committees*, Memorandum for the Deputy General Counsel Department of the Treasury (Sept. 15, 1999), available at: http://www.justice.gov/olc/219new.htm (concluding not only that foreign government officials are not prohibited from serving "as representative members of federal advisory committees [because they] do not hold offices of profit or trust [and thus,]…'owe their loyalty to outside interests and are not 'servant[s] of the Government'", but also because representative members of federal advisory committees are not 'public officials' covered by 18 U.S.C. § 219.") *Id*. 18 U.S.C. § 219 prohibits a public official from "act[ing] as an agent of a foreign principal required to register under the Foreign Agents Registration Act of 1938 or a lobbyist required to register under the Lobbying Disclosure Act of 1995 in connection with the representation of a foreign entity…[unless]…[the] employing agency certifies that such employment is required in the national interest." *See* 18 U.S.C §219(a)-(b), available at: http://www.law.cornell.edu/uscode/text/18/219.

[183] Carl Mears had made a contribution to the WG I portion of the AR4 and worked along with Frank Wentz at Remote Sensing Systems which was a participant in (CICS-M). Konstantin Vinnikov, who had served as a contributor to and

reviewer of the WG I portion of AR4, worked for Univ. of Maryland which hosts (CICS-M). Joyce Penner, who had served as a contributor and reviewer of the WG I portion of AR4, worked for Univ. of Michigan which was a participant in (CILER). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. *See also* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.

[184] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Plans for CCSP Product 1.1 Temperature trends in the lower atmosphere - steps for understanding and reconciling differences*, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID22.html.

[185] *See* U.S. Department of Commerce National Oceanographic Administration, *The North American Carbon Budget and Implications for the Global Carbon Cycle*, SAP 2.2/CCSP(2007), *supra* at p. vi.

[186] "Production of this report was charged to scientists at the Oak Ridge National Laboratory (run by Battelle Memorial Institute). This team has coordinated all aspects of production of the report, following production of the Prospectus." *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Approach for the Expert Review of the Climate Change Science Program Synthesis and Assessment Product 2.2: North American carbon budget and implications for the global carbon cycle* (March 2007), at p. 1, available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_Peer_Review_Approach.pdf.

[187] Lisa Dilling and Myanna Lahsen had been affiliated with Univ. of Colorado which had participated in CIRES. Richard Conant, Keith Paustian and Donald Johnson had been affiliated with Colorado State Univ. which had participated in (CICS-M) and had hosted (CIRA). Adam Rose, Kenneth Davis and Richard Ready had been affiliated with Penn State Univ. which had participated in (CILER). Adam Rose had also been affiliated with UC So. Calif. (LA), which had participated in (CIMEC). Burke Hales, Mark Harmon, and Beverly Law had been affiliated with Oregon State Univ. which had hosted (CIOSS). Jorge Sarmiento, Steven Pacala and Robert Socolow had been affiliated with Princeton Univ., Taro Takahashi had been affiliated with Columbia Univ. and Diane Pataki had been affiliated with UC-Irvine, all which universities had participated in (CICS-M). Jay Gregg had been affiliated with Univ. of Maryland which had hosted (CICS-M). Richard Houghton had been affiliated with Woods Hole which had participated in (CINAR).

[188] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Approach for the Expert Review of the Climate Change Science Program Synthesis and Assessment Product 2.2: North American carbon budget and implications for the global carbon cycle* (March 2007), *supra* at p. 1.

[189] James Bockheim and Christopher Kucharick had been affiliated with the University of Wisconsin which had participated in (CILER) and had hosted (CIMSS). Jonathan Rubin had been affiliated with Univ. of Maine which had participated in (CINAR). Jeffrey Richey had been affiliated with Univ. of Washington which had hosted (JISAO), while Joshua Schimel had been affiliated with UC-Santa Barbara which had participated in (CIMEC). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. *See also* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Reviewers for Climate Change Science Program Synthesis and Assessment Product 2.2: North American carbon budget and implications for the global carbon cycle* (June 2006), available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_bios.pdf.

[190] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Expert Peer Review Comments for CCSP 2.2, The First State of the Carbon Cycle Report (SOCCR): The North American Carbon Budget and Implications for the Global Carbon Cycle* (July 2006), available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_Peer_Review_Comments.pdf.

[191] "This is clearest at page ES-4 lines 19-27, where the global terrestrial sink is stated to be 'quite uncertain', but the North American sink is given to 3 significant figures. No source for this number is given. Also, no year is given – a crucial omission since the terrestrial sink is the most variable term in the C budget from year to year, both globally and regionally. This is a dangerous oversimplification in two ways. First, the extreme interannual variability of the terrestrial sink must be stressed at this point in the executive summary. Second, the actual order of uncertainty is opposite to what is implied: *all continental and regional C sink estimates from atmospheric inversion estimates are more uncertain than global sink estimates, because of mass balance constraints. Bottom-up estimates (from inventories etc) are also subject to large uncertainties, though they are much harder to quantify and are often not estimated* (see Raupach et al. 2005, Global Change Biology 11, 378 for discussion of errors and their estimation)" (emphasis added). *Id*., at pp. 1-2.

[192] *Id*., at p. 2.
[193] "[T]he lack of consideration of the ocean sink risks misleading as far as the relation of North America to the GLOBAL carbon cycle is concerned. There probably can be little question that North America makes (or has made) a "dominant" contribution to global carbon SOURCES. It may be harder to argue for the "dominance" of North America for carbon SINKS, at least when viewed historically. Here it may again be useful to contrast the situation presently (e.g. 2003) with the "cumulative" situation since 1780." *Id*., at p. 5.
[194] "Reviewer 6 Are uncertainties or incompleteness in the evidence explicitly recognized? NO: It is in fact one of my major criticisms of the report that in the Executive Summary (Pages ES-4 to ES-8 line 12) as well as in Chapter 3 (except for Table 3-1 and page 3-7, line 19-22) no uncertainty ranges of the sources and sinks fluxes of carbon in North America are given. For example, the estimated uncertainty of fossil fuel CO2 emissions is about 10% (with 95% confidence, see Table 3-1) but up to four significant digits of the cited numbers are given. This deficiency is even more obvious when it comes to the sinks which in most cases are uncertain to within 50-100%. This is very misleading as it gives the impression to the reader that the fluxes reported would be known to very high precision, but in fact the contrary is the case. The digits in the reported numbers need to be reduced to the significant ones (i.e. ≤ 2) and errors need to be reported, also in the Executive Summary." *Id*., at p. 7.
[195] *Id*., at p. 12. "Among the most glaring is the citation of the estimated carbon sink for North America (in Gt of C) to three significant figures, when the estimated error is on the order of ±50%. However, my concern also extends to some aspects of the better constrained estimates of fossil fuel emissions, which are sometimes given to four significant figures." *Id*.
[196] *Id*., at p. 11.
[197] *Id*.
[198] *Id*., at pp. 71-72.
[199] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Comments and Responses on SOCCR/SAP 2.2 Draft 1 (May 2006) PREFACE and EXECUTIVE SUMMARY*, available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_Comment_Responses_all.pdf.
[200] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Instructions for Peer Review of U.S. Climate Change Science Program (CCSP) Synthesis and Assessment Product (SAP) 2.2* (May 2006), available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_peer_review_instructions.pdf.
[201] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Approach for the Expert Review of the Climate Change Science Program Synthesis and Assessment Product 2.2: North American carbon budget and implications for the global carbon cycle* (March 2007), NOAA website, available at: http://www.cio.noaa.gov/itmanagement/prplans/pdfs/CCSP_2_2_Peer_Review_Approach.pdf.
[202] *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* (Sept. 19, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-09-19/pdf/E6-15542.pdf.
[203] *See* United States Department of Commerce, National Oceanographic 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.
[204] *See* US General Services Administration, *Terminated Federal Advisory Committees – U.S. Department of Commerce*, *supra*.
[205] *See* U.S. Global Change Research Program, *Second National Climate Assessment (2009)*, USGCRP website, available at: http://globalchange.gov/what-we-do/assessment/previous-assessments/global-climate-change-impacts-in-the-us-2009.
[206] "This report was produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research, and at the request of the U.S. Government. *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), *supra* at inside cover. "The USGCRP called for this report. An expert team of scientists operating under the authority of the Federal Advisory Committee Act, assisted by communication specialists, wrote the document." *Id*., at p. 7. *See also* 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/pdf/E9-371.pdf.

[207] "The AEC and the Scientific Coordination Team thank the following individuals for their peer review of this report…"*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), *supra* at p. 2.

[208] *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), *supra* at p. 1.

[209] Thomas Karl and David Anderson had served as a reviewer of the WG I portion of the IPCC AR4. Thomas Peterson had served as a contributor to the WG I portion of the IPCC AR4, while Jay Lawrimore had served as both a contributor to and reviewer of the WGI portion of the IPCC 4AR. Roger Pulwarty had served both as a contributor to and reviewer of the WG II portion of the IPCC AR4. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: Climate Change 2007, *Climate Change 2007: Working Group I: The Physical Science Basis*, s Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), *supra* Annexes II and III; 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), *supra* at Appendices II and III.

[210] Donald Boesch had been affiliated with Univ. of Maryland which had hosted the (CICS-M) NOAA Cooperative Institute Program. A. David McGuire had been affiliated with Univ. of Alaska Fairbanks which had hosted (CIFAR) and the NOAA RISA-ACCAP program. Brad Udall had been affiliated with Univ. of Colorado which has hosted (CIRES) and the NOAA RISA-WWA program. Donald Weubbles had been affiliated with Univ. of Illinois-Urbana which had participated in (CILER). Edward Miles had been affiliated with Univ. of Washington, which had hosted (JISAO) and had participated in NOAA RISAs-CIRC and -CNAP. Jonathan Patz had been affiliated with Univ. of Wisconsin which had hosted (CIMSS). Lynne Carter had been affiliated with Louisiana State Univ., which had participated in NOAA RISA-SCIPP. Nancy Grimm and Jonathan Overpeck had been affiliated with Univ. of Arizona which had been awarded an $800,000 NOAA grant during 2004 and had participated in NOAA SARP program. James McCarthy had been affiliated with Harvard Univ. which had been a co-recipient of a NOAA grant award in connection with the NOAA-ESS program. *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. See also United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – RISA Program*, NOAA website, *supra*; United States Department of Commerce, National Oceanic and Atmospheric Administration Climate Program Office, *Climate and Societal Interactions – Sectoral Applications Research Program - About the Sectoral Applications Research Program*, NOAA website, *supra*.

[211] These peer reviewers included: Robert Corell, John Heinz III Center for Science, Economics and the Environment; Robert Duce, Texas A&M Univ.; Kristie Ebi, Independent consultant, ESS, LLC; Christopher Field, Carnegie Institute; William Hooke, American Meteorological Assoc.; Michael MacCracken, Climate Institute; Linda Mearns, NCAR-NSF; Gerald Meehl, NCAR-NSF; Susan Solomon, NOAA; and Steven Wofsy, Harvard Univ..

[212] *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: Climate Change 2007, *Climate Change 2007: Working Group I: The Physical Science Basis*, s Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), *supra* Annexes II and III, *supra*.

[213] *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.

[214] DOC-NOAA had secured partial funding from the National Science Foundation to ensure NRC's peer review of SAPs 1.3, 3.2 and 52. DOC-NOAA had secured partial funding from the U.S. Department of Commerce to ensure NRC's peer review of SAP 5.3.

[215] *See supra*.

[216] "The National academies provide a unique public service by bringing together experts in all areas of science and technology to address issues of national importance. The most common form of advice is a written report that reflects the consensus of a committee appointed by the Academies to review research on a particular topic." *See* The National Academies, Division on Engineering and Physical Science, *DEPS -- Frequently Asked Questions*, NAS website, available at: http://sites.nationalacademies.org/DEPS/DEPS_037300.

[217] *See* (SAP1.3/CCSP(2008g)); (SAP2.4/CCSP(2008h)); (SAP3.2/CCSP(2008d)); (SAP3.3/CCSP(2008i)); (SAP5.2/CCSP(2009)); (SAP5.3/CCSP(2008)), *supra*.

[218] *See* OMB-PRB, *supra* at Sec. IV, p. 27.

[219] *Id*.

[220] *See* Ian Fein, *Reassessing the Role of the National Research Council: Peer Review, Political Tool, or Science Court?*, 99 Calif. Law Rev. 465 (2011), available at: http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1045&context=californialawreview (discussing how politicians and federal agencies have increasingly turned to the NRC to defuse political controversies, particularly in the natural resources arena. The author discusses three such cases).

[221] Holly Doremus, *Scientific and Political Integrity in Environmental Policy*, 86 Texas L. Rev. 1601, 1652 (2008), available at: http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=3001&context=facpubs.

[222] "Debate over regulatory peer review remains highly polarized: some consider it a panacea while others suggest that it poses a serious problem.[fn] Supporters assert that if peer review works for science, it should work for agency decisions that rely on science as well; [fn] critics stress the difference between research and regulation, and argue that peer review is inherently incapable of generating the same benefits for regulation that it produces within the scientific field." *See* Ian Fein, *Reassessing the Role of the National Research Council: Peer Review, Political Tool, or Science Court?*, 99 Calif. Law Rev. 465 (2011), *supra* at pp. 474-475, *citing* J.B. Ruhl and James Salzman, *In Defense of Regulatory Peer Review*, 84 Wash. Univ. L. Rev. 1 (2006), available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1016057&download=yes; Holly Doremus, *Scientific and Political Integrity in Environmental Policy*, 86 Texas L. Rev. 1601 (2008), *supra*.

[223] *See* Holly Doremus, *Scientific and Political Integrity in Environmental Policy*, 86 Texas L. Rev. 1601 (2008), *supra* at 1651-1652. "No peer reviewer can know how hard the scientists under review actually worked to practice objectivity and skepticism. The best reviewers can do is to evaluate whether the judgments made fall within the broad range of professionally acceptable ideas." *Id*., at 1652.

[224] *Id*. "[E]ffective peer review requires the devotion of extraordinary amounts of time by experts who face many competing demands on their time,[fn] and brings little in the way of professional rewards. It must therefore be reserved for those situations in which it is most likely to provide concrete improvements, and in which the reviewers are most likely to emerge from the experience confident that their time was well spent." *Id*.

[225] Climate change has long been one of the most controversial and divisive political issues the world, including Washington, has ever addressed. *See* Nick Cohen, The Climate Change Deniers Have Won, The Guardian (March 22, 2014), available at: http://www.theguardian.com/commentisfree/2014/mar/22/climate-change-deniers-have-won-global-warming; Andrew J. Hoffman, *How To Fix The Broken Debate On Climate Change*, Footnote (May 1, 2013), available at: http://footnote1.com/how-to-fix-the-broken-debate-on-climate-change/; Joel Achenbach and Juliet Eilperin, *Climate-change Science Makes for Hot Politics*, The Washington Post (Aug. 19, 2011), available at: http://www.washingtonpost.com/national/health-science/climate-change-science-makes-for-hot-politics/2011/08/18/gIQA1eZJQJ_story.html?hpid=z1

[226] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration National Climatic Data Center, *Global Warming – Introduction*, NOAA website, available at: https://www.ncdc.noaa.gov/monitoring-references/faq/global-warming.php ("One of the most vigorously debated topics on Earth is the issue of climate change,

and the National Environmental Satellite, Data, and Information Service (NESDIS) data centers are central to answering some of the most pressing global change questions that remain unresolved.") *Id*.

[227] *See* Ian Fein, *Reassessing the Role of the National Research Council: Peer Review, Political Tool, or Science Court?*, 99 Calif. Law Rev. 465 (2011), *supra* at 468 and sources cited therein.

[228] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration Office of the Chief Information Officer & High Performance Computing and Communications, National Oceanic and Atmospheric Administration Information Quality Guidelines (revised as of January 18, 2012), *supra* at Part II.

[229] *See* National Academy of Sciences, National Academy of Engineering , Institute of Medicine and National Research Council, *POLICY ON COMMITTEE COMPOSITION AND BALANCE AND CONFLICTS OF INTEREST FOR COMMITTEES USED IN THE DEVELOPMENT OF REPORTSCOMMITTEES USED IN THE DEVELOPMENT OF REPORTS* (May 12, 2003), at "APPENDIX A - Policy on Committee Composition and Balance and Conflicts of Interest for Committees Used in the Development of Reports", National Academies website, at pp. 9-10, available at: http://www.nationalacademies.org/coi/bi-coi_form-0.pdf.

[230] *Id*., at p. 10.

[231] *Id*.

[232] *See* United States Department of Commerce, National Oceanographic and Atmospheric Administration, *Notice to Establish the National Oceanic and Atmospheric Administration (NOAA) Climate Change Science Program (CCSP) Product Development Committee (CPDC) for Synthesis and Assessment Product 1.3 (CPDC—S&A 1.3) Under the Provisions of the Federal Advisory Committee Act*, 71 FR 64511-64512 (Nov. 2, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-11-02/pdf/E6-18491.pdf.

[233] *See* US General Services Administration, *Terminated Federal Advisory Committees – U.S. Department of Commerce*, *supra*.

[234] To the best of ITSSD's knowledge and belief, the twelve (12) members of CPDC-S&A1.3 consisted of: 1) Eugenia Kalnay (University of Maryland); 2) David J. Karoly (University of Melbourne, Australia); 3) Gabrielle C. Hegerl (Duke University); 4) Randall M. Dole (NOAA); 5) David Rind (Columbia University); 6) James A. Carton (University of Maryland); 7) Siegfried Schubert (NASA); 8) Martin P. Hoerling (NOAA); 9) Randy Koster (NASA); 10) Phillip Arkin (University of Maryland); 11) Roger D. Pulwarty (NOAA); 12) Arun Kumar (NOAA). *See* Find the Data, *CCSP Product Development Committee for Synthesis and Assessment Product 1.3*, FindtheBest.com, available at: http://faca-members.findthedata.org/d/dir/DOC/CCSP-Product-Development-Committee-for-Synthesis-and-Assessment-Product-1.3.

[235] They included Randall Dole, Martin Hoerling, Roger Pulwarty and Arun Kumar. Messieurs Dole and Hoerling, who also had served as editors of the SAP.

[236] Eugenia Kalnay, James Carton and Phillip Arkin had been affiliated with the Univ. of Maryland which hosts (CICS-M), while Gabrielle Hegerl and David Rind had been affiliated, respectively, with Duke Univ. and Columbia Univ., which are both participants in (CICS-M). David Karoly had been affiliated at the time with Univ. of Oklahoma, which hosted (CIMMS). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. *Although SAP 1.3 lists Gabrielle Hegerl as being affiliated with Univ. of Edinburg, she had also served, during part of 2007 when SAP 1.3 was in the process of being drafted, as a funded researcher at Duke Univ. *See* AGU Atmospheric Sciences Newsletter (March 2011), available at: http://www.hvonstorch.de/klima/Media/interviews/AS/hegerl.pdf.

[237] Gabrielle Hegerl and David Rind served as both contributors to and reviewers of the WG I portion of the AR4, while David Karoly served only as a contributor. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.

[238] The SAP reflects that Neil Christerson of NOAA was the Federal Advisory Committee Designated Federal Official, and that the twelve (12) federal advisory committee members had served as authors of the report. *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), supra at inside cover. The advisory committee members are reflected as authors on p. iv.

[239] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Peer Review Plans*, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID18.html. "This report, produced by the National Oceanic and Atmospheric Administration (NOAA) in coordination with the National Aeronautics and Science Administration (NASA) and other agencies, will summarize the present status of national and international climate reanalysis efforts and discuss key research findings on the strengths and limitations of the current reanalysis products for describing and analyzing the causes of climate variations and trends that have occurred during the time period of the reanalysis records (approximately the last 50 years)." *Id*.

[240] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Plans for CCSP Product 1.3 Re-analysis of historical climate data for key atmospheric features - Implications for attribution of causes of observed change*, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID18.html.

[241] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 1.3: Reanalyses of Historical Climate Data for Key Atmospheric Features: Implications for Attribution of Causes of Observed Change*, Washington, DC, The National Academies Press (2008), available at: http://www.nap.edu/catalog.php?record_id=12135.

[242] *Id*., at p. iii.

[243] The NRC Report Review Committee consisted of the following seven individuals having the following affiliations: 1) David Bromwich, Ohio State Univ.; Aguo Dai, Univ. of Colorado; Ioana Dima, Air Worldwide Corp.; John Nielsen-Gammon, Texas A&M Univ.; Benjamin Kirtman, Univ. of Miami; Robert Miller, Oregon State Univ.; and Andrew Robertson, International Research Institute for Climate and Society. *Id*., at p. v.

[244] *Id*., at *Appendix D: Committee to Review the U.S. Climate Change Science Program's Synthesis and Assessment Product 1.3*, p. 58.

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[245] *Id*., at p. vii. These six (6) individuals included: 1) Mary Ann Carroll, Univ. of Mich.; 2) Peter Leavitt, Weather Information Co.; 3) Elizabeth Malone, Univ. of Maryland; 4) Joellen Russell, Univ. of Arizona; 5) Andrew Solow, Woods Hole; and 6) Lynne Talley, Scripps Inst. *Id*.

[246] David Bromowich worked for Ohio State Univ., which had been a participant in (CILER). Aguo Dai worked for Univ. of Colorado which had participated in CIRES, Benjamin Kirtman worked for Univ. of Miami which had participated in (CICS-M), and Robert Miller had worked for Oregon State Univ. which had participated in (CICS-M) and had hosted (CIOSS). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.

[247] Mary Ann Carroll had worked for Univ. of Mich. which had hosted (CILER). Elizabeth Malone had worked for Univ. of MD which had hosted (CICS-M). Lynne Talley, who had overseen the review of the NRC Committee peer review report, had worked for Scripps Institution which had participated in (CIMEC).

[248] Elizabeth Malone had also simultaneously worked for DOE. *See* U.S. Department of Energy, Pacific Northwest Laboratory, Atmospheric Sciences & Global Change Division Staff Awards & Honors, *Elizabeth Malone Appointed to Associate Deputy Editor of Climatic Change* (Oct. 2012), available at: https://www.pnl.gov/science/highlights/highlight.asp?id=1212.

[249] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 1.3: Reanalyses of Historical Climate Data for Key Atmospheric Features: Implications for Attribution of Causes of Observed Change*, supra at p. 8.

[250] *Id*.

[251] *Id*.

[252] *Id*., at p. 9

[253] *Id*., at pp. 8-9.

[254] *Id*., at pp. 12, 13.

[255] *Id*.

[256] The NRC Committee's peer review report notes how SAP 1.3 employs the technique of "global reanalysis" which it refers to as "an important and *relatively new method in climate science* that…integrates a diverse array of observations within a physical model of the climate system (or of one of its components, such as the atmosphere, ocean, or land surface) to describe past conditions over an extended time period, *typically several decades*" (emphasis added). *Id*., at p. 7.

[257] 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.

[258] See NOAA Peer Review Plan for USGCRP/CCSP SAP 2.4, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID17.html. Representatives from EPA, USDA, NSF and the U.S. Navy had also participated. U.S. Department of Commerce National Oceanographic Administration, *Trends in Emissions of Ozone Depleting Substances – Ozone Layer Recovery and Implications for Ultraviolet Radiation Exposure*, SAP 2.4/CCSP(2008h), supra at p. iv.

[259] DOE scientist Anne Douglass had only reviewed the Working Group I portion of the IPCC AR4.

[260] DOC-NOAA scientists David Fahey and V. Ramaswamy had both contributed to and reviewed the WG I portion of the IPCC AR4. Both A.R. Ravishankara and John Daniel had reviewed the WG I portion of the assessment, while Stephen Montzka had made a contribution to it. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.

[261] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Plans for CCSP Product 2.4 Trends in emissions of ozone-depleting substances, ozone-layer recovery, and implications for ultraviolet radiation exposure*, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID17.html.

[262] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Draft Synthesis and Assessment Product 2.4: Trends in Emissions of Ozone Depleting Substances, Ozone Layer Recovery, and Implications for Ultraviolet Radiation Exposure*, (Wash., DC), The National Academies Press (2007), at p. 3, available at: http://www.nap.edu/download.php?record_id=12076.

[263] *Id*., at p. iii.

[264] *Id*., at pp. 1,3.

[265] *Id*., at p. vii.

[266] *Id*., at p. v. Margaret Tolbert had been affiliated with Univ. of Colorado which had hosted (CIRES), while Donald Wuebbles had been affiliated with Univ. of Illinois-Urbana which had participated in (CILER). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.

[267] Mary Anne Carroll had been affiliated with Univ. of Michigan which had hosted (CILER), while Ross Salawitch had been affiliated with Univ. of Maryland which had hosted (CICS-M). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.

[268] *Id*., at p. 1.

[269] *Id*., at pp. 1, 6.

[270] *Id*., at p. 44. "Unfortunately, this chapter does not discuss the relationships between ozone and climate in a historical context. For example, in discussing the attribution of stratospheric temperature trends to ozone, carbon dioxide, and water vapor, the references are only the recent studies, ignoring previous work that laid the groundwork on this issue…[T]he authoring team should include a discussion of the importance of ozone to the climate system both through its absorption of solar radiation and as a greenhouse gas through its absorption of infrared radiation. Ozone is not only a greenhouse gas, but is the third most important greenhouse gas in the natural climate system after water vapor and carbon dioxide." *Id*.

[271] *Id*.

[272] *Id*., at p. 45.

[273] *Id*., at pp. 7-9.

[274] *Id*., at p. 10.

[275] *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.gpo.gov/fdsys/pkg/FR-2008-03-18/pdf/E8-5423.pdf.

[276] U.S. Department of Commerce National Oceanographic Administration, *Climate Projections Based on Emissions Scenarios for Long-Lived and Short-Lived Radiatively Active Gases and Aerosols*, SAP 3.2/CCSP(2008d), at p. iv, available at: http://downloads.globalchange.gov/sap/sap3-2/sap3-2-final-report-all.pdf.
[277] M. Daniel Schwartzkopf served as a reviewer of the WG I portion of the AR4, while Ronald Stouffer had served both as a contributor to and reviewer of that assessment. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis*, *Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III.
[278] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *Peer Review Plan - CCSP Product 3.2 Climate projections for research and assessment based on emissions scenarios developed through the Climate Change Technology Program*, NOAA website, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID21.html.
[279] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.2, "Climate Projections Based on Emission Scenarios for Long-lived and Short-lived Radiatively Active Gases and Aerosols"*, (Wash., DC), The National Academies Press (2007), available at: http://www.nap.edu/download.php?record_id=12035.
[280] *Id*., at p. 3, *Appendix D: Committee to Review the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.2 - Statement of Task*, at p. 44.
[281] *Id.*, at p. vii.
[282] Mary Anne Carroll had been affiliated with Univ. of Mich., which had hosted (CILER). James Edmonds had been affiliated with Univ. of Maryland which had hosted (CICS-M). Philip Rasch had been affiliated with Univ. of Colorado which had hosted CIRES. Lisa Sloan had been affiliated with UC-Santa Cruz which had participated in (CIMEC). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.
[283] Radford Byerly, Jr. had been affiliated with Univ. of Colorado which had hosted CIRES. Sonia Kreidenweis had been affiliated with Colorado State Univ. which had both hosted (CIRA) and participated in (CICS-M). Donald Wuebbles had been affiliated with Univ. of Illinois-Urbana which had participated in (CILER). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.
[284] Mary Anne Carroll had previously served in this capacity.
[285] Donald Wuebbles had previously served in this capacity.
[286] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.2, "Climate Projections Based on Emission Scenarios for Long-lived and Short-lived Radiatively Active Gases and Aerosols"*, (Wash., DC), The National Academies Press (2007), *supra* at pp. 7-8.
[287] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.2, "Climate Projections Based on Emission Scenarios for Long-lived and Short-lived Radiatively Active Gases and Aerosols"*, (Wash., DC), The National Academies Press (2007), *supra* at p. 1.
[288] *Id*., at p. 8.
[289] *Id*., at pp. 8, 15.
[290] *Id*. at pp. 8, 15-16.
[291] *Id*., at p. 19.
[292] *Id.*, at p. 14.
[293] *Id*.
[294] *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.
[295] *See* United States Department of Commerce, National Oceanographic and Atmospheric Administration, *Notice; Establishment of the Climate Change Science Program (CCSP) Product Development Committee (CPDC) for Synthesis and Assessment Product 3.3 (CPDC—S&A 3.3) Under Provisions of the Federal Advisory Committee Act and Announcement of the First Meeting of the Committee*, 71 FR 57472 (Sept. 29, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-09-29/pdf/E6-16083.pdf.

[296] *See* US General Services Administration, *Terminated Federal Advisory Committees – U.S. Department of Commerce*, *supra*.
[297] *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.)), *supra* at pp. iv-v.
[298] It is ITSSD's understanding and belief that, in addition to Christopher Miller, the "Federal Advisory Committee Designated Federal Official", these members consisted of the following individuals: 1) David Anderson (NOAA); 2) Arthur Douglas, Creighton Univ.; 3) Kerry Emanuel, MIT; 4) William Gutowski, Iowa State Univ.; 5) Gabriele Hegerl (Univ. of Edinburgh, Scotland *and Duke Univ*.; 6) Greg Holland (NOAA); 7) Tom Karl (NOAA); 8) Jerry Meehl (NCAR/NSF); 9) Ronald Stouffer (NOAA); 10) Francis Zwiers (Environment Canada); 11) Peter Webster, Georgia Institute of Technology; 12) David Levinson (NOAA); 13) Linda Mearns (NCAR/NSF). *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.)), *supra* at inside cover, pp.
[299] NOAA scientists Tom Karl and David Levinson served as reviewers of the Working Group I and II portions of the AR4. NOAA scientists David Ronald Stouffer, Pavel Groisman and Thomas Knutson had served both as contributors to and reviewers of the WG I portion of AR4. NOAA scientists David Anderson and Harold Brooks served only as reviewers, and Gregg Holland and Thomas Peterson served only as contributors to the WG I portion of 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*, *supra*.
[300] Gabriele Hegerl had been affiliated with Duke University, Paul Komar with Oregon State Univ. and Richard Smith with Univ. of North Carolina-Chapel Hill, all of which had participated in (CICS-M). Stanley Chagnon and Kenneth Kunkel had been affiliated with Univ. of Illinois-Urbana, which had participated in (CILER). Kam-biu Liu had been affiliated with Louisiana State Univ., which had participated in (NGI).
[301] At the time of the drafting of SAP 3.3, Gabrielle Hegerl had also served as a funded researcher at Duke Univ. which was a participant in (CICS-M). Ms. Hegerl had, at that time, also served as a contributing author to SAP 1.3, and both as a contributing author to and reviewer of the WG I portion of the IPCC AR4. *See* Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: *Climate Change 2007: Working Group I: The Physical Science Basis, Annex II: Contributors to the IPCC WGI Fourth Assessment Report*, *supra* at Annexes II and III; AGU Atmospheric Sciences Newsletter (March 2011), *supra*.
[302] Stewart Cohen, David Phillips and Francis Zwiers had all been from Environment Canada, while Rugh McDonald had been from the UK Met Office. *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.)), *supra* at pp. iv-v.
[303] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.3, "Weather and Climate Extremes in a Changing Climate"*, (Washington, DC) The National Academies Press (2007), available at: http://www.nap.edu/catalog.php?record_id=11973.
[304] *Id*., at p. iii.
[305] These individuals consisted of John Gyakum, McGill Univ., CN; Hugh Willoughby, Florida Int'l Univ.; Cortis Cooper, Chevron Corp.; Michael Hayes, Univ. of Nebraska; Gregory Jenkins, Howard Univ.; David Karoly, Univ. of Oklahoma; Richard Rotunno (NCAR-NSF); and Claudia Tebaldi (NCAR-NSF). *Id*., at p. v.
[306] *Id*., at *Appendix D: Committee to Review the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.3 - STATEMENT OF TASK*, p. 49.
[307] These six (6) individuals included Walter Dabberdt, Vaisala, Inc.; Jennifer Phillips, Bard College; Robert Maddox, Univ. of Arizona; Roland Madden, Scripps Inst.; John Molinari, State Univ. of NY, Albany; and George Frederick, Falcon Consultants. *Id*., at p. vii.

[308] Hugh Willoughy had been affiliated with Florida Int'l Univ. which had participated in (CIMAS). Gregory Jenkins had been affiliated with Howard Univ. which had participated in (CICS-M). David Karoly had been affiliated with Univ. of Oklahoma which had hosted (CIMMS). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*.
[309] David Karoly had served as a reviewer of the WG I portion of the IPCC AR4.
[310] Roland Madden had been affiliated with the Scripps Institution which had participated in (CIMEC).
[311] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.3, "Weather and Climate Extremes in a Changing Climate"*, (Washington, DC) The National Academies Press (2007), *supra* at p. 4.
[312] *Id*., at p. 5.
[313] *Id*.
[314] *Id*.
[315] *Id*.
[316] *Id*.
[317] *Id*.
[318] Id., at p. 6.
[319] *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.
[320] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 5.2, "Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Climate Decision Making"*, Wash., DC, The National Academies Press (2007), available at: http://www.nap.edu/download.php?record_id=11873; http://www.glerl.noaa.gov/seagrant/ClimateChangeWhiteboard/Resources/Uncertainty/climatech/11873.pdf. *See also Id*., at Appendix D: Committee to Review the U.S. Climate Change Science Program's Synthesis and Assessment Product 5.2 - STATEMENT OF TASK, *supra*.
[321] *Id*., at p. vi.
[322] *Id*., at p. vii.
[323] Carol Anne Clayson had been affiliated with Florida State Univ. which had participated in (CIMAS) and RISA-SECC. Radford Byerly Jr. had been affiliated with Univ. of Colorado which had hosted CIRES and RISA-WWA. Ann-Margaret Eshard had been affiliated with Florida Atlantic Univ. which had hosted (CIOERT) and participated in CIMAS. Elizabeth Malone had been affiliated with Univ. of Maryland which had hosted (CICS-M) and participated in (CINAR). Henry Pollack had been affiliated with Univ. of Michigan which had hosted (CILER) and participated in RISA-GLISA. Andrew Solow had been affiliated with Woods Hole which had hosted (CINAR).
[324] Henry Pollack had previously contributed to the WG I portion of the IPCC AR4.
[325] Elizabeth Malone had contributed to and reviewed the WG II portion of the IPCC AR4, and also had contributed to the WG III portion of the IPCC AR4.
[326] Radford Byerly, Jr. had served previously as a reviewer of the NRC Report Review Committee peer review report for SAP3.2. Elizabeth Malone and Andrew Solow had served previously as reviewers of the NRC Report Review Committee peer review report for SAP 1.3, and Elizabeth Malone also had served as a reviewer of the NRC Report Committee peer review report for SAP2.4. Jennifer Phillips had served previously as a reviewer of the NRC Report Review Committee peer review report for SAP3.3.
[327] Joe Arvai had been affiliated with Univ. of Michigan which had hosted (CILER) and participated in RISA-GLISA. Christopher Costello had been affiliated with UC-Santa Barbara which had participated in (CIMEC). Mort Webster had been affiliated with Univ. of North Carolina-Chapel Hill which had participated in (CICS-M) and RISA-CISA.
[328] Claudia Tebaldi had served previously on the NRC Report Review Committee that prepared the peer review report on SAP3.3

[329] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 5.2, "Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Climate Decision Making"*, Wash., DC, The National Academies Press (2007), *supra* at p. 4.
[330] *Id.*, at pp. 1, 7-8.
[331] *Id*. at pp. 1, 4.
[332] "There is a need to discuss more traditional frequentist methods, which remain dominant in scientific work, and objective Bayesian methods based on non-informative prior distributions. By focusing exclusively on the subjective Bayesian approach, the document also fails to elucidate 'Best Practices' for characterizing uncertainty as called for in the study prospectus…The addition of a statistician to assist with the elucidation of traditional scientific methods would address a significant weakness in the report." *Id*., at pp. 8, 16. "Frequentist design focuses on planning of experiments —for instance, the issue of choosing an appropriate sample size… A typical design problem would be to choose the sample size *n* so that the expected loss is less than some prespecified limit *C*." *See*, *e.g.*, M. J. Bayarri and J. O. Berger, *The Interplay of Bayesian and Frequentist Analysis*, Statistical Science (2004), Vol. 19, No. 1, 58-59, available at: http://projecteuclid.org/download/pdfview_1/euclid.ss/1089808273.
[333] The final SAP5.2 defines the phenomenon of 'surprise' by comparing it with that of 'abrupt climate change'. Whereas it defines an "an abrupt climate change as a change that occurs faster than the underlying driving forces (NRC, 2002)", it defines 'surprise', it defines 'surprise' as being more personal/subjective – i.e., as "represent[ing] a property of the observer. An event becomes a surprise when it opens a significant gap between perceived reality and one's expectations." *See* U.S. Department of Commerce National Oceanographic Administration, *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking*, (SAP5.2/CCSP(2009)) (M. Granger Morgan (Lead Author), Hadi Dowlatabadi, Max Henrion, David Keith, Robert Lempert, Sandra McBride, Mitchell Small, and Thomas Wilbanks (Contributing Authors)), *supra* at p. 63.
[334] *See* Bruno A. Olshausen, *Bayesian Probability Theory* (2004), at pp. 1-2, available at: http://redwood.berkeley.edu/bruno/npb163/bayes.pdf.
[335] *Id*., at p. 2.
[336] *See* Carl Cranor, *Scientific Inferences in the Laboratory and the Law*, American Journal of Public Health, Vol. 95, Supplement 1 (2005), at p. S123, available at: http://defendingscience.com/sites/default/files/upload/CranorINFERENCES.pdf.
[337] *Id*.
[338] *Id*.
[339] *See* Sheldon Krimsky, *The Weight of Scientific Evidence in Policy and Law*, American Journal of Public Health, Vol. 95 Supplement 1 (2005), at p. S129, available at: http://www.tufts.edu/~skrimsky/PDF/AJPH_WOE.PDF.
[340] *See* U.S. Department of Commerce National Oceanographic Administration, *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking*, (SAP5.2/CCSP(2009)) (M. Granger Morgan (Lead Author), Hadi Dowlatabadi, Max Henrion, David Keith, Robert Lempert, Sandra McBride, Mitchell Small, and Thomas Wilbanks (Contributing Authors)), *supra* at pp. 43, 45.
[341] *See* National Research Council, *Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 5.2, "Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Climate Decision Making"*, Wash., DC, The National Academies Press (2007), *supra* at p. 14.
[342] *Id*.
[343] *Id*., at p. 15.
[344] *Id*.
[345] *See* U.S. Department of Commerce National Oceanographic Administration, *Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Decisionmaking*, (SAP5.2/CCSP(2009)) (M. Granger Morgan (Lead Author), Hadi Dowlatabadi, Max Henrion, David Keith, Robert Lempert, Sandra McBride, Mitchell Small, and Thomas Wilbanks (Contributing Authors)), *supra* at p. 65. "In contrast to decision analysis that outlines how people should make decisions in the face of uncertainty if they subscribe to a number of axioms of rational decision making, these literatures are descriptive, describing how people actually make decisions when not supported by analytical procedures such as decision analysis." *Id*. "There are also very large literatures on organizational behavior. One of the more important subsets of that literature for decision making under uncertainty concerns the processes by

which organizational structure can play a central role in shaping the success of an organization in coping with uncertainty and strategies they can adopt to make themselves less susceptible to failure." *Id*.

[346] *Id*.

[347] *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.

[348] *See* United States Department of Commerce, National Oceanographic and Atmospheric Administration, *Notice to Establish the National Oceanic and Atmospheric Administration (NOAA) Climate Change Science Program (CCSP) Product Development Committee (CPDC) for Synthesis and Assessment Product 5.3 (CPDC-S&A 5.3) Under the Provisions of the Federal Advisory Committee Act*, 71 FR 54615-54616 (Sept. 18, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-09-18/pdf/E6-15472.pdf.

[349] *See* US General Services Administration, *Terminated Federal Advisory Committees – U.S. Department of Commerce*, *supra*.

[350] "The Climate Change Science Program (CCSP) Product Development Committee for Synthesis and Assessment Product 5.3 (CPDC--S&A 5.3) was established by Charter on October 12, 2006. CPDC--S&A 5.3 is the Federal Advisory Committee charged with responsibility to develop a draft Synthesis and Assessment Product that addresses CCSP Topic 5.3: 'Decision-Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data'." *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 5.3 – Notice of Meeting*, 71 FR 671206 (Nov. 20, 2006), available at: http://www.gpo.gov/fdsys/pkg/FR-2006-11-20/pdf/E6-19589.pdf.

[351] U.S. Department of Commerce National Oceanographic Administration, *Decision Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data*, SAP 5.3/CCSP(2008), *supra* at p. iv.

[352] These authors and their affiliations include: Anne Staple, STG, Inc.; Kelly Redmond, Desert Research Inst.; Dan Basketfield, Silverado Gold Mines; and John Kochendorfer, Riverside Mines Technologies. *Id*.

[353] David Feldman had been affiliated with UC-Irvine which had been a participant in the DOC-NOAA Cooperative Institute Program designated as (CICS-M). Michael Dettinger had been affiliated with Scripps Institution, which had participated in (CIMEC). Andrew Wood and Nathan Mantua had been affiliated with the Univ. of Washington which had hosted (JISAO). Brent Yarnal had been affiliated with Penn State Univ. which had participated in (CILER). Maria Carmen Lemos had been affiliated with Univ. of Michigan which had hosted (CILER). *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. In addition, Helen Ingram, Gregg Garfin, Barbara Morehouse, Connie Woodhouse and Holly Hartmann had been affiliated with Univ. of Arizona which had received DOC-NOAA $800,000 climate science-related funding in 2004. *See* U.S. Department of Commerce National Oceanographic Administration Public Affairs, *NOAA Awards $800,000 to the University of Arizona to Support Climate Research Programs*, NOAA Press Release NOAA 2004-R989 (8/18/04), available at: http://www.publicaffairs.noaa.gov/releases2004/aug04/noaa04-r989.html. The Univ. of Arizona is currently an "affiliated institution" with the DOC-NOAA RISA-SARP program. *See supra*.

[354] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA Peer Review Plan for USGCRP/CCSP SAP 5.3*, available at: http://www.cio.noaa.gov/itmanagement/prplans/ID26.html.

[355] *See* National Research Council, *Review of CCSP Draft Synthesis and Assessment Product 5.3: Decision-Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data*, Wash., DC: The National Academies Press (2008), at p. ii, available at: http://www.nap.edu/download.php?record_id=12087.

[356] *Id*., at p. vi.

[357] *Id*., at p. vii.

[358] Soroosh Sooroshian has been affiliated with UC-Irvine which had participated in the (CICS-M). Denise Lash had been affiliated with Oregon State Univ. which had hosted (CIOSS), which also likely participated in the RISA-CIRC program at that time. Lisa Goddard had been affiliated with Columbia Univ. which had participated in (CICS-M), and had likely participated in the RISA-IRAP program at that time. Kirstin Bow had been affiliated with Univ. of South Carolina which had likely participated in the RISA-COCA and RISA-SISA programs at that time. *See* United States

Department of Commerce, National Oceanic and Atmospheric Administration, *NOAA COOPERATIVE INSTITUTE PROFILES 6/6/2012*, *supra*. *See also supra*.

[359] Soroosh Sorooshian had served as a reviewer of the WG II portion of the IPCC AR 4. *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), *supra* at Appendix II.

[360] *See* National Research Council, *Review of CCSP Draft Synthesis and Assessment Product 5.3: Decision-Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data*, Wash., DC: The National Academies Press (2008), *supra* at pp. 2, 10.

[361] *Id*., at p. 18.

[362] *Id*., at p. 3. "[I]t is important for this report to clearly indicate that the focus is meant to be on seasonal and interannual forecasts—climate variability, not climate change. While these are related processes, it is helpful to the readers that the distinction is made, because they can pose significantly different issues for decision support, as well as for climate prediction." *Id*., at p. 20.

[363] *Id*., at p. 3.

[364] *Id*., at p. 20.

[365] *Id*., at p. 3.

[366] *Id*., at p. 24.

[367] *Id*.

[368] *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.gpo.gov/fdsys/pkg/FR-2008-03-18/pdf/E8-5423.pdf.

[369] *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.

[370] *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.

[371] *See* OMB-PRB, *supra* at Preamble, p. 28; Sec. VII.

[372] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer & High Performance Computing and Communications, *National Oceanic and Atmospheric Administration Information Quality Guidelines* ("NOAA IQA Guidelines"), *supra* at Part III.

[373] *See* United States Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Information Officer & High Performance Computing and Communications, *National Oceanic and Atmospheric Administration Information Quality Guidelines* ("NOAA IQA Guidelines"), *supra* at Part IV.6.

[374] *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.

[375] *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.

[376] *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.

[377] *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.

[378] *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

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