GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Ozone and PM NAAQS Reviews

Jim Boylan
Manager, Planning & Support Program
Georgia EPD - Air Protection Branch

AAPCA 2019 Spring Meeting
Baton Rouge, LA
March 26, 2019

IN THE NEWS…

- "EPA panel may upend scientific basis for regs — researchers"
  - E&E News (March 21, 2019)
- "EPA advisers blast draft soot assessment"
  - E&E News (March 8, 2019)
- "Spat escalates between new, old EPA advisers"
  - E&E News (March 6, 2019)

OUTLINE

- Background
- NAAQS Review Process
- Status of Ozone NAAQS Review
- Status of PM NAAQS Review
- State Involvement

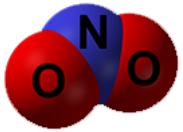
BACKGROUND

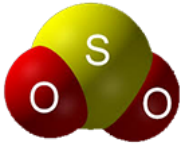
NAAQS

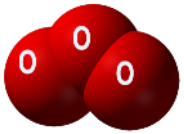
- National Ambient Air Quality Standards
  - Primary (health-based) standards
  - Secondary (welfare-based) standards
    - Welfare effects include “effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility and climate . . .”
- CAA requires EPA to review the NAAQS for each criteria pollutant every five years.

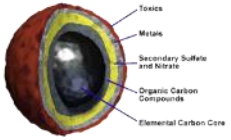
CRITERIA AIR POLLUTANTS

EPA Sets the NAAQS for 6 Criteria Air Pollutants

- Nitrogen Dioxide (NO_2) 

- Carbon Monoxide (CO) 
- Lead (Pb) 
- Sulfur Oxides (SO_x) 

- Ozone (O_3) 

- Particulate Matter 

  - Currently regulated as $PM_{2.5}$ and PM_{10}

NAAQS ELEMENTS

- **Indicator**
  - Pollutant to be measured
- **Averaging time**
  - Duration of each measurement (e.g., 1-hour daily maximum, 8-hour daily maximum, 24-hour average, 3-month rolling average, annual average)
- **Form**
  - How the design values will be calculated (e.g., 98th percentile averaged over 3 years)
- **Level**
  - Numerical value used to determine attainment

COURT DECISIONS

- EPA is required to engage in “reasoned decision making” to translate scientific evidence into standards

- EPA may not consider cost in setting standards; however, cost is considered in developing control strategies to meet the standards (implementation phase)

CASAC

- The Clean Air Scientific Advisory Committee (CASAC) is a chartered Federal Advisory Committee, established pursuant to the Clean Air Act (CAA) Amendments of 1977, codified at 42 U.S.C. 7409(d)(2), to provide advice, information and recommendations to the EPA Administrator on the scientific and technical aspects of air quality criteria and National Ambient Air Quality Standards (NAAQS).

- As required under the CAA section 109(d), the CASAC is composed of seven members, with at least one member of the National Academy of Sciences, one physician, and one person representing state air pollution control agencies.

CHARTERED CASAC

2017

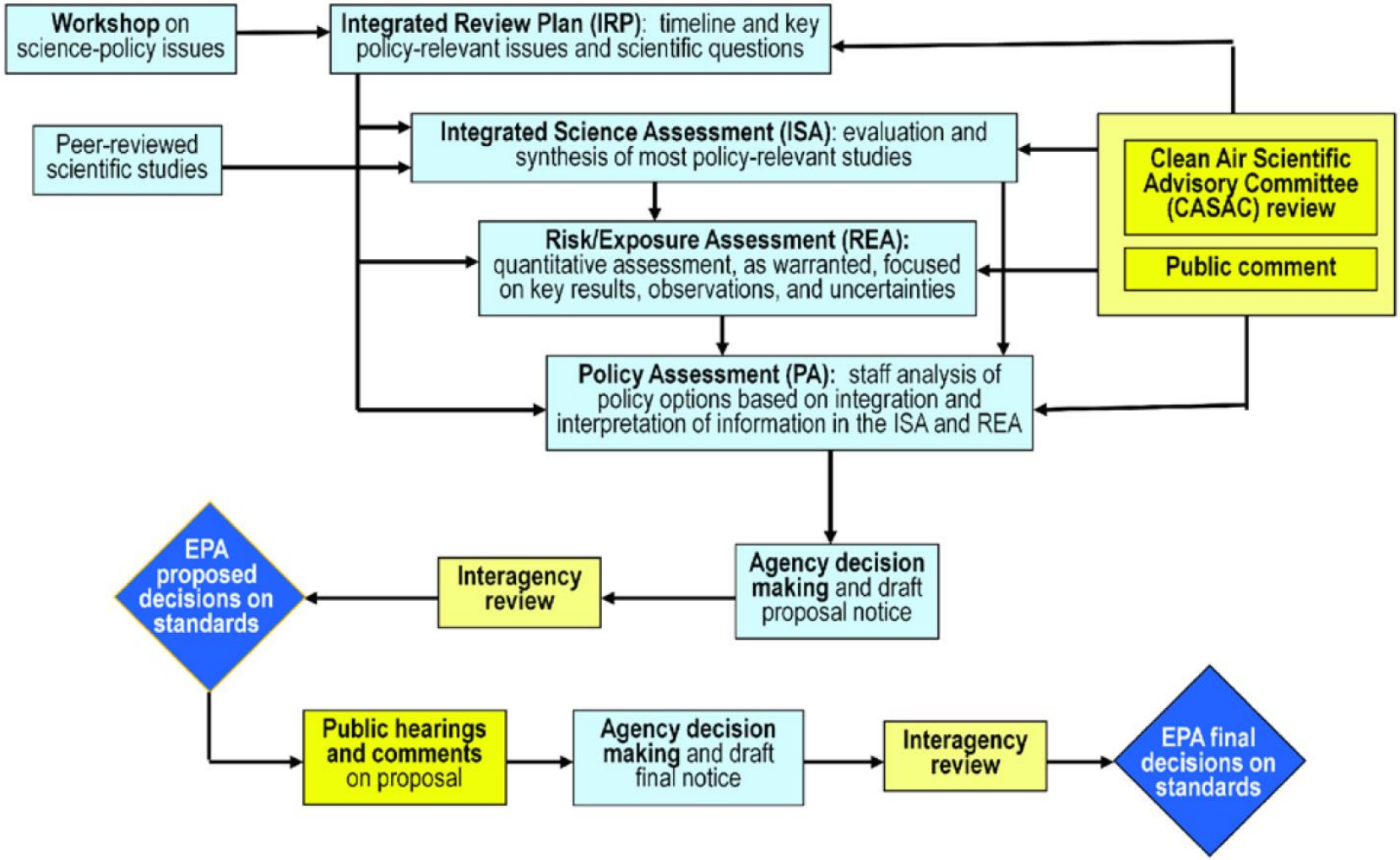
- **Dr. Louis Anthony (Tony) Cox, Jr. (CASAC Chair) - President**
  - Cox Associates, Denver, CO
- **Dr. James Boylan - Planning & Support Program Manager**
  - Georgia Department of Natural Resources, Atlanta, GA

2018

- **Dr. Mark Frampton - Professor Emeritus**
  - University of Rochester Medical Center, Rochester, NY
- **Dr. Sabine Lange - Toxicology Section Manager**
  - Texas Commission on Environmental Quality, Austin, TX
- **Dr. Corey Masuca - Principal Air Pollution Control Engineer**
  - Jefferson County Department of Health, Birmingham, AL
- **Dr. Steven C. Packham - Toxicologist**
  - Utah Department of Environmental Quality, Salt Lake City, UT
- **Dr. Timothy E. Lewis - Independent Consultant**
  - Recently retired from U.S. Army Corps of Engineers

NAAQS REVIEW PROCESS

PREVIOUS NAAQS REVIEW PROCESS



INTEGRATED REVIEW PLAN (IRP)

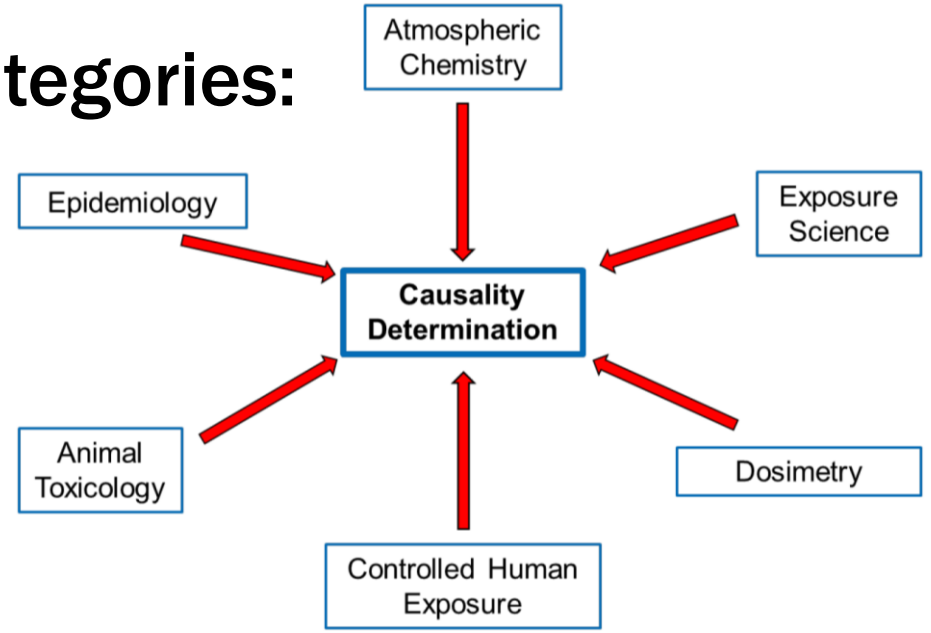
- Describes process and schedule for the review
- Identifies key policy-relevant issues that will guide the review
- Provides context and background related to previous review
- Describes planning for new/updated assessments to inform the Administrator's decisions in the review
  - Integrated Science Assessment (ISA)
  - Risk and Exposure Assessment (REA)
  - Policy Assessment (PA)

INTEGRATED SCIENCE ASSESSMENT (ISA)

- Organize relevant literature for broad health outcome categories
- Evaluate studies, characterize results, extract relevant data
- Integrate evidence across disciplines for health outcome categories
- Develop causal determinations using an established framework
- Evaluate evidence for populations potentially at increased risk

CAUSALITY DETERMINATIONS

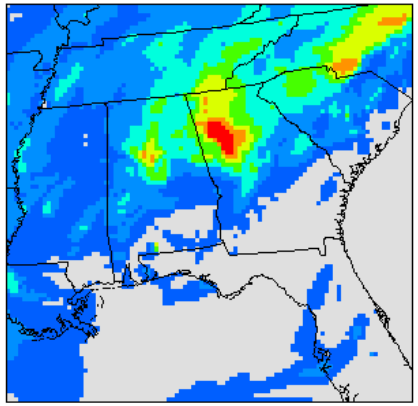
- Weight of evidence categories:
  - Causal
  - Likely
  - Suggestive
  - Inadequate
  - Not likely

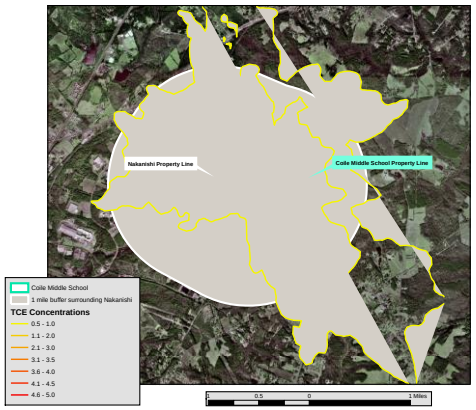


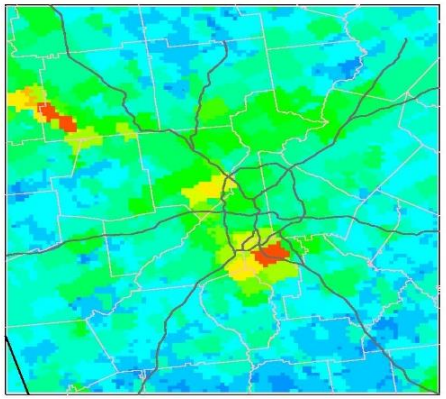
- Framework used in all ISAs over the past 10 years (13 times)
- "Causal" and "Likely to be Causal" relations are evaluated in the REA and PA.

RISK AND EXPOSURE ASSESSMENT (REA)

- Analysis of exposure, risk, and air quality draw on information in the ISA and prior assessments
- Planning for updated/new quantitative analyses include:
  - Analyses from last review, uncertainties, and ramifications on interpretation of results
  - Newly available information, including health/welfare effects evidence, tools and methods







POLICY ASSESSMENT (PA)

- Evaluation of policy implications of the currently available scientific information and qualitative analyses pertaining to the existing standards
- Set of policy-relevant questions summarized in the IRP
  - Do the currently available scientific evidence and exposure and risk-based information support or call into question the adequacy of the public health and welfare protection afforded by the current primary and secondary standards?
- Helps “bridge the gap” between EPA’s scientific assessments and the judgments required of the EPA Administrator

ADMINISTRATOR DECISION

- Section 109(b)(1) defines primary standards as ones "the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health."
- The CAA does not require the Administrator to establish a primary NAAQS at a zero-risk level or at background concentration levels.
- What is an "acceptable" risk?

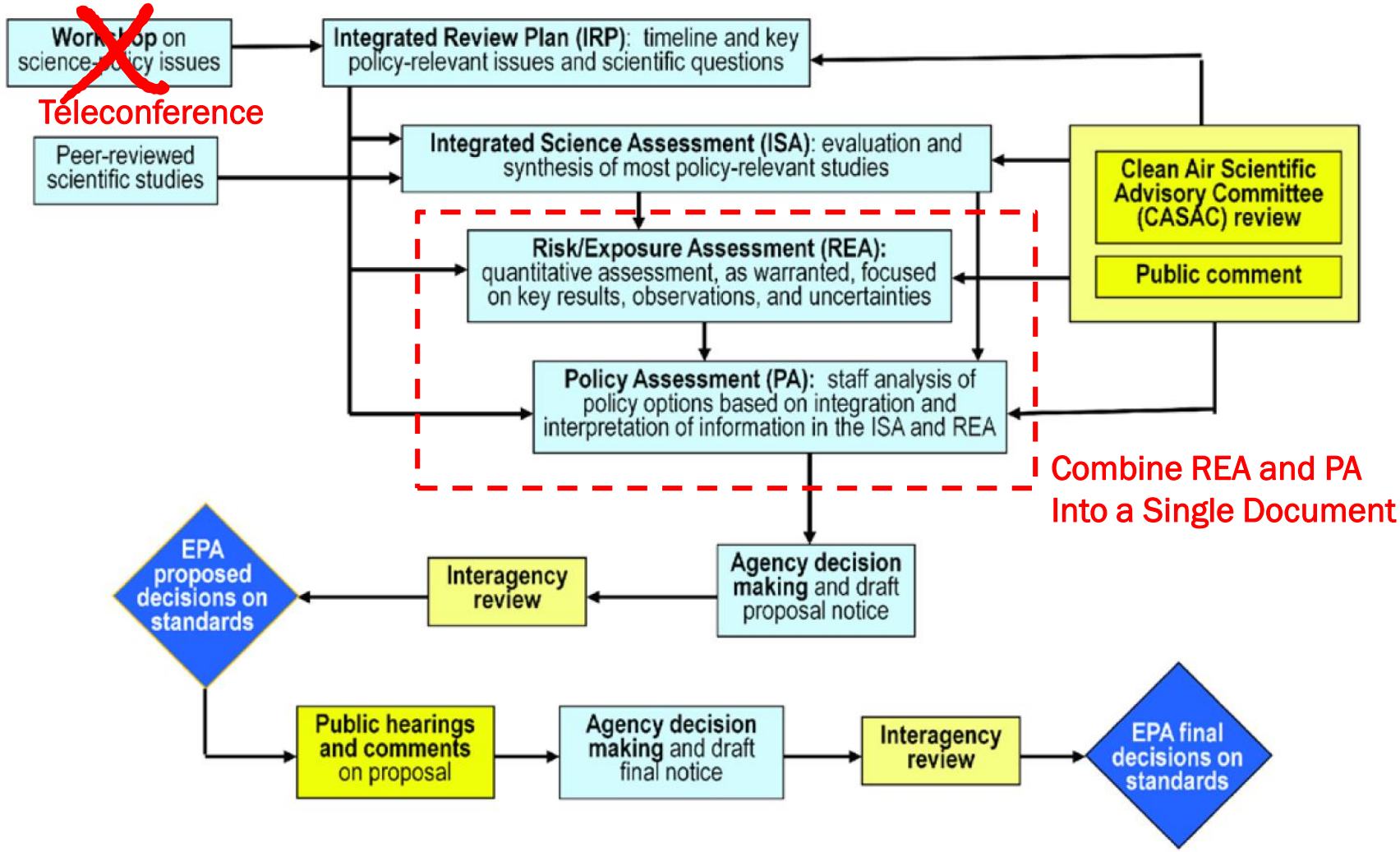
EPA ADMINISTRATOR MEMO (MAY 9, 2018)

- Directed the expedited review of the ozone and PM NAAQS
- Identified ways to streamline the review process
  - Increased focus on policy-relevant information
  - Avoiding multiple drafts of documents
- Created a standardized set of charge questions for CASAC that would be supplemented with more detailed charge questions for individual NAAQS reviews

STANDARD CHARGE QUESTIONS

- General Charge Questions
  - Are there areas in which additional knowledge is required to appraise the adequacy and basis of existing, new, or revised NAAQS?
  - What scientific evidence has been developed since the last review to indicate if the current primary and/or secondary NAAQS need to be revised?
  - Do key studies, analyses, and assessments which may inform the Administrator's decision to revise the NAAQS properly address or characterize uncertainty and causality?
- Additional Charge Questions
  - What is the relative contribution to air pollution concentrations of natural as well as anthropogenic activity? Please discuss relative proximity to peak background levels.
  - Please advise the Administrator of any adverse public health, welfare, social, economic, or energy effects which may result from various strategies for attainment and maintenance of such NAAQS.

NEW NAAQS REVIEW PROCESS

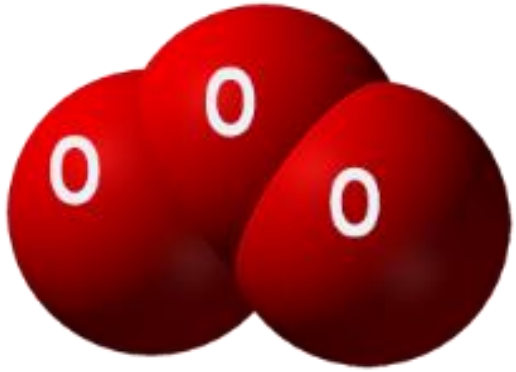


No ozone review panel was formed.
The PM review panel was disbanded in October 2018.

EPA ROLES

NAAQS Activity	ORD/NCEA[1]	OAR/OAQPS[2]
Workshop on Science and Policy Issues	Co-Lead	Co-Lead
Integrated Review Plan	Lead (ISA chapter)	Lead (REA and PA chapters)
Integrated Science Assessment	Lead	Review
Risk and Exposure Assessment	Review	Lead
Policy Assessment	Review	Lead
Rule-Making	Support	Lead

[1]Office of Research and Development/National Center for Environmental Assessment
[2]Office of Air and Radiation/Office of Air Quality Planning and Standards



STATUS OF OZONE NAAQS REVIEW

CURRENT OZONE NAAQS

- Indicator
  - Ozone
- Averaging time
  - 8-hour daily maximum
- Form
  - Annual 4th high concentration averaged over 3 years
- Level
  - 70 ppb

OZONE REVIEW SCHEDULE

Key Milestones in the Ozone NAAQS Review		
Date	**EPA**	**CASAC**
June 2018	Call for Information	
Fall 2018	Draft IRP	**Consultation** on plans for the review, including plans for ISA, REA analyses and PA
Early 2019	Final IRP	
Spring 2019	**Draft ISA**	**Review** of draft ISA, which provides an assessment of the currently available scientific information on public health and welfare effects of ozone and is the science foundation for the review *(the air quality criteria)*
Fall 2019	**Draft PA** (with REA analyses)	**Review** of draft PA, which presents an evaluation of the policy-relevant aspects of the current scientific evidence and quantitative exposure, risk and air quality analyses, focusing on implications with regard to the adequacy of the current standards and, as appropriate, potential alternatives
	Final ISA	
	Final PA	
Spring 2020	**Proposed decision**	
Late 2020	**Final decision**	

OVERVIEW OF OZONE IRP

- Chapter 1: Introduction
  - Legislative requirements, NAAQS process, timeline
- Chapter 2: Background
  - Prior O_3 NAAQS reviews, air monitoring, data analysis, air quality overview
- Chapter 3: **Key Policy-relevant Issues for the Current Review**
  - General approach for current reviews of primary and secondary standards
  - Identification of key policy-relevant questions for review, which PA will initially consider
- Chapter 4: **Science Assessment**
  - ISA organization, assessment approach, areas of specific focus
- Chapter 5: **Quantitative Risk and Exposure Assessments**
  - Assessments in last review, considerations for any assessments in this review
- Chapter **6: Policy Assessment**
  - Short overview of purpose, scope and development process
- Chapter 7: Proposed and Final Decisions
  - Short overview of process

PREVIOUS OZONE REA

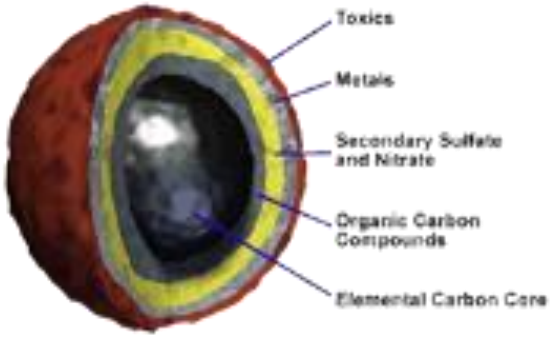
- Exposure-based analyses based on controlled human exposure studies
  - 15 urban study areas
  - CMAQ/CAMx + APEX model (and CHAD database)
- Ambient air concentration-response relationships based on air quality epidemiological studies
  - 12 urban study areas
  - CMAQ/CAMx + BenMAP

NEXT OZONE REA

- Exposure-based analyses based on controlled human exposure studies
  - Fewer 15 urban study areas
  - CMAQ/CAMx + APEX model (and CHAD database)
- Ambient air concentration-response relationships based on air quality epidemiological studies
  - 12 urban study areas
  - CMAQ/CAMx + BenMAP

OZONE IRP COMMENTS

- Ozone Integrated Review Plan
  - https://yosemite.epa.gov/sab/sabproduct.nsf//LookupWebProjectsCurrentCASAC/E18E92A94AF87D6C852582BB004CDF75?OpenDocument
- November 29, 2018 – Public teleconference
- Individual CASAC comments sent to EPA Administrator on December 10, 2018
  - https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebProjectsCurrentCASAC/e18e92a94af87d6c852582bb004cdf75!OpenDocument&TableRow=2.3#2



STATUS OF PM NAAQS REVIEW

CURRENT PM NAAQS

Current Standards – Last Review Completed in 2012*					Decisions in 2012 Review
Indicator	**Averaging Time**	**Primary/Secondary**	**Level**	**Form**	
$PM_{2.5}$	Annual	Primary	12.0 µg/m^3	Annual arithmetic mean, averaged over 3 years	Revised level from 15 to 12 µg/m^{3}**
		Secondary	15.0 µg/m^3		Retained**
	24-hour	Primary and Secondary	35 µg/m^3	98th percentile, averaged over 3 years	Retained
PM_{10}	24-hour	Primary and Secondary	150 µg/m^3	Not to be exceeded more than once per year on average over a 3-year period	Retained

PM REVIEW SCHEDULE

Date	EPA	CASAC
Dec 2014	Call for Information	
Feb 2015	Kickoff Workshop	
April 2016	Draft IRP	**Reviewed** the draft IRP, which presented the plan for reviewing the air quality criteria and the NAAQS for PM
Dec 2016	Final IRP	
Oct-Dec 2018	**Draft ISA**	**Review** draft ISA, which provides an assessment of the currently available scientific information on public health and welfare effects of PM and is the science foundation for the review *(the air quality criteria)*
Summer 2019	**Draft PA** (with REA analyses)	**Review** draft PA, which presents an evaluation of the policy-relevant aspects of the current scientific evidence and quantitative risk and air quality analyses, focusing on implications with regard to the adequacy of the current standards and, as appropriate, potential alternatives
2019-2020	**Final ISA**	
	Final PA	
Spring 2020	**Proposed decision**	
Dec 2020	**Final decision**	

OVERVIEW OF PM ISA

Preface: Legislative Requirements of the PM NAAQS, Purpose and Overview of the ISA, Process for Developing ISA

Executive Summary

Chapter 1. Integrated Synthesis

Chapter 2. Sources, Atmospheric Chemistry, and Ambient Concentrations

Chapter 3. Exposure to Ambient PM

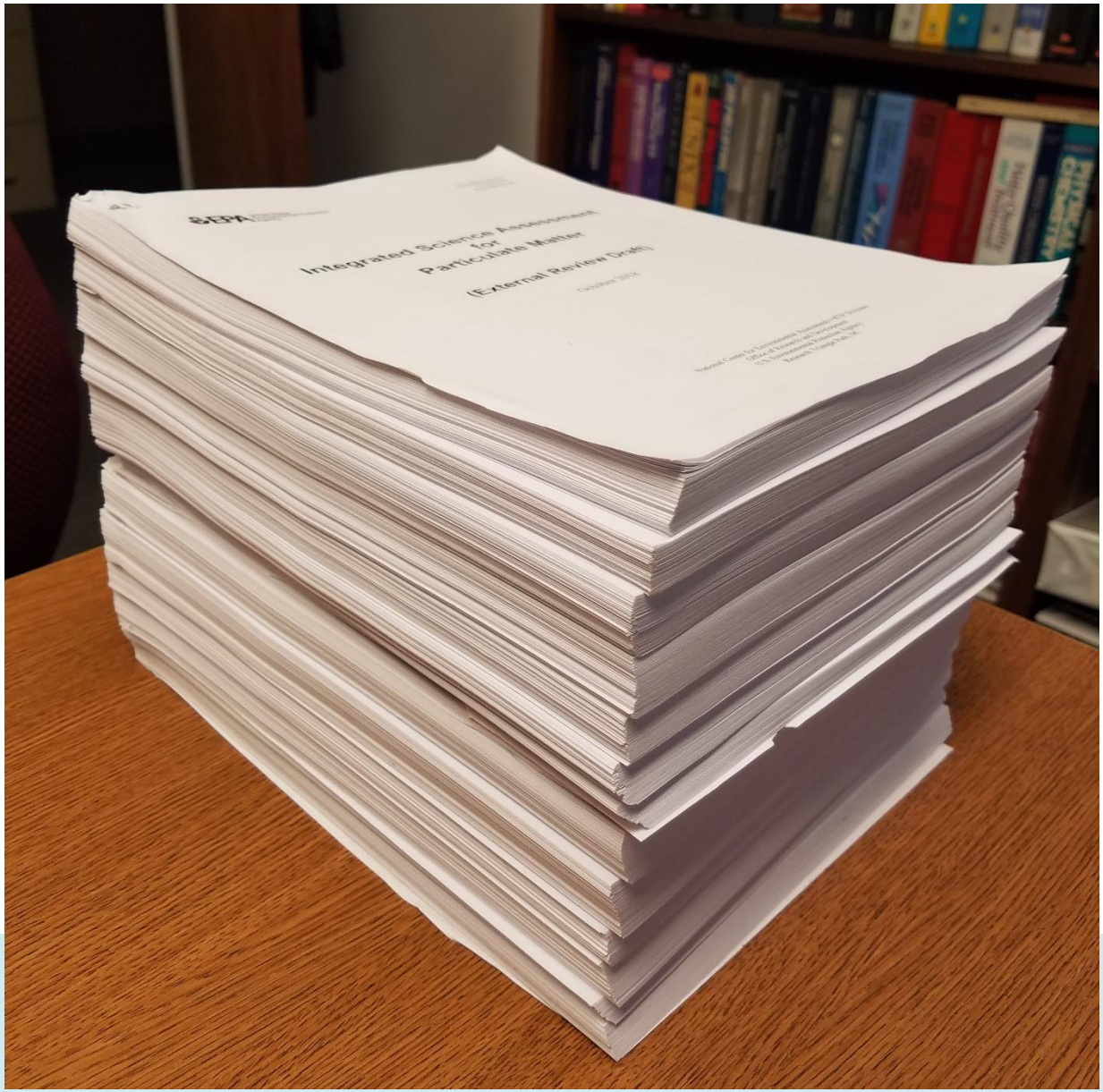
Chapter 4. Dosimetry of PM

Chapters 5 - 11. Respiratory Effects, Cardiovascular Effects, Metabolic Effects, Nervous System Effects, Reproductive and Developmental Effects, Cancer, and Mortality

Chapter 12. Lifestages and Populations Potentially at Increased Risk of a PM-related Health Effect

Chapter 13. Welfare Effects

PM ISA (1,881 PAGES)



CAUSALITY DETERMINATIONS (HEALTH)

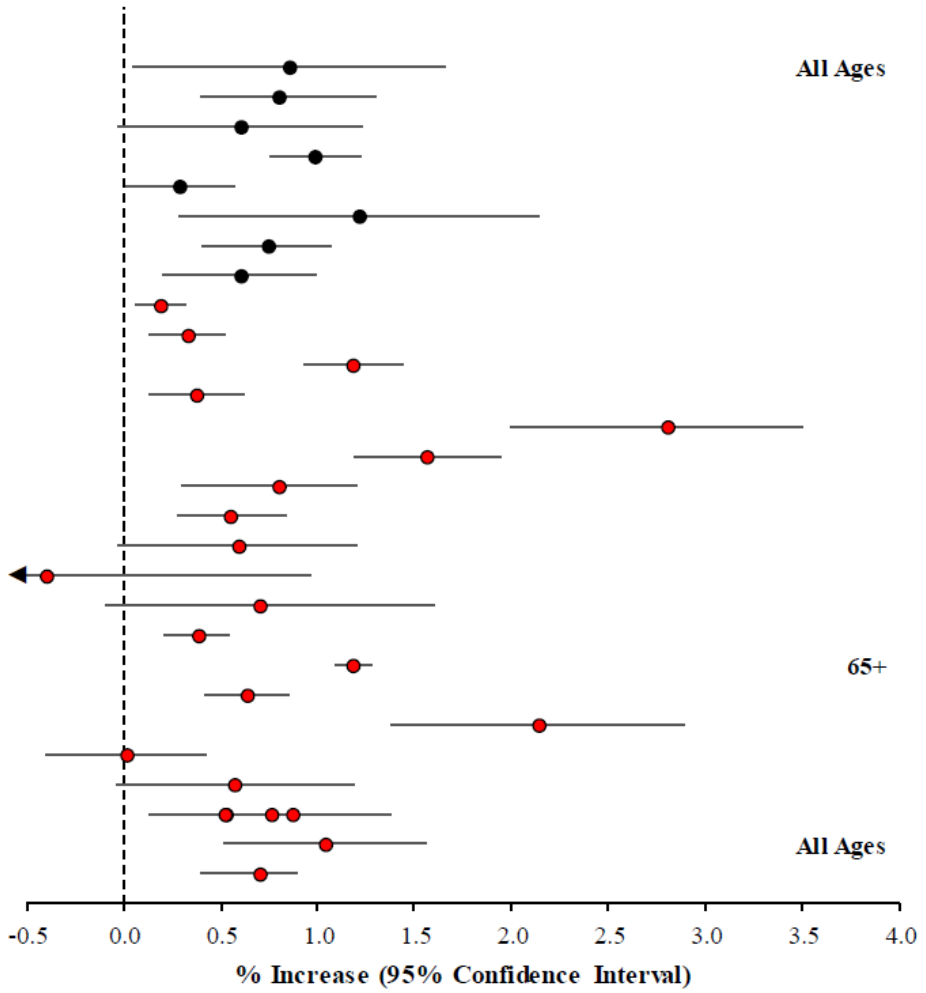
Health Outcome	Exposure	$PM_{2.5}$	$PM_{10-2.5}$	UFP
Respiratory	Short-term			
Respiratory	Long-term			
Cardiovascular	Short-term			
Cardiovascular	Long-term		NEW	
Metabolic	Short-term	NEW	NEW	NEW
Metabolic	Long-term	NEW	NEW	NEW
Nervous System	Short-term	NEW		NEW
Nervous System	Long-term	NEW	NEW	NEW
M/F Reproduction and Fertility	Long-term			
Pregnancy and Birth Outcomes	Long-term			
Cancer	Long-term	NEW	NEW	
Mortality	Short-term			
Mortality	Long-term		NEW	

CAUSAL LIKELY SUGGESTIVE INADEQUATE

MORTALITY – SHORT-TERM $PM_{2.5}$

Study	Location	Lag
Burnett and Goldberg (2003)	8 Canadian cities	1
Klemm and Mason (2003)	6 U.S. cities	0-1
Burnett et al. (2004)	12 Canadian cities	1
Zanobetti and Schwartz (2009)	112 U.S. cities	0-1
Dominici et al. (2007)	96 U.S. cities (NMMAPS)	1
Franklin et al. (2007)	27 U.S. cities	1
Franklin et al. (2008)	25 U.S. cities	0-1
Ostro et al. (2006)	9 CA counti[illegible]	0-1
†Lippmann et al. (2013)	148 U.S. cities	0
†Baxter et al. (2017)	77 U.S. [illegible]ities	0-1
†Dai et al. (2014)	75 U.S. [illegible]ties	0-1
†Krall et al. (2013)	7[illegible] U.S. ci[illegible]	1
†Kloog et al. (2013)	N[illegible] England, U.S.	0-1
†Lee et al. (2015)a	3 So[illegible]st st[illegible]es, U.S.	0-1
†Janssen et al. (2013)	Netherl[illegible]ds	0
†Samoli et al (2013)	10 E[illegible]pean Med cities	0-1
†Stafoggia et al. (2017)	8 E[illegible]opean cities	1
†Lanzinger et al. (2016)b	[illegible]Centra[illegible]European cities (UFIREG)	0-1
†Pascal et al. (2014)	9 French cities	0-1
†Lee et al. (2015)	11 East Asian cities	0-1
†Di et al. (2017)c	U.S. - Nation	0-1
†Zanobetti et al. (2014)c	121 U.S. cities	0-1
†Shi et al. (2015)c	New England, U.S.	0-1
†Young et al. (2017)	8 CA air basins	0-1d
	8 CA air basins	0-3e
†Ueda et al. (2009)f	20 Japanese areas	1
†Atkinson et al (2014)	Meta-analysis	---g
†Adar et al. (2014)	Meta-analysis	---h

CAUSAL



Note: Red = recent multi-city studies; Black = multi-city studies evaluated in the 2009 PM ISA

Figure 11-1. Summary of associations between short-term $PM_{2.5}$ exposure and total (nonaccidental) mortality in multicity studies for a 10 µg/m³ increase in 24-hour average concentrations.

CAUSALITY DETERMINATIONS (WELFARE)

Welfare Effect	PM
Visibility	
Climate	
Materials	
Ecological	Being evaluated separately with SO_x and NO_2

CAUSAL LIKELY SUGGESTIVE INADEQUATE

PM ISA COMMENTS

- PM Integrated Science Assessment
  - https://yosemite.epa.gov/sab/sabproduct.nsf//LookupWebProjectsCurrentCASAC/932D1DF8C2A9043F85258100048170D?OpenDocument
- December 12-13, 2018 - Public Meeting held in Arlington, VA
- March 7, 2019 - Posted Draft CASAC Review of the EPA's Integrated Science Assessment for PM
  - https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebProjectsCurrentCASAC/932d1df8c2a9043f85258100048170d!OpenDocument&TableRow=2.2#2.
- March 28, 2019 - Public Teleconference

MARCH 28 PUBLIC TELECONFERENCE

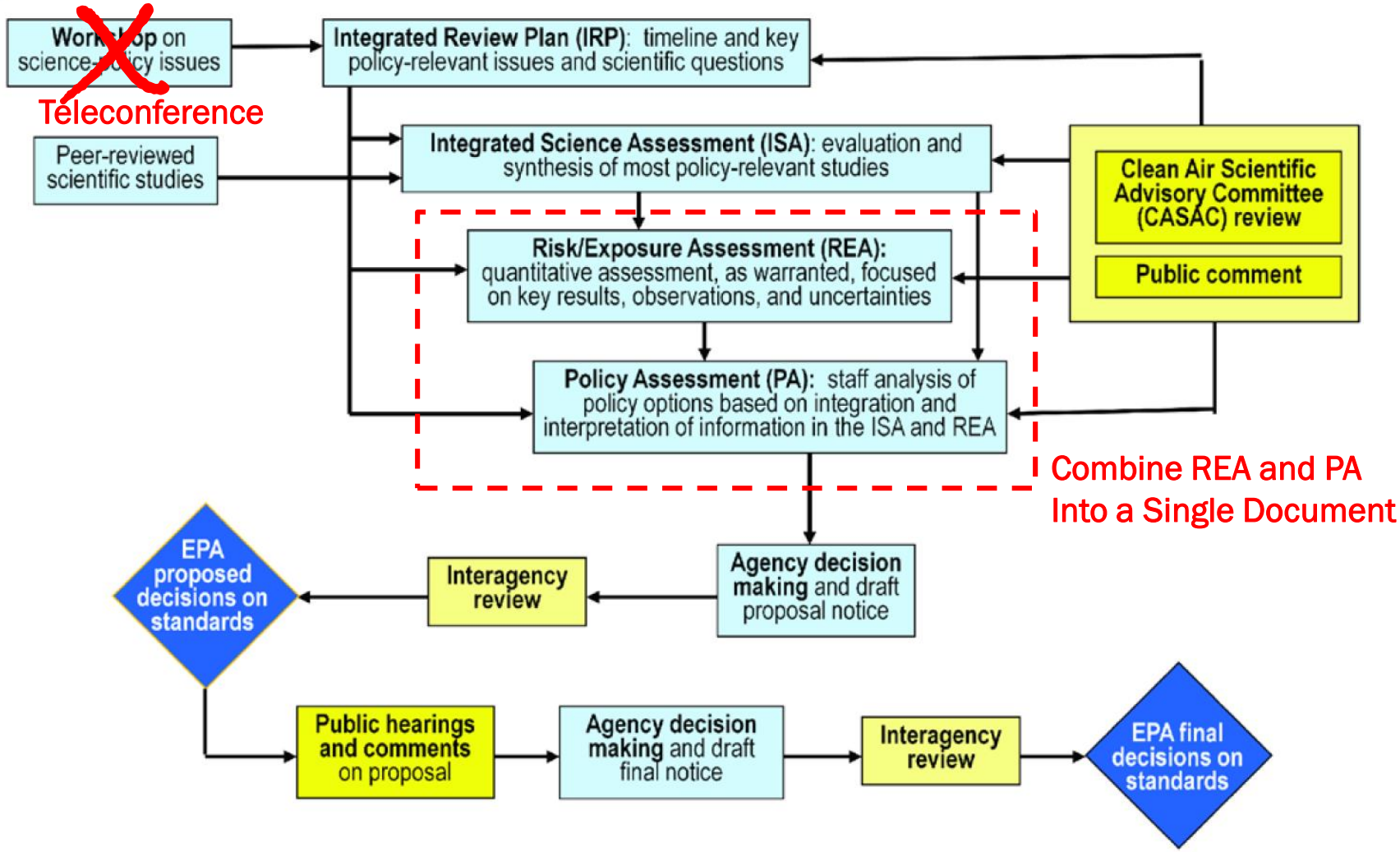
List of Registered Public Speakers

U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)
Public Teleconference on PM
March 28, 2019

#	Speaker's Name	Organizational Affiliation(s)
1	Chris Frey	North Carolina State University
2	Gretchen Goldman	Union of Concerned Scientists
3	Dan Greenbaum	Health Effects Institute
4	John Bachmann	Environmental Protection Network
5	Lianne Sheppard	University of Washington
6	Julie Goodman	Gradient
7	George Thurston	NYU School of Medicine
8	Corwin Zigler	University of Texas at Austin
9	Albert Rizzo	American Lung Association
10	Kevin Cromar	New York University
11	Jonathan Samet	Colorado School of Public Health
12	Bernard Goldstein	University of Pittsburgh Graduate School of Public Health
13	Joel Schwartz	Harvard University
14	George Allen	
15	Roger McClellan	

STATE INVOLVEMENT

NEW NAAQS REVIEW PROCESS



No ozone review panel was formed.
The PM review panel was disbanded in October 2018.

PUBLIC PARTICIPATION

- Ozone IRP Public Comments
  - Total Comments = 8
  - MJO Comments = NESCAUM
  - State Comments = 0
- PM ISA Public Comments
  - Total Comments = 33
  - MJO Comments = LADCO, NESCAUM
  - State Comments = 0
- Even if your state agency does not have the expertise to contribute to the public discussions, listening to the discussions and reading comments will help your state better understand EPA's final NAAQS decisions.

https://yosemite.epa.gov/sab/sabpeople.nsf/webcommittees/CASAC

EPA United States Environmental Protection Agency

Español | 中文: 繁體版 | 中文: 简体版 | Tiếng Việt | 한국어

Learn the Issues | Science & Technology | Laws & Regulations | About EPA

Search EPA.gov

Contact Us

EPA Clean Air Scientific Advisory Committee (CASAC)

The Clean Air Scientific Advisory Committee (CASAC) provides independent advice to the EPA Administrator on the technical bases for EPA's National Ambient Air Quality Standards.

› More about the CASAC

› About this Website

Recent additions and CASAC Recent Happenings *More about RSS news feeds (USA.gov)*

Current Activities

- Nominations for CASAC Membership (Feb 2019)
- Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter Integrated Science Assessment - Ecological Criteria (Second External Review Draft)
- Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter Risk and Exposure Assessment Planning Document for Secondary (Welfare-based) National Ambient Air Quality Standards (NAAQS)
- Ozone Integrated Review Plan for National Ambient Air Quality Standards Review (2018)
- Particulate Matter Integrated Science Assessment (External Review Draft)

Upcoming and Recent Meetings

- 03/28/2019 Chartered Clean Air Scientific Advisory Committee (CASAC) Public Teleconference on Particulate Matter (PM)

More Meetings

CASAC Home
Basic Information
Calendar
Committees, Panels, and Membership
Advisory Activities
Advisory Reports
Federal Register Notices

EPA SAB Staff
Public Involvement in Advisory Activities
Nomination of Experts
Ethics Requirements for Advisors

Science Advisory Board
Advisory Council on Clean Air Compliance Analysis

You are here: EPA Home ›› EPA Clean Air Scientific Advisory Committee (CASAC) ›› LookupWebAdvisory ActivitiesCurrentCASAC ›› Ozone Integrated Review Plan for National Ambient Air Quality Standards Review (2018)

Ozone Integrated Review Plan for National Ambient Air Quality Standards Review (2018)

EPA Designated Federal Officer (DFO): Aaron Yeow
202-564-2050
yeow.aaron@epa.gov

Responsible Committee/Panel: CASAC

See EPA's PDF page to learn more about PDF files.

BACKGROUND | PROCESS FOR COMMITTEE/PANEL FORMATION | ADVISORY MEETINGS AND REPORT DEVELOPMENT | FINAL REPORT(S)

Under the Clean Air Act, EPA is required to carry out a periodic review and revision, as appropriate, of the air quality criteria and the primary and secondary standards for six criteria air pollutants, which include ozone. EPA is currently reviewing the Ozone National Ambient Air Quality Standards (NAAQS). Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

On October 10, 2018, Acting Administrator Andrew Wheeler announced (https://www.epa.gov/newsreleases/acting-administrator-wheeler-announces-science-advisors-key-clean-air-act-committee) that the seven-member Chartered CASAC will serve as the body to review the key scientific assessments for the Ozone NAAQS review.

As part of the NAAQS review process, EPA's Office of Air and Radiation has requested CASAC advice on the Integrated Review Plan for the Review of the Ozone National Ambient Air Quality Standards.

Agency Charge . (PDF, 3 pp., 216,059 bytes)

Agency Review Document(s):

PDF for Integrated Review Plan for the Review of the Ozone National Ambient Air Quality Standards (External Review Draft - October 2018). (PDF, 157 pp., 2,818,687 bytes)

EPA United States Environmental Protection Agency

Español | 中文: 繁體版 | 中文: 简体版 | Tiếng Việt | 한국어

Learn the Issues | Science & Technology | Laws & Regulations | About EPA

Search EPA.gov

EPA Clean Air Scientific Advisory Committee (CASAC)

Contact Us

- CASAC Home
- Basic Information
- Calendar
- Committees, Panels, and Membership
- Advisory Activities
- Advisory Reports
- Federal Register Notices
- EPA SAB Staff
- Public Involvement in Advisory Activities
- Nomination of Experts
- Ethics Requirements for Advisors
- Science Advisory Board
- Advisory Council on Clean Air Compliance Analysis

You are here: EPA Home ›› EPA Clean Air Scientific Advisory Committee (CASAC) ›› LookupWebAdvisory ActivitiesCurrentCASAC ›› Particulate Matter Integrated Science Assessment (External Review Draft)

Particulate Matter Integrated Science Assessment (External Review Draft)

EPA Designated Federal Officer (DFO):	Aaron Yeow 202-564-2050 yeow.aaron@epa.gov
Responsible Committee/Panel:	CASAC

See EPA's PDF page to learn more about PDF files.

BACKGROUND | PROCESS FOR COMMITTEE/PANEL FORMATION | ADVISORY MEETINGS AND REPORT DEVELOPMENT

Under the Clean Air Act, EPA is required to carry out a periodic review and revision, as appropriate, of the air quality criteria and the primary and secondary standards for six criteria air pollutants, which include particulate matter. EPA is currently reviewing the NAAQS for particulate matter. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

On October 10, 2018, Acting Administrator Andrew Wheeler announced (https://www.epa.gov/newsreleases/acting-administrator-wheeler-announces-science-advisors-key-clean-air-act-committee) that the seven-member Chartered CASAC will serve as the body to review the remaining key scientific assessments for the PM NAAQS review.

As part of the NAAQS review process, EPA's Office of Research and Development has requested CASAC review of the Integrated Science Assessment for Particulate Matter - (External Review Draft - October 2018).

Agency Charge . (PDF, 5 pp., 223,918 bytes)

Agency Review Document(s):

PDF for Integrated Science Assessment for Particulate Matter (External Review Draft - October 2018). (PDF, 1,881 pp., 19,440,118 bytes)

EPA United States Environmental Protection Agency

Español | 中文: 繁體版 | 中文: 简体版 | Tiếng Việt | 한국어

Learn the Issues | Science & Technology | Laws & Regulations | About EPA

Search EPA.gov

EPA Clean Air Scientific Advisory Committee (CASAC)

Contact Us

- CASAC Home
- Basic Information
- Calendar
- Committees, Panels, and Membership
- Advisory Activities
- Advisory Reports
- Federal Register Notices
- EPA SAB Staff
- Public Involvement in Advisory Activities
- Nomination of Experts
- Ethics Requirements for Advisors
- Science Advisory Board
- Advisory Council on Clean Air Compliance Analysis

You are here: EPA Home ›› EPA Clean Air Scientific Advisory Committee (CASAC) ›› LookupWebAdvisory ActivitiesCurrentCASAC ›› Particulate Matter Integrated Science Assessment (External Review Draft)

Particulate Matter Integrated Science Assessment (External Review Draft)

EPA Designated Federal Officer (DFO): Aaron Yeow
202-564-2050
yeow.aaron@epa.gov

Responsible Committee/Panel: CASAC

See EPA's PDF page to learn more about PDF files.

BACKGROUND | PROCESS FOR COMMITTEE/PANEL FORMATION | **ADVISORY MEETINGS AND REPORT DEVELOPMENT**

Federal Register Notices Announcing Public Meetings:

Title	Type	Citation	Publication Date
Notification of a Public Teleconference of the Chartered Clean Air Scientific Advisory Committee (CASAC)	Public Meeting	84 46 8523-8524	03/08/2019
Notification of a Public Meeting of the Chartered Clean Air Scientific Advisory Committee (CASAC)	Public Meeting	83 215 55529-55530	11/06/2018

Public Meetings and/or Teleconferences:

03/28/2019 to 03/28/2019, Chartered Clean Air Scientific Advisory Committee (CASAC) Public Teleconference on Particulate Matter (PM)

12/12/2018 to 12/13/2018, Chartered Clean Air Scientific Advisory Committee (CASAC) Public Meeting on Particulate Matter

Draft Reports:

03-07-19 Draft CASAC Review of the EPA's Integrated Science Assessment for Particulate Matter (External Review Draft – October 2018). (PDF, 240 pp., 4,068,160 bytes)

Meeting Materials

Disclaimer Although not required to do so, EPA generally posts public comments submitted to the SAB, CASAC or Council and their subcommittees on the internet to make them easily available to the public. Posting of public comments is not an Agency endorsement of, or agreement with, any information or viewpoints presented in the public comment, nor is it an Agency endorsement of the quality or correctness of such information and viewpoints. In addition, mention of any trade names or commercial products in posted meeting material does not constitute a recommendation by EPA or the SAB for use.

Category	Meeting Material
Agency-provided Background Material	Preamble to the Integrated Science Assessments (November 2015). (PDF, 40 pp., 958,035 bytes)
Agency Briefing Material	EPA Presentation - Review of the Integrated Science Assessment for Particulate Matter (External Review Draft). (PDF, 43 pp., 2,184,169 bytes)
Agency Follow-up	Dr. John Vandenberg (EPA) Response to Dr. Tony Cox's 12-17-18 Follow-up Questions. (PDF, 4 pp., 1,501,114 bytes)
Committee-Developed or Provided Background Material	12-14-18 Follow-up Questions to the Health Effects Institute from Dr. Tony Cox. (PDF, 1 pp., 84,944 bytes)
Committee-Developed or Provided Background Material	12-17-18 Follow-up Questions for Dr. John Vandenberg (EPA) from Dr. Tony Cox. (PDF, 8 pp., 474,761 bytes)
Committee-Developed or Provided Background Material	CASAC Chair Memo to Chartered CASAC. (PDF, 3 pp., 196,640 bytes)
Committee-Developed or Provided Background Material	Charge Question for Response Bullet Points: Executive Summary and Chapter 1. (PDF, 37 pp., 311,889 bytes)
Committee-Developed or Provided Background Material	Charge Questions for Bullet Point Responses. (PDF, 16 pp., 121,476 bytes)
Committee Members' Comments	12-10-18 Preliminary Comments from Members of the CASAC on the PM ISA. (PDF, 114 pp., 2,756,161 bytes)
Committee Members' Comments	12-12-18 Updated Preliminary Comments from Dr. Mark Frampton. (PDF, 6 pp., 316,443 bytes)
List of public speakers	List of Registered Public Speakers. (PDF, 1 pp., 106,765 bytes)
List of public speakers	List of Registered Public Speakers - Clarifying Public Comments. (PDF, 1 pp., 88,208 bytes)
Presentation by Registered Public Speaker	12-12-18 Clarifying Public Comment from Julie Goodman, Gradient. (PDF, 1 pp., 90,360 bytes)
Presentation by Registered Public Speaker	Oral Statement from Albert Rizzo, American Lung Association. (PDF, 3 pp., 175,691 bytes)
Presentation by Registered Public Speaker	Oral Statement from Anne E. Smith, NERA Economic Consulting, on behalf of the Utility Air Regulatory Group. (PDF, 6 pp., 561,635 bytes)
Presentation by Registered Public Speaker	Oral Statement from Corwin Zigler, The University of Texas at Austin. (PDF, 3 pp., 85,401 bytes)
Presentation by Registered Public Speaker	Oral Statement from Daniel L. Costa. (PDF, 2 pp., 236,858 bytes)
Presentation by Registered Public Speaker	Oral Statement from Douglas Dockery, Harvard T.H. Chan School of Public Health. (PDF, 12 pp., 1,098,457 bytes)
Presentation by Registered Public Speaker	Oral Statement from George Allen. (PDF, 2 pp., 115,087 bytes)
Presentation by Registered Public Speaker	Oral Statement from George Wolff, Air Improvement Resource, Inc., on behalf of the Alliance of Automobile Manufacturers. (PDF, 10 pp., 170,028 bytes)
Presentation by Registered Public Speaker	Oral Statement from Giffe Johnson, National Council for Air and Stream Improvement (NCASI). (PDF, 3 pp., 160,314 bytes)
Presentation by Registered Public Speaker	Oral Statement from H. Christopher Frey, North Carolina State University. (PDF, 2 pp., 74,909 bytes)
Presentation by Registered Public Speaker	Oral Statement from Jack Harkema, Michigan State University. (PDF, 2 pp., 42,228 bytes)

CONTACT INFORMATION

James Boylan, Ph.D.
Georgia Dept. of Natural Resources
4244 International Parkway, Suite 120
Atlanta, GA 30354

James.Boylan@dnr.ga.gov
404-363-7014