



# Proposed Amendments to the AB 2588 Emission Inventory Criteria and Guidelines Regulation

---

PUBLIC WORKSHOP

APRIL 30, 2020

# Opening Message from Assemblymember Cristina Garcia

---

# Presentation Outline

---

- Introduction and Webinar Logistics
- Background on AB 2588 Air Toxics “Hot Spots” Program
- Proposed Amendments
- Comments and Discussion
- Next Steps and Adjourn

# Webinar Logistics

---

- Workshop Materials: [www.arb.ca.gov/ab2588/2588guid.htm](http://www.arb.ca.gov/ab2588/2588guid.htm)
  - Workshop Presentation Slides
  - Appendix A – List of Substances
  - SRP Interim Findings
  - Appendix C Examples
  - Appendix E (Modified CTR Table A-3)
- Questions and Comments
  - GoToWebinar Question Box
  - GoToWebinar Phone/Audio Line

# California Air Toxics Program

---

- CARB has a comprehensive and effective air toxics program
- Key elements include:
  - Toxic Air Contaminant Identification and Control Program (AB 1807)
  - Air Toxics “Hot Spots” Information and Assessment Act (AB 2588)
  - Children’s Environmental Health Protection Act (SB 25)
  - Community Air Protection Program (AB 617)

# Air Toxics Program Accomplishments

---

- CARB identified over 200 toxic air contaminants (AB 1807 process)
- Adopted 26 ATCMs (18 measures for stationary sources, and 8 for mobile sources)
- AB 2588 has resulted in significant air quality benefits
  - Numerous health risk assessments and facility risk reductions
  - Millions of pounds of voluntary emission reductions
- AB 617 identified first ten disadvantaged communities to engage in development of community emission reduction plans to mitigate air pollution impacts

# Air Toxics “Hot Spots” Information and Assessment Act (AB 2588)

---

- First of its kind program designed to reduce localized air toxics exposure and risk from stationary sources
- Requires California Air Resources Board (CARB) to compile air toxics emissions data reported by stationary sources
- Stationary source facilities must report the types and quantities of toxic substances they routinely release into the air

# AB 2588 Implementation

---

- CARB compiles emission data reported statewide
- Districts identify facilities having potential for localized impacts
- Facilities assess health risks and notify nearby residents of significant risks
- Facilities reduce risks below a health-protective threshold
- Data support air toxics programs (e.g., air toxic control measures, AB 617, etc.)



# Importance of Amending Emission Inventory Criteria and Guidelines Regulation

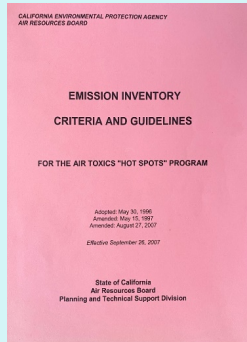
---

- Improving air toxics emissions estimates in support of public health
- Enhancing public right-to-know
- Streamlining with other reporting programs

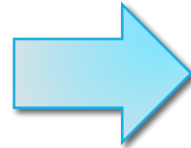
# EICG Regulation



**EICG Regulation**  
Section 93300.5, Title 17



**EICG Report**

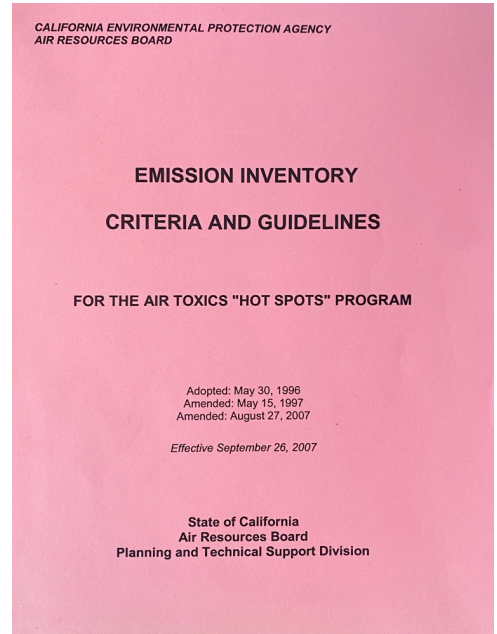


- Incorporates EICG Report by reference
- Provides direction to facilities on how to compile air toxics emission data
- Last updated August 2007

# EICG Report

---

- Applicability provisions for facilities subject to reporting
- Requirements for preparing Emission Inventory Plans and Emission Inventory Reports
- Source testing and emission factors
- Definitions
- Other requirements (e.g., data formats and instructions)



# EICG Report Appendices

---

Appendix A. List of substances to be reported

Appendix B. Reporting formats and instructions

Appendix C. Technical guidance “look-up” for chemicals, with associated processes and/or industry sectors

Appendix D. Source testing requirements and alternatives

Appendix E. Reporting requirements for facilities emitting <10 tons/year of criteria pollutants

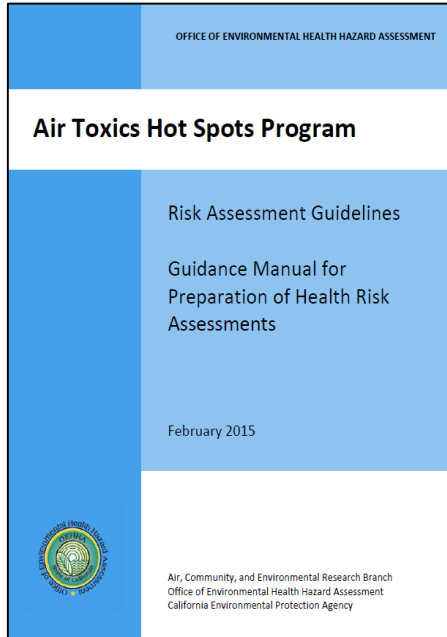
Appendix F. Criteria and protocol for screening assessments

Appendix G. List of documents incorporated by reference

# Proposed Amendments

---

# Update References to OEHHA Risk Assessment Guidelines



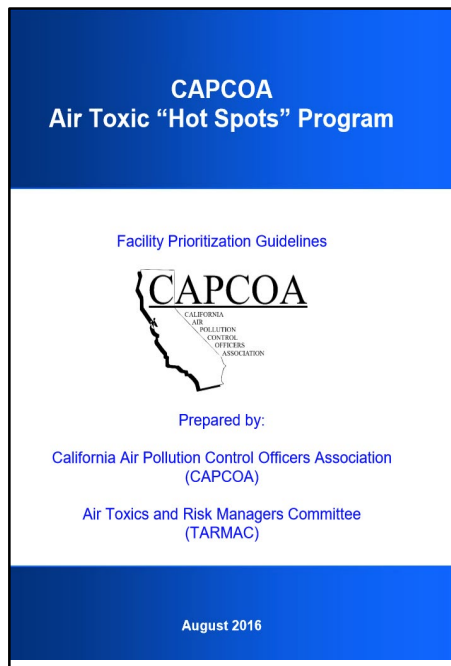
## Section. IV.A.(1)(b) Approved Risk Assessment Result

(b) Approved Risk Assessment Result: ... Some appropriate procedures for determining potential cancer risk and total hazard index are presented in the OEHHA "Air Toxics 'Hot Spots' Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015~~October 2003~~", which is incorporated by reference herein; or...

Other sections where the reference will also be updated include:

- **Section IV.B.(1)(c)(i) Screening Criteria**
- **Section X.(18) "Hazard Index"**

# Update References to CAPCOA Facility Prioritization Guidelines



## Section IV.A.(1)(a) Prioritization Score

(a) Prioritization Score: ... Some appropriate procedures for estimating prioritization scores are presented in the California Air Pollution Control Officers' Association (CAPCOA) "Air Toxics 'Hot Spots' Program Facility Prioritization Guidelines, ~~August 2016~~ July 1990", which is incorporated by reference herein; or...

Other sections where the reference will also be updated are:

- **Section X.(24) "Prioritization score"**

# Updating Diesel Engine Requirements (Section XI)

---

- Diesel engine risk screening tables will be updated to reflect OEHHA risk methods, more engine scenarios, latest AERMOD modeling guidance, and building downwash effects
- Stationary portable diesel engines >50 hp will be required to have emissions reported at specified larger facilities
- District determinations regarding smaller engines that may pose public health risk



# Sample Diesel Risk Screening Table

LAX; 200HP, 100% Load, 1.0 g/bhp

Hours	Distance (m)																
	20	30	40	50	60	70	80	90	100	120	140	160	180	200	400	800	1,200
10	8	13	14	13	11	9	8	7	6	5	4	3	3	2	1	0	0
20	17	26	28	25	22	19	16	14	12	9	8	6	5	4	1	0	0
30	25	39	41	38	33	28	24	21	18	14	11	9	8	6	2	0	0
40	34	53	55	50	44	38	33	28	25	19	15	12	10	8	2	1	0
50	42	66	69	63	55	47	41	35	31	24	19	15	13	11	3	1	0
100	84	131	138	126	110	95	82	71	61	47	38	30	25	21	6	2	1
200	168	263	276	252	220	190	163	141	123	95	75	61	50	42	12	3	1
300	253	394	414	378	330	284	245	212	184	142	113	91	75	63	19	5	2
400	337	526	551	504	440	379	326	282	245	189	150	122	100	84	25	7	3
500	421	657	689	630	550	474	408	353	307	237	188	152	125	105	31	8	4
1,000	842	1,315	1,379	1,260	1,101	948	816	705	614	474	375	304	251	211	62	16	7

**\*CAUTION: Building downwash may increase the risks from 2x to 100x.  
Assume 100x, or conduct site-specific modeling.**

# Further Considerations

---

- Qualifying scenarios that Districts may determine applicable for emission inventory reporting
  - Diesel engines used during large facility “turnaround cycles”
  - On-going/predictable “emergency use” of backup generators
- Strengthen use of population-wide impact assessment as a consideration in various provisions

# Additional Proposed Updates

---

- Include prior guidance regarding on-site mobile source coverage and other technical interpretations into regulation text
- Clarify text and definitions (e.g., facility definition)
- Streamline with other reporting programs

# Additional Proposed Updates (continued)

---

- Propose adding district determination factors to provisions in related sections
  - E.g., Section IV.A.(3) Reinstatement
    - ...changes to air dispersion methods, changes to account for updated risk science and childhood exposures, other changes to risk assessment methods; and
    - ...consideration of population exposure and cancer burden, combined impacts of facilities and other sources in the area
- Similar revisions are proposed in
  - Exemptions and reinstatement sections
  - Extent of devices needing to be updated

# Appendix A – List of Substances to be Reported

---

- AB 2588 Statute specifies six source lists for CARB to review in compiling the list of chemicals
  - CARB’s Toxic Air Contaminants (TACs)
  - US EPA’s Hazardous Air Pollutants (HAPs)
  - International Agency for Research on Cancer (IARC)
  - Proposition 65 List of Carcinogens and Reproductive Toxicants
  - National Toxicology Program (NTP)
  - Hazard Evaluation System and Information Service (HESIS)
- Statute also gives CARB explicit authority to include other chemicals of concern

*-For more information, see Appendix A on the Workshop Web Page-*

# Proposed Updates to List of Substances

---

- Staff evaluated over 1,500 substances (in consultation with OEHHA and DPR)
  - Toxicity recognized under one of the six lists mandated by the AB 2588 statute (or under CARB's Authority)
  - Include unless substance cannot become airborne
- About 600 substances were screened out (not proposed for addition)

# Proposed Chemical List – Additional Details

---

- About 900 new substances are being proposed for addition
  - Appendix A-I: ~730 substances
  - Appendix A-II: ~10 substances
  - Appendix A-III: ~160 substances
- Currently reviewing American Conference of Governmental Industrial Hygienists (ACGIH) chemical list
  - Anticipate less than 100 substances may be proposed for addition

# Proposed Functional Groups

---

- Apply to substances that contain the listed chemical functional group
- Facilities report the name and CAS number of any emitted substance that meets the definition
- CARB staff proposes 3 new functional group categories:
  - Any chemical containing the isocyanate functional group
  - Derivatives and substituted versions of polycyclic aromatic compounds that contain any halogen atom (chlorine, bromine, fluorine, or iodine)
  - Poly- and per-fluorinated chemicals (i.e., PFAS related)



# Proposed Functional Groups (continued)

**ISOCYANATE RELATED: Any chemical containing the Isocyanate functional group**

**Any chemical containing a single Isocyanate functional group**

**Any chemical containing two or more Isocyanate functional groups**

**PAH RELATED: Derivatives and substituted versions of polycyclic aromatic compounds that contain any halogen atom (chlorine, bromine, fluorine, or iodine)**

**PFAS RELATED: Substances containing any of the following functional groups of poly- and per-fluorinated chemicals**

**Perfluoroalkyl carbonyl, carboxylic acid, and alcohol compounds**

**Perfluoroalkyl sulfonyl, sulfonic acid, sulfonate and sulfonamide compounds**

**Perfluoroalkyl phosphate compounds**

**Fluorotelomer-related compounds**

**Per- and polyfluoroalkyl ether-based compounds**

**Other PFAA precursors and related compounds - perfluoroalkyl ones**

**Other PFAA precursors or related compounds - semifluorinated**

**Fluoropolymers**

# SRP Review of Proposed New Chemicals

---

CARB consulted with the Scientific Review Panel to get their recommendations on the following:

- SRP's scientific acceptance of the process we used to propose new substances
- Other recommended sources to consider
- Guidance on the appropriateness of using functional groups as a basis for including substances

*-For more information, see SRP Interim Findings on the Workshop Web Page-*

# Non-Regulatory Technical Supplement for Appendix A Chemicals

---

CARB intends to provide a non-regulatory technical supplement for the Appendix A chemicals with helpful information:

- Compile available information on a variety of health effects
- Compile available information on known uses
- Not part of EICG Regulation; posted on a technical web page

# Appendix B Proposed Updates

---

- Remove requirement for hard copy reporting
- Collect building height/parameters to ensure downwash can be considered
- Include provisions regarding Limit of Detection (LOD) into regulation text

# Appendix C – Guidance for Chemicals Expected by Process and/or Industry Sectors

---

- Provide “look up” guidance for air toxic chemicals expected to be associated with
  - Particular types of overarching processes (Appendix C-I, e.g., combustion, solvent use), or
  - Industry Sectors (Appendix C-II, e.g., similar to the structure of Standard Industrial Classification code system)

# Appendix C – Sample for Process

## Table C-I Solvent Use (excerpt)

Device/Process			Types of Emissions	Specific Substances
SOLVENT USE	Miscellaneous Use			Acetaldehyde, Acrolein, Benzene, Carbon tetrachloride, CFC-113, Chlorobenzene, Chloroform, Cresols, Dimethyl sulfate, Dioxane, EDC, <a href="#">Ethylene glycol monoethyl ether</a> , <a href="#">Hydrogen bromide</a> , Mercury, Methanol, Methylene chloride, Nitrobenzene, <a href="#">PCBTF</a> , Perc, <a href="#">t-Butyl acetate</a> , 1,1,1-TCA, <a href="#">1,1,1,2-Tetrachloroethane</a> , Toluene, TCE, Xylenes, Any other listed chlorinated solvents
SOLVENT USE	Degreasing Operations		Gaseous and aerosol organic compounds including but not limited to:	Benzene, Carbon tetrachloride, Chlorinated fluorocarbon, Chlorobenzene, 1,4-Dioxane, Freons, Methylene chloride, <a href="#">PCBTF</a> , Perc, <a href="#">t-Butyl acetate</a> , 1,1,1-TCA, Toluene, TCE, Any other listed substances
SOLVENT USE	Degreasing Operations	Cleaning & Drying		Chlorinated fluorocarbons
SOLVENT USE	Degreasing Operations	Metal Degreasers		1,4-Dioxane, Methylene chloride, <a href="#">PCBTF</a> , <a href="#">t-Butyl acetate</a> , 1,1,1-TCA, TCE

*-For more information, see Appendix C Samples on the Workshop Web Page -*

# Appendix C-I Sample for Pesticides

- Note clarifies that reporting is required if facility is subject to AB2588, and while substance is not acting in pesticidal use (e.g., waste gas venting after commodity fumigation)

Device/Process			Types of Emissions	Specific Substances
OTHER PROCESSES	Pesticide Use -- For facilities that are subject to Hot Spots applicability provisions, reporting is required except during the time it is acting as a pesticide at an operation which is not a facility subject to the Hot Spots program.			Acrolein, <a href="#">Aldicarb</a> , <a href="#">Allyl isothiocyanate</a> , <a href="#">Amitraz</a> , Arsenic, <a href="#">p-Benzoquinone dioxime</a> , <a href="#">Bifenthrin</a> , <a href="#">Bis(tributyltin) oxide</a> , <a href="#">Bromine</a> , <a href="#">Bromoxynil octanoate</a> , <a href="#">Carbaryl</a> , <a href="#">Carbazole</a> , Carbon tetrachloride, <a href="#">p-Chloroaniline</a> , Dibromoethane, 1,4-Dichlorobenzene, <a href="#">Di-n-propyl isocinchomeronate</a> , Dioxins, <a href="#">Diquat dibromide (and mixtures)</a> , <a href="#">Disodium cyanodithioimidocarbonate</a> , <a href="#">Diuron</a> , <a href="#">Endosulfan</a> , <a href="#">Endrin</a> , <a href="#">Ethoprop</a> , <a href="#">Ethyl dipropylthiocarbamate (EPTC)</a> , <a href="#">Ethyl parathion</a> , EDB, EDC, <a href="#">Fenamiphos</a> , <a href="#">Glyphosate</a> , <a href="#">Imazalil</a> , Lead, <a href="#">Methyl bromide</a> , Nickel titanate, <a href="#">Propanil</a> , <a href="#">Sulfuryl fluoride</a> , Zinc oxide

# Appendix C – Sample for Industry Sector

Table C-II Chemical Manufacturing Sector (excerpt)

Industry/Emitting Process		Type(s) of Emissions	Emitting Process Points	Specific Substances
<p><b>Chemical Manufacturing</b></p>	<p><b>Chemical Reagents &amp; Intermediates</b></p>			<p><u>Allyl chloride</u>, <u>Arsine</u>, <u>Benzidine and its salts</u>, <u>Benzotrichloride</u>, <u>Bromine pentafluoride</u>, <u>1-Bromo-3-chloropropane</u>, <u>1,3-Butadiene</u>, <u>Carbon tetrachloride</u>, <u>Carbonyl sulfide</u>, <u>p-Chloroaniline</u>, <u>Chlorobenzene</u>, <u>Cyanoacetic acid</u>, <u>1,4-Dichlorobenzene</u>, <u>2,4-Dichloro-1-nitrobenzene</u>, <u>2,5-Dichlorophenol</u>, <u>Diphenyl thiourea</u>, <u>N-Ethylaniline</u>, <u>o-Ethylaniline</u>, <u>Ethylene sulfide</u>, <u>Hydrogen bromide</u>, <u>Isobutyl nitrite</u>, <u>Methylhydrazine sulfate</u>, <u>4-Nitrochlorobenzene</u>, <u>PCBTF</u>, <u>Potassium bromate</u>, <u>1,2,3,4-Tetrachlorobenzene</u>, <u>1,2,4,5-Tetrachlorobenzene</u>, <u>trans-1,4-Dichlorobutene</u></p>



# Appendix D - Source Testing

---

- AB 2588 Statute emphasizes testing and measurement
  - In some cases, allows appropriate use of **estimation** methods (e.g., emission factors, mass balance, etc.);
  - But requires “source testing or other **measurement** techniques ...wherever necessary to verify emission estimates, as determined by the state board and to the extent technologically feasible”;
  - The facility’s plan must provide “state of the art effectiveness” and a “true representation of the types and quantities of air releases from the facility”.

# Types of Source Testing in AB 2588

---

- Stack testing may occur at a stack or point of release
- Fuel analysis may be acceptable for metals in combustion
- Some fugitives and “open” sources may be tested using capture methods (e.g., emission isolation flux chambers)
- Source testing requirements, acceptable test methods, and substances are specified in EICG text and Appendix D
  - Acceptable test methods include CARB, US EPA, ASTM, etc.

# Proposed Amendments to Source Testing Requirements and Alternatives

---

- Updating stationary source emissions measurement and fuel analysis methods to current versions, for example:
  - Hexavalent chromium, mercury, selenium, other trace metals
  - Chlorine and sulfur content of solid fuels, wastes, etc.
- Proposing fugitive emissions measurement from “open” types of sources
  - Wastewater treatment plants, landfills, composting and recycling, scrap metal recycling/recovery, metal shredding, etc.
  - Using emission isolation flux chambers

# Appendix D Proposed Amendments (continued)

---

- Proposing a “two step” process for several of these new sources that receive waste streams
  - An initial, broad qualitative screening for detectable chemicals;
  - Then review, and determination of a list of chemicals for quantitative testing
- Also allows for use of a “pooled” source test approach among similar facilities

# Appendix D (cont.)

---

<u>Process/Device/Activity</u>	<u>Substances and Type of Test</u>
<u>8. Waste water treatment</u> <u>- Basins and ponds</u>	<u>Two-step process of qualitative screening followed by quantitative testing for substances determined upon review</u>
<u>21. Landfills</u> <u>- Refuse piles</u>	<u>Two-step process of qualitative screening followed by quantitative testing for substances determined upon review</u>
<u>22. Composting and Recycling</u> <u>- Compost piles</u>	<u>Two-step process of qualitative screening followed by quantitative testing for substances determined upon review</u>
<u>23. Scrap metal recovery</u> <u>(including Metal shredders)</u>	<u>Two-step process of qualitative screening followed by quantitative testing for substances determined upon review (including metals and organics)</u>

# Appendix E – Reporting Requirements for Facilities Below 10 Tons/Year Criteria Pollutants

---

- Table of classes/sectors (and *de minimis* thresholds if applicable) – harmonize with AB 617 Criteria and Toxics Reporting (CTR) Regulation
- Consider a class/sector for facilities that emit 4 or more tons per year of criteria pollutants (but less than 10 tons/year)

# Appendix E – Revisions

---

- Expansion of sector list, in harmony with AB 617 CTR regulation
  - AB 2588 phases in facilities under quadrennial update cycles
- Some thresholds revised to more health protective levels, in light of 2015 OEHHA health risk science

# Appendix E - Examples of Revised Thresholds

<b>Process</b>	<b>Old Threshold</b>	<b>New Threshold</b>
Solvent degreasing using a carcinogenic material	55 gallons per year	Any amount
Crematoria	300 bodies per year	Any amount
Diesel engines	3,000 gallons of fuel, or 20 hours of operation	30 gallons of fuel (100 gallons for Tier 4), or 5 hours of operation



# Appendix F – Criteria and Protocol for Screening Assessments

---

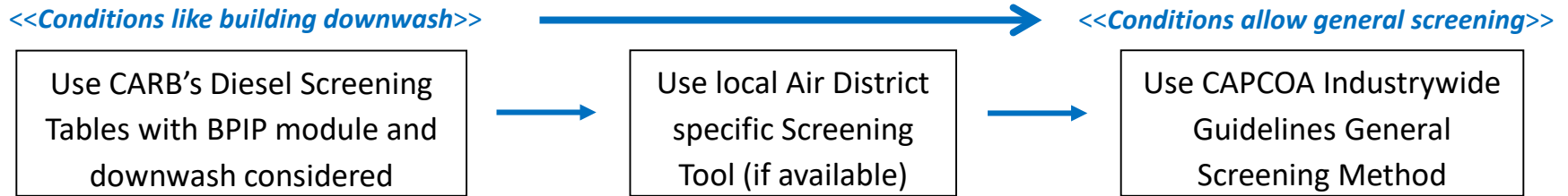
ISC3/SCREEN3 are no longer viable for regulatory purposes

AERMOD is the acceptable regulatory model, but does not have an all-purpose screening meteorology set

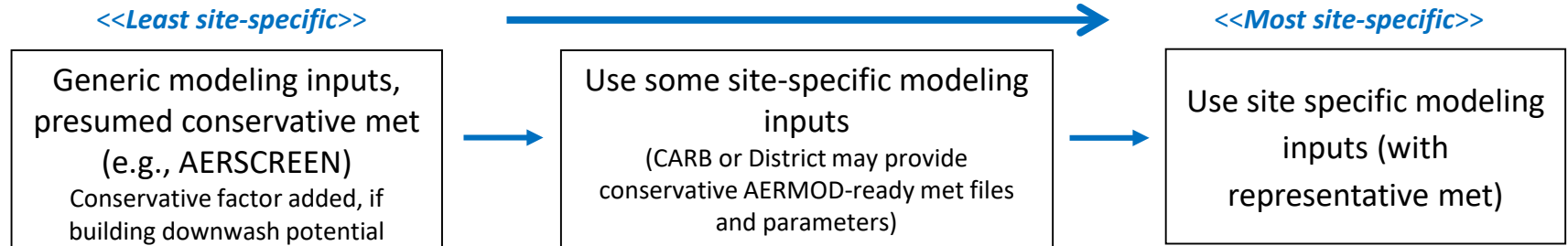
Proposing “stepwise” protocol for determining acceptable types of screening air dispersion and other screening methods

# Appendix F – Criteria and Protocol for Screening Assessments (Cont.)

## Example Draft Flow Chart for an assessment using screening tables/tools (e.g., Section XI)



## Example Draft Flow Chart for a step-wise screening assessment using modeling/AERMOD



# Next Steps

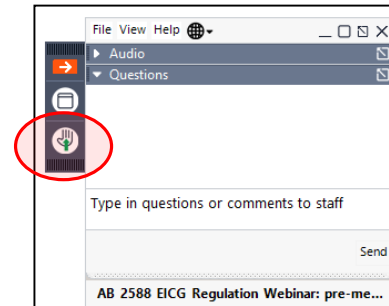
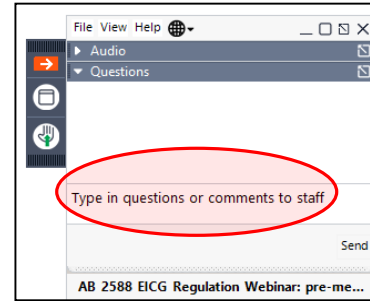
---

- Email additional comments by May 21, 2020 to [ab2588ei@arb.ca.gov](mailto:ab2588ei@arb.ca.gov)
- We will notify GovDelivery subscribers of any new materials available before the 45-day comment period
- Anticipate going to the Board in late 2020

# Comments and Discussion

Submit your questions via GoToWebinar

- Use question box for written questions
- “Raise” your hand for verbal questions



# Contact Us – EICG Regulation

---

## AB 2588 Air Toxics “Hot Spots” Inventory Guidelines

- Website: [www.arb.ca.gov/ab2588/2588guid.htm](http://www.arb.ca.gov/ab2588/2588guid.htm)
- Click “[Subscribe](#)” for Air Toxics "Hot Spots" Criteria and Guidelines listserv registration
- Email comments by May 21, 2020 to [ab2588ei@arb.ca.gov](mailto:ab2588ei@arb.ca.gov)

# EICG Regulation Contacts

---

- **Anne Klein**, Staff  
Toxics Inventory and Special Projects Section  
[Anne.Klein@arb.ca.gov](mailto:Anne.Klein@arb.ca.gov)
- **Gabe Ruiz**, Manager  
Toxics Inventory and Special Projects Section  
[Gabe.Ruiz@arb.ca.gov](mailto:Gabe.Ruiz@arb.ca.gov)
- **Greg Harris**, Chief  
Greenhouse Gas Toxics Emission Inventory Branch  
[Greg.Harris@arb.ca.gov](mailto:Greg.Harris@arb.ca.gov)