SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

The Air Toxics "Hot Spots" Program

HOW DID WE GET HERE?

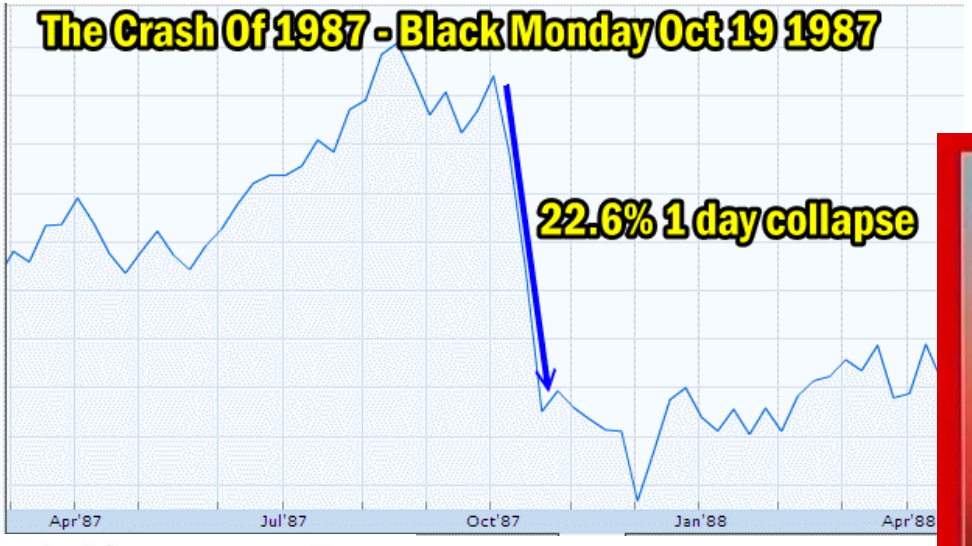
2017 Symposium

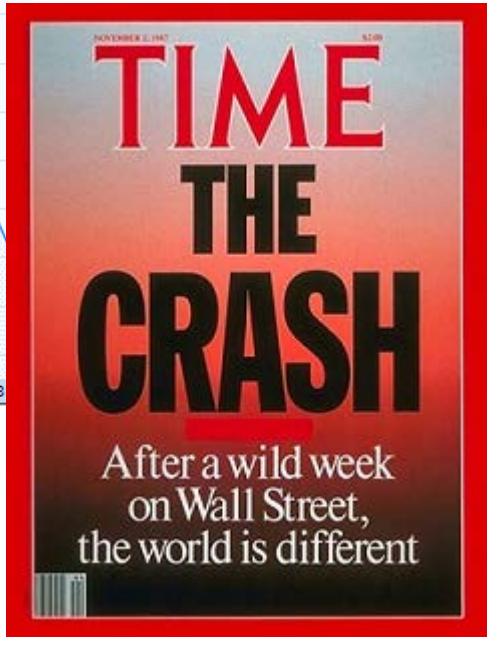
Enforcement, Engineering and Toxics

Jorge DeGuzman

November 8, 2017

WELCOME TO 1987!





"All the News That's Fit to Print"

The New York Times

Late Edition

VOL. CXXXVII . . . No. 47,298 NEW YORK, TUESDAY, OCTOBER 20, 1987 50 CENTS

STOCKS PLUNGE 508 POINTS, A DROP OF 22.6%; 604 MILLION VOLUME NEARLY DOUBLES RECORD

U.S. Ships Shell Iran Installation In Gulf Reprisal

Offshore Target Termed a Base for Gunboats

By STEVEN V. ROBERTS

A Huge Blow to the Five-Year Bull Market

Dow's Record Fall

WORLDWIDE IMPACT

Frenzied Trading Raises Fears of Recession — Tape 2 Hours Late

By LAWRENCE J. De MARIA

Does 1987 Equal 1929?

By ERIC GELMAN

Lionel Andrés "Leo" Messi

Born: June 24, 1987 (age 30) in Rosario, Argentina

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly)

AB 2588
The Air Toxics "Hot Spots" Information and Assessment

1987

The Ws:

WHO: Who is Subject to AB-2588

WHAT: What do affected facilities have to do

WHEN: By when?

Now What?

Health and Safety Code, Division 26
Chapter 2 - Facilities Subject to this Part (§ 44320-44325)

- Facilities Currently Subject to a District Toxics Inventory
- Facilities that manufacture, formulate, use or release substances identified by ARB as per § 44321, and release, or have the potential to release:
  - ≥ 25 tons per year of TOG, PM, NOx, or Sulfur. - Submit plan by Aug 1, 1989
  - ≥ 10 tons per year of TOG, PM, NOx, or Sulfur. - Submit plan by Aug 1, 1990
  - < 10 tons per year, ARB must identify the types of facilities to be included – Submit plan by Aug 1, 1994

Appendix E

TOG - Not ROG or VOC

PM - Not PM10

S – Later clarified to be SOx

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AB 2588
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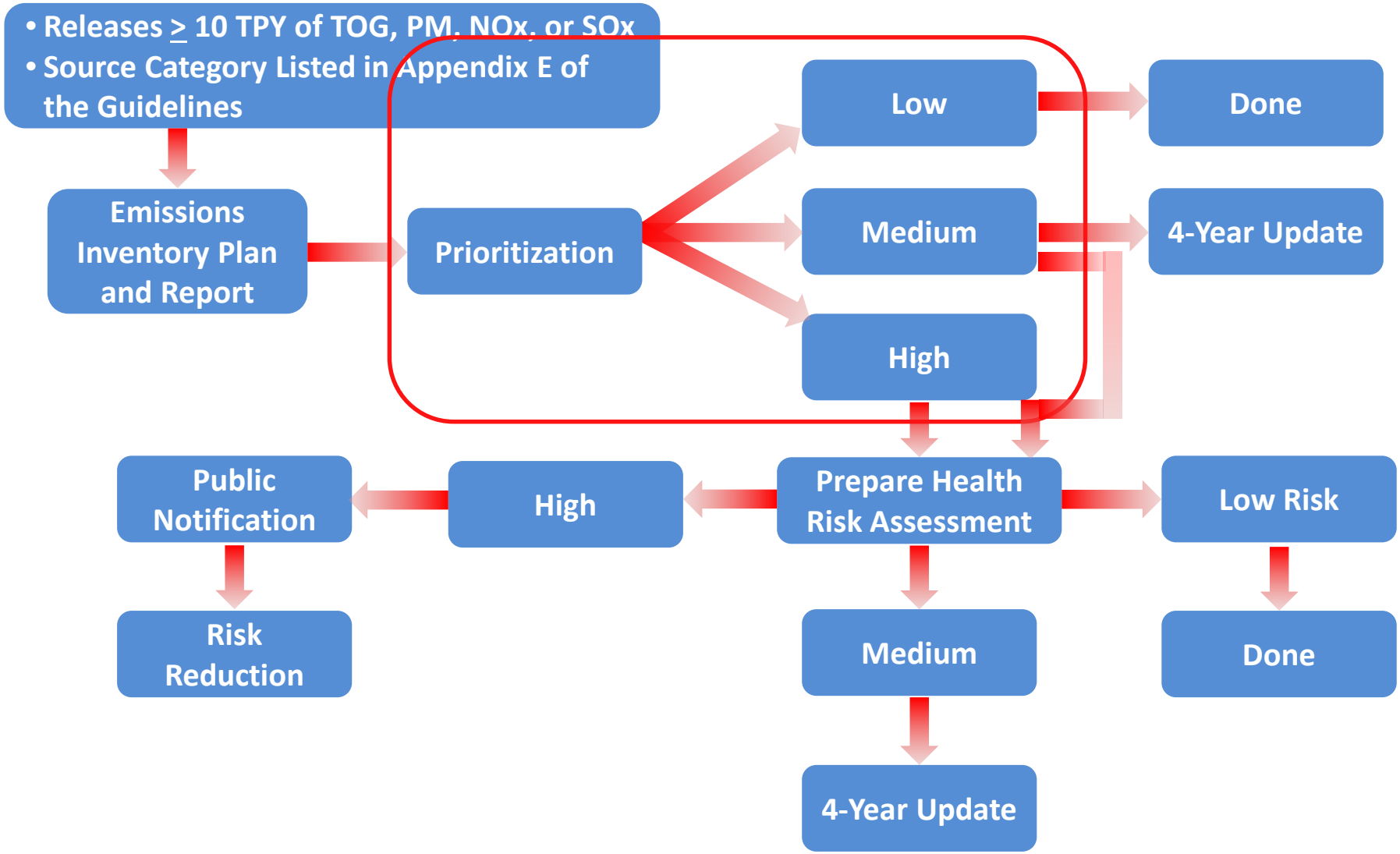
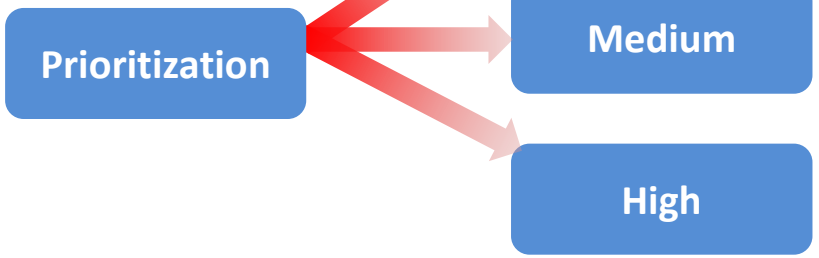
The Air Toxics "Hot Spots" Information and Assessment Act

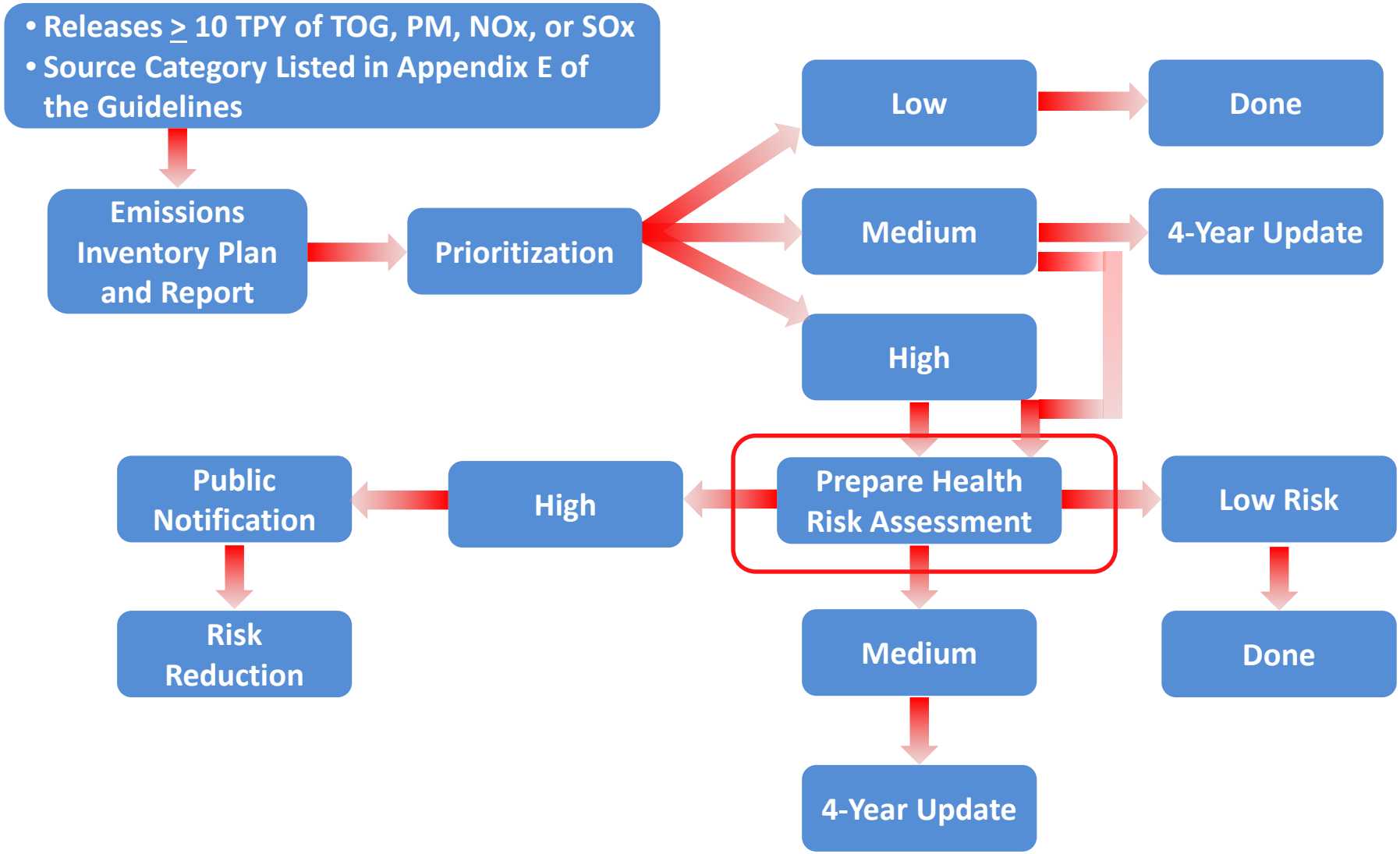


The Air Toxics "Hot Spots" Information and Assessment Act



	ARB Guidelines	CAPCOA Guidelines
Low	≤ 1	< 1
Medium	>1 and ≤10	≥1 and <10
High	>10	≥10

The Air Toxics "Hot Spots" Information and Assessment Act



The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly)

AB 2588
The Air Toxics "Hot Spots" Information and Assessment

1987

1989 - 1994

- Toxics Inventory Plan & Report
- Evaluate Health Risk
- Identify Sources Causing a Significant Risk
- Notify the Public

SIGNIFICANCE LEVELS:

H&S Code § 44362(b)

"Upon approval of the Health Risk Assessment, the operator of the facility shall provide notice to all exposed persons regarding the results of the health risk assessment prepared pursuant to Section 44361 is, in the judgment of the district, the health risk assessment indicates there is a significant health risk associated with the emissions from the facility."

Cancer Risk: ≥ 10 in one million
Non-Cancer Chronic Health Risk: Hazard Index >1
Non-Cancer Acute Health Risk: Hazard Index >1

Not to exceed the Reference Exposure Level (REL) - level at or below which no adverse health effects are anticipated

All districts in the state, except as indicated below, chose these levels.

(El Dorado, Great Basin Unified, Lake, Lassen Modoc, Mariposa, Northern Sierra and Tehama have not chosen a significant risk level)

Prop 65 "no significant risk level" and "no observable effect level"

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AB 2588
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1987 **1989 - 1994**

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- Identify Sources Causing a Significant Risk
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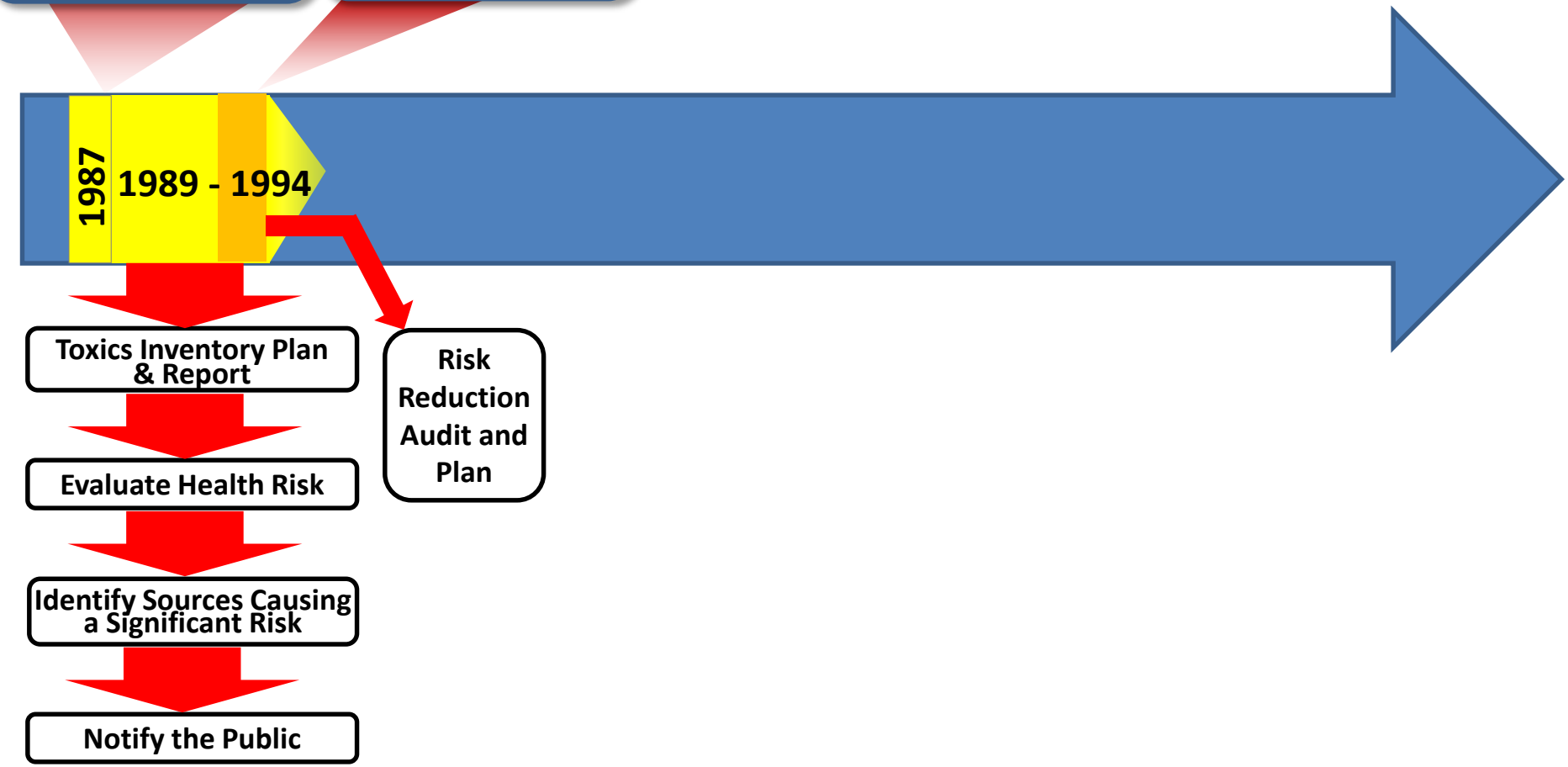
The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly)

AB 2588
The Air Toxics "Hot Spots" Information and Assessment

SB 1731 (1992)
Amendment to the Air Toxics "Hot Spots" Act



H&S Code § 44362(b)

"…the health risk assessment indicates, in the judgment of the district, that the health risk assessment indicates there is a significant health risk.."

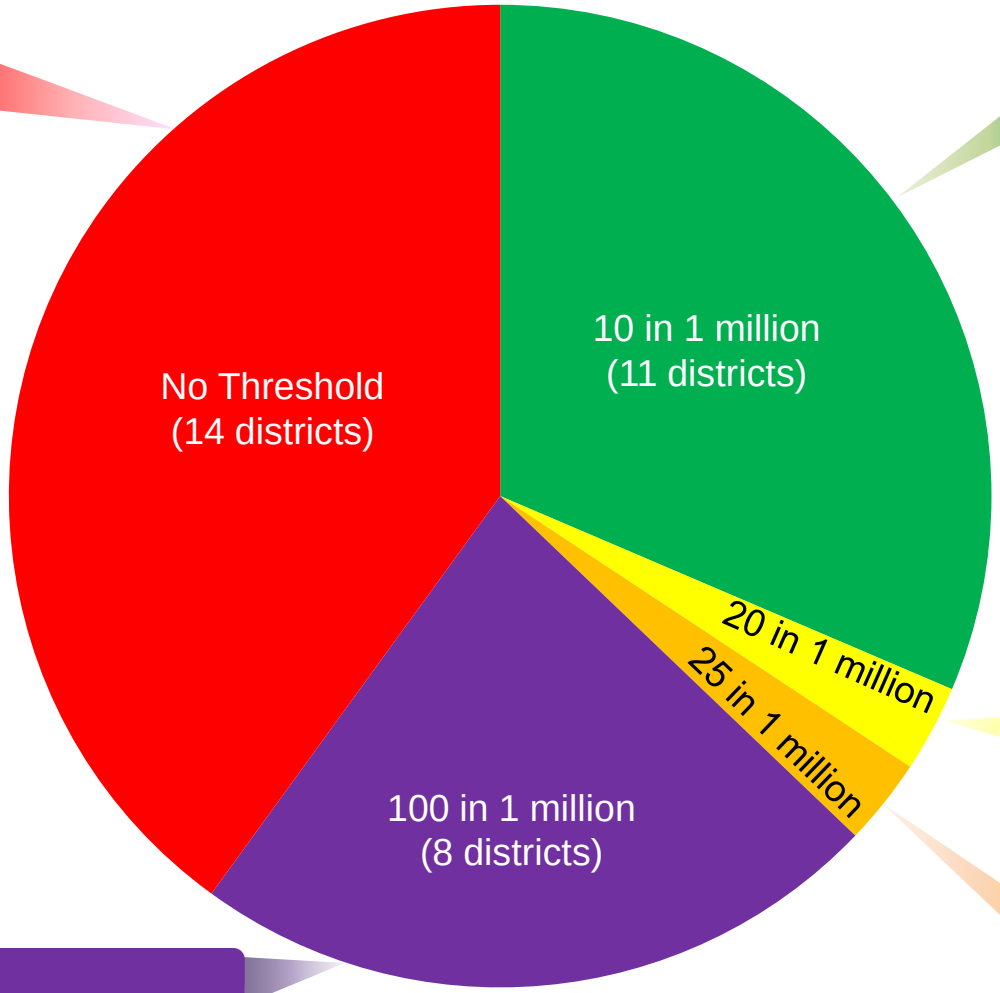
H&S Code § 44391(a)

"Whenever a health risk assessment approved pursuant to Chapter 4 (commencing with Section 44360) indicates, in the judgment of the district, that there is a significant risk associated with the emissions from a facility, the facility operator shall conduct an airborne toxic risk reduction audit and develop a plan to implement airborne toxic risk reduction measures that will result in the reduction of emissions from the facility to a level below the significant risk level within five years of the date the plan is submitted to the district. The facility operator shall implement measures set forth in the plan in accordance with this chapter."

The SMAQMD kept the same significant risk levels as for AB-2588 (Cancer Risk ≥ 10 in one million, acute and chronic HI >1)

Not all districts in the state elected to use the same significant risk levels.

SIGNIFICANT RISK LEVEL FOR RISK REDUCTION AUDIT AND PLAN



No Threshold

Butte
El Dorado
Feather River
Great Basin Unified
Glenn
Imperial
Lassen
Mendocino
Modoc
Mariposa
North Coast Unified
Northern Sierra
Tehama
Yolo-Solano

10 in 1 million

Amador
Calaveras
Colusa
Monterey Bay Unified
Placer
Sacramento
San Luis Obispo
Santa Barbara
Shasta
Tuolumne
Ventura

20 in 1 million

Lake

25 in 1 million

South Coast

100 in 1 million

Antelope Valley
Kern
Northern Sonoma
San Joaquin Valley
Bay Area
Mojave
San Diego
Siskiyou

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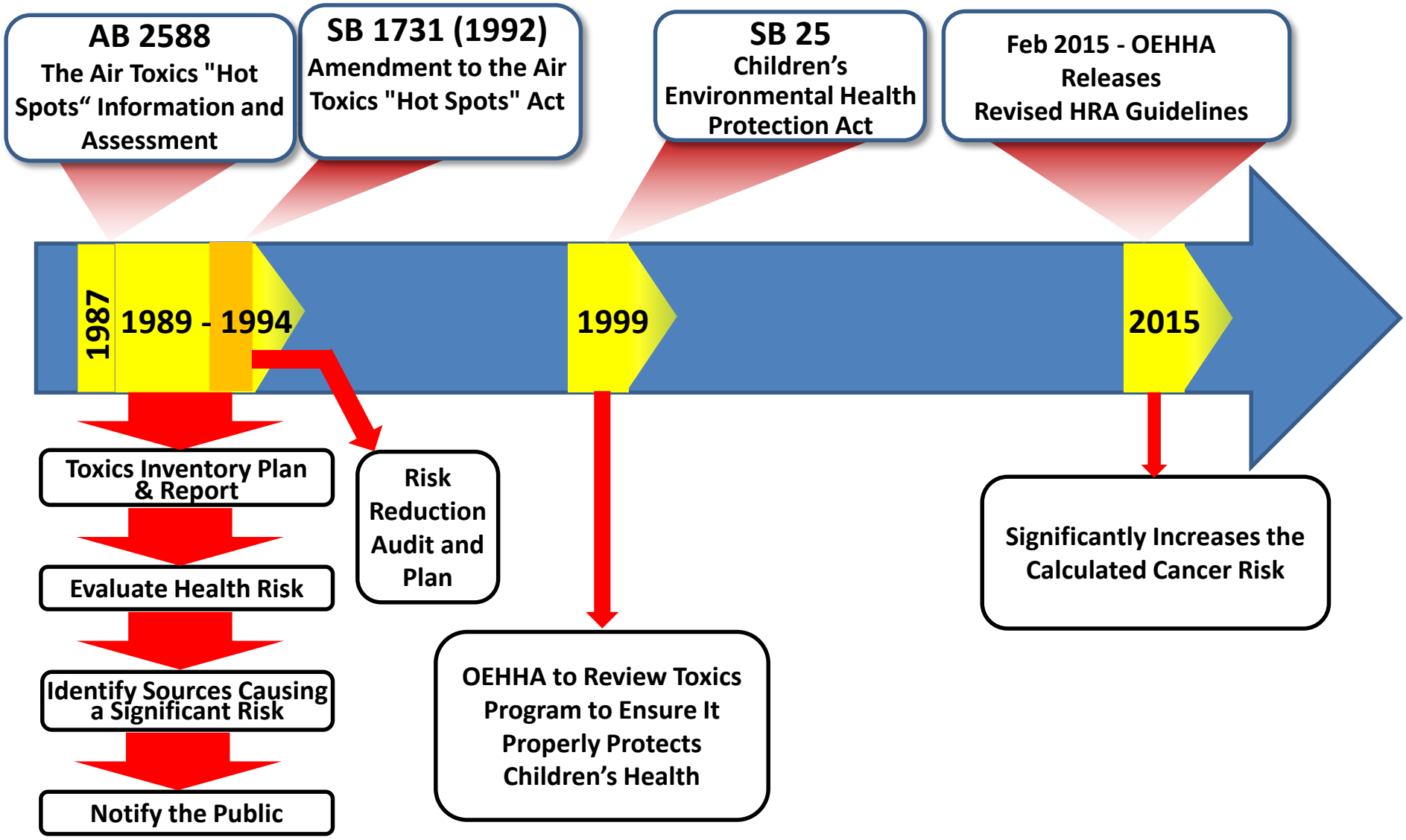
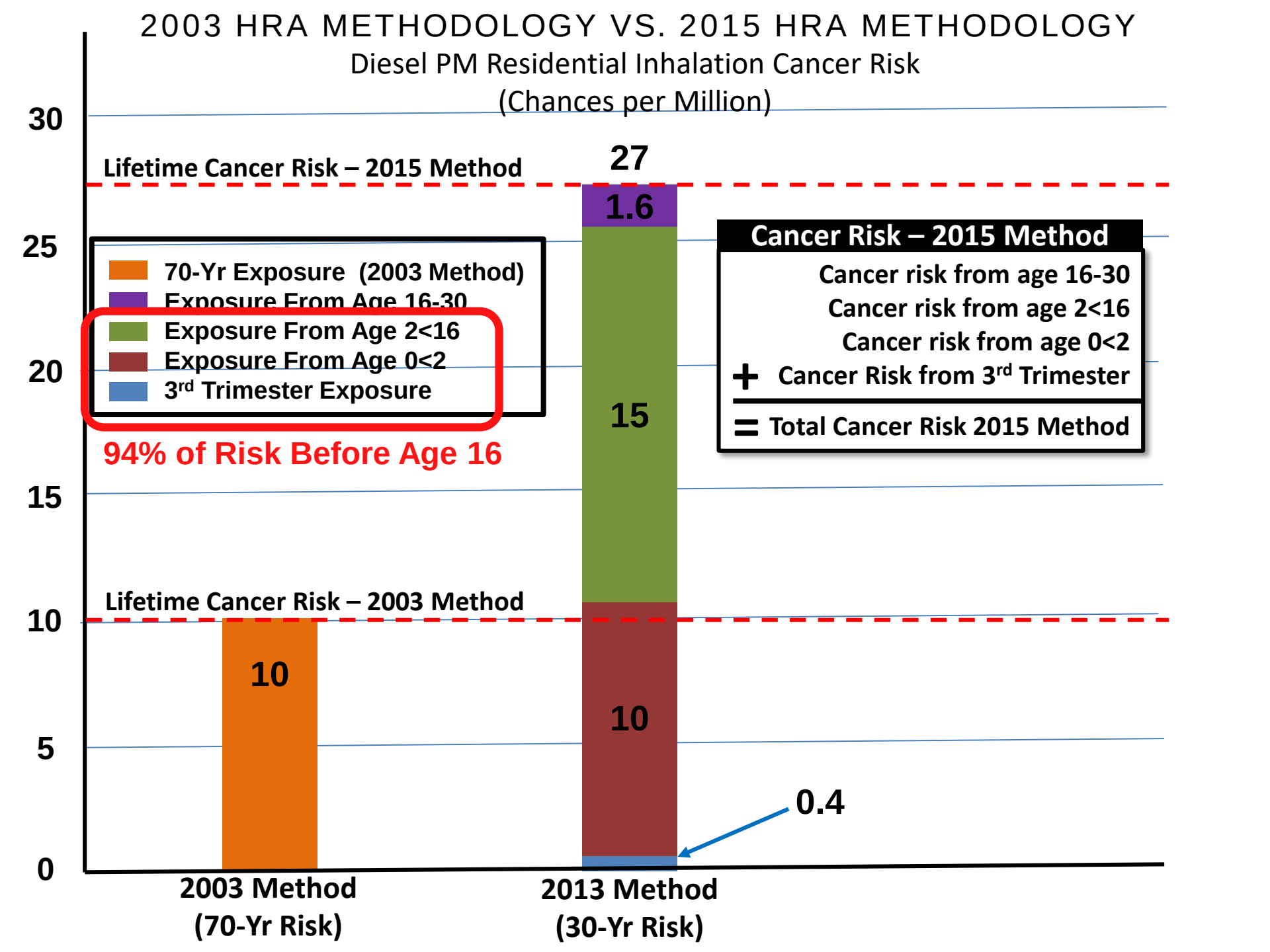



2003 HRA METHODOLOGY VS. 2015 HRA METHODOLOGY
Diesel PM Residential Inhalation Cancer Risk
(Chances per Million)
30
25
20
15
10
5
0
Lifetime Cancer Risk – 2015 Method
27
1.6
15
10
0.4
70-Yr Exposure (2003 Method)
Exposure From Age 16-30
Exposure From Age 2<16
Exposure From Age 0<2
3rd Trimester Exposure
94% of Risk Before Age 16
Cancer Risk – 2015 Method
Cancer risk from age 16-30
Cancer risk from age 2<16
Cancer risk from age 0<2
+ Cancer Risk from 3rd Trimester
= Total Cancer Risk 2015 Method
Lifetime Cancer Risk – 2003 Method
10
2003 Method
(70-Yr Risk)
2013 Method
(30-Yr Risk)

THE AIR TOXICS "HOT SPOTS" PROGRAM
EFFECT OF CHANGES TO HEALTH RISK ASSESSMENTS PROCEDURES

Age Sensitivity Factors
Daily Breathing Rates
Air Dispersion Modeling

Exposure Duration
Fraction of Time at Home
Spatial Averaging

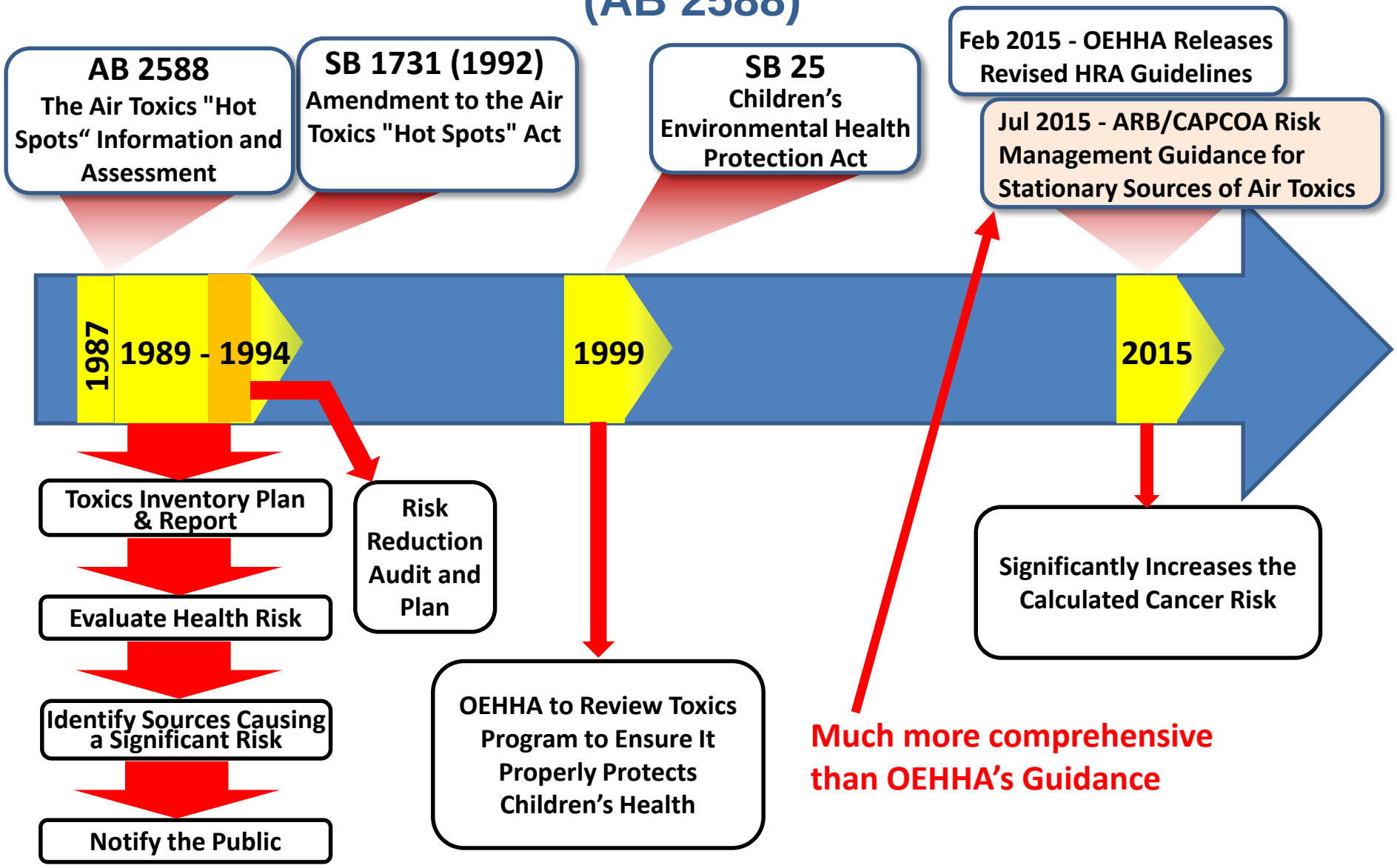
OVERALL INCREASE IN CALCULATED CANCER RISK

APPROXIMATELY 2.7 TIMES HIGHER

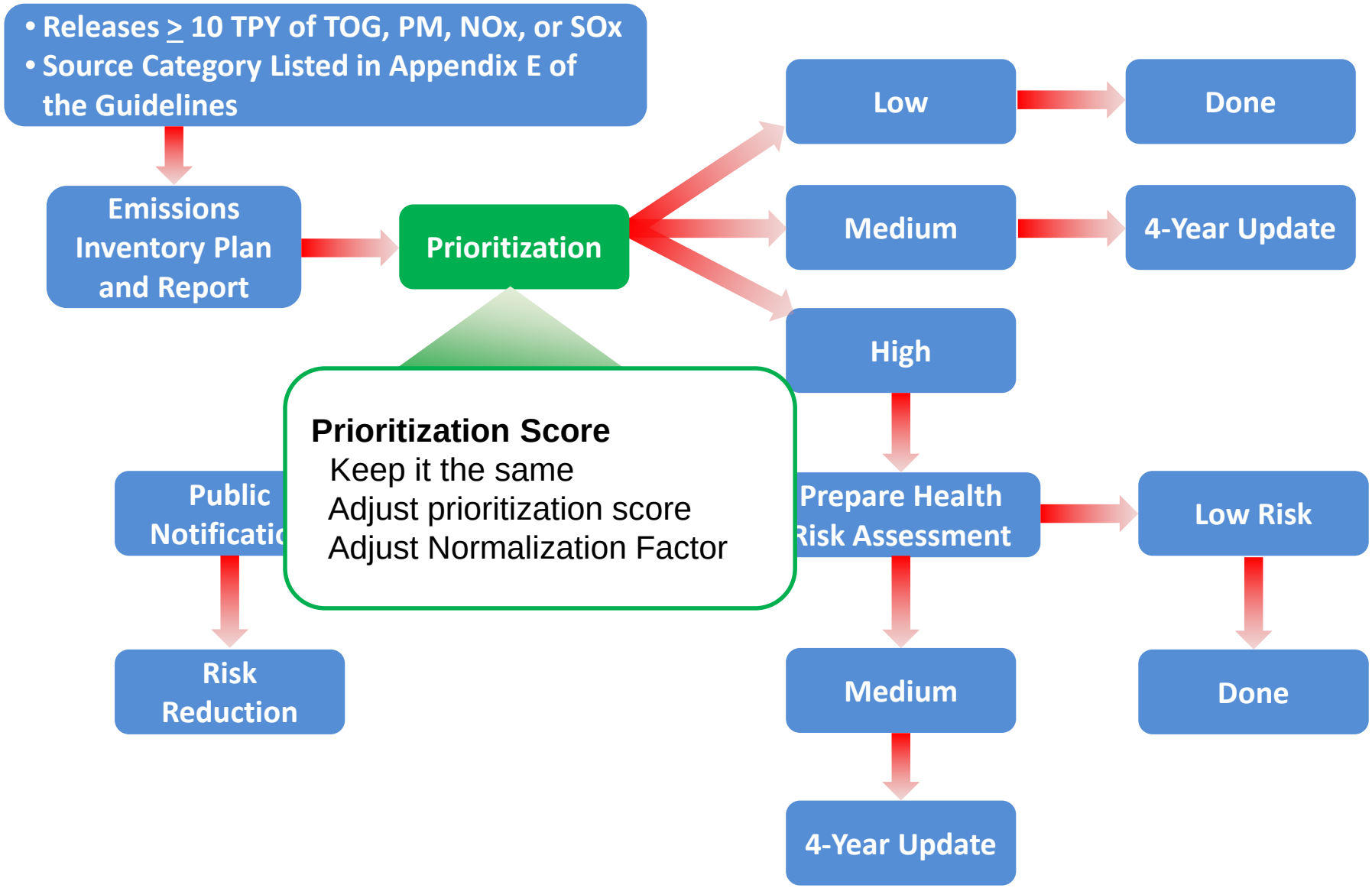
ACUTE HI UNCHANGED

CHRONIC HI UNCHANGED

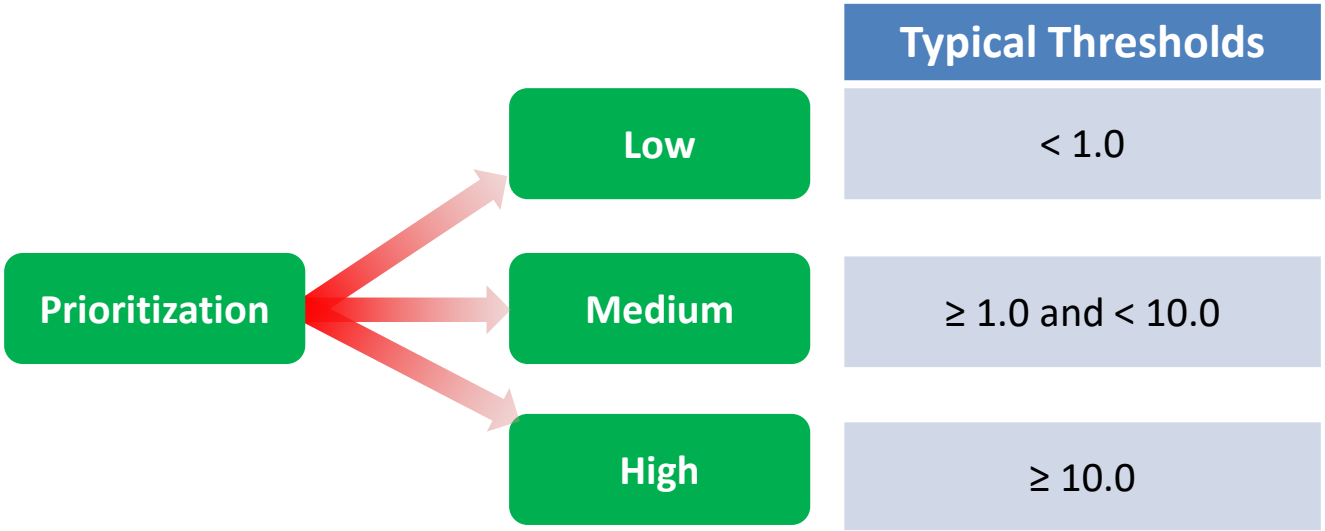
The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)



THE AIR TOXICS "HOT SPOTS" PROGRAM



CHANGES TO THE PRIORITIZATION GUIDELINES



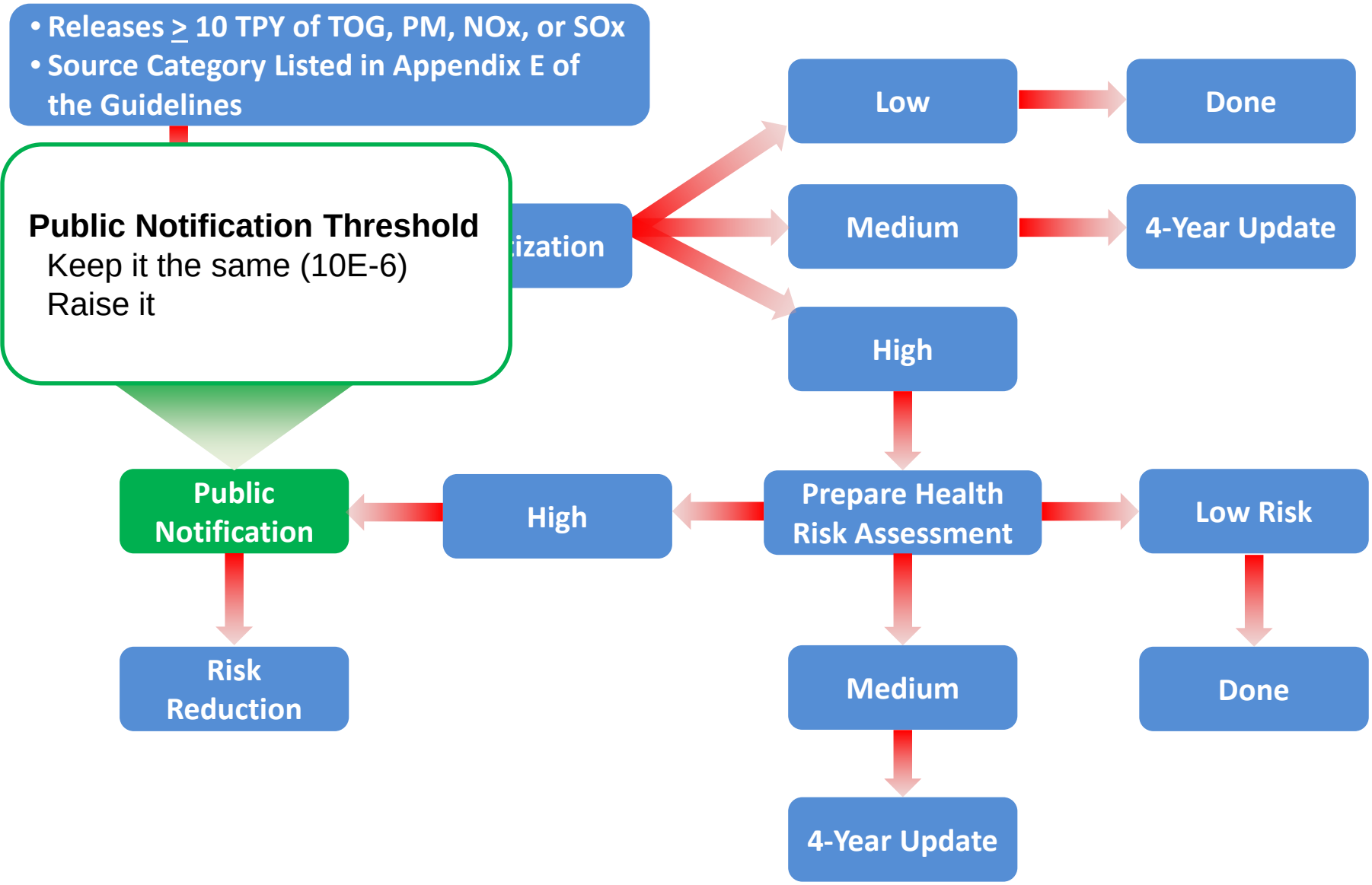
Total Prioritization Score for Carcinogens

$TS = \Sigma (E_C)(P_C)(\text{~~1,700~~} 7{,}700)$

where,

- TS = Total score, sum of scores for all carcinogens for which a unit risk value is available
- $_C$ = Specific carcinogen
- E_C = Facilitywide emissions of substance c (lbs/yr)
- P_C = Unit risk value for substance c
- 7,700 = Normalization factor

THE AIR TOXICS "HOT SPOTS" PROGRAM



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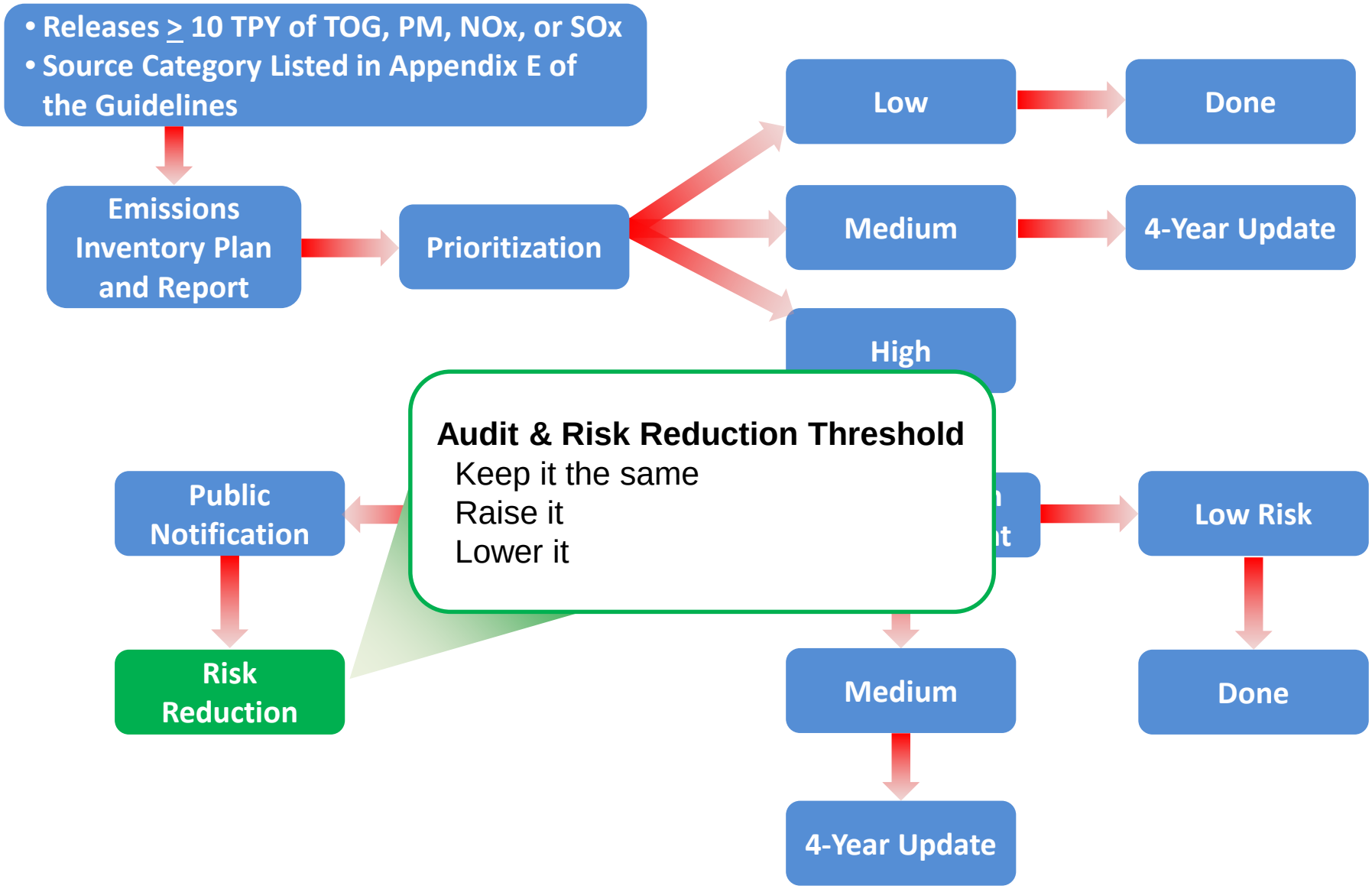
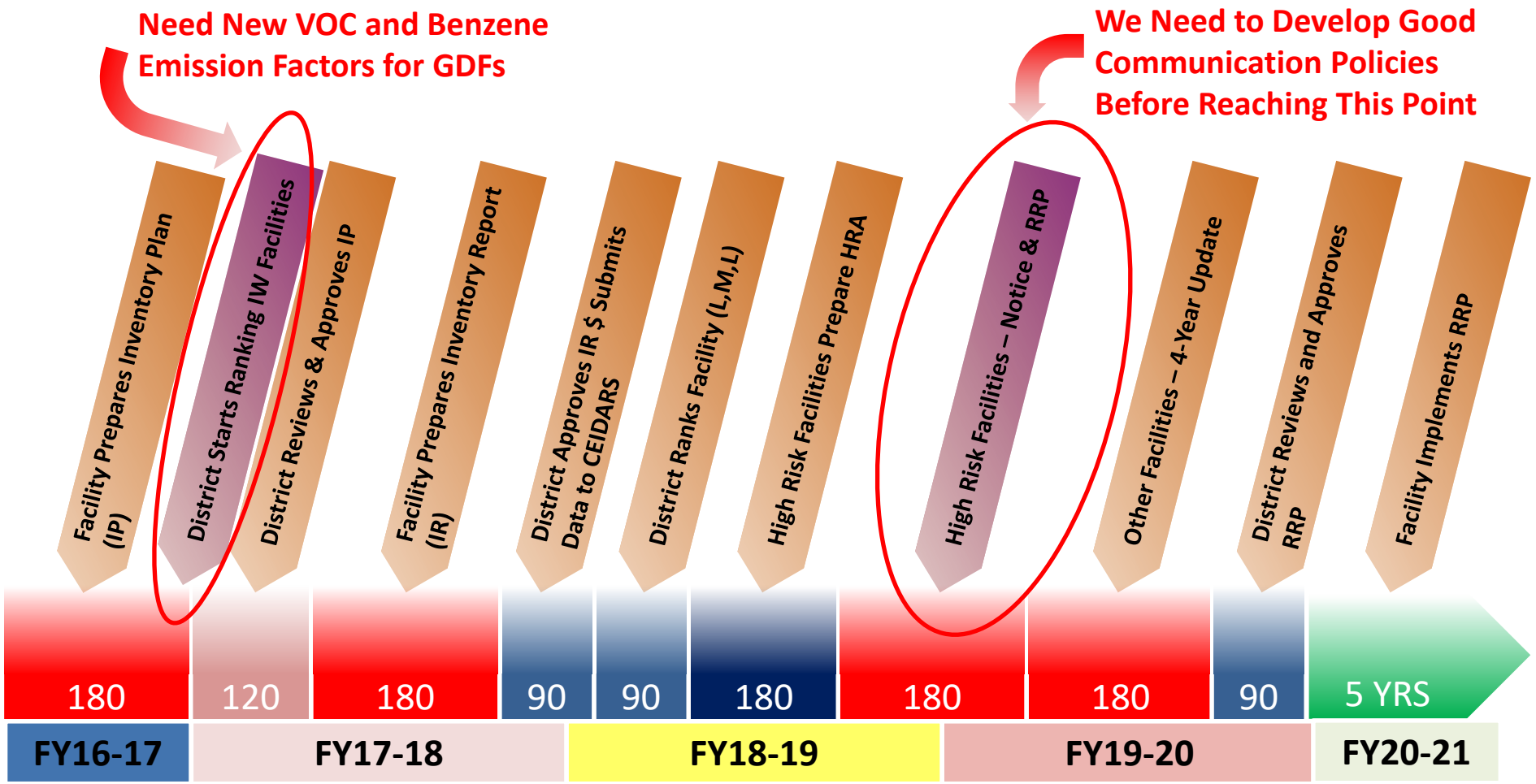


AIR TOXICS "HOT SPOTS" PROGRAM TIMELINE



Questions?