

# City of Glendale Water & Power Grayson Power Plant AB 2588 Public Meeting

South Coast Air Quality Management District  
June 26, 2019



# Purpose of Meeting



# Who we are

- **The South Coast AQMD is the regional agency responsible for air quality for areas in LA, Orange, Riverside and SB Counties**
  - Largest of the 35 local air agencies in CA
  - Work with CARB and EPA to meet state and federal standards
- **Responsibilities**
  - Control emissions from stationary sources (e.g., power plants)
  - Comply with U.S. government air quality standards
  - Permit and inspect 28,400 affected businesses
  - Administer \$100 million of incentive funding annually



# South Coast AQMD's Air Toxics Program



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

- State law enacted in 1987 (Connelly)
- Public **Right-to-Know** Program
- Purpose
  - Collect emissions data with updates every 4 years
  - Identify facilities having localized impacts
  - Evaluate potential health risks through Health Risk Assessments
  - Notify residents of those potential health risks
  - Reduce health risks below certain thresholds
- Rule 1402
  - Implements requirements of AB 2588
  - More stringent requirements for reducing health risk

# Glendale Water & Power – Grayson Power Plant

- Located at 800 Air Way in the city of Glendale
- Provides electrical power to the City of Glendale
- In operation since 1941
- HRA required based on 2015 emissions



 Boundary of Glendale Water & Power

# Operations at Glendale Water & Power



## Boilers

Three dual-fuel boilers capable of combusting both landfill gas and natural gas.

Source of dioxins, furans, and metals emissions



## Simple Cycle Gas Turbine

One simple cycle gas turbine combusting natural gas.

Source of naphthalene, polycyclic aromatic hydrocarbons (PAHs), and formaldehyde



## Combined Cycle Gas Turbines

Three combined cycle gas turbines combusting natural gas.

Source of naphthalene, PAHs, and formaldehyde

# About Health Risk Assessments

Estimates the chance that a person may experience a health effect from toxic air contaminant emissions

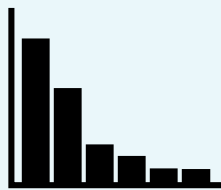


“Snapshot” based on toxic air contaminant emissions from one year of operation

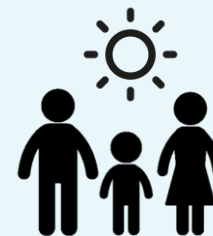
Assumes 2015 emissions levels for 30 years



Snapshot can change if toxic air contaminant emissions are reduced



Conservative assumptions - people are outdoors 24 hours, 7 days a week in one location





# 3 Key Health Risk Elements of Rule 1402

## Cancer Risk

- Estimates the increased probability for cancer
- Expressed in “Chances in a million”

## Non-Cancer Risk

- Estimates non-cancer health effects
- Acute non-cancer effects are from short-term exposure
- Chronic non-cancer effects are from long-term exposure
- Expressed using a Hazard Index (HI)

## Cancer Burden

- Estimates the increase in the occurrence of cancer cases in a population subject to a cancer risk of 1 in a million or greater
- Cancer burden  $> 0.5$  requires risk reduction

# Health Effects of Key Toxic Air Pollutants

Toxic Air Pollutant	Health Effect	
	Exposure	Potential Effects
Dioxins and Furans	Long-term	Cancer and non-cancer effects on the human reproductive, respiratory, endocrine, and blood systems
Hexavalent Chromium	Long-term	Increases the chance of developing cancer, e.g. lung cancer
Arsenic	Long-term	Non-cancer effects on the human cardiovascular, nervous, reproductive, respiratory, and skin systems
Nickel	Long-term	Non-cancer effects on the human respiratory, blood, and immune systems

# Rule 1402 Health Risk Thresholds

## Cancer Risk Thresholds

Risk Reduction

Cancer Risk > 25 in one million

Public Notification

Cancer Risk > 10 in one million

## Non-Cancer Risk Thresholds

Risk Reduction

Non-Cancer HI > 3

Public Notification

Non-Cancer HI > 1

## Cancer Burden Threshold

Risk Reduction

Cancer Burden > 0.5

# Rule 1402 Risk Reduction Plans

**Risk Reduction Plan – Required if Risk > Risk Reduction Threshold**

- Permanent, verifiable and enforceable risk reduction measures
- Must be implemented within 2½ years from the approval of plan or sooner
- Must reduce the facility-wide health risk below 25 in-a-million for cancer risk and a Hazard Index of 3 for non-cancer health effects

# Grayson Power Plant Approved & Alternate HRAs

## Approved HRA

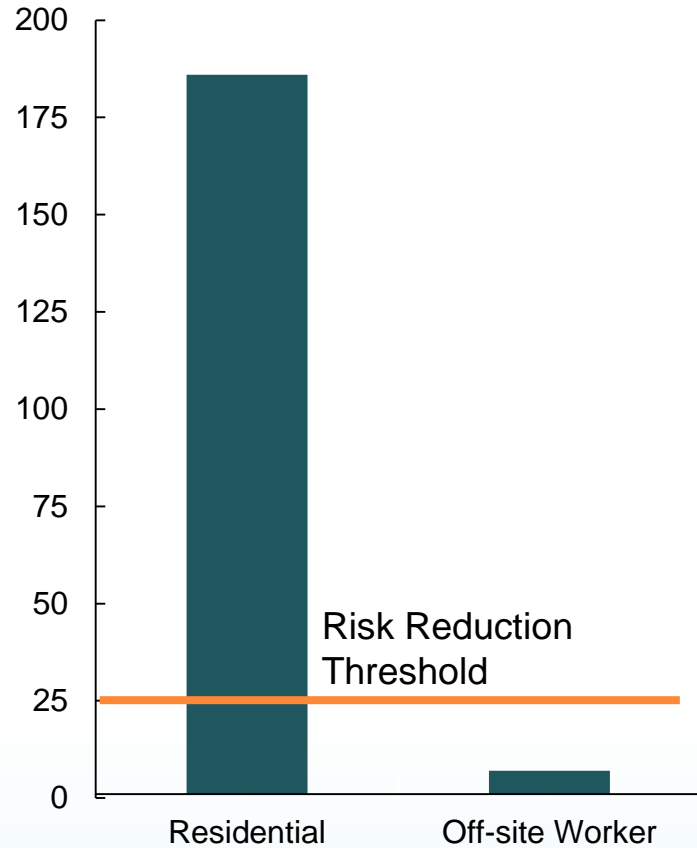
- Uses 2015 emissions data
- Uses a default factor to estimate emissions from burning landfill gas
- This factor likely overestimated emissions of dioxins & furans
- The resulting estimated risk levels are likely higher than the actual risk levels in 2015

## Alternate HRA

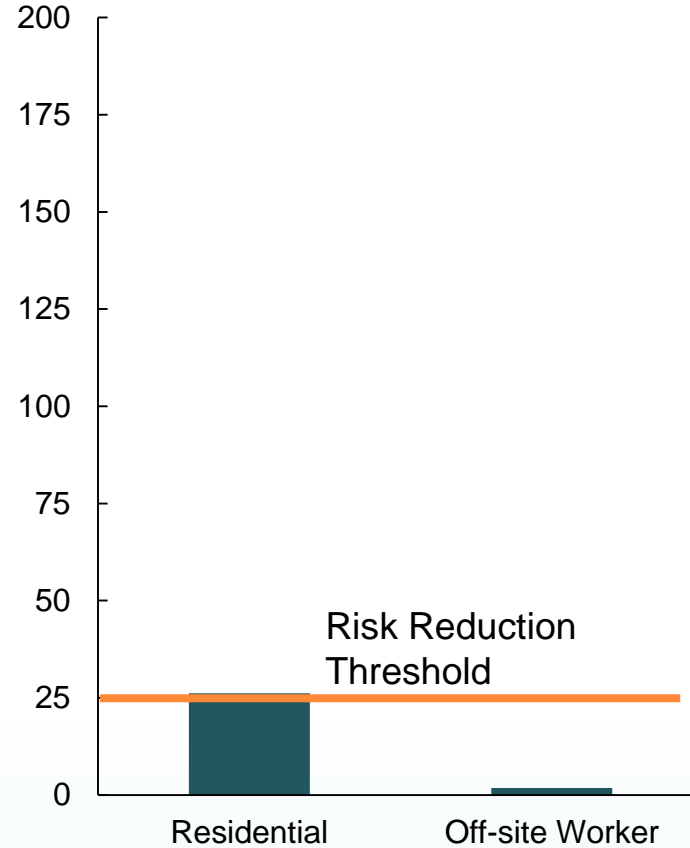
- Uses 2015 emissions data
- Uses an emissions factor developed from a 2018 source test
- This factor is likely a better estimate of dioxin & furan emissions *provided* the landfill gas produced in 2018 is similar to that in 2015

The Approved HRA remains the official HRA; the Alternate HRA will not be reviewed for approval but validated information may still be used in the risk reduction plan

# Estimated Cancer Risk – 2015 Approved HRA and 2019 Alternate HRA



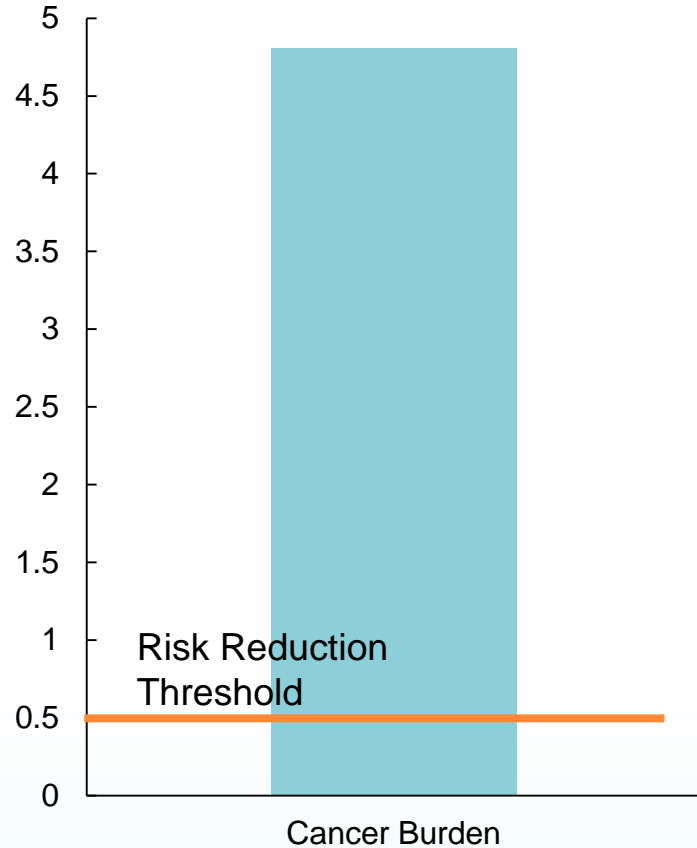
**2015 Approved  
HRA Cancer Risk**



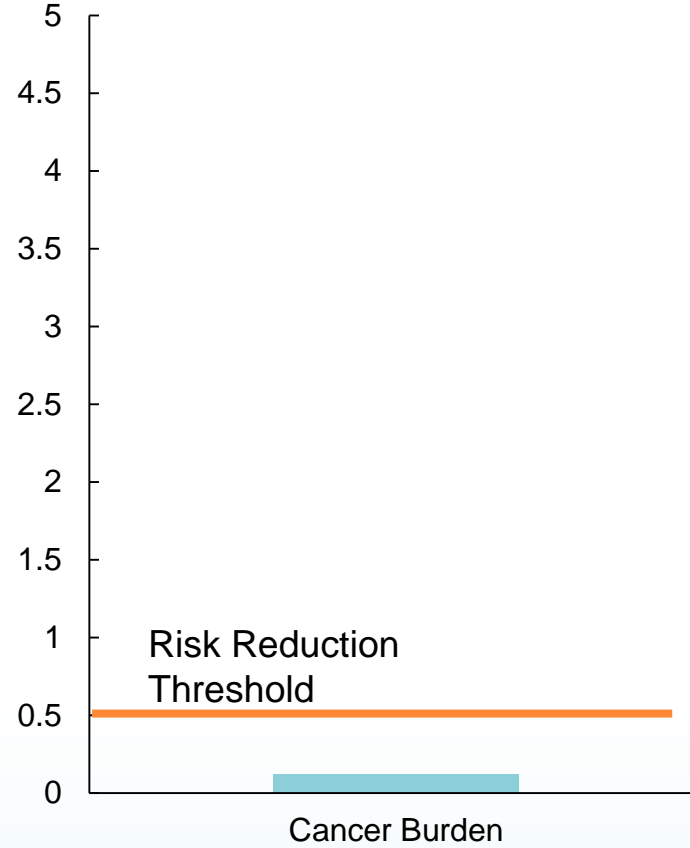
**2019 Alternate  
HRA Cancer Risk**

- 2015 Approved HRA cancer risk is well above risk reduction threshold
  - Dioxins, furans, and metals from landfill gas combustion represent 97% of the cancer risk
- 2019 Alternate HRA risk is slightly above risk reduction threshold
  - Metals represent 85% of the cancer risk

# Estimated Cancer Burden – 2015 Approved HRA and 2019 Alternate HRA



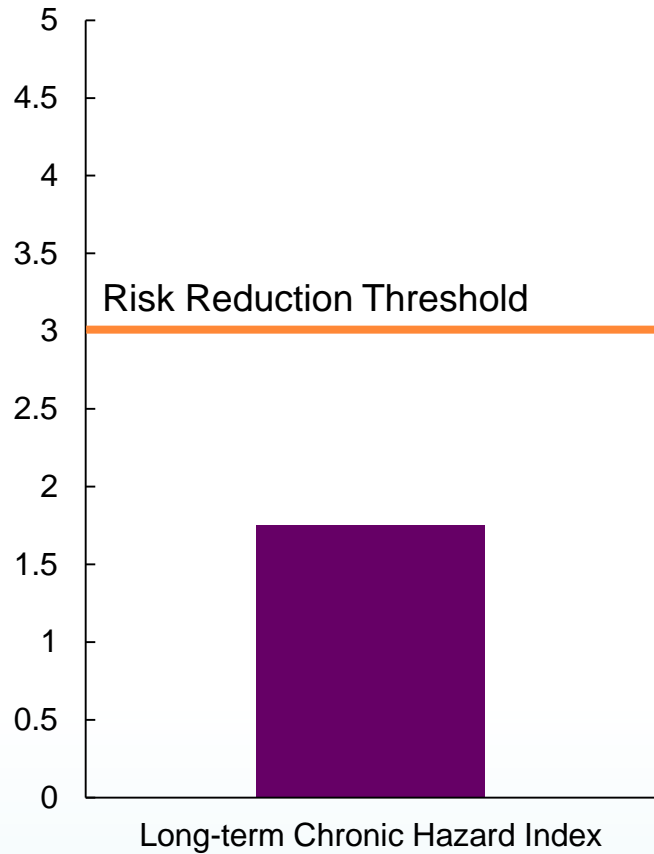
**2015 Approved HRA  
Cancer Burden**



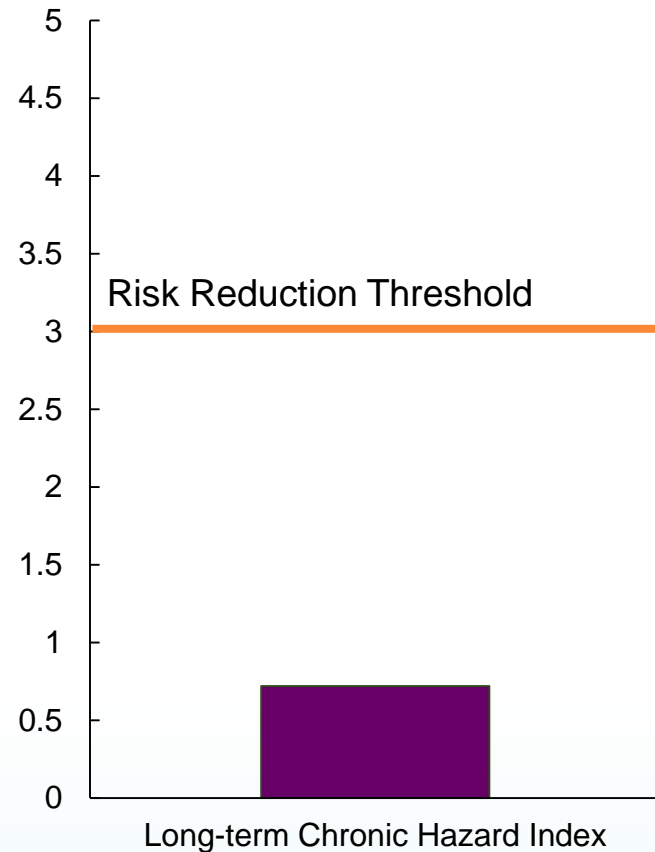
**2019 Alternate HRA  
Cancer Burden**

- 2015 Approved HRA cancer burden is well above the Risk Reduction Threshold
- 2019 Alternate HRA cancer burden is below the Risk Reduction Threshold
- The 2019 Alternate HRA will not be reviewed for approval but validated information may still be used in the risk reduction plan

# Estimated Non-Cancer Risk – 2015 Approved HRA and 2019 Alternate HRA



**2015 Approved HRA  
Long-term Chronic Risk**

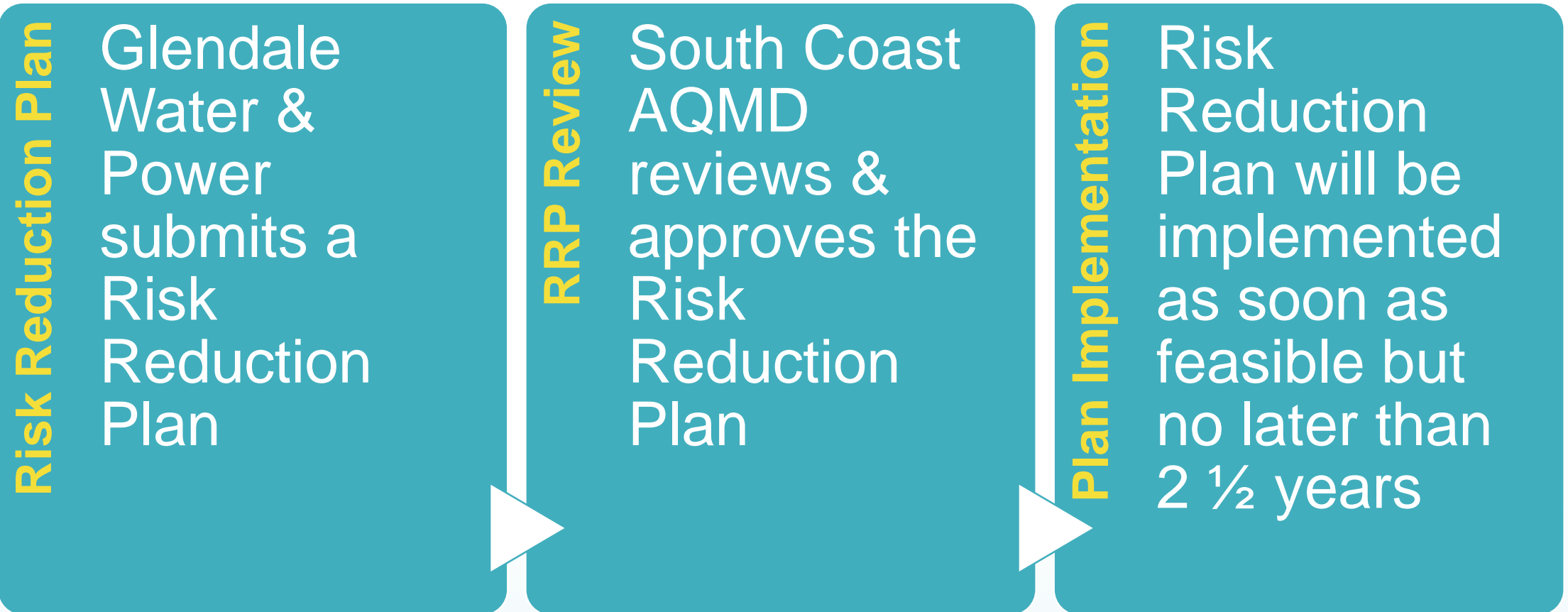


**2019 Alternate HRA  
Long-term Chronic Risk**

- 2015 Approved HRA long-term chronic health risk is below the Risk Reduction Threshold
  - Dioxins, furans, and metals from landfill gas combustion represent 99% of the long-term chronic health risk
- 2019 Alternate HRA long-term chronic health risk is below the Risk Reduction Threshold
  - Metals represent 98% of the long-term chronic risk



# Next Steps



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