
A vertical collage of four images related to water treatment: an aerial view of a large facility, a row of large red pipes, a worker at a water treatment tank, and a white truck with a red tank.



## HEALTH RISK ASSESSMENT PROCESS FOR BAAQMD RULE 11-18

BACWA EXECUTIVE COMMITTEE MEETING  
NOVEMBER 17, 2017

The logo for Central San Joaquin Water Agency, featuring stylized green hills and the letters 'CSJ' in a circle.

## AGENDA

- Overview of Rule 11-18 adopted November 15, 2017
- HRA Process
- Central San Baseline HRA
  - Why?
  - Central San HRA Process

A landscape image showing a body of water with a fountain, trees, and a building in the background.The logo for Central San Joaquin Water Agency, featuring stylized green hills and the letters 'CSJ' in a circle.

## Overview of Rule 11-18

### Reduction of health risk from air toxic emissions at existing facilities

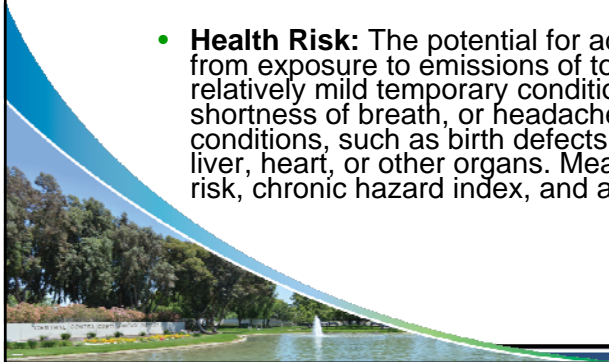


- Facility Prioritization Scores at Public Hearing
- HRA Risk Action Levels (RAL)
  - Cancer risk = 25/M or 10/M
  - Chronic hazard index = 2.5 or 1.0
  - Acute hazard index = 2.5 or 1.0
- Added Dispute Resolution Board
- Develop Risk Reduction Plan (<RAL)
- Approval by BAAQMD
- 5 years to implement Risk Reduction Plan
  - Operational changes
  - Best Available Retrofit Control Technology for Toxics (TBARCT)

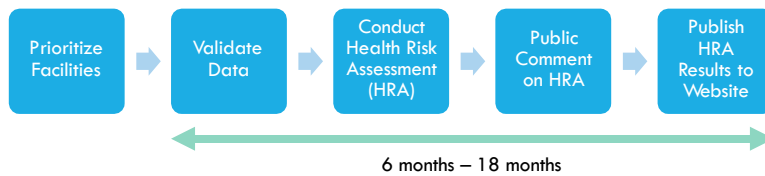


## HEALTH RISK ASSESSMENT

- **Health Risk Assessment, or HRA:** An analysis that estimates the potential for increased individuals in the affected population that may be exposed to emissions of one or more toxic air contaminants.
- **Health Risk:** The potential for adverse human health effects resulting from exposure to emissions of toxic air contaminants and ranging from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs. Measures of health risk include cancer risk, chronic hazard index, and acute hazard index.



## RISK CHARACTERIZATION



Phase 1 - 2018 -2019 Complete HRA's for high priority facilities  
 Phase 2 - 2019 – 2021 Complete Remaining HRAs

SLIDE 5



## IMPLEMENTATION: RISK REDUCTION



SLIDE 14



## HOW TO DO A HEALTH RISK ASSESSMENT-1

- **Build mathematical representation of facility including:**
  - Terrain,
  - Receptors,
  - Buildings,
  - Emission Sources
- **Point and Area Source Emission Rates**
  - Emission factors from BAAQMD annual emission report & established emission factor databases
  - Fuel usage data (combustion sources) & concentration data for OCUs
- **EPA's AERMOD model (Air Dispersion)**
  - Meteorological Data



## HOTSPOTS ANALYSIS AND REPORTING PROGRAM (HARP), VERSION 2

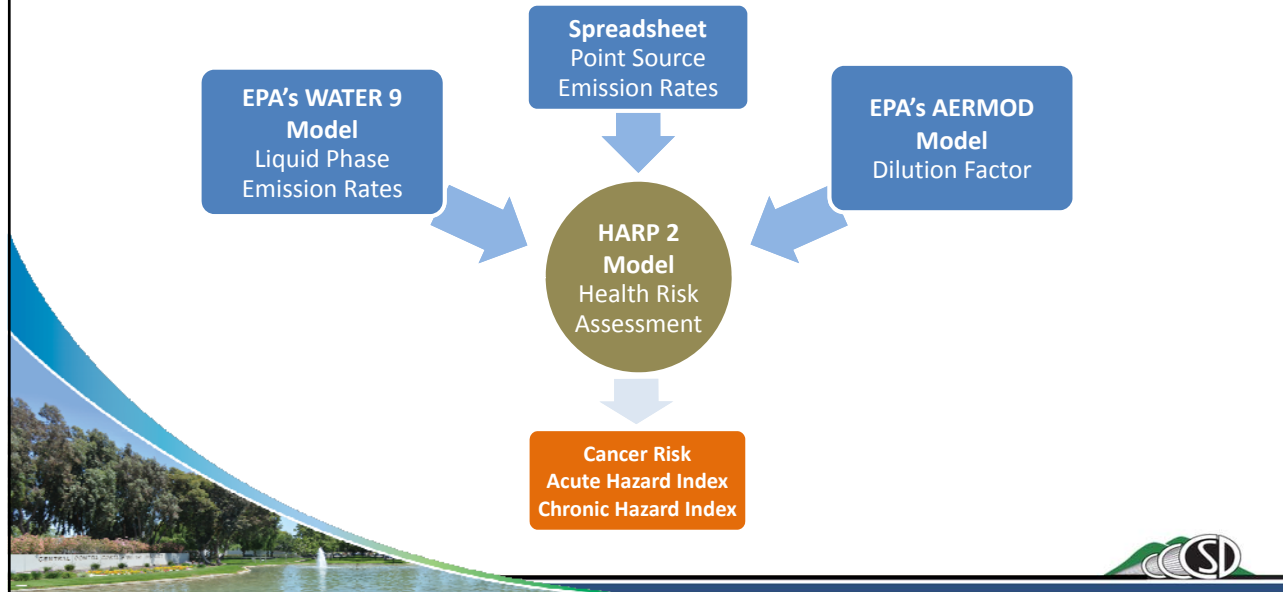
- Cal EPA/ARB Air Dispersion Modeling & Risk Tool (ADMRT) - contains Air Dispersion Model & Risk Tool
- Recommended model for calculating & presenting HRA results
- Developed by California ARB in consultation with OEHHA and Air Pollution Control/AQMD
- Calculates health risk in accordance with OEHHA methodology based on inputs provided by user



Black & Veatch Digital Gallery




## PROCESS TO CALCULATE HEALTH RISK VALUES




## CENTRAL SAN'S BASELINE HRA



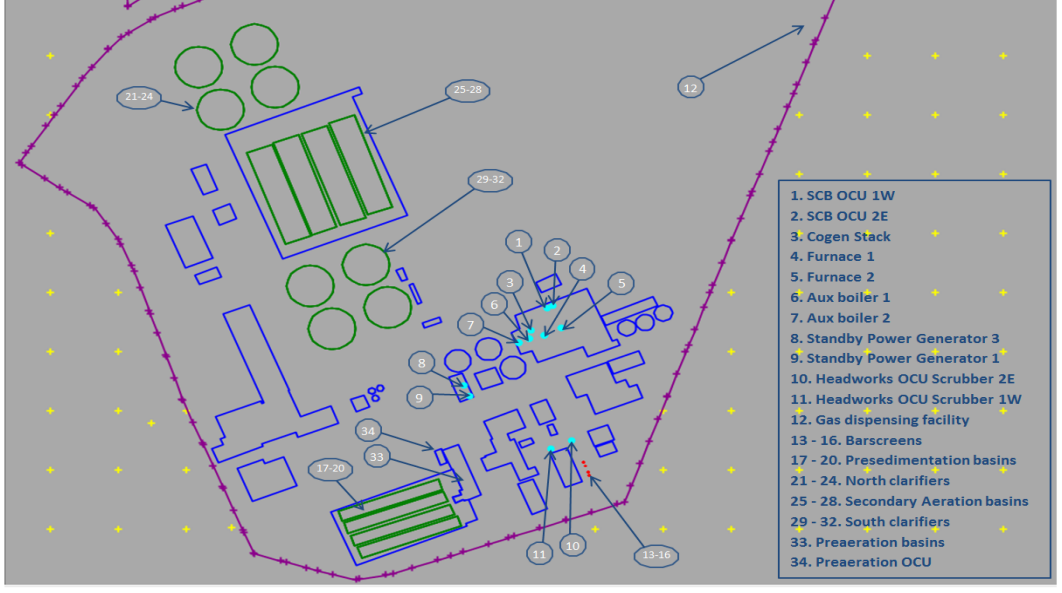


## WHY DO A BASELINE HRA?


- Prevent HRA shock
- Best data available
  - Develop accurate mathematical model of facility to get best results from HRA
  - Develop current emission factors & emission rates for sources
- Distinguish problem sources and pollutants
- Identify the MEIR and MEIW receptors
- Develop compliance solutions before completing the Risk Reduction Plan
- Documentation: BAAQMD Dispute Resolution Board



## CENTRAL SAN FACILITY REPRESENTED AERMOD



1.	SCB OCU 1W
2.	SCB OCU 2E
3.	Cogen Stack
4.	Furnace 1
5.	Furnace 2
6.	Aux boiler 1
7.	Aux boiler 2
8.	Standby Power Generator 3
9.	Standby Power Generator 1
10.	Headworks OCU Scrubber 2E
11.	Headworks OCU Scrubber 1W
12.	Gas dispensing facility
13 - 16.	Barscreens
17 - 20.	Presedimentation basins
21 - 24.	North clarifiers
25 - 28.	Secondary Aeration basins
29 - 32.	South clarifiers
33.	Preaeration basins
34.	Preaeration OCU

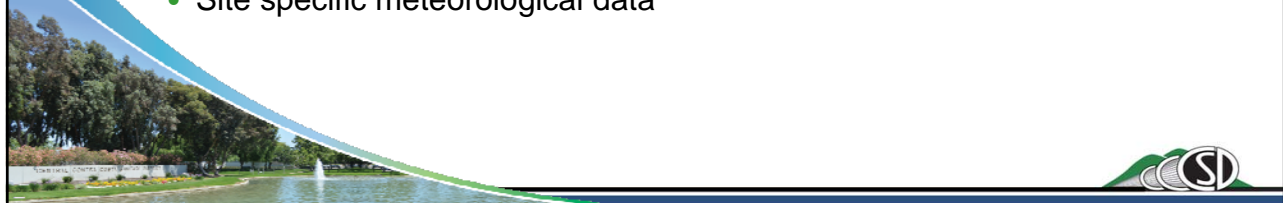


## OFFSITE RECEPTORS INCLUDED IN BASELINE HRA



## INITIAL FINDINGS

- Largest contributor to Health Risk appears to be landfill gas combustion in boilers and not the incinerators
- Internal QA/QC of emission data you provide
- Internal QA/QC of Health Risk Assessment results you receive
- Work with BAAQMD
  - Correct emission inventory
  - Correct mathematical plant model
  - Site specific meteorological data



Questions?

