Salton Sea Air Quality Mitigation Program
Salton Sea Air Quality Mitigation Program

Comprehensive, science-based, adaptive program

- Proactively detect, locate, assess, and identify options to mitigate dust emissions from exposed Salton Sea playa
Estimate Emissions

Objectives:
- Where and when dust emissions occur?
- How much dust is emitted?
- Where does the dust plume go?
- Which areas of the playa should be prioritized for dust control?
Map Playa Exposure

Increase of 2,100

Table 1: Classified Exposed Playa (Acres) for 2019 through 2021

<table>
<thead>
<tr>
<th>Exposed Playa</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Playa</td>
<td>17,923</td>
<td>19,918</td>
</tr>
<tr>
<td>Small pools, drain</td>
<td>660</td>
<td>567</td>
</tr>
<tr>
<td>water, and sheet flow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playa Vegetation</td>
<td>7,006</td>
<td>7,184</td>
</tr>
<tr>
<td>Total</td>
<td>25,589</td>
<td>27,689</td>
</tr>
</tbody>
</table>
Characterize Playa Surfaces

- **PI-SWERL:**
  - 3610 Playa measurements
  - 1220 Desert measurements

- Sand motion: 45 CSC, SANTRI, SENSIT

- Surface Condition: 4,830 measurements

- Soil Moisture: 500 measurements

- Soil Cores: 1,500 soil cores
Measure and Model
Wind & Dust Emissions
Reviewers

Name: Amato Evan, PhD; Associate Professor at UC San Diego
Research Focus: Atmospheric Aerosols and Chemistry, Climate Science, Ocean-Atmosphere Interaction, Remote Sensing and Satellite Oceanography, Tropical Meteorology and Oceanography

Name: William Porter, PhD; Assistant Professor at UC Riverside
Research Focus: Cause and impacts of air pollution by applying numerical and statistical models

Name: James King, PhD; Associate Professor at University of Montreal, Canada
Research Focus: Measurements and modeling of aeolian dust emissions processes

Name: Mark Sweeney, PhD; Professor at University of South Dakota
Research Focus: sedimentology and geomorphology; generation, transport, and deposition of dust.
Salton City – $PM_{10}$
Five Year Annual Average Summary

Total Acreage  23,917
Playa Acreage  17,024
Open Water Acreage  1,006
Vegetation Acreage  5,887

Emissions Estimates

Tons  243.66
Tons day\(^{-1}\)  0.667
Tons km\(^{-1}\) yr\(^{-1}\)  2.51
<table>
<thead>
<tr>
<th>Playa Percentage</th>
<th>Area (ac)</th>
<th>Percent of Total PM$_{10}$ Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1,280</td>
<td>32</td>
</tr>
</tbody>
</table>
Implementation Progress

Active Projects
Mitigating 62% of Playa Emissions

- **Implemented**
  - 1,997 acres
  - In collaboration with the State.

- **Sites Identified**
  - Implement in > 1 yr
  - 3,714 acres

- **Sites Designed**
  - Implement in < 1 yr
  - 1,111 acres

- **708 acres**

**Figure 1.** Annual Emissions for Playa and Existing and Planned Dust Control

**Air Quality Mitigation Program**

**Salton Sea**

**DATE:** OCT 15, 2021
Thank You
Brian Schmid
bschmid@formationenv.com