Shafter
Community Air Monitoring Plan
Group Exercise and Discussion

August 26, 2019
San Joaquin Valley Air Pollution Control District
Goals of Meeting

- Shafter community steering committee meetings from Spring 2019 included discussions of air monitoring
  - Members of steering committee recently requested that additional discussion on community air monitoring be held
- Today’s committee exercise and discussion will help focus and design initial community air monitoring network
- Provide foundation for community air monitoring plan for Shafter
Current Air Monitoring in Shafter

<table>
<thead>
<tr>
<th>Air Monitoring Site</th>
<th>Pollutants Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shafter-DMV</td>
<td>Ozone, NOx, VOC, PM2.5, PM10 (coming soon)</td>
</tr>
<tr>
<td>Shafter-Grimmway</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Sequoia Elementary School</td>
<td>Pesticides (DPR)</td>
</tr>
</tbody>
</table>

- Ongoing air monitoring operations at these existing sites will provide valuable data alongside rest of community air monitoring network
- Fixed sites like Shafter-DMV are part of already existing regulatory air monitoring network
  - Immobile structures permanently installed and not able to be deployed to areas of concern
Current Air Monitoring in Shafter
Current Plans for Expanded Air Monitoring in Shafter

• Sequoia Elementary School: Multi-pollutant air monitoring system (planned)

• Golden Oak Elementary School: PM2.5 monitor (planned)
Air Monitoring Study Area for Shafter Community

- Exercise will consider where to place remaining monitoring equipment within Shafter boundary and within 7-mile radius
- Resources are limited to cover expansive area within 7-mile radius, so need to be thoughtful with recommendations
## Expanded Air Monitoring Capabilities

<table>
<thead>
<tr>
<th>Air Monitoring System</th>
<th>Measured Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Monitoring Trailer</td>
<td>PM2.5, Ozone, Black Carbon, CO, NO/NO2/NOx, VOC, SO2/H2S, Toxics, Speciated VOCs, Meteorology</td>
</tr>
<tr>
<td>Compact Multi-Pollutant Air Monitoring Systems</td>
<td>PM2.5, Ozone, Black Carbon, CO, NO/NO2/NOx, SO2/H2S, VOC, Meteorology</td>
</tr>
<tr>
<td>Stand-Alone PM2.5 Monitors</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Mobile Air Monitoring Van</td>
<td>PM2.5, Ozone, Black Carbon, CO, NO/NO2/NOx, VOCs, SO2/H2S, Toxics, Meteorology</td>
</tr>
</tbody>
</table>
Abilities of New Air Monitoring Resources

• Planned air monitoring resources for Shafter will have same abilities as current stationary regulatory network
  – High-precision and regulatory-grade
  – Many instruments will be the same models used at regulatory stations
  – Will monitor more types of pollutants than regulatory stations

• Benefit of community air monitoring resources will be greater mobility and quicker deployment

• Community air monitoring network capabilities will be similar to capabilities of fixed air monitoring stations
  – Beyond routine measurements of gas and PM pollutants, community air monitoring network will have ability to measure PM and VOC speciation, black carbon, H2S

• Air monitoring trailer will have most expansive air monitoring capabilities
  – Equivalent to a fixed air monitoring station but with greater mobility
# Platform Capabilities for Initial Community Air Monitoring Network

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Example Sources</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Trailer</td>
</tr>
<tr>
<td>PM2.5</td>
<td>Mobile, industry, residential</td>
<td>x</td>
</tr>
<tr>
<td>Black Carbon</td>
<td>Mobile, industry, residential</td>
<td>x</td>
</tr>
<tr>
<td>NO, NO2, NOx</td>
<td>Mobile, industry</td>
<td>x</td>
</tr>
<tr>
<td>CO</td>
<td>Mobile</td>
<td>x</td>
</tr>
<tr>
<td>Ozone</td>
<td>Regional, formed from VOC and NOx</td>
<td>x</td>
</tr>
<tr>
<td>SO2, H2S</td>
<td>Industry</td>
<td>x</td>
</tr>
<tr>
<td>VOC (BTEX)</td>
<td>Gasoline distribution and marketing</td>
<td>x</td>
</tr>
<tr>
<td>Hourly VOC Speciation</td>
<td>Industry, mobile</td>
<td>x</td>
</tr>
<tr>
<td>Toxics</td>
<td>Industry, mobile</td>
<td>x</td>
</tr>
<tr>
<td>Meteorology</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>
Exercise and Discussion

Maps
1. Current Monitors and Wind Direction
2. Sources of Emissions: NOx
3. Sources of Emissions: PM2.5
4. Sources of Emissions: VOC
5. Diesel Particulate Exposure
6. Asthma Percentile (CalEnviroScreen)
7. Cardiovascular (CalEnviroScreen)
8. Sensitive Receptors

Tools
1. Monitoring Objectives
2. Pollutant Glossary
3. Monitor Capabilities
4. Worksheet
Exercise and Discussion

• Subcommittee members provided materials to review for group and individual exercises
  1. Group exercise to discuss pollutants and priority areas for community air monitoring
  2. Individual exercise to prioritize pollutants to measure and community air monitoring locations
  3. Individual exercise to place stickers on community map to represent their network design preferences
  4. Review results and group discussion
Contact Information

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www.valleyair.org

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