Imperial-Mexicali Air Quality Work Plan Update and Calexico-Mexicali PM2.5 Air Quality Trends

February 7, 2019
Draft Work Plan Actions Initiated

Public Education and Awareness
- Air quality alerts and forecasting expanded to Mexicali
- Winter media campaign
- Increased District Outreach

Monitoring
- First set of 25 PM sensors provided to Mexicali for enforcement
  - CARB provided PurpleAir training in December
  - Additional 25 sensors will be installed later this year
- Regulatory PM2.5 monitoring in Mexicali
- 14 monitors in Baja California to be rehabilitated using grant funds
Draft Work Plan Actions Initiated Continued...

Reduce unpaved road emissions in Mexicali
- City of Mexicali allocated $5 million to pave 15 miles of dirt roads

Improve border region emission inventory
- Emission inventory improvement for Baja California

Agricultural Burning
- District working to increase special zone buffer
- Plan to establish a program in Mexicali
- CARB committed to the following:
  - Provide training to enhance accuracy of agricultural burn calls
  - Consider Mexicali air quality into burn calls for Imperial
  - Provide burn calls to Mexicali when program is established
Future Actions and Recommendations

Near term actions
- Plan to Evaluate and Mitigate Windblown Dust Sources in Imperial County
  - Develop a complete emission inventory, determine most emissive sources, investigate and evaluate alternative controls, seek operator and public feedback, and adopt and enforce new regulations
- Establish a model flag program for a school in Mexicali
- Website/Mobile app to display all air quality monitors in Mexicali
- Media campaigns for air quality website and agricultural burning in Mexicali

Long term recommendations - need further discussion
- Obtain more resources for inspection and enforcement in Mexicali
- Tighten vehicle inspection programs in Mexicali and Imperial
- Evaluate border crossing emissions
Mexicali and Calexico Air Quality Trends (2016-2018)
Annual and Winter Average PM2.5 Trends (2016-2018)

Calexico and COBACH Annual Average PM2.5 (2016-2018)

Calexico and COBACH Winter Average PM2.5 (2016-2018)
Calexico and COBACH Monthly Average PM2.5 Average Trends (2016-2018)

2018 monthly average PM2.5 concentrations were higher at Calexico during 4 months when compared to 2016 and 2017.

2018 monthly average PM2.5 concentrations were higher at COBACH during 9 months when compared to 2016 and 2017.
Calexico and COBACH Days Over 35 ug/m$^3$ by Month (2016-2018)

Calexico had days over 35 ug/m$^3$ in winter months. 2018 had highest count of days over 35 ug/m$^3$ (10 days in 2018, 6 days in 2017, and 5 days in 2016)

COBACH experienced days over 35 ug/m$^3$ in April, July, August, and September. 2018 had highest count of days over 35 ug/m$^3$ (85 days in 2018, 64 days in 2017, and 27 days in 2016 (incomplete data collected for 2016))
Winter Holiday PM2.5 Concentrations at Calexico and COBACH

Recent holiday concentrations were lower in 2018 when compared to 2017. Average for other days in December (Las Posadas) increased in 2018.
Calexico-COBACH AQI Readings Winter 2016-2019

PM2.5 AQI to Concentration (ug/m³)

<table>
<thead>
<tr>
<th>AQI</th>
<th>Good (0-50)</th>
<th>Moderate (51-100)</th>
<th>Unhealthy for Sensitive Groups (101-150)</th>
<th>Unhealthy (151-200)</th>
<th>Very Unhealthy (201-300)</th>
<th>Hazardous (&gt;300)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM2.5 Concentration</td>
<td>0-12</td>
<td>12.1-35.4</td>
<td>35.5-55.4</td>
<td>55.5-150.4</td>
<td>150.5-250.4</td>
<td>&gt;250.4</td>
</tr>
</tbody>
</table>
Takeaways

• PM2.5 concentrations: Mexicali > Calexico
• Highest PM2.5 concentrations occurred Dec. 2017- Jan. 2018
• PM2.5 winter averages for Jan., Feb., and Nov. were highest in 2018
• Days over 35 ug/m$^3$: 2018 > 2016, 2017
• Calexico days over 35 ug/m$^3$ are limited to winter months
• COBACH experiences days over 35 ug/m$^3$ throughout the year
• Favorable meteorological conditions (increased dispersion) occurred during winter holidays in 2018
CARB California-Mexico Border Website

https://www.arb.ca.gov/planning/border/border.htm