Ozone Advance Progress Report

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Washoe County Health District, Air Quality Management Division
Washoe County Planning Commission
November 5, 2019
# National Ambient Air Quality Standards (NAAQS)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>Level</th>
<th>Design Value (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ozone</strong></td>
<td>8-hour</td>
<td>0.070 ppm</td>
<td>0.071 ppm*</td>
</tr>
<tr>
<td><strong>PM$_{2.5}$</strong></td>
<td>24-hour</td>
<td>35 mg/m³</td>
<td>25 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>12 mg/m³</td>
<td>7.6 mg/m³</td>
</tr>
<tr>
<td><strong>PM$_{10}$</strong></td>
<td>24-hour</td>
<td>150 mg/m³</td>
<td>0.0 expected exceedances</td>
</tr>
<tr>
<td><strong>Carbon Monoxide</strong></td>
<td>8-hour</td>
<td>9 ppm</td>
<td>2.2 ppm</td>
</tr>
<tr>
<td></td>
<td>1-hour</td>
<td>35 ppm</td>
<td>2.7 ppm</td>
</tr>
<tr>
<td><strong>Nitrogen Dioxide</strong></td>
<td>1-hour</td>
<td>100 ppb</td>
<td>48 ppb</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>53 ppb</td>
<td>12 ppb</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide</strong></td>
<td>1-hour</td>
<td>75 ppb</td>
<td>5 ppb</td>
</tr>
<tr>
<td><strong>Lead</strong></td>
<td>3-month</td>
<td>0.15 mg/m³</td>
<td>n/a</td>
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Ozone (2018)

<table>
<thead>
<tr>
<th>Month</th>
<th>Good</th>
<th>Moderate</th>
<th>USG</th>
<th>Unhealthy or worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feb</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mar</td>
<td>30</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Apr</td>
<td>19</td>
<td>11</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>May</td>
<td>20</td>
<td>11</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Jun</td>
<td>7</td>
<td>22</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Jul</td>
<td>7</td>
<td>17</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Aug</td>
<td>4</td>
<td>17</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Sep</td>
<td>12</td>
<td>18</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Oct</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nov</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dec</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
How did we get to 100% of the NAAQS?

• EPA strengthens Ozone NAAQS (97, 08, 15)
• Economic Recovery and Growth (11 - today)
  – Population, Employment, VMT, Ozone
• WC Health participates in Ozone Advance (16)
• Resolutions supporting Ozone Advance (16)
Ozone = NOx + VOC + Sunlight

**NOx**
(71,194 lbs/day)
- On-Road Mobile: 64%
- Off-Road Mobile: 31%
- Non-Point: 3%
- Point: 2%

**VOC**
(70,245 lbs/day)
- Off-Road Mobile: 48%
- On-Road Mobile: 29%
- Non-Point: 18%
- Point: 5%
Health District’s Approach

- Incorporate Ozone Advance goals into:
  - Region-wide plans
  - Local plans
  - Other long-term plans
  - Priorities
- Top-Down support
- Goals target Technology, Behavior, and Built Environment
Ozone Advance’s 5 Goals

1. Reduce impacts from on-road motor vehicles
   a) Trips, VMT, Tailpipe Emissions. . . not LOS
2. Reduce impacts from off-road motor vehicles
3. Reduce impacts from Urban Heat Island
4. Increase efficiency of buildings
5. Educate and empower champions to make good decisions for a Healthy Community
Top-Down Support

• Adopted Resolutions
  – District Board of Health
  – BCC
  – City of Reno
  – City of Sparks
  – RTC
  – Regional Planning Governing Board

• Jurisdictions cover all of Washoe County
  – especially Reno/Sparks area
BCC Resolution of Support (April 2016)

• Encourage plans, policies, and codes that:
  – Minimize motor vehicle trips and VMT
  – Support active transportation and transit
  – Reduce per capita
    • Energy and water usage
    • Waste material to landfills
  – Reduce stormwater runoff
  – Increase tree canopy
Connections Between Development and Air Quality

• Transportation
  – Largest category of ozone precursors
  – Reduce number and length of trips
    • Smart Trips (employee trip reduction)
    • Active transportation (ped and bike)
    • Transit
  – Reduce per mile emission rates
    • Cleaner technology such as Electric Vehicles

• Energy
  – Conservation and efficiency
    • Avoided emissions
Connections Between Development and Air Quality

• Schools
  – Central location
    • Reduces need for bus routes
    • Multimodal transportation options and connectivity

• Urban Heat Island
  – Increases energy usage for comfort cooling
  – Increases heat vulnerability

• Construction Impacts
  – Portion of second largest category of ozone precursors
Example: Co-Benefits of Tree Canopies

• Acts as a cool corridor/island
  – Reduces energy use and heat vulnerability
• Walking/biking becomes a more attractive option
  – Reduces vehicle trips and congestion
• Improves stormwater management
  – Reduces amount and temperature of runoff
• Lengthens pavement life
  – Reduces maintenance costs
What Does Long-Term “Non-Attainment” Mean in the Future?

- **Environmental Health**: Poor air quality
- **Public Health**: Higher rates of chronic diseases such as asthma, COPD, and diabetes

![Graph showing trends in asthma, COPD, and angina/heart disease rates from 2012 to 2016.](chart)

<table>
<thead>
<tr>
<th>Year</th>
<th>Asthma (%)</th>
<th>COPD (%)</th>
<th>Angina/Heart Disease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>7.8</td>
<td>5.9</td>
<td>2.8</td>
</tr>
<tr>
<td>2013</td>
<td>7.7</td>
<td>5.4</td>
<td>3.7</td>
</tr>
<tr>
<td>2014</td>
<td>8.2</td>
<td>6.4</td>
<td>3.1</td>
</tr>
<tr>
<td>2015</td>
<td>9.5</td>
<td>5.7</td>
<td>3.3</td>
</tr>
<tr>
<td>2016</td>
<td>8.5</td>
<td>5.4</td>
<td>4.1</td>
</tr>
</tbody>
</table>
What Does Long-Term “Non-Attainment” Mean in the Future?

- **Economic Health**: Economy can grow, but growth must be connected to improved air quality
  - Clean Air Act requires progressively more stringent requirements until the NAAQS is met
  - Additional pollution control equipment for industry
  - Regional Transportation Plan revision
    - Transportation Conformity, MVEB . . . and fewer VMT
  - Emission offsets up to 1.5 : 1
  - Federal Implementation Plan
  - Loss of federal highway dollars
  - Adjacent counties and states become more attractive for new and expanding businesses
What can the Planning Commission do?

- **Recognize . . .**
  - The environmental, public health, and economic impacts of not meeting the ozone standard
  - A collaborative effort is needed by regional partners such as Washoe County and the Health District to meet the Ozone standard

- **Encourage . . .**
  - “Better than Business as Usual” projects
    - Smart trips programs, Increased tree canopy, Cool roofs, . . .
  - Ordinances, codes, and policies that support Ozone Advance
Takeaways

• “Business as Usual” = 100% of ozone standard
• Ozone = Vehicle Trips, VMT, and Fleet Mix
• Washoe County and PC can encourage . . .
  – “Better than Business as Usual” projects
  – Strategies that support meeting the Ozone standard
• Supporting Ozone Advance also supports . . .
  – WC Master Plan; WC Energy and Sustainability Strategy; Regional Plan; a Healthy Community; and many more plans. . .
#KeepItClean  @WashoeCountyAQ

*** 2014 EPA Gregg Cooke Visionary Program Award ***
Ozone Trend (2006-18)

- NAAQS (1997)
- NAAQS (2008)
- NAAQS (2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>0.08</td>
</tr>
<tr>
<td>2007</td>
<td>0.08</td>
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<tr>
<td>2008</td>
<td>0.075</td>
</tr>
<tr>
<td>2009</td>
<td>0.075</td>
</tr>
<tr>
<td>2010</td>
<td>0.075</td>
</tr>
<tr>
<td>2011</td>
<td>0.075</td>
</tr>
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<td>2012</td>
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<td>2015*</td>
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<td>0.070</td>
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<td>2018*</td>
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- NAAQS
- Design Value

WASHOE COUNTY HEALTH DISTRICT
ENHANCING QUALITY OF LIFE