UDAQ PM2.5 WORKGROUP

Round 2 Meetings: Dec 2011

Introduction and Key Points

- DAQ scientists have accomplished a lot since the last meetings, and are discovering important things as the science unfolds. But there is still a lot of work to do.
- The workgroups have been instrumental in refining our information, a process we are certain will continue. DAQ appreciates your work.
- We are on schedule and on track, and remain in close collaboration with EPA. Our fundamentals remain unchanged:
  - Do what's right for public health.
  - Develop an approvable SIP.
  - Inclusive and transparent public process.
  - Strive for consensus and the best possible outcome.

Meeting Outline: Refer to Agenda

Segment 1: Process Review and Data Update (9:00-10:10 am)

- Welcome and Meeting Outline
- PI Review and Top Strategies
- Inventory and Modeling Updates (2008/2014/2019)
- Model Runs, the Reduction "Basket" and County-Specific Targets
- Break

Segment 2: Workgroup Breakouts (10:10 am-12:00 Noon)

- Breakout Period 1: Area/Mobile/Point at different tables
- Breakout Period 2: Area/Mobile/Point at different tables
- Breakout Period 3: Area/Mobile/Point at different tables
- Wrap-up, Next Steps, and Voluntary Assignments
- Adjourn

Public Involvement Review

Constituent Group Review

- How did it go from your perspective?
- What DAQ did with your responses?
  - Carefully read each one.
  - Broke them down into tabs:
    - Ranked Strategies
    - Follow-Ups Needed
    - Strategy Analysis

1. Survey Response Summary

- Limeask survey service used.
- About 120 sent out, 72 completed (60%)
- 3 completed in September, 66 in October, and 3 in November.
- 45 provided ranked strategies; 40 were reasonably detailed.
- 45 asked clarifying questions or requests; all were systematically considered and addressed.
- 29 made it all the way to number 5.
- 12 letters received through govcomments.com

2. Top Themes

- Improve transit/bike/pedestrian (24/168)
- Control idling/traffic flow (20/168)
- Implement I/M programs (17/168)
- Reduce VMT programs (13/168)
- Yellow/Red day restrictions (12/168)
- Vehicle technology/retrofit (11/168)
- Livestock measures (10/168)
- General/uniques 24
- Others: PI/Educ/Plann; Alt Fuels; Building Efficiency; Cooking/burning; Solvents; Alt energy; Monitoring

3. Mobile vs. Area vs. Point

- A very significant majority of strategy ideas focused on Mobile sources.
- Area sources blended somewhat into several categories.
- Point sources were discussed mostly in passing.
- In your first-place rankings, Mobile ranked #1 (33), Area ranked #2 (11), and Point ranked #3 (4)

4. Unique Ideas

- Federal reformulated gasoline
- Adopt California standards on small engines
- Paving dirt roads
- Vapor control at service stations
- Lower LDAR leak definitions
- High-efficiency vehicle parking

PI Summary

- The responses were diverse and professional.
- UDAQ considered them carefully, and in many cases made significant adjustments as a result.
- As will be explained later, they were used as a basis for developing a “Basket” of strategies to run through the modeling.

Inventory and Modeling Updates

Overview of Technical Information

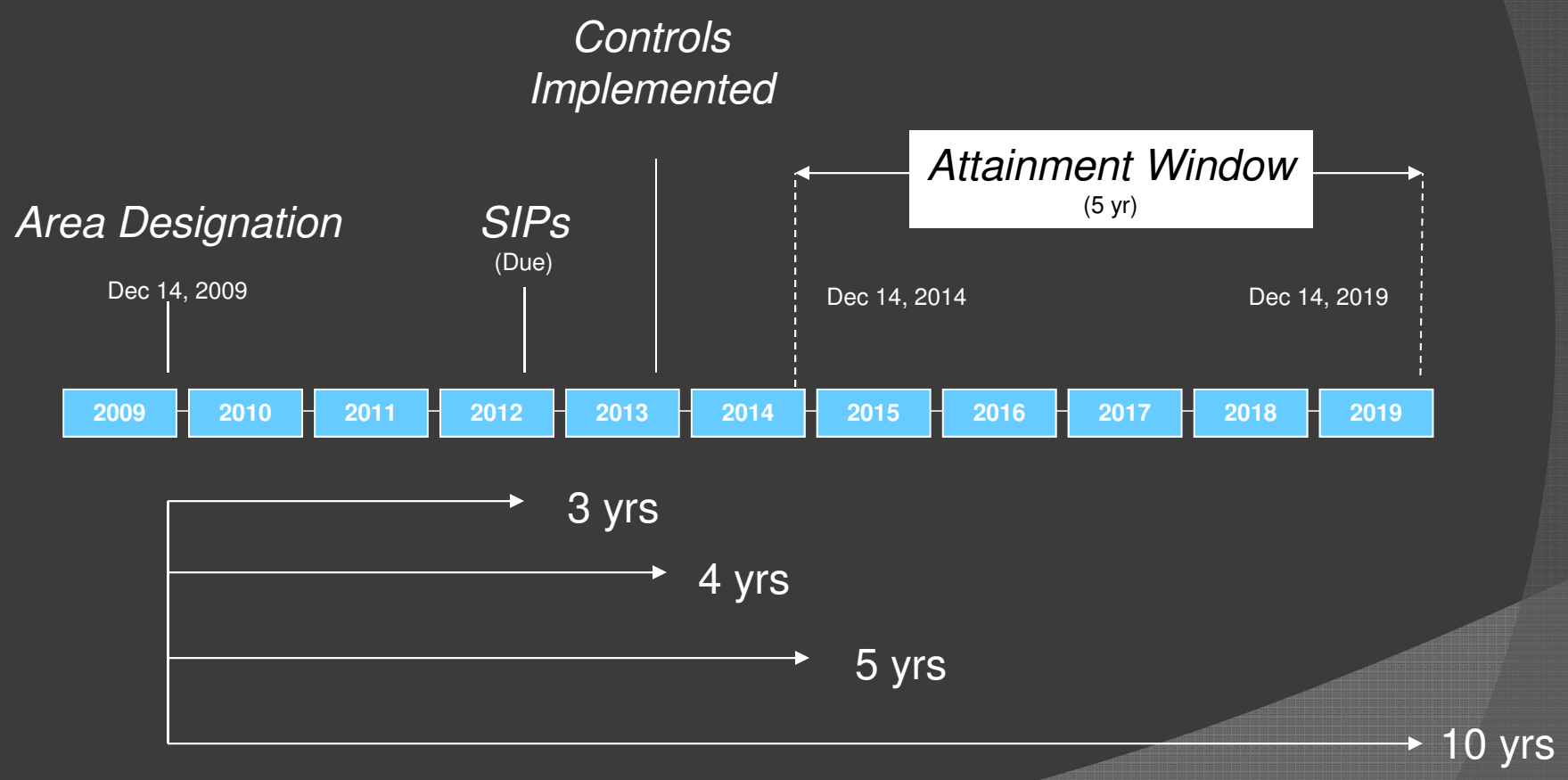
We'll be presenting some model results, showing:

1. Where we expect to be relative to the NAAQS assuming no additional controls
2. What reductions in PM2.5 are expected due to the emission reductions recommended by the workgroups
3. What additional emission reductions may be necessary to attain the NAAQS

Emissions Inventories and the Air Quality Model

1. What inventories are used in making the prediction
2. How those inventories are prepared

Attainment Dates



Projection Years

We'll be looking at both sides of this attainment window…

- Which means we need the inventories of 2014 and 2019
- And we'll compare each of these years to the baseline inventory of 2008

Inventories

2008 – the Baseline Inventory

- Represents *Actual Emissions* from all source categories

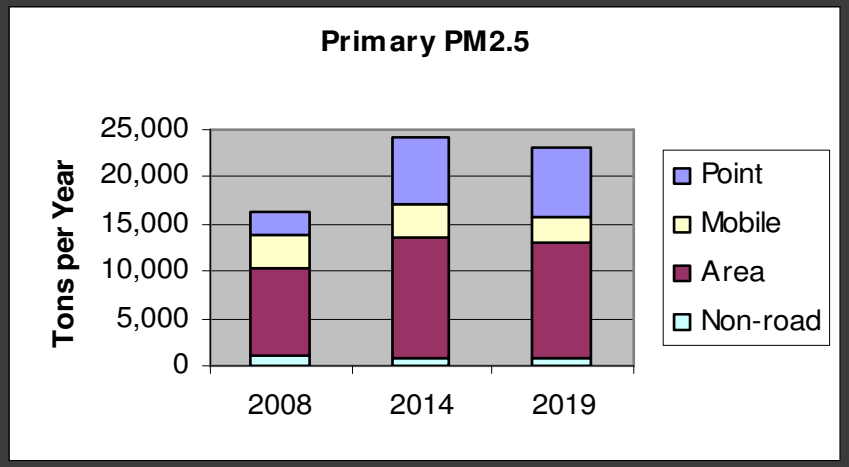
Projection-Year Inventories (e.g. 2019)

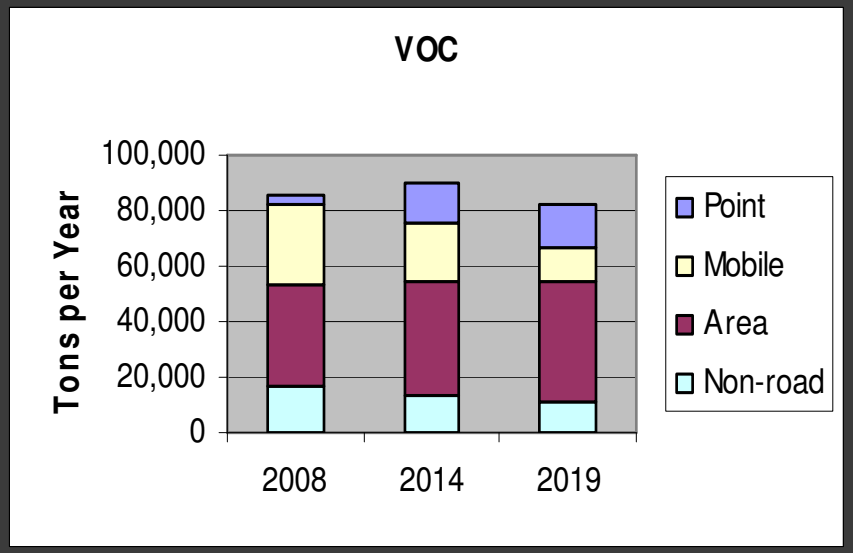
- Contain *Assumptions* about what emissions are likely to be

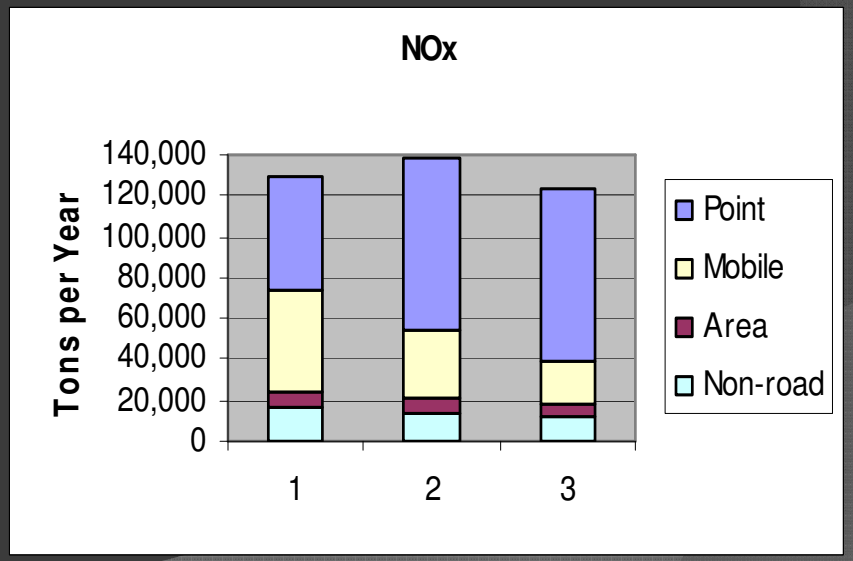
Sector-Specific Assumptions

- Point Sources
  - Allowable emission rates
  - SIP related emission controls
- Area Sources
  - Accounts for growth in population
  - Includes economic forecasts
- Mobile Sources
  - Accounts for growth in vehicle miles traveled (vmt)
  - Includes fleet turnover with newer, cleaner vehicles

Inventories used in the AQ Model







Basket of Control Strategies – Mobile Source

- I/M program for counties that currently don't have one
- Clean vehicle emissions standards (e.g. CARB LEVII)
- One pound decrease in RVP
- Bundle of additional measures assumed to achieve a combined 3% reduction in total mobile source emissions:
  - Alternative fuel fleets (e.g. natural gas and electric)
  - Diesel retrofits
  - Idle reduction
  - Trip reduction measures

Basket of Control Strategies – Area Source

- 98% of the inventory included in the basket
- Need to consider rule effectiveness when implementing regulatory strategies
- Applied a conservative value for effectiveness to account for varying degrees of technological use and implementation, resulting in:
  - Restaurants – 22% VOC and PM
  - Livestock housing – 20% VOC
  - Residential fireplace/wood stove – 80% VOC
  - Remaining categories – 15% VOC
- Ammonia – dietary manipulation and manure management:
  - 5% reduction

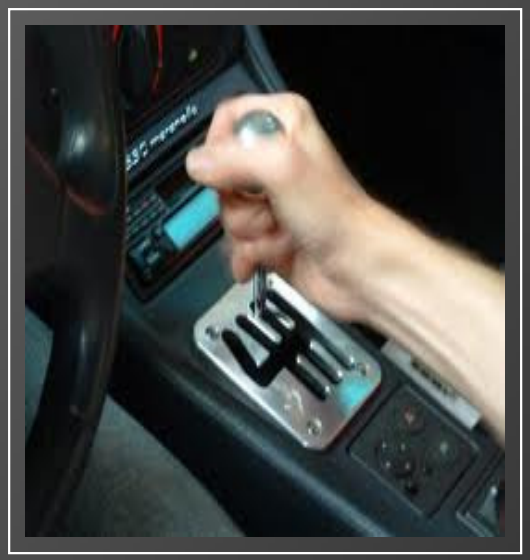
Basket of Control Strategies – Point Source

- Point source emissions reductions will be addressed through the rule making and application of RACT on a case-by-case basis
- Focusing on narrowing the gap between actual and allowable emissions
  - Assumed a 15-20% reduction in the difference between actual and allowable point source emissions

Basket of Control Strategies - Summary

- Taken as a whole, the basket of emissions strategies resulted in:
  - 10.3% reduction in primary PM 2.5
  - 14.2% reduction in VOCs
  - 9.2% reduction in NOx

Model Attainment Test Results



Same Meteorology. Same Episode(s). Same Model.

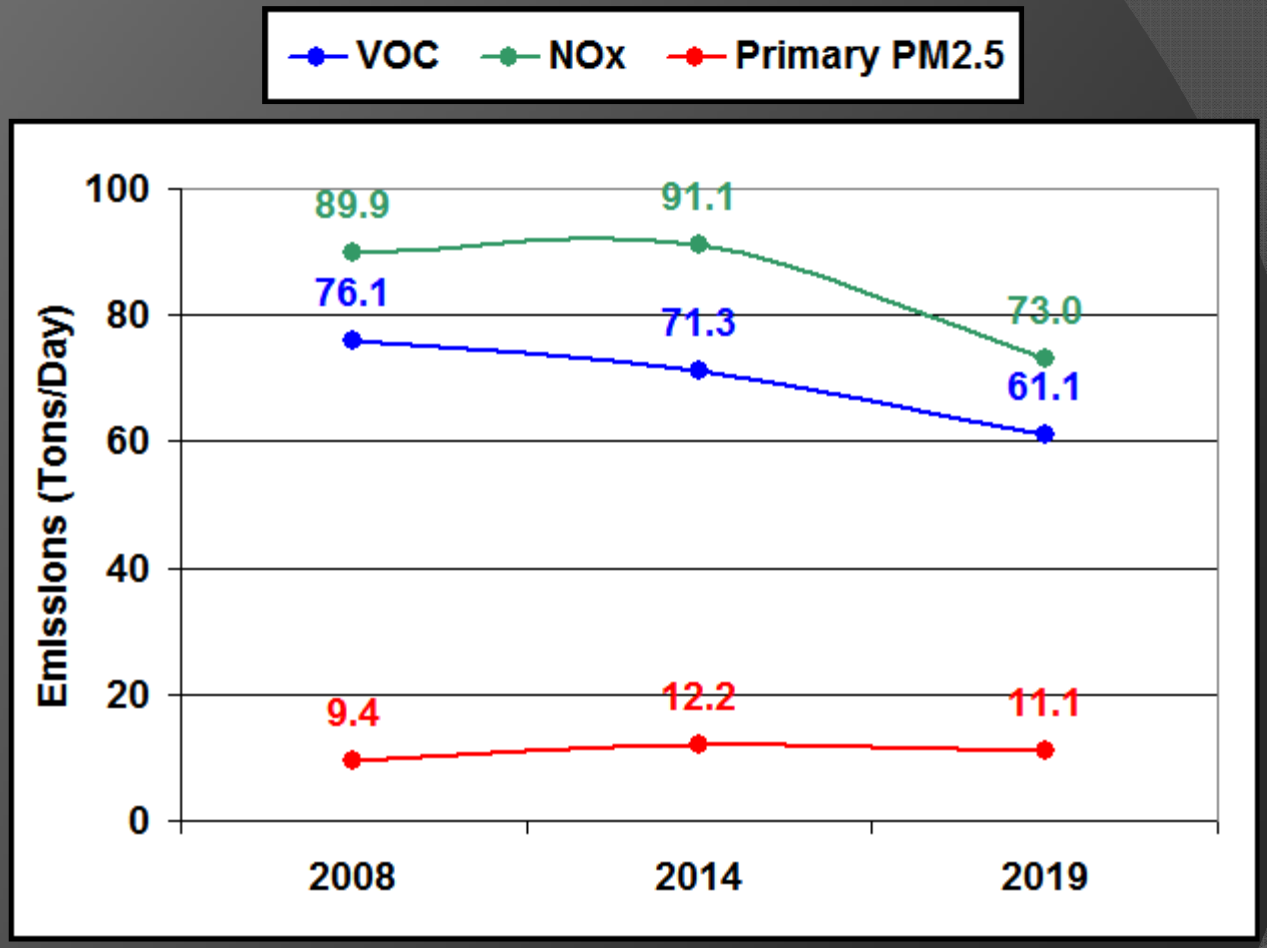
Different Emissions

* Disclaimer *

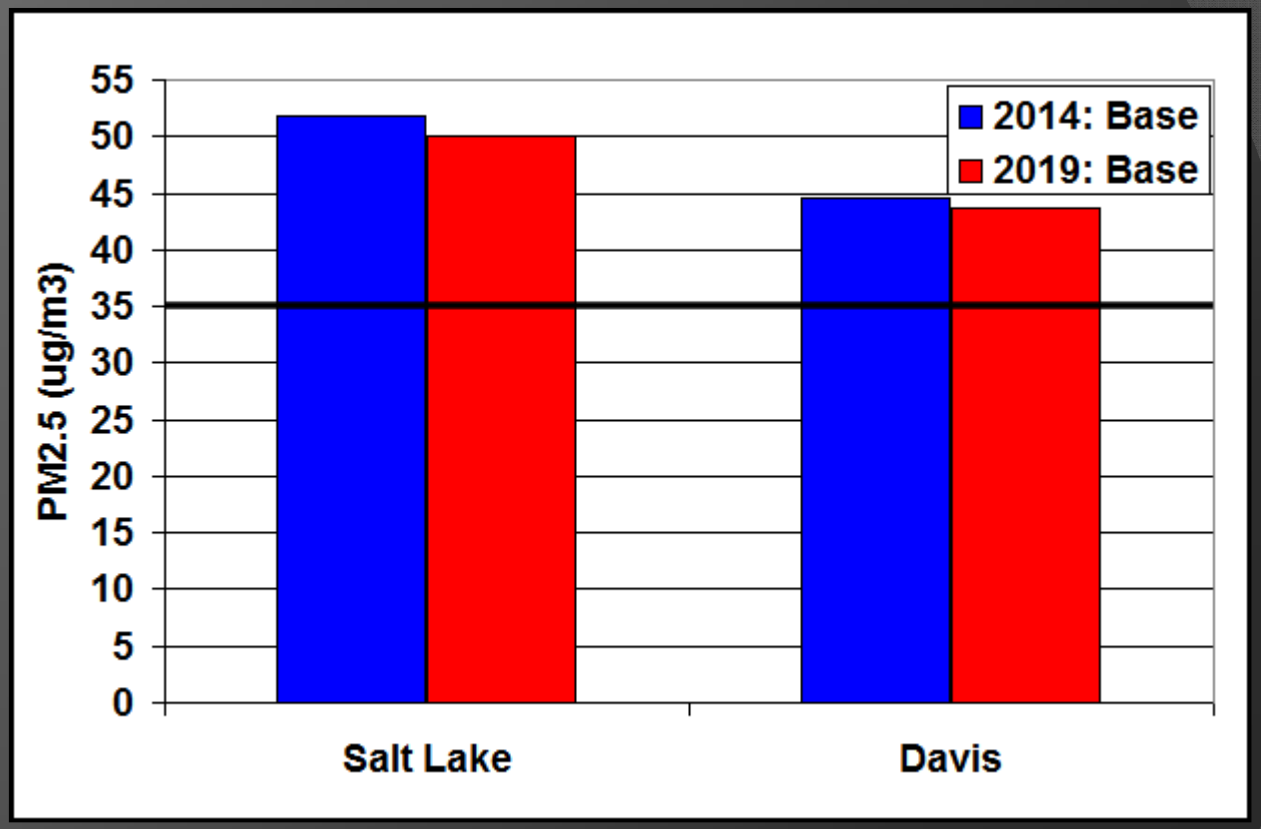
Attainment test results are **NOT FINAL** and **WILL CHANGE**

- Mobile Emissions
- Allowable Emissions
- Design Value Change

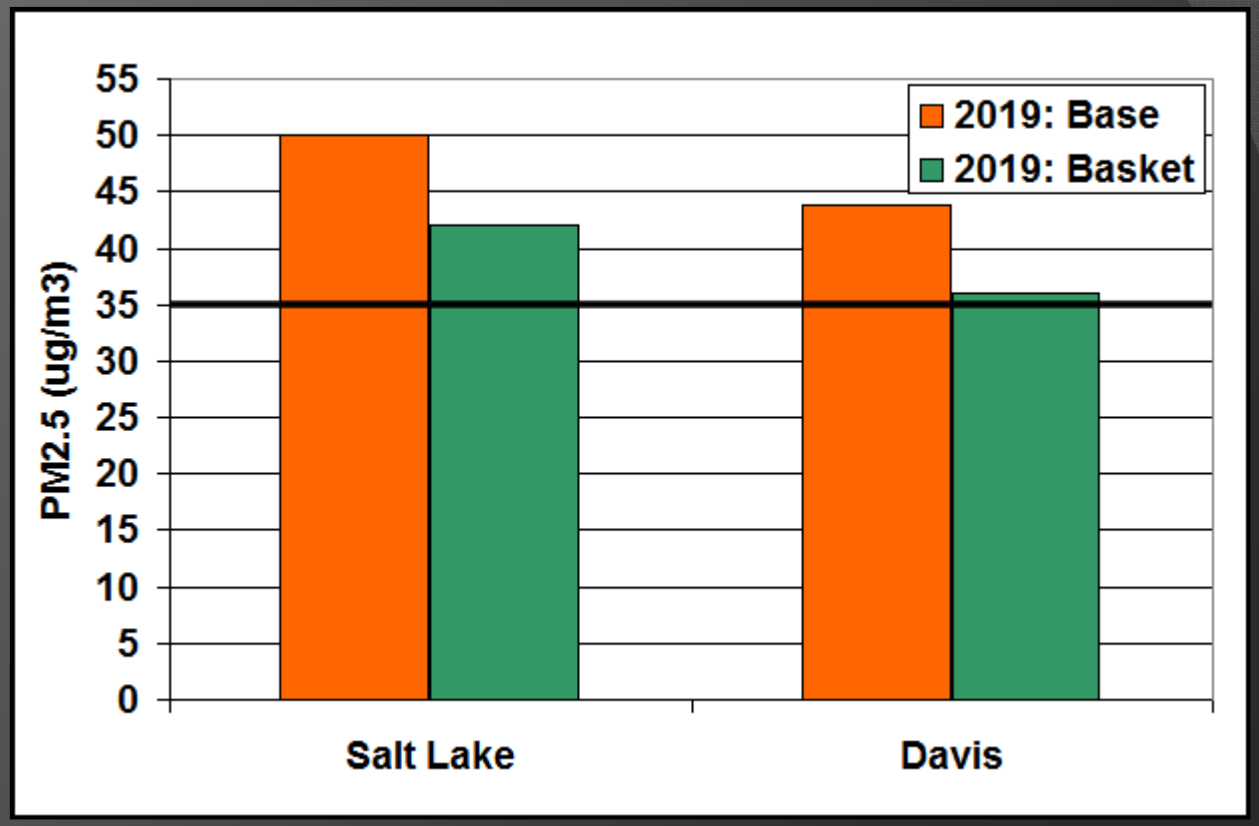
Salt Lake County Emission Trends



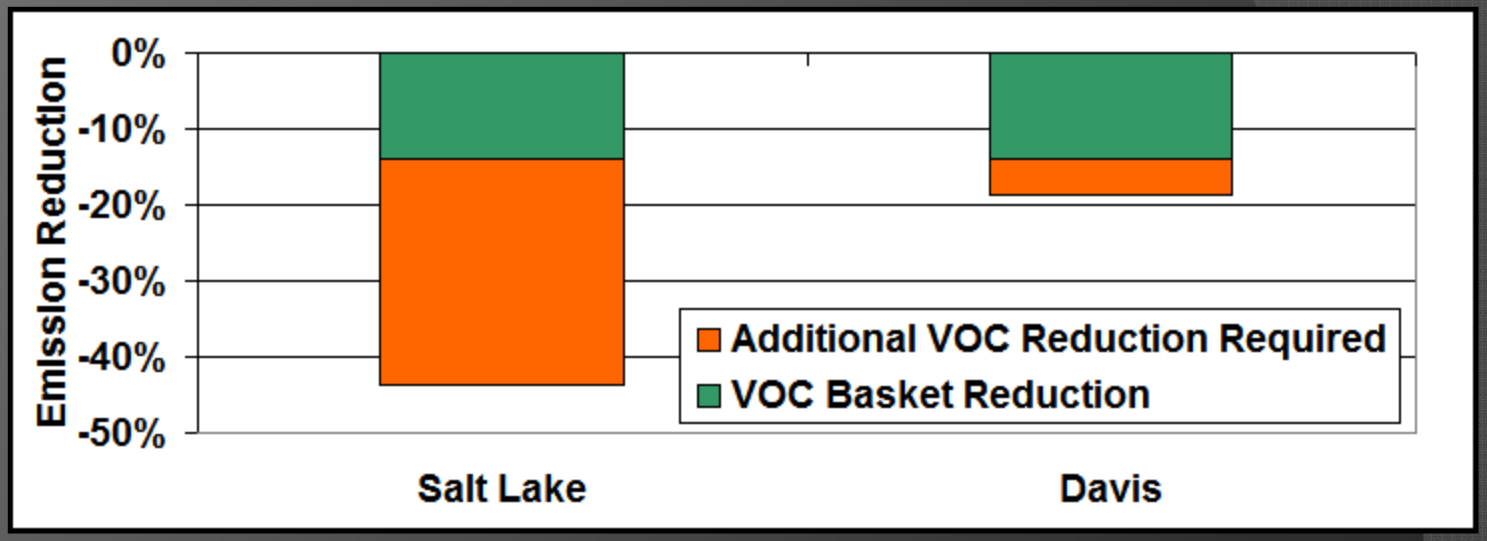
Future Year Model Attainment Test

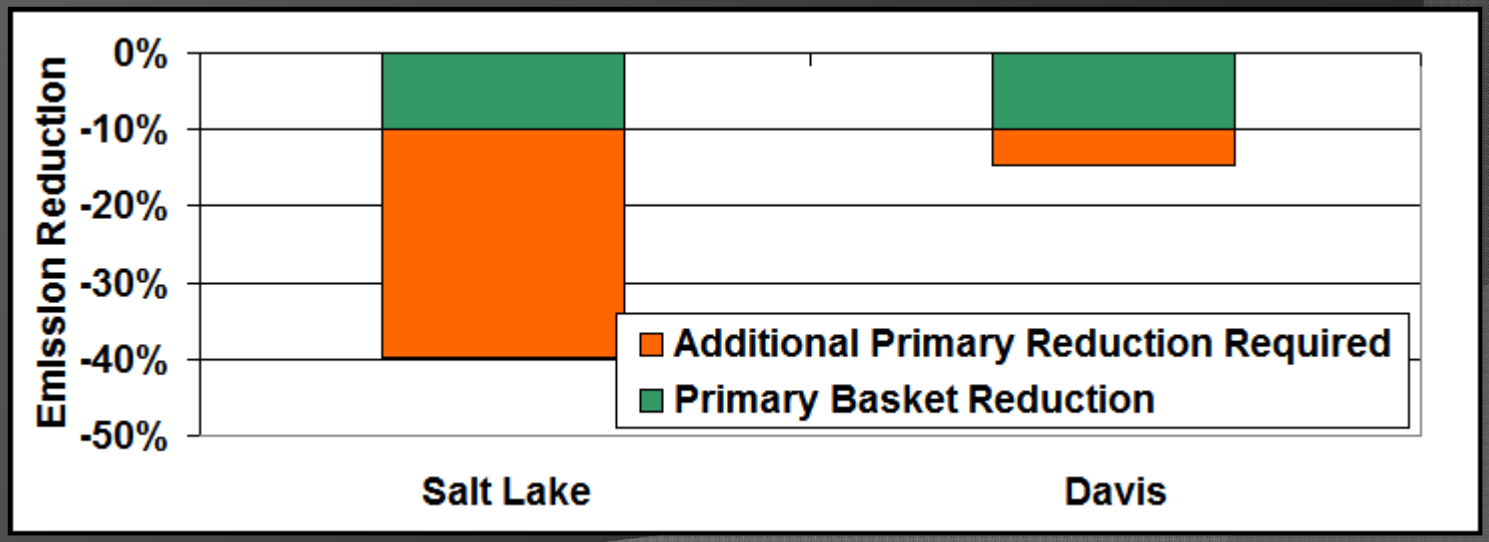


Future Year Basket Strategies



More Emissions Reduction?





Accomplishments & Challenges

1. Mobile Emissions Reduced

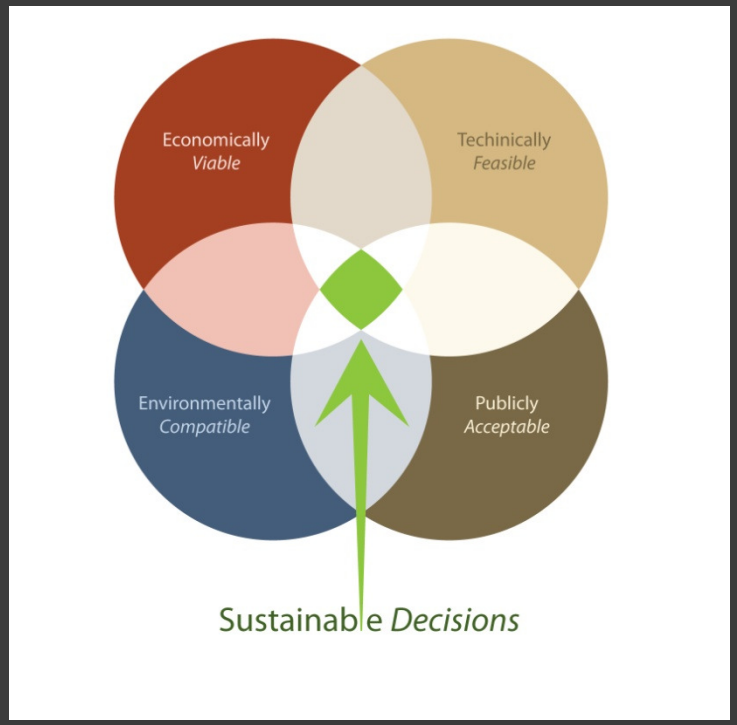
2. Strategies are Promoting Healthier Air Quality

3. Large Cities Remain a Problem

4. Reduce Point Source Allowable “Gaps”

Breakout Sessions

The Decision Space and Breakout Rules



Breakout Fundamentals

•30 minutes at each table (area/point/mobile) – facilitators rotate. You are assigned to the table matching your agenda color.

•The breakout is a forum for you to ask specific questions and discuss "basket" and other strategies you consider high-value options.

•UDAQ will record key questions and ideas, and will dutifully respond. An optional survey will follow to assess your attitudes about the strategies that have been discussed.

Rules:

1. **Listen Actively**: Listen carefully to other participants. Only one participant may speak at a time. All may speak in order.
2. **Respect**: Please allow expression of other ideas, even if you disagree. The goal is not to agree, but to develop a deeper understanding.
3. **Speak up, but Play Nice**: Share your views fully and honestly with everyone. All are encouraged to respectfully challenge an idea or ask questions, but no participant may criticize or attack another personally.
4. **No Disruptions**: Stay engaged with your group and avoid side conversations. Also please turn cell phones and pagers off.