

## What is Utah's Winter-Time Pollution?

- Utah's smog is primarily composed of fine particles (PM<sub>2.5</sub>).

## Where Does the Pollution Come From?

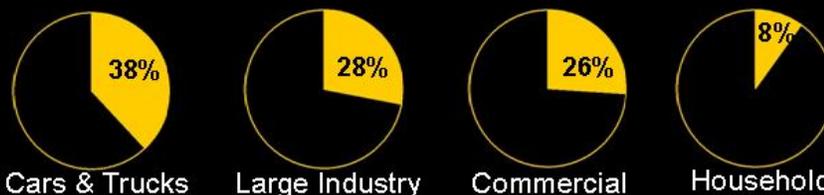
- Our PM<sub>2.5</sub> particle pollution starts as gas emissions from cars and trucks, large industry, commercial activity, and households.

## How is Our Pollution Created?

- Gas emissions are converted to different types of PM<sub>2.5</sub> particles through complex chemical reactions.



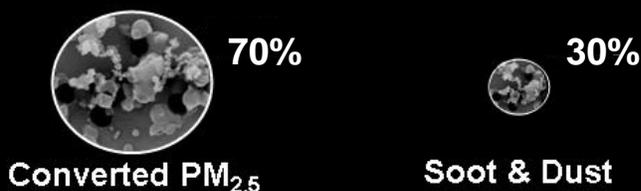
### Pollution Sources – Gases



### Particle Creation – Air Chemistry



### The Air We Breathe – PM<sub>2.5</sub> Particulates



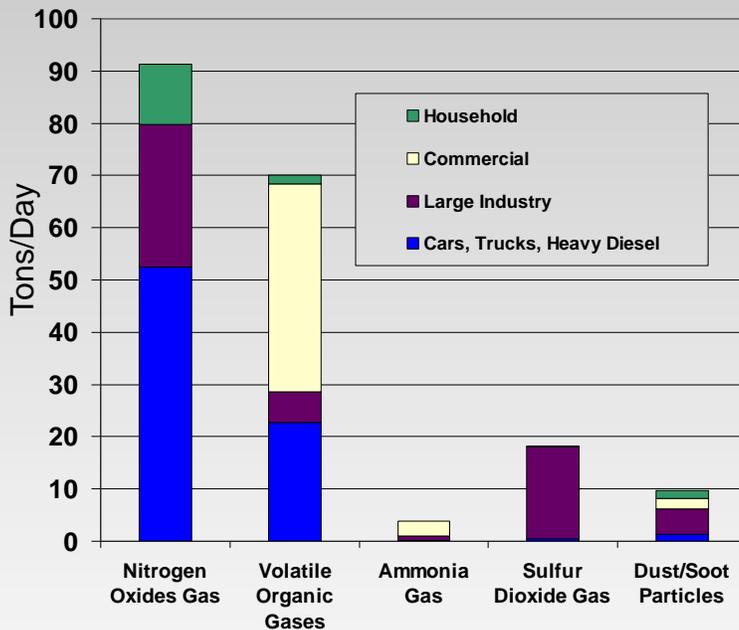
# Detailed View of the Emissions that Enter the Air

## What is the link between emissions from daily activity and the air pollution that accumulates during a winter inversion?

- Nitrogen Oxides, Volatile Organic Compounds, Ammonia, and Sulfur Dioxide gas emissions react in the air to form about 70% - 75% of the PM<sub>2.5</sub> during an inversion.
- Dust and soot particles go directly into the air and do not transform in the atmosphere. These constitute the other 25% - 30% of the PM<sub>2.5</sub> particles in the air.

### Winter-Time Emissions

*Our best estimate of the local sources that add to the pollution load on a daily basis*



### Measured Air Pollution

*When air in the valley is at its worst, chemical reactions create the majority of particles in the air*

