
Air Quality
Considerations
in NEPA

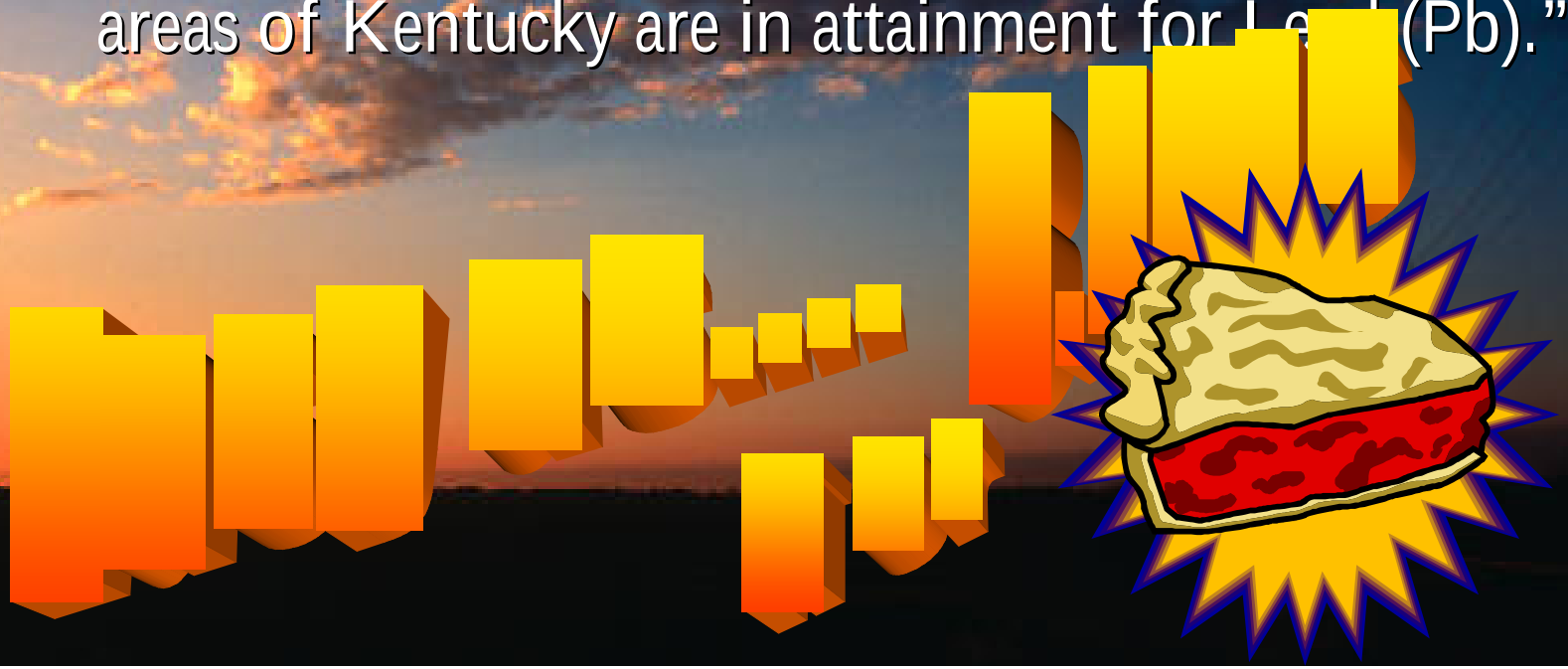
NEPA Requirements

- Evaluate Alternatives
- Assess Effects
- Highway Project Potential Air Quality Effects
  - Lead
  - Sulfur Dioxide
  - Nitrogen Dioxide
  - Carbon Monoxide
  - 8 hour Ozone
  - Particulate Matter ($PM_{2.5}$, PM_{10})
  - Mobile Source Air Toxics (MSATs)
- Guidance Forthcoming

Lead (PB)

- Include the following in NEPA document:

"Lead has not been a mobile source concern since tetraethyl lead was banned as a fuel additive. All areas of Kentucky are in attainment for Lead (Pb)."



Sulfur Dioxide (SO_2)

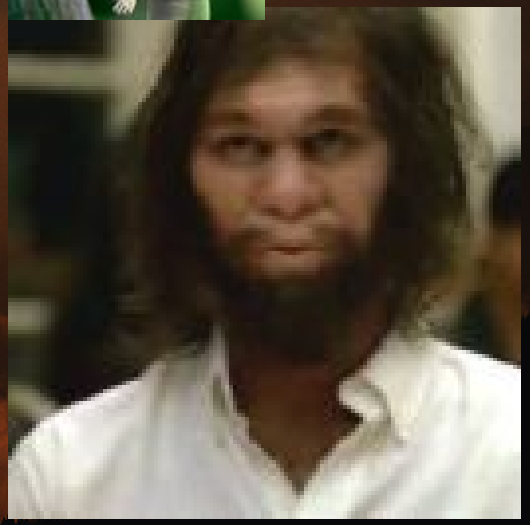
- Include the following in NEPA document:

"Sulfur Dioxide (SO_2) is primarily an industrial source concern and not a mobile source concern. All areas of Kentucky are in attainment for SO_2."

Nitrogen Dioxide (NO_2)

- Include the following in NEPA document:

  " All areas of Kentucky are in attainment for Nitrogen Dioxide (NO_2)"



A Caveman Can Do It!

Carbon Monoxide (CO)

- IF:
  - Project with intersection having ≥ 80,000 ADT or project is controversial
- THEN:
  - CAL3QHC analysis required
- ELSE:
  - "Based on the Kentucky CO Screening criteria, this project does not meet the criteria requiring a CO project-level analysis and will not produce a projected violation of the CO standards (35 ppm over a 1-hour or 9 ppm over an 8-hour period.)"

8-Hour Ozone (O_3)

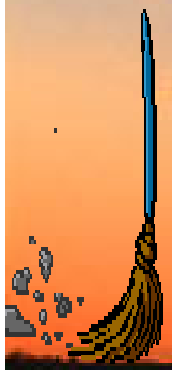
- IF:
- ELSE:
  - Project located in Boone, Boyd, Bullitt, Campbell, Christian, Jefferson, Kenton or Oldham
  - "This project is located in an 8-Hour Ozone attainment area and is not a project-level concern"
- THEN:
  - Discuss 8-hr Ozone designation and attainment status
  - Identify conforming TIP and TP, or STIP, and page number where project listed

Particulate Matter ($PM_{2.5}$)

- IF:

  Project located in Boone, Boyd, Bullitt, Campbell, Jefferson, Kenton or parts of Lawrence County

- THEN:
  - Discuss $PM_{2.5}$ designation, attainment status
  - Complete Project Level Checklist and Interagency Consultation
  - Identify from Checklist whether project is Exempt, Not Exempt, Not of Concern, or Of Concern
  - Identify conforming TIP and TP, or STIP, and page number where project listed
  - For “non-exempt” projects include summary of $PM_{2.5}$ hot-spot analysis



Particulate Matter ($PM_{2.5}$) (cont.)

- Else

  "This project is located in a $PM_{2.5}$ attainment area and it is not a project-level concern, therefore, the conformity procedures of 23 CFR 770 do not apply."

Particulate Matter (PM_{10})

- Include the following in NEPA document

"All areas of Kentucky are in attainment for PM_{10}. The conformity procedures set forth in 30 CFR 770 do not apply to this project."

Mobile Source Air Toxics (MSATs)

- Clean Air Act identified 188 air toxics AKA hazardous air pollutants
- 21 identified as Mobile Source Air Toxics
- 6 contaminants identified as Priority Pollutants

1. Benzene
2. Formaldehyde
3. Acetaldehyde
4. Diesel particulate/org. gas
5. Acrolein
6. 1,3-Butadiene

MSAT (cont)

Much Ado About Nothing????

leaner fuels and
f 57-87% predicted
tween 2000-2020

MSAT Degrees of Concern

- Exempt or

  No potential for meaningful MSAT effects

- Lower potential for meaningful MSAT effects

- Higher potential for meaningful MSAT effects

MSATs (cont)

- IF:

  Project is a

  1. "C List" Cat. Ex. (23 CFR 771.117(c)) OR;
  2. Conformity Reg. Exempt (40 CFR 93.126) OR;
  3. Project with no meaningful impact to traffic volumes or mix

- THEN:
  - "Exempt or No Potential for Meaningful MSAT Effects"
  - No analysis required
  - Description of why project qualifies is needed (see 2/3/06 FHWA Interim Guidance)

MSATs (cont)

- IF:

  Project not considered as

  1. Exempt or No potential for meaningful MSAT effects; OR
  2. Higher potential for meaningful MSAT effects

- THEN:

  Lower Potential for Meaningful MSAT Effects

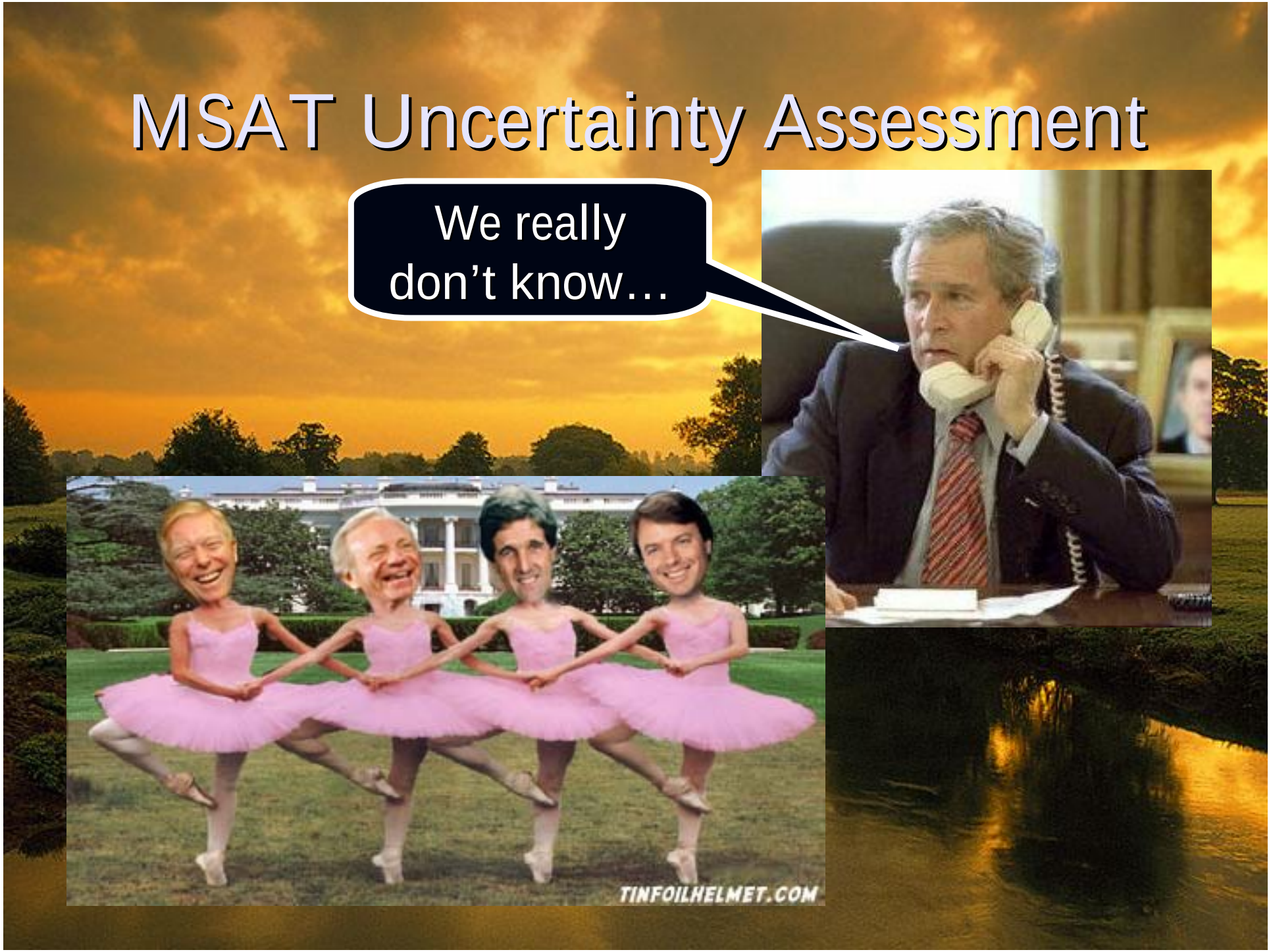
  - Qualitative analysis required
  - Uncertainty Assessment required

MSAT Qualitative Analysis

- Interim Guidance on Air Toxic Analysis in NEPA Documents (FHWA, [illegible] 3, 2006)
- Qualitative [illegible] consists of:
  - [illegible] umes,
    [illegible]ng
  - [illegible]nges in M[illegible] ic changes
    [illegible]ach alternative
    1. Vehicle Miles Travel
    2. Vehicle mix
    3. Speed
- National data trends t[illegible]
- No appreciable differe[illegible] rnatives
- No credible useful res[illegible] lysis

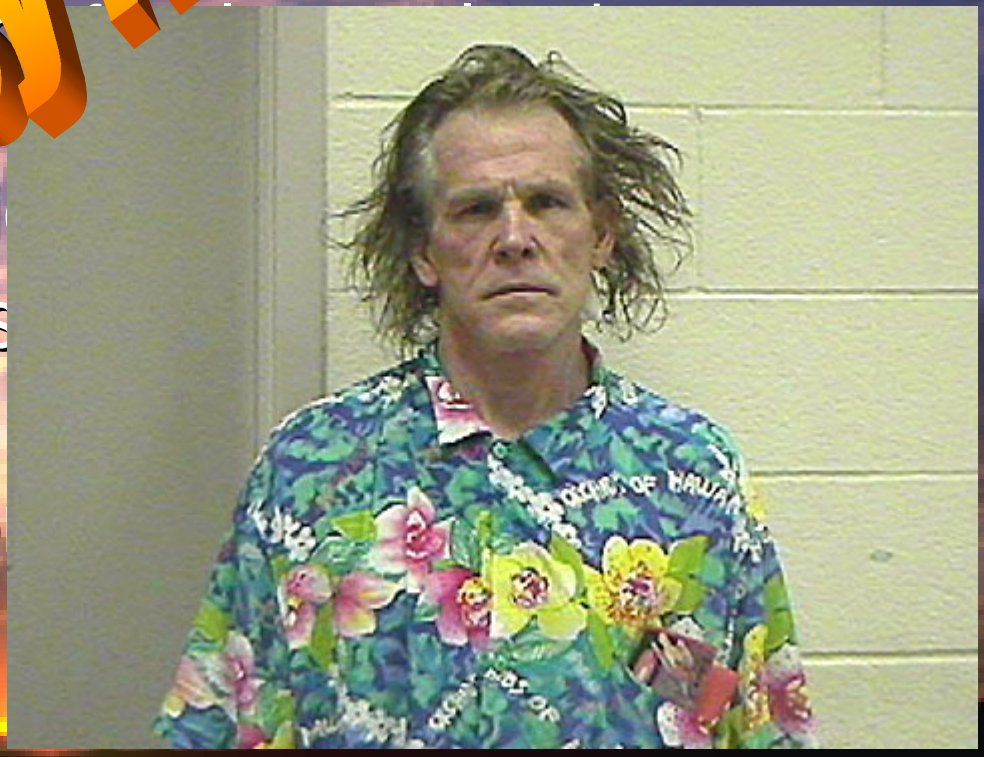
Some thought required…

MSAT Uncertainty Assessment



MSAT Uncertainty Assessment

- Discussion of "Incomplete or Unavailable" information for project-specific analysis
  - Emerging Field
  - Lack of sophis… health ef…
  - Not of val… decisi…
- Summary of current s… impacts of MSATs
- Prototype language p…



Higher MSAT Effects

- Project will either
  - Construct or modify a major intermodal freight facility with potential to concentrate high levels of diesel particulate in single location ; OR
  - New/ Increased capacity to address design year 140,000 ADT or more for a highway

  AND

  Project is proximate to populated areas or vulnerable populations (schools, nursing homes, hospitals)

Higher MSAT Effects (cont)

- THEN:
  - Contact FHWA Office of Planning for guidance
  - Emissions Burden Analysis at the corridor level using Mobile 6.2
  - Analyze emissions for each of six priority MSATs Current and design year conditions
  - Uncertainty Assessment per 2/3/06 FHWA Guidance
  - Mitigation

Greenhouse Gas / Global Warming

- Evolving
- No FHWA guidance issued to date
- Difficulties assessing project level impacts
- CEQ being asked to address
- KYTC will be providing guidance

Questions