



Ozone Conceptual Description for SIPs

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Background

- EPA guidance requests states include a “conceptual description” of ozone problem in their SIPs
- OTC has funded NESCAUM to draft the “conceptual description” for OTR states
 - Provides common foundation for all states
 - Avoids redundant efforts amongst states
 - Synthesizes most recent information across OTR
- States may need to supplement with state-specific info, depending on needs

Covers ozone, PM2.5, and haze

- Separate volumes drafted to cover ozone and PM2.5/Haze
- This presentation focuses on ozone
- Input and review from States, MARAMA, OTC

Description of conceptual description

- Qualitative in nature
- Not a new analysis
- Synthesizes & expands upon existing information
- Seeks to address questions posed by EPA guidance, e.g.:
 - Is O₃ problem local or regional in character?
 - Is transport important?
 - What types of weather lead to high O₃?
 - Is O₃ limited by NO_x, VOCs, or both?

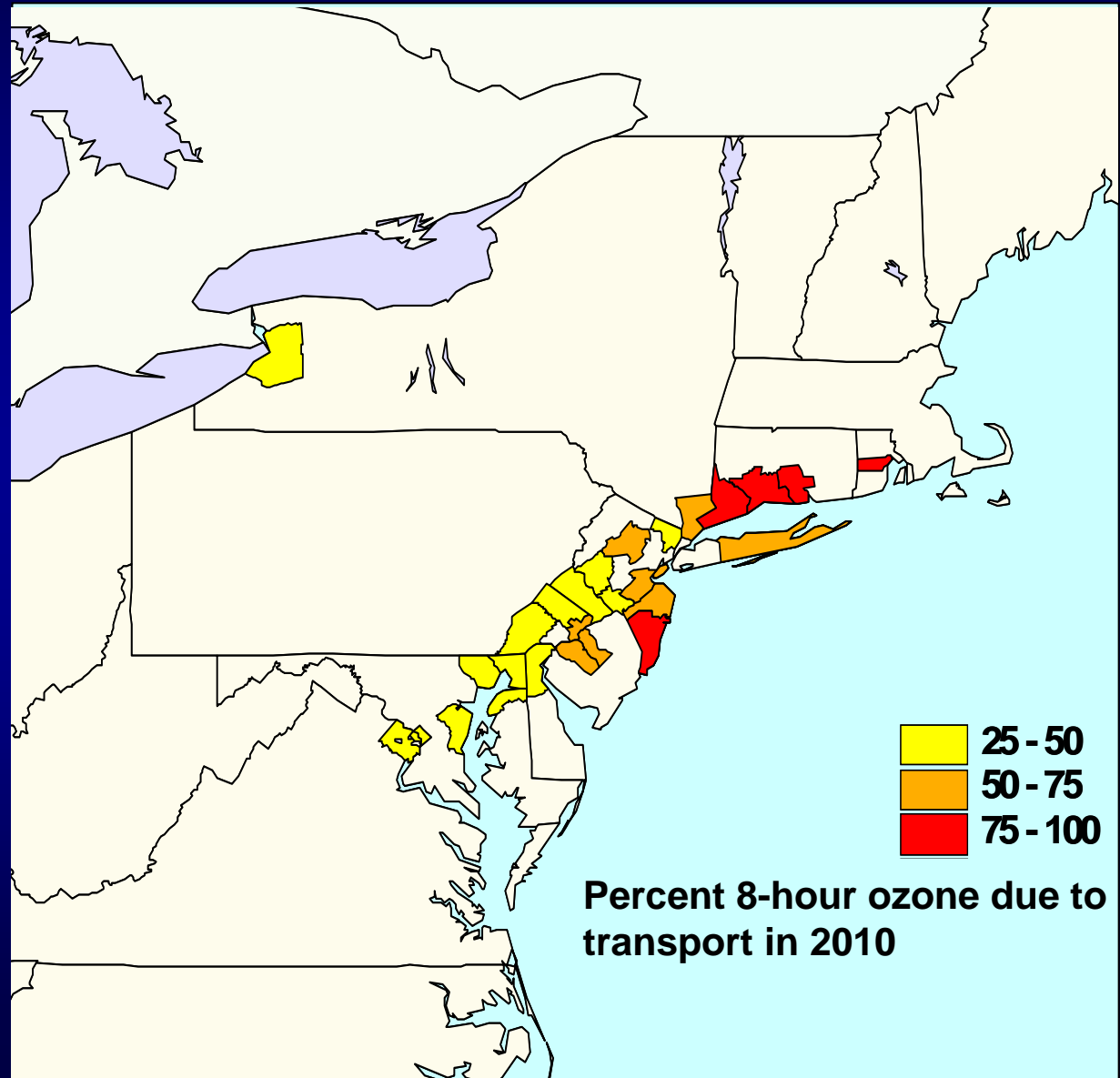
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Regional nature

-CAIR: significant contributions to OTR non-attainment from states outside OTR

-Only 3 of 40 modeled non-attainment counties in 2010 in eastern US will reach attainment with CAIR in place

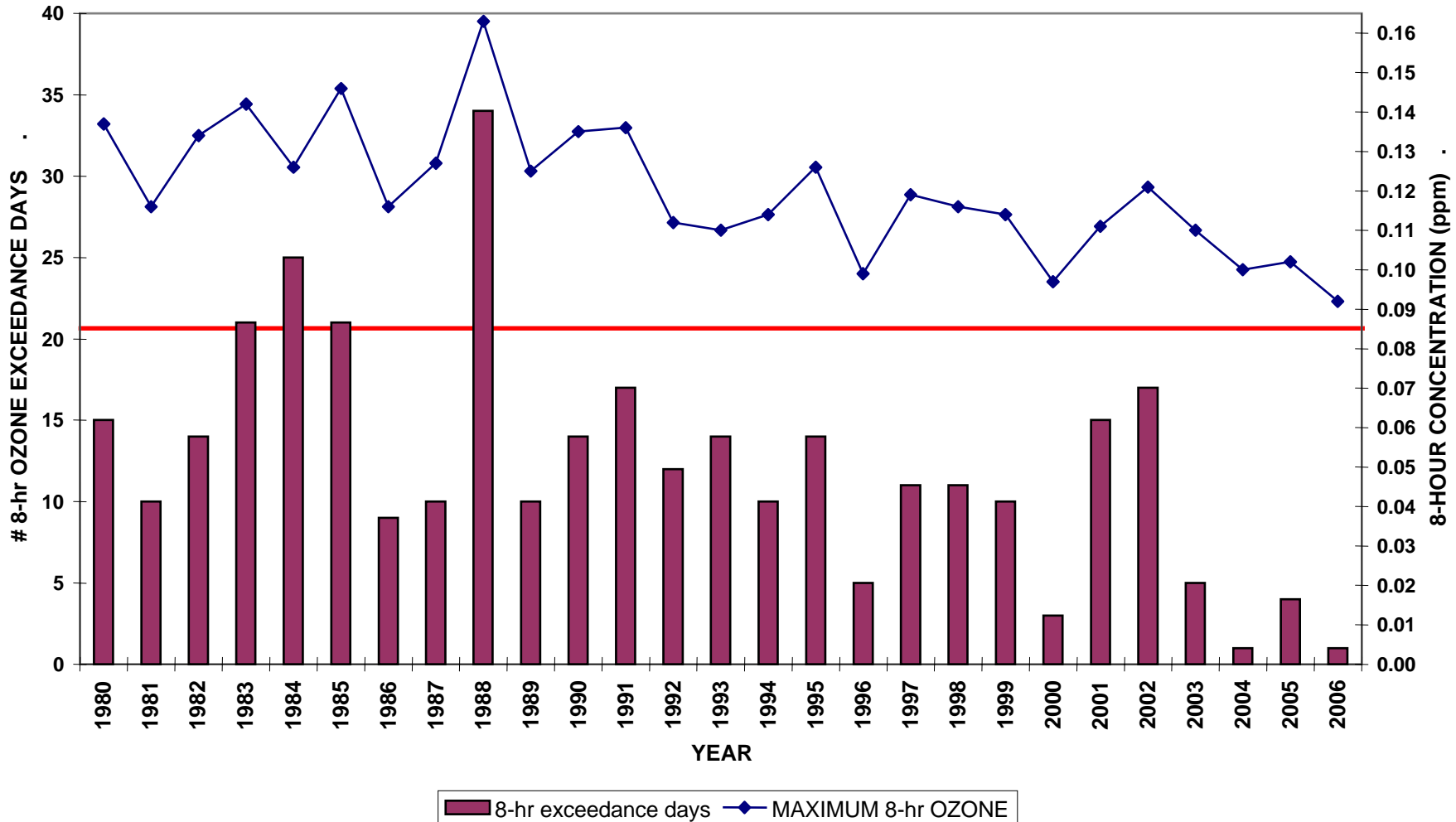


Ozone trends e.g., Maine



Created by Tom Downs, Maine DEP-
BAQ - 10/5/2006

1997-2005 OZONE SEASON 8-HOUR OZONE EXCEEDANCE DAYS AND MAXIMUM 8-hr
OZONE CONCENTRATION TRENDS IN MAINE

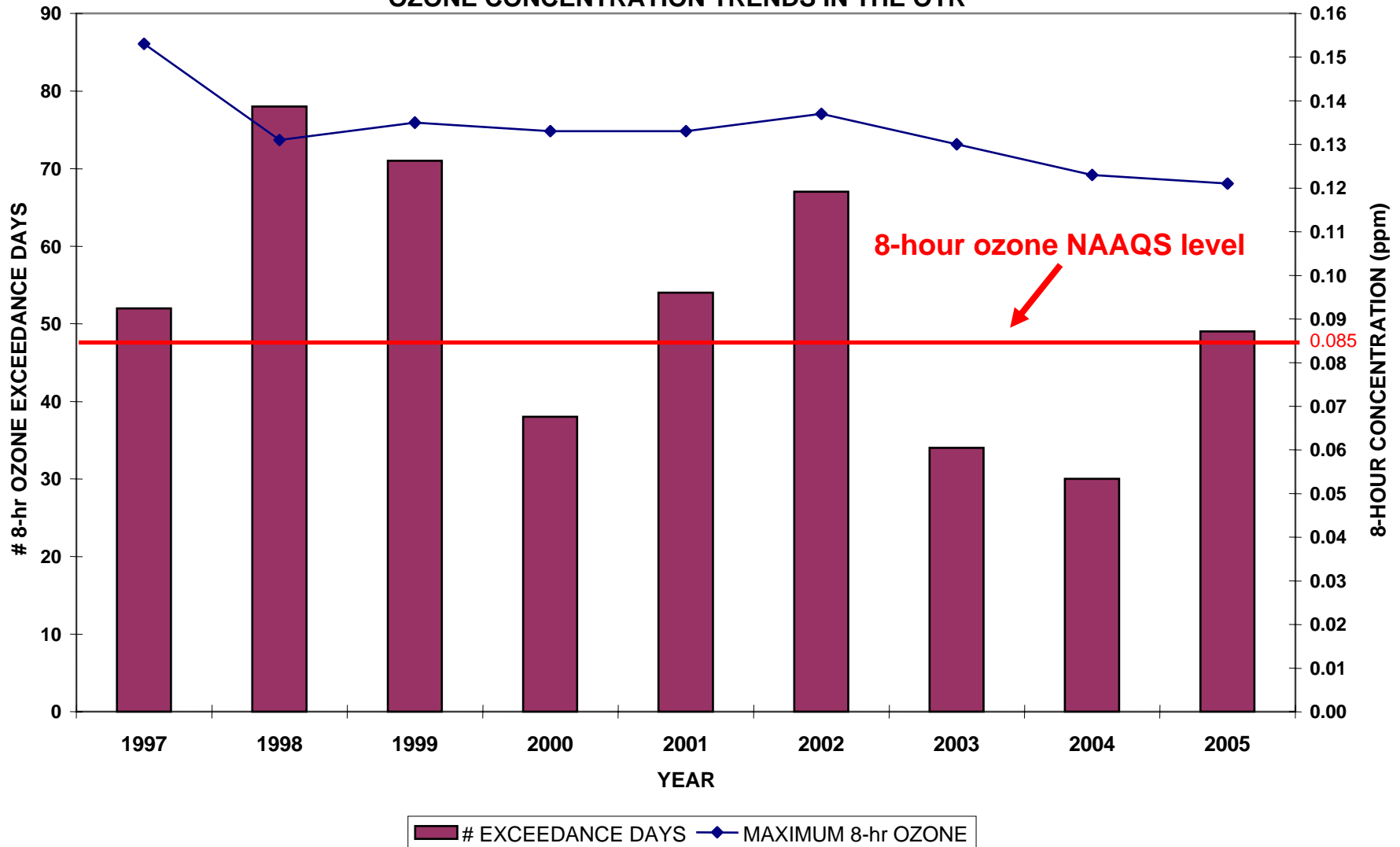


OTR-wide trends



Created by Tom Downs, Maine DEP-
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1997-2005 OZONE SEASON 8-HOUR OZONE EXCEEDANCE DAYS AND MAXIMUM 8-hr
OZONE CONCENTRATION TRENDS IN THE OTR



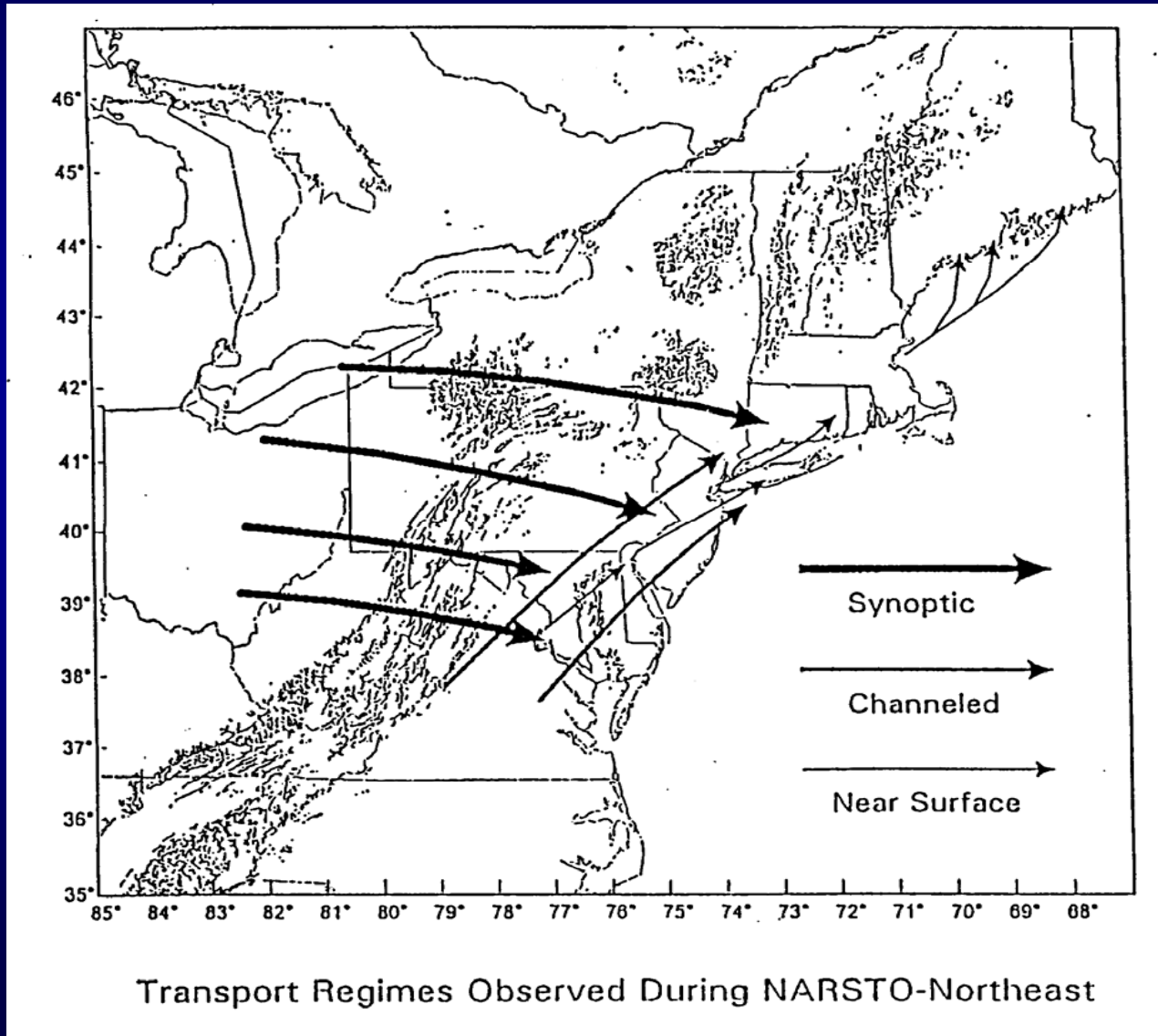
Recap of NE ozone studies

- Peer-reviewed science literature
- OTAG 1995-1997 (Eastern US)
- NE-OPS 1998-2002 (Philadelphia)
- NARSTO 2000 (Northeast)
- NEAQS 2002-2004 (New England)
- RAMMPP 2003 (Eastern blackout)

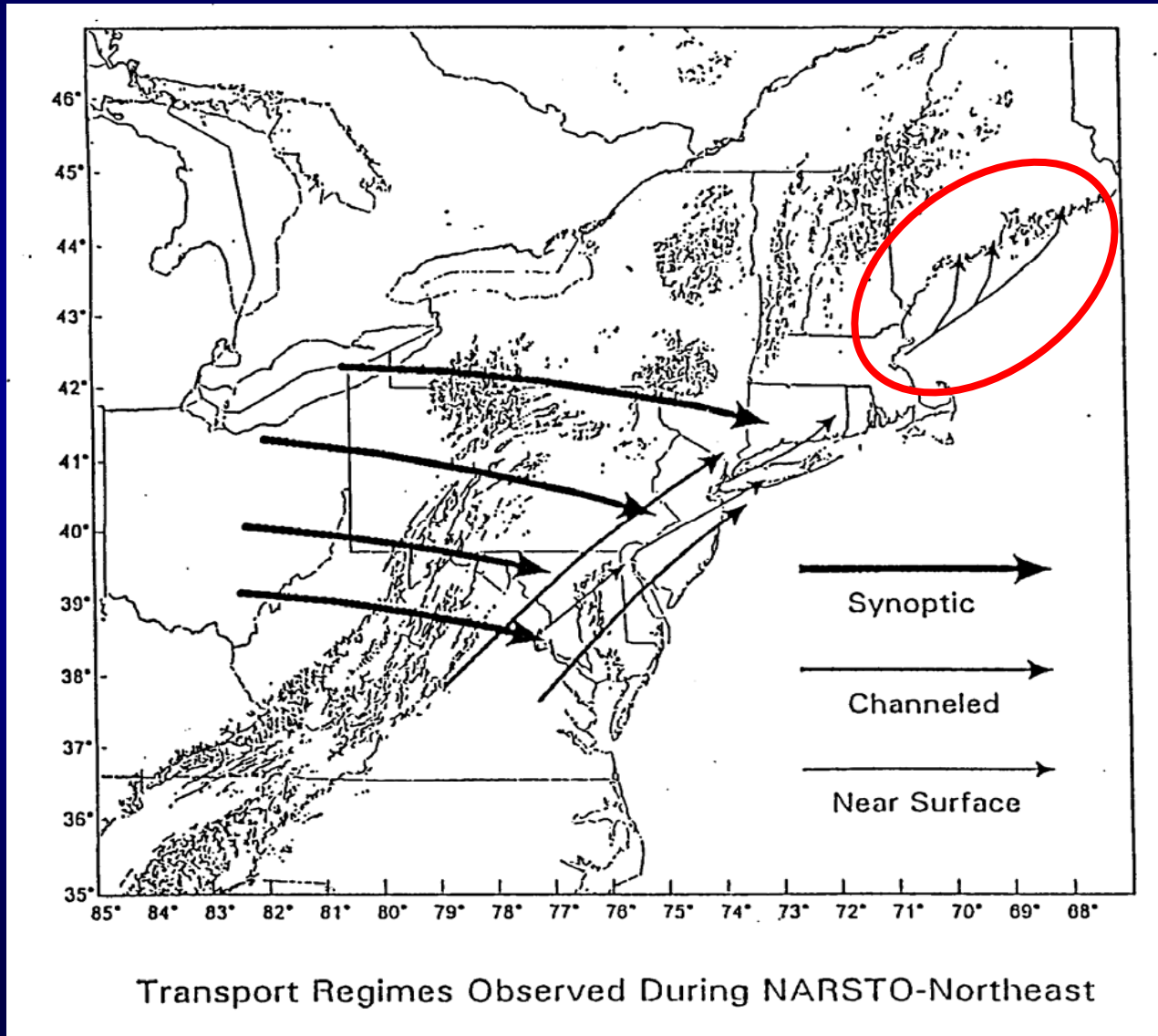
Transport pathways

- Smaller scale - seabreeze/surface winds
- Regional scale – mid-level channeled flow; nocturnal low level jets
- Largest scale - upper level ozone reservoir

Meteorological & transport paths

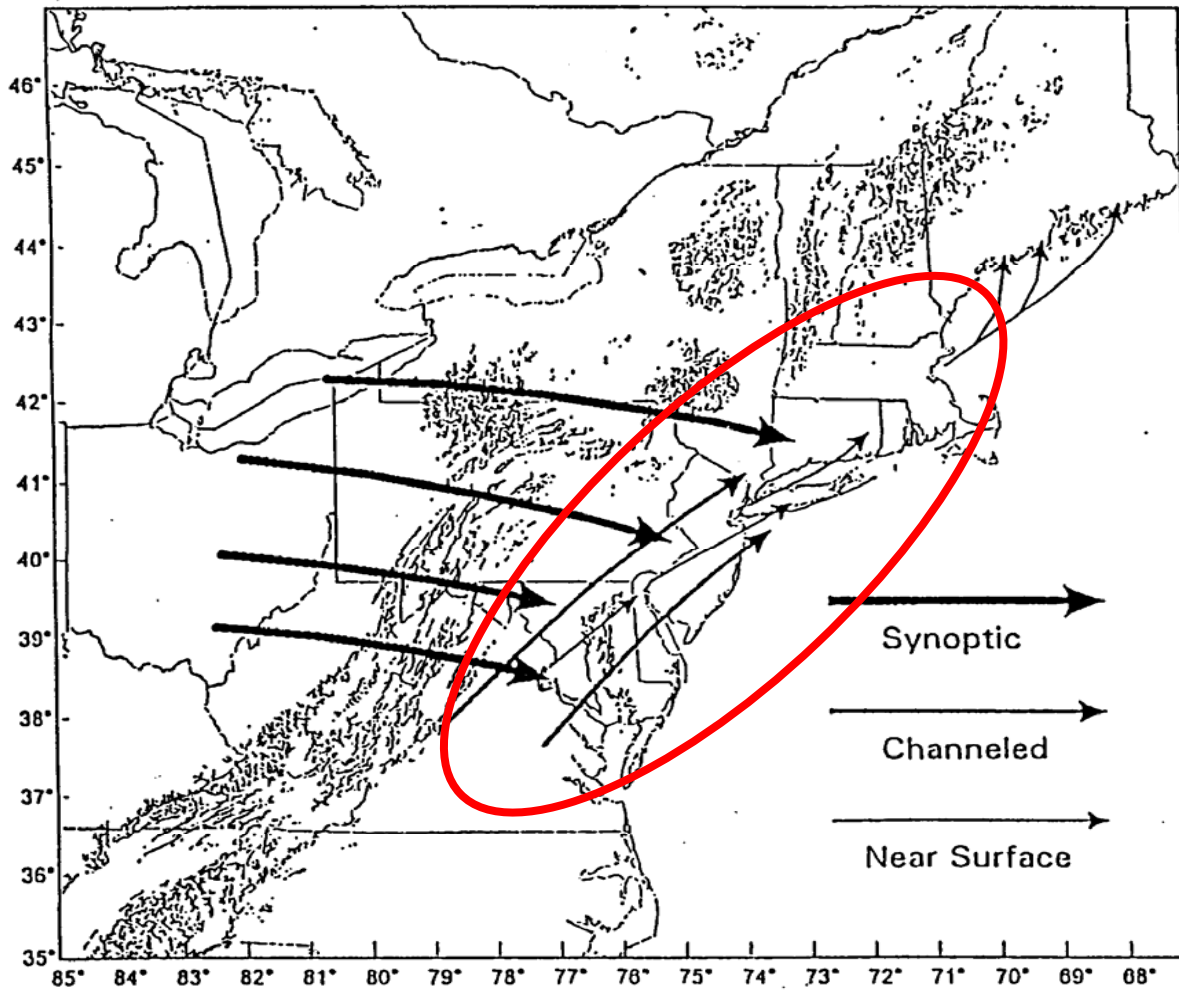


Small scale surface



Over water
transport

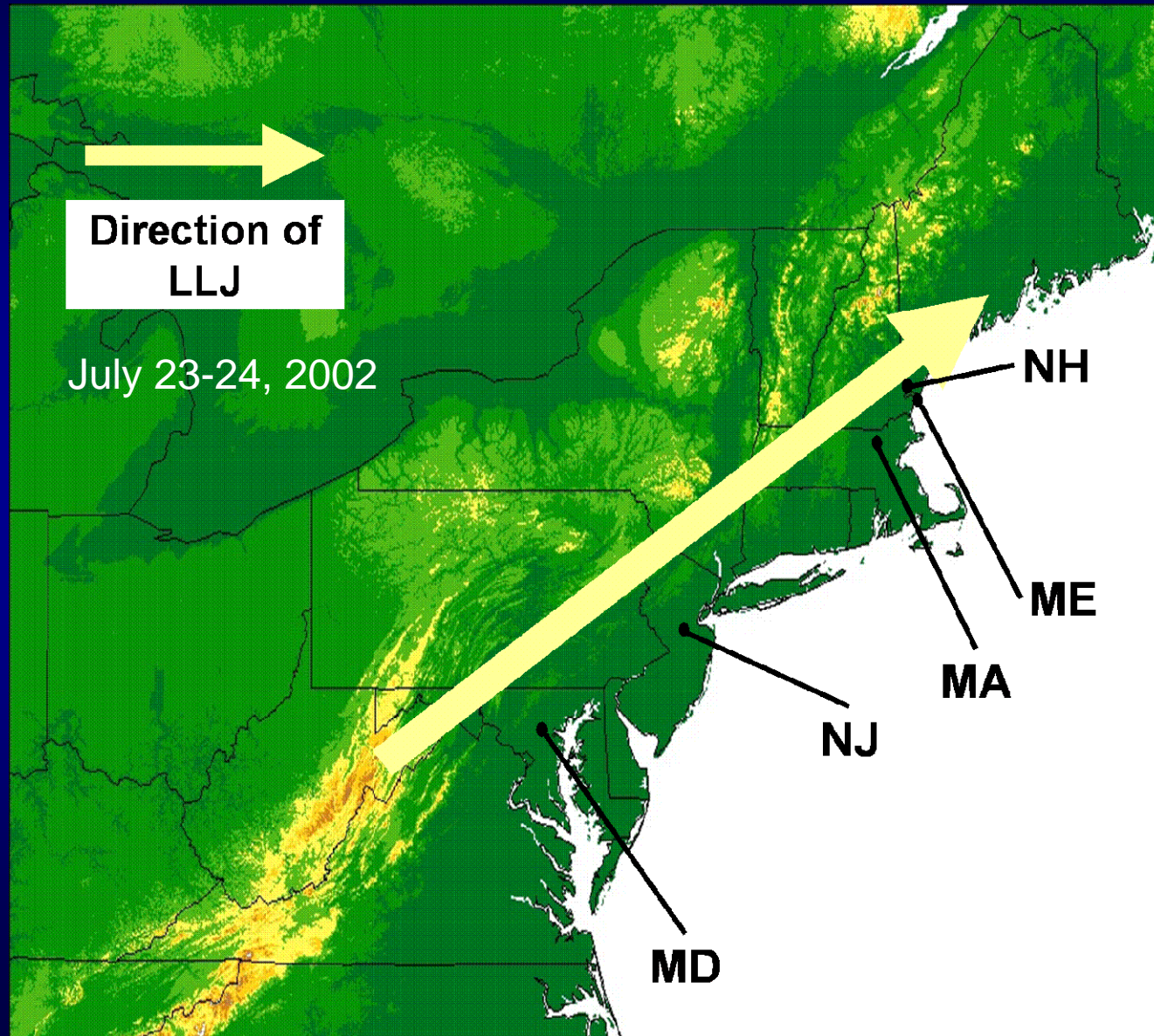
Regional scale flow



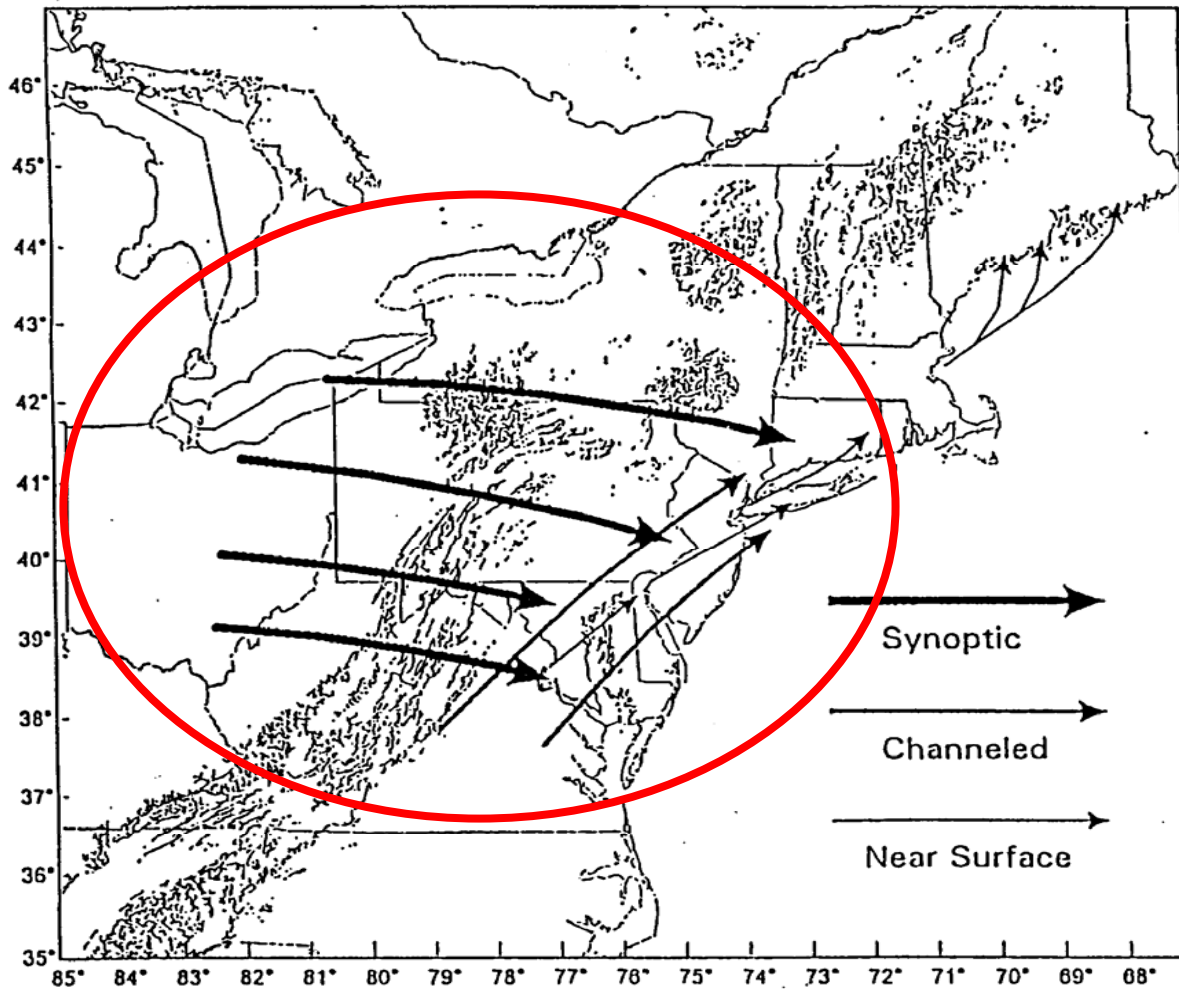
Nocturnal
low level
jet

Transport Regimes Observed During NARSTO-Northeast

OTR-wide low level jet



Upper level transport



Transport Regimes Observed During NARSTO-Northeast

Upper
level
ozone
reservoir

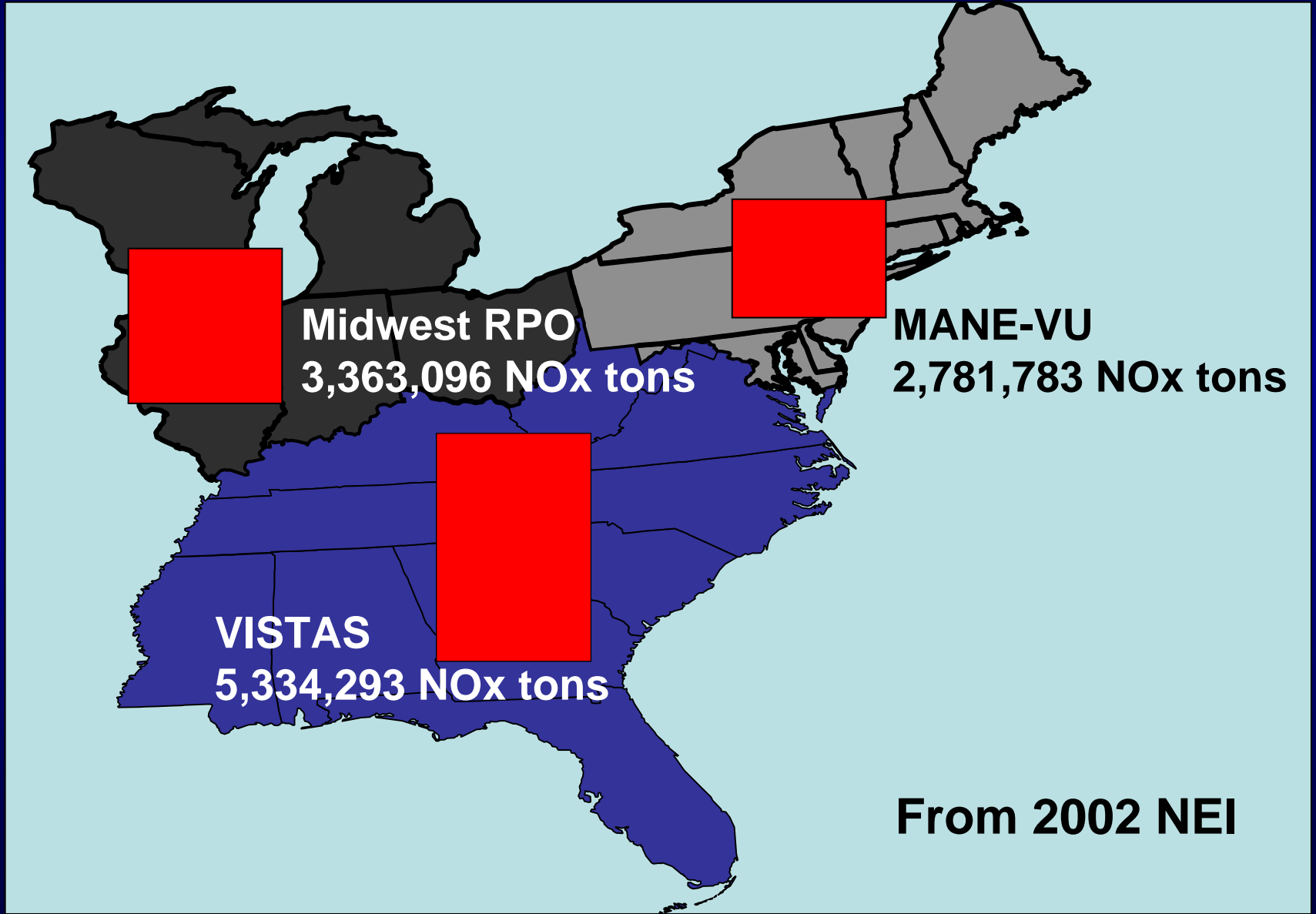
Regional emissions

NOx emissions:

| RPO | Point | Area | On-road | Non-road | Total |
|---------|-----------|---------|-----------|----------|-----------|
| MWRPO | 1,437,284 | 184,790 | 1,290,178 | 723,844 | 3,636,096 |
| MANE-VU | 680,975 | 268,997 | 1,297,357 | 534,454 | 2,781,783 |
| VISTAS | 2,094,228 | 266,848 | 2,160,601 | 812,615 | 5,334,293 |

From 2002 NEI

Regional emissions



Science/policy links

- Pulls together the pieces of a bad ozone day
- Presents day-by-day chronology of historical episode
- Gives overview of CAA transport provisions
- Lists past regional efforts

Summary: Building upon success

- Ozone still a regional problem in OTR
- Danger of labeling as “residual” ozone implies “local-only” problem – throw back to local-only approaches that may not effectively address the full extent of the problem

Summary: Building upon success

- States' SIPs must address local as well as downwind impacts – discussions with upwind areas critical
- Regional NOx controls coupled with appropriate local VOC & NOx measures have proven success record
- Timely action is critical in order to protect public health

Timeline and status

- Work effort commenced in May
- 1st drafts reviewed by states and revisions made in early September
- Ozone 2nd draft reviewed by states mid-September
- PM/Haze 2nd draft reviewed by states end of September
- Final reports released end of October
- States can add state-specific information for inclusion in their SIPs

Final Report

Report at <http://www.nescaum.org>

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