

US EPA ARCHIVE DOCUMENT

June 30, 2004

Richard E. Greene  
Regional Administrator  
USEPA Region VI  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Dear Mr. Greene:

Please find enclosed our third six-month progress report describing Oklahoma's Early Action Compact (EAC) activities for the Central Oklahoma and the Tulsa areas.

This report meets the June 30, 2004 milestone by summarizing the activities for both of Oklahoma's EACs. Topics addressed in the report include recent monitoring results, stakeholder involvement, modeling activities, and future SIP development.

Even though all areas of Oklahoma are considered to be in attainment with the 8-hour standard, the work on both of our Early Action Compacts is going forward.

If you have any questions or desire additional information concerning this report, please contact Mr. Scott Thomas at 405-702-4157.

Sincerely,

Eddie Terrill  
Director, Air Quality Division

ET:ST:jmc

C: Tom Diggs, EPA  
Jerry Lasker, INCOG  
Zach Taylor, ACOG

**3<sup>rd</sup> Six-Month Progress Report for the  
Central Oklahoma Early Action Compact  
and the  
Tulsa Early Action Compact**

**Submitted by the Oklahoma Department of Environmental Quality  
June 30, 2004**

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- II. Stakeholder Involvement
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## **I. Monitored Ozone Values in Oklahoma**

All of Oklahoma continues in attainment with the 8-hour ozone standard. The attached chart summarizes recent ozone data collected in Oklahoma through June 27, 2004.

The Skiatook and Glenpool monitoring sites in the Tulsa area remain in jeopardy of exceeding the standard this summer.

# 2004 OKLAHOMA OZONE

## Highest 8 Hour Averages as 3/18/2004

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| Site             |        |        | 1st    | 2nd    | 3rd    | 4th    | 01-03 Avg* | 02-04 Avg* |
|------------------|--------|--------|--------|--------|--------|--------|------------|------------|
| 01 4th           | 02 4th | 03 4th | (date) | (date) | (date) | (date) | 4th Highs  | 4th Highs  |
| Walters (680)    |        |        | 0.052  | 0.048  | 0.046  | 0.044  |            |            |
| (new)            |        | 0.077  | 10-Mar | 7-Mar  | 8-Mar  | 9-Mar  |            |            |
| Healdton (297)   |        |        |        |        |        |        |            |            |
| (new)            |        | 0.081  |        |        |        |        |            |            |
| Tishomingo (323) |        |        | 0.054  | 0.053  | 0.053  | 0.051  |            |            |
| (new)            |        | 0.070  | 10-Mar | 8-Mar  | 17-Mar | 7-Mar  |            |            |
| Mannford (144)   |        |        | 0.057  | 0.057  | 0.057  | 0.057  |            |            |
| (new)            |        | 0.081  | 19-Feb | 22-Feb | 17-Mar | 18-Mar |            |            |
| Lynn Lane (178)  |        |        | 0.056  | 0.054  | 0.053  | 0.053  |            | 0.072      |
| 0.078            | 0.080  | 0.084  | 19-Feb | 22-Feb | 27-Feb | 10-Mar |            |            |
| Tulsa (1127)     |        |        | 0.051  | 0.050  | 0.049  | 0.049  | 0.080      | 0.069      |
| 0.081            | 0.080  | 0.080  | 19-Feb | 8-Mar  | 22-Feb | 11-Mar |            |            |
| Skiatook (137)   |        |        | 0.054  | 0.053  | 0.052  | 0.052  | 0.083      | 0.072      |
| 0.084            | 0.083  | 0.083  | 19-Feb | 22-Feb | 27-Feb | 18-Mar |            |            |
| Glenpool (174)   |        |        | 0.054  | 0.054  | 0.053  | 0.053  | 0.081      | 0.073      |
| 0.077            | 0.082  | 0.086  | 19-Feb | 27-Feb | 22-Feb | 18-Mar |            |            |
| Edmond (037)     |        |        | 0.058  | 0.057  | 0.053  | 0.051  | 0.080      | 0.070      |
| 0.082            | 0.078  | 0.082  | 22-Feb | 18-Mar | 10-Mar | 8-Mar  |            |            |
| OKC (033)        |        |        | 0.055  | 0.055  | 0.049  | 0.047  | 0.079      | 0.069      |
| 0.078            | 0.080  | 0.080  | 22-Feb | 18-Mar | 10-Mar | 18-Feb |            |            |
| Moore (049)      |        |        | 0.058  | 0.053  | 0.050  | 0.048  | 0.076      | 0.066      |
| 0.079            | 0.075  | 0.076  | 22-Feb | 18-Mar | 18-Feb | 19-Feb |            |            |
| Goldsby (073)    |        |        | 0.051  | 0.049  | 0.048  | 0.047  | 0.078      | 0.067      |
| 0.080            | 0.078  | 0.077  | 18-Feb | 8-Mar  | 18-Mar | 7-Mar  |            |            |
| Choctaw (096)    |        |        | 0.064  | 0.055  | 0.055  | 0.052  | 0.073      | 0.069      |
| 0.063            | 0.078  | 0.078  | 22-Feb | 18-Feb | 18-Mar | 19-Feb |            |            |
| Yukon (101)      |        |        | 0.057  | 0.053  | 0.049  | 0.049  | 0.072      | 0.068      |
| 0.058            | 0.081  | 0.078  | 22-Feb | 18-Feb | 8-Mar  | 18-Mar |            |            |
| Lawton (647)     |        |        | 0.056  | 0.056  | 0.053  | 0.052  | 0.077      | 0.068      |
| 0.078            | 0.076  | 0.078  | 22-Feb | 18-Mar | 10-Mar | 18-Feb |            |            |
| McAlester (415)  |        |        | 0.056  | 0.055  | 0.054  | 0.054  |            | 0.068      |
| (new)            | 0.076  | 0.076  | 19-Feb | 17-Mar | 22-Feb | 27-Feb |            |            |
| Seiling (860)    |        |        | 0.056  | 0.053  | 0.052  | 0.052  |            | 0.066      |
| (new)            | 0.069  | 0.077  | 18-Mar | 10-Mar | 27-Feb | 17-Mar |            |            |

\*0.085 or greater indicates exceedance of the proposed NAAQS

## **II. Stakeholder Involvement**

EAC Technical Advisory Committee and Public Meetings were held in Oklahoma City on January 22, 2004, and in Tulsa on March 16, 2004.

Agendas and applicable meeting notes are attached.

## **Agenda**

**Oklahoma Early Action Compacts  
Technical Advisory Committee and Public Meeting  
10 A. M. Thursday, January 22, 2004**

**Department of Environmental Quality  
707 North Robinson – 1<sup>st</sup> Floor Meeting Room  
Oklahoma City, Oklahoma**

- |                                                                                                                                                                                                                                      |                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>1. Welcome</b>                                                                                                                                                                                                                    | <b>DEQ</b>                 |
| <b>2. 1999 Modeling Sensitivity Results *</b><br><b>2002 and 2007 RRF Results</b><br><b>2007 Ozone Source Apportionment Results</b><br><b>2007 Controls and Sensitivity Results</b><br><b>Boundary Condition Sensitivity Results</b> | <b>ENVIRON</b>             |
| <b>3. Federal Perspective</b>                                                                                                                                                                                                        | <b>EPA Region 6</b>        |
| <b>4. Comments from Committee</b>                                                                                                                                                                                                    | <b>Technical Committee</b> |
| <b>5. Comments from Public</b>                                                                                                                                                                                                       | <b>Public</b>              |
| <b>6. Next Steps/Recommendations</b>                                                                                                                                                                                                 | <b>Committee</b>           |

**Adjourn**

**\*Background materials found at [www.deq.state.ok.us/AQDNew/EACreport.htm](http://www.deq.state.ok.us/AQDNew/EACreport.htm)**

**Early Action Compact  
Technical Advisory Committee and Public Meeting  
Thursday, January 22, 2004, 10:00 AM**

**Department of Environmental Quality  
707 North Robinson – 1<sup>st</sup> Floor Meeting Room  
Oklahoma City, Oklahoma**

An Oklahoma Early Action Compact Technical Advisory and Public Meeting was held at 10:00 am on January 22, 2004 at the 1<sup>st</sup> floor Oklahoma City Department of Environmental Quality Meeting Room, 707 North Robinson, Oklahoma City, Oklahoma.

Present for the meeting:

**Technical Advisory Committee Members:**

Steve Moyer, Sinclair Oil Corporation, Primary  
David Branecky, OG&E Energy, Alternate  
Nancy Graham, INCOG, Primary  
Leon Ashford, DEQ  
Erik Snider, EPA Region 6  
Doug Rex, ACOG  
Gary Collins, Terry Industries, General Industry, Primary

**Public:**

Ralph Morris, ENVIRON  
Kit Wagner, Atmospheric Information Systems  
Stuart Chai, City of OKC  
Kim Kohler, OIPA  
Jane Sutter, ACOG  
Paul W. Matthews, Oklahoma Highway Users  
Zach Taylor, ACOG  
Josie Adams, ACOG  
Tim Armer, INCOG  
Sam Shehab, ODOT  
Larry Hopper, COTPA

**DEQ Staff:**

Eddie Terrill  
Scott Thomas  
Beverly Botchlet-Smith  
Kendal Cody  
Morris Moffett  
Matt Paque  
Toni Payne  
Lee Warden  
Myrna Bruce  
Julia McWhirter

Sign-in sheet is attached.

**Meeting Summary**

Eddie Terrill welcomed everyone to the Early Action Compact Technical Advisory Committee (TAC) and Public Meeting for Oklahoma City and Tulsa. He stated DEQ appreciates everyone coming; he felt we needed to have this initial meeting in order for Ralph Morris to share with us where we are with modeling. Everyone needs to know exactly where we are, because we are going to have to make some decisions on control strategies both here and in Tulsa by March 31. He also stated that we are committed to having as many meetings as necessary between now and the end of March to make sure everyone is comfortable that we are doing what we need to do in order to meet our requirements and move this process along. He stated that this is an informal meeting relative to asking questions.

Mr. Terrill introduced Ralph Morris, our liaison from ENVIRON.

**Presentations:****Ralph Morris from ENVIRON gave a presentation on the 1999 Base Case Model Performance and Sensitivity Results.**

Environ provided a current status on the modeling effort in support of the EAC agreements. Results documented in the 1999 Base Case Model Performance Evaluation and Sensitivity Report (<http://www.deq.state.ok.us/AQDnew/EACreport.htm>) were presented. In this document, the performance of the base case runs presented at the October meeting were reported and tested with updated boundary conditions provided by Community Multiscale Air Quality (CMAQ) model results from EPA. Broad cut sensitivity analyses were also conducted per the October recommendation of the Technical Advisory Committee to test model sensitivity. The model proved to be sensitive to both VOC and NOx reductions in anthropogenic emissions.

The Environ presentation also provided updates in the modeling effort subsequent to the December report. Included in these updates were corrections to the area source inventory,

revised 1999, 2002 and 2007 base case modeling, 2007 8-hour ozone design value projections and ozone source apportionment.

The preliminary conclusions are that regional NO<sub>x</sub> controls in Oklahoma are the most beneficial, although local NO<sub>x</sub> disbenefits occur in Tulsa and Oklahoma City. Regional VOC controls in Oklahoma are only effective at reducing ozone in and immediately downwind of Tulsa and OKC and mitigate some (but not all) of the NO<sub>x</sub> disbenefits. Effectiveness of Oklahoma emission controls is dampened by contributions of ozone transport.

Erik Snider stated that we will have to show attainment using the 1999 (1998-2000) Design Value (DV) of 93 00b. Nancy Graham stated that they were happy to see they will need to use the highest value of 93 ppm, and that all the controls required for an attainment demonstration should guarantee that Tulsa will remain in attainment for a long time.

Ralph Morris, in response to a question from Doug Rex, about how our model performance rates compared to the other models he has worked with, responded that this model is about average.

**Federal Perspective – with comments from the public: Erik Snider talked with the group and fielded questions about the Federal Perspective.**

- Erik spoke about the Read Vapor Pressure (RVP) and the Clean Air Act (CAA), and the status on the 8-Hour Implementation Plan. He explained that EPA issued source guidance back in 1997 pertaining to Section 211 of the Act. He noted there is a restriction on local areas doing more stringent rules beyond federal measures on fuels. He stated some of the concern is commerce-related, restricting commerce, etc. Typically, areas in non-attainment have been restricted from using RVP.
- Erik discussed the conditions and the waiver request required under CAA Part A, Section 211, that an area must meet to qualify to use as State Implementation Plan (SIP) creditable reductions in the Attainment Demonstration Modeling.

Nancy Graham asked about whether other areas have been granted waivers, and his response was that even some nonattainment areas have been denied a waiver. She also asked if the fact that we have a very short timeline to get reductions would qualify us to obtain a waiver. Erik's response was - possibly, then pointed out that we could do the low RVP voluntarily and count it as our 3% voluntary control measure.

- Erik told us that Austin is looking at Inspection and Maintenance (I&M) and energy efficiency measures like Light-Emitting Diode (LED) stoplights for control measures, and NE Texas is looking at voluntary controls on oil and gas production. Doug Rex asked what is the minimum controls we can do, and Erik's response was that EPA has not determined the answer to that question because of the large spectrum of possibilities.
- Eddie Terrill suggested that the most efficient use of our time and modeling effort would be for the DEQ, INCOG, and ACOG to hold some conference calls to determine what controls to model.

- Lee Warden asked if any other EAC areas are showing attainment, and Erik responded that NE Texas is special because they used 1999 met data and 2002 emissions data to show attainment.
- Lee asked how do we show attainment using a Weight of Evidence (WOD) demonstration, and Erik said to start with, you need to show that the 96 ppb 4<sup>th</sup> high in 2000 is an outlier, then develop all of the possible supporting documentation that points to attainment in 2007. He stated that the restriction on WOE is that the future year modeling (2007) must show a 90 ppb or less.
- Nancy Graham asked if we could require a 30% NO<sub>x</sub> reduction on point sources. Steve Moyer clarified that Nancy did not intend to include refineries in the 30% NO<sub>x</sub> reduction. He said that a 30% reduction for them would probably not be possible in the 2005 timeframe. Nancy stated that an Electric Generation representative told her that a 30% reduction of NO<sub>x</sub> would be possible for them. David Branecky stated that a 30% reduction is definitely not possible in the 2005 timeline. Eddie stated that most likely, the electric generation industry will be dealt NO<sub>x</sub> reduction requirements from Clear Skies, or EPA's Interstate Transport Rule, and DEQ does not desire to magnify their problem by requiring reductions in the interim.
- The question was raised as to what entity will control RVP levels, DEQ or Oklahoma Corporation Commission.
- Steve Moyer asked if we could participate in the EAC, but also plan to obtain some controls that would be outside the EAC (controls that may take longer than 2005 to get in place).
- A request was made for Ralph to make a report of emissions (elevated point, low level point, area, biogenic, nonroad mobile, and mobile) by county for the Tulsa MSA.

#### **Next Steps/Recommendations:**

After discussion Eddie Terrill suggested a conference call with DEQ, INCOG, and ACOG within the next week. He stated that we need to get some sense of what we are going to recommend, so DEQ can have something for the Council and the Board

Eddie Terrill thanked everyone for coming and participating. He stated that, again, this meeting was primarily to get Ralph here to give us some idea where we are with the modeling, and have some frank dialogue and discussion.

**Oklahoma Early Action Compact  
Technical Advisory Committee and Public Meeting  
Tulsa Metro Chamber Conference Room  
March 16, 2004 – 10:00 AM  
Two West Second Street  
2<sup>nd</sup> Floor Williams Tower 2  
Downtown Tulsa**

- |                                                            |                  |
|------------------------------------------------------------|------------------|
| <b>1. Welcome</b>                                          | <b>ODEQ</b>      |
| <b>2. Report of Modeling Activities/Strategy Scenarios</b> | <b>ENVIRON</b>   |
| <b>3. Federal Perspective</b>                              | <b>EPA</b>       |
| <b>4. State Perspective</b>                                | <b>ODEQ</b>      |
| <b>4. Comments from TAC</b>                                | <b>Committee</b> |
| <b>5. Comments from Public/COGS</b>                        | <b>All</b>       |
| <b>6. TAC Recommendations</b>                              | <b>Committee</b> |
| <b>7. Next Steps</b>                                       | <b>ODEQ</b>      |

**Early Action Compact  
Technical Advisory Committee and Public Meeting  
Tuesday, March 16, 2004 - 10:00 AM**

**Two West Second Street  
2<sup>nd</sup> Floor Williams Tower 2  
Downtown Tulsa**

An Oklahoma Early Action Compact Technical Advisory and Public Meeting was held at 10:00 am on March 16, 2004 at the Tulsa Metro Chamber Conference Room in the Williams Tower 2 in Tulsa, Oklahoma.

Present for the meeting:

**Technical Advisory Committee Members:**

Leon Ashford, DEQ  
David Branecky, OG&E Energy, Alternate  
Nancy Graham, INCOG, Primary  
Bud Ground, AEP  
Gaylon Pinc, INCOG, Alternate  
Doug Rex, ACOG  
Roger Saunders, ODOT  
Erik Snider, EPA Region 6  
Glenn Travis, Sunoco, Alternate

**Public:**

Isaac Akem, FAWA  
Tim Armer, INCOG  
Marla Benyshek, Conoco  
Angie Burkhalter, OIPA  
Bill Cartwright, Tulsa Transit  
Sarah Frey, Tulsa Chamber of Commerce  
Perry Friedrich, GRDA  
Ben Henneke, Clean Air Action Corporation  
Jerry Lasker, INCOG  
Ralph Morris, ENVIRON  
Don Puch, American Airlines  
Viplav Putta, INCOG  
Ron Sober, RFS Consulting  
Cynthia Staals, Tulsa Transit

**DEQ Staff:**

Eddie Terrill  
Scott Thomas  
Beverly Botchlet-Smith  
Leon Ashford  
Julia McWhirter

Sign-in sheet is attached.

**Meeting Summary**

Beverly Botchlet-Smith, DEQ, welcomed everyone to the meeting and stated that the purpose of this meeting was to see and hear the latest information from ENVIRON. She asked that individuals identify themselves when asking questions. She introduced the first person on the agenda, Ralph Morris from ENVIRON, our modeling contractor.

**Presentation:**

Ralph Morris, ENVIRON, gave a report of Modeling Activities/Strategy Scenarios, and provided handouts of the modeling results table showing projected 2007 8-hour ozone Design Values for various 2007 emission scenarios, using the observed 1998-2000 8-hour ozone Design Values.

Ralph stated this meeting would be used to determine the status of the Oklahoma Early Action modeling and what the modeling tells us in terms of attainment – following EPA guidance. The main goal is to determine exact writing assignments for the contractor, DEQ, and the COGs to ensure the Clean Air Action Plan (CAAP), and Weight of Evidence (WOE) Attainment Demonstration is completed and submitted to EPA by the March 31 deadline.

Ralph also presented a part of the Colorado and New Mexico EAC Modeling Analysis, and results of the University of California at Irvine oil and gas emission sensitivity tests. There were questions/discussion from the TAC and the public.

The ENVIRON presentations are on the DEQ website

**Federal Perspective**

Erik Snider, EPA, talked with the group and fielded questions concerning the Federal Perspective. He stated they are trying to get Phase I of the 8-hour Implementation Plan out by 4/15/04. Modeling guidance will be after the 15<sup>th</sup>, a part of the Phase II Implementation Package. 8-hour modeling guidance will be finalized at that point. At this time, changes do not appear to make a direct difference as far as the Oklahoma City-Tulsa planning.

Erik also gave a perspective on EACs in other areas, what they were doing. All are in pretty much the same timeframe as Oklahoma. He shared where other Regions were in their EAC

modeling. Nancy Graham asked if other areas were meeting standards as we are for future years (except 2007). Eric answered that no other area compares with Oklahoma as far as their monitoring showing attainment but their modeling coming out above. Questions/discussion followed.

### **State Perspective**

Scott Thomas stated that Oklahoma City and Tulsa are in attainment, and that by working together we can meet all the goals to remain so. DEQ plans to make a submittal in March and go forward from there.

### **Next Steps**

Scott Thomas stated that the next steps will be to get together both with the COGS and with Ralph to formulate the Clean Air Action Plan. A brief outline of what it will include is as follows:

- A brief description of entire process
- Formation of the committee.
- Background of the EACs and further identification of where we are in the state as to the standard throughout the state.
- Executive summary of modeling results, which have come out of the modeling analyses.
- Control strategies recommended by the local areas, as well as a description and commitment to the voluntary plans - includes ozone alert, clean cities, everything we have.
- Detailed description of the transportation control plan - COGs will be asked to help with this.
- The last part of the plan will be the description of our commitment, and discussion of our Weight of Evidence, which is an ongoing thing, something we will keep working on throughout the summer months.

Erik Snider suggested that we add local control measures to this.

### **Recommendations**

Nancy Graham requested an additional episode for Tulsa. A discussion ensued concerning this recommendation. Eddie Terrill explained that there was no more funding allocated for additional modeling at this time, and he felt that this group's work was completed. The recommendation was not voted on/accepted.

No recommendations were approved by the Technical Advisory Committee for submission to the Policy Committee at this meeting.

Beverly Smith thanked everyone for coming and stated today's presentations and summary will be on the website.

### III. Modeling Activities and Action Plan

The following section summarizes some of the modeling activities and recommendations for both EACs. Modeling continues to be performed by a contractor, ENVIRON Corporation.

Also, on March 30, 2004, the Oklahoma Department of Environmental Quality, under separate cover, submitted the local Clean Air Plan for both the Central Oklahoma and Tulsa EACs. Enclosed is an acknowledgement of completion of this important milestone from Administrator Greene.

Additional EAC technical information can be found at [www.deq.state.ok.us](http://www.deq.state.ok.us).

At the January 22, 2004 Oklahoma EAC Technical Advisory Committee and Public Meeting, results were presented for a 2007 Base Case simulation based on projected 2007 Base Case emissions that used area and point source emissions from EPA's Heavy Duty Diesel Rulemaking. 2007 on-road and non-road mobile sources were projected using EPA's MOBILE6 and NONROAD model and projected increases in activity. Projected 8-hour ozone Design Values were estimated following EPA's guidance and using five years of observed 8-hour ozone Design Values from 1999 to 2003. Attainment was demonstrated at all monitoring sites but Skiatook monitor in Tulsa. Table 1 below displays the 2007 Base Case projected 8-hour ozone Design Values for the three sites in Oklahoma that recorded violations of the 8-hour ozone standard during 1999-2003, two sites in Tulsa (Skiatook and Tulsa) and one in Oklahoma City (OSDH). When using the observed 1999, 2000, 2002 or 2003 DVs, attainment is projected at all sites in Oklahoma. However, when the 2000 or 2001 DVs are used, the projected Design Value at Skiatook is 88.0 ppb and 85.1 ppb both of which are 85.0 ppb or greater so do not project attainment.

**Table 1.** Projected 2007 8-hour ozone Design Values (DV) in Oklahoma using the EPA Heavy Duty Diesel Rulemaking 2007 Base Case emissions and five years of observed DVs from 1999 to 2003 (attainment demonstrated when project DV is 84.9 ppb or lower)

|           | Tulsa  |         | Skiatook |         | OSDH   |         |
|-----------|--------|---------|----------|---------|--------|---------|
| Year      | Obs DV | 2007 DV | Obs DV   | 2007 DV | Obs DV | 2007 DV |
| 1997-1999 | 86     | 81.9    | 88       | 83.2    | 86     | 82.4    |
| 1998-2000 | 89     | 84.7    | 93       | 88.0    | 84     | 80.5    |
| 1999-2001 | 82     | 78.1    | 90       | 85.1    | 80     | 76.7    |
| 2000-2002 | 81     | 78.1    | 87       | 84.3    | 79     | 77.0    |
| 2001-2003 | 80     | 77.2    | 83       | 80.4    | 79     | 77.0    |

At the January 22, 2004 meeting concerns were expressed over using EPA's 2007 Base Case Heavy Duty Diesel Rulemaking (HDDR) area and point source emissions because they were based on the 1996 NET inventory that was believe to be much poorer quality for emissions in Oklahoma than the 1999 NEI inventory. An analysis of the EPA's 2007 HDDR inventory revealed that the locations and stack parameters for point sources in

Oklahoma that were not Electrical Generating Units (EGUs) were in error. In fact, the locations for many of the non-EGU point sources in Oklahoma were the center of the county. Thus, new projected 2007 Base Case area and point source emissions were generated based on the 1999 NEI inventory.

### Revised 2007 Base Case Modeling Results

Revised 2007 Base Case area and point source emissions were generated by projecting the 1999 NEI inventory to 2007. A CAMx revised 2007 Base Case simulation was conducted and 2007 projected 8-hour ozone Design Values calculated, as shown in Table 2. Using the observed 1998-2000 8-hour ozone Design Values, attainment is not demonstrated at the Tulsa (85.2 ppb) and Skiatook (87.5 ppb). Attainment is demonstrated using all other years of observed Design Values and at all other monitoring sites.

**Table 2.** Projected 2007 8-hour ozone Design Values (DVs) in Oklahoma using the Revised 2007 Base Case emissions and five years of observed DVs from 1999 to 2003 (attainment demonstrated when project DV is 84.9 ppb or lower)

|           | Tulsa  |         | Skiatook |         | OSDH   |         |
|-----------|--------|---------|----------|---------|--------|---------|
| Year      | Obs DV | 2007 DV | Obs DV   | 2007 DV | Obs DV | 2007 DV |
| 1997-1999 | 86     | 82.4    | 88       | 82.8    | 86     | 82.1    |
| 1998-2000 | 89     | 85.2    | 93       | 87.5    | 84     | 80.2    |
| 1999-2001 | 82     | 78.5    | 90       | 84.7    | 80     | 76.4    |
| 2000-2002 | 81     | 78.6    | 87       | 83.9    | 79     | 76.7    |
| 2001-2003 | 80     | 77.7    | 83       | 80.0    | 79     | 76.7    |

### 2007 Control Strategies

Table 3 presents the 2007 projected 8-hour ozone Design Values at the key Tulsa and Skiatook monitors in Tulsa and OSDH monitor in Oklahoma City for the 2007 control strategies analyzed as part of the Tulsa and Oklahoma City Clean Air Action Plans (CAAP). The projected 8-hour ozone Design Values at the Tulsa, Skiatook and OSDH monitors for the Revised 2007 Base Case (Run 0) simulation were 85.2, 87.5 and 80.2 ppb, respectively. When permitted sources whose permits are expiring so will never be built (Run 5) are removed from the 2007 inventory (which becomes a new 2007 Base Case) the projected 8-hour ozone Design Values for the three sites are reduced to 85.0, 87.0 and 80.0 ppb, respectively. Thus, the Tulsa and Skiatook monitors are still estimated to exceed the 8-hour ozone standard under the 2007 Base Case conditions. Most of the remaining control measures reduce the projected 8-hour ozone Design Values by 0.0 to 0.2 ppb. Thus the Control Strategy 17 that combines the transportation control measures, RVP and point source NO<sub>x</sub> controls reduces the 2007 projected 8-hour ozone Design Values at the Tulsa and Skiatook monitors by 0.3 and 0.5 ppb, respectively, to 84.8 and 87.1 ppb thereby demonstrating modeled attainment at the Tulsa but not the Skiatook monitor.

**Table 3.** Projected 2007 8-hour ozone Design Values for various 2007 emission scenarios using the observed 1998-2000 8-hour ozone Design Values.

| No.                             | Scenario                                                      | 2007/2000 8-Hr O <sub>3</sub> DV (ppb) |           |           | Priority |
|---------------------------------|---------------------------------------------------------------|----------------------------------------|-----------|-----------|----------|
|                                 |                                                               | Tulsa                                  | Skiatook  | OSDH      |          |
| <b>Obs</b>                      | <b>1998-2000 Observed 8-Hr O<sub>3</sub> DVs</b>              | <b>89</b>                              | <b>93</b> | <b>84</b> |          |
| 0.                              | Revised 2007 Base Case                                        | 85.2                                   | 87.5      | 80.2      | High     |
| <b>Sensitivity Simulations</b>  |                                                               |                                        |           |           |          |
| 1a.                             | UCI Oil&Gas VOC Sens (High Est)                               |                                        |           |           | Low      |
| 1b.                             | UCI Oil&Gas VOC Sens (Low Est)                                |                                        |           |           | Low      |
| 2.                              | 2007 5% VOC control in Tulsa MSA                              | 85.1                                   | 87.4      | 80.2      | Low      |
| 3.                              | 2007 5% NO <sub>x</sub> control in Tulsa MSA                  | 85.1                                   | 87.1      | 80.2      | Low      |
| 4.                              | 2007 5% VOC&NO <sub>x</sub> control Tulsa MSA                 | 85.0                                   | 87.0      | 80.2      | Low      |
| <b>2007 Emissions Scenarios</b> |                                                               |                                        |           |           |          |
| 5.                              | Remove Expiring Permitted Sources <sup>1</sup>                | 85.0                                   | 87.3      | 80.0      | Med      |
| 6.                              | 7.8 RVP in Tulsa TMA                                          | 84.9                                   | 87.2      | 80.0      | Med      |
| 7.                              | Stage I Controls in Tulsa MSA                                 | 85.0                                   | 87.3      | 80.0      | Med      |
| 8.                              | 7.8 RVP in OKC TMA                                            | 85.0                                   | 87.3      | 79.8      | Low      |
| 9.                              | Stage I in OKC MSA                                            | 85.0                                   | 87.3      | 79.9      | Low      |
| 10.                             | TCMs in OKC TMA <sup>2</sup>                                  | 84.9                                   | 87.2      | 76.3      | Med      |
| 11.                             | 7.8 RVP in TTMA 85% market penetration in on-road/non-road    | 84.9                                   | 87.2      | 80.0      | High     |
| 12.                             | ITS/Transportation Congestion Mitigation in TTMA <sup>3</sup> | 84.9                                   | 87.1      | 80.0      | High     |
| 13.                             | Combined 11. and 12. <sup>2,3</sup>                           | 84.8                                   | 87.1      | 80.0      | High     |
| 14.                             | AEP-PSO Oologah 1 Unit Low NO <sub>x</sub>                    | 85.0                                   | 87.1      | 80.0      | Low      |
| 15.                             | OG&E Muskogee 1 Unit Low NO <sub>x</sub>                      | 84.9                                   | 87.2      | 80.0      | Low      |
| 16.                             | GRDA Chouteau 1 Unit Low NO <sub>x</sub>                      | 85.0                                   | 87.2      | 80.0      | Low      |
| 17.                             | Combine 13.-16.                                               | 84.7                                   | 86.8      | 80.0      | Low      |
| 18.                             | Stage II in Tulsa MSA                                         | 84.9                                   | 87.2      | 80.0      | High     |
| 19.                             | Basic I/M in Tulsa TMA                                        | 84.9                                   | 87.2      | 80.0      | High     |

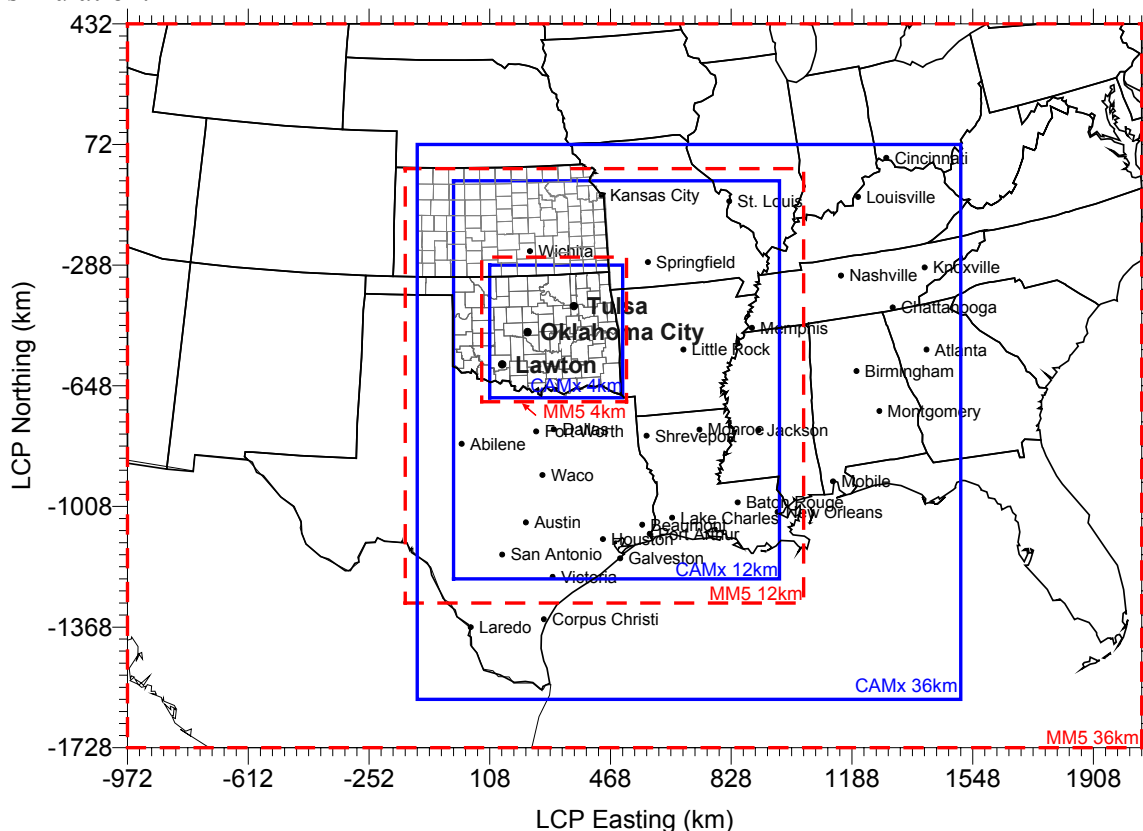
1. Expiring permitted sources will stay removed in all runs from 5. on.
2. Requires link-based TDM output from ACOG.
3. Requires link-based TDM output from INCOG.

### Run 10 Recalculation

DEQ, ACOG, and Environ agree that the results of run 10 are faulty, and will not be used. To calculate the ozone reductions resulting from Transportation Control Measures in the Oklahoma City Metropolitan area, ACOG is calculating the reductions at each link and intersection, and those results will be used to develop the ozone reduction values.

## PROPOSED PROCEDURES FOR UPDATING FUTURE-YEAR BOUNDARY CONDITIONS FOR THE OKLAHOMA 8-HOUR OZONE EAC MODELING

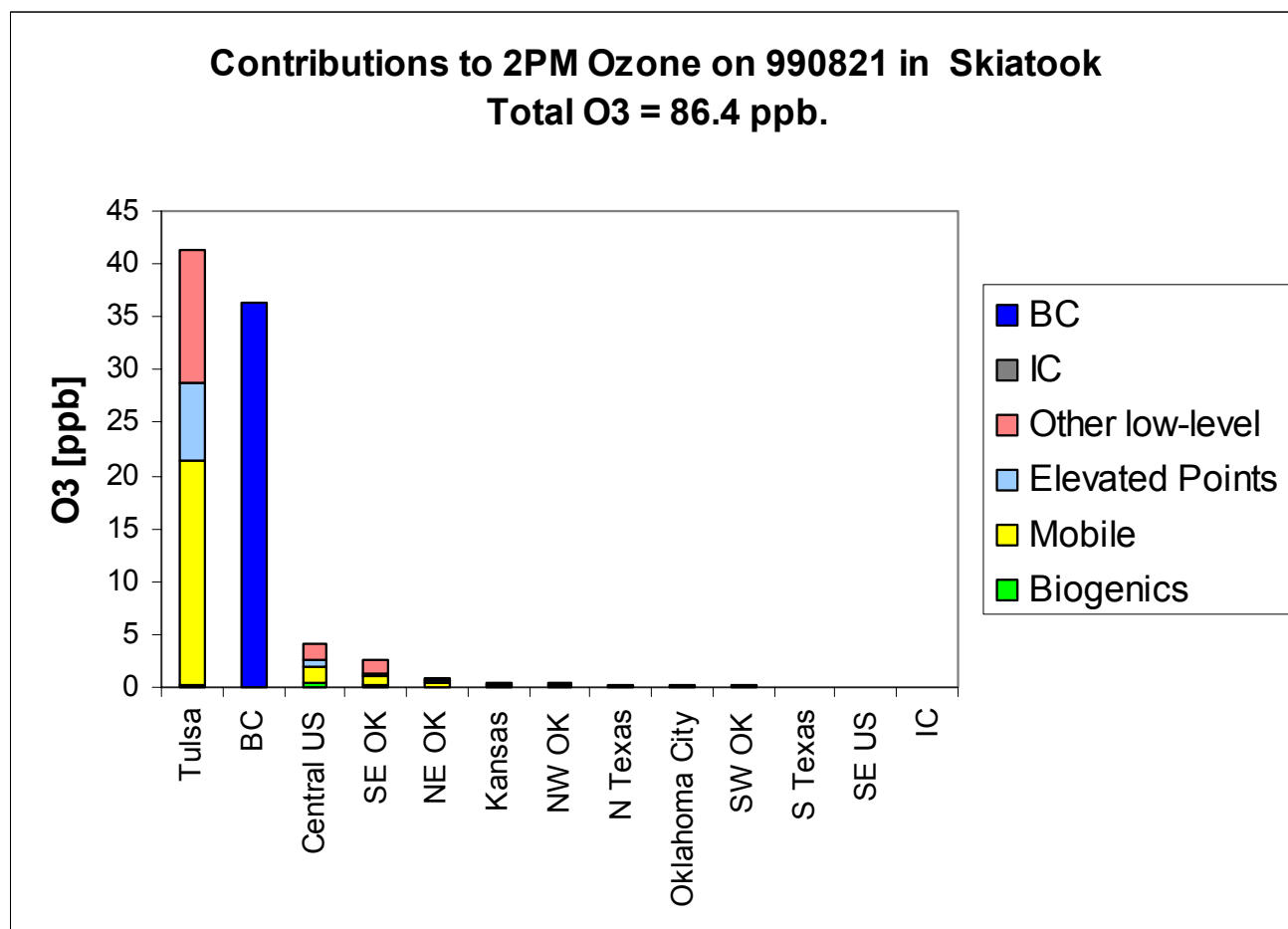
The Oklahoma 8-hour ozone Early Action Compact (EAC) photochemical modeling of the August 13 through September 1, 1999 episode used a 36/12/4 km nested grid structure as shown in Figure 1. Boundary Conditions (BCs) (i.e., the assumed concentrations along the lateral edges of the 36 km grid) were generated using results from an EPA simulation of their Models-3 CMAQ model for an August 1999 Base Case simulation.



**Figure 1.** Original relationship between the MM5 (red) and CAMx (blue) 36/12/4-km modeling domains.

Future-year (2007) modeling was performed by projecting the 1999 emissions to 2007. However since EPA only performed 1999 Base Case modeling using CMAQ for the August 1999 episode, the 2007 BCs for the Oklahoma EAC modeling were kept at 1999 Base Case levels. For the key Skiatook ozone monitor in Tulsa, CAMx ozone source apportionment modeling demonstrated that BCs and emissions from the Tulsa MSA are by far the two highest contributors to elevated 8-hour ozone concentrations. An example of the ozone source apportionment modeling for August 21, 1999 is shown in Figure 2. The use of 1999 Base Case BCs in 2007 will overstate the ozone contribution to BCs in the Tulsa area because several EPA regional emission control rules that EPA has shown to effectively reduce regional ozone concentrations and ozone transport are not being

accounted for. Rules that have already been promulgated include the NO<sub>x</sub> SIP Call, Tier 2/Low Sulfur, Heavy Duty Diesel (HDD) and Land Based Non-Road Engine Rules.



**Figure 2.** Ozone source apportionment modeling results at the Skiatook monitor in Tulsa on August 21, 1999.

The development of more representative 2007 BCs for the Oklahoma EAC modeling has risen in importance. Four possible approaches have been identified:

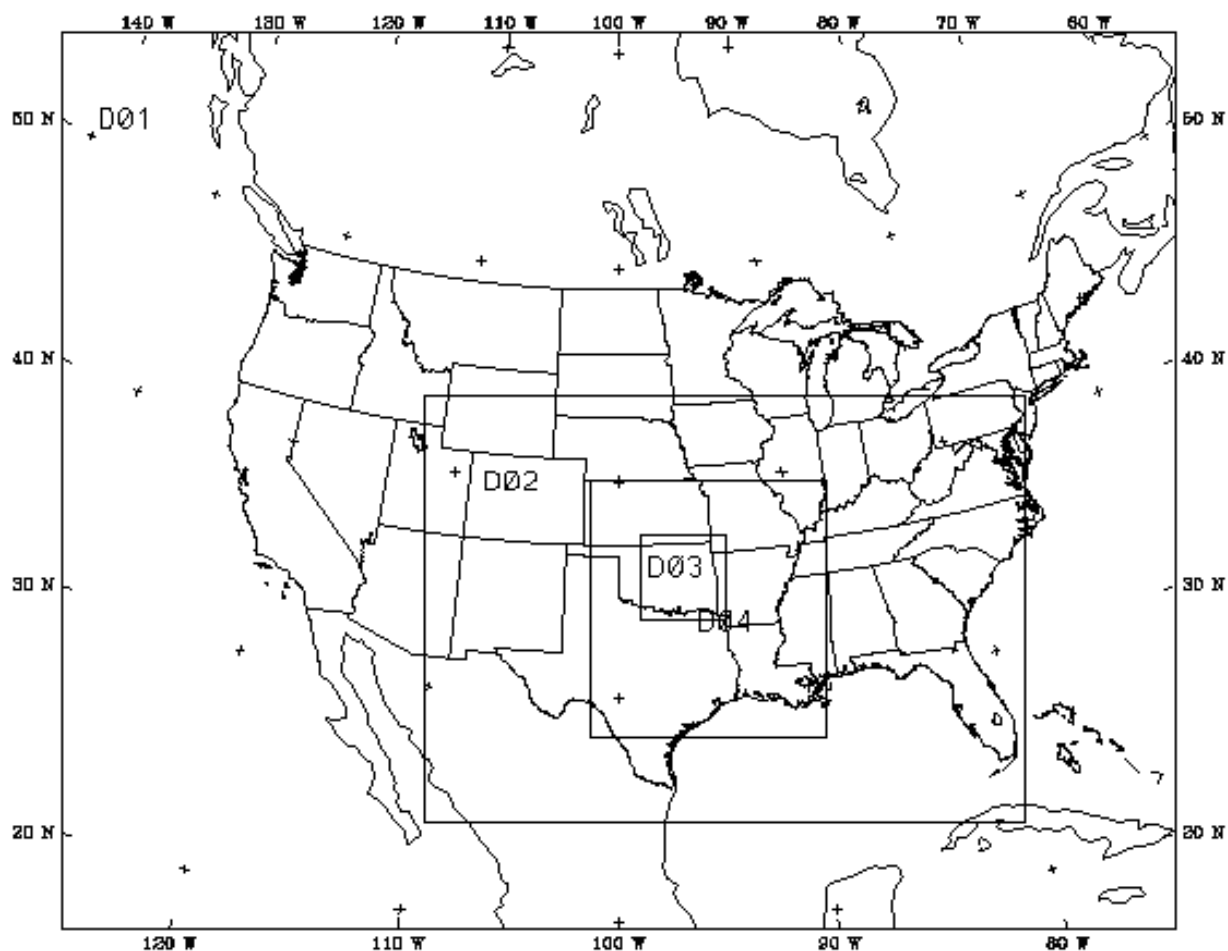
1. Perform CMAQ modeling of 2007 using EPA's August 1999 CMAQ database.
2. Develop BC adjustment factors for August 1999 based on current to future year regional modeling results (e.g., from HDD or IAQR rules or RPO modeling).
3. Extend the current Oklahoma EAC 36 km modeling domain to include the Midwest and Southeast (and other areas that are believed contributing) and develop 1999 and 2007 Base Case emissions inventories for the new areas.

Even if EPA's August 1999 CMAQ databases could be obtained, Option 1 would involve an entirely new emissions modeling activity for a new grid projection and a modeling grid essentially starting from scratch. This would be quite a resource-intensive activity.

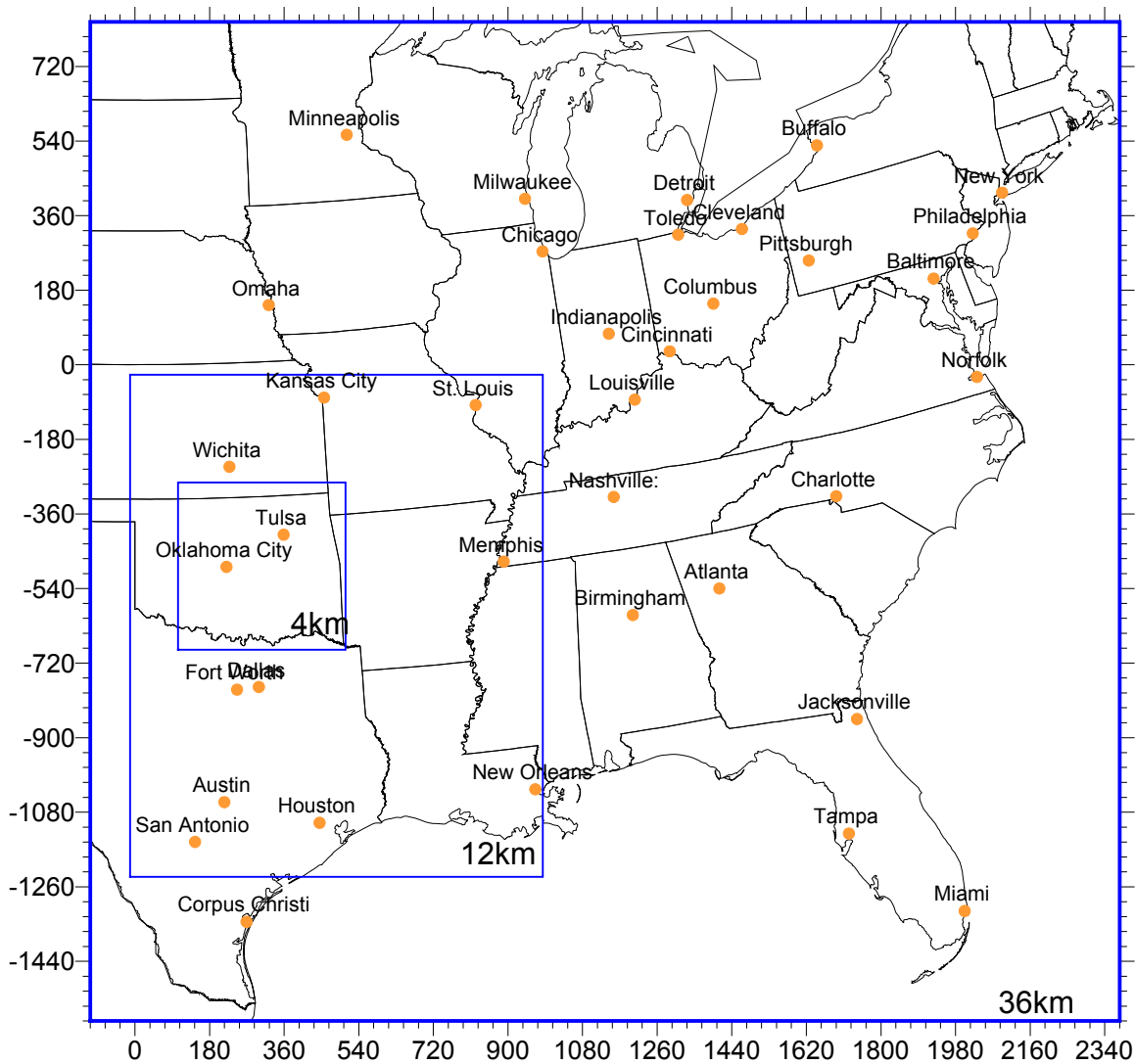
Option 2 has been considered, and discussions with EPA have been held in regards to obtaining some of their current and future year CMAQ modeling output. But arbitrary rules would have to be developed on how to use modeled results from one episode to adjust boundary conditions for another that we believed could be open to criticism.

Thus, it has been recommended that we pursue Option 3 and extend the OK EAC 36 km to include the Midwest and Southeast (and elsewhere as needed) and then develop new 1999 Base Case and 2007 Base Case emission inventories for the new areas and the August 1999 episode. The 1999 Base Case would be based on a standard application using the NEI99 inventory; whereas the 2007 Base Case would be based on the Heavy Duty Diesel Rule 2007 control case emissions inventory. This approach can be pursued provided the MM5 model was exercised for the August 1999 episode over a large enough area to capture the new modeling areas. Figure 3 displays the MM5 modeling domain that more than encompasses the new areas we want to include. The following steps would be involved in this approach:

- Perform ozone source apportionment modeling of the current 36/12/4 km Oklahoma EAC database with seven source categories, the four lateral edges of the BCs (N, S, E and W) along with the aloft BCs plus all anthropogenic and biogenic emissions to identify which lateral BCs contribute the most to elevated ozone in Tulsa.
- Extend the OK EAC 36 km domain to include the new areas. For example, if most of the BC contribution comes from the eastern and northern boundaries then we could push the northern boundary to the top of the US and the eastern boundary to include as far east as New York City.
- Develop emissions for a 1999 Base Case and the new expanded 36 km domain using the NEI99 inventory.
- Run the new 1999 Base Case and perform the model performance evaluation to assure that model performance is acceptable.
- Develop emissions for a 2007 Base Case and the new expanded 36 km domain using the 2007 Control Scenario from the EPA Heavy Duty Diesel Rulemaking.
- Run the 2007 Base Case and perform Design Value projections using the 1998-2000 observed Design Values and the new 1999 and 2007 Base Case simulation.
- Perform additional control strategy simulations as desired.



**Figure 3.** MM5 domain configuration (108/36/12/4-km) for the August 1999 Oklahoma episode.



### CAMx Modeling Domain for ODEQ

|             | nx x ny    | SW to NE Corners             |
|-------------|------------|------------------------------|
| — CAMx 36km | 69 x 67    | (-108, -1584) to (2376, 828) |
| — CAMx 12km | 83 x 101*  | ( -12, -1236) to ( 984, -24) |
| — CAMx 04km | 101 x 101* | ( 104, -688) to ( 508, -284) |

\* includes buffer cells

**Figure 4.** Revised CAMx domain to reduce North and East boundary condition influence.

## V. Future SIP Development

The Oklahoma Department of Environmental Quality (ODEQ), the Association of Central Oklahoma Governments (ACOG), and the Indian Nations Council of Governments (INCOG) have identified strategies that will reduce transportation-related emissions by improving traffic flow and reducing congestion in both Early Action Compact areas. These Transportation Control Measures (TCMs) will include: intersection improvement projects, signal improvements, and signal coordination efforts. These strategies will concentrate on TCMs that are currently programmed at the state (STIP), regional (TIP), and/or local (CIP) level.

ODEQ plans on entering into Memorandums of Agreement (MOAs) that can be incorporated into the Oklahoma SIP with both ACOG and INCOG. The MOAs will assure that the TCMs are implemented and that emission reductions are achieved. Under the MOAs, ACOG and INCOG shall oversee the implementation of all cited TCMs.

Pursuant to 40 CFR § 51.102, and prior to final adoption and submission of the MOAs, ODEQ plans to hold public hearings on the MOAs. These hearings are to be scheduled in the fall of 2004. Subsequent formal SIP submittals are planned prior to the December 31, 2004 deadline.

Transportation Control Measures  
For the Central Oklahoma  
And Tulsa Early Action Compacts

# ACOG Transportation Control Measures

Table 1:

## Early Action Compact

### Clean Air Action Plan Emission Reduction Strategy:

### OCARTS area Transportation Control Measure (TCM) Commitments

Intersection Improvement, Signal Modification/ Interconnect and Continuous Left Turn Lanes

| Agency       | Project Name            | From                       | To                      | Project Description        | Commitment Year (FY) |
|--------------|-------------------------|----------------------------|-------------------------|----------------------------|----------------------|
| Del City     | SE 29 <sup>th</sup> St. | @ Sooner Rd.               |                         | Signal Modification        | 2004                 |
| Del City     | SE 29 <sup>th</sup> St. | @ Bryant Ave.              |                         | Signal Modification        | 2004                 |
| Del City     | SE 15 <sup>th</sup> St. | Vickie Dr.                 | Sooner Rd.              | Continuous Left Turn Lane  | 2005                 |
| Del City     | SE 29 <sup>th</sup> St. | Bryant Ave.                | Sooner Rd.              | Signal Interconnect        | 2005                 |
| Edmond       | Kelly Ave.              | @ 7 <sup>th</sup> St.      |                         | Intersection Improvement   | 2004                 |
| Edmond       | 2 <sup>nd</sup> St.     | @ Vista Lane               |                         | Intersection Improvement   | 2004                 |
| Edmond       | 2 <sup>nd</sup> St.     | @ Bradbury Dr.             |                         | Intersection Improvement   | 2004                 |
| Edmond       | Danforth Rd             | @ Coltrane Rd.             |                         | Intersection Improvement   | 2004                 |
| Edmond       | 15 <sup>th</sup> St.    | @ Edgewood Dr.             |                         | Signal Modification        | 2004                 |
| Edmond       | 15 <sup>th</sup> St.    | @ Pine Oak                 |                         | Signal Modification        | 2004                 |
| Edmond       | Kelly Ave.              | @ 33 <sup>rd</sup> St.     |                         | Signal Modification        | 2004                 |
| Edmond       | Kelly Ave.              | @ 15 <sup>th</sup> St.     |                         | Signal Modification        | 2004                 |
| Edmond       | 15 <sup>th</sup> St.    | @ Boulevard                |                         | Signal Modification        | 2004                 |
| Edmond       | 2 <sup>nd</sup> St.     | @ Bauman Ave.              |                         | Signal Modification        | 2004                 |
| Edmond       | 2 <sup>nd</sup> St.     | @ University Dr.           |                         | Signal Modification        | 2004                 |
| Edmond       | 2 <sup>nd</sup> St.     | @ Walmart entrance         |                         | Signal Modification        | 2004                 |
| Edmond       | 33 <sup>rd</sup> St.    | @ Edmond Crossing          |                         | Signal Modification        | 2004                 |
| Edmond       | Danforth Rd.            | @ Boulevard                |                         | Signal Modification        | 2004                 |
| Edmond       | Danforth Rd.            | @ Chowning Ave.            |                         | Signal Modification        | 2004                 |
| Edmond       | Danforth Rd             | @ Fretz Ave.               |                         | Signal Modification        | 2004                 |
| Edmond       | Edmond Rd.              | @ Santa Fe Ave.            |                         | Signal Modification        | 2004                 |
| Edmond       | Danforth Rd.            | @ Blackwelder              |                         | Signal Modification        | 2004                 |
| Edmond       | 15 <sup>th</sup> St.    | @ Rankin St.               |                         | Signal Modification        | 2004                 |
| Edmond       | Boulevard               | @ Covell Rd.               |                         | Intersection Improvement   | 2005                 |
| Edmond       | 33 <sup>rd</sup> St.    | @ Lincoln Ave.             |                         | Intersection Improvement   | 2005                 |
| El Reno      | US-66                   | @ 27 <sup>th</sup> St.     |                         | Signal Modification        | 2004                 |
| Midwest City | Douglas Ave.            | SE 29 <sup>th</sup> St.    | SE 15 <sup>th</sup> St. | Continuous Left Turn Lane  | 2003                 |
| Midwest City | NE 10 <sup>th</sup> St. | @ Air Depot Blvd           |                         | Intersection Improvement   | 2004                 |
| Midwest City | NE 10 <sup>th</sup> St. | @ Midwest Blvd.            |                         | Intersection Improvement   | 2004                 |
| Moore        | SW 19 <sup>th</sup> St. | @ Santa Fe Ave.            |                         | Intersection Improvement   | 2003                 |
| Moore        | SW 19 <sup>th</sup> St. | @ Telephone Rd.            |                         | Intersection Improvement   | 2003                 |
| Moore        | Telephone Rd.           | @ S. 4 <sup>th</sup> St.   |                         | Intersection Improvement   | 2004                 |
| Moore        | Telephone Rd.           | @ S. 17 <sup>th</sup> St.  |                         | Intersection Improvement   | 2004                 |
| Moore        | SE 19 <sup>th</sup> St. | @ Eastern Ave.             |                         | Intersection Improvement   | 2004                 |
| Moore        | Eastern Ave.            | @ Moore H.S.               |                         | Signal Modification        | 2005                 |
| Moore        | SW 4 <sup>th</sup> St.  | @ Classen Ave.             |                         | Signal Modification        | 2005                 |
| Moore        | SW 4 <sup>th</sup> St.  | @ Wilson St.               |                         | Signal Modification        | 2005                 |
| Norman       | Robinson Ave.           | @ 48 <sup>th</sup> Ave. NW |                         | Intersection Improvement   | 2003                 |
| Norman       | Robinson Ave.           | @ Brookhaven Blvd.         |                         | Intersection Improvement   | 2003                 |
| Norman       | Porter Ave.             | @ Robinson Ave.            |                         | Intersection Improvement   | 2003                 |
| Norman       | Porter Ave.             | @ Rock Creek Rd.           |                         | Intersection Improvement   | 2003                 |
| Norman       | Gray St.                | Flood Rd.                  | Porter Ave.             | Signal Mod. / Interconnect | 2003                 |

Table 1: Intersection Improvement, Signal Modification/ Interconnect  
and Continuous Left Turn Lanes (cont.)

| Agency        | Project Name             | From                       | To        | Project Description        | Commitment Year (FY) |
|---------------|--------------------------|----------------------------|-----------|----------------------------|----------------------|
| Norman        | Jenkins Ave.             | @ Imhoff Rd.               |           | Intersection Improvement   | 2004                 |
| Norman        | 24 <sup>th</sup> Ave. SW | @ SH-9                     |           | Intersection Improvement   | 2004                 |
| Norman        | Robinson Ave.            | @ Woods Ave.               |           | Signal Modification        | 2004                 |
| Norman        | Robinson Ave.            | @ Crossroads Ct.           |           | Signal Modification        | 2004                 |
| Norman        | Boyd St.                 | @ Flood Ave.               |           | Intersection Improvement   | 2005                 |
| Norman        | Jenkins Ave.             | @ Imhoff Rd.               |           | Intersection Improvement   | 2005                 |
| Norman        | 24 <sup>th</sup> Ave. SW | @ SH-9                     |           | Intersection Improvement   | 2005                 |
| Norman        | Boyd St.                 | @ Flood Ave.               |           | Intersection Improvement   | 2005                 |
| Norman        | US-77                    | @ Cedar Lane               |           | Intersection Improvement   | 2005                 |
| Norman        | 36 <sup>th</sup> NW Ave. | @ Rock Creek Rd            |           | Signal Modification        | 2005                 |
| ODOT          | I-35                     | @ SH-9                     |           | Interchange Modification   | 2004                 |
| ODOT          | I-35                     | @ I-240                    |           | Interchange Reconstruction | 2004                 |
| ODOT          | SH-9                     | @ Berry Rd.                |           | Intersection Improvement   | 2004                 |
| ODOT          | SH-130                   | @ US-62                    |           | Intersection Improvement   | 2004                 |
| Oklahoma City | Eastern Ave.             | @ SE 44 <sup>th</sup> St.  |           | Intersection Improvement   | 2003                 |
| Oklahoma City | Eastern Ave.             | @ SE 59 <sup>th</sup> St.  |           | Intersection Improvement   | 2003                 |
| Oklahoma City | Meridian Ave.            | SW 29 <sup>th</sup> St.    | Reno Ave. | Continuous Left Turn Lane  | 2004                 |
| Oklahoma City | Eastern Ave.             | @ SE 59 <sup>th</sup> St.  |           | Intersection Improvement   | 2004                 |
| Oklahoma City | Eastern Ave.             | @ I-240                    |           | Intersection Improvement   | 2004                 |
| Oklahoma City | Meridian Ave.            | @ SW 29 <sup>th</sup> St.  |           | Intersection Improvement   | 2004                 |
| Oklahoma City | Meridian Ave.            | @ SW 15 St.                |           | Intersection Improvement   | 2004                 |
| Oklahoma City | Meridian Ave.            | @ Reno                     |           | Intersection Improvement   | 2004                 |
| Oklahoma City | MacArthur                | @ 104 <sup>th</sup> St.    |           | Intersection Improvement   | 2004                 |
| Oklahoma City | MacArthur                | @ SH-152                   |           | Intersection Improvement   | 2004                 |
| Oklahoma City | SW 54 <sup>th</sup> St.  | @ MacArthur Ave.           |           | Intersection Improvement   | 2005                 |
| Oklahoma City | SW 54 <sup>th</sup> St.  | @ Portland Ave.            |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Drexel Blvd.             | @ NW 23 <sup>rd</sup> St.  |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Lake Hefner Pkwy         | @ NW 122 <sup>nd</sup> St. |           | Intersection Improvement   | 2005                 |
| Oklahoma City | NW 150 <sup>th</sup> St. | @ Penn Ave.                |           | Intersection Improvement   | 2005                 |
| Oklahoma City | NW 150 <sup>th</sup> St. | @ Western Ave.             |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Sooner Rd.               | @ I-240                    |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Lincoln Ave.             | NW 4 <sup>th</sup> St.     |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Tulsa Ave.               | @ NW 50 <sup>th</sup> St.  |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Tulsa Ave.               | @ NW 10 <sup>th</sup> St.  |           | Intersection Improvement   | 2005                 |
| Oklahoma City | May Ave.                 | @ NW 10 <sup>th</sup> St.  |           | Intersection Improvement   | 2005                 |
| Oklahoma City | Rockwell Ave.            | @ Reno Ave.                |           | Signal Modification        | 2005                 |
| Oklahoma City | Santa Fe Ave.            | @ Kilpatrick Turnpike      |           | Signal Modification        | 2005                 |
| Oklahoma City | Council Rd.              | @ Riverbend Dr.            |           | Signal Modification        | 2005                 |
| Oklahoma City | Southwestern             | @ SW 66 <sup>th</sup> St.  |           | Signal Modification        | 2005                 |
| Warr Acres    | MacArthur Blvd.          | @ NW 50 <sup>th</sup> St.  |           | Intersection Improvement   | 2004                 |
| Warr Acres    | MacArthur Blvd.          | @ NW 63 <sup>rd</sup> St.  |           | Intersection Improvement   | 2004                 |
| Warr Acres    | MacArthur Blvd.          | @ NW 36 <sup>th</sup> St.  |           | Intersection Improvement   | 2004                 |

# INCOG Transportation Control Measures

Table #2 - 2025 Mobility Plan Roadway Improvements

## (2025) Planned Roadway Improvements

| Expressways            |                                                       | Existing or Committed Lanes | Proposed Lanes |
|------------------------|-------------------------------------------------------|-----------------------------|----------------|
| Gilcrease Expressway   | I-44 To Edison                                        | New                         | 4 Lanes        |
| Gilcrease Expressway   | Edison To Tisdale/Osage Expressway                    | New                         | 2 Lanes        |
| I-44                   | I-44/I-244 Junction To New Creek East Turnpike        | 4 Lanes                     | 6 Lanes        |
| I-44                   | I-244 To Yale Ave                                     | 4 Lanes                     | 6 Lanes        |
| MV Expressway (US 169) | I-244 To 86 <sup>th</sup> Street N                    | 4 Lanes                     | 6 Lanes        |
| MV Expressway (US 169) | 91st Street S To Memorial Dr.                         | 4 Lanes                     | 6 Lanes        |
| US-75 S.               | I-44 To SH-117 (121 <sup>st</sup> Street S)           | 4 Lanes                     | 6 Lanes        |
| US-75 N.               | SH-11 (Gilcrease Expway) To 86 <sup>th</sup> Street N | 4 Lanes                     | 6 Lanes        |
| BA Expressway          | I-44 To 161 <sup>st</sup> E Ave                       | 6 Lanes                     | 8 Lanes        |
| BA Expressway          | 193rd E Ave To Muskogee Turnpike                      | 4 Lanes                     | 6 Lanes        |
| US-169 S               | I-244 To 71 <sup>st</sup> St S                        | 6 Lanes                     | 8 Lanes        |
| Osage/Tisdale Expway   | 36th Street North To S.H. 20                          | New                         | 2 Lanes        |

| Arterials                                 |                                                            | Existing Or Committed Lanes | Proposed Lanes |
|-------------------------------------------|------------------------------------------------------------|-----------------------------|----------------|
| S.H. 20                                   | S.H. 97/Lake Rd To Lennapah (Skiatook)                     | 2 Lanes                     | 4 Lanes        |
| S.H. 266                                  | SH-167 To I-44 & New Will Rogers Tpk Entrance              | 2 Lanes                     | 4 Lanes        |
| S.H. 266 (Port Road)                      | E 36 <sup>th</sup> St N. To Gilcrease Expressway (S.H. 11) | 2 Lanes                     | 4 Lanes        |
| S.H. 266 (Port Road)                      | US 169 N. To Tulsa-Port Of Catoosa                         | 2 Lanes                     | 4 Lanes        |
| S.H. 167                                  | I-44 / US-412 To S.H. 266                                  | 2 Lanes                     | 4 Lanes        |
| S.H. 67 (151 <sup>st</sup> Street S)      | ½ Mi. E Of US 75A To US 75 S                               | 2 Lanes                     | 4 Lanes        |
| S.H. 97                                   | 103 <sup>rd</sup> Street North To Existing SH-97           | New                         | 2 Lanes        |
| S.H. 72                                   | SH-51 To 151 <sup>st</sup> Street South                    | 2 Lanes                     | 4 Lanes        |
| Admiral                                   | Garnett To 193 <sup>rd</sup> E Ave                         | 2 Lanes                     | 4 Lanes        |
| 11 <sup>th</sup> Street                   | I-44 To 145 <sup>th</sup> E Ave                            | 2 Lanes                     | 4 Lanes        |
| E 31 <sup>st</sup> Street South           | S Garnett Road To S 145 <sup>th</sup> E Ave                | 2 Lanes                     | 5 Lanes        |
| E 41 <sup>st</sup> Street South           | S Garnett Road To S 145 <sup>th</sup> E Ave                | 2 Lanes                     | 5 Lanes        |
| E 51 <sup>st</sup> Street South           | S 129 <sup>th</sup> E Ave To S 145 <sup>th</sup> E Ave     | 2 Lanes                     | 5 Lanes        |
| E 61 <sup>st</sup> Street South           | Riverside Parkway To South Harvard Ave                     | 2 Lanes                     | 4 Lanes        |
| E 61 <sup>st</sup> Street South           | US-169 S To 161 <sup>st</sup> E Avenue                     | 2 Lanes                     | 5 Lanes        |
| E 61 <sup>st</sup> Street South           | 161 <sup>st</sup> E Ave To 177 <sup>th</sup> E Ave         | New                         | 2 Lanes        |
| E 61 <sup>st</sup> Street South (Albany)  | 177 <sup>th</sup> E Avenue To 193 <sup>rd</sup> E Avenue   | 2 Lanes                     | 4 Lanes        |
| S Memorial Drive                          | I-44 To SH-67 (151 <sup>st</sup> St S)                     | 4 Lanes                     | 6 Lanes        |
| Us-64/S Memorial                          | E 161 <sup>st</sup> St S To S Mingo Road                   | 2 Lanes                     | 4 Lanes        |
| E Pine Street                             | Gilcrease Expway To US-169 N.                              | 2 Lanes                     | 5 Lanes        |
| E 66 <sup>th</sup> Street North           | US-75 To Lakewood Avenue                                   | 2 Lanes                     | 4 Lanes        |
| E 76 <sup>th</sup> Street North           | Sheridan To Main Street In Owasso                          | 2 Lanes                     | 4 Lanes        |
| E 76 <sup>th</sup> Street North           | US-169 To 129 <sup>th</sup> Street In Owasso               | 2 Lanes                     | 4 Lanes        |
| E 86 <sup>th</sup> Street North           | US 75 N To N 145 <sup>th</sup> E Avenue                    | 2 Lanes                     | 4 Lanes        |
| E 96 <sup>th</sup> Street North           | Garnett Road To 129 <sup>th</sup> E Ave                    | 2 Lanes                     | 4 Lanes        |
| 116 <sup>th</sup> Street North            | Garnett To US-169 N                                        | 2 Lanes                     | 4 Lanes        |
| N Sheridan                                | Apache To 36 <sup>th</sup> Street N                        | 2 Lanes                     | 4 Lanes        |
| N Yale Ave                                | E Pine Street To E Apache Street                           | 2 Lanes                     | 4 Lanes        |
| N Yale Ave                                | 66 <sup>th</sup> St North To 76 <sup>th</sup> St North     | 2 Lanes                     | 4 Lanes        |
| N Garnett Road                            | 86 <sup>th</sup> Street N To 116 <sup>th</sup> Street N    | 2 Lanes                     | 4 Lanes        |
| 129 <sup>th</sup> E Ave                   | 76 <sup>th</sup> Street N To 106 <sup>th</sup> Street N    | 2 Lanes                     | 4 Lanes        |
| E 81 <sup>st</sup> Street South           | ¼ Mi. E Of S Lewis Ave To SH-51 (Broken Arrow)             | 2 Lanes                     | 5 Lanes        |
| E 81 <sup>st</sup> Street South (Houston) | 209 <sup>th</sup> E Avenue To 225 <sup>th</sup> E Avenue   | 2 Lanes                     | 4 Lanes        |
| E 91 <sup>st</sup> Street South           | Delaware To Mingo Road                                     | 2 Lanes                     | 5 Lanes        |
| E 91 <sup>st</sup> St S (Washington St.)  | US-169 S To S 193 <sup>rd</sup> E Ave                      | 2 Lanes                     | 4 Lanes        |

| Arterials                                                 |                                                                     | Existing Or Committed Lanes | Proposed Lanes |
|-----------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|----------------|
| E 101 <sup>st</sup> St South                              | Riverside Dr To SH-51                                               | 2 Lanes                     | 4 Lanes        |
| E 121 <sup>st</sup> St South                              | Riverside Drive To 193 <sup>rd</sup> E Ave                          | 2 Lanes                     | 4 Lanes        |
| W 46 <sup>th</sup> Street North                           | Cincinnati Ave To Proposed Osage Expway                             | 2 Lanes                     | 4 Lanes        |
| W Pine Street                                             | Union Ave To 25 <sup>th</sup> W Ave/Gilcrease Museum Rd             | 2 Lanes                     | 4 Lanes        |
| W 71 <sup>st</sup> Street                                 | 33 <sup>rd</sup> W Ave To Union                                     | 2 Lanes                     | 4 Lanes        |
| W 61 <sup>st</sup> Street                                 | US-75 S To 49 <sup>th</sup> W Ave                                   | 2 Lanes                     | 4 Lanes        |
| Lakewood Ave                                              | 66 <sup>th</sup> Street North To 76 <sup>th</sup> Street North      | 2 Lanes                     | 4 Lanes        |
| 25 <sup>th</sup> W Ave/Gilcrease Museum Rd                | W Edison St To W Pine St                                            | 2 Lanes                     | 4 Lanes        |
| 33 <sup>rd</sup> W Ave                                    | 61 <sup>st</sup> Street S To 71 <sup>st</sup> Street S              | 2 Lanes                     | 4 Lanes        |
| 49 <sup>th</sup> W Ave                                    | West Edison Street To Pine Street                                   | 2 Lanes                     | 4 Lanes        |
| 49 <sup>th</sup> W Ave                                    | 61 <sup>st</sup> Street S To I-44                                   | 2 Lanes                     | 4 Lanes        |
| W 81 <sup>st</sup> Street                                 | 49 <sup>th</sup> W Ave To SH-66                                     | 2 Lanes                     | 4 Lanes        |
| W 96 <sup>th</sup> Street South                           | Riverside Parkway To US 75 S                                        | 2 Lanes                     | 4 Lanes        |
| W 141 <sup>st</sup> Street South                          | US-75 S To South Peoria Avenue                                      | 2 Lanes                     | 4 Lanes        |
| W 71 <sup>st</sup> St South                               | US 75 S To Riverside Parkway                                        | 4 Lanes                     | 6 Lanes        |
| W 71 <sup>st</sup> St South                               | S Union To US-75 S                                                  | 2 Lanes                     | 4 Lanes        |
| S Union Ave                                               | I-44 To West 71 <sup>st</sup> Street South                          | 2 Lanes                     | 4 Lanes        |
| Lake Road (Osage County)                                  | SH-20 To Lake Road At 126 <sup>th</sup> St N                        | New                         | 2 Lanes        |
| S Peoria Ave                                              | Creek Turnpike To W 131 <sup>st</sup> St South                      | 2 Lanes                     | 5 Lanes        |
| S Peoria Ave                                              | 61 <sup>st</sup> Street South To Riverside Drive                    | 2 Lanes                     | 4 Lanes        |
| S Delaware Ave                                            | E 81 <sup>st</sup> Street South To E 91 <sup>st</sup> Street South  | 2 Lanes                     | 4 Lanes        |
| S Harvard Ave                                             | E 61 <sup>st</sup> Street South To E 91 <sup>st</sup> Street South  | 2 Lanes                     | 4 Lanes        |
| S Yale Ave                                                | Creek Expressway To 121 <sup>st</sup> Street South                  | 2 Lanes                     | 4 Lanes        |
| S Yale Ave                                                | E 61 <sup>st</sup> Street S To E 71 <sup>st</sup> St S              | 2 Lanes                     | 6 Lanes        |
| S Yale Ave                                                | E 81 <sup>st</sup> Street S To Creek Expressway                     | 2 Lanes                     | 6 Lanes        |
| S Sheridan Road                                           | E 81 <sup>st</sup> St South To 101 <sup>st</sup> Street South       | 2 Lanes                     | 5 Lanes        |
| S Mingo Road                                              | E 21 <sup>st</sup> St South To 41 <sup>st</sup> St S                | 2 Lanes                     | 5 Lanes        |
| S Mingo Road                                              | E 71 <sup>st</sup> Street To E 91 <sup>st</sup> Street South        | 2 Lanes                     | 4 Lanes        |
| S Mingo Road                                              | US-169 S To E 121 <sup>st</sup> Street South                        | 2 Lanes                     | 4 Lanes        |
| S Garnett Road                                            | E Pine Street To E 21 <sup>st</sup> Street South                    | 2 Lanes                     | 5 Lanes        |
| S Garnett Road                                            | E 51 <sup>st</sup> Street To E 111 <sup>th</sup> Street South       | 2 Lanes                     | 5 Lanes        |
| S 129 <sup>th</sup> E Ave                                 | E 21 <sup>st</sup> Street South To E 121 <sup>st</sup> Street South | 2 Lanes                     | 5 Lanes        |
| 161 <sup>st</sup> E Ave                                   | 111 <sup>th</sup> Street S To 131 <sup>st</sup> Street S            | 2 Lanes                     | 4 Lanes        |
| S 177 <sup>th</sup> E Ave (Lynn Lane/S. 9 <sup>th</sup> ) | E 51 <sup>st</sup> St S To BA Expway                                | 2 Lanes                     | 4 Lanes        |
| S 177 <sup>th</sup> E Ave (Lynn Lane/S. 9 <sup>th</sup> ) | E 71 <sup>st</sup> St S To E 101 <sup>st</sup> St S                 | 2 Lanes                     | 4 Lanes        |
| 193 <sup>rd</sup> E Ave (County Line)                     | I-44/US-412 To 61 <sup>st</sup> Street S                            | 2 Lanes                     | 4 Lanes        |
| 193 <sup>rd</sup> E Ave (County Line)                     | 71 <sup>st</sup> Street S To 101 <sup>st</sup> Street S             | 2 Lanes                     | 4 Lanes        |
| S 145 <sup>th</sup> E Ave                                 | I-44 To E 41 <sup>st</sup> Street South                             | 2 Lanes                     | 4 Lanes        |
| S 145 <sup>th</sup> E Ave                                 | E 41 <sup>st</sup> Street S To 71 <sup>st</sup> Street S            | 4 Lanes                     | 6 Lanes        |
| S 145 <sup>th</sup> E Ave (Aspen)                         | 101 <sup>st</sup> Street S To 121 <sup>st</sup> Street S            | 2 Lanes                     | 4 Lanes        |
| Elwood (Glenpool)                                         | 141 <sup>st</sup> Street To 151 <sup>st</sup> Street S (SH-67)      | 2 Lanes                     | 4 Lanes        |
| 12 <sup>th</sup> Street (Sand Springs)                    | Adams Road To McKinley St.                                          | 2 Lanes                     | 4 Lanes        |
| McKinley Street (Sand Springs)                            | 2 <sup>nd</sup> Street To 12 <sup>th</sup> Street                   | 2 Lanes                     | 4 Lanes        |
| N 81 <sup>st</sup> W Ave (Sand Springs)                   | S.H. 97 To North Road                                               | New                         | 2 Lanes        |

| Parkways          |                                        | Existing Or Committed Lanes | Proposed Lanes |
|-------------------|----------------------------------------|-----------------------------|----------------|
| Riverside Parkway | 21 <sup>st</sup> Street S To I-44      | 4 Lanes                     | 4 Lanes        |
| Riverside Parkway | I-44 To Creek Turnpike                 | 4 Lanes                     | 6 Lanes        |
| Riverside Parkway | Creek Turnpike To E 121st Street South | New                         | 4 Lanes        |

| Bridges            |                                                             | Existing or Committed Lanes | Proposed Lanes |
|--------------------|-------------------------------------------------------------|-----------------------------|----------------|
| New Bridge On Yale | Connecting S Yale Ave To S Yale Place Across Arkansas River | New                         | 4 Lanes        |

Table #3 - The TTMA Transportation Improvement Plan (TIP) 2003 - 2006

| <u>PIECE TYPE</u> | <u>FACILITY</u>             | <u>DESCRIPTION</u>                                                                                                      | <u>COUNTY</u> | <u>LET DATE</u> | <u>YEAR</u> |
|-------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|-------------|
| BRIDGE            | 186th Street North          | 0.103 Mile - Bridge Approach on 186th Street North over Skalall Creek, 3.3 miles West of US-74, North of Skiatook       | TULSA         | 26-Sep-02       | 2003        |
| BRIDGE            | Bridge (Nickle Creek)       | 0.181 Kilometer - Bridge over Nickle Creek approximately 6.437 kilometer North and 4.828 kilometer East of Sapulpa      | CREEK         | 20-Feb-03       | 2003        |
| BRIDGE            | County Bridge               | Bridge and Approaches (#87) over Bird Creek on East 56th Street North, approximately 10 miles East of US-169(NBI#05043) | TULSA         |                 | 2003        |
| BRIDGE            | County Bridge               | Bridge over Delaware Creek                                                                                              | OSAGE         | 22-Aug-02       | 2003        |
| BRIDGE            | County Bridge               | County Bridge over tributary to Broken Arrow Creek, 2.5 miles North & 6 miles West of Coweta                            | WAGONER       |                 | 2003        |
| BRIDGE            | County Bridge (Cedar Creek) | 0.139 Kilometer - Bridge Approach over Cedar Creek 4.828 Kilometers West and 1.770 Kilometers North of Coweta           | WAGONER       | 25-Jul-02       | 2003        |
| BRIDGE            | I-244                       | 0.00 Mile - Bridge Repair on I-244 over the Arkansas River                                                              | TULSA         | 23-Oct-03       | 2003        |
| BRIDGE            | I-244                       | Bridge Repair on I-244 Southbound over the Arkansas river                                                               | TULSA         | 24-Apr-03       | 2003        |
| BRIDGE            | Memorial Drive (US-64)      | US-64 reconstruct bridge and approaches to 5 lanes over unnamed creek 6.35 miles south of US-169 (see (11186(04))       | TULSA         |                 | 2003        |
| BRIDGE            | US-169                      | Bridge and Approaches over 11th St and Admiral Pl (11031(09))                                                           | TULSA         |                 | 2003        |
| BRIDGE            | US-169                      | 0.00 Mile - Bridge Repair on US-169 Northbound ramp to I-244 Westbound                                                  | TULSA         | 25-Sep-03       | 2003        |
| BRIDGE            | County Bridge               | Bridge and Approaches over Rock Creek on 20th Street West 1/4 mile north of 113th Street North                          | OSAGE         |                 | 2004        |
| BRIDGE            | SH-151                      | Bridge Repair on Keystone Dam                                                                                           | TULSA         |                 | 2004        |
| BRIDGE            | SH-266                      | Bridge Repair over SH-66                                                                                                | ROGERS        |                 | 2004        |
| BRIDGE            | SH-66                       | 0.160 Mile - Bridge Repair (Joint Seal) on SH-66 over the Verdigris River 3.8 miles North of I-44 Junction              | ROGERS        |                 | 2004        |
| BRIDGE            | SH-66                       | 0.160 Mile - Bridge Painting on SH-66 over the Verdigris River 3.8 miles North of I-44 (both bridges)                   | ROGERS        |                 | 2004        |
| BRIDGE            | US-64                       | Joint Seal Repair over Snake Creek, 10.4 mi South of Turnpike                                                           | TULSA         |                 | 2004        |
| BRIDGE            | 113th Street North          | County Bridge Repair on 113th Street North & 52nd West                                                                  | OSAGE         |                 | 2005        |

|        |                               |                                                                                                                             |         |           |      |
|--------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| BRIDGE | Bridge Projects (Various)     | Small-scale Bridge Improvements; Paint, Seal Coat, Waterproofing, Silane, etc                                               | TTMA    |           | 2005 |
| BRIDGE | County Bridge                 | County Bridge #86 over Bird Creek Overflow, on 56th Street North, 0.7 mile East of US-169                                   | TULSA   |           | 2005 |
| BRIDGE | County Bridge (NS414)         | 0.20 Mile - County Bridge and Approaches on NS414, 1.2 M. North of 71st Street                                              | WAGONER |           | 2005 |
| BRIDGE | SH-97                         | ROW Acquisition for Bridge over Delaware Creek for project (13399(04), including overflow structure                         | OSAGE   |           | 2005 |
| BRIDGE | SH-97                         | Utilities Relocation for Bridge over Delaware Creek for project (13399(04), including overflow structure                    | OSAGE   |           | 2005 |
| BRIDGE | Bridge Projects (Various)     | Small-scale Bridge Improvements; Paint, Seal Coat, Waterproofing, Silane, etc                                               | TTMA    |           | 2006 |
| BRIDGE | I-44                          | 0.5 Mile - Reconstruct Yale Avenue Bridges "A" & "B" on I-44 to 6 lanes (06374(40)) BRIDGE AND APPROACHES                   | TULSA   |           | 2006 |
| BRIDGE | Lewis Road                    | County bridge Repair app 1 mile north of SH-67                                                                              | TULSA   |           | 2006 |
| BRIDGE | Mingo Road/156th Street North | County Bridge Repair on Mingo Road at 156th Street North                                                                    | TULSA   |           | 2006 |
| BRIDGE | SH-20                         | 0.118 Mile on SH-20 Bridge joint/seal repair over Verdigris River, 6.9 miles East of the Tulsa County line                  | ROGERS  |           | 2006 |
| BRIDGE | SH-20                         | 0.118 Mile on SH-20 Bridge painting over Verdigris River, 6.9 miles East of the Tulsa County line                           | ROGERS  |           | 2006 |
| BRIDGE | 191st & Mingo Road            | County Bridge Approach                                                                                                      | TULSA   |           |      |
| BRIDGE | Bird Creek                    | County Bridge                                                                                                               | TULSA   | 18-Oct-01 |      |
| BRIDGE | Bridge Projects (Various)     | Federal Aid 3B(Bridge) in conjunction with FHWA - preventative maintenance including Paint,Joints, Bearings and Deck repair | TTMA    |           |      |
| BRIDGE | Bridge Projects (Various)     | Small-scale Bridge Improvements; Paint, Seal Coat, Waterproofing, Silane, etc                                               | TTMA    |           |      |
| BRIDGE | Bridge Projects (Various)     | Federal Aid 3B(Bridge) in conjunction with FHWA - preventative maintenance including Paint,Joints, Bearings and Deck repair | TTMA    |           |      |
| BRIDGE | Bridge Projects (Various)     | Federal Aid 3B(Bridge) in conjunction with FHWA - preventative maintenance including Paint,Joints, Bearings and Deck repair | TTMA    |           |      |

|        |                               |                                                                                                                           |         |           |  |
|--------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------|-----------|--|
| BRIDGE | Bridge Projects (Various)     | Silane Treatment for bridge deck                                                                                          | TULSA   | 25-Apr-02 |  |
| BRIDGE | County Bridge (Billy Creek)   | 0.33 Kilometer - Bridge and Approach over Billy Creek 2.414 kilometers West & 6.276 kilometers North of Wagoner           | WAGONER | 27-Mar-03 |  |
| BRIDGE | County Bridge (NS408)         | 0.125 Mile - County Bridge on NS408 over Concharte Creek, 1 mile South and 0.75 mile West of Stone Bluff                  | WAGONER |           |  |
| BRIDGE | County Bridge (Polecat Creek) | 0.346 Kilometer - Bridge and Approach over Polecat Creek at 33rd West Avenue and 101st                                    | TULSA   | 19-Oct-00 |  |
| BRIDGE | County Bridge (Spunky Creek)  | 0.20 Mile - Bridge and Approaches over Spunky Creek 1.8 mile North and 0.7 mile East of SH-66/I-44                        | ROGERS  |           |  |
| BRIDGE | County Bridge (Verdigris)     | 0.55 Kilometer - Bridge and Approach over the Verdigris River 8.529 kilometers North & 7.242 kilometers West of Claremore | ROGERS  | 16-Nov-00 |  |
| BRIDGE | I-244                         | Joint Seal                                                                                                                | TULSA   | 26-Apr-01 |  |
| BRIDGE | I-244                         | Joint Seal                                                                                                                | TULSA   | 24-May-01 |  |
| BRIDGE | I-244                         | Joint Seal Repair on I-244 at various locations in the City of Tulsa                                                      | TULSA   | 21-Mar-02 |  |
| BRIDGE | I-244                         | Bridge Painting over 23rd                                                                                                 | TULSA   | 25-Apr-02 |  |
| BRIDGE | I-244                         | Bridge Painting on I-244 at various locations in the City of Tulsa                                                        | TULSA   | 21-Mar-02 |  |
| BRIDGE | I-44                          | 0.3 Mile - Grade, Drain, Surface, Bridge over 31st Street and Memorial Road                                               | TULSA   |           |  |
| BRIDGE | I-44                          | Bridge Repair                                                                                                             | ROGERS  | 21-Mar-02 |  |
| BRIDGE | I-444                         | Bridge Repair                                                                                                             | TULSA   | 18-Oct-01 |  |
| BRIDGE | SH-16                         | Bridge Painting over the Verdigris River 1.9 mile North of Muskogee Countyline                                            | WAGONER | 24-Mar-94 |  |
| BRIDGE | SH-51                         | Bridge Repair                                                                                                             | TULSA   | 20-Jun-02 |  |
| BRIDGE | SH-66                         | 0.331 Mile - Bridge and Approach on SH-66 for Bridge at Mossey Creek and unnamed Creek Southwest of Claremore (13400(04)) | ROGERS  |           |  |
| BRIDGE | SH-66                         | Bridge and Approaches (Asphalt)                                                                                           | ROGERS  |           |  |
| BRIDGE | SH-97                         | 0.208 Mile - Bridge on SH-97 over Delaware Creek and an unnamed creek                                                     | OSAGE   |           |  |
| BRIDGE | unknown                       | Bridge and Approaches                                                                                                     | TULSA   |           |  |
| BRIDGE | unknown                       | Bridge Repair                                                                                                             | TULSA   |           |  |
| BRIDGE | unknown                       | Bridge and Approaches                                                                                                     | CREEK   |           |  |
| BRIDGE | unknown                       | Bridge and Approaches                                                                                                     | TULSA   |           |  |
| BRIDGE | unknown                       | Joint Seal                                                                                                                | TULSA   |           |  |
| BRIDGE | unknown                       | Bridge and Approaches                                                                                                     | TULSA   |           |  |

|              |                                       |                                                                                                                        |         |           |      |
|--------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| BRIDGE       | unknown                               | Bridge and Approaches                                                                                                  | TULSA   |           |      |
| BRIDGE       | unknown                               | Bridge Repair                                                                                                          | TULSA   |           |      |
| BRIDGE       | unknown                               | Joint Seal                                                                                                             | TULSA   |           |      |
| BRIDGE       | US-169                                | 0.029 Mile - Bridge Repair on US-169; Northbound over Pine Street to Repair Vehicle Impact Damage                      | TULSA   | 22-Jan-04 |      |
| BRIDGE       | US-169                                | Silane Treatment for bridge decks at various locations                                                                 | TULSA   | 25-May-00 |      |
| BRIDGE       | US-64                                 | 0.0 Mile - Bridge Repair on 129TH West Avenue over US-64 (#7286-0699X)                                                 | TULSA   | 26-Feb-88 |      |
| BRIDGE       | US-69                                 | 0.156 Mile - Bridge Redecking on US-69 over the Verdigris River North of Muskogee                                      | WAGONER | 26-Sep-02 |      |
| CONSTRUCTION | 101st Street                          | Industrial Access: Begin at JCT 101st/Peoria in Jenks, Extend E & N to JCT 9th/B Street (OK Aquarium & Dept. Wildlife) | TULSA   |           | 2003 |
| CONSTRUCTION | Arkansas River Parks Trail            | West Bank Trail Phase 2 Construction from I-44 to 71st Street South                                                    | TULSA   |           | 2003 |
| CONSTRUCTION | Cherry Creek Trail                    | Construction from Elwood Avenue to West 41st Street                                                                    | TULSA   |           | 2003 |
| CONSTRUCTION | County Road (NS-390)                  | 0.075 Mile - Grade, Drain, Surface County Road (NS-390) approximately 1.3 miles North of Kiefer                        | CREEK   | 23-Jan-03 | 2003 |
| CONSTRUCTION | Lake Skiatook Access Roads            | Lake Access for Lake Skiatook: Begin on W 103rd Street 4.25 miles W of SH-11 extend West 2.0 miles and North 5 miles   | OSAGE   |           | 2003 |
| CONSTRUCTION | Memorial Drive (US-64)                | 1.713 Kilometer - Grade, Drain, Surface, Bridge US-64 from 151st Street to 161st Street in Bixby                       | TULSA   | 19-Dec-02 | 2003 |
| CONSTRUCTION | SH-20                                 | Claremore bypass on new alignment from interchange at SH-66 to I-44 (R/W for 18695(04))                                | ROGERS  |           | 2003 |
| CONSTRUCTION | SH-66                                 | Grade, Drain, Surface on SH-66; North of Catoosa to North of Foyil                                                     | ROGERS  | 27-Mar-03 | 2003 |
| CONSTRUCTION | SH-66                                 | From North of Claremore to 1.5 miles N of Foyle (Median Opening)                                                       | ROGERS  |           | 2003 |
| CONSTRUCTION | Broken Arrow South Loop Trail Phase 2 | Construction from 145th to 161st East Avenue                                                                           | TULSA   |           | 2004 |
| CONSTRUCTION | SH-51                                 | Grade, Drain, Surface from east end of Salt Creek Bridge, extend east to 1/4 mile East of Tulsa county line            | CREEK   |           | 2004 |
| CONSTRUCTION | US-169                                | Reconstruct to widen to 6-lanes from I-44 to I-244 and 4th Place bridge and approaches                                 | TULSA   |           | 2004 |

|              |                           |                                                                                                                                           |         |           |      |
|--------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| CONSTRUCTION | SH-20                     | Grade, Drain, Surface SH-20 from US-169 East 4.0 miles to East of 209th E Avenue (4 LANES)                                                | TULSA   |           | 2005 |
| CONSTRUCTION | SH-20                     | Grade, Drain, Surface SH-20 from app 2.6 mi East of SH-66 in Claremore East 18 mile                                                       | ROGERS  |           | 2005 |
| CONSTRUCTION | 2nd Street                | Grade, Drain, Surface 2nd Street                                                                                                          | TULSA   |           |      |
| CONSTRUCTION | 41st Street               | Grade, Drain, Surface, Bridge                                                                                                             | TULSA   | 20-Jan-00 |      |
| CONSTRUCTION | 61st Street               | 0.9240 Mile - Grade, Drain, Surface on 61st between Sheridan and Memorial (City of Tulsa)                                                 | TULSA   | 23-Apr-98 |      |
| CONSTRUCTION | 71st (Kenosha)            | 2.888 Kilometer - Grade, Drain, Surface, Bridge East on 71st Street from Garnett Road                                                     | TULSA   | 22-Jul-99 |      |
| CONSTRUCTION | 81st Street West          | 0.22 Mile - Grade, Drain, Surface, Bridge & Traffic Signals on 81st Street over I-44 near Sapulpa                                         | CREEK   | 30-Apr-02 |      |
| CONSTRUCTION | Cemetery Road             | Grade, Drain, Surface (Asphalt)                                                                                                           | OSAGE   |           |      |
| CONSTRUCTION | County Road               | 0.30 Mile - Grade, Drain, Surface. Realign County Road and remove traffic from Railroad Bridge 0.9 mile South and 0.8 mile East of Bowden | CREEK   |           |      |
| CONSTRUCTION | County Road               | 1.71 Mile - Grade, Drain, Surface on County Road from 2 miles East of Tulsa county-line, extend North and West to NS-390                  | OSAGE   |           |      |
| CONSTRUCTION | County Road               | 0.206 Mile - Grade, Drain, Surface County Road (Hilton Rd) from 2.5 miles East and 1.5 miles North of Sapulpa, extend East and South      | CREEK   | 26-Jun-03 |      |
| CONSTRUCTION | County Road (Sandy Creek) | 0.274 Mile - Bridge Approach over the West Fork of Sandy Creek, 8 miles South and 1 mile East of SH-48/SH-16                              | CREEK   | 24-Jul-03 |      |
| CONSTRUCTION | I-244                     | 2.30 Mile - Surface Wearing Course on I-244 East from US-75/I-244                                                                         | TULSA   | 21-Feb-02 |      |
| CONSTRUCTION | I-44                      | 0.163 Mile - Bridge Approach at 7 sites on I-44 betwee the Mingo Valley and I-244                                                         | TULSA   | 26-Jul-90 |      |
| CONSTRUCTION | I-44                      | Flame Straightening and Paint                                                                                                             | ROGERS  |           |      |
| CONSTRUCTION | I-44                      | 1.69 Mile - Grade, Drain, Surface on I-44 from 0.7 mile NorthEast of Broken Arrow to Mingo                                                | TULSA   |           |      |
| CONSTRUCTION | I-44                      | 0.889 Mile - Grade, Drain, Surface on I-44 from East of MKT RR to West of 31st in Tulsa                                                   | TULSA   | 23-May-02 |      |
| CONSTRUCTION | Midway Road               | Grade, Drain, Surface, Bridge                                                                                                             | WAGONER | 23-Aug-01 |      |
| CONSTRUCTION | SH-20                     | 1.733 Mile - Grade, Drain, Surface on SH-20 from 1.75 mile West of Osage/Tulsa county-line and extend East                                | OSAGE   |           |      |

|              |        |                                                                                                                                |         |           |  |
|--------------|--------|--------------------------------------------------------------------------------------------------------------------------------|---------|-----------|--|
| CONSTRUCTION | SH-20  | 3.9230 Mile - Grade, Drain, Surface, Bridge on SH-20 from 7.08 kilometer East of SH-20/SH-66 in Claremore and extend East      | ROGERS  | 21-Oct-99 |  |
| CONSTRUCTION | SH-266 | 0.115 Mile - Grade, Drain, Surface, Bridge SH-266 East from SH-266/SH-66 to I-44                                               | ROGERS  | 19-Oct-00 |  |
| CONSTRUCTION | SH-33  | 9.43 Kilometer - Grade, Drain, Surface, Bridge on SH-33 from 12 miles West of I-44/SH-33 and extend East                       | CREEK   | 26-Jul-01 |  |
| CONSTRUCTION | SH-51  | 6.791 Mile - Grade, Drain, Surface, Bridge East on SH-51 from 7.0 miles West of Wagoner                                        | WAGONER |           |  |
| CONSTRUCTION | SH-51  | Grade, Drain, Surface, Bridge                                                                                                  | TULSA   |           |  |
| CONSTRUCTION | SH-51  | 6.6 Kilometer - Grade, Drain, Surface, Bridge from 2.575 kilometer East of the Tulsa/Creek countyline and extend East          | TULSA   | 19-Feb-98 |  |
| CONSTRUCTION | SH-51  | 7.184 Kilometer - Grade, Drain, Surface SH-51 from the existing 4 lane approximately 2.575 kilometer East of Creek county-line | TULSA   | 18-Nov-99 |  |
| CONSTRUCTION | SH-51  | Grade, Drain, Surface                                                                                                          | TULSA   |           |  |
| CONSTRUCTION | SH-51  | 1.051 Mile - Grade, Drain, Surface on SH-51 from US-169 and extend East                                                        | TULSA   | 22-Jun-00 |  |
| CONSTRUCTION | SH-51  | 1.416 Kilometer - Grade, Drain, Surface, Bridge on SH-51 from 2.25 kilometer East of SH-51/I-44 and extend East                | TULSA   | 22-Apr-99 |  |
| CONSTRUCTION | SH-51  | 1.853 Mile - Grade, Drain, Surface, Bridge on SH-51 from Sheridan to West of Memorial including cross street at M.L. & BR.     | TULSA   | 24-May-01 |  |
| CONSTRUCTION | SH-66  | 2.741 Mile - Grade, Drain, Surface, Bridge on SH-66 beginning at SH-66/SH-33 and extend East                                   | CREEK   |           |  |
| CONSTRUCTION | SH-66  | 2.31 Mile - Grade, Drain, Surface SH-66 from 4 miles South and 3 miles West of SH-66/SH-28 in Chelsea                          | ROGERS  | 22-Feb-01 |  |
| CONSTRUCTION | SH-67  | 0.45 Mile - Grade, Drain, Surface on SH-67 beginning West of SH-67/US-75 then extend East                                      | CREEK   | 20-Jan-00 |  |
| CONSTRUCTION | SH-67  | 2.285 Mile - Grade, Drain, Surface SH-67 from 0.5 mile East of US-75A in Kiefer to US-75                                       | CREEK   | 25-Apr-02 |  |
| CONSTRUCTION | SH-88  | 4.60 Mile - Grade, Drain, Surface, Bridge SH-88 North from 3.5 miles Northwest of US-412                                       | ROGERS  |           |  |
| CONSTRUCTION | SH-88  | 3.5 Mile - Grade, Drain, Surface, Bridge from US-412 and extend Northwest 3.5 miles                                            | ROGERS  |           |  |
| CONSTRUCTION | SH-88  | Grade, Drain, Surface                                                                                                          | ROGERS  | 25-Jan-01 |  |
| CONSTRUCTION | SH-97  | 5.423 Kilometer - Grade, Drain, Surface from US-64/129th West Avenue in Sand Springs to SH-97 in Osage County                  | TULSA   | 19-Oct-00 |  |

|              |                      |                                                                                                                  |         |           |      |
|--------------|----------------------|------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| CONSTRUCTION | SH-99                | 1.041 Mile - Grade, Drain, Surface, Bridge SH-99; begin approximately 3.4 miles North of Hominy and extend North | OSAGE   | 25-Jul-02 |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | CREEK   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface                                                                                            | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface                                                                                            | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface                                                                                            | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface                                                                                            | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | TULSA   |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | WAGONER |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface, Bridge                                                                                    | WAGONER |           |      |
| CONSTRUCTION | unknown              | Grade, Drain, Surface and Signage                                                                                | TULSA   |           |      |
| CONSTRUCTION | US-169               | 8.1715 Kilometer - Grade, Drain, Surface, Bridge US-169 from North of Oologah and extend North through Talala    | ROGERS  | 20-Feb-03 |      |
| CONSTRUCTION | US-169               | 1.0464 KM. Grade, Drain, Surface, Bridge US-169 from 21st to I-44/21st Off-Ramp from I-44                        | TULSA   | 21-Mar-02 |      |
| CONSTRUCTION | US-51                | 8.1939 Kilometer - Grade, Drain, Surface, Bridge SH-51 from 2.5 miles West of the Turnpike and extend East       | WAGONER | 18-Oct-01 |      |
| CONSTRUCTION | US-75A               | 0.818 Mile - Bridge and Approach on US-75A over Duck Creek, 0.74 mile North of Okmulgee                          | CREEK   | 25-Sep-03 |      |
| GUARDRAIL    | SH-20                | Guardrail: SH-20 from west edge of Keetonville Hill, ext. East/SH-88 at Oologah Dam                              | ROGERS  | 24-Apr-03 | 2003 |
| GUARDRAIL    | I-244                | Guardrail                                                                                                        | TULSA   | 15-Nov-01 |      |
| GUARDRAIL    | I-244                | Guardrail on I-244 from Arkansas River to I-44 in Tulsa                                                          | TULSA   | 26-Jun-03 |      |
| INTERCHANGE  | US-75                | 0.75 Kilometer - Grade, Drain, Surface on US-75 at US-75 & 8st Street                                            | TULSA   | 23-Oct-03 | 2003 |
| INTERCHANGE  | US-75                | Interchange improvements at US-75 and 71st Street                                                                | TULSA   |           | 2004 |
| INTERCHANGE  | US-75                | 0.75 Mile - Interchange on US-75 at US-75/111th Street South in Jenks                                            | TULSA   |           | 2005 |
| INTERCHANGE  | Gilcrease Expressway | 1.128 Kilometer - Grade, Drain, Surface, Bridge Interchange at US-75 & SH-11 (Gilcrease Expressway)              | TULSA   | 25-Jan-01 |      |

|              |                             |                                                                                                             |         |           |      |
|--------------|-----------------------------|-------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| INTERCHANGE  | I-244                       | 0.19 Mile - Intersection Modifications on I-244 Entrance Ramp at Southwest Blvd                             | TULSA   |           |      |
| INTERSECTION | 11th Street & South Elm     | 0.362 Mile - Intersection Modifications at 11th Street & South Elm in Jenks                                 | TULSA   | 25-Jul-02 | 2003 |
| INTERSECTION | 81st Street (Houston)       | Intersection reconstruction and widening at SH-51 and 81st street                                           | WAGONER |           | 2003 |
| INTERSECTION | Elm Street                  | Intersection improvements, turn lanes, and signals at 121st Street                                          | TULSA   |           | 2003 |
| INTERSECTION | Nogales Street/Main Street  | Intersection improvements, widening, and overlay at West Main Street                                        | TULSA   |           | 2003 |
| INTERSECTION | SH-167/SH-266               | 0.633 Mile - Intersection Modifications & Traffic Signals at SH-167/SH-266 at the Port of Catoosa           | ROGERS  | 23-Oct-03 |      |
| INTERSECTION | US-169/76th Street North    | 0.34 Mile - Intersection Modifications at US-169/76th Street North in Owasso                                | TULSA   | 18-Oct-01 |      |
| RAILROAD     | Railroad Projects (Various) | Railroad Crossing Protection Devices, Surfaces, Signage, Striping, Closures, etc                            | TTMA    |           | 2005 |
| RAILROAD     | Railroad Projects (Various) | Railroad Crossing Protection Devices, Surfaces, Signage, Striping, Closures, etc                            | TTMA    |           | 2006 |
| RAILROAD     | Railroad Projects (Various) | Railroad Crossing Protection Devices, Surfaces, Signage, Striping, Closures, etc                            | TTMA    |           |      |
| RESURFACE    | Cherokee Street             | Patching, widen, and overlay sections and add turn lanes from SH-167 (193rd St) to SH-66                    | ROGERS  |           | 2003 |
| RESURFACE    | Gilcrease Expressway        | Phase 2 grading, drainage, and surfacing for a 4-lane expressway between US-75 and LL Tisdale Expressway    | TULSA   |           | 2003 |
| RESURFACE    | US-64                       | 7.16 Mile - Resurface NS104 East from 0.56 mile East of the Tulsa/Wagoner countyline to Haskell City Limits | WAGONER | 25-Sep-03 | 2003 |
| RESURFACE    | Elwood Avenue               | Pavement Resurfacing of Elwood Avenue From 151St to 131St                                                   | TULSA   |           | 2004 |
| RESURFACE    | I-244                       | 1.412 Mile - Resurface Various Locations in the City of Tulsa                                               | TULSA   | 20-Jun-02 |      |
| RESURFACE    | I-244                       | Resurface various locations                                                                                 | TULSA   | 20-Jun-02 |      |
| RESURFACE    | I-244                       | 8.0 Mile - Resurface, Bridge Deck Repair on I-244 from East end of bridge over Peoria                       | TULSA   | 20-Jun-02 |      |

|           |                        |                                                                                                                  |         |           |      |
|-----------|------------------------|------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| RESURFACE | I-44                   | Resurface on I44/244                                                                                             | TULSA   | 30-Apr-02 |      |
| RESURFACE | I-44/US-64             | 7.0 Miles - Resurface I44 from Arkansas River/us-64 to 1.7 mile West of SH-97                                    | TULSA   | 26-Jun-03 |      |
| RESURFACE | SH-11/US-60            | 19.20 Mile - Resurface on SH-11 East from the Kay county-line and East on US-60 from SH-99                       | OSAGE   | 22-Jan-04 |      |
| RESURFACE | SH-20                  | 7.0 Mile - Resurface                                                                                             | ROGERS  | 25-Apr-02 |      |
| RESURFACE | SH-51                  | Resurface (Asphalt) SH-51                                                                                        | WAGONER | 25-Jul-02 |      |
| RESURFACE | SH-66                  | Resurface                                                                                                        | CREEK   | 21-Feb-02 |      |
| RESURFACE | SH-66                  | 1.80 Mile - Resurface on SH-66 from SH-66/SH-97 to North and East                                                | CREEK   | 26-Jun-03 |      |
| RESURFACE | SH-72                  | Resurface                                                                                                        | WAGONER | 21-Jun-01 |      |
| RESURFACE | SH-97                  | 6.60 Mile - Asphalt Overlay                                                                                      | OSAGE   | 21-Feb-02 |      |
| RESURFACE | SH-97/SH-117           | Resurface                                                                                                        | TULSA   | 20-Jun-02 |      |
| RESURFACE | SH-99                  | 3.70 Mile - Resurface OF SH-99 North from 1.7 miles North of SH-99/SH-33                                         | CREEK   | 25-Sep-03 |      |
| RESURFACE | Sheridan Road          | Widen & Resurface                                                                                                | TULSA   | 22-Jul-99 |      |
| RESURFACE | unknown                | Resurface                                                                                                        | CREEK   |           |      |
| RESURFACE | unknown                | Resurface                                                                                                        | ROGERS  |           |      |
| RESURFACE | unknown                | Widen & Resurface                                                                                                | TULSA   |           |      |
| RESURFACE | unknown                | Resurface (Asphalt) and Joint Repair                                                                             | TULSA   |           |      |
| RESURFACE | US-169                 | Resurface                                                                                                        | TULSA   | 20-Jun-02 |      |
| RESURFACE | US-60/SH-99            | 8.57 Mile - Resurface US-60/SH-99; North from SH-99/SH-11 (North of Wynona)                                      | OSAGE   | 25-Sep-03 |      |
| ROW       | Memorial Drive (US-64) | ROW Acquisition and utility relocation for widening to 6-lanes from Arkansas River to SH-67 (161st)              | TULSA   |           | 2003 |
| ROW       | Right of Way Clearance | Line Item Placeholder for Projects to be Specified by ODOT                                                       | TTMA    |           | 2003 |
| ROW       | SH-51                  | From the East end of Salt Creek Bridge, ext. E. to 0.25 mi. E. of Tulsa C/L for parallel lane (ROW for 02224(04) | CREEK   |           | 2003 |
| ROW       | US-169                 | ROW Acquisition from I-44 to I-244                                                                               | TULSA   |           | 2003 |
| ROW       | US-75                  | ROW for Interchange improvements at US-75 and 71st Street (12938(04))                                            | TULSA   |           | 2003 |
| ROW       | US-75                  | ROW for Interchange: US 75 at 81st                                                                               | TULSA   |           | 2003 |
| ROW       | Right of Way Clearance | Line Item Placeholder for Projects to be Specified by ODOT                                                       | TTMA    |           | 2004 |

|     |                        |                                                                                                                       |        |           |      |
|-----|------------------------|-----------------------------------------------------------------------------------------------------------------------|--------|-----------|------|
| ROW | SH-20                  | SH-20 from US-169 E 4 mi to Keetonville Hill near 209th E Ave [Right of Way Acquisition For project (09482(04))]      | TULSA  |           | 2004 |
| ROW | Right of Way Clearance | Demolition, Removal, Disposal of Obstructions prior to Utility Relocation or Project Startup                          | TTMA   |           | 2005 |
| ROW | Right of Way Clearance | Demolition, Removal, Disposal of Obstructions prior to Utility Relocation or Project Startup                          | TTMA   |           | 2006 |
| ROW | SH-66                  | 0.331 Mile - ROW Acquisition on SH-66 for Bridge at Mossey Creek and unnamed Creek Southwest of Claremore (13400(04)) | ROGERS |           | 2006 |
| ROW | SH-66                  | 2.2 Mile - ROW Purchase for 4 lane construction on SH-66 from SH-117 to SH-97 (10157(04))                             | CREEK  |           | 2006 |
| ROW | US-75                  | 0.75 Mile - ROW Purchase on US-75 for Interchange at US-75 & 111th Street South in Jenks                              | TULSA  |           | 2006 |
| ROW | I-44                   | 1.10 Mile - ROW Purchase on I-44 at Harvard Avenue for 6-lane reconstruction                                          | TULSA  |           |      |
| ROW | I-44                   | 0.05 Mile - ROW Purchase on I-44 for 193rd Street Interchange (SH-167)                                                | ROGERS |           |      |
| ROW | I-44                   | 1.10 Mile - ROW Purchase on I-44 at Harvard Avenue for Reconstruction to 6 lanes                                      | TULSA  |           |      |
| ROW | I-44                   | 1.10 Mile - ROW Purchase for ((06375(50))) on I-44 at Harvard Avenue for Reconstruction to 6 lanes                    | TULSA  |           |      |
| ROW | I-44                   | ROW Clearance                                                                                                         | TULSA  |           |      |
| ROW | Memorial Drive (US-64) | ROW                                                                                                                   | TULSA  | 18-Oct-01 |      |
| ROW | Right of Way Clearance | Demolition, Removal, Disposal of Obstructions prior to Utility Relocation or Project Startup                          | TTMA   |           |      |
| ROW | SH-11                  | 2.0 Mile - ROW Purchase on SH-11; from Barnsdall, extend Southeast approximately 2.0 miles                            | OSAGE  |           |      |
| ROW | SH-20                  | 0.55 Mile - ROW Purchase on SH-20 for new alignment of SH-20 at SH-66                                                 | ROGERS |           |      |
| ROW | SH-20                  | 0.0 Mile - ROW Clearance along SH-20; Claremore bypass on new alignment from interchange at SH-66 to I-44             | ROGERS | 24-Jul-03 |      |
| ROW | SH-88                  | 1.08 Mile - ROW Purchase on SH-88 from Will Rogers Memorial South to the SH-20 Claremore ByPass                       | ROGERS |           |      |
| ROW | SH-88                  | 3.56 Mile - ROW Purchase on SH-88 from 8.1 miles Northwest of US-412 into Claremore                                   | ROGERS |           |      |
| ROW | unknown                | ROW Clearance                                                                                                         | CREEK  |           |      |

|                     |                         |                                                                                                                               |         |           |      |
|---------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|
| ROW                 | US-169                  | ROW Clearance                                                                                                                 | ROGERS  |           |      |
| SAFETY IMPROVEMENTS | Traffic Safety Projects | Small-scale Traffic Safety Improvements; Signals, Intersection Modifications, Lighting, Guardrails, Interconnect Systems, etc | TTMA    |           | 2005 |
| SAFETY IMPROVEMENTS | Traffic Safety Projects | Small-scale Traffic Safety Improvements; Signals, Intersection Modifications, Lighting, Guardrails, Interconnect Systems, etc | TTMA    |           | 2006 |
| SAFETY IMPROVEMENTS | Traffic Safety Projects | Small-scale Traffic Safety Improvements; Signals, Intersection Modifications, Lighting, Guardrails, Interconnect Systems, etc | TTMA    |           |      |
| SHOULDER            | SH-51                   | Shoulder Repair                                                                                                               | TULSA   | 21-Feb-02 |      |
| SIGNAGE             | Traffic Safety Projects | Safety Improvements on I-244/US-169; deploy 7 overhead message sign bases at various locations in Tulsa                       | TULSA   | 17-Oct-02 | 2003 |
| SIGNAGE             | US-75                   | Signage Replacement on US-75 from I-244/US-75 North to SH-20                                                                  | TULSA   | 17-Oct-02 | 2003 |
| SIGNAGE             | I-44                    | Signage                                                                                                                       | TULSA   | 18-Nov-99 |      |
| SIGNAGE             | SH-51                   | Signage                                                                                                                       | TULSA   | 20-Jan-00 |      |
| SIGNAGE             | SH-72                   | Signage - (School) on SH-72 (COWETA)                                                                                          | WAGONER |           |      |
| SIGNAGE             | unknown                 | Signage                                                                                                                       | TULSA   |           |      |
| SIGNAGE             | US-169                  | Signage - (Traffic)                                                                                                           | TULSA   |           |      |
| SIGNAGE             | US-169                  | Signage                                                                                                                       | TULSA   | 22-Jun-00 |      |
| SIGNAGE             | US-169                  | Signage - Overhead Sign Structure and sign Replacement on US-169 at SH-266 EXIT in Tulsa                                      | TULSA   | 25-Sep-03 |      |
| TRAFFIC SIGNALS     | SH-66/SH-33             | Traffic Signals at SH-33/SH-66 West of downtown Sapulpa                                                                       | CREEK   | 19-Dec-02 | 2003 |
| TRAFFIC SIGNALS     | Traffic Safety Projects | Line Item Placeholder for Projects to be Specified by ODOT                                                                    | TTMA    |           | 2003 |
| TRAFFIC SIGNALS     | Mission Street          | Traffic Signals 0.5 mi East of SH-117 & SH-97 Junction                                                                        | CREEK   |           | 2004 |
| TRAFFIC SIGNALS     | Traffic Safety Projects | Line Item Placeholder for Projects to be Specified by ODOT                                                                    | TTMA    |           | 2004 |
| TRAFFIC SIGNALS     | East 86th Street North  | East 86th Street North at Mingo Rd - Intersection Modification & Traffic Signals in Owasso                                    | TULSA   |           | 2005 |
| TRAFFIC SIGNALS     | East 86th Street North  | East 86th Street North at N 145th E Ave - Intersection Modification & Traffic Signals in Owasso                               | TULSA   |           | 2005 |

|                 |                                       |                                                                                                        |        |           |      |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------|--------|-----------|------|
| TRAFFIC SIGNALS | 71st Street & 129th East Avenue       | Traffic Signals at 71st/129th in Broken Arrow                                                          | TULSA  | 25-May-00 |      |
| TRAFFIC SIGNALS | 86th Street North                     | 0.517 Mile - Intersection Modifications & Traffic Signals at 86TH ST N. from Dogwood to Main in Owasso | TULSA  | 20-Jun-02 |      |
| TRAFFIC SIGNALS | Elm Street/Main Street                | 0.516 Kilometer - Intersection Modifications & Traffic Signals at Elm Street/Main Street in Jenks      | TULSA  | 21-Sep-00 |      |
| TRAFFIC SIGNALS | SH-88                                 | 0.00 Mile Traffic Signals at SH-88 and Blue Starr in the City of Claremore                             | ROGERS | 20-Nov-03 |      |
| TRAFFIC SIGNALS | US-169                                | Traffic Signals on US-169 at US-169/SH-88                                                              | ROGERS | 20-Dec-01 |      |
| TRAILS          | Broken Arrow South Loop Trail Phase 3 | Trail construction from 161st E. Avenue (Elm Street) to 101st Street South (New Orleans Street) NSU    | TULSA  |           | 2003 |
| TRAILS          | Claremore Citywide Trail Phase 1      | Design and Engineering for Claremore Citywide Trail Phase 1                                            | ROGERS |           | 2003 |
| TRAILS          | Osage Prairie Trail Project           | Osage Prairie Trail Project (selected by OK Tourism and Recreation Dept)                               | TTMA   |           | 2003 |
| TRAILS          | Osage Trail                           | Design and Engineering from OSU Tulsa to 56th Street North                                             | TULSA  |           | 2003 |
| TRAILS          | Trail Projects                        | Line Item Placeholder for Projects to be selected by OK Tourism and Recreation Dept                    | TTMA   |           | 2004 |
| TRAILS          | Trail Projects                        | Line Item Placeholder for Projects to be selected by OK Tourism and Recreation Dept                    | TTMA   |           | 2005 |
| TRAILS          | Trail Projects                        | Funding to be determined based on project selection by ODOT                                            | TTMA   |           | 2006 |
| TRAILS          | Trail Projects                        | Line Item Placeholder for Projects to be selected by OK Tourism and Recreation Dept                    | TTMA   |           | 2006 |
| TRAILS          | Arkansas River Parks Trail            | Bicycle and Pedestrian Trail Enhancement                                                               | TULSA  | 27-May-99 |      |
| TRAILS          | Arkansas River Parks Trail            | 1.551 Mile - River Parks Trail Extension East from 11th Street to Tulsa / Sand Springs Trail           | TULSA  | 23-Jul-98 |      |
| TRAILS          | unknown                               | Bicycle and Pedestrian Trail                                                                           | TULSA  |           |      |
| UTILITIES       | I-44                                  | Safety Improvements for Tulsa Metro; Communications for 7 DMS and Cameras                              | TULSA  | 22-May-03 | 2003 |

|           |        |                                                                                                                            |        |  |      |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------|--------|--|------|
| UTILITIES | SH-51  | From the East end of Salt Creek Bridge, ext. E. to 0.25 mi. E. of Tulsa C/L for parallel lane (Utilities for 02224(04))    | CREEK  |  | 2003 |
| UTILITIES | US-169 | Utilities Adjustment from I-44 to I-244                                                                                    | TULSA  |  | 2003 |
| UTILITIES | US-75  | Utilities for Interchange improvements at US-75 and 71st Street 12938(04)                                                  | TULSA  |  | 2003 |
| UTILITIES | US-75  | Utilities for Interchange US 75 at 81st                                                                                    | TULSA  |  | 2003 |
| UTILITIES | SH-20  | SH-20 from US-169 E 4 mi to Keetonville Hill near 209th E Ave [Relocation of Utilities for project (09482(04))]            | TULSA  |  | 2004 |
| UTILITIES | I-44   | Clearance of Utilities on I-44 over Yale Avenue- Bridges A & B widen to 6 Lanes (06374(38))                                | TULSA  |  | 2005 |
| UTILITIES | SH-66  | 0.331 Mile - Utilities Relocation on SH-66 for Bridge at Mossey Creek and unnamed Creek Southwest of Claremore (13400(04)) | ROGERS |  | 2006 |
| UTILITIES | SH-66  | 2.2 Mile - Relocate Utilities for 4 lane construction on SH-66 from SH-117 to SH-97 (10157(04))                            | CREEK  |  | 2006 |
| UTILITIES | US-75  | 0.75 Mile - Utilities for Interchange on US-75 at US-75 & 111th Street South in Jenks                                      | TULSA  |  | 2006 |
| UTILITIES | I-44   | 1.10 Mile - Relocate Utilities on I-44 at Harvard Avenue for 6-lane reconstruction                                         | TULSA  |  |      |
| UTILITIES | I-44   | 0.05 Mile - Relocate Utilities on I-44 for 193rd Street Interchange (SH-167)                                               | ROGERS |  |      |
| UTILITIES | SH-11  | 2.0 Mile - Relocate Utilities on SH-11; from Barnsdall, extend Southeast approximately 2.0 miles                           | OSAGE  |  |      |
| UTILITIES | SH-20  | 1.04 Mile - Relocate Utilities on SH-20 for Claremore ByPass realignment from SH-20/SH-66 to I-44                          | ROGERS |  |      |
| UTILITIES | SH-20  | 0.55 Mile - Relocate Utilities on SH-20 for new alignment of SH-20 at SH-66                                                | ROGERS |  |      |
| UTILITIES | SH-88  | 3.56 Mile - Utilities Relocation on SH-88 from 8.1 miles Northwest of US-412 into Claremore                                | ROGERS |  |      |
| UTILITIES | SH-88  | 1.08 Mile - Relocate Utilities on SH-88 from Will Rogers Memorial South to the SH-20 Claremore ByPass                      | ROGERS |  |      |
|           |        |                                                                                                                            |        |  |      |



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

MAY 07 2004

Mr. Eddie Terrill  
Director, Air Quality Division  
Oklahoma Department of  
Environmental Quality  
P.O. Box 1677  
Oklahoma City, OK 73101



Dear Mr. Terrill:

Thank you for submitting the final version of the Clean Air Action Plan for both the Central Oklahoma and Tulsa 8-hour Ozone Early Action Compacts (EAC). This document fulfills an important milestone for the Central Oklahoma and Tulsa 8-hour EAC programs. Completion of this milestone demonstrates the commitment of local governments, community leaders, environmental groups, and involved citizens to improving regional air quality.

I recognize that this is an interim step in a multi-step process that will influence local and state actions to improve the community's air quality. My staff and I look forward to continuing our close working relationship with you and your staff as the state works to develop the implementation plan that will keep these areas in attainment of the 8-hour ozone standard.

If you have any questions, please contact me at (214) 665-2100, or have your staff contact Mr. Thomas Diggs (214) 665-7214 or Dr. Michael Morton (214) 665-8329 of my staff.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Richard E. Greene".

Richard E. Greene  
Regional Administrator

cc: Mr. Steven A. Thompson, Executive Director, ODEQ  
Mr. Jerry Lasker, INCOG  
Mr. Zach Taylor, ACOG