

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

**3rd 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
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
0.081	0.080	0.080	19-Feb	8-Mar	22-Feb	11-Mar	0.069
Skiatook (137)			0.054	0.053	0.052	0.052	0.083
0.084	0.083	0.083	19-Feb	22-Feb	27-Feb	18-Mar	0.072
Glenpool (174)			0.054	0.054	0.053	0.053	0.081
0.077	0.082	0.086	19-Feb	27-Feb	22-Feb	18-Mar	0.073
Edmond (037)			0.058	0.057	0.053	0.051	0.080
0.082	0.078	0.082	22-Feb	18-Mar	10-Mar	8-Mar	0.070
OKC (033)			0.055	0.055	0.049	0.047	0.079
0.078	0.080	0.080	22-Feb	18-Mar	10-Mar	18-Feb	0.069
Moore (049)			0.058	0.053	0.050	0.048	0.076
0.079	0.075	0.076	22-Feb	18-Mar	18-Feb	19-Feb	0.066
Goldsby (073)			0.051	0.049	0.048	0.047	0.078
0.080	0.078	0.077	18-Feb	8-Mar	18-Mar	7-Mar	0.067
Choctaw (096)			0.064	0.055	0.055	0.052	0.073
0.063	0.078	0.078	22-Feb	18-Feb	18-Mar	19-Feb	0.069
Yukon (101)			0.057	0.053	0.049	0.049	0.072
0.058	0.081	0.078	22-Feb	18-Feb	8-Mar	18-Mar	0.068
Lawton (647)			0.056	0.056	0.053	0.052	0.077
0.078	0.076	0.078	22-Feb	18-Mar	10-Mar	18-Feb	0.068
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 – 1st Floor Meeting Room
Oklahoma City, Oklahoma**

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

Adjourn

***Background materials found at www.deq.state.ok.us/AODNew/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 – 1st 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 1st 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 NO_x 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_x controls in Oklahoma are the most beneficial, although local NO_x 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_x 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 4th 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_x reduction on point sources. Steve Moyer clarified that Nancy did not intend to include refineries in the 30% NO_x 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_x 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_x 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
2nd Floor Williams Tower 2
Downtown Tulsa**

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

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

**Two West Second Street
2nd 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 15th, 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.

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)

Year	Tulsa		Skiatook		OSDH	
	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 believed 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)

Year	Tulsa		Skiatook		OSDH	
	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_x 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 ₃ DV (ppb)			Priority
		Tulsa	Skiatook	OSDH	
Obs	1998-2000 Observed 8-Hr O₃ DVs	89	93	84	
0.	Revised 2007 Base Case	85.2	87.5	80.2	High
Sensitivity Simulations					
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 _x control in Tulsa MSA	85.1	87.1	80.2	Low
4.	2007 5% VOC&NO _x control Tulsa MSA	85.0	87.0	80.2	Low
2007 Emissions Scenarios					
5.	Remove Expiring Permitted Sources ¹	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 ²	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 ³	84.9	87.1	80.0	High
13.	Combined 11. and 12. ^{2,3}	84.8	87.1	80.0	High
14.	AEP-PSO Oologah 1 Unit Low NO _x	85.0	87.1	80.0	Low
15.	OG&E Muskogee 1 Unit Low NO _x	84.9	87.2	80.0	Low
16.	GRDA Chouteau 1 Unit Low NO _x	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.

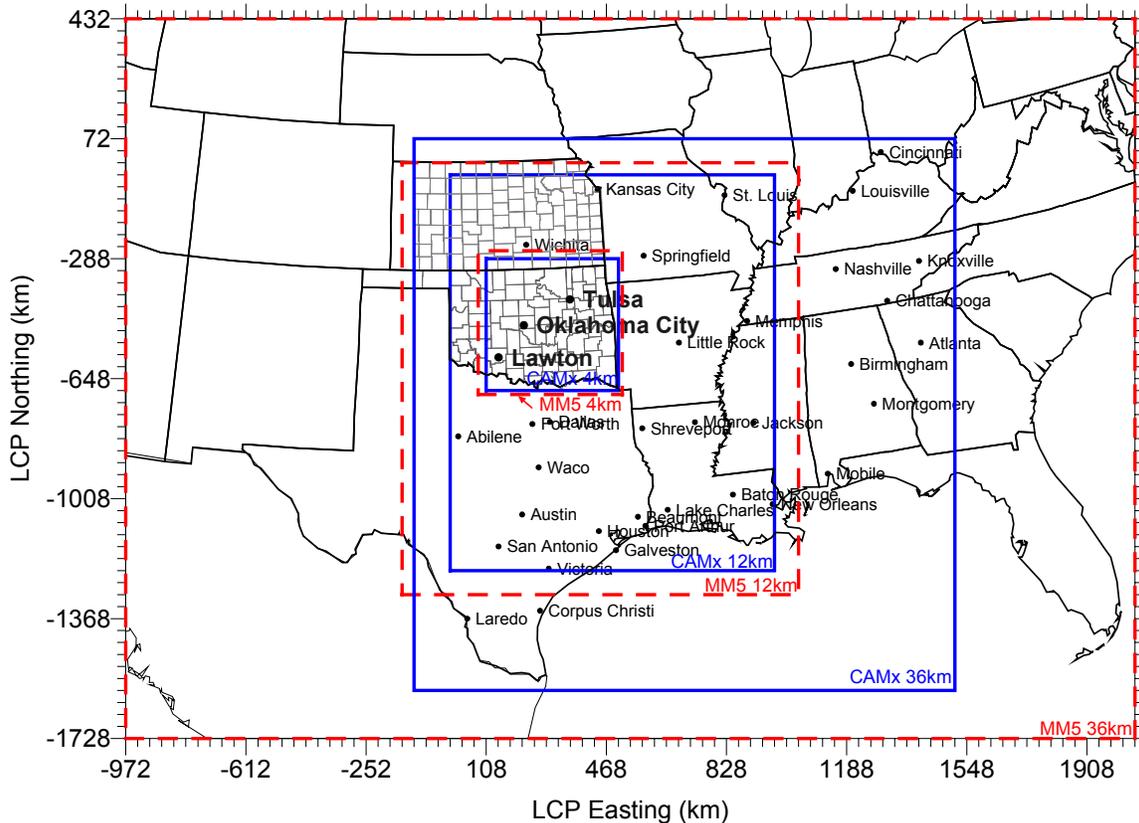


Figure 1. Original relationship between the MM5 (red) and CAMx (blue) 36/12/4-km modeling domains.

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_x SIP Call, Tier 2/Low Sulfur, Heavy Duty Diesel (HDD) and Land Based Non-Road Engine Rules.

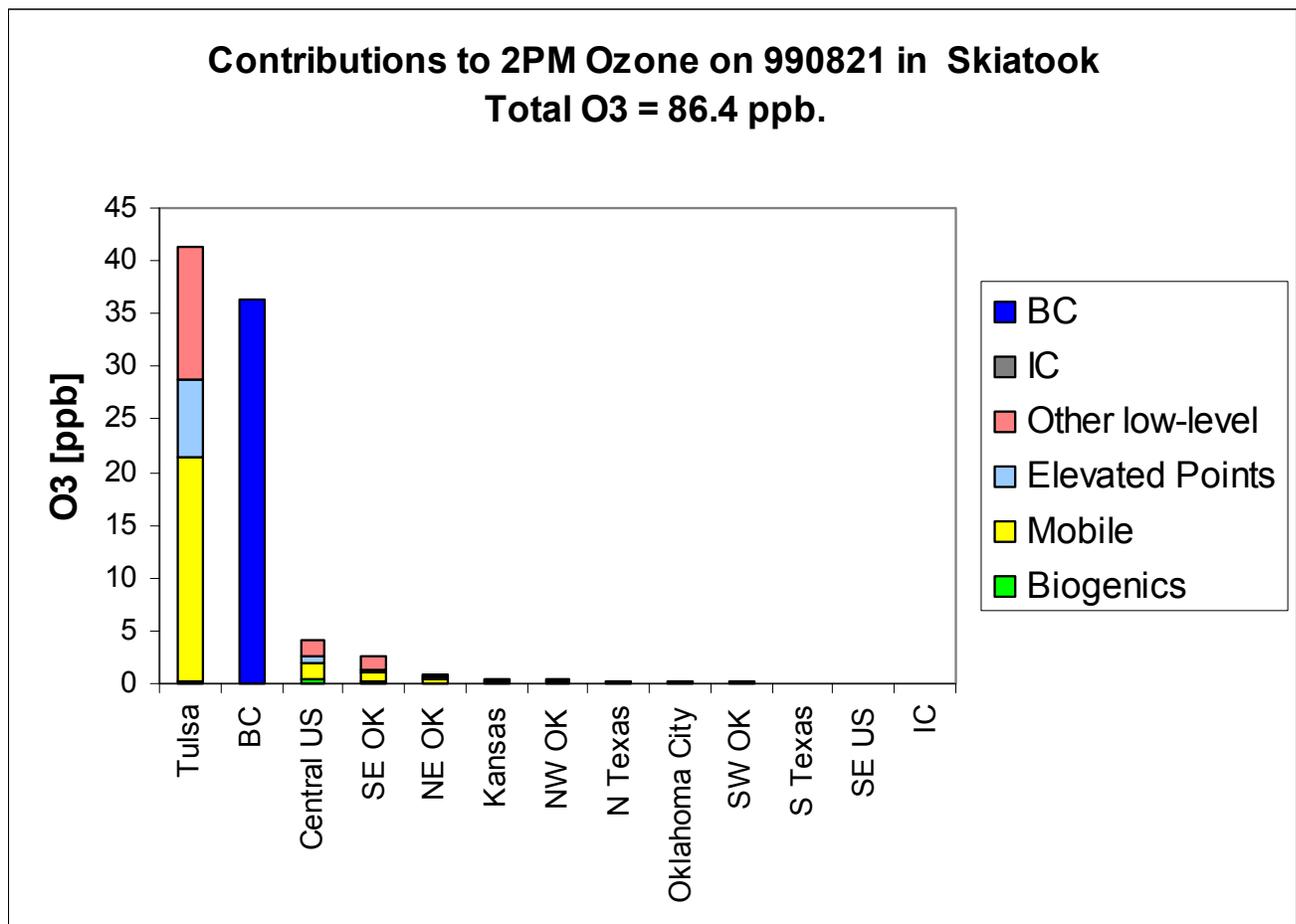


Figure 2. Ozone source apportionment modeling results at the Skiatook monitor in Tulsa on August 21, 1999.

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.

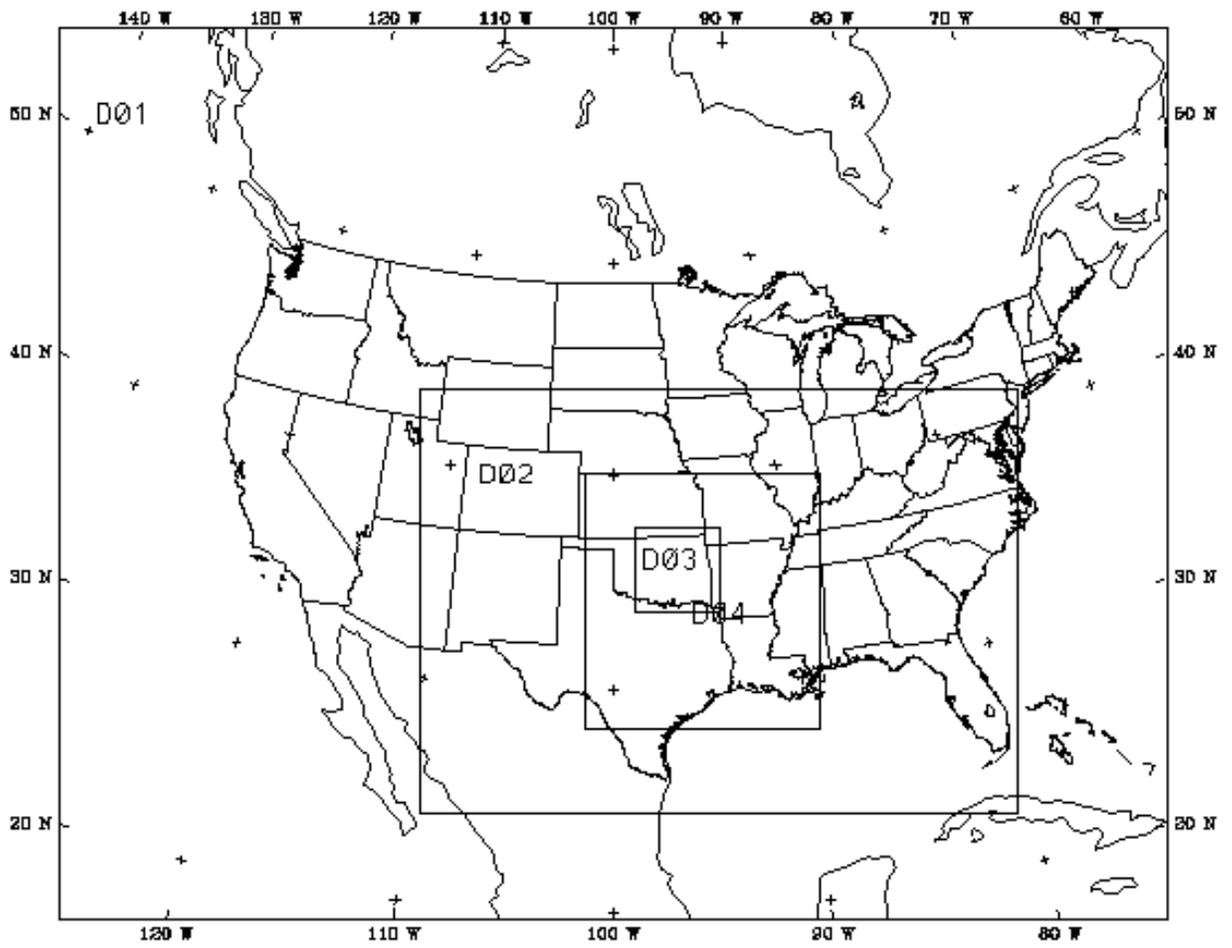
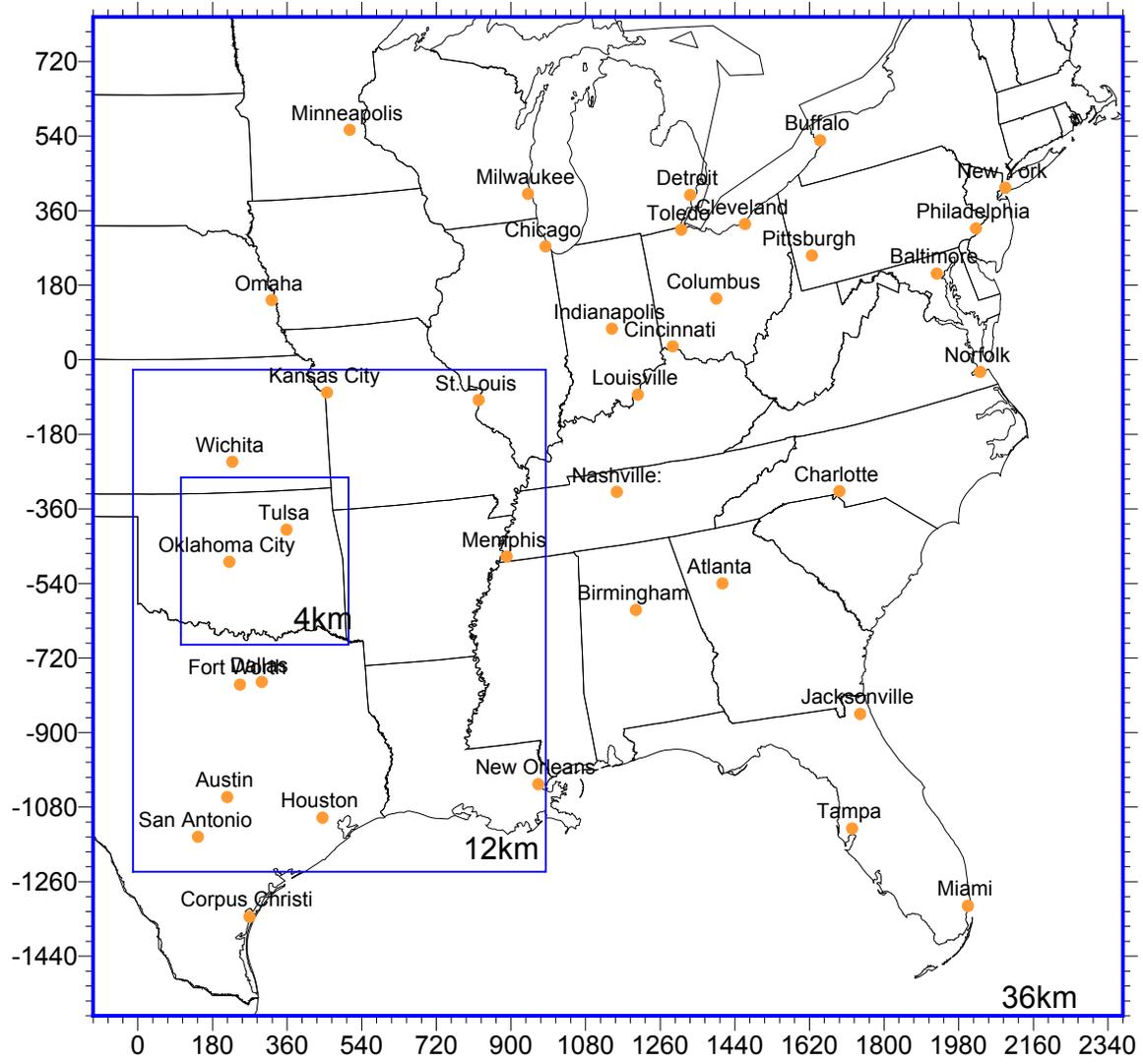


Figure 3. MM5 domain configuration (108/36/12/4-km) for the August 1999 Oklahoma episode.



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 th St.	@ Sooner Rd.		Signal Modification	2004
Del City	SE 29 th St.	@ Bryant Ave.		Signal Modification	2004
Del City	SE 15 th St.	Vickie Dr.	Sooner Rd.	Continuous Left Turn Lane	2005
Del City	SE 29 th St.	Bryant Ave.	Sooner Rd.	Signal Interconnect	2005
Edmond	Kelly Ave.	@ 7 th St.		Intersection Improvement	2004
Edmond	2 nd St.	@ Vista Lane		Intersection Improvement	2004
Edmond	2 nd St.	@ Bradbury Dr.		Intersection Improvement	2004
Edmond	Danforth Rd	@ Coltrane Rd.		Intersection Improvement	2004
Edmond	15 th St.	@ Edgewood Dr.		Signal Modification	2004
Edmond	15 th St.	@ Pine Oak		Signal Modification	2004
Edmond	Kelly Ave.	@ 33 rd St.		Signal Modification	2004
Edmond	Kelly Ave.	@ 15 th St.		Signal Modification	2004
Edmond	15 th St.	@ Boulevard		Signal Modification	2004
Edmond	2 nd St.	@ Bauman Ave.		Signal Modification	2004
Edmond	2 nd St.	@ University Dr.		Signal Modification	2004
Edmond	2 nd St.	@ Walmart entrance		Signal Modification	2004
Edmond	33 rd 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 th St.	@ Rankin St.		Signal Modification	2004
Edmond	Boulevard	@ Covell Rd.		Intersection Improvement	2005
Edmond	33 rd St.	@ Lincoln Ave.		Intersection Improvement	2005
El Reno	US-66	@ 27 th St.		Signal Modification	2004
Midwest City	Douglas Ave.	SE 29 th St.	SE 15 th St.	Continuous Left Turn Lane	2003
Midwest City	NE 10 th St.	@ Air Depot Blvd		Intersection Improvement	2004
Midwest City	NE 10 th St.	@ Midwest Blvd.		Intersection Improvement	2004
Moore	SW 19 th St.	@ Santa Fe Ave.		Intersection Improvement	2003
Moore	SW 19 th St.	@ Telephone Rd.		Intersection Improvement	2003
Moore	Telephone Rd.	@ S. 4 th St.		Intersection Improvement	2004
Moore	Telephone Rd.	@ S. 17 th St.		Intersection Improvement	2004
Moore	SE 19 th St.	@ Eastern Ave.		Intersection Improvement	2004
Moore	Eastern Ave.	@ Moore H.S.		Signal Modification	2005
Moore	SW 4 th St.	@ Classen Ave.		Signal Modification	2005
Moore	SW 4 th St.	@ Wilson St.		Signal Modification	2005
Norman	Robinson Ave.	@ 48 th 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 th 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 th 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 th 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 th St.		Intersection Improvement	2003
Oklahoma City	Eastern Ave.	@ SE 59 th St.		Intersection Improvement	2003
Oklahoma City	Meridian Ave.	SW 29 th St.	Reno Ave.	Continuous Left Turn Lane	2004
Oklahoma City	Eastern Ave.	@ SE 59 th St.		Intersection Improvement	2004
Oklahoma City	Eastern Ave.	@ I-240		Intersection Improvement	2004
Oklahoma City	Meridian Ave.	@ SW 29 th 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 th St.		Intersection Improvement	2004
Oklahoma City	MacArthur	@ SH-152		Intersection Improvement	2004
Oklahoma City	SW 54 th St.	@ MacArthur Ave.		Intersection Improvement	2005
Oklahoma City	SW 54 th St.	@ Portland Ave.		Intersection Improvement	2005
Oklahoma City	Drexel Blvd.	@ NW 23 rd St.		Intersection Improvement	2005
Oklahoma City	Lake Hefner Pkwy	@ NW 122 nd St.		Intersection Improvement	2005
Oklahoma City	NW 150 th St.	@ Penn Ave.		Intersection Improvement	2005
Oklahoma City	NW 150 th St.	@ Western Ave.		Intersection Improvement	2005
Oklahoma City	Sooner Rd.	@ I-240		Intersection Improvement	2005
Oklahoma City	Lincoln Ave.	NW 4 th St.		Intersection Improvement	2005
Oklahoma City	Tulsa Ave.	@ NW 50 th St.		Intersection Improvement	2005
Oklahoma City	Tulsa Ave.	@ NW 10 th St.		Intersection Improvement	2005
Oklahoma City	May Ave.	@ NW 10 th 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 th St.		Signal Modification	2005
Warr Acres	MacArthur Blvd.	@ NW 50 th St.		Intersection Improvement	2004
Warr Acres	MacArthur Blvd.	@ NW 63 rd St.		Intersection Improvement	2004
Warr Acres	MacArthur Blvd.	@ NW 36 th 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 th 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 st Street S)	4 Lanes	6 Lanes
US-75 N.	SH-11 (Gilcrease Expway) To 86 th Street N	4 Lanes	6 Lanes
BA Expressway	I-44 To 161 st 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 st 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 Lennaph (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 th 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 st Street S)	½ Mi. E Of US 75A To US 75 S	2 Lanes	4 Lanes
S.H. 97	103 rd Street North To Existing SH-97	New	2 Lanes
S.H. 72	SH-51 To 151 st Street South	2 Lanes	4 Lanes
Admiral	Garnett To 193 rd E Ave	2 Lanes	4 Lanes
11 th Street	I-44 To 145 th E Ave	2 Lanes	4 Lanes
E 31 st Street South	S Garnett Road To S 145 th E Ave	2 Lanes	5 Lanes
E 41 st Street South	S Garnett Road To S 145 th E Ave	2 Lanes	5 Lanes
E 51 st Street South	S 129 th E Ave To S 145 th E Ave	2 Lanes	5 Lanes
E 61 st Street South	Riverside Parkway To South Harvard Ave	2 Lanes	4 Lanes
E 61 st Street South	US-169 S To 161 st E Avenue	2 Lanes	5 Lanes
E 61 st Street South	161 st E Ave To 177 th E Ave	New	2 Lanes
E 61 st Street South (Albany)	177 th E Avenue To 193 rd E Avenue	2 Lanes	4 Lanes
S Memorial Drive	I-44 To SH-67 (151 st St S)	4 Lanes	6 Lanes
Us-64/S Memorial	E 161 st 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 th Street North	US-75 To Lakewood Avenue	2 Lanes	4 Lanes
E 76 th Street North	Sheridan To Main Street In Owasso	2 Lanes	4 Lanes
E 76 th Street North	US-169 To 129 th Street In Owasso	2 Lanes	4 Lanes
E 86 th Street North	US 75 N To N 145 th E Avenue	2 Lanes	4 Lanes
E 96 th Street North	Garnett Road To 129 th E Ave	2 Lanes	4 Lanes
116 th Street North	Garnett To US-169 N	2 Lanes	4 Lanes
N Sheridan	Apache To 36 th Street N	2 Lanes	4 Lanes
N Yale Ave	E Pine Street To E Apache Street	2 Lanes	4 Lanes
N Yale Ave	66 th St North To 76 th St North	2 Lanes	4 Lanes
N Garnett Road	86 th Street N To 116 th Street N	2 Lanes	4 Lanes
129 th E Ave	76 th Street N To 106 th Street N	2 Lanes	4 Lanes
E 81 st Street South	¼ Mi. E Of S Lewis Ave To SH-51 (Broken Arrow)	2 Lanes	5 Lanes
E 81 st Street South (Houston)	209 th E Avenue To 225 th E Avenue	2 Lanes	4 Lanes
E 91 st Street South	Delaware To Mingo Road	2 Lanes	5 Lanes
E 91 st St S (Washington St.)	US-169 S To S 193 rd E Ave	2 Lanes	4 Lanes

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

Parkways		Existing Or Committed Lanes	Proposed Lanes
Riverside Parkway	21 st 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 1-44 Junction	ROGERS		2004
BRIDGE	SH-66	0.160 Mile - Bridge Painting on SH-66 over the Verdigris River 3.8 miles North of 1-44 (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 black 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