

# **Future Mobility in Oklahoma:**

**An Analysis of the Ability of Oklahoma's Transportation System to Meet the State's Need for Safe and Efficient Mobility**

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Prepared by:

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## Executive Summary

Oklahoma's extensive system of roads and bridges provides the state's residents and its visitors with a high level of personal and commercial mobility. As the backbone of Oklahoma's surface transportation system, roads and bridges play a central role in the state's economy. Oklahoma's extensive highway transportation system enables the state's residents and visitors to go to work, visit family and friends, move goods to market, and frequent tourist attractions.

In 2006, with Oklahoma's roads and bridges showing significant levels of deterioration, legislation was passed providing an additional \$1.6 billion over eight years for road, highway and bridge repair and improvements. As a result, the state has begun an eight-year roadway construction program that will provide for improved road and bridge conditions, enhanced traffic safety and traffic congestion relief. However, the eight-year program has run into its first potential roadblock, with 2007 funding in danger of being cut by \$32.5 million. And even if the state's eight-year road and bridge improvement program is fully funded, the state will face future funding challenges in meeting the needs for further modernization of some of its most critical highways and bridges.

This 2006 increase in transportation funding has provided Oklahoma with an excellent opportunity to address much-needed road, highway and bridge improvements created by years of inadequate funding of its transportation system. But providing Oklahomans with highways and bridges that are well-maintained, safe and efficient will require that the state fully fund its eight-year roadway improvement program.

This report looks at the impact of increased highway funding as a result of the 2006 funding increase, current road and bridge conditions, traffic congestion levels, traffic safety rates and the funding needs of major roads, highways and bridges in Oklahoma.

**The 2006 approval of House Bill 1176 resulted in a significant increase in funding for road, highway and bridge repairs and improvements in Oklahoma. But a possible cut in 2007 funding could reduce the state's ability to improve road, highway and bridge conditions.**

- Approved by the Oklahoma legislature and signed into law by the Governor in 2006, House Bill 1176 will provide an additional \$1.6 billion in road, highway and bridge funds through 2014.
- The Oklahoma Department of Transportation (ODOT) has begun an eight-year, nearly \$4 billion road, highway and bridge improvement program, funded partly by the additional funds made available by House Bill 1176.
- House Bill 1176 provided additional state road, highway and bridge funds without an increase in state fuel, registration or licensing fees. The legislation requires that an increased share of the state motor fuel tax revenue, interest on some transportation accounts and some general fund revenue be spent on road, highway and bridge repairs.
- The state has announced that \$32.5 million of anticipated new highway revenue from House Bill 1176 may not be available in 2007 because the state's revenues did not

increase by at least three percent over the last year, a threshold for the release of some of the additional money.

- The cost of roadway improvements is escalating in part because the price of key materials needed for highway and bridge construction has increased rapidly. Over the past three years, the average cost of materials used for highway construction, including asphalt, concrete, steel, lumber and diesel fuel has increased by 33 percent.

**The additional highway transportation funding approved in 2006 will allow Oklahoma to make significant improvements to its highway transportation system over the next eight years.**

- Traffic safety is likely to improve in Oklahoma because of numerous safety improvements that have been included in the state's eight-year highway construction program. By 2014, Oklahoma plans to build paved shoulders along 553 miles of roadway, install median cable barriers along 280 miles of high-traffic routes and provide significant rehabilitation to 496 miles of state roads and highways.
- Bridge conditions in Oklahoma are likely to improve because the state's new construction plan calls for significant investment in bridge repairs and replacement. The state's new eight-year transportation plan calls for replacing 480 bridges and repairing another 426 bridges by 2014.
- Some highway improvements to provide traffic congestion relief and improve economic development opportunities will be completed over the next eight years, partly as a result of new funding made available by House Bill 1176. These projects include the redesign and rebuilding of high volume, multi-lane facilities including portions of Interstate 44 in Tulsa, the Interstate 40 Crosstown in Oklahoma City, Interstate 35 between Moore and Norman and several bypasses.

**Forty percent of major roads in Oklahoma are in poor and mediocre condition, providing motorists with a rough ride.**

- In 2005 (the latest year for which data is available), 18 percent of major roads in Oklahoma were rated in poor condition and 22 percent of major roads were rated in mediocre condition.
- Roads rated in poor condition may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed.
- Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

- A desirable goal for state and local organizations that are responsible for road maintenance is to have 75 percent of major roads in good condition. Only 42 percent of Oklahoma's major roads are in good condition.

**Oklahoma has the largest percentage of bridges rated structurally deficient in the nation.**

- In 2006, the latest year for which data is available, 27 percent of Oklahoma's bridges (20 feet or longer) were rated structurally deficient, the highest percentage among all states. A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action.
- Seven percent of Oklahoma's bridges (20 feet or longer) were functionally obsolete in 2006. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.
- Bridge deficiencies have an impact on mobility and safety. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid these bridges.
- Narrow bridge lanes, inadequate clearances and poorly aligned bridge approaches reduce traffic safety. Redirected trips lengthen travel time, waste fuel and reduce the efficiency of the local economy.

**Traffic congestion levels in Oklahoma are rising, as vehicle travel on the state's roadways has increased 21 times faster than additional roadway capacity has been added.**

- Oklahoma's population reached 3.5 million in 2005, an increase of approximately 13 percent since 1990. Oklahoma's population is projected to increase by approximately 17 percent by 2030, an increase of approximately 700,000 residents.
- Vehicle travel on Oklahoma's major highways increased by 42 percent from 1990 to 2005 – jumping from 33 billion vehicle miles traveled (VMT) in 1990 to 47 billion VMT in 2005.
- From 1990 to 2005, overall lane miles and miles of highways or freeways in Oklahoma increased by approximately two percent. Thus, vehicle travel in the state increased at a rate 21 times faster than new capacity was added to the system.
- Vehicle travel in Oklahoma is expected to increase by another 40 percent by 2020, reaching 66 billion VMT.
- Twenty-two percent of Oklahoma's urban Interstates and other highways or freeways are considered congested, because they carry a level of traffic that is likely to result in significant delays during peak travel hours.

- The average rush hour trip in the Oklahoma City and Tulsa urban areas currently takes approximately 10 percent longer to complete than during non-rush hour.
- By 2030, unless additional roadway capacity is added, travel delays in the Oklahoma City and Tulsa urban areas will more than double, with the average rush hour trip taking 26 percent longer to complete than during non-rush hours. This level of traffic delay is similar to congestion levels currently experienced in Indianapolis, St. Louis and Salt Lake City.

**More than 3,500 people were killed in crashes on Oklahoma's roads between 2001 and 2005. Improving safety features on Oklahoma's roads and highways would likely result in a decrease in traffic fatalities in the state. Roadway design is an important factor in approximately one-third of all fatal and serious traffic accidents.**

- Between 2001 and 2005, 3,665 people were killed in traffic crashes in Oklahoma, an average of 733 fatalities per year.
- Oklahoma's traffic fatality rate was 1.71 fatalities per 100 million vehicle miles of travel in 2005 (the latest year for which data is available), 18 percent higher than the national average of 1.45.
- There are several factors associated with vehicle accidents that result in fatalities, including driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is an important factor in one-third of fatal traffic crashes.
- Where appropriate, highway improvements such as removing or shielding obstacles, adding or improving medians, adding rumble strips, widening lanes, widening and paving shoulders, upgrading roads from two lanes to four lanes and adding better road markings and traffic signals can reduce traffic fatalities and accidents while improving traffic flow to help relieve congestion.
- The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.

**The efficiency of Oklahoma's transportation system, particularly its highways, is critical to the health of the state's economy. Businesses are increasingly reliant on an efficient and reliable transportation system to move products and services. A key component in business efficiency and success is the level and ease of access to customers, markets, materials and workers.**

- Approximately \$78 billion in goods are shipped annually from sites in Oklahoma and another \$83 billion in goods are shipped annually to sites in Oklahoma, mostly by commercial trucks on the state's highways.

- Seventy-eight percent of the goods shipped annually from sites in Oklahoma are carried by trucks and another seven percent are carried by courier services, which use trucks for part of the deliveries. Similarly, 79 percent of the goods shipped to sites in Oklahoma are carried by trucks and another 11 percent are carried by courier services.
- Commercial truck travel in the state is expected to increase significantly over the next two decades. Based on federal projections, TRIP estimates that commercial trucking will increase by 48 percent in Oklahoma by the year 2020.
- Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with a smoother, more efficient transportation system.
- Businesses have responded to improved communications and greater competition by moving from a push-style distribution system, which relies on low-cost movement of bulk commodities and large-scale warehousing, to a pull-style distribution system, which relies on smaller, more strategic and time-sensitive movement of goods.

*Sources of information for this study include the U.S. Department of Transportation, Federal Highway Administration (FHWA), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), the National Bridge Inventory (NBI), the Bureau of Transportation Statistics (BTS), the Texas Transportation Institute (TTI), the Bureau of Transportation Statistics (BTS), the Reason Foundation, and the Oklahoma Department of Transportation (ODOT).*

## **Introduction**

Oklahoma's system of roads and bridges provides the state's residents and visitors with a high level of mobility. As the backbone of Oklahoma's surface transportation system, roads and bridges play a central role in the state's economy and enable residents and visitors to go to work, visit family and friends, move goods to market, and frequent tourist attractions.

The modernization of Oklahoma's roads and bridges is crucial to providing a safer, more efficient transportation system, while improving the economic livelihood of the state and accommodating future growth. As travel on Oklahoma's surface transportation system becomes more efficient and the physical condition of the state's roads, highways and bridges improves, personal and commercial productivity will increase, boosting economic development statewide.

Following numerous years when the state's roads and bridges had high levels of deterioration, Oklahoma took an important step towards modernizing its roadway system in 2006 with the approval of House Bill 1176, which will boost funding for road and bridges in the state by approximately \$1.6 billion through 2014. House Bill 1176 provided for an increase in state highway funding, without increasing the state's motor fuel, registration or licensing fees. Under the legislation, a portion of motor fuel tax revenues, interest from other transportation funds and some general fund revenue is redirected to road, bridge and highway improvements in the state.

The significant increase in transportation funding allowed the Oklahoma Department of Transportation (ODOT) to recently announce an eight-year, approximately \$4 billion transportation investment plan that will allow the state to improve road and bridge conditions, improve traffic safety, relieve some traffic congestion and enhance economic development opportunities in the state. However, the state recently announced that \$32.5 million of

anticipated new highway revenue from House Bill 1176 may not be available in 2007 because the state's revenues did not increase by at least three percent over the last year, a threshold for the release of some of the additional money.

In addition to evaluating the current condition of Oklahoma's highway transportation system, this report evaluates the state's ability to meet future mobility and traffic safety needs.

Sources of information for this study include the U.S. Department of Transportation, the Federal Highway Administration (FHWA), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), the Texas Transportation Institute (TTI), the National Bridge Inventory (NBI), the Bureau of Transportation Statistics (BTS), the Reason Foundation, and the Oklahoma Department of Transportation (ODOT).

## **Population and Travel Trends in Oklahoma**

Oklahoma residents enjoy modern lifestyles that rely on a high level of personal and commercial mobility. Increases in both the state's population and the rate of travel of its residents have created additional demand on Oklahoma's transportation system, particularly on its key highways and roads. It is critical that Oklahoma develop and maintain a modern transportation system that can accommodate future growth in population, vehicle travel and economic development.

Oklahoma's population reached approximately 3.5 million in 2005, an increase of 13 percent and approximately 400,000 people since 1990. Oklahoma's population is expected to increase another 17 percent by 2030, an increase of approximately 700,000 people.<sup>1</sup>

From 1990 to 2005, annual vehicle miles of travel (VMT) in the state increased by 42 percent, from approximately 33 billion annual VMT to 47 billion VMT.<sup>2</sup> Based on travel and population trends, TRIP estimates that vehicle travel in Oklahoma will increase by another 40 percent by 2020, reaching approximately 66 billion VMT.<sup>3</sup>

## **Condition of Oklahoma's Roads**

In 2005 (the latest year for which data is available), 40 percent of Oklahoma's major roads were rated in poor or mediocre condition, providing motorists with a rough ride.<sup>4</sup> Eighteen percent of Oklahoma's major roads were rated in poor condition and 22 percent were rated in mediocre condition.<sup>5</sup> Roads rated poor may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

The lifecycle of Oklahoma's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that structures last as long as possible. The pavement condition of the state's major roads are evaluated and typically classified as being in poor, mediocre, fair or good condition. A desirable goal for state and local organizations that are responsible for road maintenance is to keep 75 percent of major roads in good condition.<sup>6</sup> In Oklahoma, 42 percent of the state's major roads were in good condition in 2005.<sup>7</sup>

Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road’s foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. Because reconstructing roads costs approximately four times more than resurfacing them, it is critical that roads are fixed before they require major repairs.<sup>8</sup>

### **Bridge Conditions in Oklahoma**

Oklahoma’s bridges form key links in the state’s highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, as well as facilitating commerce and access for emergency vehicles.

In 2006, the latest year for which data is available, 27 percent of Oklahoma’s bridges (20 feet or longer) were rated structurally deficient.<sup>9</sup>

**Chart 1. Bridge Conditions in Oklahoma, 2006.**

<b>Bridge Condition</b>	<b>Number of Bridges</b>	<b>Percent Deficient</b>
Structurally Deficient	6,299	27
Functionally Obsolete	1559	7
Total Bridges	23,460	

**Source: Federal Highway Administration, National Bridge Inventory**

Oklahoma currently ranks first in the nation in the percentage of structurally deficient bridges, ahead of Rhode Island, Pennsylvania, Iowa and South Dakota.

**Chart 2. States with highest share of structurally deficient bridges, 2006.**

<b>State</b>	<b>Percent Structurally Deficient</b>
<b>Oklahoma</b>	<b>27</b>
<b>Rhode Island</b>	<b>25</b>
<b>Pennsylvania</b>	<b>25</b>
<b>Iowa</b>	<b>21</b>
<b>South Dakota</b>	<b>20</b>

**Source: Federal Highway Administration, National Bridge Inventory**

A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

Seven percent of Oklahoma’s bridges (20 feet or longer) were functionally obsolete in 2006.<sup>10</sup> Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.

Bridge conditions in Oklahoma are likely to improve because the state’s new construction plan calls for significant investment in bridge repairs and replacement. ODOT’s new eight-year transportation plan calls for replacing 480 bridges and repairing another 426 bridges by 2014.<sup>11</sup>

## Traffic Congestion in Oklahoma

Traffic congestion in Oklahoma is a growing burden in key urban areas and threatens to impede the state's economic development. Congestion on Oklahoma's urban highways is growing as a result of increases in vehicle travel and population.

From 1990 to 2005, vehicle travel on Oklahoma's roadways increased by 42 percent. During the same period, both overall lane miles and lane miles of major freeways in Oklahoma increased by two percent. Thus, vehicle travel in the state increased at a rate 21 times faster than new roadway capacity was added to the system.

In 2005, the latest year for which data is available, 22 percent of Oklahoma's urban highways were congested, carrying traffic volumes that result in significant rush hour delays.<sup>12</sup> Highways that carry high levels of traffic are also more vulnerable to experiencing significant traffic delays as a result of accidents or other incidents.

The average rush hour trip in both the Oklahoma City and Tulsa areas currently takes approximately 10 percent longer to complete than during non-rush hour. According to a recent report by the Reason Foundation, unless additional highway capacity is added, travel delays in both regions will more than double by 2030, with the average rush hour trip taking 26 percent longer to complete than during non-rush hour. This level of traffic delay would be similar to traffic congestion levels currently experienced in Indianapolis, St. Louis and Salt Lake City.<sup>13</sup>

## Traffic Safety in Oklahoma

A total of 3,665 people were killed in motor vehicle crashes in Oklahoma from 2001 through 2005, an average of 733 fatalities per year.<sup>14</sup> Oklahoma's traffic fatality rate of 1.71 fatalities per 100 million vehicle miles of travel in 2005 (the latest year for which data is available) was 18 percent higher than the national average of 1.45.

**Chart 3. Traffic fatalities in Oklahoma from 2001 – 2005.**

Year	Fatalities
2001	682
2002	739
2003	668
2004	774
2005	802

**Source: National Highway Traffic Safety Administration.**

There are three major factors associated with fatal vehicle crashes: driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is an important factor in one-third of all fatal and serious traffic accidents. Improving safety on Oklahoma's roads and highway system can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and a variety of improvements in roadway safety features.

Where appropriate, roadway improvements such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, providing better road markings, and upgrading or installing traffic signals could reduce the severity of serious traffic crashes. The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.<sup>15</sup>

Roads with poor geometry, with insufficient clear distances, without turn lanes, inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

The following chart shows the correlation between specific needed road improvements and the reduction of fatal accident rates nationally.<sup>16</sup>

**Chart 4. Reduction in fatal accident rates after roadway improvements**

Type of Improvement	Reduction in Fatal Accident Rates after Improvements
New Traffic Signals	53%
Turning Lanes and Traffic Signalization	47%
Widen or Modify Bridge	49%
Construct Median for Traffic Separation	73%
Realign Roadway	66%
Remove Roadside Obstacles	66%
Widen or Improve Shoulder	22%

Source: TRIP analysis of U.S. Department of Transportation data

Traffic safety is likely to improve in Oklahoma because of numerous safety improvements that have been included in the state’s eight-year highway construction program. By 2014, Oklahoma plans to build paved shoulders along 553 miles of roadway, install median cable barriers along 280 miles of high-traffic routes and provide significant rehabilitation to 496 miles of state roads and highways.

## **Importance of Transportation to Economic Growth**

The new culture of business demands that an area have well-maintained and efficient roads, highways and bridges if it wants to remain economically competitive. The advent of modern national and global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement. Consequently, the quality of a region's transportation system has become a key component in a business's ability to compete locally, nationally and internationally.

Businesses have responded to improved communications and the greater necessity to cut costs with a variety of innovations including just-in-time delivery, increased small package delivery, demand-side inventory management and by accepting customer orders through the Internet. The result of these changes has been a significant improvement in logistics efficiency as firms move away from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

Highways are vitally important to continued economic development in Oklahoma. As the economy expands, creating more jobs and increasing consumer confidence, the demand for consumer and business products grows. In turn, manufacturers ship greater quantities of goods to market to meet this demand, a process that adds to truck traffic on the state's highways and major arterial roads.

An analysis of commodity transport by the U.S. Bureau of Transportation Statistics (BTS) and U.S. Census Bureau underscored the economic importance of Oklahoma's road

system. The BTS report found \$78 billion in goods are shipped annually from sites in Oklahoma and another \$83 billion in goods are shipped to sites in Oklahoma, mostly by commercial trucks on the state's highways.<sup>17</sup> Seventy-eight percent of the goods shipped annually from sites in Oklahoma are carried by trucks and another seven percent are carried by courier services, which use trucks for part of the deliveries. Similarly, 79 percent of the goods shipped to sites in Oklahoma are carried by trucks and another 11 percent are carried by courier services.<sup>18</sup>

Trucking is a crucial part of Oklahoma's economy, as commercial trucks move goods from sites across the state to markets inside and outside the state. Commercial truck travel in the state is expected to increase significantly over the next two decades. Based on federal projections, TRIP estimates that commercial trucking will increase by 48 percent in Oklahoma by the year 2020.<sup>19</sup>

### **Transportation Funding and Future Needs in Oklahoma**

The increase in highway transportation funding provided by the approval of House Bill 1176 in 2006 has allowed Oklahoma to significantly expand its highway construction program over the next eight years. The additional funding provided in 2006 will allow the state to undertake many needed roadway improvement projects throughout the state. The following are the major road, highway and bridge projects that are scheduled to be completed by 2014 and are financed in part by increased revenues provided by the 2006 legislation.<sup>20</sup> These projects include the redesign and rebuilding of high volume multi-lane facilities, including portions of Interstate 44 in Tulsa, the Interstate 40 Crosstown in Oklahoma City, Interstate 35 between Moore and Norman and several bypasses.

**Chart 5: Major projects to be completed by 2014**

<b>Route</b>	<b>From</b>	<b>To</b>	<b>County/City</b>	<b>Why needed</b>	<b>Anticipated Completion</b>
SH-51	Taylor's Ferry Area	Sequoyah State Park	Wagoner County	Bridge Replacement	2013
US-70	0.5 mi. west of Durant	4.3 miles east of SH-78	Durant	Durant Bypass	2012
I-35	Canadian River	Indian Hills Road	Norman	Congestion	2015
I-40	I-235	I-44	Oklahoma City	Congestion	2012
US-270	Major / Dewey County Line	3 miles Southeast of County Line	Seiling	Congestion	2008
US-287	20 miles south of Colorado State Line	Colorado State Line	Boise City	Boise City Bypass	2014
SH-199	4.8 mi. west of US-177	0.32 mi. east of US-177	Ardmore	Congestion	2012
I-44	Riverside Drive	Yale Avenue	Tulsa	Congestion	2012
US-59	2.7 miles south of I-40	5.7 miles south of I-40	Sallisaw	Alignment Correction	2009
US-70	2 miles east of Choctaw County Line	7.7 miles east of Choctaw County Line	Valliant	Valliant Bypass	2013
SH-99	North of I-40	Prague	Prague	Alignment Correction	2009
I-235 / I-44	Interchange		Oklahoma City	Congestion	2015
US-183	3.5 mi. south of SH-152	2.65 mi. north of SH-152	Cordell	Congestion	2010
US-183 / SH-3 / US-270	5 miles SE of Woodward	5 miles SE of SH-50	Woodward County	Congestion	2014
I-44	1.6 miles north of SH-7	4.2 miles north of SH-7	Comache County	Pavement Condition	2010
US-60	Pawhuska	Bartlesville	Osage County	Alignment Correction	2013
I-40	Milepost 276.47	Milepost 281.66	Muskogee County	Pavement Condition	2010
US-69 / Comanche	Interchange		McAlester	Congestion	2013
SH-9	24th Street	72nd Street	Norman	Congestion	2013
I-40 / Choctaw Road	Interchange		Oklahoma County	Congestion	2014
SH-6	1 mile south of Granite	SH-55E in Beckham County	Granite	Congestion	2014
US-54	1.25 mi. South of US-64	North 1.75 Miles	Hooker	Congestion	2012
US-62	Apache North	7 miles north of Apache	Apache	Pavement Condition	2014
I-44 / SH-167 (193rd Street)	Interchange		Catoosa / Tulsa	Congestion	2012
SH-74	Memorial Road	Covell Road	Oklahoma City	Congestion	2015

**Source: Oklahoma Department of Transportation**

Despite the increased investment in repairing and improving roads, highways and bridges in the state that is anticipated through 2014, Oklahoma will still face future funding challenges in meeting the need for further modernization of some of its most critical highways and bridges.

The cost of roadway improvements is escalating, in part because the price of key materials needed for highway and bridge construction has increased rapidly. Over the past three years, the average cost of materials used for highway construction, including asphalt, concrete, steel, lumber and diesel fuel has increased by 33 percent.

## **Conclusion**

The approval of House Bill 1176 in 2006 was a critical milestone on the path to providing a modern and well-maintained network of roads, highways and bridges for Oklahoma's residents, businesses and visitors. The additional funding provided by the legislation will allow the state to improve the condition and the performance of the state's roads, highways and bridges. But maintaining the level of funding called for in House Bill 1176 will require ongoing vigilance by the state's leaders.

Oklahoma will also have to consider future increases in funding to offset escalating highway construction costs and also to allow the state to both modernize its existing road, highway and bridge system, and to also expand the system to accommodate the tremendous growth in travel anticipated in the state. Meeting the state's future needs for a safe and efficient roadway system will be critical in providing Oklahomans with the benefits of a road and highway network that is well-maintained, safe and reliable.

## Endnotes

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<sup>1</sup> Oklahoma State Data Center, 2003. Oklahoma Population Projections 2005 to 2030.

<sup>2</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2004.

<sup>3</sup> TRIP estimate based on analysis of FHWA data.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Why We Must Preserve our Pavements, D. Jackson, J. Mahoney, G. Hicks, 1996 International Symposium on Asphalt Emulsion Technology.

<sup>7</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2005.  
www.fhwa.dot.gov.

<sup>8</sup> Selecting a Preventative Maintenance Treatment for Flexible Pavements. R. Hicks, J. Moulthrop. Transportation Research Board. 1999. Figure 1.

<sup>9</sup> Federal Highway Administration – National Bridge Inventory.

<sup>10</sup> Ibid.

<sup>11</sup> Oklahoma Department of Transportation, 2007. Response to TRIP survey.

<sup>12</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 2004

<sup>13</sup> *Building Roads to Reduce Traffic Congestion in America's Cities: How Much and at What Cost?*  
Detailed State-by-State Analysis of Future Congestion and Capacity Needs. The Reason Foundation, 2006.

<sup>14</sup> U.S. Department of Transportation - Federal Highway Administration: Highway Statistics 1999-2004  
www.fhwa.dot.gov and www-fars.nhtsa.dot.gov.

<sup>15</sup> Highway Safety Evaluation System, 1996 Annual Report on Highway Safety Improvement Programs, U.S. Department of Transportation.

<sup>16</sup> Highway Safety Evaluation System; 1996 Annual Report on Highway Safety Improvement Programs; U.S. Department of Transportation.

<sup>17</sup> 2002 Commodity Flow Survey, U.S. Census Bureau – Bureau of Transportation Statistics. www.census.gov.

<sup>18</sup> Ibid.

<sup>19</sup> U.S. Department of Transportation: Office of Freight Management and Operations. www.fhwa.dot.gov.

<sup>20</sup> Oklahoma Department of Transportation response to TRIP survey.