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Researchers: Traffic Congestion Costs Northwest Arkansas $103 million annually

ROGERS, Ark. – Oct. 9, 2012 – The nation's premiere traffic researchers announced today that Northwest Arkansas traffic congestion costs drivers about $103 million each year.

The finding by David Schrank and Tim Lomax of the Texas A&M Transportation Institute is another example of the need for congestion-relieving road projects. Local officials say the findings by TTI illustrate the need for roadway improvements.

"Our findings show traffic congestion here is far worse than what we'd expect to see in regions of comparable size," Schrank said. "Some of the highways and streets we studied would be among the worst in the entire state of Texas."

The Texas A&M Transportation Institute produces the Urban Mobility Report, the nation's most thorough assessment of congestion. TTI also produces an annual review of every Texas highway and major street for the Texas Department of Transportation.

TTI researchers David Schrank and Tim Lomax based their research of eight road segments in Northwest Arkansas on the method used in the Texas-only study, and then they estimated overall traffic congestion in Benton and Washington counties to arrive at the $103 million figure.

"If these eight road segments we studied were in Texas, four of them would be among the worst 100 in all of Texas," Lomax said. "Regions with twice as many people as Northwest Arkansas, such as El Paso and McAllen in Texas, didn't have as many roads in what we call the Texas 100.

"Our research shows highway infrastructure investment is critical to areas like Northwest Arkansas. Removing traffic bottlenecks reduces travel time between neighborhoods, jobs and markets, and it enhances the ability to attract new companies to the region, create jobs, increase the region's economic competitiveness and improve quality of life. Companies want to know that they can move freight without major traffic delays and that their workers will have reasonable commute times."

Plans have been discussed for decades to make major highway improvements in Northwest Arkansas. Those unfunded projects include the Bella Vista Bypass, a U.S. 412 Bypass of Springdale and making improvements to Interstate 540.

"Improving those highways would have a direct impact on traffic congestion in Northwest Arkansas," Schrank said. "A wider I-540 would pull traffic off some of the region's congested streets and improve I-540's overall reliability. There'd be fewer slowdowns and delays on I-540 even though it will carry more traffic overall because of that extra lane in each direction. We also think providing more money to cities and counties, building the Bella Vista Bypass and starting the U.S. 412 Bypass would reduce traffic on some of the roads we studied and other nearby streets."

The Northwest Arkansas Council, a private, nonprofit organization focused on improving the region's infrastructure, education, community vitality and economic opportunity, commissioned the study.

"We wanted to see how much the congestion costs, and TTI's findings are staggering," said Mike Malone, the Northwest Arkansas Council's president and CEO.

"We spend more than $100 million a year sitting in traffic, consuming more gasoline and waiting unnecessarily."

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Traffic Congestion in Benton and Washington Counties

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Findings

The Texas A&M Transportation Institute (TTI) has been ranking traffic congestion levels on Texas urban roadways for the past four years. The Texas Legislature required the Texas Department of Transportation to identify the worst congestion points for the first time in 2009; the list has focused attention on improvements that provide the most benefits to the motoring public. In the summer of 2012, the Northwest Arkansas Council asked TTI to perform a similar analysis on eight key corridors in Benton and Washington counties. The analysis included about 40 miles of roadway in the two counties which represented less than 10 percent of the existing freeway and major street mileage in the two-county region, but at least 40 percent of the extra travel time (also called delay).

Exhibit 1 shows that US-412 in Washington County from AR-112 to Thompson Street is the most congested corridor in the study with about 137,000 hours of delay per mile and $12.6 million congestion cost in 2011. This level of delay would make it the 55th most congested segment in the Texas Most Congested Corridors analysis. Three other sections would also be ranked in the Texas 100, all with more than $10 million lost in annual time and fuel costs.

Exhibit 1. Results of Congestion Analysis

Rank	Roadway	County	From	To	Delay per Mile[1]	Travel Time Index[3]	Planning Time Index[4]	Annual Congestion Cost ($mil)[2]
1	US-412	Washington	AR-112	Thompson	136,900	1.41	8.35	12.6
2	US-71 Business	Benton	Central	Moberly	130,200	1.10	2.80	11.2
3	College	Washington	Lafayette	Main	107,100	1.23	4.14	10.9
4	Walnut	Benton	I-540	W Hudson	99,600	1.08	2.70	10.6
5	US-71	Benton	AR-340	N Walton	62,000	1.28	3.87	6.2
6	Thompson	Washington	Main	County Line	58,500	1.13	4.82	6.5
7	I-540	Washington	US-62	AR-112	24,700	1.08	1.63	2.0
8	I-540	Washington/ Benton	Pleasant Grove	Elm Springs	17,900	1.07	1.70	2.4
	Non-study Roadways[5]				17,050	1.08	2.02	40.8
	Total or Average				32,200	1.10	2.35	**103.2**

[1] Delay Per Mile—Extra travel time during the year due to congestion, divided by the corridor length. Primary measure used to rank roadway segments in this analysis.
[2] Cost of congestion – Value of time delay and excess fuel consumption based on an hourly rate of $20.50 per hour of delay.
[3] Travel Time Index – A ratio of travel time in the peak period to the travel time at free-flow conditions. A value of 1.30 indicates that a 20-minute free-flow trip takes 26 minutes in the peak period.
[4] Planning Time Index – Represents the total travel time that should be planned for a trip. A PTI of 2.50 means that for a 30-minute trip in light traffic, 75 minutes should be planned to reach a destination on time.
[5] These roadways include freeway, major arterial and minor arterial roadway segments in Benton and Washington counties that were not analyzed in the 8 study segments.

Uncertainty is part of the congestion problem; the planning time index illustrates the amount of extra time that one should allow for an important trip (for example, a commute trip where being late more than once a month might be a problem). A trip on College Avenue in Fayetteville, for example, could take more than four times the free-flow trip time – so a 10-minute late-evening trip could take 40 minutes on the worst travel day in a month. Thompson Street in Springdale, while less congested, is even more unreliable, with "worst day" travel times approaching five times the late evening trips.

The Northwest Arkansas congestion analysis was compared to the 2012 Texas Most Congested Corridor analysis to provide some perspective. Texas has four metropolitan areas of more than 1 million residents which contain 93 of the 100 worst Texas bottlenecks. For comparison purposes, El Paso and McAllen both have metro area populations of 800,000 and yet together only have 5 of the 100 most congested sections. Corpus Christi, with a similar population to Fayetteville-Springdale-Rogers, has no sections in the top 300. (see Exhibit 2)

Exhibit 2. Comparison of Northwest Arkansas with Smaller Regions in Texas 100 Analysis

Metro Region[1]	2010 Population (1000)	Segments in 2012 Texas Top 100
Texas	25,670	
El Paso	804	3
McAllen	780	2
Corpus Christi	428	0
Tyler	211	1
Laredo	252	1
Arkansas	2,940	
Benton County	230	2
Washington County	210	2

[1]Note: 93 of the Texas 100 segments are in Houston, Dallas-Fort Worth, San Antonio and Austin metro regions.

Background

The traffic volume information in this report was based on the roadway inventory database maintained by the Arkansas State Highway and Transportation Department (AHTD). The speed data for the analysis was obtained from INRIX, a leading provider of traffic speed data, for the calendar year 2011.

Exhibit 3 shows the extent of the roadway system examined in this report. The congestion statistics were generated for each direction of each roadway segment; however, the results were reported by combining the directions.

Exhibit 3. Northwest Arkansas Roadway System Analyzed, 2011 Data

Area	Miles of Roadway	
	Freeway	Major Street
Region	82	469
Roads Analyzed in Each County		
Benton	3	14
Washington	8	15

Source: Arkansas State Highway and Transportation Department

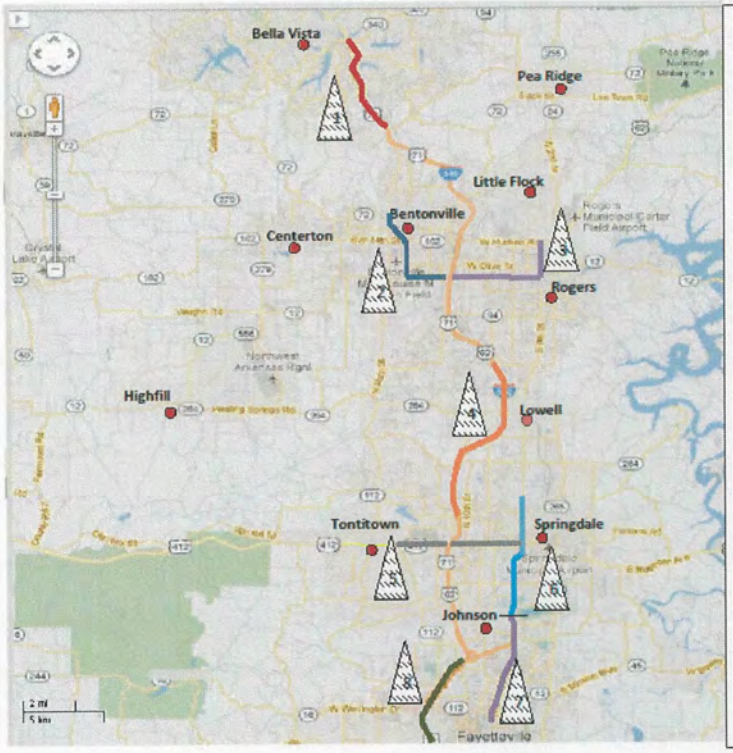
The INRIX speed network was matched to the AHTD roadway inventory network. Six of the eight road locations had both volume and speed data. Where speed data was not present, estimated speeds were

generated from similarly-sized metropolitan areas included in the Texas analysis. Roadway sections with similar traffic volumes were used to estimate travel speeds; less traveled locations received a higher estimated speed than locations with more traffic.

It is also important to note that short sections of roadway (for example, a very congested intersection) can produce very high congestion values. Longer road segments tend to lessen the effect of one very poorly performing short stretch of roadway. In the Texas analysis, a minimum length of three miles is used in the analysis so that the results focus on identifying potential corridor projects. All of the corridors in the northwest Arkansas analysis were at least four miles long.

Exhibit 4 shows the location of the analysis corridors in Benton and Washington Counties. US 71 Business (Corridor #2) and Walnut Street (Corridor #3) were the two corridors that contained estimated speeds.

Exhibit 4. Location of Analysis Corridors



Section

1 – US 71 (AR 340 to North Walton)

2 – US 71 Busn (Central to Moberly)

3 – Walnut (I-540 to W Hudson)

4 – I-540 (Pleasant Grove to Elm Springs)

5 – US 412 (AR 112 to Thompson St)

6 – Thompson St (Main to County Line)

7 – College (Main to Lafayette)

8 – I-540 (US 62 to AR 112)

Source: Google Maps and TTI Analysis

Northwest Arkansas Traffic Congestion Study Areas