

Toll Pricing Strategies for the Bella Vista Bypass

All Toll Pricing strategies are contingent upon the full funding of the ARRA TIGER Grant. The AHTD is looking at three Toll Pricing Strategies to improve the livability for the region. These three strategies are: a) green car discount; b) elderly driver discount; c) low income driver discount. Users eligible for more than one discount must choose a single incentive.

Green Car Incentives

For the Bella Vista Bypass there will be a toll discount implemented for green cars. The EPA's definition of green cars as shown in <http://www.epa.gov/greenvehicles/Index.do> will be used to determine eligible vehicles. Factors for the EPA's definition for green cars are as follows:

- a) Fuel Economy (combined the city and highway miles per gallon estimates).
- b) Air Pollution (vehicle tailpipe emissions that contribute to local and regional air pollution, creating problems such as smog, haze, and health issues); and
- c) Greenhouse Gas (emissions of carbon dioxide (CO₂) and other greenhouse gases).

Types of vehicles that are meeting the EPA's definition include the Chevrolet Cobalt, Toyota Prius, Honda Fit, and the Chrysler PT Cruiser. In order to estimate the loss of revenue due to the green car incentives the AHTD conducted a green vehicle survey of the traffic within the existing corridor on July 9, 2009 thru July 10, 2009. Based on this survey it was determined that seventeen percent of the traffic meets the EPA's definition of green cars.

Assuming a \$0.50 discount applied in the toll rate, the following table shows the total toll savings associated with "Green" vehicles. Based on anticipated industry trends, fuel costs, and fleet turnover, it is assumed that "Green" vehicles within the fleet will increase at a rate of 5.2%. This is higher than the anticipated traffic growth of 1.84%.

Year	"Green" Vehicles per Day	"Green" Vehicles per Year	Cost-Average Discount Toll	Revenues for "Green" Vehicle Discount	Savings for "Green" Vehicles
2012	0	0	\$1.00	\$0.00	\$0.00
2013	273	99,645	\$1.00	\$99,645.00	\$49,822.50
2014	287	104,827	\$1.00	\$104,826.54	\$52,413.27
2015	302	110,278	\$1.00	\$110,277.52	\$55,138.76
2016	318	116,012	\$1.00	\$116,011.95	\$58,005.98
2017	334	122,045	\$1.00	\$122,044.57	\$61,022.29
2018	352	128,391	\$1.00	\$128,390.89	\$64,195.45
2019	370	135,067	\$1.00	\$135,067.22	\$67,533.61
2020	389	142,091	\$1.00	\$142,090.71	\$71,045.36
2021	410	149,479	\$1.00	\$149,479.43	\$74,739.71
2022	431	157,252	\$1.00	\$157,252.36	\$78,626.18
2023	453	165,429	\$1.00	\$165,429.48	\$82,714.74
2024	477	174,032	\$1.00	\$174,031.81	\$87,015.91
2025	502	183,081	\$1.00	\$183,081.47	\$91,540.73
2026	528	192,602	\$1.00	\$192,601.71	\$96,300.85
2027	555	202,617	\$1.00	\$202,616.99	\$101,308.50
2028	584	213,153	\$1.00	\$213,153.08	\$106,576.54
2029	614	224,237	\$1.00	\$224,237.04	\$112,118.52
2030	646	235,897	\$1.00	\$235,897.36	\$117,948.68
2031	680	248,164	\$1.00	\$248,164.03	\$124,082.01
2032	715	261,069	\$1.00	\$261,068.56	\$130,534.28
2033	752	274,644	\$1.00	\$274,644.12	\$137,322.06
2034	792	288,926	\$1.00	\$288,925.62	\$144,462.81
2035	833	303,950	\$1.00	\$303,949.75	\$151,974.87
2036	876	319,755	\$1.00	\$319,755.13	\$159,877.57
2037	922	336,382	\$1.00	\$336,382.40	\$168,191.20
2038	970	353,874	\$1.00	\$353,874.29	\$176,937.14
2039	1,020	372,276	\$1.00	\$372,275.75	\$186,137.87
2040	1,073	391,634	\$1.00	\$391,634.09	\$195,817.04
2041	1,129	411,999	\$1.00	\$411,999.06	\$205,999.53
2042	1,187	433,423	\$1.00	\$433,423.01	\$216,711.51
2043	1,249	455,961	\$1.00	\$455,961.01	\$227,980.50
2044	1,314	479,671	\$1.00	\$479,670.98	\$239,835.49
2045	1,383	504,614	\$1.00	\$504,613.87	\$252,306.94
2046	1,454	530,854	\$1.00	\$530,853.79	\$265,426.90
2047	1,530	558,458	\$1.00	\$558,458.19	\$279,229.10
2048	1,610	587,498	\$1.00	\$587,498.02	\$293,749.01
2049	1,693	618,048	\$1.00	\$618,047.91	\$309,023.96
2050	1,781	650,186	\$1.00	\$650,186.41	\$325,093.20
Total "Green" Vehicle Toll Savings					\$5,618,760.56

Elderly Driver Incentives

For the Bella Vista Bypass there will be a toll discount implemented for elderly drivers. It is defined as a \$0.50 discount for a vehicle containing a driver that is over the age of 65. To obtain this special pass, the user must apply and show proof of age. The figure collected for elderly drivers taking the Bella Vista Bypass assumes current demographic characteristics of Benton, Washington and McDonald Counties will persist. The calculation takes the latest Census population multiplied by the percentage of drivers and the percentage of those who commute outside of their state of residence, assuming a continuation in behavioral patterns, which is then adjusted for the projected population growth expected by 2012 and 2032.

The following table shows the total toll savings for the discounted elderly driver incentive.

Year	"Elderly Drivers" Vehicles per Day	"Elderly Drivers" Vehicles per Year	Cost Average Discount Toll	Revenues for "Elderly Drivers" Discount	Savings for "Elderly Drivers" Toll
2012	0	0	\$1.00	\$0.00	\$0.00
2013	264	96,416	\$1.00	\$96,416.15	\$48,208.08
2014	337	122,883	\$1.00	\$122,883.33	\$61,441.67
2015	373	136,117	\$1.00	\$136,116.92	\$68,058.46
2016	420	153,132	\$1.00	\$153,131.54	\$76,565.77
2017	430	156,913	\$1.00	\$156,912.56	\$78,456.28
2018	440	160,694	\$1.00	\$160,693.59	\$80,346.79
2019	456	166,365	\$1.00	\$166,365.13	\$83,182.56
2020	482	175,818	\$1.00	\$175,817.69	\$87,908.85
2021	492	179,599	\$1.00	\$179,598.72	\$89,799.36
2022	497	181,489	\$1.00	\$181,489.23	\$90,744.62
2023	508	185,270	\$1.00	\$185,270.26	\$92,635.13
2024	518	189,051	\$1.00	\$189,051.28	\$94,525.64
2025	528	192,832	\$1.00	\$192,832.31	\$96,416.15
2026	533	194,723	\$1.00	\$194,722.82	\$97,361.41
2027	544	198,504	\$1.00	\$198,503.85	\$99,251.92
2028	549	200,394	\$1.00	\$200,394.36	\$100,197.18
2029	559	204,175	\$1.00	\$204,175.38	\$102,087.69
2030	570	207,956	\$1.00	\$207,956.41	\$103,978.21
2031	575	209,847	\$1.00	\$209,846.92	\$104,923.46
2032	580	211,737	\$1.00	\$211,737.44	\$105,868.72
2033	585	213,628	\$1.00	\$213,627.95	\$106,813.97
2034	590	215,518	\$1.00	\$215,518.46	\$107,759.23
2035	596	217,409	\$1.00	\$217,408.97	\$108,704.49
2036	601	219,299	\$1.00	\$219,299.49	\$109,649.74
2037	606	221,190	\$1.00	\$221,190.00	\$110,595.00
2038	611	223,081	\$1.00	\$223,080.51	\$111,540.26
2039	622	226,862	\$1.00	\$226,861.54	\$113,430.77
2040	622	226,862	\$1.00	\$226,861.54	\$113,430.77
2041	632	230,643	\$1.00	\$230,642.56	\$115,321.28
2042	637	232,533	\$1.00	\$232,533.08	\$116,266.54
2043	642	234,424	\$1.00	\$234,423.59	\$117,211.79
2044	663	241,986	\$1.00	\$241,985.64	\$120,992.82
2045	668	243,876	\$1.00	\$243,876.15	\$121,938.08
2046	673	245,767	\$1.00	\$245,766.67	\$122,883.33
2047	684	249,548	\$1.00	\$249,547.69	\$124,773.85
2048	694	253,329	\$1.00	\$253,328.72	\$126,664.36
2049	694	253,329	\$1.00	\$253,328.72	\$126,664.36
2050	704	257,110	\$1.00	\$257,109.74	\$128,554.87
Total "Elderly Drivers" Toll Savings					\$3,865,153.46

Low Income Incentives

For the Bella Vista Bypass there will be a toll discount implemented for drivers from low income families. These motorists must submit an application to verify their income status to receive a discount pass. For the Bypass, the toll will be reduced by \$1.00 per trip for the qualified motorist. To estimate the savings, it was estimated that 30% of the bypass traffic could be realized as low income drivers. The estimated 30% is based on the commuter population and the estimated traffic diversion to the proposed Bypass. This estimate is based on an analysis of the free and reduced lunch program from schools that are geographically relevant to the proposed bypass. If full funding of the ARRA TIGER Grant is received, this incentive will be further defined regarding the eligibility mechanism.

The following figures show the free and reduced lunch data and the potential bypass users.

County	Free Lunch	Reduced Lunch	Enrollment	% of Free/Reduced
Benton County School Districts	11,522	3,259	36,365	40.6%
Carroll County School Districts	1,724	441	3,757	57.6%
Madison County School Districts	1,132	202	2,510	53.1%
Washington County School Districts	12,455	2,963	33,754	45.7%
McDonald County School Districts	2,021	431	4,250	57.7%

Potential "Low Income" Bypass Users		
County Schools	Percentage of Free/Reduced Lunch	Percentage of Bypass Users Considered "Low Income"
Benton	40.60%	20%
McDonald	57.70%	10%
Total Percent of Bypass "Low Income"		30%

The following table shows the total toll savings for the low income incentives.

Year	Low Income Vehicles per Day	Low Income Vehicles per Year	Cost Average Discount Toll	Revenues for Low Income Vehicles Discount	Savings for "Low Income" Toll
2012	0	0	\$0.50	\$0.00	\$0.00
2013	55	20,130	\$0.50	\$10,064.98	\$20,129.96
2014	43	15,794	\$0.50	\$7,897.14	\$15,794.28
2015	39	14,259	\$0.50	\$7,129.36	\$14,258.73
2016	35	12,674	\$0.50	\$6,337.21	\$12,674.42
2017	34	12,369	\$0.50	\$6,184.51	\$12,369.01
2018	33	12,078	\$0.50	\$6,038.99	\$12,077.98
2019	32	11,666	\$0.50	\$5,833.11	\$11,666.23
2020	30	11,039	\$0.50	\$5,519.51	\$11,039.01
2021	30	10,807	\$0.50	\$5,403.31	\$10,806.61
2022	29	10,694	\$0.50	\$5,347.02	\$10,694.04
2023	29	10,476	\$0.50	\$5,237.90	\$10,475.80
2024	28	10,266	\$0.50	\$5,133.14	\$10,266.28
2025	28	10,065	\$0.50	\$5,032.49	\$10,064.98
2026	27	9,967	\$0.50	\$4,983.63	\$9,967.26
2027	27	9,777	\$0.50	\$4,888.71	\$9,777.41
2028	27	9,685	\$0.50	\$4,842.59	\$9,685.17
2029	26	9,506	\$0.50	\$4,752.91	\$9,505.82
2030	26	9,333	\$0.50	\$4,666.49	\$9,332.98
2031	25	9,249	\$0.50	\$4,624.45	\$9,248.90
2032	25	9,166	\$0.50	\$4,583.16	\$9,166.32
2033	25	9,085	\$0.50	\$4,542.60	\$9,085.21
2034	25	9,006	\$0.50	\$4,502.76	\$9,005.51
2035	24	8,927	\$0.50	\$4,463.60	\$8,927.20
2036	24	8,850	\$0.50	\$4,425.12	\$8,850.24
2037	24	8,775	\$0.50	\$4,387.30	\$8,774.60
2038	24	8,700	\$0.50	\$4,350.12	\$8,700.24
2039	23	8,555	\$0.50	\$4,277.62	\$8,555.24
2040	23	8,555	\$0.50	\$4,277.62	\$8,555.24
2041	23	8,415	\$0.50	\$4,207.49	\$8,414.99
2042	23	8,347	\$0.50	\$4,173.29	\$8,346.57
2043	23	8,279	\$0.50	\$4,139.63	\$8,279.26
2044	22	8,021	\$0.50	\$4,010.27	\$8,020.53
2045	22	7,958	\$0.50	\$3,979.18	\$7,958.36
2046	22	7,897	\$0.50	\$3,948.57	\$7,897.14
2047	21	7,777	\$0.50	\$3,888.74	\$7,777.49
2048	21	7,661	\$0.50	\$3,830.70	\$7,661.40
2049	21	7,661	\$0.50	\$3,830.70	\$7,661.40
2050	21	7,549	\$0.50	\$3,774.37	\$7,548.74
Total "Low Income" Vehicle Toll Savings					\$379,020.57

The following table shows the present value of all of the Toll Pricing Incentives savings.

Savings for Toll Pricing Incentives			
	"Green" Vehicle	"Elderly Drivers" Vehicle	Low Income Vehicle
Present Value*	\$4,648,686	\$3,197,838	\$313,583
Total Savings			\$8,160,106
* - Present Value over the life of the toll.			

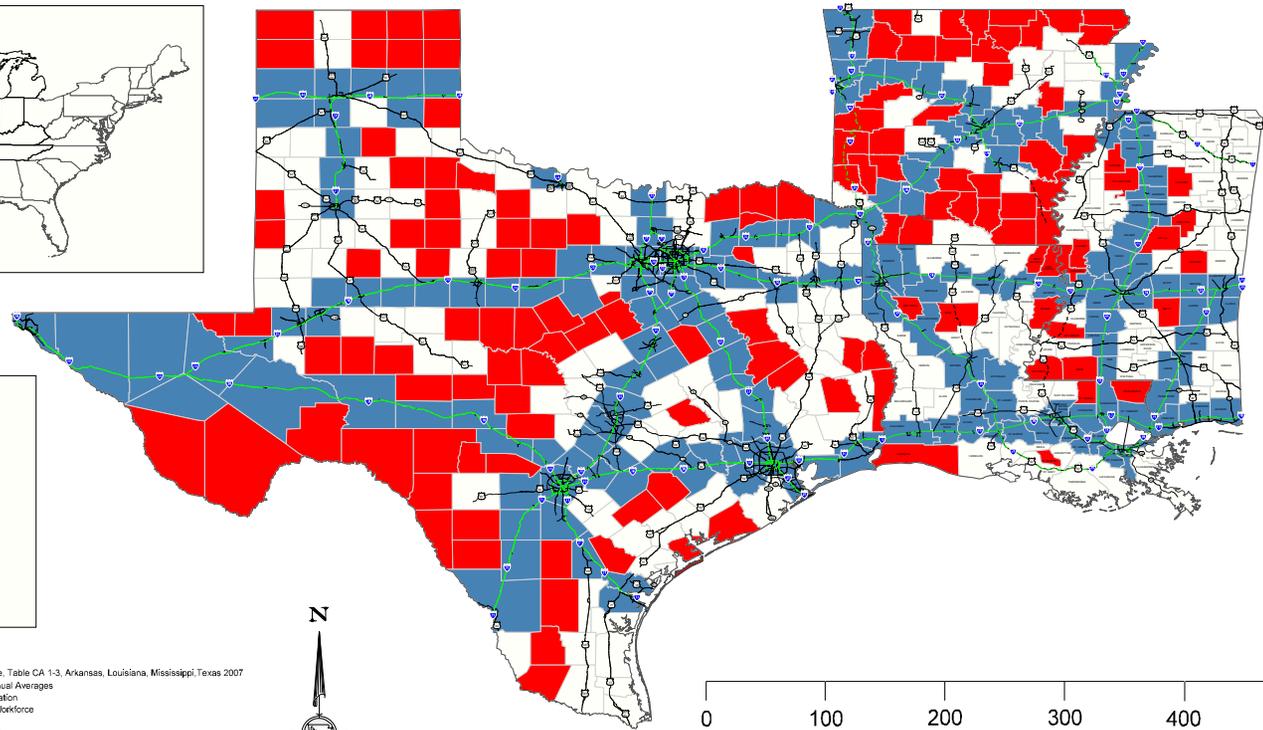
Research conducted by the AHTD has shown that there is substantial economic impact associated with interstate connectivity. The AHTD studied the economic performance of Louisiana, Texas, Mississippi, and Arkansas by county/parish area and related economic indicators to interstate access. It was found that the Per Capita Income and Unemployment rate of counties/parishes with direct interstate access were much improved over counties that had no access to facilities and counties with four-lane facilities linking to interstate-like facilities. Per capita income was found to be improved by 32% and unemployment rate was improved by 1.09%. This information is shown in detail on the map on the next page.

Economic Impact of Interstate Facilities

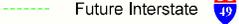
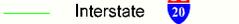
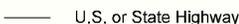
An Examination of Interstates And Their Multi-Lane Connectors

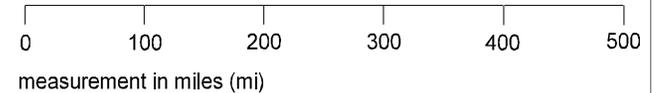
Economic Performance by County/Parish Area
Arkansas, Louisiana, Mississippi and Texas

	Interstate Access		No Access To Interstate
Per Capita Income	\$37,959	Per Capita Income	\$25,489
Unemployment Rate	4.91%	Unemployment Rate	6.08%
	Four Lane Highway With Interstate Access		
Per Capita Income	\$29,351		
Unemployment Rate	5.60%		



ROAD LEGEND

	Future Interstate	
	Interstate	
	U.S. or State Highways/Parkways (Four or More Lanes)	
	Future Four Lane Highways	



Sources: Bureau of Economic Analysis, Regional Economic Accounts, Local Area Personal Income, Table CA 1-3, Arkansas, Louisiana, Mississippi, Texas 2007
Bureau of Labor Statistics, Publications, Special Requests, Labor Force Data by County, 2008 Annual Averages
County Per Capita Income Methodology: Combined Personal Income Divided By Combined Population
Unemployment Rate Methodology: Combined Total Unemployed Workers Divided By Combined Workforce
Geographic Projection: WGS 84
Created By Gary Zekis, Mapping Section, Arkansas State Highway and Transportation Department