

Millerton Road - North Fork Road to Millerton Lake State Park Entrance

Benefit-Cost Summary

Year	Safety Benefits	Time Savings/Costs	Project Costs & Upkeep	Undiscounted Benefits	Cumulative Undiscounted	7% Discounted Value	Cumulative (7% Discount)
2018	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ (750,000.00)	\$ (750,000.00)	\$ (750,000.00)	\$ (700,934.58)	\$ (700,934.58)
2020	\$ -	\$ -	\$ (750,000.00)	\$ (750,000.00)	\$ (1,500,000.00)	\$ (655,079.05)	\$ (1,356,013.63)
2021	\$ -	\$ -	\$ (1,500,000.00)	\$ (1,500,000.00)	\$ (3,000,000.00)	\$ (1,224,446.82)	\$ (2,580,460.44)
2022	\$ -	\$ -	\$ (1,500,000.00)	\$ (1,500,000.00)	\$ (4,500,000.00)	\$ (1,144,342.82)	\$ (3,724,803.26)
2023	\$ -	\$ (5,040,553.74)	\$ (18,000,000.00)	\$ (23,040,553.74)	\$ (27,540,553.74)	\$ (16,427,596.38)	\$ (20,152,399.64)
2024	\$ -	\$ (2,595,885.18)	\$ (4,000,000.00)	\$ (6,595,885.18)	\$ (34,136,438.91)	\$ (4,395,116.80)	\$ (24,547,516.44)
2025	\$ 6,030,150.20	\$ -	\$ 8,614.04	\$ 6,038,764.24	\$ (28,097,674.67)	\$ 3,760,638.87	\$ (20,786,877.57)
2026	\$ 6,211,054.71	\$ -	\$ 8,872.46	\$ 6,219,927.17	\$ (21,877,747.51)	\$ 3,620,054.24	\$ (17,166,823.33)
2027	\$ 6,397,386.35	\$ -	\$ 9,138.63	\$ 6,406,524.98	\$ (15,471,222.53)	\$ 3,484,725.11	\$ (13,682,098.22)
2028	\$ 6,589,307.94	\$ -	\$ 9,412.79	\$ 6,598,720.73	\$ (8,872,501.80)	\$ 3,354,455.01	\$ (10,327,643.20)
2029	\$ 6,786,987.18	\$ -	\$ 9,695.17	\$ 6,796,682.35	\$ (2,075,819.44)	\$ 3,229,054.83	\$ (7,098,588.38)
2030	\$ 6,990,596.79	\$ -	\$ 9,986.03	\$ 7,000,582.82	\$ 4,924,763.38	\$ 3,108,342.50	\$ (3,990,245.88)
2031	\$ 7,200,314.70	\$ -	\$ 10,285.61	\$ 7,210,600.31	\$ 12,135,363.69	\$ 2,992,142.78	\$ (998,103.11)
2032	\$ 7,416,324.14	\$ -	\$ 10,594.18	\$ 7,426,918.32	\$ 19,562,282.00	\$ 2,880,286.97	\$ 1,882,183.86
2033	\$ 7,638,813.86	\$ -	\$ 10,912.00	\$ 7,649,725.87	\$ 27,212,007.87	\$ 2,772,612.69	\$ 4,654,796.56
2034	\$ 7,867,978.28	\$ -	\$ 11,239.36	\$ 7,879,217.64	\$ 35,091,225.51	\$ 2,668,963.62	\$ 7,323,760.17
2035	\$ 8,104,017.63	\$ -	\$ 11,576.54	\$ 8,115,594.17	\$ 43,206,819.69	\$ 2,569,189.28	\$ 9,892,949.45
2036	\$ 8,347,138.16	\$ -	\$ 11,923.84	\$ 8,359,062.00	\$ 51,565,881.68	\$ 2,473,144.82	\$ 12,366,094.27
2037	\$ 8,597,552.30	\$ -	\$ 12,281.56	\$ 8,609,833.86	\$ 60,175,715.54	\$ 2,380,690.81	\$ 14,746,785.08
2038	\$ 8,855,478.87	\$ -	\$ 12,650.00	\$ 8,868,128.87	\$ 69,043,844.41	\$ 2,291,693.02	\$ 17,038,478.10
2039	\$ 9,121,143.24	\$ -	\$ 13,029.50	\$ 9,134,172.74	\$ 78,178,017.15	\$ 2,206,022.25	\$ 19,244,500.35
2040	\$ 9,394,777.53	\$ -	\$ 13,420.39	\$ 9,408,197.92	\$ 87,586,215.07	\$ 2,123,554.13	\$ 21,368,054.48
2041	\$ 9,676,620.86	\$ -	\$ 13,823.00	\$ 9,690,443.86	\$ 97,276,658.93	\$ 2,044,168.93	\$ 23,412,223.41
2042	\$ 9,966,919.48	\$ -	\$ 14,237.69	\$ 9,981,157.17	\$ 107,257,816.11	\$ 1,967,751.40	\$ 25,379,974.81
2043	\$ 10,265,927.07	\$ -	\$ 14,664.82	\$ 10,280,591.89	\$ 117,538,408.00	\$ 1,894,190.60	\$ 27,274,165.41
2044	\$ 10,573,904.88	\$ -	\$ 15,104.77	\$ 10,589,009.65	\$ 128,127,417.64	\$ 1,823,379.74	\$ 29,097,545.15

Safety Factors (Escalated Using MVM)

- 54.77% Accident Reduction
- 54.98% Property Damage Reduction Factor
- 58.99% Injury Reduction Factor
- 75.88% Fatality Reduction Factor

Time Factors

- 5.00 Minutes Lost/Vehicle (Construction)
- 0.00 Minutes Saved/Vehicle
- 3.00% Annual Traffic Escalation

Construction completed mid-2025

Maintenance Factors

- \$ 4,000.00 Projected Annual Maintenance Cost/Mile, Over C
- 3.00% Inflation Rate

Millerton Road - North Fork to Auberry (W)

Collision History: 1/1/2006 - 12/31/2016

	Number of Accidents Along Project Stretch	Number of Vehicles Involved in Collisions ^b	Value of Property Damage (\$4,252 / Vehicle)	Number of Injuries	Value of Injuries ^c	Number of Fatalities	Value of Fatalities (\$9,600,000 / Each)	Cumulative Statistical Value of Collisions
<i>Total</i>	101	138	\$ 597,126.00	103	\$ 17,922,000.00	7	\$ 67,200,000.00	\$ 85,719,126.00
Rate/MVM	1.08	1.47	\$ 6,381.50	1.10	\$ 191,532.88	0.07	\$ 718,168.16	\$ 916,082.54

^a Average Daily Traffic (2017 Sample):

11600

Annual Adjustment Factor:

3.00%

^b Exact records are not available on the number of vehicles involved in multi-vehicle collisions. All multi-vehicle collisions were assigned a value of two (2).

^c Derived by applying guidance factors for converting unknown injury severity to AIS, given in the TIGER BCA Resource Guide (page 13). See conversion table for details.

\$9,600,000 Value of Statistical Life (VSL)

Millerton Road - North Fork to Auberry (W)

Accident Prevention / Crash Reduction Factors

Primary Collision Factor	9/1/2004 - 7/31/2017				Accident Factors				Preventable					
	Number	Vehicles	Injuries	Fatalities	Applied Crash Reduction Factors ^a	CRFs			Applied	Overall	Vehicles	Injuries	Fatalities	
Improper Turning	41	47	35	5		1	2	3		26.45	30.12	21.74	3.91	
<i>Ran Off Road/Fixed Object</i>	19	20	10	4	Install Turn Lanes (33); Increase Lanes, Run Off Road (61); Widen Shoulder, Paved, 0-6Ft (69)	44%	60%	12%	80.29%	15.25	16.06	8.03	3.21	
<i>Slower or Turning 2nd</i>	3	6	2	0	Install Turn Lanes (33); Increase Lanes, All (61); Widen Shoulder, Paved, 0-6Ft (69)	42%		12%	48.96%	1.47	2.94	0.98	0.00	
<i>Overtaken</i>	17	17	16	0	Install Raised Median (32); Install Turn Lanes (33)	42%		12%	48.96%	8.32	8.32	7.83	0.00	
<i>Head On/Opposing Lane</i>	2	4	7	1	Install Raised Median (32); Install Turn Lanes (33)	38%	45%	12%	69.99%	1.40	2.80	4.90	0.70	
Unsafe Speed	35	50	38	0						20.59	29.20	23.74	0.00	
<i>Ran Off Road/Fixed Object</i>	7	7	7	0	Install Turn Lanes (33); Increase Lanes, Run Off Road (61); Widen Shoulder, Paved, 0-6Ft (69)	44%	60%	12%	80.29%	5.62	5.62	5.62	0.00	
<i>Slower or Turning 2nd</i>	9	18	2	0	Install Turn Lanes (33); Increase Lanes, All (61); Widen Shoulder, Paved, 0-6Ft (69)	42%		12%	48.96%	4.41	8.81	0.98	0.00	
<i>Overtaken</i>	13	13	15	0	Install Raised Median (32); Install Turn Lanes (33)	42%		12%	48.96%	6.36	6.36	7.34	0.00	
<i>Head On/Opposing Lane</i>	6	12	14	0	Install Raised Median (32); Install Turn Lanes (33)	38%	45%	12%	69.99%	4.20	8.40	9.80	0.00	
Improper Passing	2	4	2	0	Increase Lanes, All (61)	35%	28%	12%	58.82%	1.18	2.35	1.18	0.00	
Wrong Side of the Road	7	14	17	2	Increase Lanes, Head On & Run Off Road (61); Install Raised Median (73)	38%	45%	12%	69.99%	4.90	9.80	11.90	1.40	
Auto R/W Violation	4	8	4	0	Increase Lanes, Run Off Road (61); Widen Shoulder, Paved, 0-6 Ft (69)	35%	28%	12%	55.07%	2.20	4.41	2.20	0.00	
DUI	7	10	7	0	None. Accidents are either not readily preventable by transportation improvements or project improvements will not significantly impact.									
Other Than Driver or Ped	4	4	0	0										
Unknown	1	1	0	0										
Total	101	138	103	7							55.32	75.87	60.76	5.31
										Overall Crash Reduction Factors	54.77%	54.98%	58.99%	75.88%

^a Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, September 2008 (Page Number in Parenthesis)

Millerton Road - North Fork Road to Millerton Lake State Park Entrance

Projected Accident Prevention / Traffic Safety Benefits

Calendar Year	Affected Drivers/Day	MVM/Year	Reduced Accidents	Fewer Vehicles Damaged	Prevented Injuries	Prevented Fatalities	Undiscounted Value
2018	11948	7.41	0.00	0.00	0.00	0.00	\$ -
2019	12306	7.64	0.00	0.00	0.00	0.00	\$ -
2020	12676	7.87	0.00	0.00	0.00	0.00	\$ -
2021	13056	8.10	0.00	0.00	0.00	0.00	\$ -
2022	13448	8.34	0.00	0.00	0.00	0.00	\$ -
2023	13851	8.59	0.00	0.00	0.00	0.00	\$ -
2024	14267	8.85	0.00	0.00	0.00	0.00	\$ -
2025	14695	9.12	5.39	7.39	5.92	0.52	\$ 6,030,150.20
2026	15135	9.39	5.55	7.62	6.10	0.53	\$ 6,211,054.71
2027	15589	9.67	5.72	7.84	6.28	0.55	\$ 6,397,386.35
2028	16057	9.96	5.89	8.08	6.47	0.57	\$ 6,589,307.94
2029	16539	10.26	6.07	8.32	6.66	0.58	\$ 6,786,987.18
2030	17035	10.57	6.25	8.57	6.86	0.60	\$ 6,990,596.79
2031	17546	10.89	6.44	8.83	7.07	0.62	\$ 7,200,314.70
2032	18072	11.21	6.63	9.09	7.28	0.64	\$ 7,416,324.14
2033	18615	11.55	6.83	9.37	7.50	0.66	\$ 7,638,813.86
2034	19173	11.90	7.03	9.65	7.73	0.68	\$ 7,867,978.28
2035	19748	12.25	7.24	9.94	7.96	0.70	\$ 8,104,017.63
2036	20341	12.62	7.46	10.23	8.20	0.72	\$ 8,347,138.16
2037	20951	13.00	7.69	10.54	8.44	0.74	\$ 8,597,552.30
2038	21579	13.39	7.92	10.86	8.69	0.76	\$ 8,855,478.87
2039	22227	13.79	8.15	11.18	8.96	0.78	\$ 9,121,143.24
2040	22894	14.21	8.40	11.52	9.22	0.81	\$ 9,394,777.53
2041	23580	14.63	8.65	11.86	9.50	0.83	\$ 9,676,620.86
2042	24288	15.07	8.91	12.22	9.79	0.86	\$ 9,966,919.48
2043	25016	15.52	9.18	12.59	10.08	0.88	\$ 10,265,927.07
2044	25767	15.99	9.45	12.96	10.38	0.91	\$ 10,573,904.88

Millerton Avenue - North Fork to Auberry (W)

Social / Time Savings

Calendar Year	Affected Drivers/Day	Time Savings (Hrs)	Undiscounted Value
2018	11948	0.00	\$ -
2019	12306	0.00	\$ -
2020	12676	0.00	\$ -
2021	13056	0.00	\$ -
2022	13448	0.00	\$ -
2023	13851	-266639.53	\$ (5,040,553.74)
2024	14267	-137319.36	\$ (2,595,885.18)
2025	14695	0.00	\$ -
2026	15135	0.00	\$ -
2027	15589	0.00	\$ -
2028	16057	0.00	\$ -
2029	16539	0.00	\$ -
2030	17035	0.00	\$ -
2031	17546	0.00	\$ -
2032	18072	0.00	\$ -
2033	18615	0.00	\$ -
2034	19173	0.00	\$ -
2035	19748	0.00	\$ -
2036	20341	0.00	\$ -
2037	20951	0.00	\$ -
2038	21579	0.00	\$ -
2039	22227	0.00	\$ -
2040	22894	0.00	\$ -
2041	23580	0.00	\$ -
2042	24288	0.00	\$ -
2043	25016	0.00	\$ -
2044	25767	0.00	\$ -

\$13.60 / Person / Hr.
1.39 Passengers / Vehicle