QuikTrip #4076

Solms Road & Interstate 35

TRAFFIC IMPACT ANALYSIS

PREPARED FOR:

QuikTrip

PREPARED BY:

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TxDOT

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Table 4 – N Solms Road & FM 482 LOS Results

N Solms Road & FM 482	Intersection Analysis									
	Northbound N Solms Road		Southbound N Solms Road		Eastbound FM 482		Westbound FM 482		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2021)	11.5	B	9.0	A	9.3	A	9.3	A	10.2	B
Projected (2022)	11.9	B	9.2	A	9.5	A	9.5	A	10.5	B
Proj w/ Dev (2022)	12.1	B	9.3	A	9.6	A	9.5	A	10.6	B
PM Peak Period										
Existing (2021)	12.3	B	10.3	B	10.9	B	10.5	B	11.8	B
Projected (2022)	12.7	B	10.6	B	11.2	B	10.8	B	11.5	B
Proj w/ Dev (2022)	13.0	B	10.7	B	11.4	B	10.9	B	11.7	B

Table 5 – N Solms Road & IH-35 SB Frontage LOS Results

N Solms Road & IH-35 SB Frontage	Intersection Analysis									
	Northbound N Solms Road		Southbound N Solms Road		Eastbound		Westbound Frontage		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2021)	1.8	A	49.8	D			53.8	D	35.4	D
Projected (2022)	2.0	A	50.3	D			54.3	D	35.8	D
Proj w/Dev (2022)	4.9	A	50.8	D			60.3	E	38.2	D
PM Peak Period										
Existing (2021)	1.4	A	74.3	E			57.9	E	52.0	D
Projected (2022)	1.5	A	78.1	E			58.8	E	53.7	D
Proj w/Dev (2022)	1.6	A	79.9	E			64.8	E	53.9	D

Table 6 – S Solms Road & IH-35 NB Frontage LOS Results

S Solms Road & IH-35 NB Frontage	Intersection Analysis									
	Northbound S Solms Road		Southbound S Solms Road		Eastbound Frontage		Westbound		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2021)	71.4	E	1.6	A	49.8	D			35.7	D
Projected (2022)	73.0	E	1.6	A	50.2	D			36.3	D
Proj w/Dev (2022)	176.1	F	3.3	A	53.6	D			69.2	E
PM Peak Period										
Existing (2021)	64.2	E	1.3	A	52.7	D			28.8	C
Projected (2022)	64.3	E	1.4	A	53.1	D			29.0	C
Proj w/Dev (2022)	80.3	F	2.3	A	56.1	E			35.5	D

Table 7 – S Solms Road and Driveway #1 LOS Results

S Solms Road & Driveway #1	Intersection Analysis									
	Northbound S Solms Road		Southbound S Solms Road		Eastbound		Westbound Driveway #1		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Proj w/ Dev (2022)	0.0	A	0.0	A			10.0	B	1.8	A
PM Peak Period										
Proj w/ Dev (2022)	0.0	A	0.0	A			9.2	A	1.8	A

ROUGH PROPORTIONALITY

The purpose of this TIA is to identify any mitigation improvements that are necessitated by and attributable to the proposed development. As previously stated, the recommended mitigation improvements for this proposed development include the following:

- S Solms Road & Driveway #1 – Construct 250 LF raised concrete median along S Solms Road ($100,000)
- S Solms Road & Driveway #2 – Adjust pavement marking to include a 210 LF Left-turn Lane ($20,000)
- Interstate Highway NB Frontage & Driveway #3 – Construct 305 LF Right-turn Lane ($150,000)

Total cost is approximately **$270,000.**

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	377	325	113	318	241
v/c Ratio	0.53	0.87	0.27	0.36	0.18
Control Delay	29.9	60.2	6.5	2.7	0.2
Queue Delay	0.0	0.0	0.0	0.1	0.5
Total Delay	29.9	60.2	6.5	2.8	0.8
Queue Length 50th (ft)	84	180	0	0	0
Queue Length 95th (ft)	130	#330	36	m26	m0
Internal Link Dist (ft)	976	62			236
Turn Bay Length (ft)					
Base Capacity (vph)	718	372	418	879	1304
Starvation Cap Reductn	0	0	0	61	717
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.87	0.27	0.39	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	442	184	84	441	217
v/c Ratio	0.62	0.49	0.20	0.45	0.17
Control Delay	33.5	37.2	3.2	1.4	0.1
Queue Delay	0.0	0.0	0.0	0.5	0.6
Total Delay	33.5	37.2	3.2	1.9	0.7
Queue Length 50th (ft)	107	94	0	0	0
Queue Length 95th (ft)	158	159	16	m0	m0
Internal Link Dist (ft)	976	62			236
Turn Bay Length (ft)					
Base Capacity (vph)	713	372	418	986	1304
Starvation Cap Reductn	0	0	0	213	778
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.49	0.20	0.57	0.41

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.