

**Texas Department of Transportation
Technical Provisions**

SH 183 Managed Lanes Project

**Attachment 8-1
Minimum Pavement Design Requirements**

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

February 5, 2014

										Total Number of Equivalent 18K ESAL			
Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Single Axle Load Applications in One Direction Expected for a 20 Year Period (2015 to 2035)				
	2015	2035	Dir. Dist. %	K Factor	Percent Truck				Flexible Pavement	S N	Rigid Pavement	SLAB	
					ADT	DHV							
SH 183 <u>Section 1</u>													
From SH 121 To SH 360	146,300	201,500	54-46	9.1	6.3	4.2	13,100	20	32,941,000	3	43,510,000	8"	
							13,100	20	32,941,000	3	44,444,000	10"	
							13,100	20	32,941,000	3	44,746,000	12"	
Tarrant County													

Data for Use in Air & Noise Analysis		
Vehicle Class	Base Year	
	% of ADT	% of DHV
Light Duty	93.7	95.8
Medium Duty	2.7	1.8
Heavy Duty	3.6	2.4

										Total Number of Equivalent 18K ESAL			
Description of Location	Average Daily Traffic*		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Single Axle Load Applications in One Direction Expected for a 30 Year Period (2015 to 2045)				
	2015	2045	Dir. Dist. %	K Factor	Percent Truck				Flexible Pavement	S N	Rigid Pavement	SLAB	
					ADT	DHV							
SH 183 <u>Section 1</u>													
From SH 121 To SH 360	146,300	229,100	54-46	9.1	6.3	4.2	13,100	20	53,333,000	3	70,446,000	8"	
							13,100	20	53,333,000	3	71,957,000	10"	
							13,100	20	53,333,000	3	72,447,000	12"	
Tarrant County													

*Average Daily Traffic values reflect corridor traffic in both directions and include frontage roads.

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Dallas District

February 5, 2014

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 20 Year Period (2015 to 2035)			
	ADT	DHV			Flexible Pavement	S N			Rigid Pavement	SLAB		
	2015	2035										
SH 183 <u>Section 2</u>												
From SH 360 To SH 161	206,700	284,700	54-46	9.1	5.4	3.6	13,200	20	39,972,000	3	52,745,000	8"
							13,200	20	39,972,000	3	53,875,000	10"
							13,200	20	39,972,000	3	54,242,000	12"
Tarrant and Dallas Counties												

Data for Use in Air & Noise Analysis		
Vehicle Class	Base Year	
	% of ADT	% of DHV
Light Duty	94.6	96.4
Medium Duty	2.3	1.5
Heavy Duty	3.1	2.1

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 30 Year Period (2015 to 2045)			
	ADT	DHV			Flexible Pavement	S N			Rigid Pavement	SLAB		
	2015	2045										
SH 183 <u>Section 2</u>												
From SH 360 To SH 161	206,700	323,700	54-46	9.1	5.4	3.6	13,200	20	64,717,000	3	85,397,000	8"
							13,200	20	64,717,000	3	87,228,000	10"
							13,200	20	64,717,000	3	87,820,000	12"
Tarrant and Dallas Counties												

*Average Daily Traffic values reflect corridor traffic in both directions and include frontage roads.

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Dallas District

February 5, 2014

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 20 Year Period (2015 to 2035)			
	ADT	DHV			Flexible Pavement	S N			Rigid Pavement	SLAB		
	2015	2035										
SH 183 Section 3												
From SH 161 To I-35E	164,300	226,300	54-46	9.1	6.0	4.0	13,100	20	35,253,000	3	46,551,000	8"
							13,100	20	35,253,000	3	47,549,000	10"
							13,100	20	35,253,000	3	47,873,000	12"
Dallas County												

Data for Use in Air & Noise Analysis		
Vehicle Class	Base Year	
	% of ADT	% of DHV
Light Duty	94.0	96.0
Medium Duty	2.5	1.7
Heavy Duty	3.5	2.3

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 30 Year Period (2015 to 2045)			
	ADT	DHV			Flexible Pavement	S N			Rigid Pavement	SLAB		
	2015	2045										
SH 183 Section 3												
From SH 161 To I-35E	164,300	257,300	54-46	9.1	6.0	4.0	13,200	20	57,077,000	3	75,369,000	8"
							13,200	20	57,077,000	3	76,985,000	10"
							13,200	20	57,077,000	3	77,509,000	12"
Dallas County												

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Dallas District

February 5, 2014

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 20 Year Period (2015 to 2035)			
	2015	2035			ADT	DHV			Flexible Pavement	S N	Rigid Pavement	SLAB
SH 114												
From International Parkway (Dallas County Line) To SH 183	116,600	160,600	54-46	9.1	6.3	4.2	12,900	30	27,622,000	3	37,479,000	8"
							12,900	30	27,622,000	3	38,344,000	10"
							12,900	30	27,622,000	3	38,621,000	12"
Dallas County												

Data for Use in Air & Noise Analysis		
Vehicle Class	Base Year	
	% of ADT	% of DHV
Light Duty	93.7	95.8
Medium Duty	2.2	1.5
Heavy Duty	4.1	2.7

Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Total Number of Equivalent 18K ESAL			
			Dir. Dist. %	K Factor	Percent Truck				Single Axle Load Applications in One Direction Expected for a 30 Year Period (2015 to 2045)			
	2015	2045			ADT	DHV			Flexible Pavement	S N	Rigid Pavement	SLAB
SH 114												
From International Parkway (Dallas County Line) To SH 183	116,600	182,600	54-46	9.1	6.3	4.2	13,000	30	44,721,000	3	60,680,000	8"
							13,000	30	44,721,000	3	62,082,000	10"
							13,000	30	44,721,000	3	62,529,000	12"
Dallas County												

*Average Daily Traffic values reflect corridor traffic in both directions and include frontage roads.

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Dallas District

February 5, 2014

										Total Number of Equivalent 18K ESAL			
Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Single Axle Load Applications in One Direction Expected for a 20 Year Period (2015 to 2035)				
	2015	2035	Dir. Dist. %	K Factor	Percent Truck				Flexible Pavement	S N	Rigid Pavement	SLAB	
					ADT	DHV							
SH 12													
From I-35E To	106,000	146,000	54-46	9.1	6.6	4.4	12,900	30	26,293,000	3	35,685,000	8"	
South of SH 183							12,900	30	26,293,000	3	36,509,000	10"	
Dallas County							12,900	30	26,293,000	3	36,773,000	12"	

Data for Use in Air & Noise Analysis		
Vehicle Class	Base Year	
	% of ADT	% of DHV
Light Duty	93.4	95.6
Medium Duty	2.3	1.5
Heavy Duty	4.3	2.9

										Total Number of Equivalent 18K ESAL			
Description of Location	Average Daily Traffic		Base Year				ATHWLD	% Tandem Axles in ATHWLD	Single Axle Load Applications in One Direction Expected for a 30 Year Period (2015 to 2045)				
	2015	2045	Dir. Dist. %	K Factor	Percent Truck				Flexible Pavement	S N	Rigid Pavement	SLAB	
					ADT	DHV							
SH 12													
From I-35E To	106,000	166,000	54-46	9.1	6.6	4.4	12,900	30	42,569,000	3	57,776,000	8"	
South of SH 183							12,900	30	42,569,000	3	59,111,000	10"	
Dallas County							12,900	30	42,569,000	3	59,537,000	12"	

*Average Daily Traffic values reflect corridor traffic in both directions and include frontage roads.