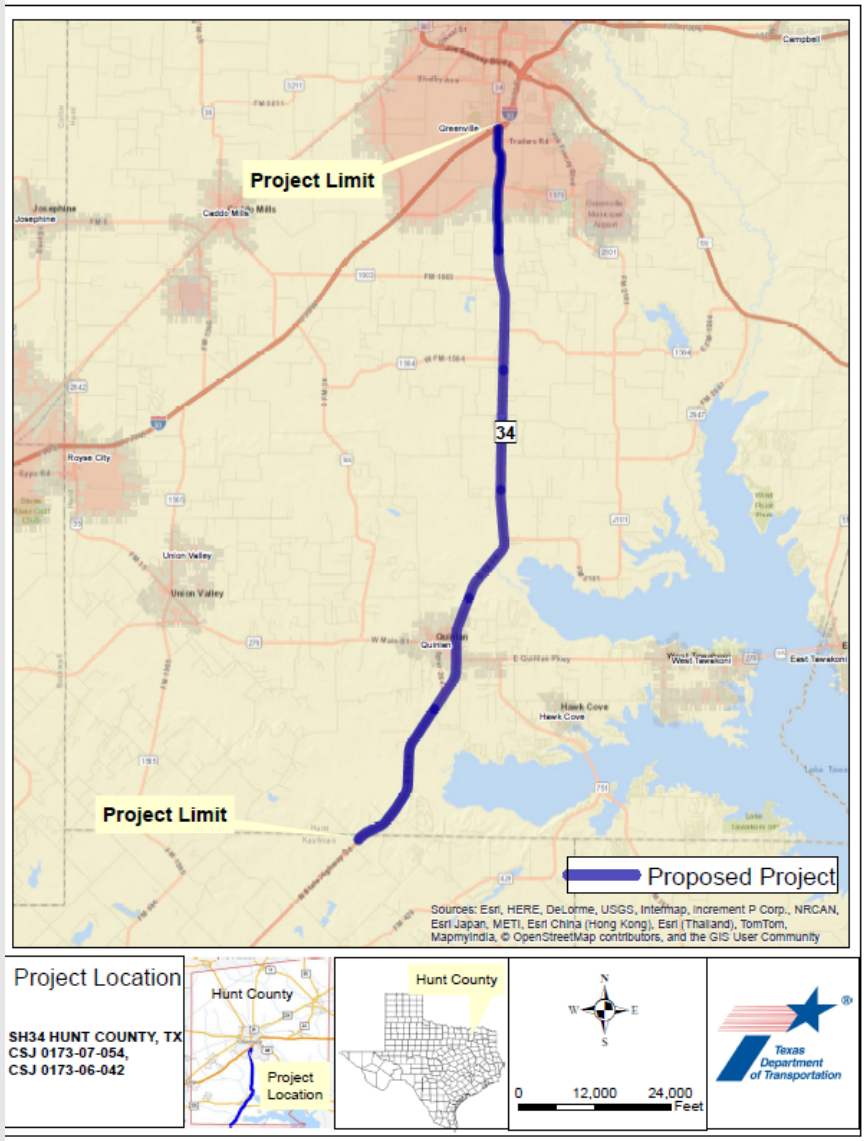
TEXAS DEPARTMENT OF TRANSPORTATION

CSJ: 0173-07-054, 0173-06-042
SH 34 Feasibility Study
From IH-30 to CR 2312

SH 34 FEASIBILITY STUDY

June 18, 2019
June 20, 2019

Project Study Area



Project limits:

IH 30 to FM 2101 & FM 2101 to CR 2312

Project Goals:

- To determine critical elements of engineering and the economic feasibility, more specifically, establish design concepts, general rights of way requirements, and associated project impacts.

Project Details:

- The communities of Quinlan and Greenville and surrounding areas in Hunt County are currently experiencing an increase in residential and commercial development.
- This growth has placed increased demand on this already congested highway.
- Limited route alternatives, constrained rights of way, and environmental constraints pose challenges to potential roadway improvement solutions.

Purpose and Need (Draft)

- Address existing and increased future traffic congestion,
- Address safety and develop short-, mid-, and long-term mobility and safety improvements.

Goals and Objectives

Goals:

- Enhance connectivity and improve mobility (short-, mid-, and long-term)
- Address access management and reduce conflict points
- Address growth and plan for future
- Mitigate current and future traffic congestion
- Improve reliability and safety
- Solicit community input
- Provide safe circulation routes for schools
- Improve pedestrian and sidewalk accessibility
- Facilitate the movement of freight

Study Process

Feasibility Study
- Design Concept
- Need and Purpose
- Preliminary Cost
- Environmental Constraints
- Alternatives
- Public Involvement

1-2 Years

Route Location Studies
- Alternative Analysis
- Environmental Studies
- Traffic Studies
- Public Involvement

2-3 Years

Preliminary Engineering
- Survey
- Schematic Design
- ROW Mapping
- Utility Relocation

3-5 Years

Final Design
- Construction Plan Preparation
- Cost Estimates
- Specifications

3-5 Years

Construction

1-5 Years

Texas Department of Transportation

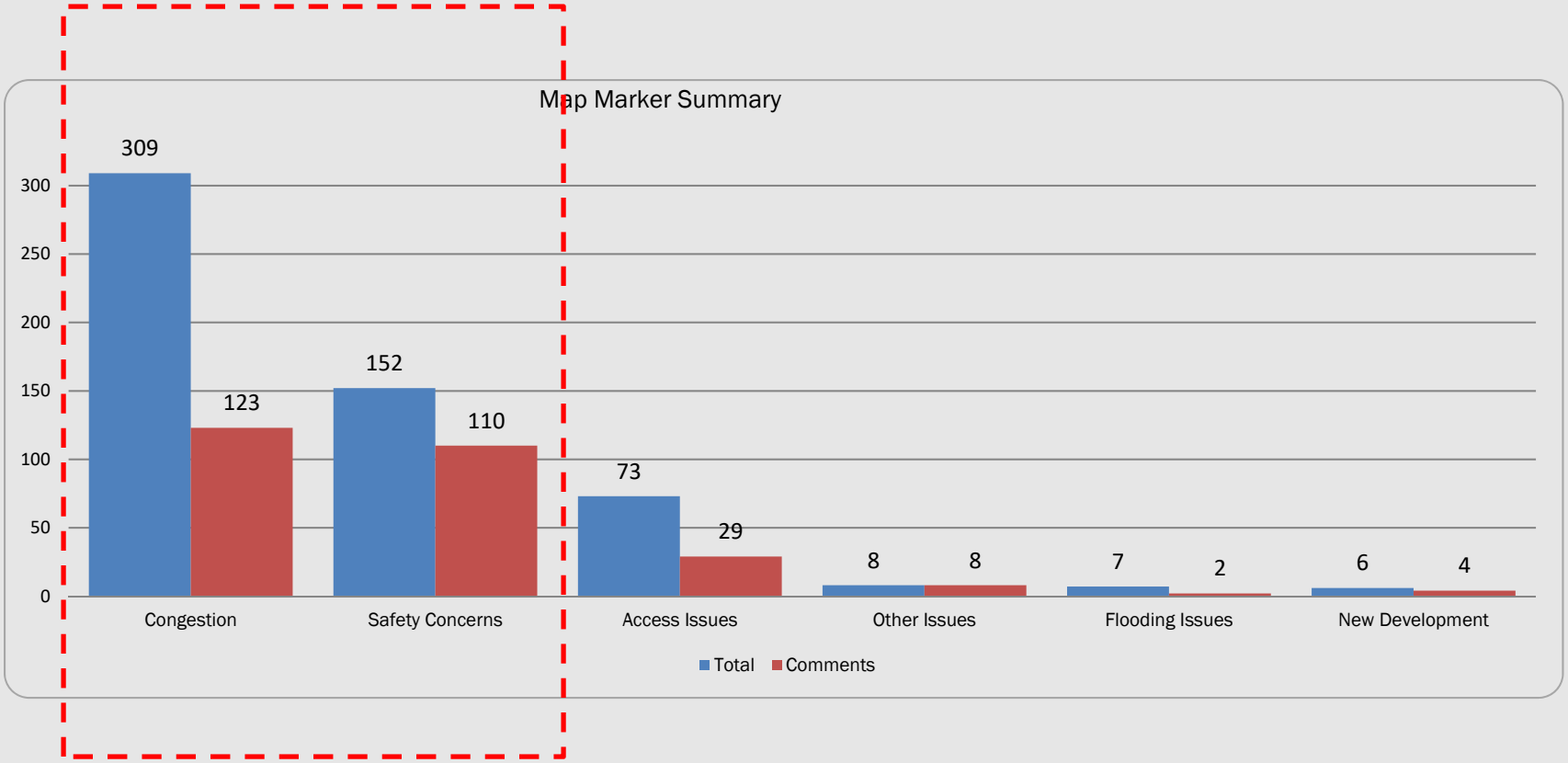
TODAY

Feasibility Study
- Design Concept
- Need and Purpose
- Preliminary Cost
- Environmental Constraints
- Alternatives
- Public Involvement

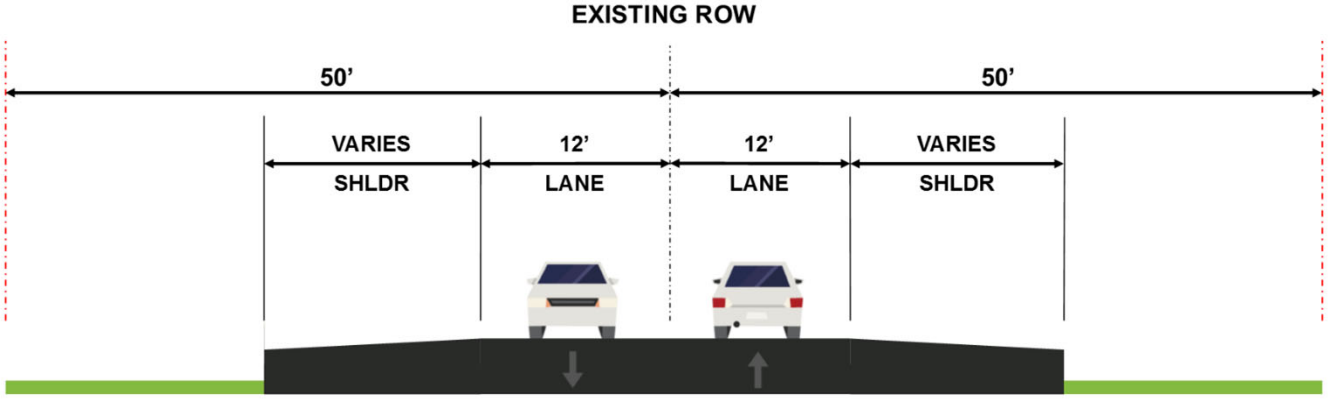
Recap

- Stakeholder Meeting
- Data Collection
- Public Meeting #1 Summary
  - Key Issues (Address Congestion, Address Growth, Improve Safety)
  - Responses to Comments
  - Written Comments (During Public Meeting)
  - Metro Quest Survey (273 Survey Participants)
  - E-mail Comments (4 E-mail Comments)

Summary from Public Meeting #1



Existing/Proposed Typical Sections



Impacts determined:

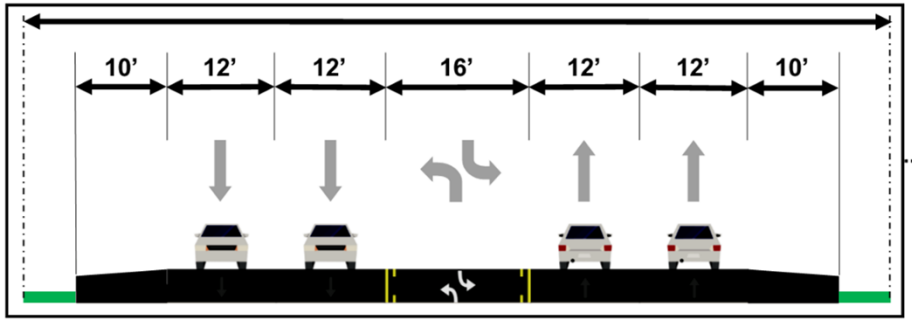
- 130' ROW vs. 180' ROW
- Factors evaluated are:
  - Slopes
  - Urban vs. Rural Section
  - Constraints

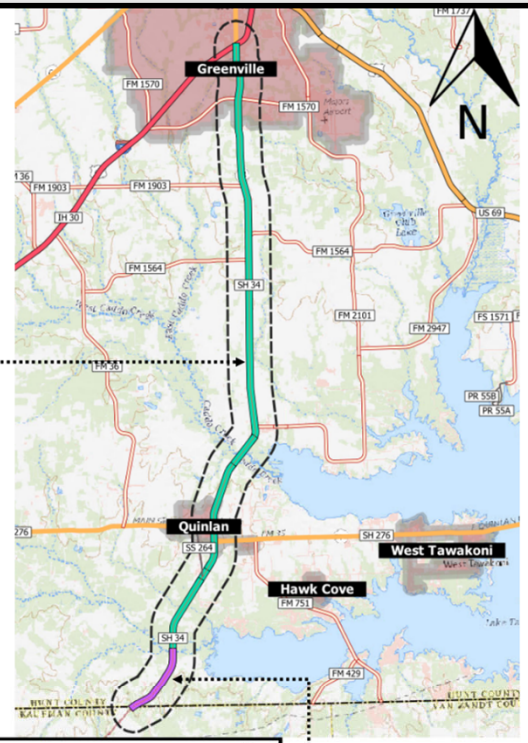
	DISTANCE	PERCENTAGE
5—LANE	0.19 MILE	1%
4—LANE	2.61 MILES	14%
3—LANE	6.80 MILES	36%
2—LANE	9.40 MILES	49%
	TOTAL	
BRIDGE	6	

Proposed Typical Sections

SH 34: IH 30 to Spur 264
SH 34: South Fork Sabine River to Kaufman County Line

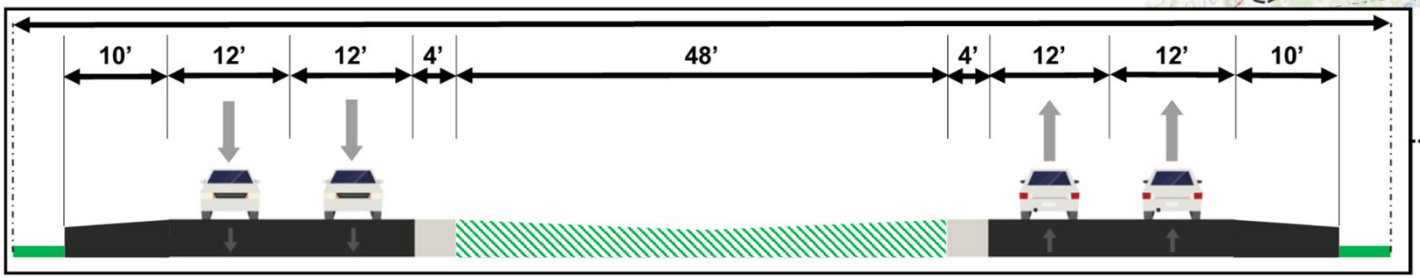
ROW: 130'





SH 34: Spur 264 to South Fork Sabine River
SH 34: FM 2101 to Davis Dr

ROW VARIES



Existing Conditions

Traffic

- Projections
- Operations
- Safety

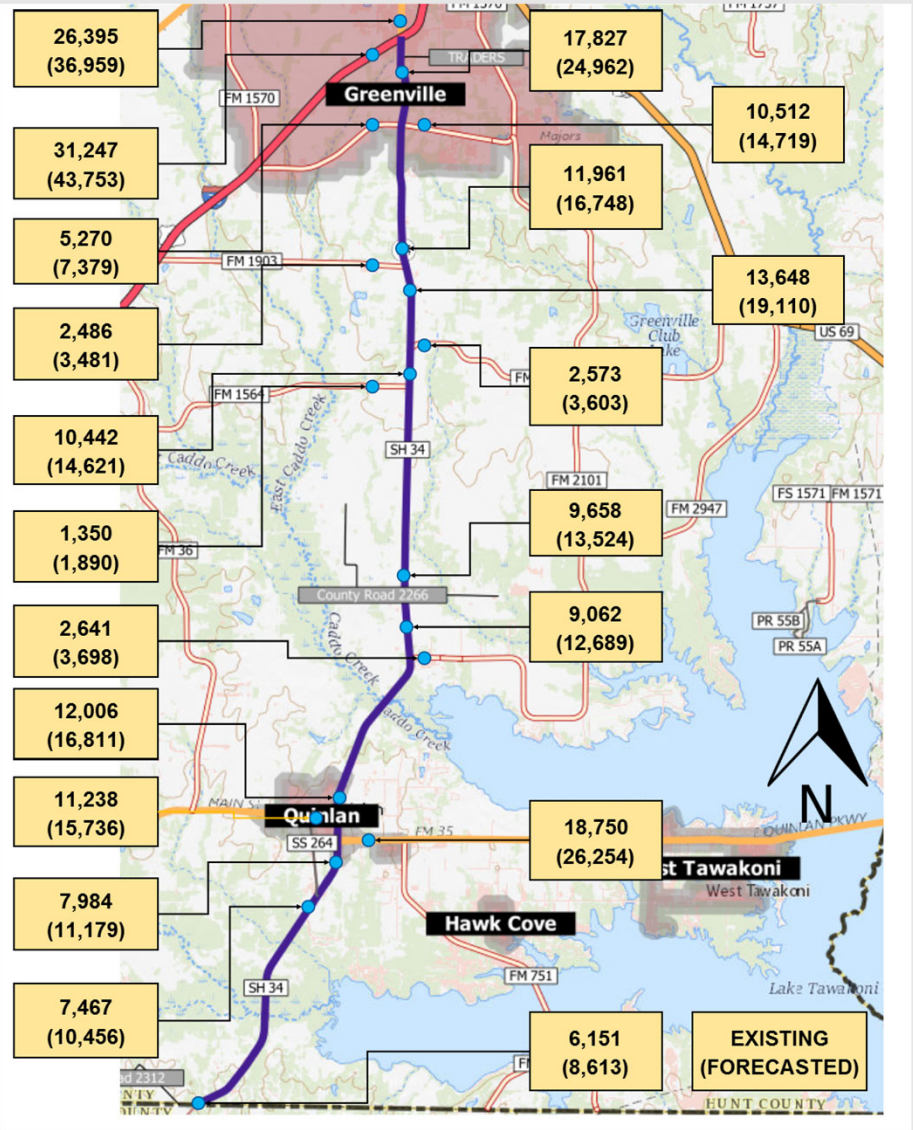
Drainage

Environmental

Existing and Forecasted Traffic Volumes

Counts of vehicles per day
24-hour counts collected in 2018, shown in yellow
daily traffic projections:

- 2% annual growth through 2048
- Forecasted conditions for 2048 shown in parentheses



Growth Rate

Growth Rate of 2% per year

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

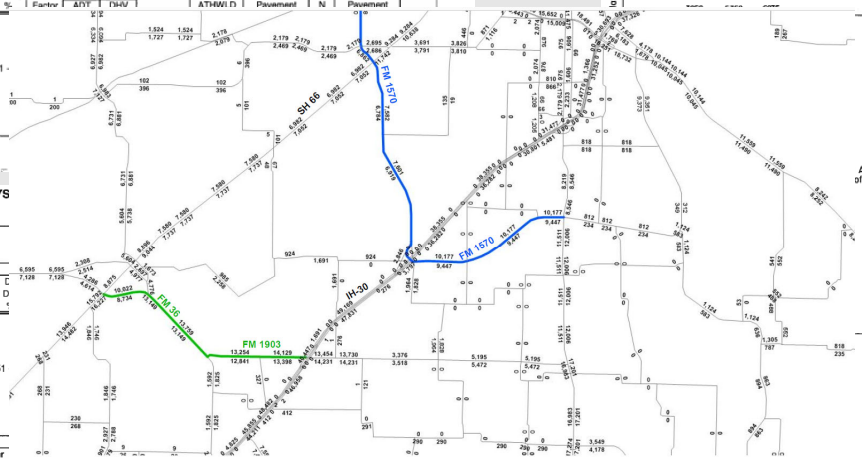
Paris District — August 16, 2018

Description of Location	Average Daily Traffic 2018	Average Daily Traffic 2038	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Period (2018 to 2038) Flexible Pavement	S N	Rigid Pavement	SLAB
SH 34 Section 1 From I-30 To FM 1564 (West Portion) Hunt County	12,500	17,300	51 - 49	9.7	11.3	7.5	11,800	50	6,135,000	3	8,627,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	88.7	92.5
Medium Duty	2.5	1.7
Heavy Duty	8.8	5.8

Description of Location	Average Daily Traffic 2018	Average Daily Traffic 2048	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 30 Year Period (2018 to 2048) Flexible Pavement	S N	Rigid Pavement	SLAB
SH 34 Section 1 From I-30 To FM 1564 (West Portion) Hunt County	12,500	19,700	51 -									



TRAFFIC ANALYS

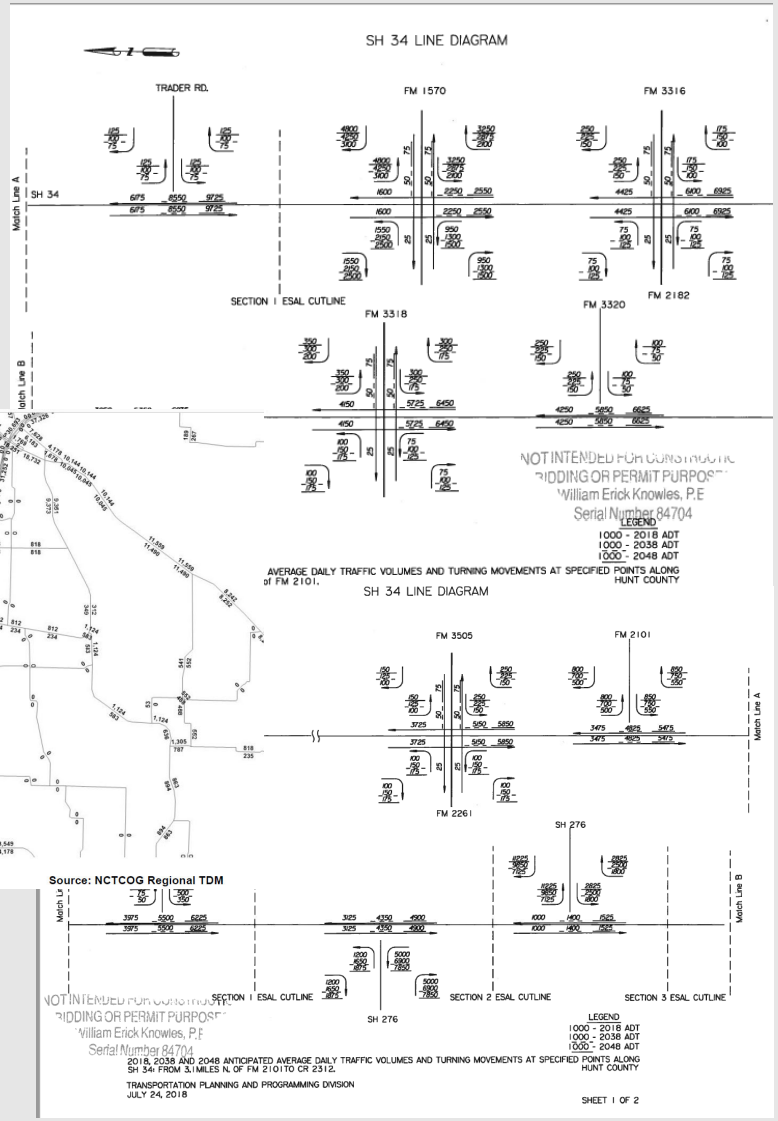
Paris District

Description of Location	Average Daily Traffic 2018	Average Daily Traffic 2038
SH 34 Section 2 From Main ST./ SH 276 To Quinlan Pkwy./SH 276 Hunt County	16,250	22,500

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT
Light Duty	89.5
Medium Duty	2.3
Heavy Duty	8.2

Description of Location	Average Daily Traffic 2018	Average Daily Traffic 2048	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 30 Year Period (2018 to 2048) Flexible Pavement	S N	Rigid Pavement	SLAB
SH 34 Section 2 From Main ST./ SH 276 To Quinlan Pkwy./SH 276 Hunt County	16,250	25,500	51 - 49	9.7	10.5	6.9	11,900	50	11,984,000	3	16,849,000	8"



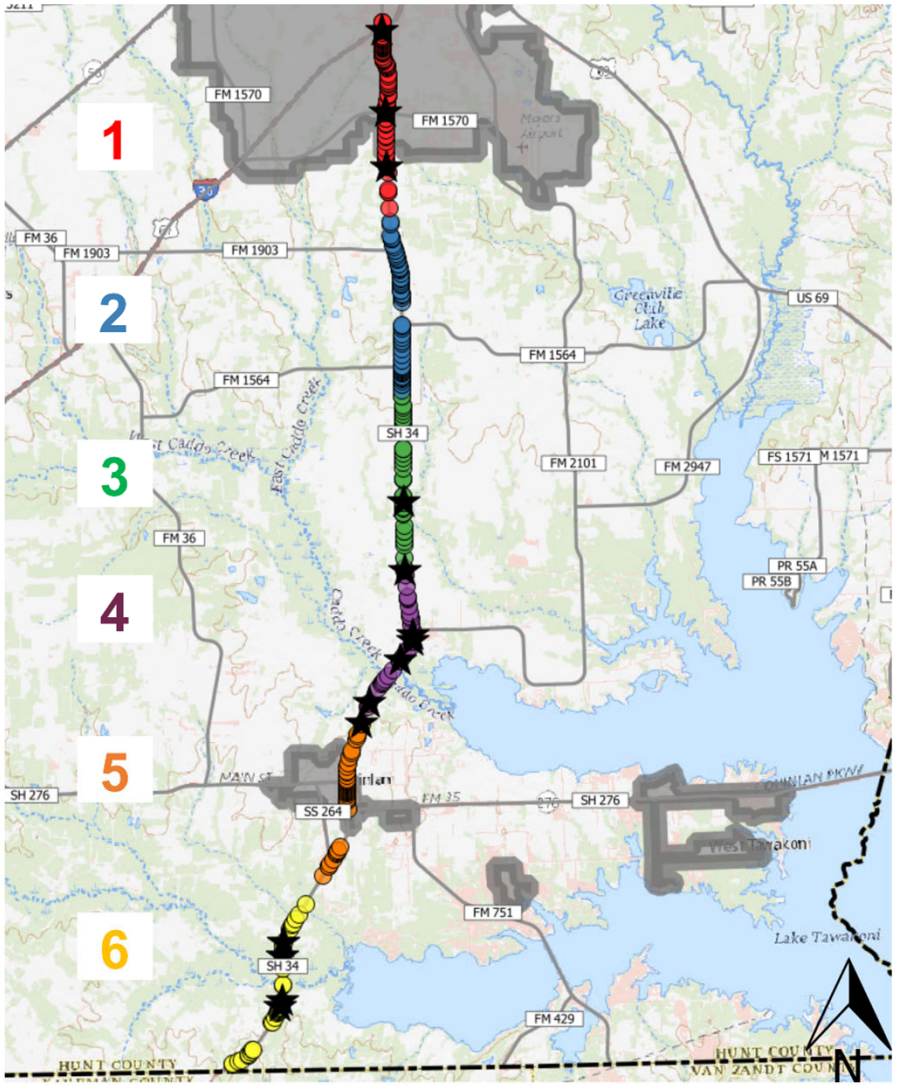
Source: NCTCOG Regional TDM

Safety (Crash Analysis)

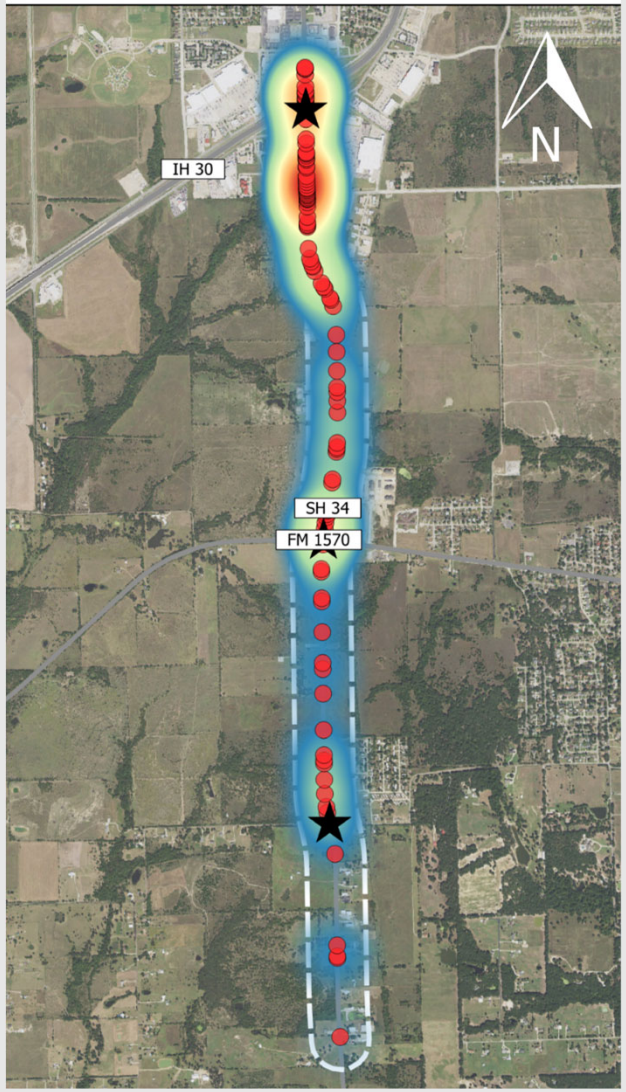
Section	# of Crashes
1	114
2	58
3	34
4	40
5	57
6	40
Total	343

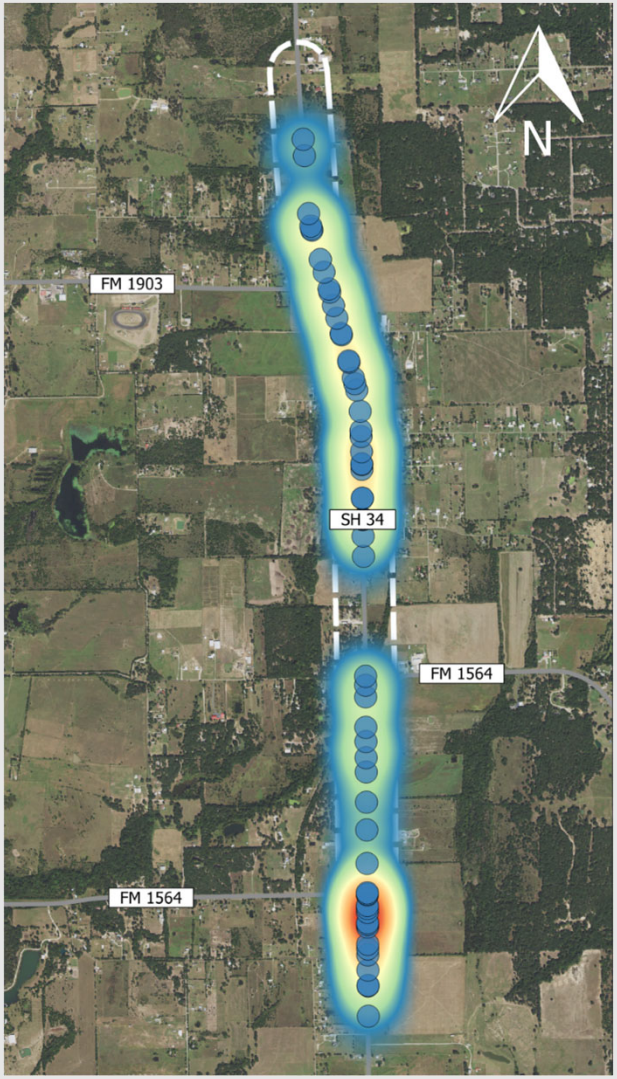
Each circle along the TX 34 represents one crash that occurred at that locations between 2013 and 2017.

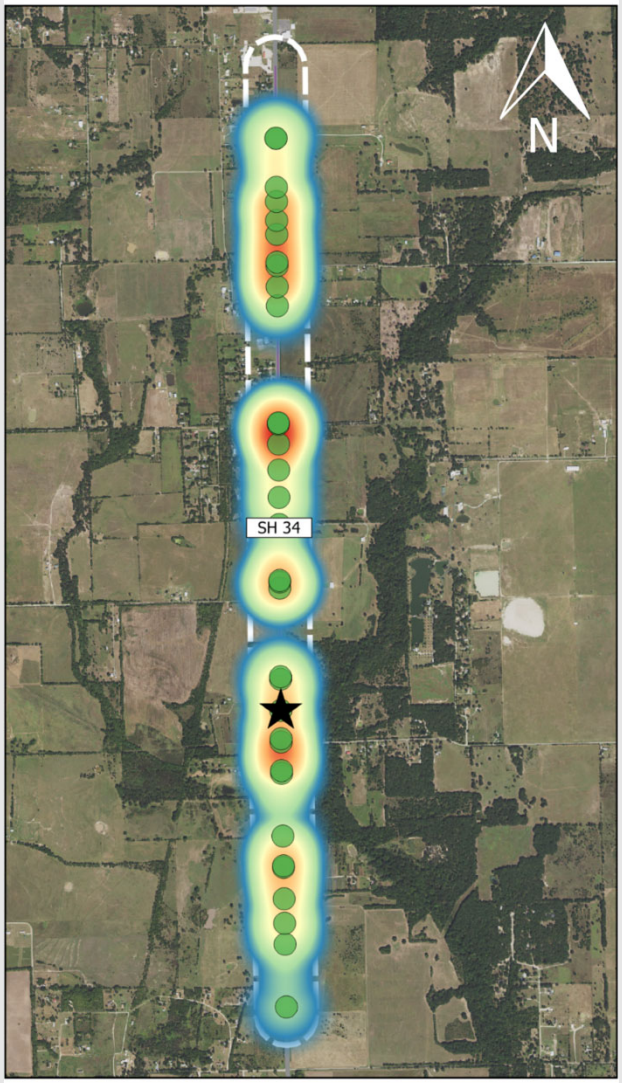
All locations with a star represents all such crashes that led to one or more fatalities.



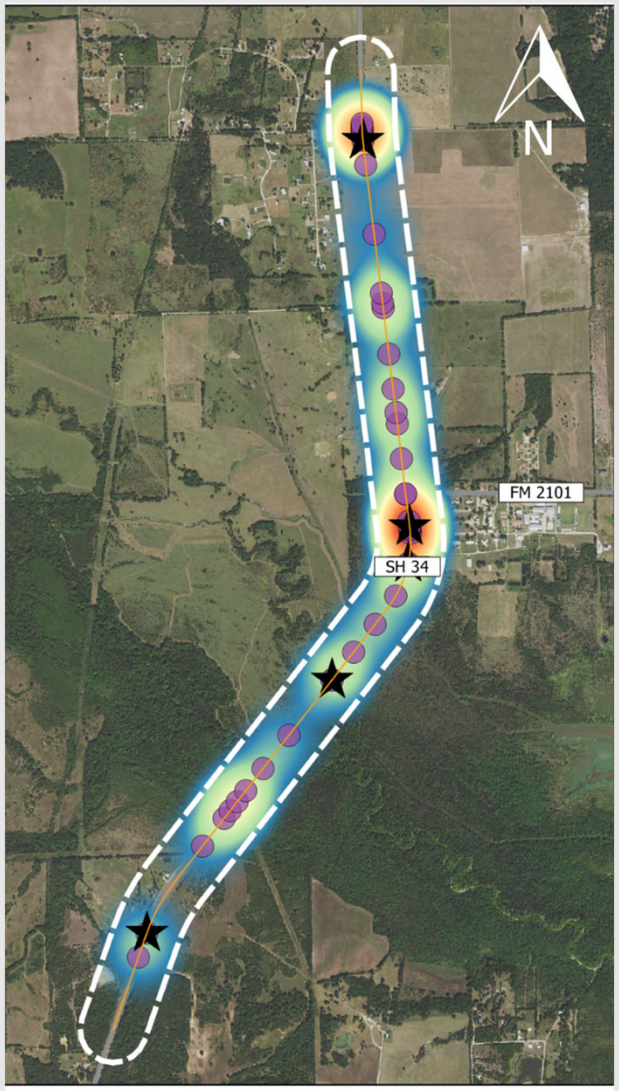
Safety (Crash Analysis)

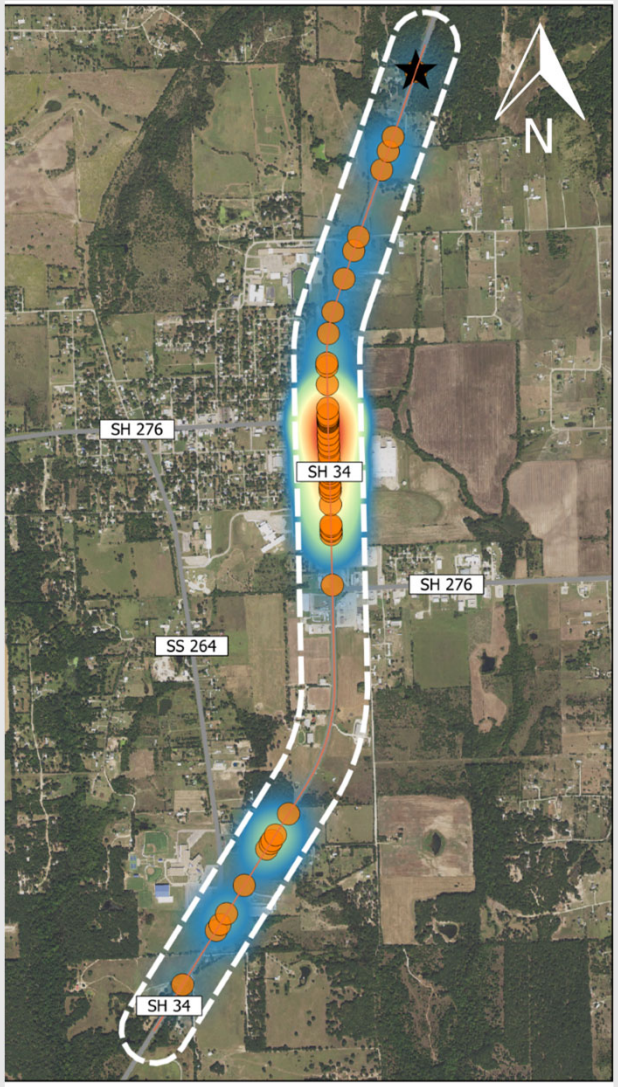


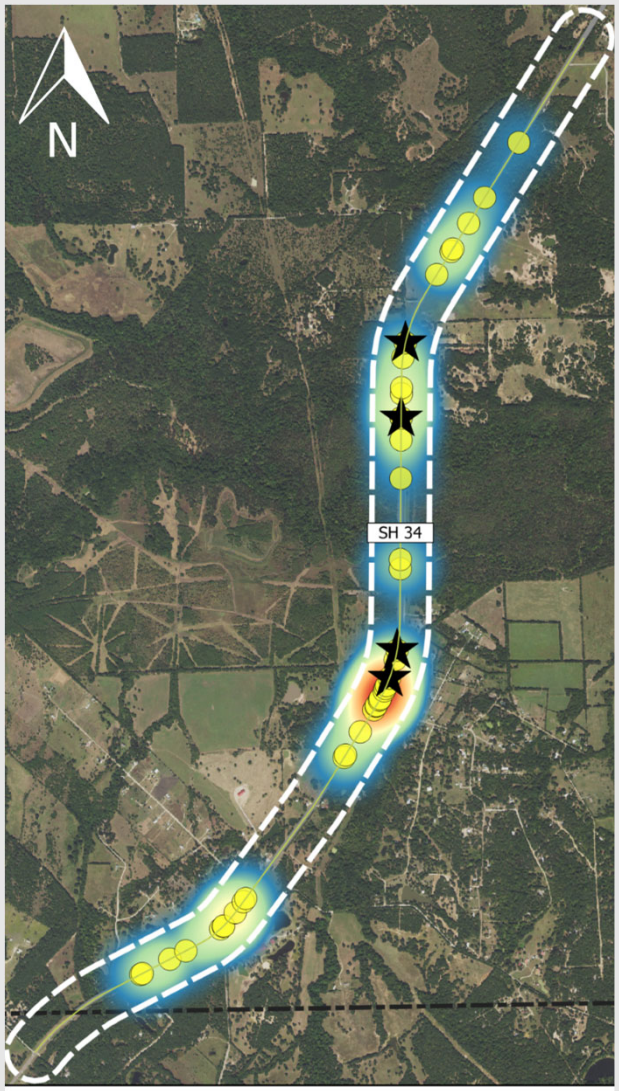




Safety (Crash Analysis)



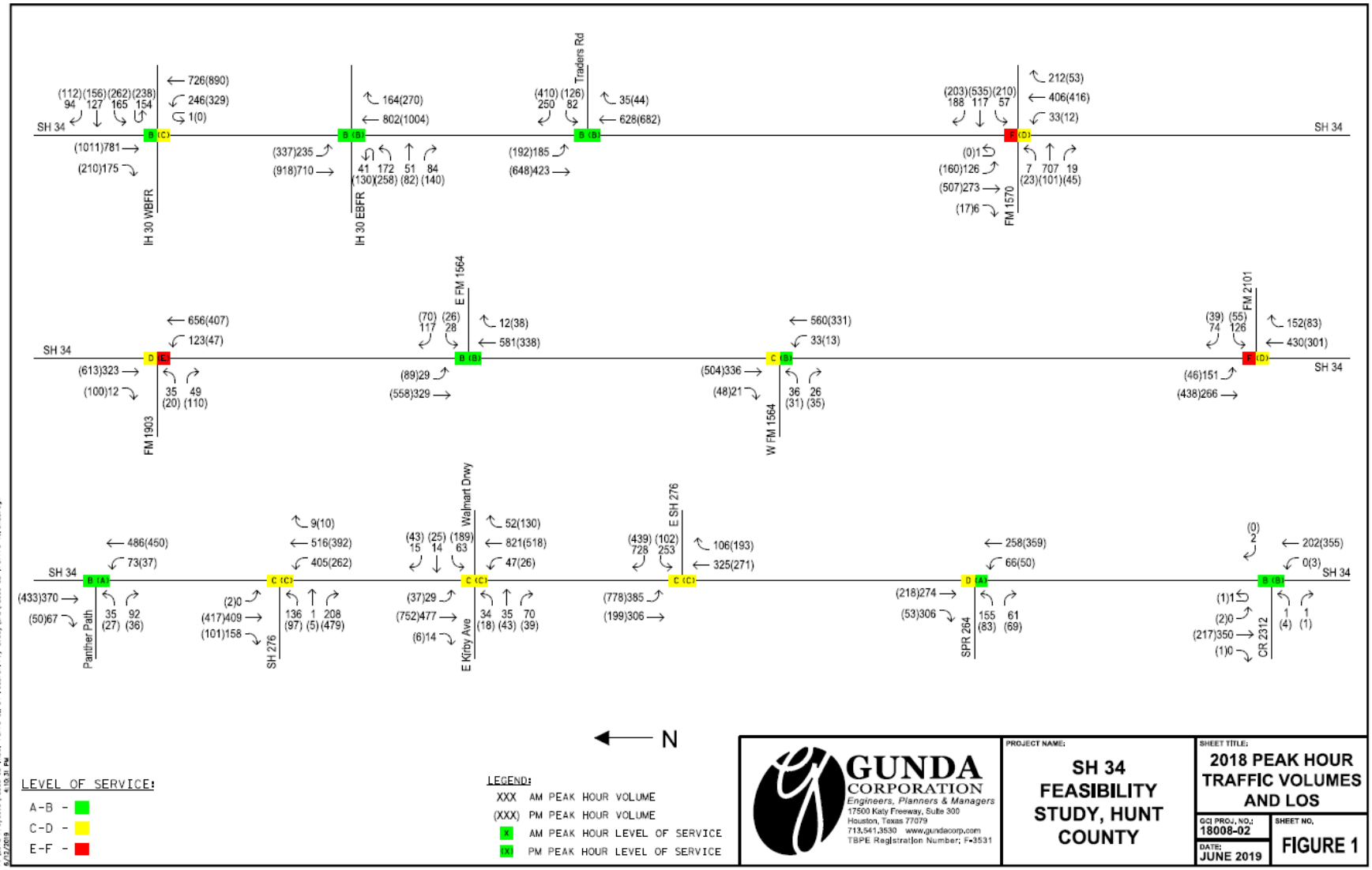




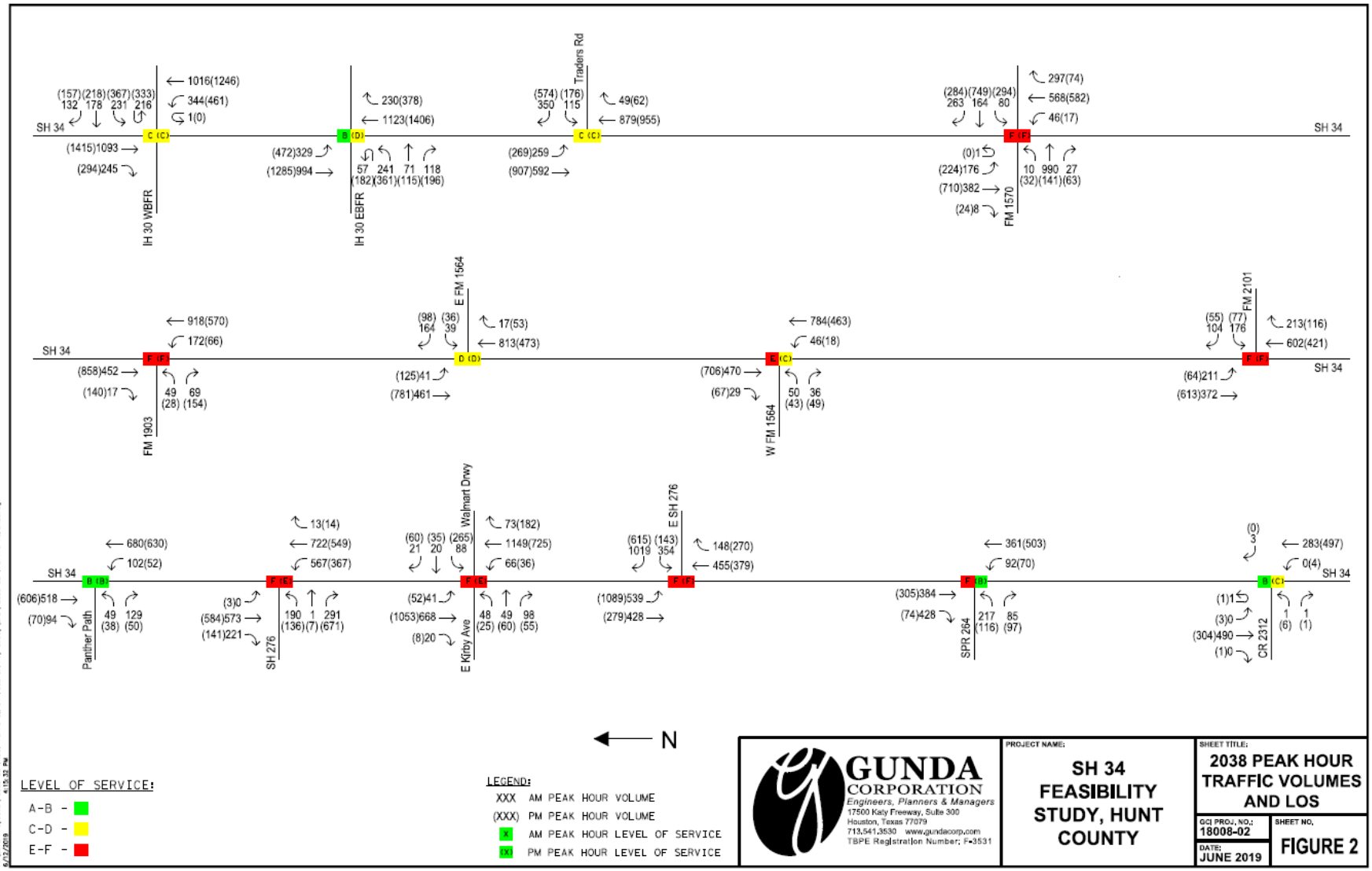
Level of Service (LOS)

Source: Figure B1-Reproduction of Figure 1-2 from the FDOT 2009 Quality/Level of Service Handbook

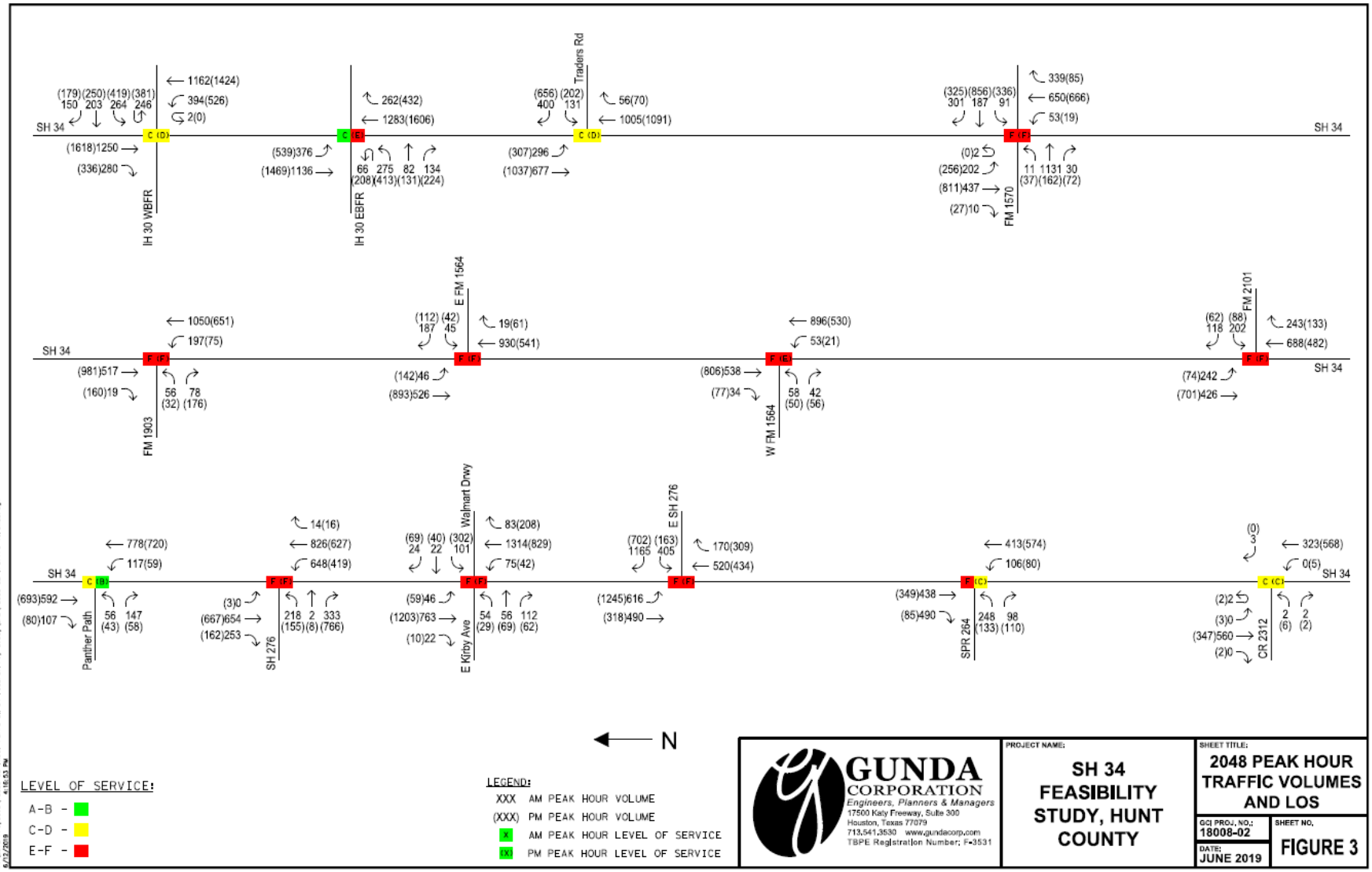
2018 Existing Traffic Volumes



2038 Traffic Volumes (No-Build)



2048 Traffic Volumes (No-Build)



Existing Conditions Analysis

	Intersection Level of Service SH 34 Traffic Analysis												
	Intersection	AM						PM					
		Existing		2038		2048		Existing		2038		2048	
		LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
1	SH 34 at IH 30 WBFR	B	16.7	C	21.6	C	25.5	C	20.7	C	31.0	D	44.7
2	SH 34 at IH 30 EBFR	B	14.9	B	18.6	C	22.6	B	17.1	D	43.6	E	74.1
3	SH 34 at Traders Road	B	15.7	C	20.6	C	25.0	B	16.0	C	27.3	D	52.2
4	SH 34 at FM 1570	F	99.9	F	227.7	F	296.8	D	41.0	F	127.1	F	203.0
5	SH 34 and FM 1903*	D	27.5	F	177.3	F	552.7	E	35.8	F	251.5	F	588.0
6	SH 34 and E FM 1564*	B	14.3	D	28.0	F	97.6	B	12.3	D	33.1	F	141.8
7	SH 34 and W FM 1564*	C	16.0	E	36.5	F	89.2	B	12.0	C	22.2	E	42.4
8	SH 34 and FM 2101*	F	493.3	F	3,045.5	F	6,709.9	D	25.2	F	77.6	F	196.9
9	SH 34 and Panther Path	B	11.8	B	17.2	C	25.6	A	8.8	B	12.4	B	15.7
10	SH 34 and SH 276	C	27.9	F	90.7	F	136.4	C	22.8	E	72.0	F	113.5
11	SH 34 and E Kirby Avenue / Walmart Driveway	C	25.8	F	85.7	F	128.3	C	26.1	E	74.1	F	113.7
12	SH 34 and E SH 276	C	32.0	F	128.4	F	187.2	C	24.6	F	104.8	F	153.0
13	SH 34 and SPR 264	D	43.5	F	682.3	F	860.4	A	8.5	B	16.1	C	24.0
14	SH 34 and CR 2312*	B	12.0	B	14.4	C	16.2	B	12.8	C	17.0	C	18.1
	LOS – Level of Service												

Improvements

- Short-Term Improvements
  - SH 34 @ FM 1570
  - SH 34 @ FM 1903
  - SH 34 @ FM 2101
  - SH 34 @ E. SH 276
  - SH 34 @ SPUR 264

- Mid-Term Improvements (Bridges)

- Long-Term Improvements (Widening Options Roll Plots)

Analysis with Short Term Improvements

	SH 34 Traffic Analysis												
	Intersection	AM						PM					
		Existing		2038		2048		Existing		2038		2048	
		LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
1	SH 34 at IH 30 WBFR	B	16.7	C	21.6	C	25.5	C	20.7	C	31.0	D	44.7
2	SH 34 at IH 30 EBFR	B	14.9	B	18.6	C	22.6	B	17.1	D	43.6	E	74.1
3	SH 34 at Traders Road	B	15.7	C	20.6	C	25.0	B	16.0	C	27.3	D	52.2
4	SH 34 at FM 1570	C	27.2	D	43.5	E	61.0	C	24.2	D	54.8	F	93.4
5	SH 34 and FM 1903	A	6.7	B	11.1	B	14.3	A	9.9	B	18.0	D	43.1
6	SH 34 and E FM 1564*	B	14.1	D	28.0	F	97.6	B	12.0	D	33.1	F	141.8
7	SH 34 and W FM 1564*	C	15.7	E	36.5	F	89.2	B	11.7	C	22.2	E	42.4
8	SH 34 and FM 2101	B	16.8	D	49.0	F	102.1	A	7.0	B	10.2	B	12.2
9	SH 34 and Panther Path	B	11.8	B	17.2	C	25.6	A	8.8	B	12.4	B	15.7
10	SH 34 and SH 276	C	28.0	F	90.7	F	136.4	C	22.8	E	72.0	F	113.5
11	SH 34 and E Kirby Avenue / Walmart Driveway	C	25.8	F	85.7	F	128.3	C	26.1	E	74.1	F	113.7
12	SH 34 and E SH 276	D	47.3	F	136.7	F	307.1	E	58.4	F	173.5	F	493.7
13	SH 34 and SPR 264	C	23.3	F	110.5	F	172.9	A	7.9	B	12.3	B	15.6
14	SH 34 and CR 2312*	B	12.0	B	14.4	C	16.2	B	12.8	C	17.0	C	18.1
	LOS – Level of Service												

Analysis with Ultimate Condition

	Intersection Level of Service SH 34 Traffic Analysis												
	Intersection	AM						PM					
		Existing		2038		2048		Existing		2038		2048	
		LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
1	SH 34 at IH 30 WBFR	B	16.7	C	21.6	C	25.5	C	20.7	C	31.0	D	44.7
2	SH 34 at IH 30 EBFR	B	14.9	B	18.6	C	22.6	B	17.1	D	43.6	D	40.9
3	SH 34 at Traders Road	B	15.7	C	20.6	C	25.0	B	16.0	C	27.3	D	52.2
4	SH 34 at FM 1570	C	27.2	D	43.5	D	46.5	C	24.2	D	54.8	D	53.8
5	SH 34 and FM 1903	A	5.3	A	6.4	A	7.6	A	6.7	A	9.2	B	11.5
6	SH 34 and E FM 1564*	B	10.7	B	13.6	C	17.2	A	9.7	C	16.4	D	28.5
7	SH 34 and W FM 1564*	B	12.2	C	19.5	D	28.2	B	10.6	C	17.2	D	26.6
8	SH 34 and FM 2101	B	13.5	C	30.1	D	53.9	A	5.8	A	7.2	A	7.7
9	SH 34 and Panther Path	A	8.7	B	11.3	B	12.7	A	6.8	A	7.7	A	7.8
10	SH 34 and SH 276	B	18.9	D	50.5	C	24.6	B	17.6	D	39.6	C	28.8
11	SH 34 and E Kirby Avenue / Walmart Driveway	B	17.5	C	22.3	C	30.8	B	18.3	C	25.7	D	38.5
12	SH 34 and E SH 276	D	47.3	D	37.0	D	48.3	C	33.6	D	41.3	D	47.5
13	SH 34 and SPR 264	A	9.4	B	18.3	C	25.0	A	6.7	A	8.7	A	10.0
14	SH 34 and CR 2312*	B	11.1	B	12.8	B	14.1	B	10.7	B	12.0	B	12.1
	LOS – Level of Service												

<u>SH 34 @ SH 276:</u>

- Add Eastbound Right-Turn Lane (by 2048)

<u>SH 34 @ E SH 276:</u>

- Add 2nd Westbound Left-Turn Lane (by 2048)
- Add exclusive Westbound Right-Turn Lane (by 2048)
- Add 2nd Southbound Left-Turn Lane (by 2038)
- Add acceleration lane for Northbound Right-Turn Lane (by 2048)

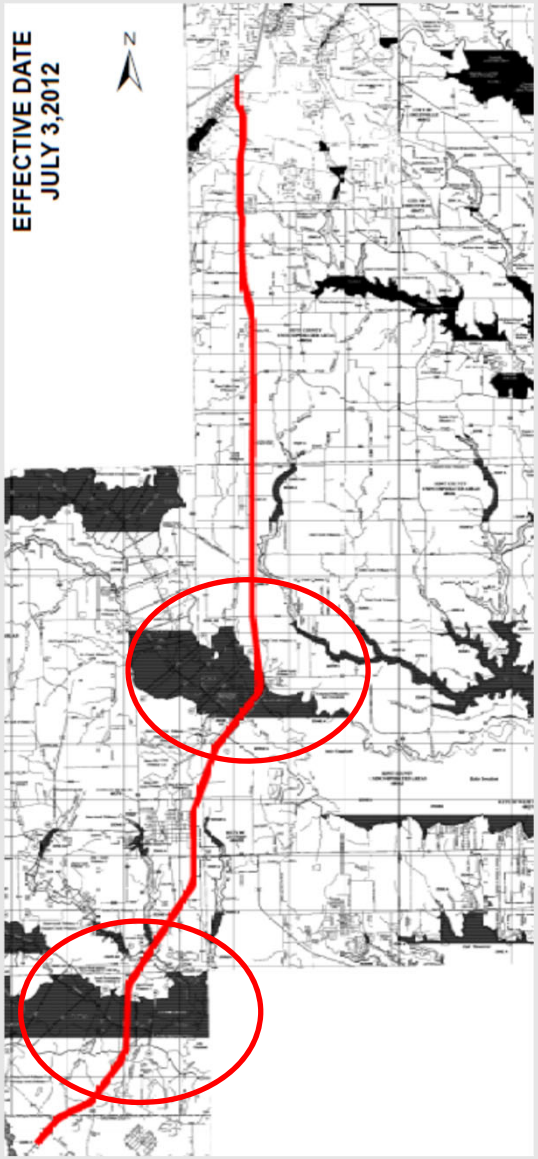
Drainage

- Land uses : Undeveloped, Residential and Commercial .

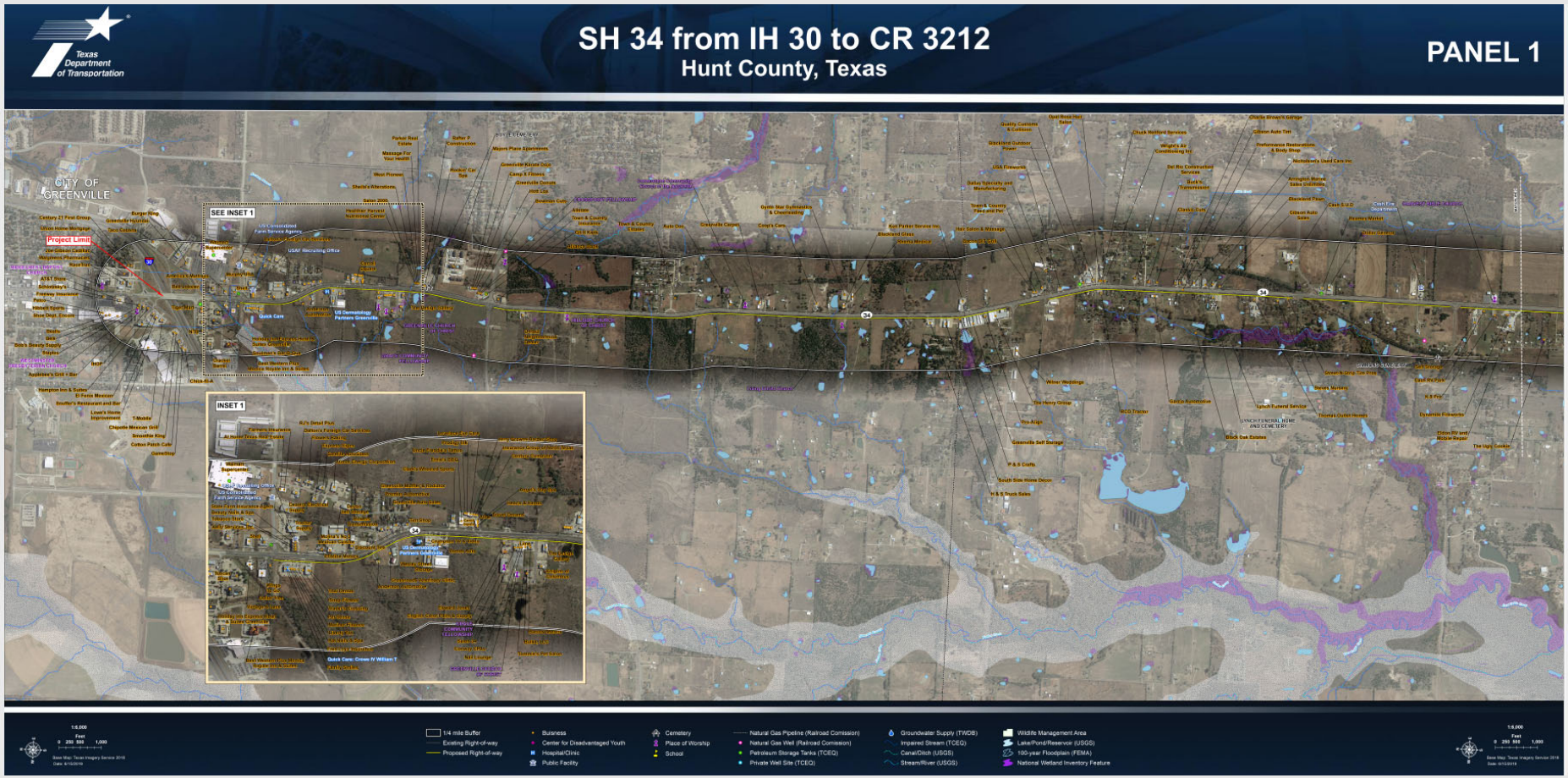
- Major Creeks: Mustang Branch, Farber Creek, Caddo Creek, Jones Creek, Sabine Creek and Lake Tawakoni.

- Floodplain: Areas at Caddo, Jones and Sabine Creek are in 100-year floodplain.

- Existing Analysis: Existing drainage systems have capacity to convey the flow.



Environmental



Costs

Short-Term:	$2M
Mid-Term:	$48M (not incl. ROW &Utilities)
Long-Term:	$60M (not incl. ROW &Utilities)

TOTAL

Construction:	$110M
ROW & Utilities:	$16M

Coordination

- City of Quinlan
- City of Greenville
- Hunt County
- Steering Committee

Next Steps

Today!
SH 34
PROJECT NEXT STEPS
PUBLIC MEETING #2
COLLECT PUBLIC FEEDBACK
DRAFT FEASIBILITY STUDY REPORT
OBTAIN FEEDBACK FROM STAKEHOLDERS
PREPARE THE FINAL FEASIBILITY STUDY REPORT

Comments

Tonight
In the comment box

By Email
Submit to:
dan.perry@txdot.gov

By Mail
Dan Perry, TP&D Director
TxDOT Paris District
1365 N. Main St., Paris, TX 75460

Online
https://www.txdot.gov/inside-txdot/get-involved/about/hearings-meetings/paris/061819.html

Please provide your comments by July 9, 2019