

Section 20.2 SPEED STUDY

20.2.1 PURPOSE

The following study is to accompany the Establishment of Speed Zones EDSM VI.1.1.1. The purpose of the SPEED STUDY is to determine the basic measure of traffic performance. The study is also used to measure speeds at locations under the traffic and environmental conditions prevailing at the time of the study.

20.2.2 EQUIPMENT AND PERSONNEL

Test vehicle (passenger car/vehicle), driver, observer, radar unit, laser unit or stop watch, SPOT SPEED STUDY TABLE (Figure 20.2.1) to input data.

20.2.3 PROCEDURE

The following is the minimum that should be collected and/or examined:

1. Calculate the 95th, 85th, and 15th percentile speeds and the 10 miles per hour pace speed range.
 - **Equipment** – Radar Unit, Laser Unit or Stop watch.
 - **Locations** – where drivers can obtain uninterrupted free flow speed. (i.e. tangent sections, outside of braking area for intersection)
 - **Sample size** – a minimum of 100 vehicles of spot speeds should be recorded. If 100 vehicles cannot be achieved, 2 hours of data is sufficient.
 - **Time of Day** – Outside of peak hours. Typically 10am-noon or 1pm-3pm depending upon location.
 - **Weather** – dry and sunny
2. Note the roadway characteristics, such as but not limited to:
 - Curves
 - Lane width and number of lanes
 - Medians
 - Sight distance
 - Traffic control features and spacing of such
 - Number of driveways
 - Number of side streets
 - ADT
 - Shoulder conditions
 - Pavement Conditions
3. Crash analysis for the last 3 years (i.e. abnormal crashes, crash type, crash summary, traffic volumes, etc.)

20.2.4 SPEED STUDY REPORT

The report should follow the order below and include all described information.

1. Description of roadway characteristics
2. Reason for zoning study
3. Write up with supporting documentation
4. Crash analysis and crash summary with description (i.e. abnormal crashes, crash type, crash summary, traffic volumes, etc.)
5. Explanation of additional information deemed necessary by engineering judgment.
6. Conclusion
7. Proposed Chief Engineer’s Order (not required if speed is statutory) – The order must include a description containing intersecting street or bridge names, control section and logmiles from Agile Assessts for the beginning and end of the zone. An example Chief Engineer’s Order is shown below:

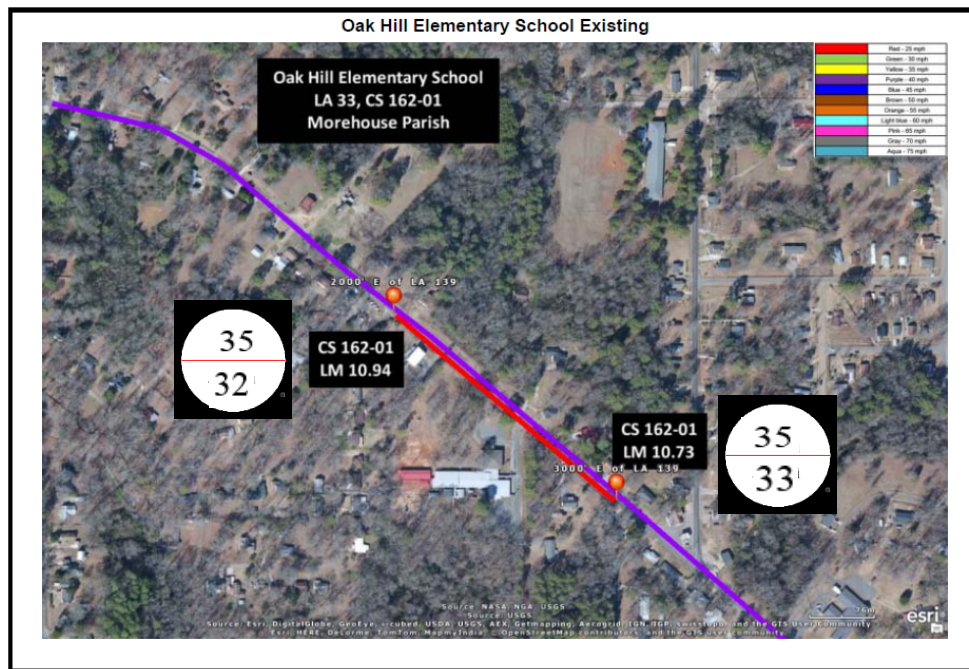
“No person shall operate any vehicle at a **speed** in excess of **45 miles per hour** on **State Route LA 447** between (1) a point 470 feet north of its intersection with Crotwell Drive (CS 268-01, LM 6.08) and (2) its intersection with State Route LA 1027 (CS 268-02, LM 0.04), in the Town of Walker, all in Livingston Parish.”

8. **Current Speed Zone Map on aerial** (Figure 20.2.2) – Shows the existing speed limit(s), location, logmiles, and speed study locations with the 85th and 50th percentile speeds identified.

All maps included in the report should follow the coloring scheme below.

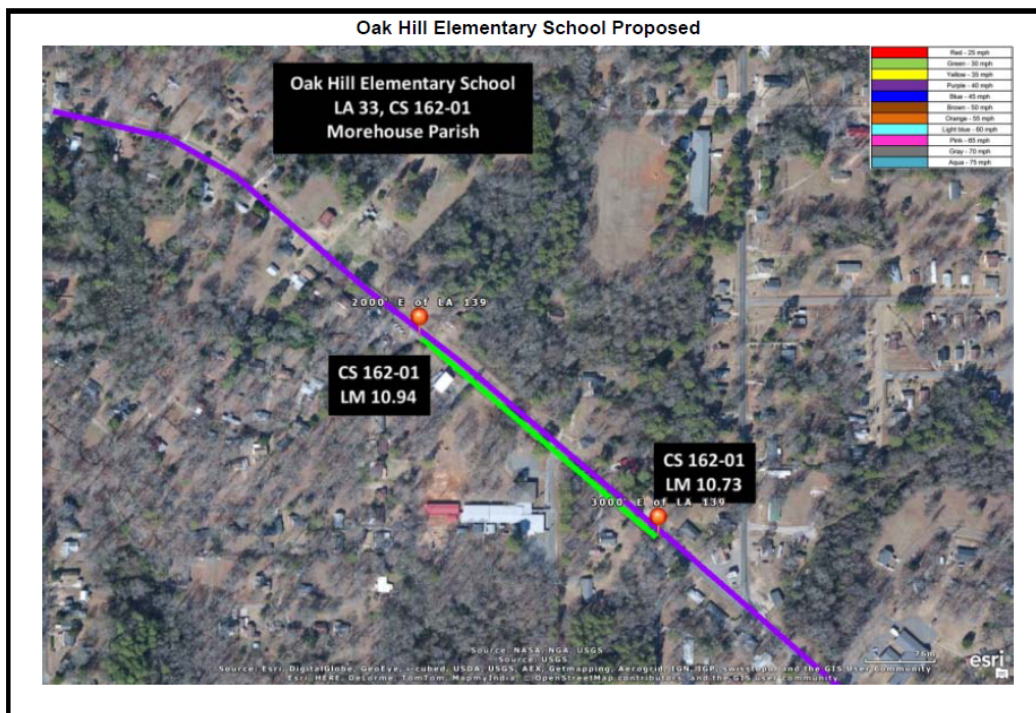
	Red - 25 mph
	Green - 30 mph
	Yellow - 35 mph
	Purple - 40 mph
	Blue - 45 mph
	Brown - 50 mph
	Orange - 55 mph
	Light blue - 60 mph
	Pink - 65 mph
	Gray - 70 mph
	Aqua - 75 mph

Figure 20.2.2 Current Speed Zone Map Example



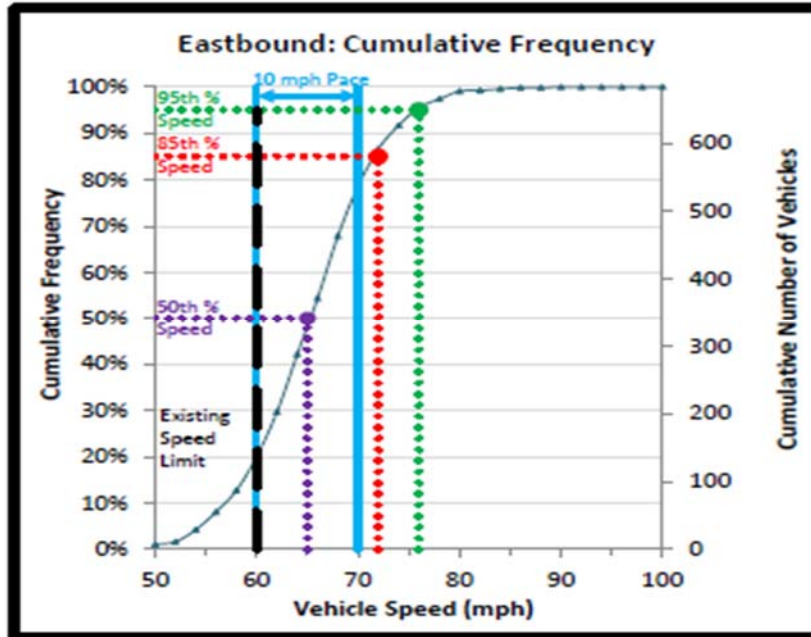
- Suggested Speed Zone Map on aerial (Figure 20.2.3)** – Shows the proposed speed limit (s) location, and logmiles.

Figure 20.2.3 Suggested Speed Zone Map Example



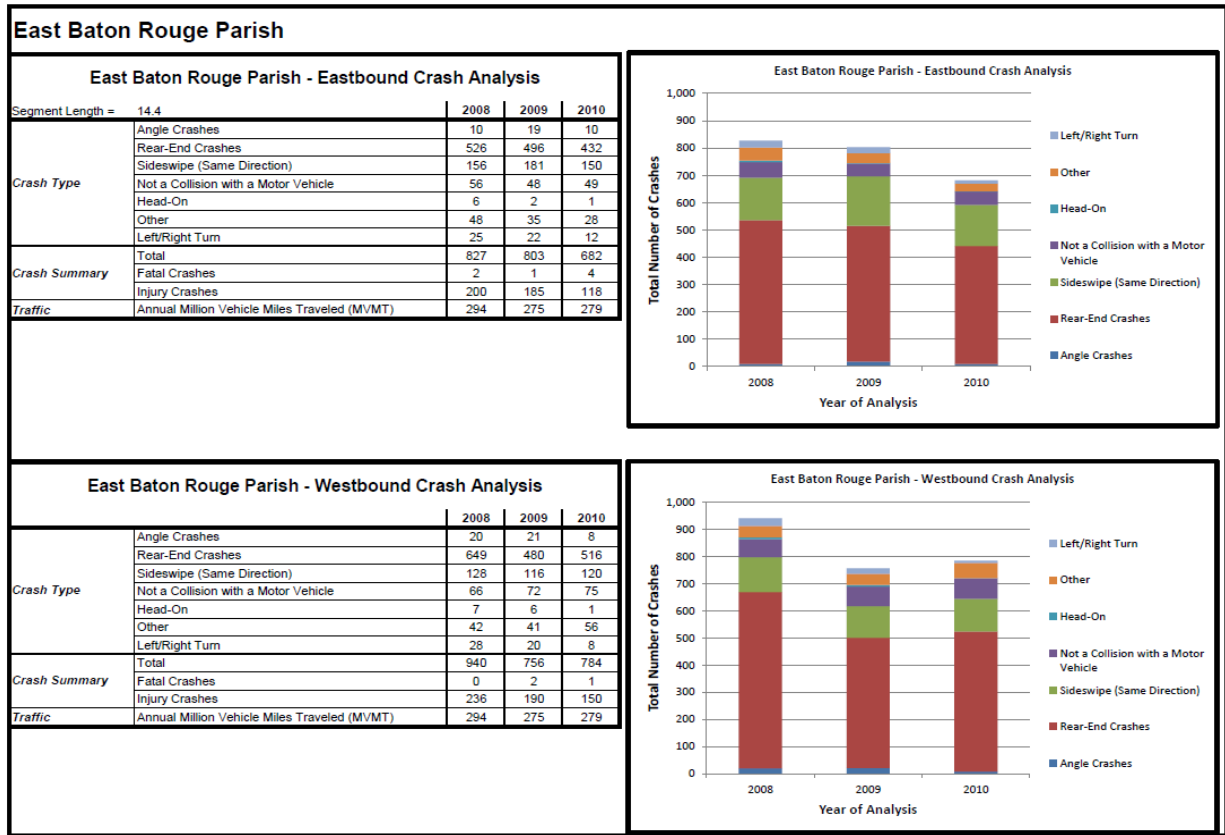
10. **Spot Speed Study Table** (Figure 20.2.1) – Shows the 95th, 85th, and 50th percentile speeds along with the 10 miles per hour pace range.
11. **Cumulative Frequency Curve Form** (Figure 20.2.4) – Shows a graphical representation of the 95th, 85th, and 50th percentile speeds.

Figure 20.2.4 Cumulative Frequency Curve Example



12. **Crash Data Tables** (See below or [Road Safety Triage](#)) – Must include 3 years of crash data describing all types of crashes.

Figure 20.2.5 Crash Data Table Example



20.2.5 SPEED LIMIT SIGNS

The following guidelines apply to the length of zones and placement of signs.

1. Speed limit signs shall be placed at the beginning of all speed zones.
2. Suggested sign spacing for additional speed limit signs:
 - Urban highways – a two block interval between signs
 - Rural areas – a one mile interval between signs if the speed limit is not statutory
 - After state route intersections
3. If the speed limit is statutory, suggested sign spacing is as follows:
 - Rural areas – five mile spacing
 - Urban highways – one mile spacing
 - After state route intersections

Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and, where appropriate, at jurisdictional boundaries in urban areas. A W3-5 Reduced Speed Limit Ahead sign should be used with all speed zones unless there is insufficient room or if the speed zone begins at a stop, signalized, or yield controlled intersection.

Figure 20.2.1 Spot Speed Study Table Example

SPOT SPEED STUDY

LOCATION :	On US 167, 1000' north of the LA 8 intersection, in Bentley.		
REPORT #		TIME OF STUDY:	10:20 A-11:30 A
DATE:	5/29/2013	WEATHER:	Partly Cloudy
DIRECTION OF TRAVEL :	Southbound	ROAD CONDITIONS:	Dry
ROUTE:	US 167	PARISH:	Grant
CONTROL SECTION:	023-02	POSTED SPEED LIMIT:	45 mph

MEAN (AVERAGE):	47.0	50 TH PERCENTILE:	46
MODE:	51	85 TH PERCENTILE:	51
MEDIAN:	46	95 TH PERCENTILE:	55
BOTTOM OF 10 MPH PACE SPEED:	43	NO. OF OBSERVATIONS:	104
TOP OF 10 MPH PACE SPEED:	52	% OF VEHICLES IN PACE RANGE:	72.1%

SPEED	FREQ.	Percent	Cumulative Percent	SPEED	FREQ.	Percent	Cumulative Percent
15				49	3	2.88	64.42%
16				50	7	6.73	71.15%
17				51	13	12.50	83.65%
18				52	5	4.81	88.46%
19				53	4	3.85	92.31%
20				54	1	0.96	93.27%
21				55	1	0.96	94.23%
22				56	2	1.92	96.15%
23				57	2	1.92	98.08%
24				58	2	1.92	100.00%
25				59			
26				60			
27				61			
28				62			
29				63			
30				64			
31				65			
32				66			
33				67			
34	1	0.96	0.96%	68			
35				69			
36				70			
37	2	1.92	2.88%	71			
38				72			
39	1	0.96	3.85%	73			
40	3	2.88	6.73%	74			
41	7	6.73	13.46%	75			
42	3	2.88	16.35%	76			
43	11	10.58	26.92%	77			
44	10	9.62	36.54%	78			
45	11	10.58	47.12%	79			
46	1	0.96	48.08%	80			
47	6	5.77	53.85%				
48	8	7.69	61.54%				