

Attachment B: Marsh Road Speed Study Math and Interpretation Issues

Prepared as a supporting attachment for the Marsh Road supervisory review request. Calculations are based on the speed-bin totals shown in the studies listed in this attachment.

1. Executive Summary

The available speed data does not support the plain-language conclusion that only "fewer than 3%" of Marsh Road traffic is speeding.

The "fewer than 3%" figure appears to correspond to vehicles traveling in the 46 mph and higher bins, not all vehicles exceeding the posted 35 mph speed limit.

That distinction matters. If VCSO is using approximately 46 mph and higher as a practical enforcement threshold in a 35 mph zone, then the data should be described as:

Approximately 2.98% exceeded VCSO's apparent enforcement threshold in the northbound February-March 2026 dataset.

It should not be described as:

Only 3% of traffic was speeding.

The same All Traffic Solutions northbound report shows approximately 46.3% of vehicles in the 36 mph and higher bins and approximately 15.9% in the 41 mph and higher bins.

2. Important Location and Methodology Note

The Marsh Road studies were not all taken at the same location, during the same period, or with the same apparent device configuration. That matters.

The later All Traffic Solutions speed-sign data appears to involve specific sign placements, including the 2025 placement near 2005 Marsh Road and the 2026 placement near Pine Avenue, based on resident understanding, field observation, and the documents provided.

The County Traffic Engineering studies south of Sandy Lane and north of Palm Avenue are useful because they show that speeds vary materially along Marsh Road. They should not be treated as a direct one-to-one comparison against the later speed-sign report unless the County or VCSO confirms comparable device placement, study method, visibility, and configuration.

The point is not that every dataset must show identical speeds. The point is that one later speed-sign report should not be used to dismiss the broader Marsh Road issue without explaining location, device configuration, methodology, and why that report should outweigh other County data.

3. Binning and Tolerance Note

The reports use speed bins, so some thresholds cannot be isolated to the exact mile per hour.

For a 35 mph posted speed:

Category	Speed bins used
Above posted speed	36 mph and higher
Outside 1-5 mph warning-only band	41 mph and higher
Apparent VCSO "fewer than 3%" threshold	46 mph and higher

For a 40 mph posted speed:

Category	Speed bins used
Above posted speed	Greater than 40 mph
Outside 1-5 mph warning-only band	Greater than 45 mph
Approx. 10+ mph over threshold	Greater than 50 mph

If VCSO disputes whether the All Traffic Solutions 36-40 mph bin should be treated as entirely above the posted 35 mph limit because of binning or device tolerance, that does not resolve the broader speed issue. The 41 mph and higher bins remain above the warning-only range, the 46 mph and higher bins remain the apparent enforcement-threshold category, and the County Palm Avenue study separately uses greater-than speed bins that show materially higher speeds in a 35 mph segment.

4. All Traffic Solutions Report, Northbound, Feb. 22-Mar. 23, 2026

Location: Marsh Road northbound, understood to be near Pine Avenue

Posted speed: 35 mph

Total vehicles: 60,357

Average speed shown: 32.8 mph

Category	Vehicles	Percent
Total recorded traffic	60,357	100%
36 mph and higher	27,934	46.3%
41 mph and higher	9,624	15.9%
46 mph and higher	1,799	2.98%

Interpretation: The "fewer than 3%" figure appears to match the 46 mph and higher category. It does not represent all vehicles exceeding the posted 35 mph speed limit.

5. All Traffic Solutions Report, Southbound, Sept. 11-Oct. 10, 2025

Location: Marsh Road southbound, understood to be near 2005 Marsh Road

Posted speed: 35 mph

Total vehicles: 10,158

Average speed shown: 33.7 mph

Category	Vehicles	Percent
Total recorded traffic	10,158	100%
36 mph and higher	4,574	45.0%
41 mph and higher	1,367	13.5%
46 mph and higher	301	2.96%

Interpretation: The southbound data follows the same pattern. The "fewer than 3%" framing appears to correspond to 46 mph and higher, not all vehicles exceeding the 35 mph posted speed.

6. Speed-Sign Configuration Concern

The later All Traffic Solutions report from February 22, 2026 through March 23, 2026 should not be used by itself to dismiss the speed issue without explaining the device configuration.

Lieutenant Brodie Hughes acknowledged that the speed display sign itself can affect driver behavior because some drivers react to it or attempt to trigger the lights.

Based on resident observation during that same study period, the sign did not appear to begin visibly flashing the displayed speed until approximately 44-45 mph, and did not appear to activate red/blue warning lights until approximately 50 mph, despite the posted speed limit being 35 mph.

If that observation is correct, the device itself may have reinforced a practical threshold far above the posted speed limit during the same period used to support the "fewer than 3%" claim.

VCSO and the County should clarify:

- What speed triggered the displayed number to flash.
- What speed triggered red/blue warning lights.
- Whether those thresholds were set above the posted 35 mph speed limit.
- Whether the device was displaying speeds to drivers during the study.
- Whether the device configuration influenced driver behavior.
- Why that report should be treated as representative of Marsh Road enforcement conditions.

7. County Traffic Engineering Study, Marsh Road South of Sandy Lane, July 10-14, 2024

Posted speed: 40 mph

Total combined vehicles: 5,902

Mean speed: 48.2 mph

85th percentile speed: 54 mph

95th percentile speed: 60 mph

10 mph pace: 43-52 mph

Vehicles over 50 mph: 2,081, or 35.3%

Category	Vehicles	Percent
Total recorded traffic	5,902	100%
Greater than 40 mph	5,282	89.5%
Greater than 45 mph	3,948	66.9%
Greater than 50 mph	2,081	35.3%

Interpretation: This study is not the same location as the later All Traffic Solutions sign report. However, it shows that other Marsh Road segments have recorded materially higher speeds. It also shows why a single speed-sign dataset should not be used to minimize the corridor-wide issue.

This data is especially relevant because a County memorandum later referenced this area and concluded that "speeding is high for this area."

8. County Traffic Engineering Study, Marsh Road North of Palm Avenue, June 10-16, 2025

Posted speed: 35 mph

Total combined vehicles: 19,528

Mean speed: 40.6 mph

85th percentile speed: 44 mph

95th percentile speed: 47 mph

10 mph pace: 36-45 mph

Vehicles over 45 mph: 2,887, or 14.8%

Category	Vehicles	Percent
Total recorded traffic	19,528	100%
Greater than 35 mph	17,158	87.9%
Greater than 40 mph	10,182	52.1%
Greater than 45 mph	2,887	14.8%

Interpretation: This study is also not the same as the later Pine Avenue / All Traffic Solutions sign report. However, it is important because it was conducted in a 35 mph Marsh Road segment and showed 14.8% over 45 mph, which is materially higher than the later "fewer than 3%" framing.

If VCSO is using approximately 45-46 mph as the practical enforcement threshold in a 35 mph zone, then the Palm Avenue data shows a materially larger enforcement-threshold issue than the later speed-sign report suggests.

The Palm Avenue data is also the cleaner fallback if VCSO disputes the All Traffic Solutions 36-40 mph bin because the County study uses greater-than bins and independently reports 87.9% strictly greater than 35 mph.

9. Comparison of Key Speed Findings

Study / Location	Posted	Total	Mean	85th	Key finding
All Traffic Solutions NB, near Pine Ave, Feb-Mar 2026	35	60,357	32.8	N/A	46.3% at 36+; 15.9% at 41+; 2.98% at 46+
All Traffic Solutions SB, near 2005 Marsh Rd, Sept-Oct 2025	35	10,158	33.7	N/A	45.0% at 36+; 13.5% at 41+; 2.96% at 46+
County study, S of Sandy Ln, July 2024	40	5,902	48.2	54	35.3% over 50 mph
County study, N of Palm Ave, June 2025	35	19,528	40.6	44	14.8% over 45 mph; 87.9% over 35 mph

10. Why the Data Should Not Be Used to Minimize the Issue

A. The "fewer than 3%" statement appears to be threshold-based

The figure appears to mean approximately 46 mph and higher, not all vehicles exceeding 35 mph.

B. The All Traffic Solutions sign configuration may have influenced results

If the sign only flashed around 44-45 mph and only activated red/blue lights around 50 mph, then the device may have normalized speeds above 35 mph and affected driver behavior during the study.

C. Other County studies show materially different conditions

The Sandy Lane and Palm Avenue studies show that different Marsh Road locations produce materially different speed results. That does not clear Marsh Road. It shows the opposite: Marsh Road conditions vary by segment, and one speed-sign report should not be treated as the final answer.

11. County Memo Already Acknowledged a Speeding Problem

A Volusia County Traffic Engineering memorandum dated October 16, 2024 documented that VCTE received a concern on August 20, 2024 regarding high large-vehicle volume on Marsh Road north of Carter Road.

Measure	Result
85th percentile speed	54 mph
Average speed	48 mph
10 mph pace	43-52 mph
ADT	1,180
3-axle single-unit trucks and large vehicles	5.9% in the data bullet; the conclusion paragraph states 5.0%

Note: The memo appears internally inconsistent on the large-vehicle percentage. Its data bullet states 5.9%; its conclusion paragraph states 5.0%.

The memo concluded:

However, speeding is high for this area and will ask law enforcement for help to deter speeding.

Interpretation: This is important because it shows the County was already on notice of a Marsh Road speeding concern and a large-vehicle-volume concern before the most recent complaints.

12. Optional Scale Check: Conservative Statutory Base Fine Exposure

This section is not included to argue that traffic enforcement should be revenue-driven. It is included only to show the scale of the speeding data that may be minimized when the data is described as "fewer than 3% speeding."

VCSO generally does not directly receive the money from traffic citations. Civil penalties are collected and distributed through the clerk/court system under statutory formulas. The figures below are only a conservative estimate of statutory base fine exposure under F.S. 318.18, before court costs, surcharges, statutory distributions, and other add-ons.

Speed over limit	Base fine
1-5 mph	Warning
6-9 mph	\$25
10-14 mph	\$100
15-19 mph	\$150
20-29 mph	\$175
30 mph and above	\$250

Because the studies use speed bins, these estimates use a conservative minimum for each bin. For example, in a 35 mph zone, the 41-45 mph bin is valued at \$25 even though 45 mph is 10 mph over and may fall into a higher fine category.

12A. All Traffic Solutions NB, Feb. 22-Mar. 23, 2026, Posted 35 mph

Category	Vehicles	Conservative base fine	Estimated base fine exposure
41-45 mph	7,825	\$25	\$195,625
46-50 mph	1,471	\$100	\$147,100
51-55 mph	231	\$150	\$34,650
56-60 mph	62	\$175	\$10,850
61-65 mph	20	\$175	\$3,500
66+ mph	15	\$250	\$3,750
Total conservative base fine exposure			\$395,475

This estimate is based only on vehicles in the 41 mph and higher bins. It excludes the 36-40 mph warning-only range.

12B. All Traffic Solutions SB, Sept. 11-Oct. 10, 2025, Posted 35 mph

Category	Vehicles	Conservative base fine	Estimated base fine exposure
41-45 mph	1,066	\$25	\$26,650
46-50 mph	235	\$100	\$23,500
51-55 mph	49	\$150	\$7,350
56-60 mph	12	\$175	\$2,100
61-65 mph	3	\$175	\$525
66+ mph	2	\$250	\$500
Total conservative base fine exposure			\$60,625

12C. County Traffic Engineering, North of Palm Avenue, June 10-16, 2025, Posted 35 mph

Category	Vehicles	Conservative base fine	Estimated base fine exposure
>40-45 mph	7,295	\$25	\$182,375
>45-50 mph	2,371	\$100	\$237,100
>50-55 mph	410	\$150	\$61,500
>55-60 mph	77	\$175	\$13,475
>60-65 mph	17	\$175	\$2,975
>65-70 mph	3	\$250	\$750
>70 mph	9	\$250	\$2,250
Total conservative base fine exposure			\$500,425

12D. County Traffic Engineering, South of Sandy Lane, July 10-14, 2024, Posted 40 mph

Category	Vehicles	Conservative base fine	Estimated base fine exposure
>45-50 mph	1,867	\$25	\$46,675
>50-55 mph	1,214	\$100	\$121,400
>55-60 mph	539	\$150	\$80,850
>60-65 mph	204	\$175	\$35,700
>65-70 mph	77	\$175	\$13,475
>70 mph	47	\$250	\$11,750
Total conservative base fine exposure			\$309,850

12E. Why This Scale Check Matters

Again, this is not an argument that traffic enforcement should be revenue-driven. It is an argument that the "fewer than 3%" framing materially understates the scale of the speeding data.

If VCSO chooses, as a matter of discretion, not to stop vehicles until approximately 10 mph over the posted limit, that should be described as an enforcement-priority decision. It should not be used to imply that only a small number of vehicles are exceeding the posted speed limit.

The practical issue for residents is safety, noise, roadway compatibility, and enforcement consistency. The fine exposure is included only as another way to show that the underlying violation volume is not trivial.

13. Bottom-Line Interpretation

- The "fewer than 3%" statement appears to refer to vehicles traveling 46 mph and higher, not all vehicles exceeding the posted speed limit.
- The All Traffic Solutions northbound data still shows approximately 46.3% of vehicles in the 36 mph and higher bins and approximately 15.9% in the 41 mph and higher bins.
- The All Traffic Solutions northbound 46 mph and higher calculation is 2.98%, and the southbound 46 mph and higher calculation is 2.96%.
- The All Traffic Solutions southbound data shows the same pattern: approximately 45.0% in the 36 mph and higher bins and only 2.96% in the 46 mph and higher bins.
- Even if VCSO disputes the ATS 36-40 mph bin because of binning or device tolerance, the County Palm Avenue study independently reports 87.9% strictly greater than 35 mph in a 35 mph segment.
- Prior County Traffic Engineering studies from other Marsh Road locations show materially different and, in some cases, substantially higher speeds.
- The County's own October 2024 memorandum concluded that speeding is high for this area, while also appearing internally inconsistent on the large-vehicle percentage by stating 5.9% in the data bullet and 5.0% in the conclusion paragraph.
- If VCSO uses approximately 46 mph as a practical enforcement threshold in a 35 mph zone, that should be described as an internal enforcement practice or policy, not as proof that only 3% of drivers are speeding.
- The data should not be used to dismiss resident concerns without addressing device configuration, study location, study date, direction of travel, speed-sign behavior, roadway geometry, and commercial vehicle impacts.