

Peake's Point Horizontal Curve Study

Gulf Breeze, Florida

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July 31, 2023

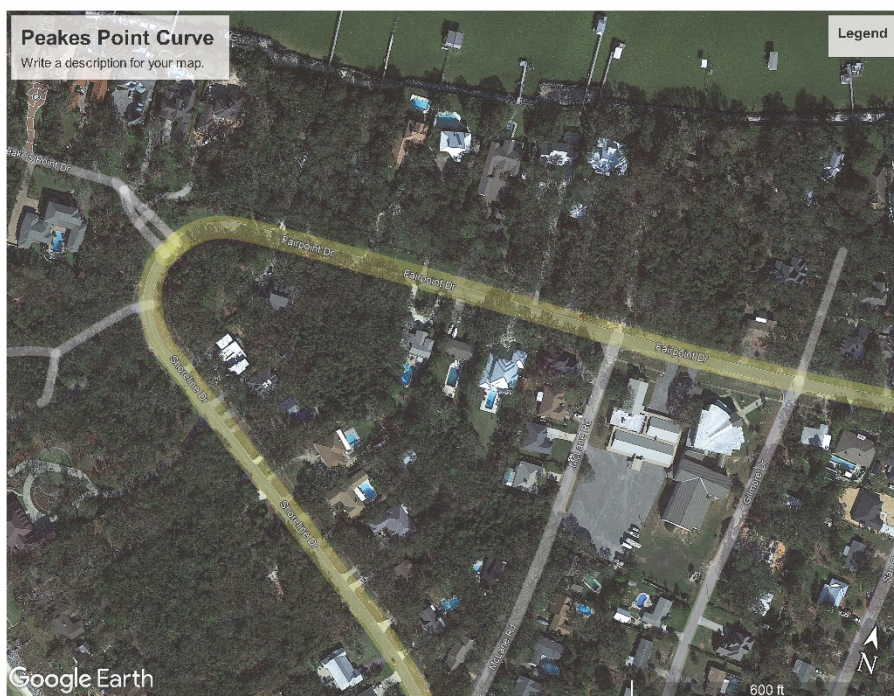


Introduction

Pursuant to a request from the City of Gulf Breeze for a horizontal curve study along Fairpoint Drive and Shoreline Drive in the vicinity of Peake's Point, HSA Columbia conducted the following analysis for the traffic study:

1. Analyzed the existing roadway and operational conditions, noting existing signing and traffic control features
2. Analyzed historic crash summaries and individual crash records
3. Developed a signing plan to better inform motorists of the need to slow to an appropriate speed to negotiate the horizontal curve at Peake's Point
4. The report includes a graphical representation of needed signs, official MUTCD designation and placement recommendations.

The roadway is shown in the aerial image below.



Operational Characteristics

Fairpoint Drive and Shoreline Drive are two-lane undivided county roadways that contain a sharp horizontal curve at their intersection with Peake's Point Drive. All roadways have flush grass shoulders, and have centerline and edge line thermoplastic pavement markings. Centerline retroreflective pavement markers (RPM's) follow FDOT specifications installed at 40 ft spacing. The study extended from McLane Rd on Shoreline Drive through the curve and back to McLane Rd on Fairpoint Drive.

There is a recently installed joint-use path along both roadways on the inside of the curve (south side of Fairpoint Drive and north side of Shoreline Drive). The posted speed limit is 35 mph until approaching the curve, where there is an advisory speed reduction to 15 mph, with a speed panel mounted with a W1-1 Curve Warning Sign. There is a radar speed sign on the Fairpoint Drive approach to the curve.

Traffic varies from 350-750 vehicles per day and Speed Spy data indicates the 85th percentile speed was measured to be 37-39 mph in the 35 mph speed zone. The area is residential with well-spaced driveways that do not have an influence on vehicle speeds.

Crash Analysis

Historical crash information from January 1, 2018, to March 17, 2023, was reviewed using the updated Signal Four Analytics (SFA) system. This is now the standard source for crash data. The data is shown in the following two tables. The crash databases documented a total of 10 crashes over the 63-month timeframe throughout the 0.45-mile study segment. **Table 1** shows crashes by year and type, while **Table 2** shows the crash detail (injuries/ fatalities/ property damage only).

Table1: Crashes by Year and Type

TYPE	2018	2019	2020	2021	2022	2023	Total Crashes
Angle	0	0	0	1	0	0	1
Front to Front	0	0	0	0	0	1	1
Front to Rear	0	0	1	0	0	2	3
Off roadway	1	0	0	1	1	1	4
Other	0	0	0	0	1	0	1
Sideswipe	0	0	0	0	0	0	0
Total	1	0	1	2	2	4	10

Table 2: Crash Detail Report

Year	Fatal Crashes	Injured Crashes	Property Damage Only Crashes	Total Crashes
2018	0	0	1	1
2019	0	0	0	0
2020	0	0	1	1
2021	0	0	2	2
2022	0	1	1	2
2023	0	0	4	4
Totals	0	1	9	10

As shown in **Table 1**, a total of 10 crashes were reported within the 0.45 mile study segment between 2018 and 2023. Of the 10 crashes, only one listed wet roadways as a contributing factor. Four crashes occurred during night conditions. Three listed possible alcohol use but not as a contributing factor.

Off-roadway crashes were the most common, which is expected for a sharp curve.

Table 2 notes that there were no fatal crashes and only one injury crash. Vehicles were damaged in all crashes.

A review of individual crash records indicated most crashes included inattentive or distracted drivers. Providing additional notice to drivers will provide the most effective improvement to increase safety.

Recommended Improvements

Roadway improvements to provide additional notice to motorists that they are approaching a curve include:

- Regulatory Signs
- Warning Signs
- Improved Pavement Marking System

Regulatory Signs – The posted speed limit should be lowered from 35 mph to 25 mph in advance of the curve. These signs should be installed on Fairpoint Drive and Shoreline Drive, 300 feet west of McLane Road.

This report will suffice to justify lowering of the speed limit for safety reasons.

Warning Signs – Several warning signs should be installed:

- 25 mph Speed Zone Ahead symbol signs (W3-5) should be installed 200 feet in advance of the reduced speed zone on Fairpoint Drive and Shoreline Drive.
- An additional curve warning sign should be installed on Shoreline Drive, 250 feet in advance of the point of curvature. There is an existing sign at a similar location on Fairpoint Drive.
- Install a Sharp Turn warning symbol sign (W1-1aR) with 15 mph advisory speed panel on Shoreline Drive, 100 feet before the point of curve. There is an existing sign on Fairpoint Drive.
- Install Chevron Signs (W1-8) along the curve at 100-foot intervals such that two signs are always visible to motorists as they proceed through the curve. This should require four double sided signs. These signs should measure 18"x24" or 24"x30" for additional emphasis. These signs are to be mounted a minimum of 4 feet from the bottom of the sign to the grade.

A graphic representation of the recommended signing plan is attached for reference.

Improved Pavement Marking System

- FDOT-compliant audible and vibratory pavement markings, to provide a lane departure warning, should be installed on the approaches and through the curve on both centerlines and edge lines. Profiled Thermoplastic should be used. These are described in the FDOT Design Manual Section 230.3.1.2 and Standard Specifications 701. Ground in rumbles strips are not appropriate for this residential location.
- Retroreflective pavement markers (RPMs) are currently used on the centerlines at standard 40-foot spacing. The spacing should be decreased to 20 feet within 100 feet and through the curve.
- The MUTCD allows RPMs to be used on edge lines where problems exist and bicycle operations are not affected. While bicyclists can use the joint use path, some are reluctant to do so, choosing to ride on the roadway and avoid conflicts with pedestrians. RPM's are not recommended for the edge lines as a primary improvement.
 - If the primary improvements do not provide the desired reduction in crashes, edge line RPM's should be considered as a supplemental measure to reduce crashes.

Roadway Lighting

Not mentioned in this study, but already committed to by the City of Gulf Breeze, is improved roadway lighting along the corridor.

