



# Overview of Florida's SAP

(Highway Railroad Grade Crossing  
State Action Plan)



# FRA Requirements

- ✓ • Identify highway-rail and pathway grade crossings that have experienced more than one accident/incident within the previous 5 years
  - ✓ • Strategies/types of improvement projects for improving safety at the identified highway-rail and pathway grade crossings
  - ✓ • An implementation timeline for the specific strategies
  - ✓ • Contact information for a designated State official who will be responsible for managing implementation of the SAP
- ✓ • As one of the 10 states originally required to submit an SAP in 2011, Florida must also include a report that describes:
    - Actions taken to implement the previously submitted plan
    - How Florida will continue to reduce grade crossing safety risks



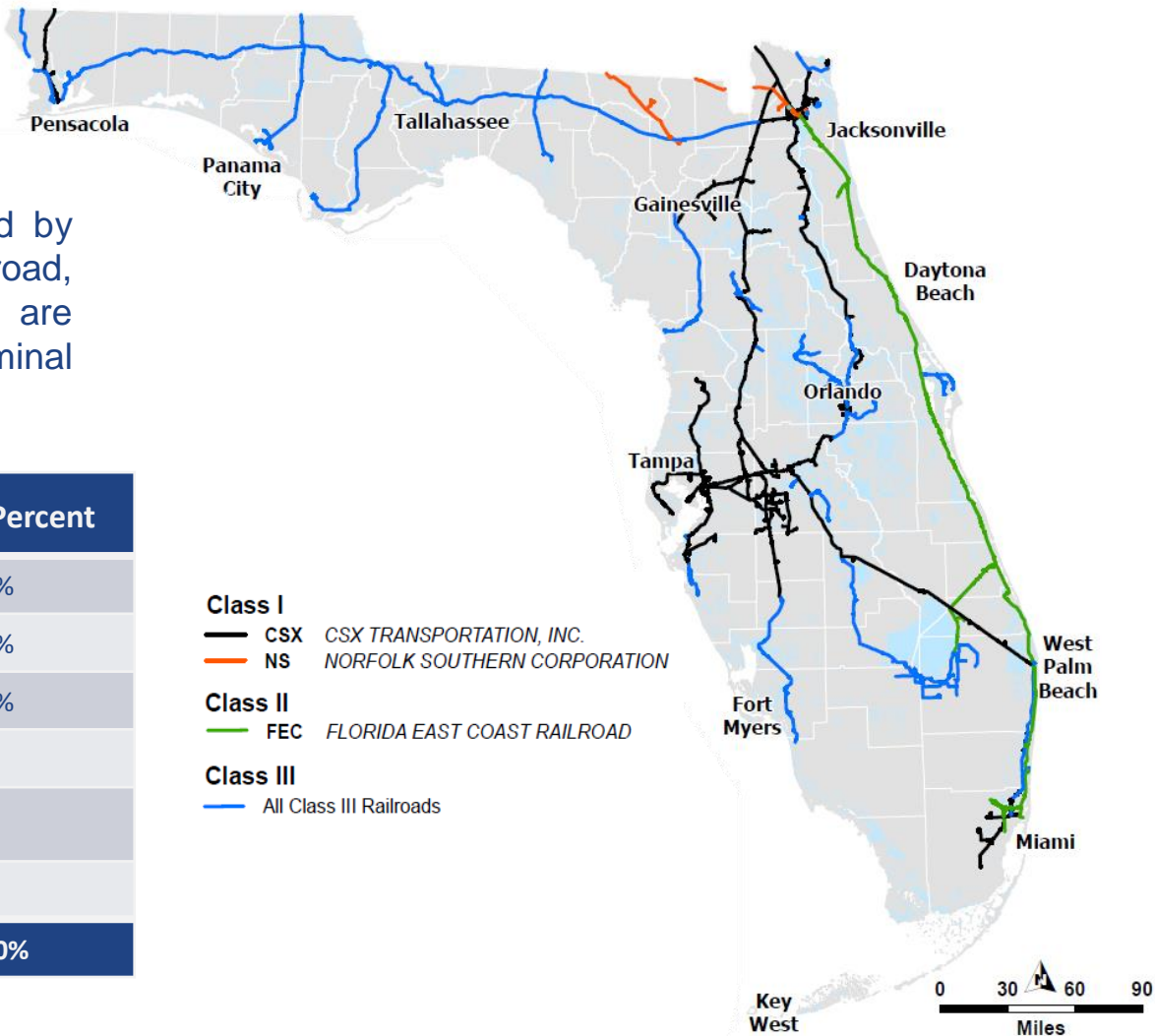


Existing Conditions

# Rail Classes

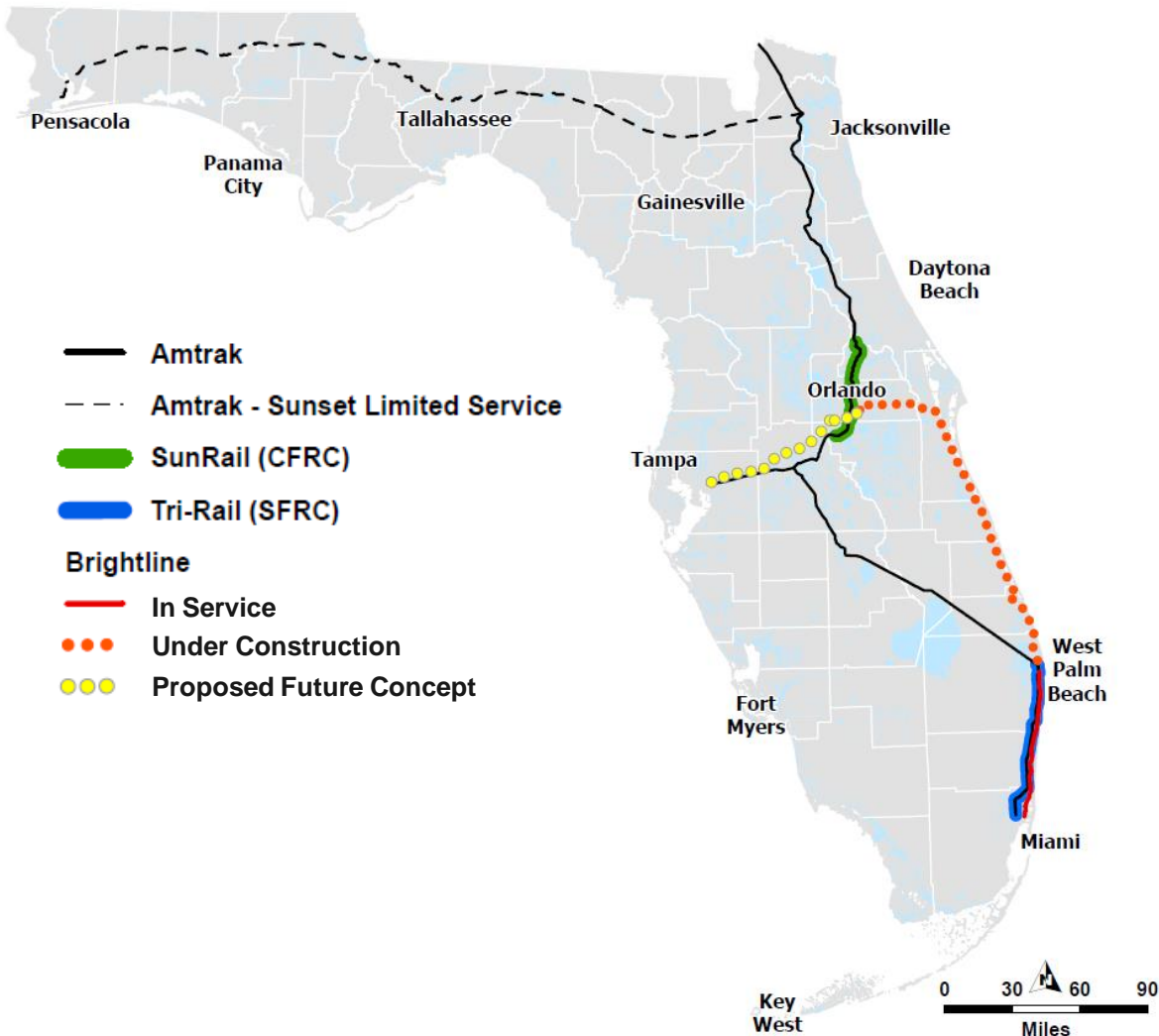
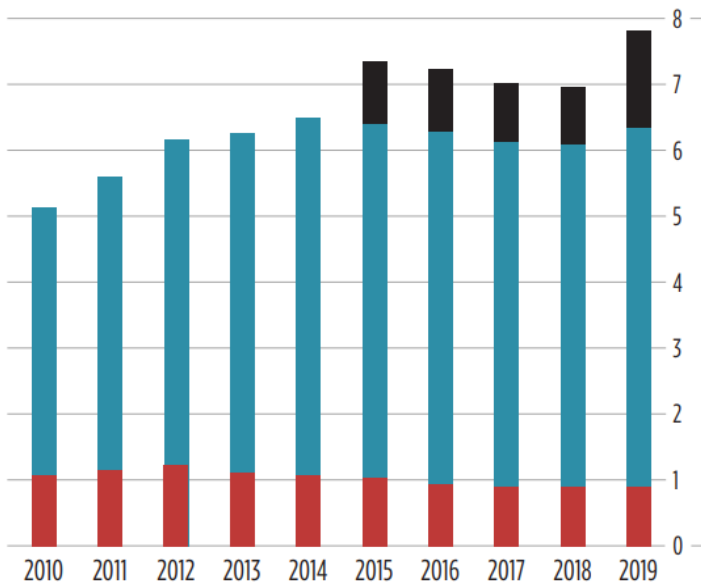
Florida's freight rail system is operated by two Class I railroads, one Class II railroad, and multiple Class III railroads that are further categorized as switching and terminal railroads or short lines.

Railroad	Miles Owned	Percent
CSX Transportation	1652	43%
Shortlines	1232	32%
Florida East Coast Railway	562	15%
Norfolk Southern Railway	126	3%
Florida Department of Transportation	136	4%
Other	156	4%
<b>TOTAL</b>	<b>3865</b>	<b>100%</b>



# Passenger Rail

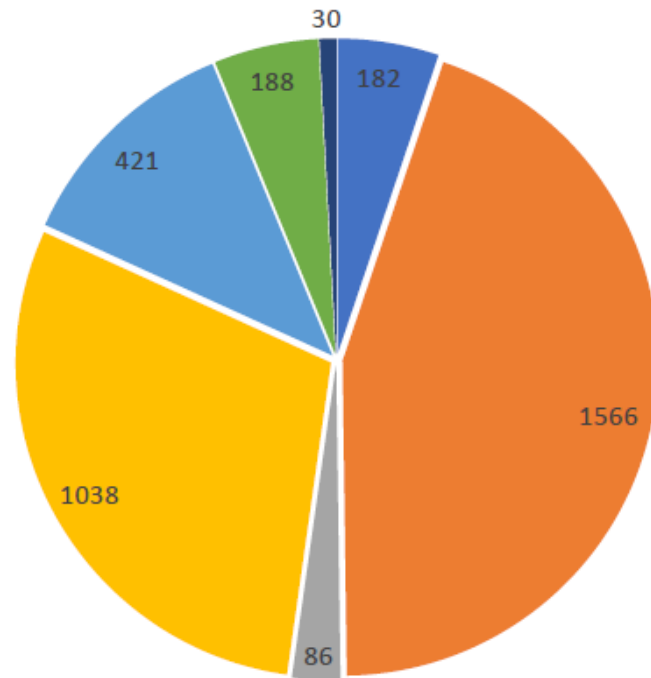
Florida has four passenger rail operations. In 2019, 7.8 million people rode rail in Florida, the highest total in over 15 years.



# Crossings & Warning Devices

	Public	Private	Total
At-Grade	3577	1291	4868
RR Under	394	6	400
RR Over	54	2	56
<b>Total</b>	<b>4025</b>	<b>1299</b>	<b>5324</b>

- Flashing Lights
- Flashing Lights & Gates
- Cantilever Flashing Lights
- Cantilever Flashing Lights & Gates
- Crossbucks
- Stop Signs
- None



<sup>11</sup> Does not include 70 at-grade pedestrian crossings

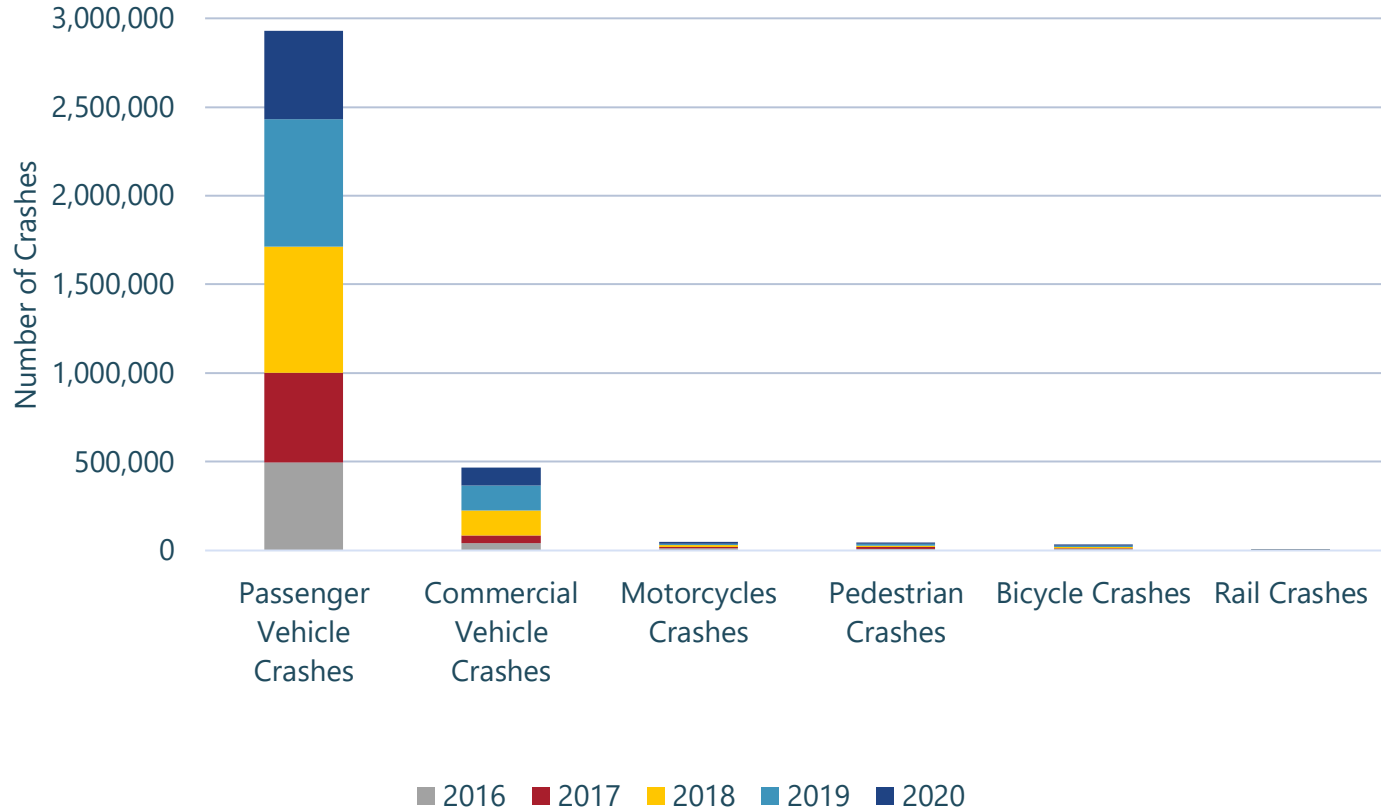


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# Data Analysis

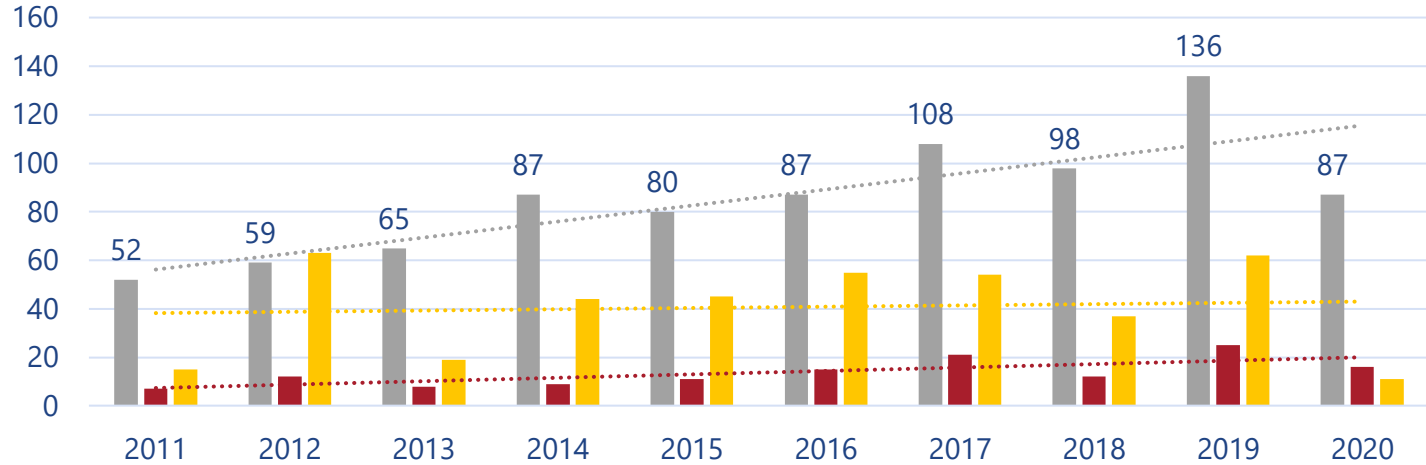
A sample of data from the plan

# Florida Crashes by Mode, 2016-2020





# Total Highway-Rail Grade Crossing Incidents in Florida, 2011-2020



■ Total Highway-Rail Incidents

■ Highway-Rail Incident Deaths

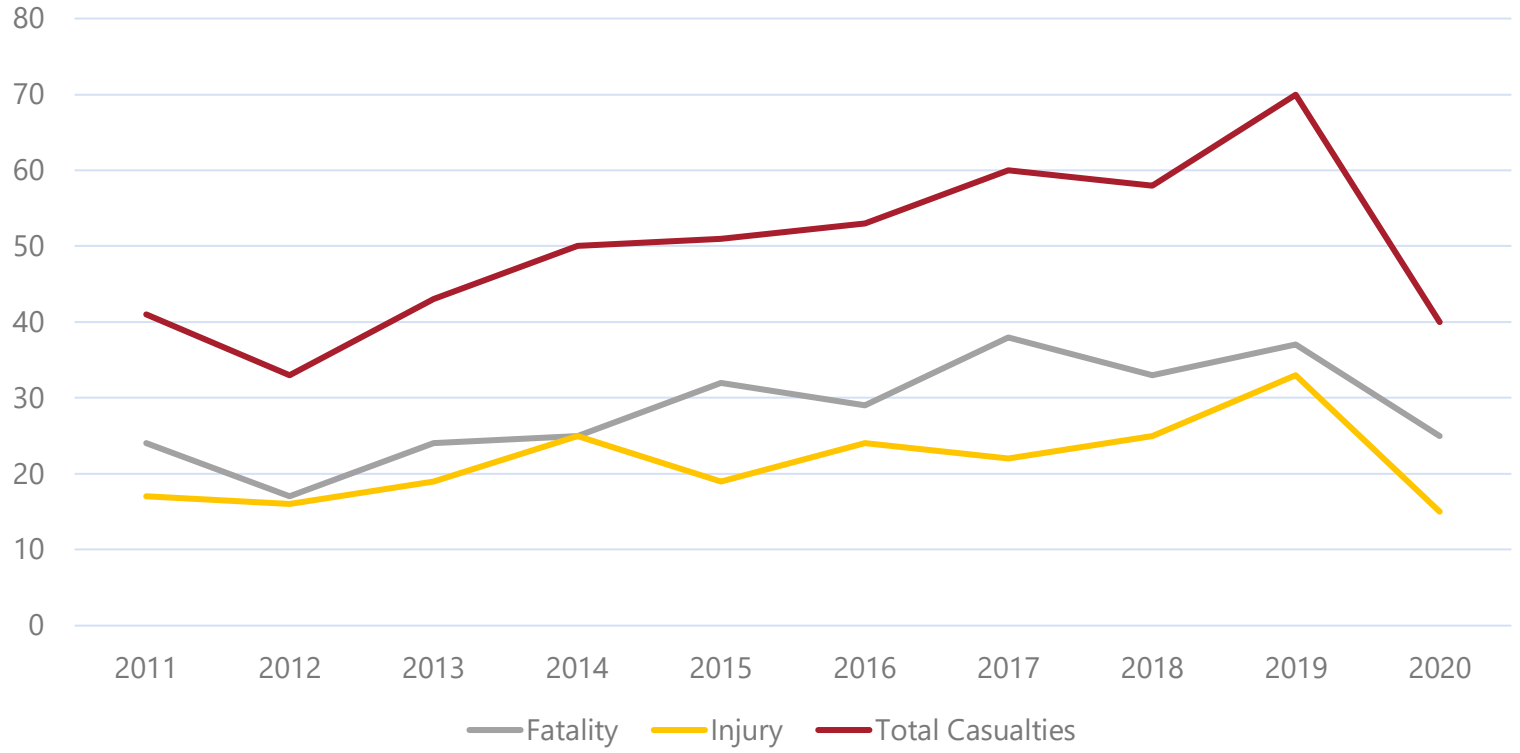
■ Highway-Rail Incident Injuries

..... Linear (Total Highway-Rail Incidents)

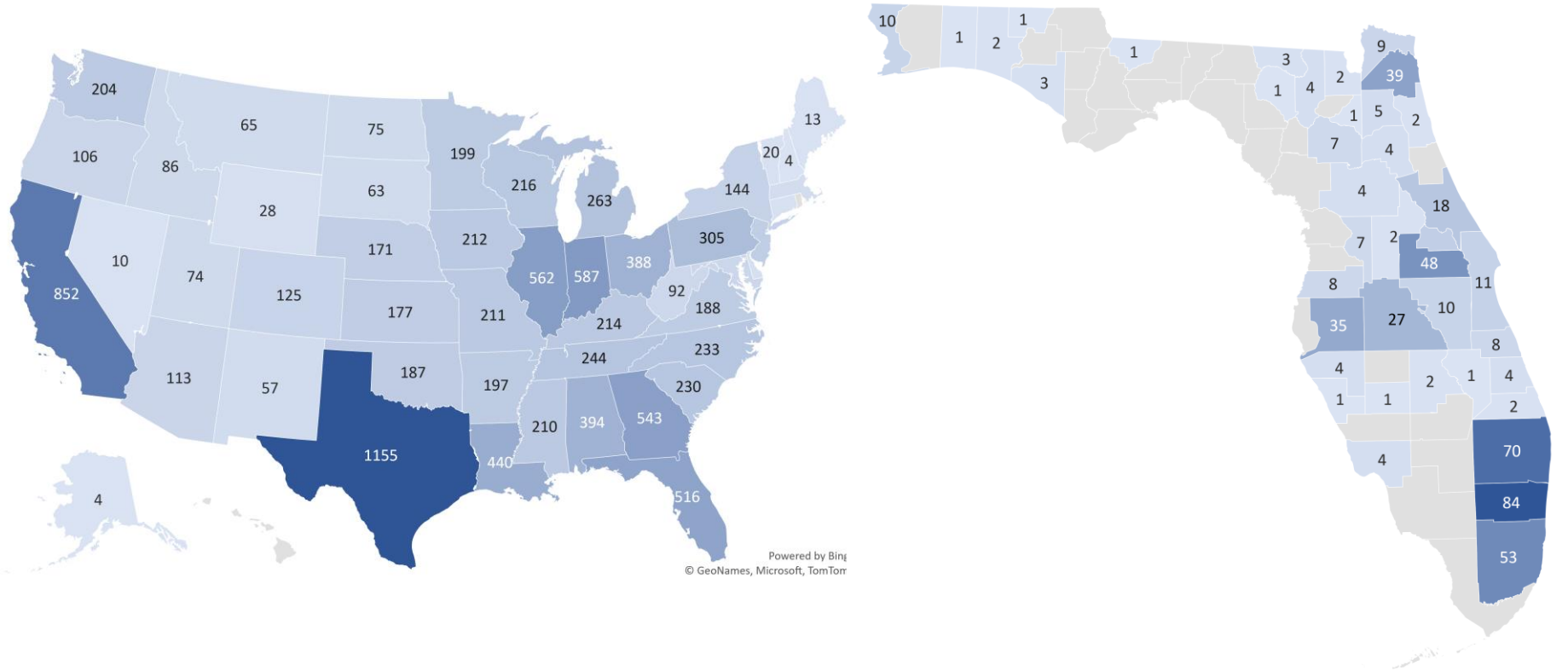
..... Linear (Highway-Rail Incident Deaths)

..... Linear (Highway-Rail Incident Injuries)

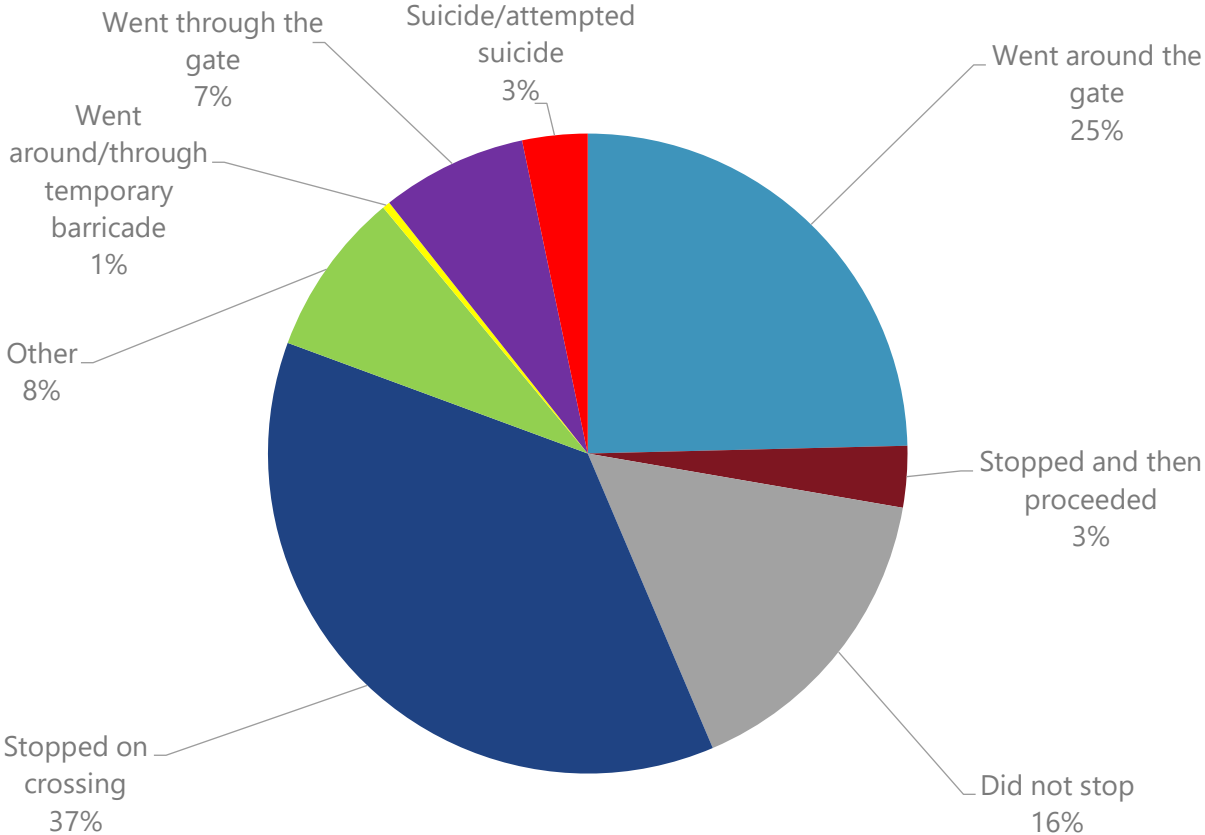
# Florida Trespassing Casualties, 2011-2020



# Highway-Rail Grade Crossing Incidents by State & County, 2016-2020



# Highway-Rail Grade Crossing Incidents by Highway User Action, 2016-2020



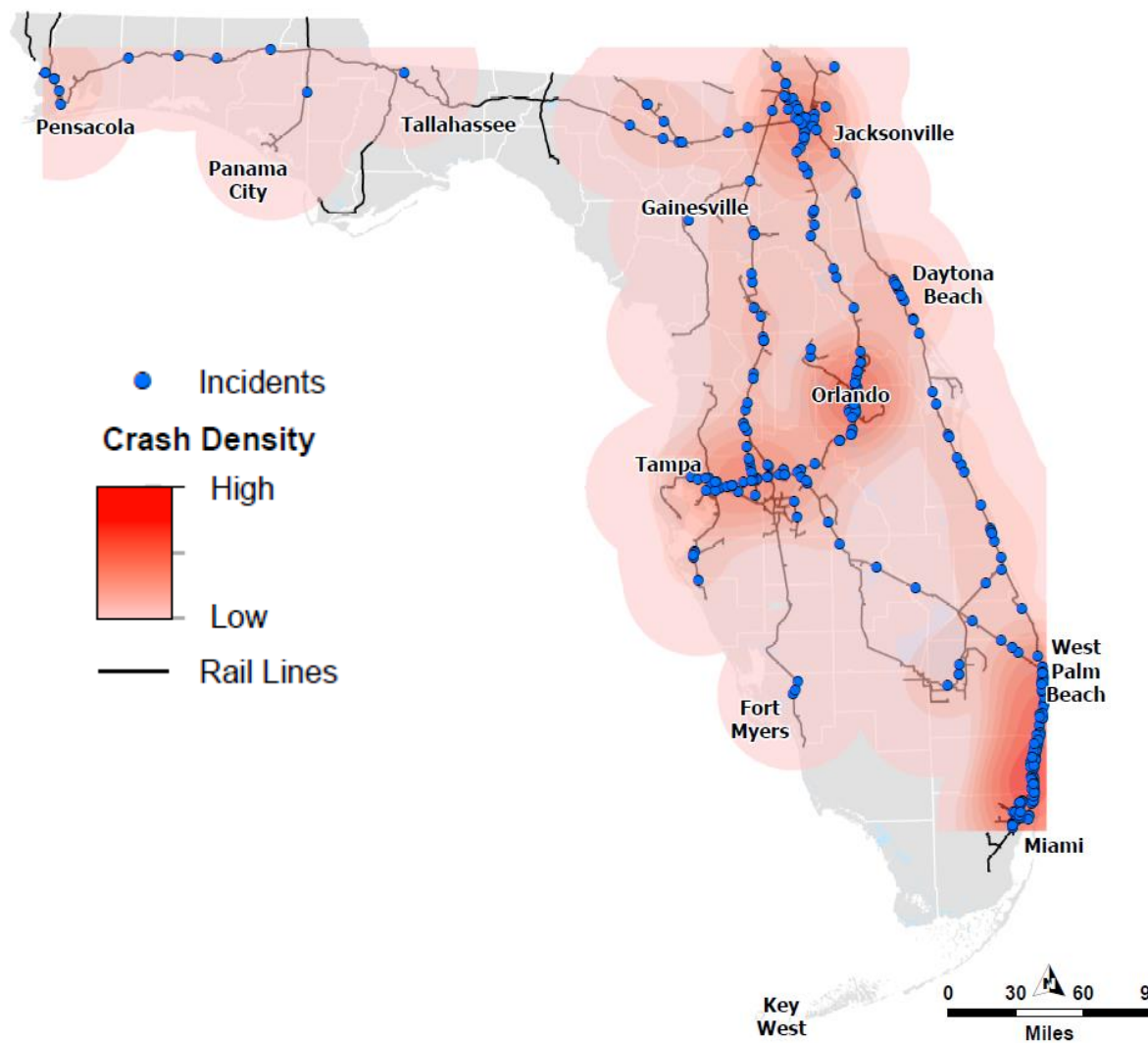
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# Risk Assessment

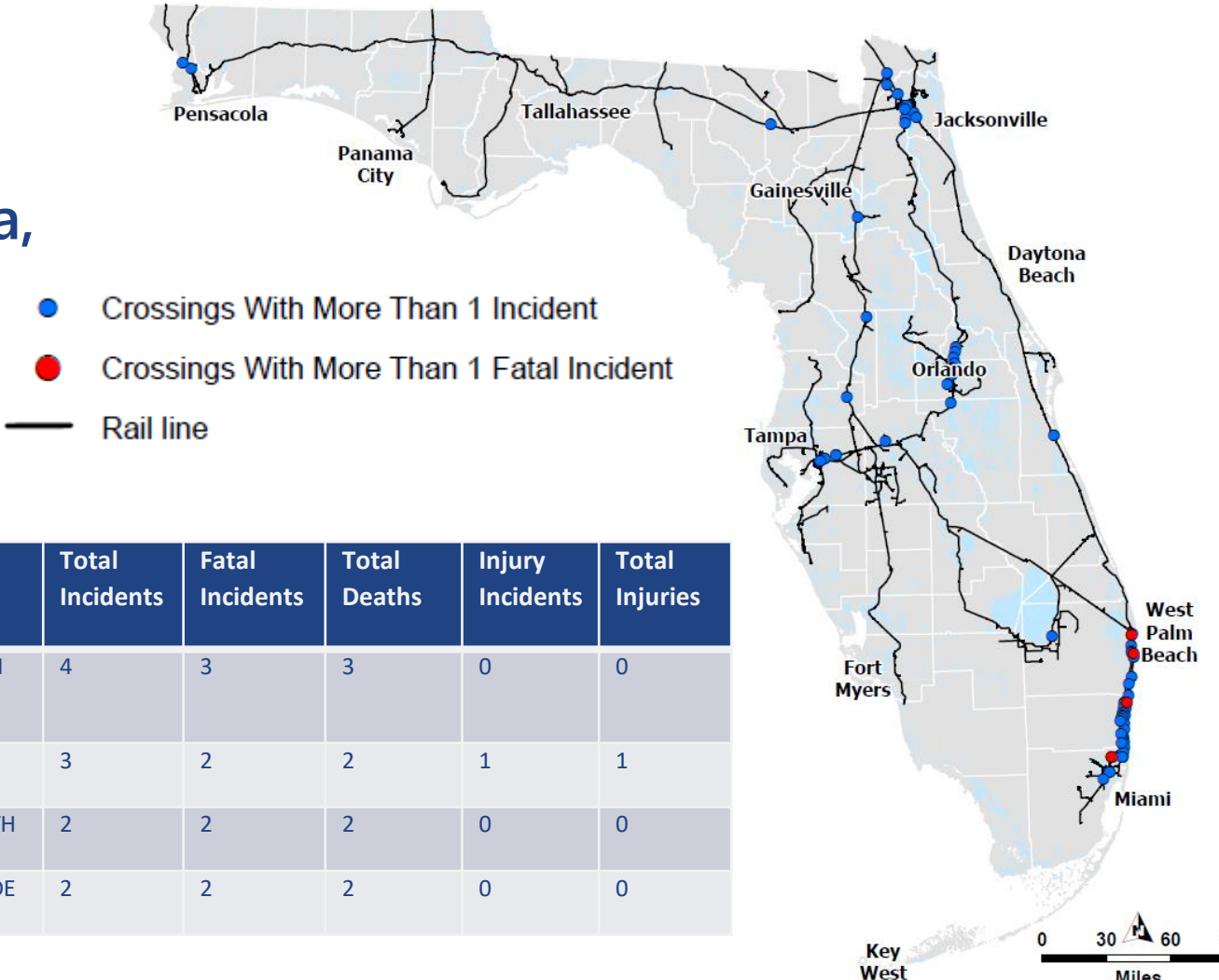
# Crossings Incident Density Analysis, 2016-2020

During this 5-year period, there were 516 incidents at 408 highway-railroad grade crossings in Florida, accounting for 219 injuries and 89 fatalities.

The highest occurrences of incidents happen in the state's most densely populated areas.



# Crossings with Multiple Fatal Incidents in Florida, 2016-2020

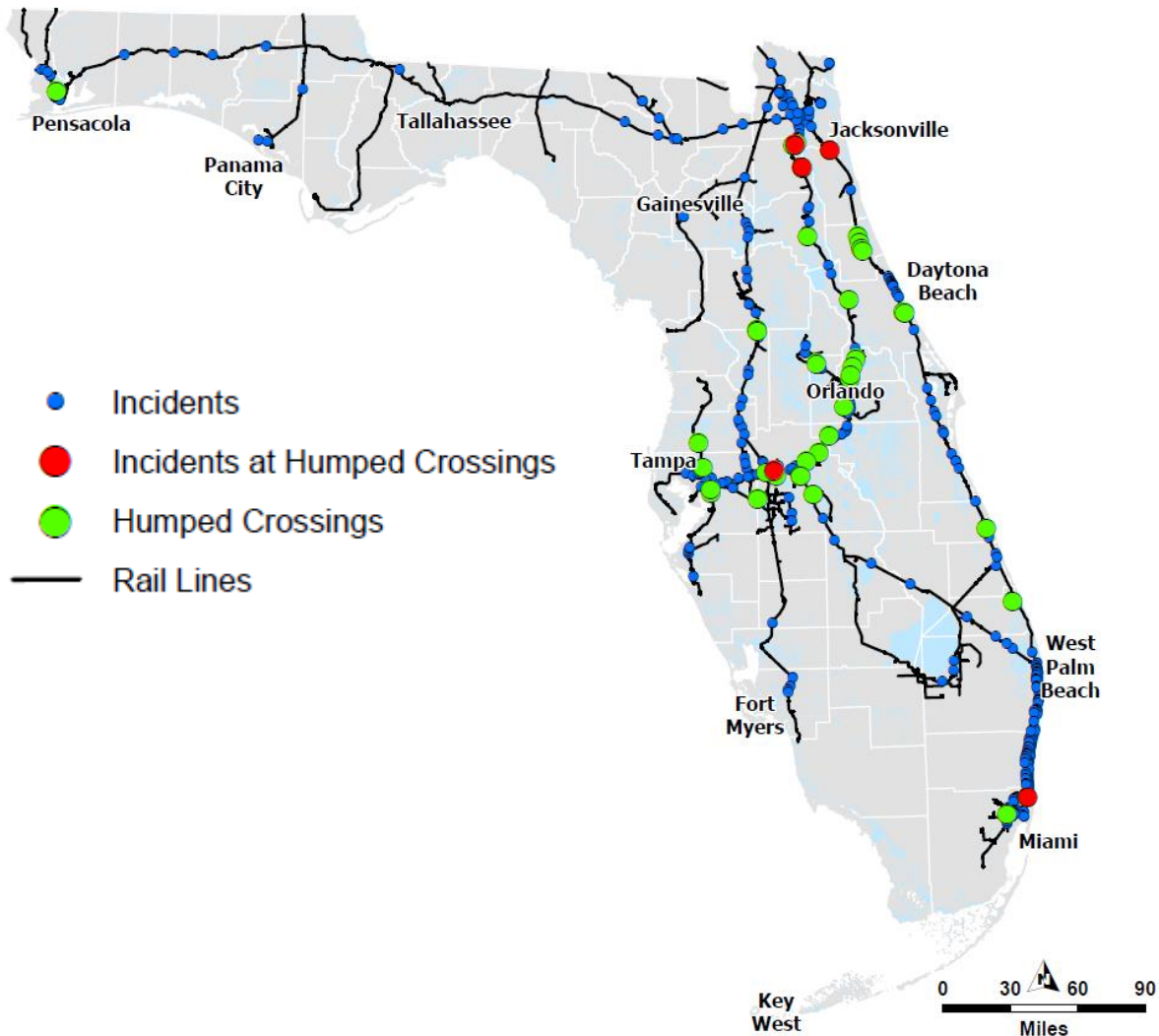


Crossing ID	County	City	Total Incidents	Fatal Incidents	Total Deaths	Injury Incidents	Total Injuries
628118D	PALM BEACH	WEST PALM BEACH	4	3	3	0	0
272518H	BROWARD	DEERFIELD BEACH	3	2	2	1	1
272468G	PALM BEACH	LAKE WORTH	2	2	2	0	0
628321V	MIAMI-DADE	MIAMI-DADE	2	2	2	0	0

# Incidents at Humped Crossings, 2016-2020

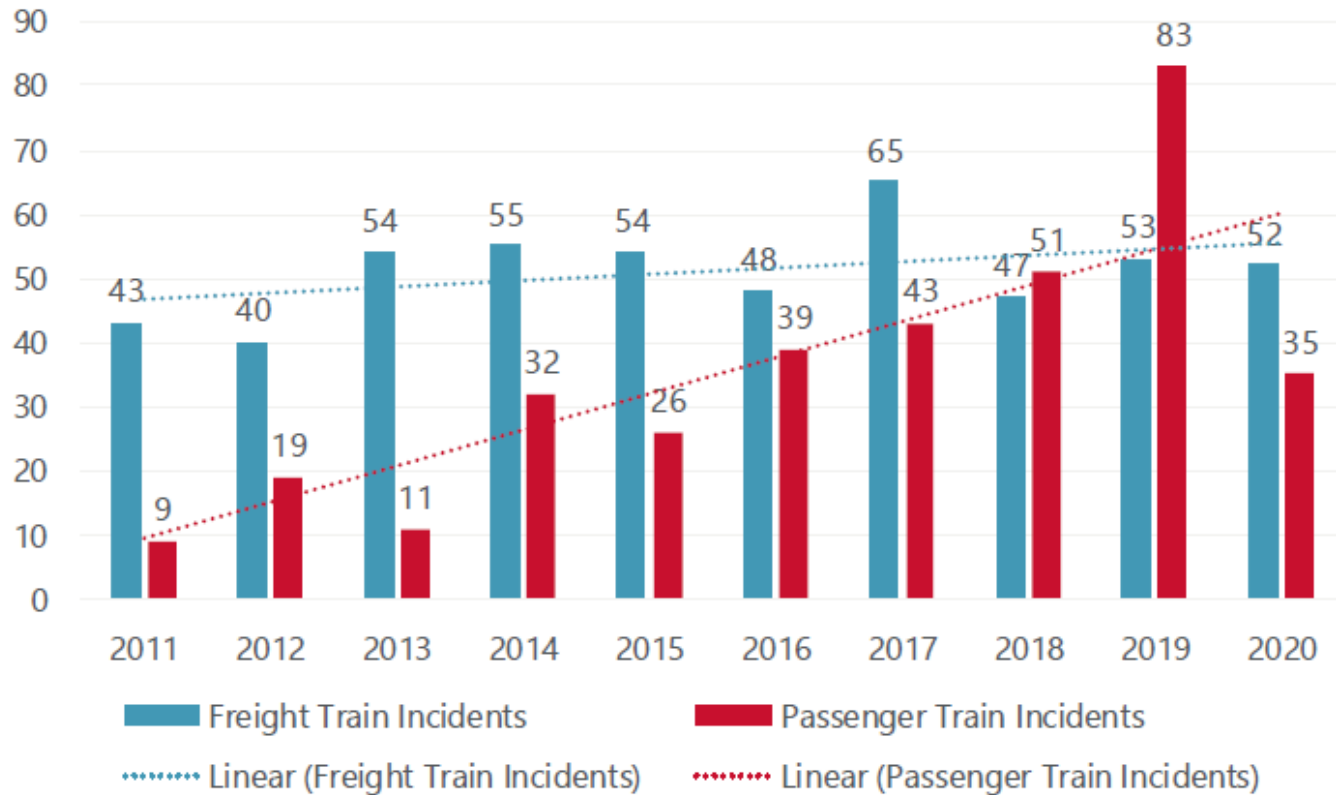
43 humped crossings were identified by the FMO office by searching for crossings with “low-clearance” signs. Incidents were overlaid to see where they occurred at humped crossings.

There were 9 incidents that occurred at 5 humped crossings from 2016 to 2020.





# Florida Highway-Railroad Incidents by Freight vs Passenger Trains, 2011-2020



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# Goals & Objectives

# Highest Priority Challenges

## Driver and pedestrian behavior

The data on driver behavior displays the variety of driver behaviors that lead to incidents, despite warning and protection devices. Tangentially, trespasser deaths have increased in the past 10 years.

## Humped crossings

According to incident reports, only 9 incidents occurred at the 43 known humped crossings, but a vehicle can be stuck or stopped on the tracks for any number of reasons.

## Traffic queuing on tracks

Queuing traffic could have contributed to any of the 38% of incidents where vehicles stopped on the tracks or were blocked by gates.

## Blocked crossings

FDOT receives complaints from the public about blocked crossings. They create a potential hazard for road users driving into the side of the train during nighttime or low-visibility conditions, and from agitated drivers turning around to find an alternative route.



## **SAFETY CHALLENGES**

## **GOALS**

## **OBJECTIVES**

**Driver and  
pedestrian  
behavior**

**Reduce hazards based on  
driver/pedestrian behavior**

**1**

**Identify locations of highest trespassing incidents and develop recommendations to solve challenges**

**2**

**Create the "Next Generation Project" to share the importance of rail safety and the significant impact freight and passenger rail service has on improved quality of life**

**Humped  
crossings**

**Eliminate humped crossings**

**3**

**Define humped crossings and identify humped crossings in Florida**

**4**

**Identify methods to fix or mitigate humped crossings and work with partners to implement solutions**

## **SAFETY CHALLENGES**

## **GOALS**

## **OBJECTIVES**

**Traffic  
queuing on  
tracks**

**Reduce redundant crossings**

**5**

**Aim to close five crossings a year while reducing net crossing openings to zero**

**6**

**Address preemption issues in FDOT standards and manuals**

**Reduce the number of vehicles stopping on the tracks or in the foul zone**

**7**

**Implement clearer signals, signage, and pavement markings at railroad crossings**

**Eliminate incorrect turns onto tracks**

**8**

**Identify methods to fix or mitigate incorrect turns onto railroad tracks and develop or revise FDOT standards to solve challenges**

**9**

**Educate the public about the incorrect turns onto the tracks issue**

## **SAFETY CHALLENGES**

**Blocked  
crossings**

## **GOALS**

**Reduce the number of  
blocked crossings due to  
railroad operations**

**10**

**Rapidly notify the public of  
blocked crossings and provide  
alternate route options**

**11**

## **OBJECTIVES**

**Identify areas with blocked crossing issues  
and work with railroads to resolve**

**Identify opportunities to leverage emerging  
technology to avoid traffic congestion**

# Responsibilities Matrix

SAFETY CHALLENGES	GOALS	OBJECTIVES	START <sup>18</sup>	END	RESPONSIBLE PARTY
Driver and Pedestrian Behavior	Reduce hazards based on driver/pedestrian behavior	Identify locations of highest trespassing incidents and develop recommendations to solve challenges	Jan 2018	Dec 2023	FMO Office, Safety Office, District Rail Coordinators, SunRail, Tri-Rail
		Create the "Next Generation Project" to share the importance of rail safety and the significant impact freight and passenger rail service has on improved quality of life	Jan 2019	Ongoing	FMO Office, Florida Operation Lifesaver
Humped Crossings	Eliminate humped crossings	Define humped crossings and identify humped crossings in Florida	Jan 2019	Dec 2023	FMO Office
		Identify methods to fix or mitigate humped crossings and work with partners to implement solutions	Jan 2020	Dec 2025	FMO Office
Traffic Queued on Tracks	Reduce redundant crossings	Aim to close five crossings a year while reducing net crossing openings to zero	Jan 2018	Ongoing	FMO Office
		Address preemption issues in FDOT standards and manuals	Jan 2019	Dec 2024	FMO Office, Traffic Engineering and Operations Office, Office of Design
	Reduce the number of vehicles stopping on the tracks or in the foul zone	Implement clearer signals, signage, and pavement markings at railroad crossings	Dec 2019	Dec 2025	FMO Office, Safety Office, Traffic Engineering and Operations Office, Office of Design, District Rail Coordinators, SunRail, Tri-Rail, RRs
		Eliminate incorrect turns onto tracks	Identify methods to fix or mitigate incorrect turns onto railroad tracks and develop or revise FDOT standards to solve challenges	Jan 2022	Dec 2024
Educate the public about the incorrect turns onto the tracks issue	May 2019		Ongoing	FMO Office, Safety Office	
Blocked Crossings	Reduce the number of blocked crossings due to railroad operations	Identify areas with blocked crossing issues and work with railroads to resolve	Mar 2019	Jan 2023	FMO Office, FRA
	Rapidly notify the public of blocked crossings and provide alternate route options	Identify opportunities to leverage emerging technology to avoid traffic congestion	Jan 2019	Dec 2025	FMO Office, Traffic Engineering and Operations Office, Research Office

# Plan Details

- Available for public comment: December 16-January 21 at [Highway-Rail Grade Crossing Safety Action Plan \(fdot.gov\)](https://www.fdot.gov/highway-rail-grade-crossing-safety-action-plan)
- Meets all FRA requirements & includes an Implementation Report that describes what was done since the last plan (2011)
- Must be submitted electronically to FRA by [February 14, 2022](#)





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