

Orlando, FL

November 7-8, 2024



# 2024 TRANSPORTATION SYMPOSIUM



## Meeting the Challenge of Rail Safety in Florida

Presented by

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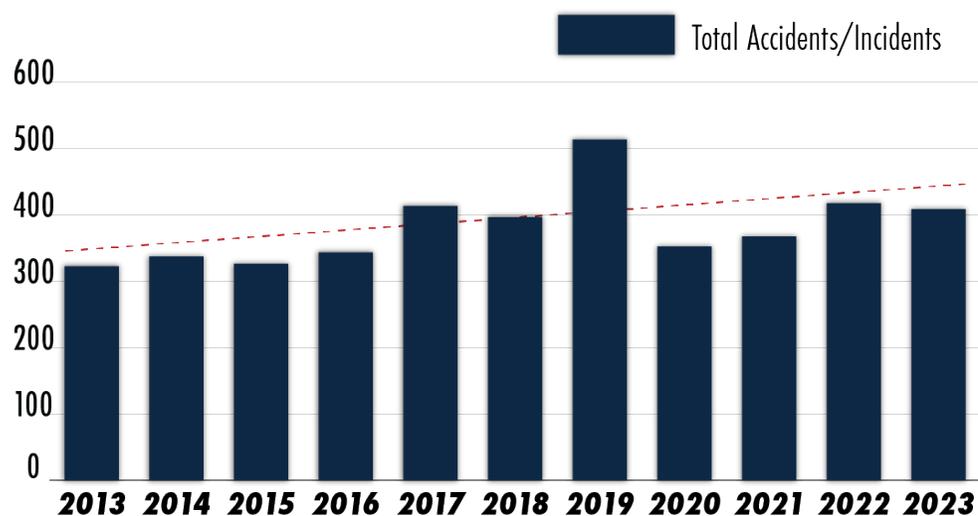


# The Problem



# Rail Incident Data

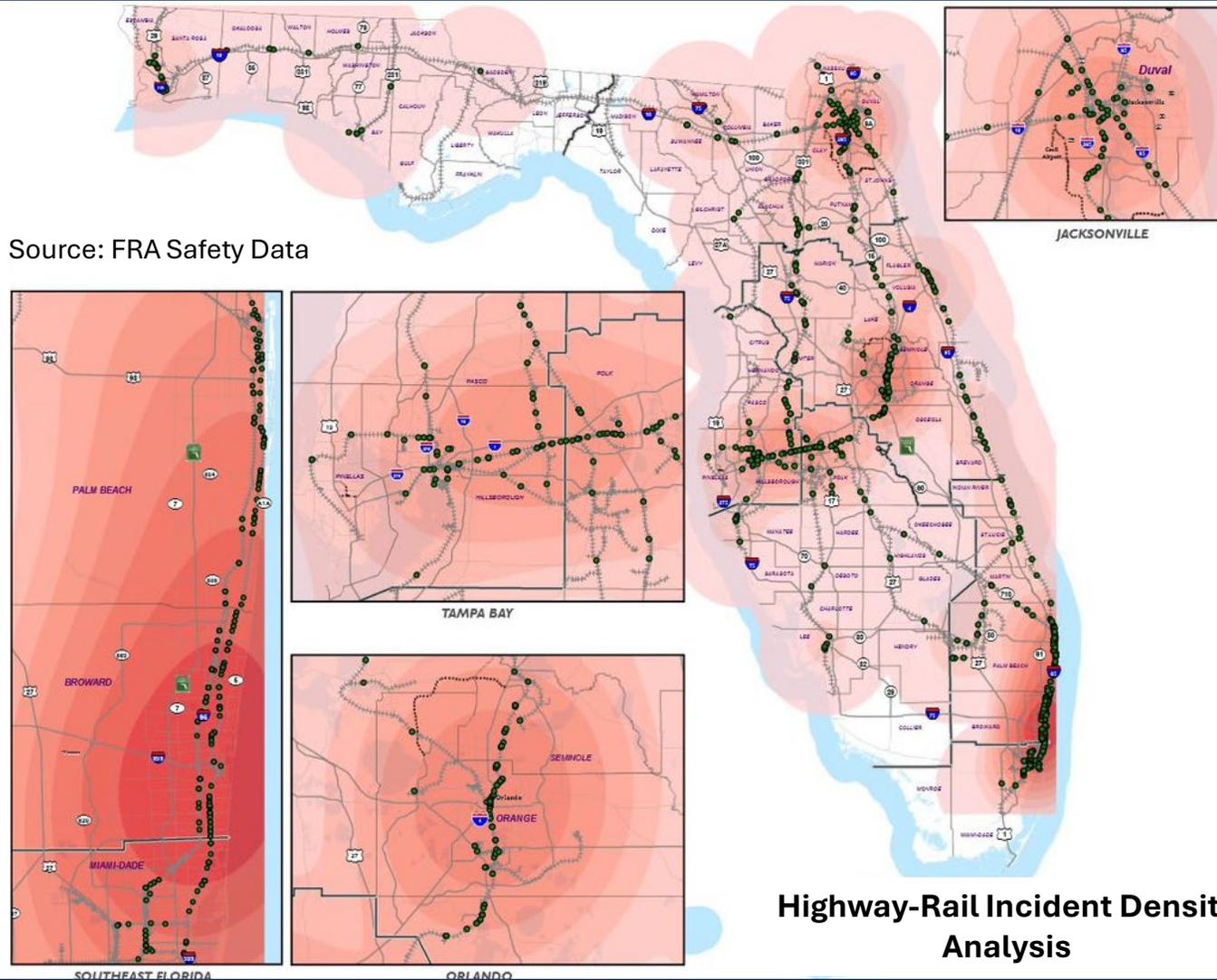
## Total Rail Incidents in Florida, 2013-2023



There were **4,200** total rail incidents and **1,000** at-grade crossing incidents between 2013 and 2023.

Florida ranked **4th** in highest number of grade-crossing incidents in the US, just behind California, Texas, and Illinois in 2023.

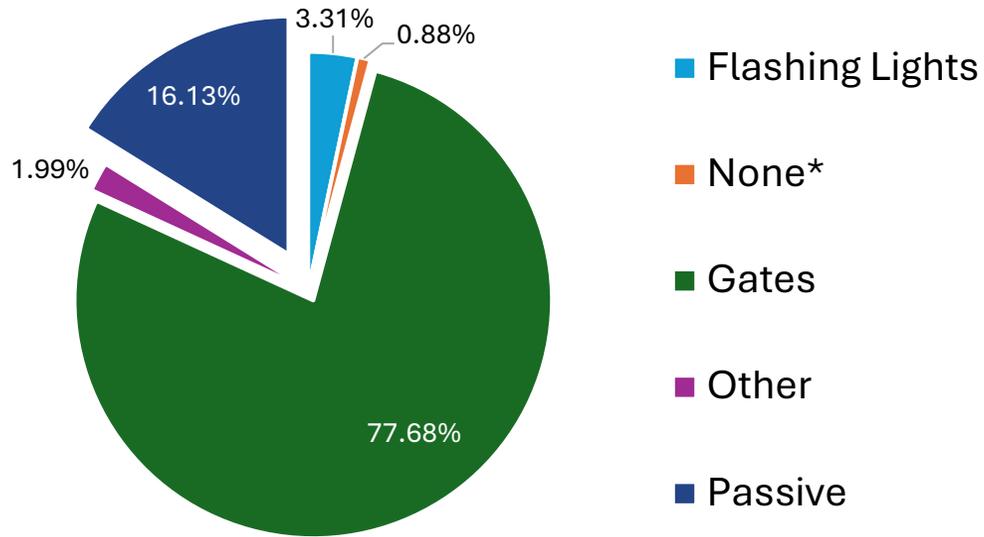
Source: FRA Safety Data



Highway-Rail Incident Density Analysis

# Crossing Data

**% of Collisions by Warning Device**



**82%** of collisions between 2013 -2023 happened at crossings **with flashing lights/gates**, vs **18%** at crossings with **passive/other devices**

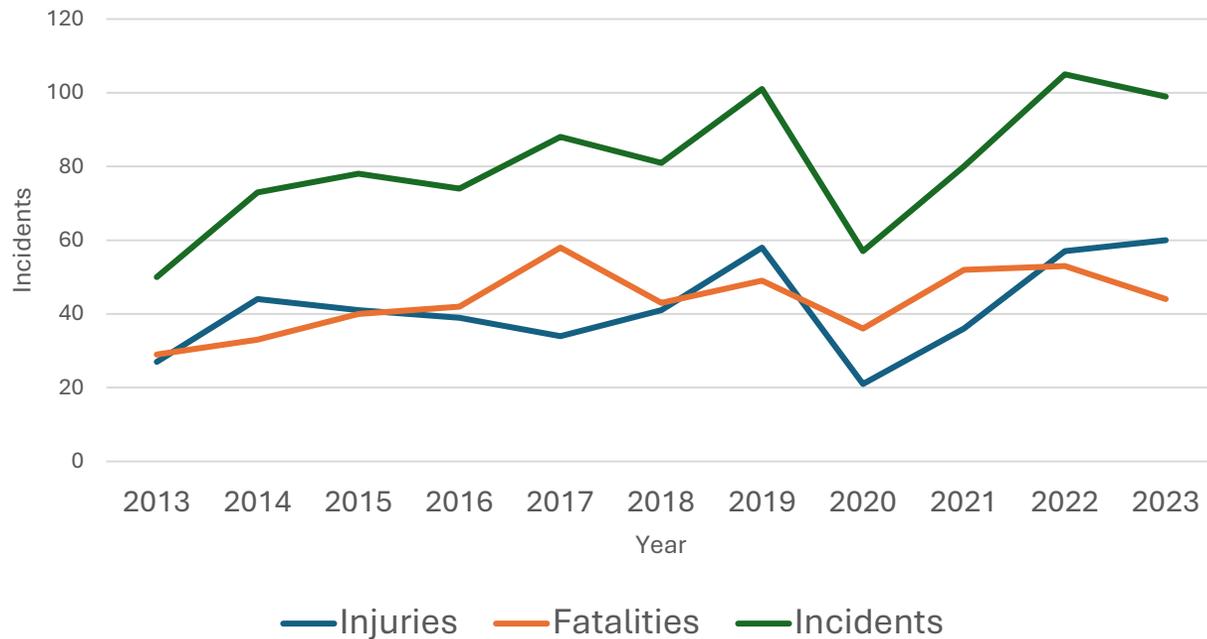
**2023 Driver Behavior/Compliance**

Motorist	% of Total Collisions	Number of Collisions
Stopped on crossing	44.63%	54
Went around the gate	19.01%	23
Did not stop	15.70%	19
Other	3.31%	4
Went through the gate	9.09%	11
Stopped and then proceeded	3.31%	4
Suicide/Attempted Suicide	4.96%	6

79% {

# Trespasser Data

## Trespass Incidents by Year w/Injury & Fatal



In 2023, **Florida ranked 4th** in highest number of rail trespass casualties, after California, Texas, and New York.



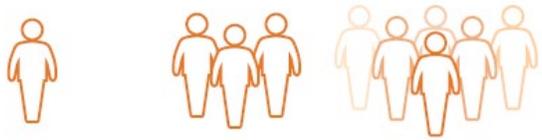
Trespassing along a train’s right-of-way is the **leading cause** of all rail-related fatalities nationwide. Trespassing accounted for **over 60%** of rail fatalities in 2023.

Source: FRA Safety Data



# The Challenge

# Florida Urban Expansion

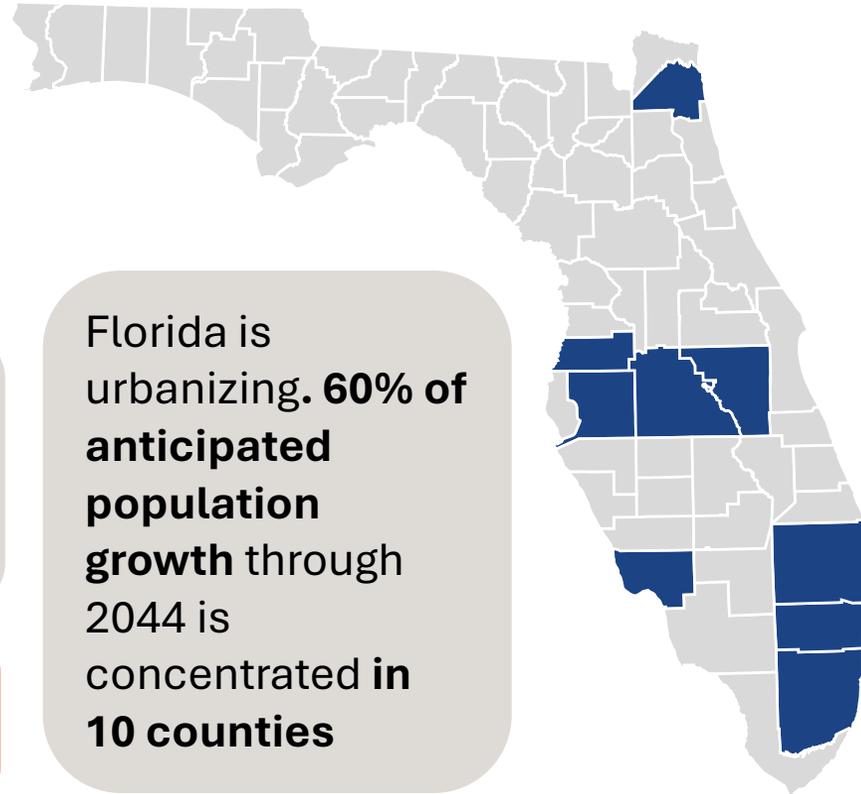


2022      2032      2044

22.2 M      25 M      27.1 M

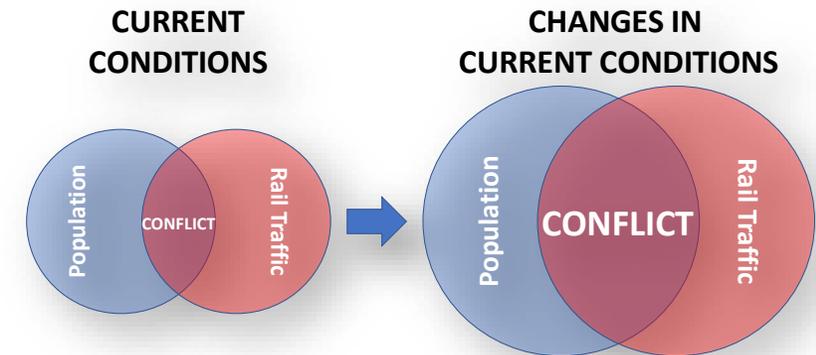
Florida has the third highest population among the states. Its population is expected to reach **27.1 million** by **2044**.

Florida At-Grade Crossings:  
+5,000 (SE = +20%)



Florida is urbanizing. **60% of anticipated population growth** through 2044 is concentrated in **10 counties**

**Population growth + Urbanization trends + Increased rail speeds + Increased rail capacity = increased human interactions with railroads**



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# Changing Dynamics in Our Communities

- **Grade Crossing Incidents:** Increase in crashes involving vehicles and trains
- **Pedestrian Traffic:** Higher volume of pedestrian traffic in the vicinity of railroad tracks
- **Emergency Response Access:** Challenges for emergency responders in accessing accident sites quickly and efficiently
- **Noise and Vibration:** Residents in proximity to rail lines may experience noise and vibration from passing trains, impacting their quality of life



Source: FRA Safety Data

A photograph of railroad workers in safety gear (hard hats, high-visibility vests) working on tracks. A yellow machine labeled "SWING MASTER" is visible in the background. The scene is outdoors with trees and utility structures. The text "Taking Action" is overlaid in large white font.

# Taking Action

# Florida is Taking Action



**Opening-Closure Program**



**Rail Safety Coalition**



**Dynamic Envelopes**



**Rail Safety Improvement Program**



**Education Campaigns**



**Law Enforcement**



**Rail Safety Inspection Program**



**Additional Safety Countermeasures**

**TRANSPORTATION SYMPOSIUM**

# Opening/Closure Program

- Per Florida Statute 341.302, “the Department is directed to address the opening and closing of public grade crossings....”
- FDOT aims to close five crossings a year while reducing net crossing openings to zero
- Takes proactive approach to eliminate humped crossings
- Diagnostic Team Safety Review
- Currently developing tool to help identify crossings that are good candidates for closure



# Rail Safety Improvement Program

FDOT's Railroad-Highway Grade Crossing Safety Improvement Program have funded 818 projects (2014-2023).

- ▶ Incidents Decreased **49%**
- ▶ Fatal Incidents Decreased **69%**
- ▶ Serious Injury Incidents Decreased **55%**

The Section 130 program has been used to:

- Upgrade lights from incandescent to LED
- Install new signage
- Replace or upgrade Equipment



# Rail Safety Inspection Program

State Rail Inspectors inspect track, locomotives, equipment, highway grade crossing warning devices, as well as confirm railroads and shippers are operating within federal and state standards



# Rail Safety Coalition



## Participants

- Public Road Agencies
- Publicly Owned Rail Agencies
- Privately Owned Rail Companies
- Rail Advocacy Groups
- State Rail Inspectors
- Law Enforcement
- Human Services Agencies

*Florida's Rail Safety Coalition aims to implement strategies and action steps that help improve rail safety, by reducing rail collisions and related fatalities and serious injuries through infrastructure and beyond infrastructure outreach*



# Rail Grants

## Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program East Coast Corridor Trespassing and Intrusion Mitigation Project



FDOT was awarded a \$25 million federal RAISE Grant to enhance safety between Miami-Dade and Brevard counties

- Federal Grant Funding: \$25 million
- Brightline & FDOT match: \$10 million each
- Estimated Total Project Costs: \$45 million

The project mitigations aim to reduce the two primary types of crashes

- Vehicle collisions
- Trespasser strikes

The supplemental safety measures to be installed include are:

- Rail Dynamic Envelopes
- Delineators, Raised Pavement Markers, and Edge Striping
- Fencing and/or Landscaping
- "Do Not Stop on Tracks" and Crisis Support Signage

# Rail Grants

Commuter Authority Rail Safety Improvement (CARSI) program

## On Site Signal Safety Improvements

FDOT was awarded \$12.9 million

FDOT match: \$5.59 million

Estimated Total Project Costs: \$18.51 million

- The project is located on the South Florida Rail Corridor (SFRC) spanning from Miami-Dade to Palm Beach County
- The project will modernize 25 critical, dated, at-grade railroad crossings by replacing:
  - 35 signal houses
  - 34 gate mechanisms
  - 7 cantilevers
  - more than 70 light assemblies at the most traveled crossings along the South Florida Rail Corridor

# Rail Grants

## Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grant Central Florida Rail Corridor Crossings and Trespassing Safety Improvements project

FDOT was awarded \$6.93 million

FDOT match: 50%

- Final design and construction activities for improvements at 110 highway-rail grade crossings
  - Pavement markings
  - Signage
  - Surface replacement
  - Traffic signal equipment
- Complete trespassing prevention improvements at select locations

# Rail Countermeasures



*US 17 signal mast arm pole used for smart sensor evaluation*

- Engineering countermeasures can help combat driver behavior issues
- FDOT reviewed crash data at crossings statewide to determine where certain types of incidences are over-represented, and developed specific countermeasures to address those behavioral issues

- Tubular markers
- Pavement markings
- Signage
- Smart sensors/detection
- Anti-trespass panels
- Trainfo
- Flashing Chevrons



*Tubular markers on SunRail corridor*

# Traffic Signal Preemption

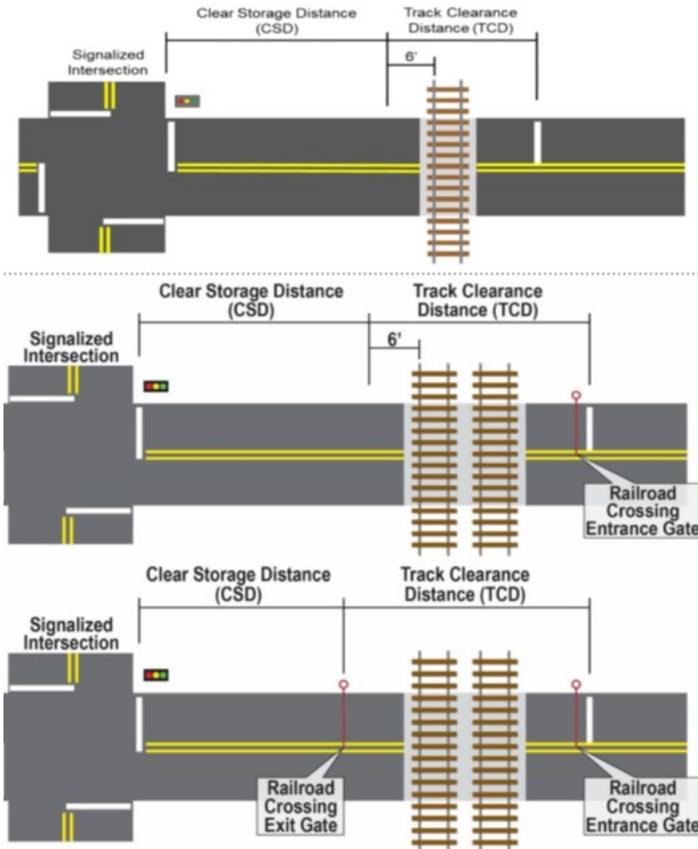
Preemption required if any of the following:

- Traffic Signal within 200 ft. of railroad crossing
- Highway traffic queues have potential to extend across railroad crossing
- Traffic backed up from nearby downstream RR crossing could interfere with a signalized intersection

A study to determine the need for preemption is required for a signal within 500 ft of a railroad crossing

- Currently three proposed locations in Brevard County
  - State Road 520 @ US1
  - S Babcock St. @ US1
  - E Strawbridge Ave. @ US1

Insert D5  
locations here



# Education Campaigns



# Education Campaigns



DAVE MIXON

TOOK THE OPERATION LIFESAVER RAIL SAFETY PLEDGE ON OCTOBER 22, 2024.

#### I PLEDGED TO:

- ✓ I will make safe choices around railroad tracks and trains by obeying warning signs and always expecting a train.
- ✓ I will stay off the tracks including when taking photographs or filming videos and never walk on or too close to railroad tracks (it's dangerous and illegal).
- ✓ I will walk, ride or drive across railroad tracks only at designated crossings.
- ✓ I will share the rail safety message with my friends and family.

I WILL HELP #STOPTRACKTRAGEDIES

[www.oli.org](http://www.oli.org)

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TRANSPORTATION SYMPOSIUM



# Florida is Taking Action

“Too often, families and communities experience the heartbreak of losing a loved one in a preventable rail incident,”

“As FDOT actively works to reduce these tragedies through increased engineering countermeasures and education, all Floridians – whether driving, walking, or biking – must be safe and sensible around trains and tracks.”

Secretary Jared W. Perdue, P.E.



*Addressing Rail Safety is crucial, and this Vision helps guide solutions while aligning with the FDOT compass*



**At the tracks, know when and where to cross.**

**LIVE  
TO TELL**

