CENTRAL FLORIDA TSM&O CONSORTIUM MEETING SUMMARY

Meeting Date:	April 1, 2021 (Thursday)	**Time**: 10:00 AM – 12:00 PM
Subject:	TSM&O Consortium Meeting	
Meeting Location:	Teleconference	

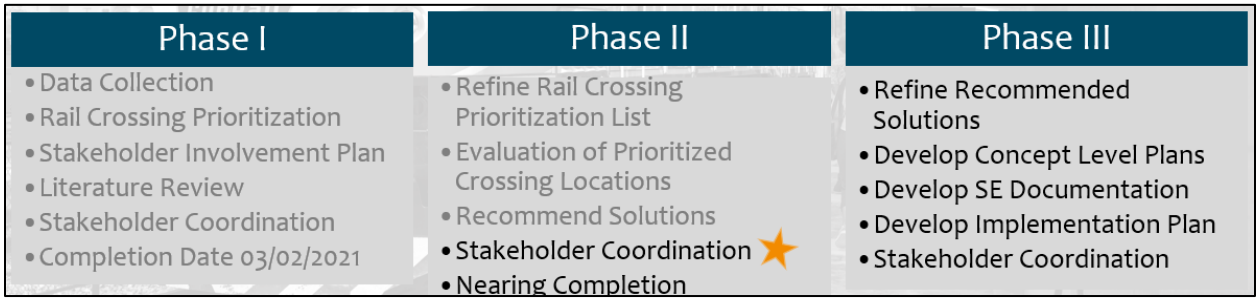
I. OVERVIEW

The purpose of this recurring meeting is to provide an opportunity for District Five FDOT staff and local/regional agency partners to collaborate on the state of the TSM&O Program and ongoing efforts in Central Florida. Jeremy Dilmore gave a short introduction and outlined the meeting agenda.

II. HIGHWAY RAIL NOTIFICATION & ARTERIAL APPROACH CLEARANCE

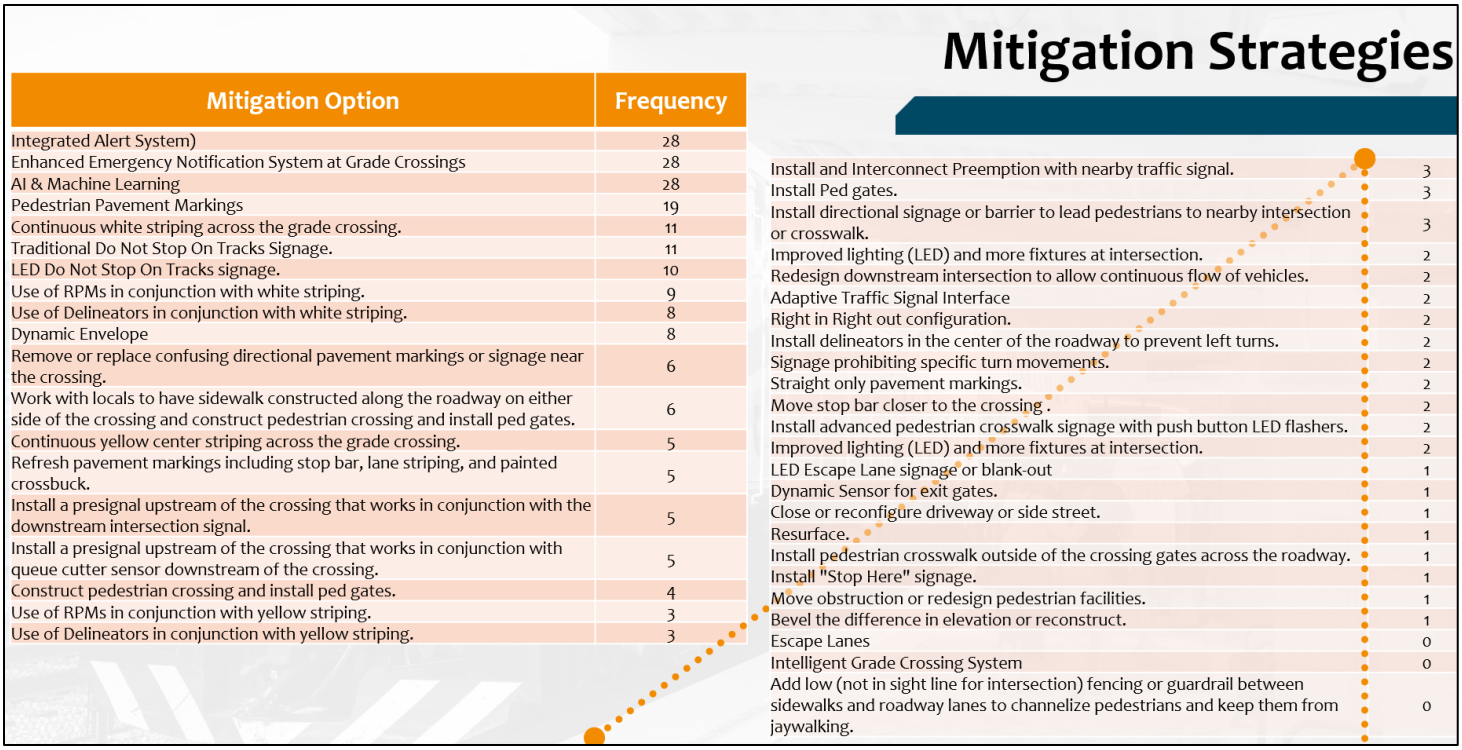
The Project Team, including Carlo Adair (HNTB), Scott Zornek (HNTB), and Melissa Gross (InNovo Partners), discussed the Highway Rail Notification & Arterial Approach Clearance project within the District.

- 900 railroad crossings in District Five
- **Purpose:** to engage regional stakeholders to evaluate potential improvement scenarios that incorporate TSM&O principles for improved rail safety
- Study will result in an Implementation Plan that will include a prioritized list of District crossing locations with proposed specific site solutions, concept level plans advancement, and an implementation timeline for the solutions
- **Timeline**



- Melissa Gross provided a review of the stakeholder feedback received following the first project update at the February 2021 TSM&O Consortium Meeting
    - there were no objections to the approach taken by the project team and their analysis; stakeholders indicated they either APPROVED or STRONGLY APPROVED of the project approach as presented during the February 2021 Consortium Meeting

  - Stakeholder suggestions included potentially relocating crossings to safer locations, as well as additional consideration for a specific railroad crossing (Gatlin/Holden Avenue at Orange Avenue)
- The project team presented on two crossings to demonstrate the methodology for analyzing crossings (East Horatio Avenue; East Hibiscus Boulevard)
- There were 28 priority rail crossing locations examined by the project team for their existing condition and potential mitigation strategies
  - Mitigation Strategies recommended frequently include
    - Integrated Alert System
    - Enhanced Emergency Notification System
    - AI & Machine Learning
    - Dynamic Detection (exit gates)
    - Pedestrian Pavement Markings
    - Rail Light System (RLS)



Mitigation Strategies

Mitigation Option	Frequency
Integrated Alert System)	28
Enhanced Emergency Notification System at Grade Crossings	28
AI & Machine Learning	28
Pedestrian Pavement Markings	19
Continuous white striping across the grade crossing.	11
Traditional Do Not Stop On Tracks Signage.	11
LED Do Not Stop On Tracks signage.	10
Use of RPMs in conjunction with white striping.	9
Use of Delineators in conjunction with white striping.	8
Dynamic Envelope	8
Remove or replace confusing directional pavement markings or signage near the crossing.	6
Work with locals to have sidewalk constructed along the roadway on either side of the crossing and construct pedestrian crossing and install ped gates.	6
Continuous yellow center striping across the grade crossing.	5
Refresh pavement markings including stop bar, lane striping, and painted crossbuck.	5
Install a presignal upstream of the crossing that works in conjunction with the downstream intersection signal.	5
Install a presignal upstream of the crossing that works in conjunction with queue cutter sensor downstream of the crossing.	5
Construct pedestrian crossing and install ped gates.	4
Use of RPMs in conjunction with yellow striping.	3
Use of Delineators in conjunction with yellow striping.	3
Install and Interconnect Preemption with nearby traffic signal.	3
Install Ped gates.	3
Install directional signage or barrier to lead pedestrians to nearby intersection or crosswalk.	3
Improved lighting (LED) and more fixtures at intersection.	2
Redesign downstream intersection to allow continuous flow of vehicles.	2
Adaptive Traffic Signal Interface	2
Right in Right out configuration.	2
Install delineators in the center of the roadway to prevent left turns.	2
Signage prohibiting specific turn movements.	2
Straight only pavement markings.	2
Move stop bar closer to the crossing .	2
Install advanced pedestrian crosswalk signage with push button LED flashers.	2
Improved lighting (LED) and more fixtures at intersection.	2
LED Escape Lane signage or blank-out	1
Dynamic Sensor for exit gates.	1
Close or reconfigure driveway or side street.	1
Resurface.	1
Install pedestrian crosswalk outside of the crossing gates across the roadway.	1
Install "Stop Here" signage.	1
Move obstruction or redesign pedestrian facilities.	1
Bevel the difference in elevation or reconstruct.	1
Escape Lanes	0
Intelligent Grade Crossing System	0
Add low (not in sight line for intersection) fencing or guardrail between sidewalks and roadway lanes to channelize pedestrians and keep them from jaywalking.	0

- Next Steps – **Phase III**
  - Refine the recommended solutions for crossings
  - Develop Regional “typicals”
  - Final Stakeholder Coordination
  - Develop Implementation Plan
  - Develop SE Documentation

Discussion:

Q: Regarding the overhead, mast-arm signals at the Hibiscus crossings. I don't recall seeing this type of application at a crossing. What are the circumstances for installing these and the cost considerations?

A: Carlo and Jim Ganey (FDOT Rail) will follow up after researching this further.

Q: Does your scope include train travel information dissemination to the public or emergency responders?

A: In general, yes; at a high level. The idea of "information dissemination" is being considered in multiple forms from integrated smartphone applications to specific diversion-route notice to EMS and the like.

Q: Jeremy requested folks to provide input; Work Program funds may be available to prioritize projects identified in this project study.

Jim Ganey – funding could also be secured for railroad crossing improvements using MPO funds

Jon Chaney – if any improvements are made at railroad crossing, will a new maintenance agreement need to be made/updated

If no agreement in place, usually execute it at 100% cost to maintaining agency.

Q: How often will this be updated?

A: We do not have a timeline, but with Brightline coming online soon, it may be worthwhile to have an update when necessary

Q: Do you have the FY 21/22 railroad crossing upgrade locations for CSX or FEC? We're developing our next fiscal year budget and it would be nice to have an idea on how much we need to set aside. Our default is $1M per year. Thanks for forwarding if you have information.

A: We do not have a timeline, but with Brightline coming online soon, it may be worthwhile to have an update when necessary

III. LOCAL AGENCY PROPRIETARY PRODUCT CERTIFICATION (PPC) WEBSITE

Anne Allan provided a demonstration of the Local Agency Proprietary Product Certification (PPC) website.

- https://lappc.cflsmartroads.com/
- simple page that will allow us to update and maintain information as things change in the field
- maintain a list of products that have been discontinued (red strikethrough)
- still some “unknowns”; this webpage was built using available data, so it will be updated moving forward
- Permitted Users can edit data in page
    - If you are a valid representative of an agency, you are encouraged to get approval through the D5 TSMO Office
        - if you have not done so already, you will need to submit a SARS form
        - use the HELP button in the top right of the webpage to follow through with the SARS form and signing up as a permitted user

- How to apply for proprietary items? What are the limits for requesting a priority item (what qualifies and what not)?
    - Jeremy – the new PPC standard form includes 4 reasons for using a Proprietary product (in the gray box); these are the main reasons for approving PPC

IV. LOOKING AHEAD – TRAFFIC SIGNALS

Jeremy Dilmore discussed the anticipated changes to traffic signal maintenance in the next one to five years, and how these changes may affect the existing Traffic Signal Maintenance and Compensation Agreements with maintaining agencies.

- Current TSMCA language:
    - "Traffic Signals and Devices is defined as follows: all signals, interconnected and monitored traffic signals systems (defined as central computer, cameras, message signs, communication devices, interconnect/network, vehicle, bicycle & pedestrian detections devices, traffic signal hardware and software, preemption devices, and uninterruptible power supplies("UPS")), control devices (defined as intersection control beacons, pedestrian crossing beacons, illuminated street name signs, pedestrian flashing beacons (i.e., school zone flashing beacons, pedestrian crossing beacons, and Rectangular Rapid Flashing Beacons)), blank out signs, travel time detectors, emergency/fire department signals, speed activated warning displays, and other types of traffic signals and devices specifically identified with Exhibit A."
        - Signal
        - TMC
        - Camera
        - DMS
        - Network
        - Detection
        - Pedestrian Buttons
        - Street Signs
        - Blank Out Signs
        - Beacons of all sorts
        - AVIs like Bluetooth
        - Speed activated warning signs
        - Preemption Devices
        - Other
    - Changes in our business in Production
        - Signal Performance Measure
        - Integrated Corridor Management Software (R-ICMS)
        - Data Picker (SunStore application)
    - Changes in our business in the Pipeline
        - Computer Vision (detection, Surrogate Safety Measures, CV emulation)
            - literature suggests one month of Surrogate Safety Measures can detect safety issues as effectively as five years of crash data
        - Connected Vehicle (RSUs and Emergency Vehicle Preemption)
            - District Five has approximately 1,600 intersections; we're deploying this technology on ~400 of those intersections within the year
    - How our business is changing
        - Driven by data
        - Increased need for uptime/availability

        - Higher standard for accuracy
        - New Devices
        - Increased complexity
    - Case for Increased Complexity
        - NOEMI data management
        - SCMS interaction
        - MAP verification
        - Cybersecurity risks
        - Etc.
- How are we going to respond?
    - No one-size-fits-all solution
    - Need to maintain a high level of performance (and uptime)
    - Need to know where agencies feel comfortable
    - Clarify the expectation of the TSMCA to be fair, but reflect unique conditions to every area
- Steps
    - FDOT – upfront work
        - establish standard for maintenance and operations to be all inclusive and forward-looking
        - look at ways work can be divided
        - FDOT to provide material that describes all the "new" technology coming out and the level of maintenance required
    - One-on-One discussions
        - thoughts on standard – it will be different and higher
        - how can we move forward with your agency?
    - FDOT to present findings
        - Open discussion about what we heard (findings in aggregate; not a discussion about what each agency is doing)
        - allow agencies to reach out about what we got wrong
    - TSMCA Rider
        - Develop language
        - pilot some different approach this year with some agencies

Discussion:

- Q: Eric Hill - Jeremy, as a cyclist, how effective is computer vision at detecting a cyclist waiting instead of a vehicle? During my weekly bike ride, I encounter an intersection with computer vision that fails to give me a green.
    - A: The technology that we're talking about here is not deployed, at scale, in the country. Dr. Aty (UCF) is currently reviewing the 8 vendor products associated with this technology. This research should be completed in 6 months or so. Central Office also has a pilot project to evaluate near-miss technology from Iteris.
- Hazem El Assar – We have to be careful to not oversell these technologies.
    - Jeremy – Agreed. We just have to be prepared as they start to become more prominent.
- Q: Michael Grunewald - Is the machine vision concept of traffic accident prediction something actively in use in Florida?

  - Tushar - There are a number of vendors using machine vision and we have tasked UCF to evaluate these. Also, CO has a pilot project to evaluate near miss from Iteris.
  - Jeremy – they are in place in Florida.
- Q: Jon Cheney – Does Signal Maintenance Agreement mean editing Exhibit A or Master Agreement?
  - A: This would be focusing on the Master Agreement to expand definitions and provide additional clarity
- Hazem El Assar – Also, our priority should be addressing safety issues for which we already have crash history.
  - Jeremy Dilmore – personally, I think the biggest safety issues should be addressed first, regardless of which dataset (crash history and/or Safety Surrogate Measures) determined the need
  - Crash History and Surrogate Safety Measures have been indicated by literature to be on equal footing

V. WEJO TRAFFIC DATA

Jeremy Dilmore briefly discussed the traffic data currently being offered by Wejo.

- Wejo provides traffic-related data services using CV data. Per their website:
  - CV data covers 95% of roadways in the country
  - CV data transmitted from vehicles every 1-3 seconds, with 95% of that data reaching data customers within 32 seconds
  - Accurate to within 3-meter radius
- Questions for Local Agencies and MPO/TPOs
  - Is anyone looking to purchase?
  - How much?
  - Purpose?
- Suggest coordinating a purchase to improve the region's pricing
  - there is also the potential to get this from CO purchase
- FDOT has worked with this data for some time
- Please let Jeremy know if you are interested in using the HERE data. Again, we may be able to coordinate a regional purchase
  - Tushar – we are also testing/evaluating HERE data currently
  - HERE and Wejo are essentially competitors using the same data from OEMs
- Lara Bouck - We've been testing Wejo data at MetroPlan Orlando (still underway) and they have a rather strict licensing agreement; interested to hear what the negotiations have been like for FDOT

VI. CURRENT INITIATIVES

Jeremy Dilmore briefly provided an update on the District Five ITS Master Plan IT Standards.

- MetroPlan Orlando – Workforce Development Task Force (Lara Bouck)
  - Kickoff meeting on March 3rd, made up volunteers from staff and committees

    - hoping to resurrect the signal technician program originally coordinated with Orange Technical College
    - focusing on the high school level; looking at feasibility of developing a dual enrollment program
        - initial focus on identifying potential partner schools
        - coordinating with CareerSource Florida
        - Altamonte Springs Science Incubator – coordinating with them to determine lessons learned
- ICMS
    - made it through testing; working on bug fixes now
    - training recordings are now available
    - currently looking at Mezo model; seem to be some performance issues
    - updating our TIM training site to be more of a comprehensive training website (for all major programs within the District)
- ATTAIN
    - focusing on PedSafe deployment; completion set for April
    - backoffice integration likely a month later
    - AV Shuttle
- I-75 FRAME
    - the contractor that was doing the work is going out of business; physical deployment was completed yesterday
    - FDOT will handle testing
- Volusia Adaptive
    - will likely be going into detector mode in Summer/Fall
- Ocala/Marion
    - originally intended to do DB work for county; County suggested a Construction Manager General Contractor (CMGC) model
    - will follow up to discuss outcome
- I-4 FRAME
    - running CV and ICM along I-4 to Tampa; similar to some of the ATTAIN work but more narrowly focused on signal
    - met with Osceola and Orange County
    - On schedule for let in February 2022
- Drone Legislation (Sheryl Bradley)
    - two weeks ago, passed unanimously through the senate and is now in the house
    - would allow for drones to be more proactively used in traffic investigations
    - The District is closely monitoring this legislation
        - no funded projects yet, but expect if this becomes law that it will expand drone usage rapidly
- Regional TSMO Program – Working Group (Eric Hill)
    - bridge the region's 7 MPOs for regional efforts
    - MOU between the agencies
    - On March 9th, convened the first Working Group meeting
        - feature speaker from NOCOE

  - Next meeting anticipated for April 13th
  - features speaker will be Tom ____ from Dallas – Fort Worth
- Hazem El Assar – Jeremy, any update on the Bluetooth upgrades in Orange County?
  - after testing, determined the firmware update did not work well with the hardware
  - hoping to test devices at SunTrax for testing at gantries

VII. NEXT MEETING

- May 27, 2021

VIII. ATTACHMENTS

- A – Presentation Slides
- B – Meeting agenda

END OF SUMMARY

This summary was prepared by David Williams and is provided as a summary (not verbatim) for use by the Consortium Members. The comments do not reflect FDOT's concurrence. Please review and send comments via e-mail to dwilliams@vhb.com *so the meeting summary can be finalized.*

Welcome to the TSM&O Consortium Meeting

April 1, 2021

Transportation Systems Management & Operations

Meeting Agenda

1. Welcome
2. Highway Rail Notification & Arterial Approach Clearance Project
3. Local Agency Proprietary Product Certifications (PPC) Website
4. Looking Ahead – Traffic Signals
5. Wejo CV Data
6. Current Initiatives

Highway Rail Notification & Arterial Approach Clearance

TSM&O Consortium Meeting

April 1, 2021

FDOT.D5

Presenters

Jeremy Dilmore, PE

R. "Carlo" Adair, PE

Scott Zornek, PE

Pam McCombe, P.Eng.

Sorry I couldn't make it. See you at the next one!

Melissa Gross, PE

Agenda

- Project Update
- Stakeholder Feedback
- Prioritized Rail Crossing
- Location Evaluation
- Proposed Solution Overview
- Next Steps
- Feedback!

Project Overview

RECALL - Purpose and Need

FDOT District 5 encompasses over 900 railroad crossings throughout its jurisdiction.

Purpose:

- Engage Stakeholders
- Evaluate improvement scenarios for Safety (Vision Zero)
- ***Implementation Plan*** including a prioritized list of District crossings
  - Regionally accepted site solutions,
  - Concept plans advancement,
  - Regional "Typicals" for industry use
  - Implementation strategy

Project Update

Summary thus far

Evaluation Factors (Phase I):

- Empirical Data
- Historical Records
- Human Behavior
- Physical Conditions
- Probability and Statistics
- Engineering Judgement

Evaluation Factors (Phase II):

- Existing Conditions Verification
- Regional Impacts
- Future Development
- Planning and Coordination
- **Stakeholder Feedback**

Phase I

- Data Collection
- Rail Crossing Prioritization
- Stakeholder Involvement Plan
- Literature Review
- Stakeholder Coordination
- Completion Date 03/02/2021

Phase II

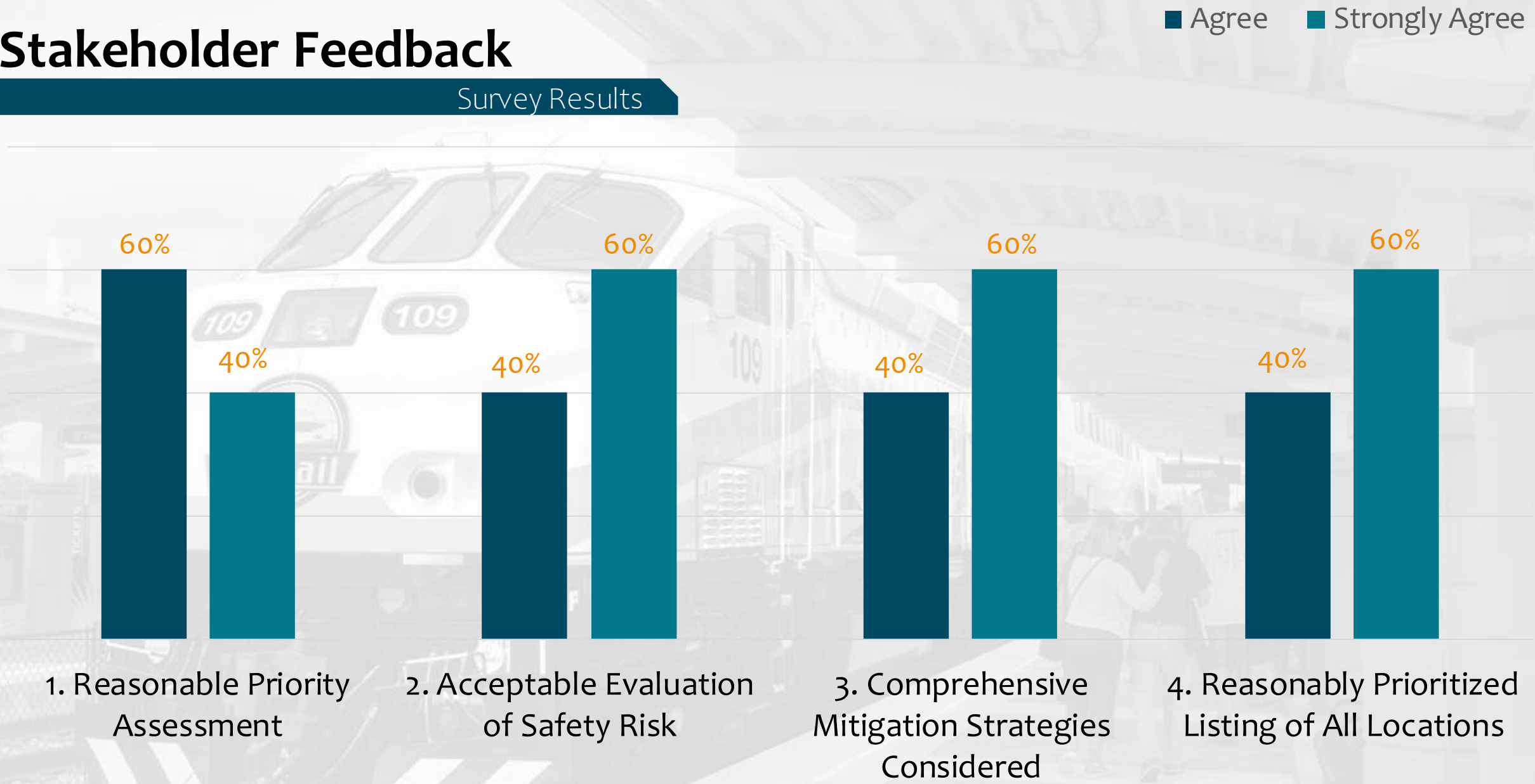
- Refine Rail Crossing Prioritization List
- Evaluation of Prioritized Crossing Locations
- Recommend Solutions
- Stakeholder Coordination
- Nearing Completion

Phase III

- Refine Recommended Solutions
- Develop Concept Level Plans
- Develop SE Documentation
- Develop Implementation Plan
- Stakeholder Coordination

Stakeholder Feedback

Survey Results



Stakeholder Feedback

Survey Results

5. Are there any additional safety factors you recommend as part of this safety evaluation process presented at the TSM&O Consortium Meeting?

Comment: "Just to take into account any future improvements to the roadways/intersections with crossings and probably consider closing the crossing if it's dangerous or can be relocated to a better location."

6. Considering local jurisdictional preferences, are there any additional mitigation strategies you would like to see considered for further evaluation? If yes, please identify them in your response.

Comments: "Not at this time."

7. Are there any proposed mitigation strategies that should be removed from consideration based on local jurisdictional preferences? If yes, please identify them in your response.

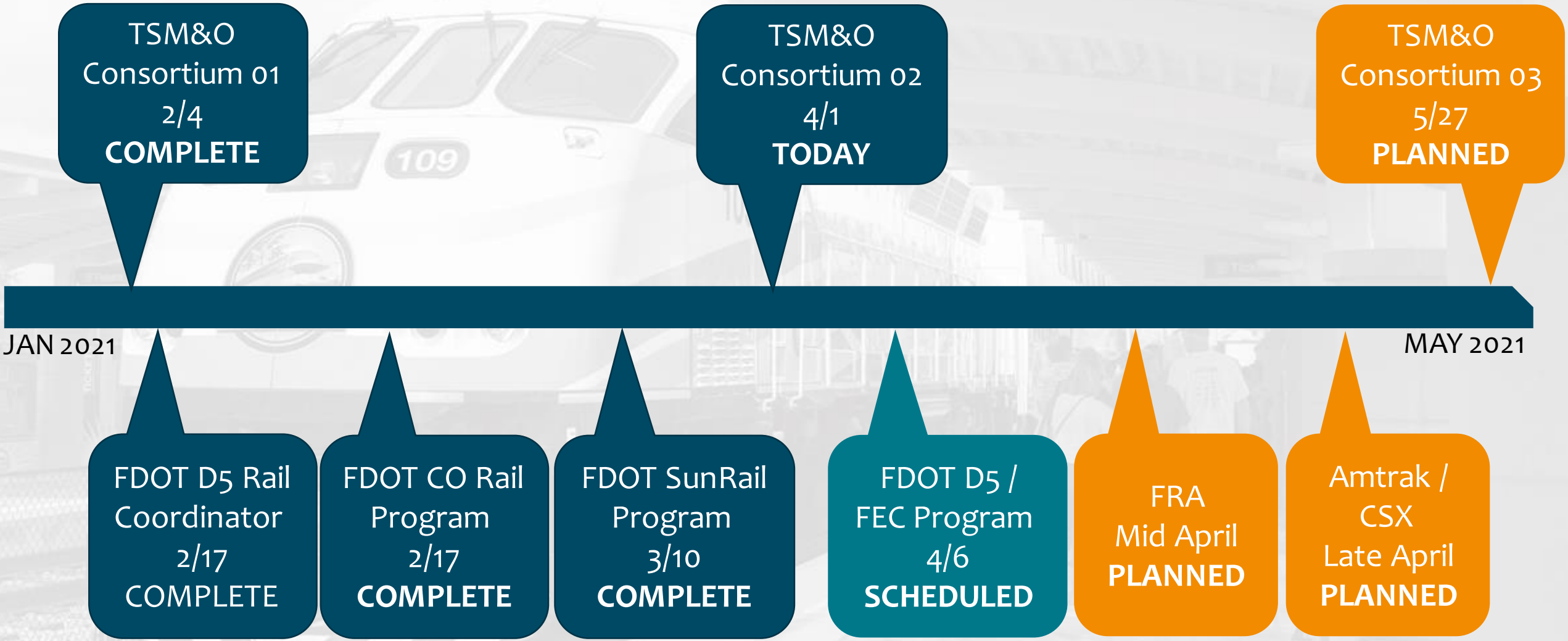
Comments: "No."

8. Are there any specific concerns or insights regarding identified rail crossing locations within your jurisdiction that you would like to have considered in addition to the safety assessment presented at the TSM&O Consortium Meeting?

Comments: "Gatlin/Holden Avenue intersection with Orange Ave. There might be a long-term improvement to realign Holden with Gatlin. So, whether we need to keep both locations or close one and add a new one needs to be studied."

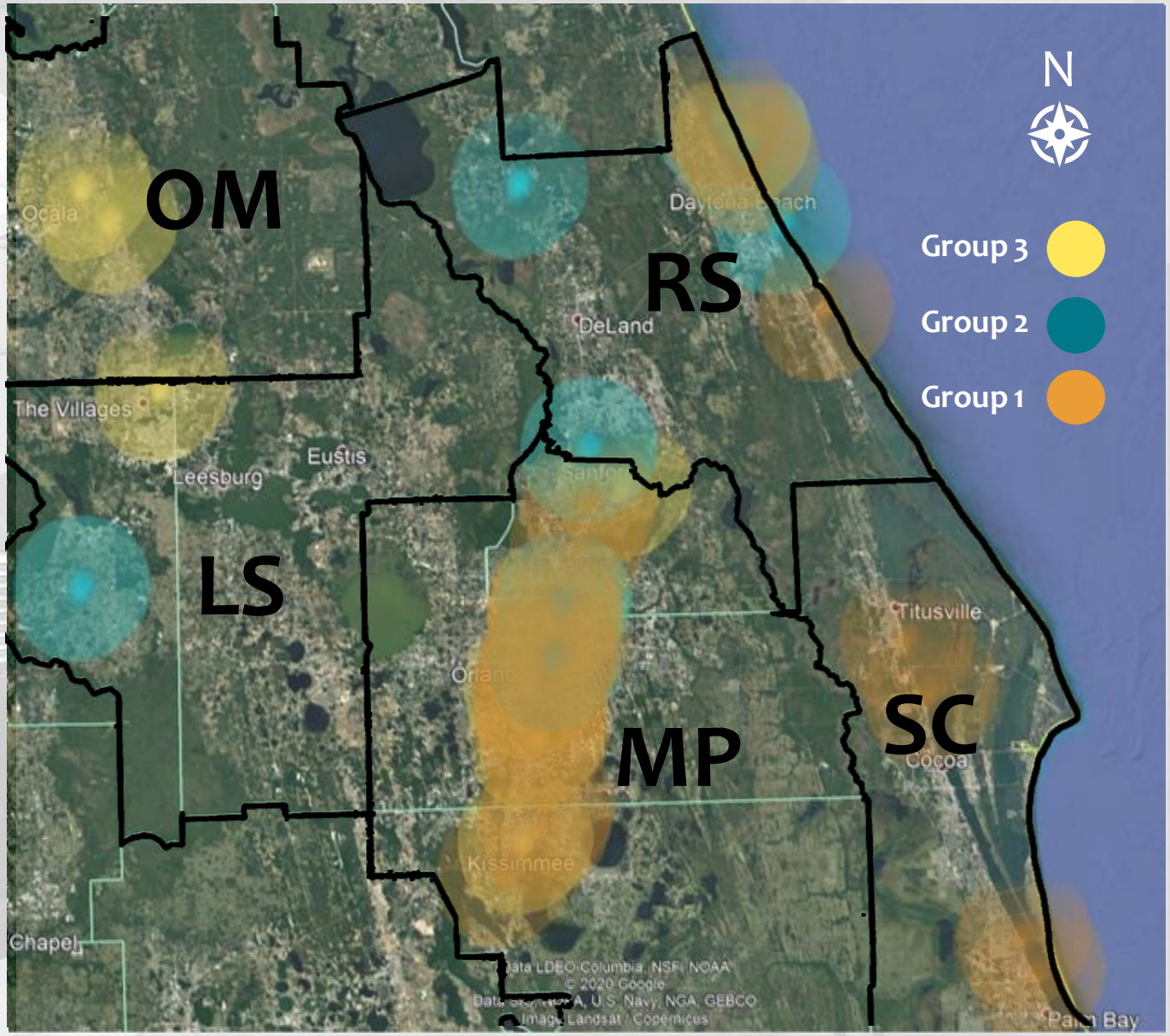
Stakeholder Feedback

Survey Results continued …

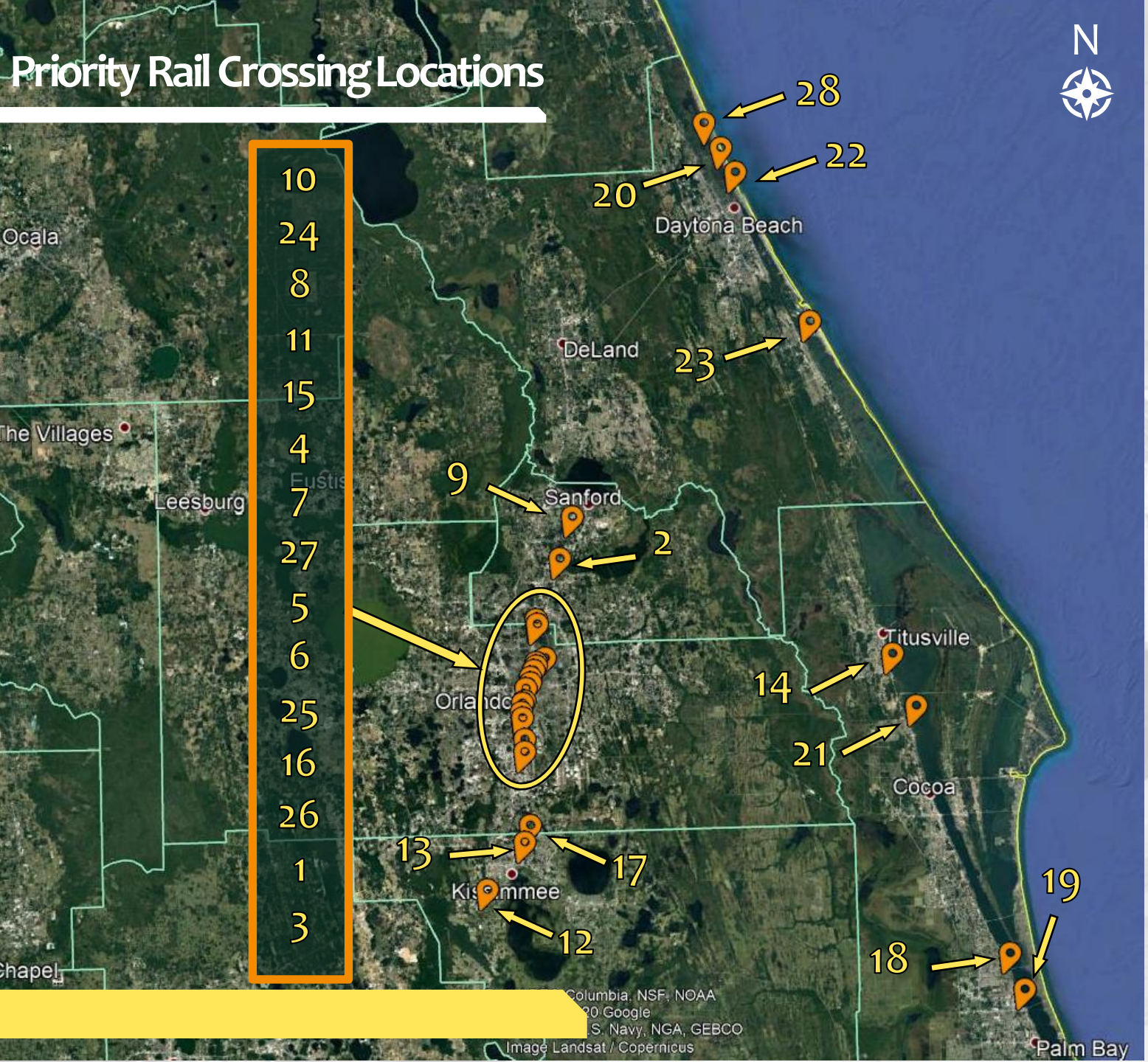


Regional Priority Crossings

	MPO / TPO	Group 1	Group 2	Group 3	Total Study
LS	Lake – Sumter MPO	0	1	0	1
OM	Ocala Marion MPO	0	0	3	3
SC	Space Coast TPO	4	0	0	4
RS	River to Sea TPO	3	5	1	9
MP	MetroPlan Orlando	21	3	6	30



Priority Rail Crossing Locations



	CROSSING NAME	RAIL OWNER
1	E LANCASTER RD	CFRC/SUNRAIL
2	CR-427 / N R. REAGAN BLVD	CFRC/SUNRAIL
3	CR-528 / E LANDSTREET RD	CFRC/SUNRAIL
4	SR-527 / N MAGNOLIA AVE	CFRC/SUNRAIL
5	W PINE ST	CFRC/SUNRAIL
6	W SOUTH ST	CFRC/SUNRAIL
7	US-17/92 / W COLONIAL DR	CFRC/SUNRAIL
8	SR-426/527 / FAIRBANKS AVE	CFRC/SUNRAIL
9	CR-4220 / W LAKE MARY BLVD	CFRC/SUNRAIL
10	E HORATIO AVE	CFRC/SUNRAIL
11	US-17/92 / S ORLANDO AVE	CFRC/SUNRAIL
12	S POINCIANA BLVD	CFRC/SUNRAIL
13	US-192/441 / VINE ST	FEC
14	SR-50 / CHENEY HWY	CFRC/SUNRAIL
15	VIRGINIA DR	CFRC/SUNRAIL
16	W MICHIGAN ST	CFRC/SUNRAIL
17	E CARROLL ST	FEC
18	SR-518 / W EAU GALLIE BLVD	FEC
19	E HIBISCUS BLVD	FEC
20	CR-4019 / LPGA BLVD	CFRC/SUNRAIL
21	FAY BLVD	FEC
22	CR-4040 / FAIRVIEW AVE	FEC
23	WASHINGTON ST	FEC
24	E PACKWOOD AVE	CFRC/SUNRAIL
25	W GORE ST	CFRC/SUNRAIL
26	W KALEY ST	CFRC/SUNRAIL
27	W JEFFERSON ST	CFRC/SUNRAIL
28	HAND AVE	FEC

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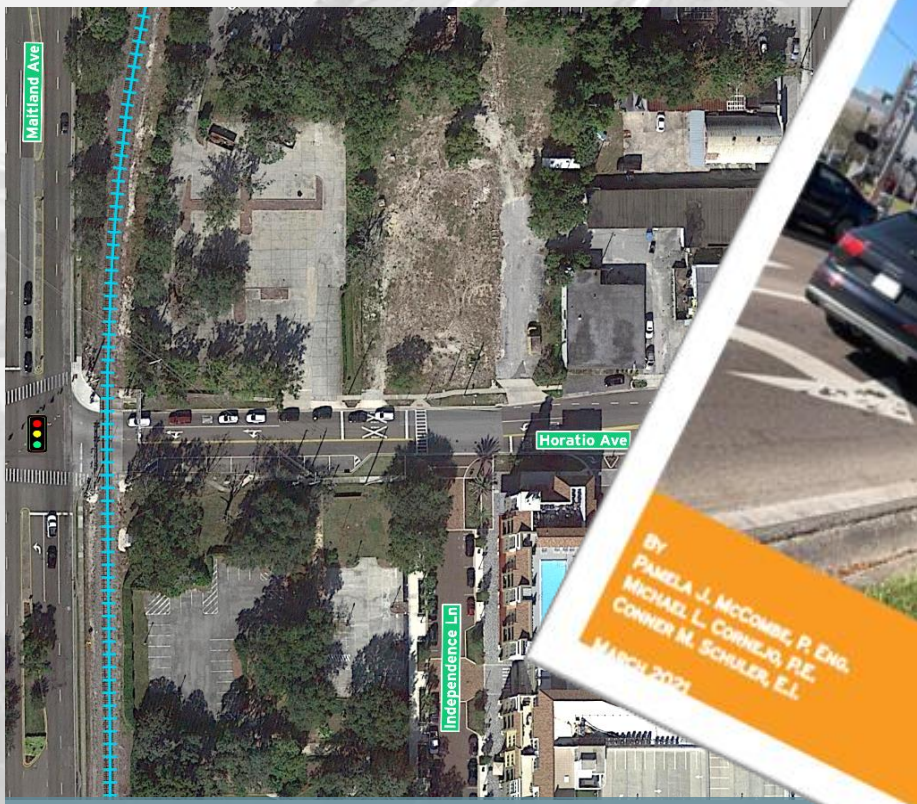
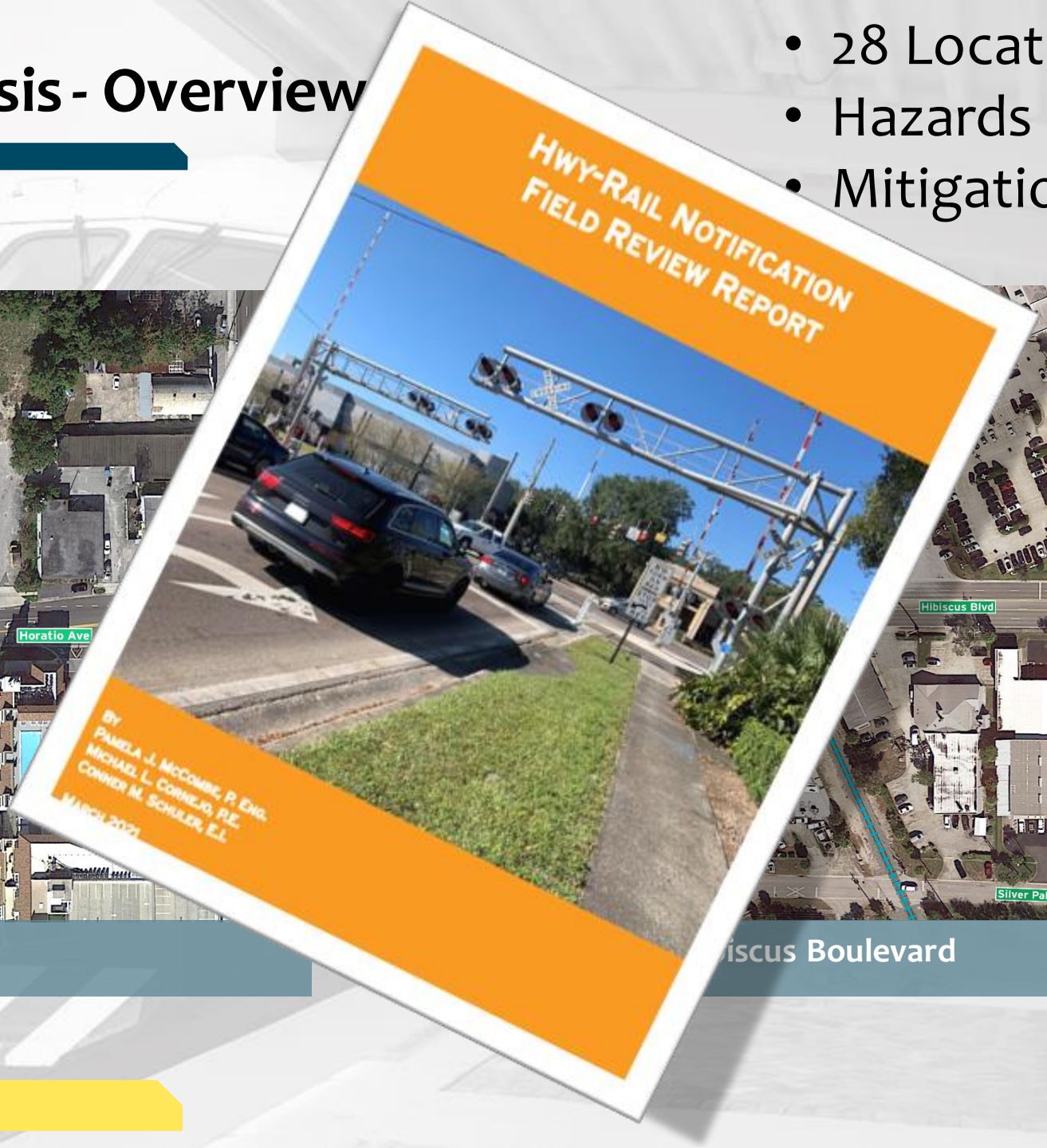
Field Review Analysis - Overview

- 28 Locations
- Hazards & Root Causes
- Mitigations



East Horatio Avenue

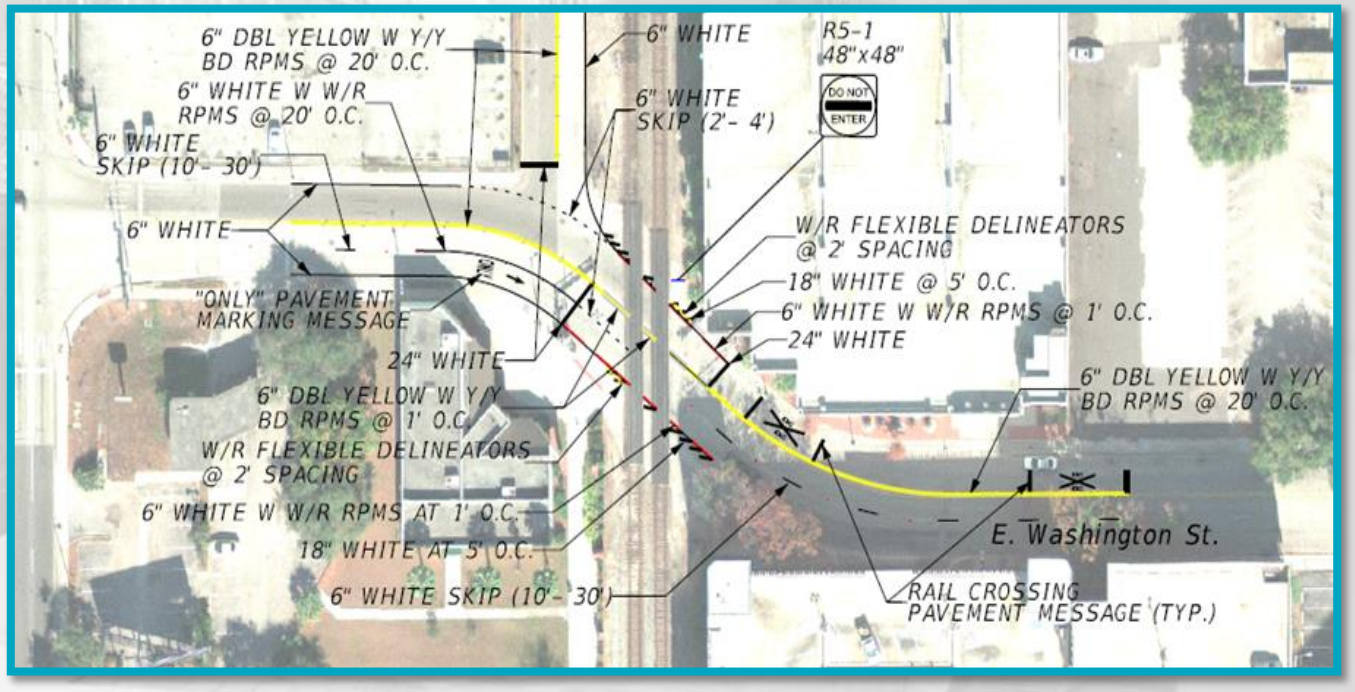


iscus Boulevard

FDOT D5

Corridor Wide Strategies

- Integrated Alert System
- Enhanced Emergency Notification System
- AI & Machine Learning
- Dynamic Detection (Exit Gates)
- Pedestrian Pavement Markings
- Rail Light System (RLS)

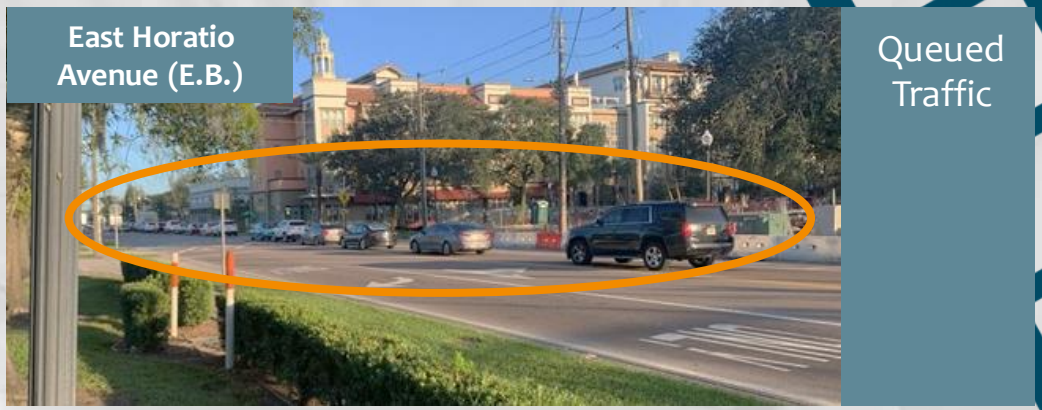


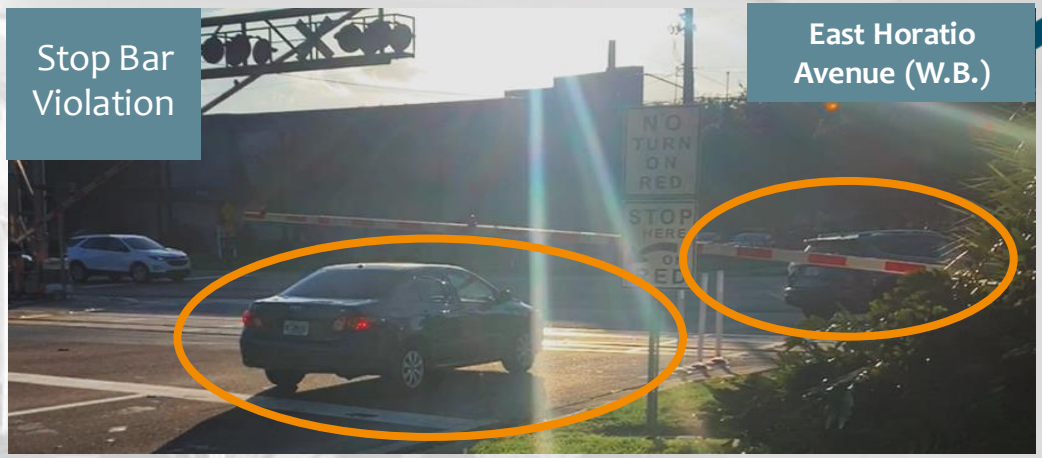
FDOT D5

East Horatio Avenue

Identified Hazards & Significant Root Causes

- Mistakenly turning onto the tracks
- Queuing over the tracks
- Trapped inside crossing gates
- Undesignated Pedestrian crossing behavior



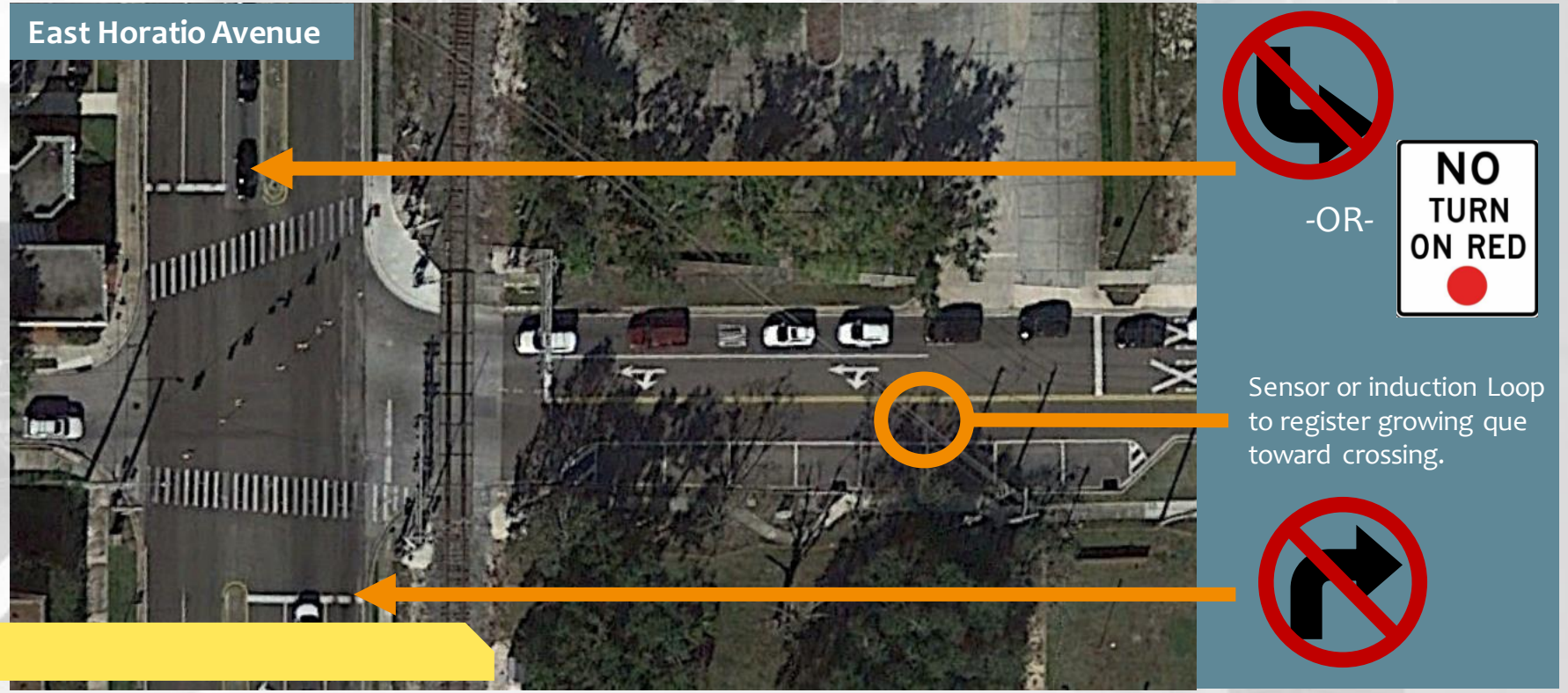


Maitland, FL.

East Horatio Avenue

Considered Mitigations

- Replace grade crossing cantilever
- Pre-signal WB in advance of the crossing
- Queue cutter signal technology
- No-Turn blank-out signs
- Preemption study
- Flashing Do Not Stop on Tracks

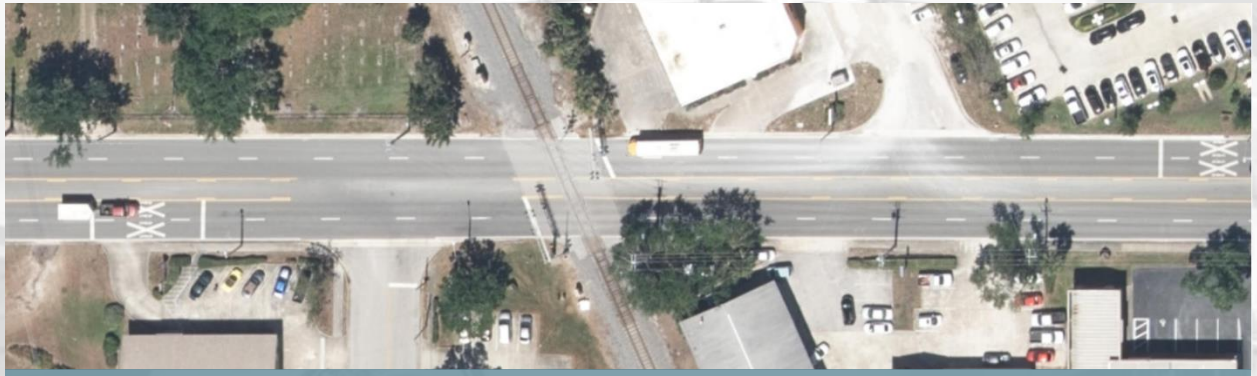


Maitland, FL.

East Hibiscus Boulevard

Identified Hazards & Significant Root Causes

Florida East Coast RAILWAY



East Hibiscus Boulevard

East Hibiscus Boulevard (E.B.)

East Hibiscus Boulevard (W.B.)

- Partial Pedestrian Facilities
- Legacy Striping Treatment
- Lower Volume Conditions

Melbourne, FL.

FDOT D5

East Hibiscus Boulevard

Mitigations for Hazards

Florida East Coast RAILWAY

- Striping, RPMs, and Delineators
- Flashing Do Not Stop on Tracks
- Dynamic Envelope Treatment
- Sidewalk Continuity

East Hibiscus Boulevard

Melbourne, FL.

FDOT D5

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Right in Right out configuration.	2
Install delineators in the center of the roadway to prevent left turns.	2
Signage prohibiting specific turn movements.	2
Straight only pavement markings.	2
Move stop bar closer to the crossing .	2
Install advanced pedestrian crosswalk signage with push button LED flashers.	2
Improved lighting (LED) and more fixtures at intersection.	2
LED Escape Lane signage or blank-out	1
Dynamic Sensor for exit gates.	1
Close or reconfigure driveway or side street.	1
Resurface.	1
Install pedestrian crosswalk outside of the crossing gates across the roadway.	1
Install "Stop Here" signage.	1
Move obstruction or redesign pedestrian facilities.	1
Bevel the difference in elevation or reconstruct.	1
Escape Lanes	0
Intelligent Grade Crossing System	0
Add low (not in sight line for intersection) fencing or guardrail between sidewalks and roadway lanes to channelize pedestrians and keep them from jaywalking.	0

We need to hear more from you!!!

Next Steps

- Stakeholder Questionnaire
- Feedback by **April 22nd**
- Next Consortium Meeting May 27th

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Phase I

- Data Collection
- Rail Crossing Prioritization
- Stakeholder Involvement Plan
- Literature Review
- Stakeholder Coordination
- Date 03/02/2021

Phase II

- Refine Rail Crossing Prioritization List
- Evaluation of Prioritized Crossing Locations
- Recommend Solutions
- Stakeholder Coordination
- Nearing Completion

Phase III

- **Refine Recommended Solutions**
- Develop Regional "Typicals"
- Final Stakeholder Coordination
- Develop Implementation Plan
- Develop SE Documentation

Thank You!

Survey

Highway Rail Notification & Arterial Approach Clearance

Agency Stakeholder Coordination Meeting 2 of 3
FDOT D5 TSM&O Consortium Meeting
April 1, 2021

Thank you for your input, we want to hear from you!!

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
The assessment of hazards at East Horatio Avenue are accurate.	○	○	○	○	○
The assessment of hazards at East Hibiscus Boulevard are accurate.	○	○	○	○	○
The mitigation strategies presented are comprehensive of the regional safety challenges at rail crossings.	○	○	○	○	○
The mitigations proposed are acceptable for your agency/jurisdiction.	○	○	○	○	○

We need to hear from you!!!

Local Agency Proprietary Product Certifications (PPC) Website

Anne Allan, InNovo Partners

Looking Ahead: Traffic Signals

Jeremy Dilmore, FDOT District Five TSM&O

Looking Ahead – Traffic Signals

- Traffic Signal Maintenance and Compensation Agreement between FDOT and local agencies
- Traffic Signals and Devices is defined as follows: all signals, interconnected and monitored traffic signals systems (defined as central computer, cameras, message signs, communication devices, interconnect/network, vehicle, bicycle & pedestrian detections devices, traffic signal hardware and software, preemption devices, and uninterruptible power supplies("UPS")), control devices (defined as intersection control beacons, pedestrian crossing beacons, illuminated street name signs, pedestrian flashing beacons (i.e., school zone flashing beacons, pedestrian crossing beacons, and Rectangular Rapid Flashing Beacons)), blank out signs, travel time detectors, emergency/fire department signals, speed activated warning displays, and other types of traffic signals and devices specifically identified with Exhibit A.
- The Maintaining Agency shall be responsible for the maintenance and continued operation of the Traffic Signals and Devices.
- Pay for the electricity…

What Devices?

- Signal
- TMC
- Camera
- DMS
- Network
- Detection
- Ped Buttons

- Street Signs
- Blank Out Signs
- Beacons of all sorts
- AVI's like Bluetooth
- Speed activated warning signs
- Preempt devices
- Other…

Changes in our Business in Production

- Signal Performance Measure
- Integrated Corridor Management Software
- Data Picker

Changes in our Business in the Pipeline

- Computer Vision
  - Detection
  - Surrogate Safety Measures
  - CV Emulation
- Connected Vehicle
  - RSU
  - EVP

How our Business is Changing

- Driven by data
- Increase need for uptime/availability
- Higher standard for accuracy
- New devices
- Increased complexity

Making the Case for Increased Complexity

- NOEMI data management
- SCMS interaction
- MAP verification
- Cyber Security Risks
- …

How are we going to respond?

- No one-size-fits-all solution
- Need to maintain a high level of performance
- Need to know where agencies feel comfortable
- Clarify the expectation of the TSMCA to be fair, but reflect unique conditions to every area

Steps

- FDOT – Upfront work
  - Establish standard for maintenance and ops all inclusive and forward looking
  - Look at ways work can be divided
- One on One Discussions
  - Thoughts on standard – it will be different and higher
  - How can we move forward with your agency
- FDOT present findings
  - Next Consortium – aggregate what we heard
  - Open discussion
  - Allow agencies to reach out about what we got wrong
- TSMCA Rider
  - Develop language
  - Pilot some different approach this year with some agencies
- Continue the conversation… What is and isn't working?

Looking Ahead

- Signal Maintenance Agreement – Update Schedule
  - April 2021 – multiple conversations throughout update schedule
  - May 2021 – Available for staff review
  - June 2021 – Council approvals in June
  - July 2021 – Update executed in Signal Maintenance Agreement

Questions

Wejo Traffic Data

Jeremy Dilmore, FDOT District Five TSM&O

Wejo Traffic Data

- Traffic-related data services using CV data
  - Coverage of 95% of roadways in USA
  - CV data transmitted from vehicles every 1-3 seconds
    - 95% of that data will reach data customers within 32 seconds
  - Accurate to within a 3-meter radius (size of a typical car)
  - Up to 650,000 data points per second
- Public Sector use cases:
  - Identify travel patterns through “key driving event data”
    - Harsh braking, speeding, ignition on/off
  - Vehicle location data
  - Wejo data science and analytics products

Taken from Wejo website

Wejo Traffic Data

- Is anyone looking to purchase?
- How much?
- Purpose?
- Suggesting coordinating a purchase to improve regional pricing
- Potential to get from CO purchase

Current Initiatives

Jeremy Dilmore, District Five TSM&O

THANK YOU!

Next Consortium – May 27, 2021

TSM&O Consortium Meeting

MEETING AGENDA

Teleconference

April 1, 2021
10:00 AM-12:00 PM

1) WELCOME
2) HIGHWAY RAIL NOTIFICATION & ARTERIAL APPROACH CLEARANCE PROJECT
   - Carlo Adair, HNTB
3) LOCAL AGENCY PROPRIETARY PRODUCT CERTIFICATIONS (PPC) WEBSITE
   - Anne Allan, InNovo Partners
4) LOOKING AHEAD: TRAFFIC SIGNALS
   - Jeremy Dilmore, District Five TSM&O
5) CONNECTED VEHICLE DATA
   - Jeremy Dilmore, District Five TSM&O
6) CURRENT INITIATIVES
   - Jeremy Dilmore, District Five TSM&O