Central Florida Freight Sub-Area Studies and First/Last Mile Connectivity

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April 24, 2025

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Agenda

1. **Introduction**
2. **Sub-Area Identification**
3. **Example Study**
4. **Applicability**

Orlando International Airport, a major freight traffic generator in Central Florida
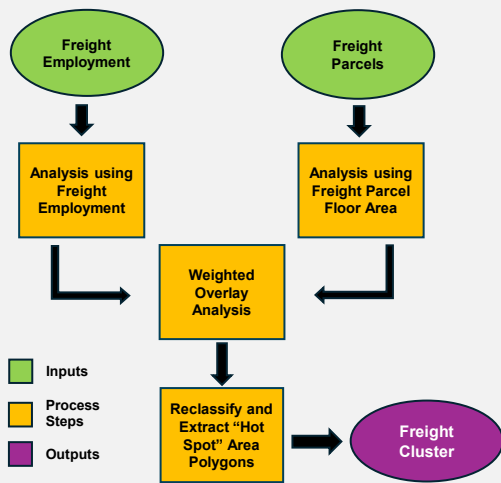
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Introduction

- **How can a regional agency support local agencies?**
  - **Goal: identify near-term, low-cost, high-impact improvements**
- **FDOT District 5 usually focuses on regional scale**
- **Counties with distinct freight challenges have location-specific concerns**
- **Three-year program (2022-2024)**
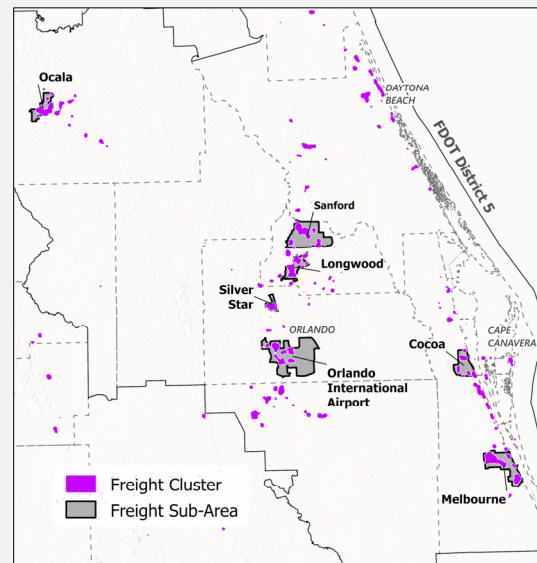 - **Two to three sub-area studies each year**

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Sub-Area Identification

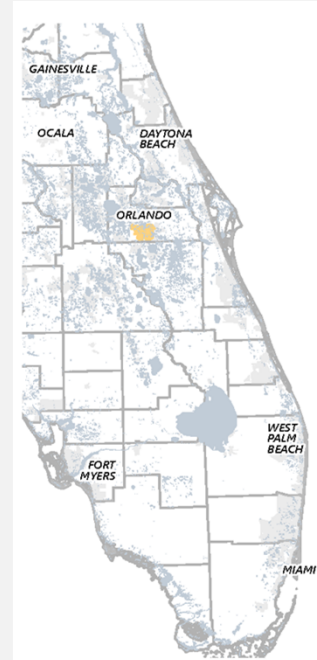**Freight Cluster Identification**

Sub-area boundary delineation

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Example Study

- **Orlando International Airport**
  - **Major freight generator**
  - **Interacts with Orlando-area freight clusters**
- **Goal: support local agencies with**
  - **analysis**
  - **project identification**
  - **funding application**

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Study Process

1. Existing Conditions
2. Stakeholder Engagement
3. Field Review
4. Needs Assessment
5. Recommendations

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Existing Conditions Analysis

- **Develop Sub-area**
  - **Land Use Analysis**
  - **Socio-economic Analysis**
  - **Review Freight Network**
  - **Truck and Traffic Data**
- **Stakeholder Engagement**
- **Safety Analysis**
- **Operational Analysis**
- **Develop list of key freight mobility concerns**

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Sub-area Boundaries

- **South of City of Orlando**
- **Boundary defined by major roads, industrial land uses**
- **Includes freight facilities**
  - **Major highways**
  - **Orlando International Airport**
  - **CSX Automotive yard**
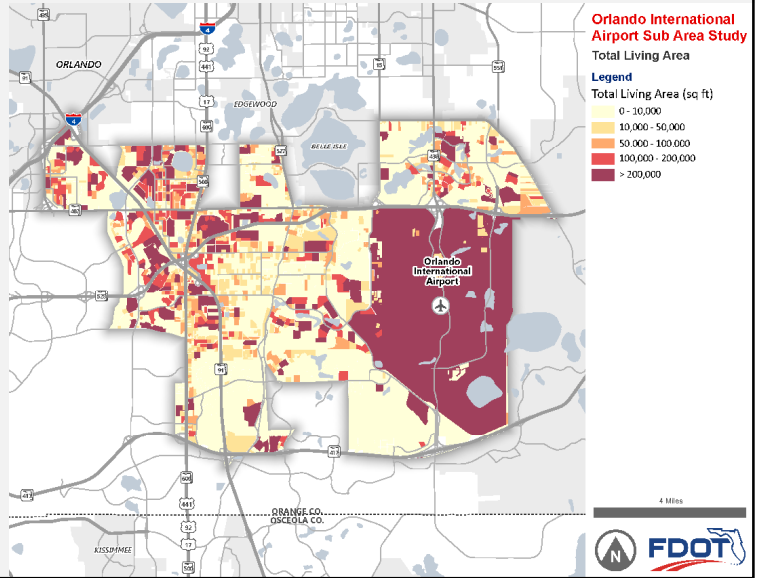 - **Industrial land uses**
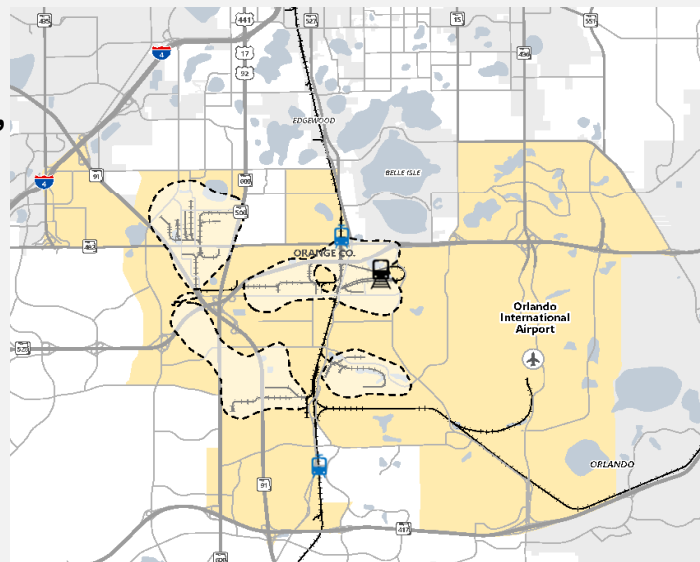
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Freight Facilities – by Size

The largest area is the airport in the study area

Several warehouses in the study area are over >200,000 sq ft
- **Amazon, Prologis, Staples, Coca Cola, Behr Paints and others**

Orlando International Airport Sub Area Study
Total Living Area
Legend
Total Living Area (sq ft)
- 0 - 10,000
- 10,000 - 50,000
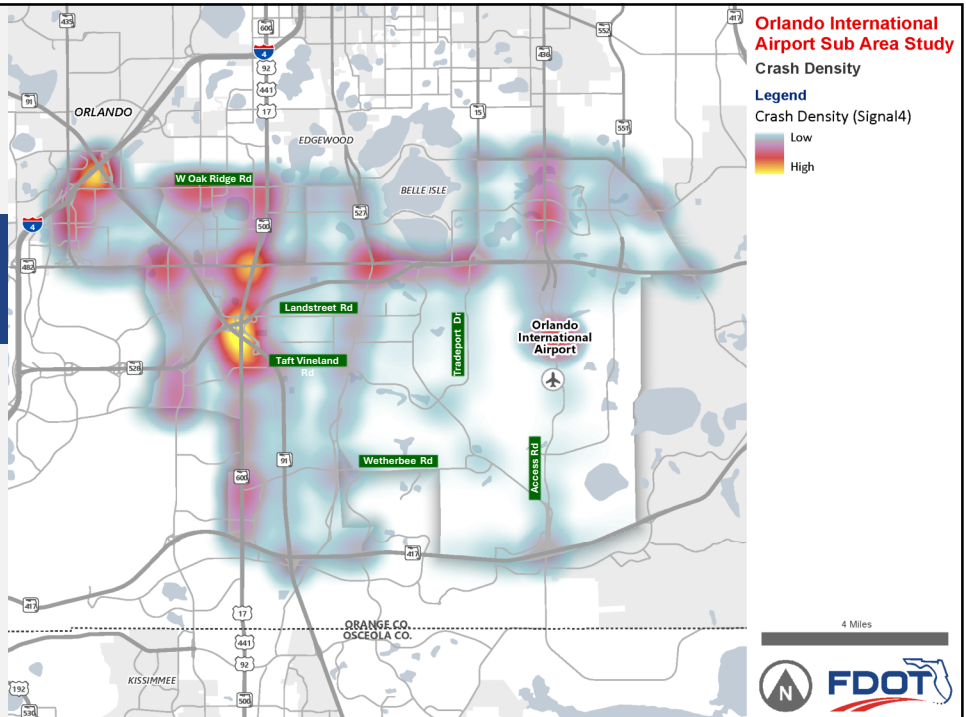- 50,000 - 100,000
- 100,000 - 200,000
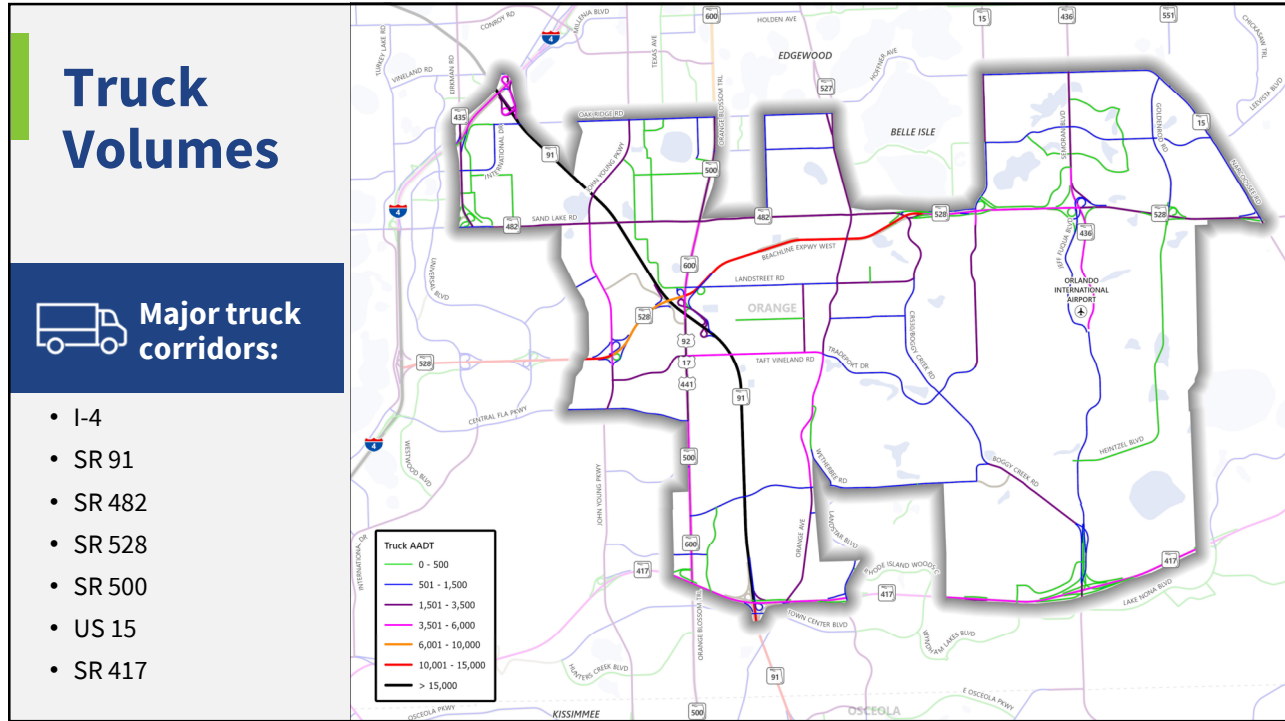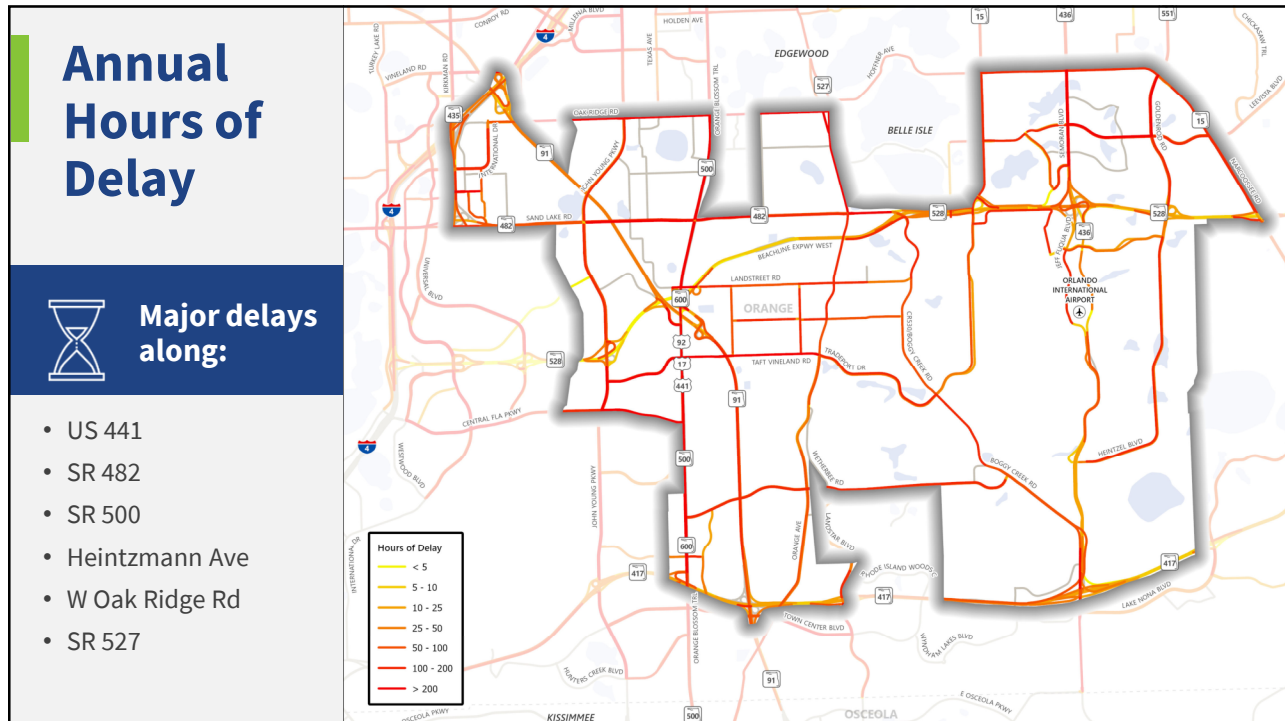- >200,000

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Safety Analysis

Crash hotspot locations:

- I-4 @ SR 91
- SR 500@ SR 482
- SR 91 @ SR 528
- SR 500 @SR 528
- US 441 @ Wetherbee Rd
- SR 482 @ US 441
- SR 527 @ SR 482

Orlando International Airport Sub Area Study
Crash Density
Legend
Crash Density (Signal4)
- Low
- High

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Truck Volumes

Major truck corridors:

- I-4
- SR 91
- SR 482
- SR 528
- SR 500
- US 15
- SR 417

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Annual Hours of Delay

Major delays along:

- US 441
- SR 482
- SR 500
- Heintzmann Ave
- W Oak Ridge Rd
- SR 527

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Stakeholder Engagement

- **Identify Key Stakeholders**
- **Interview Stakeholders to Identify Issues**
- **Discuss Issues**
  - **Needs & opportunities**
  - **Ongoing initiatives**
  - **Consensus with advisory committee**

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Discussion Highlights

- ☑ The land uses along Land Street Road and Boggy Creek Road have the potential to increase non-freight traffic between Orange County and Orlando International Airport (OIA).
- ☑ Obsolescence of older facilities could potentially alter the dynamics related to commercial and industrial zoning.
- ☑ The Taft Vineland corridor study identified a new truck tandem lot which can potentially add 90 parking spaces to the sub-area.
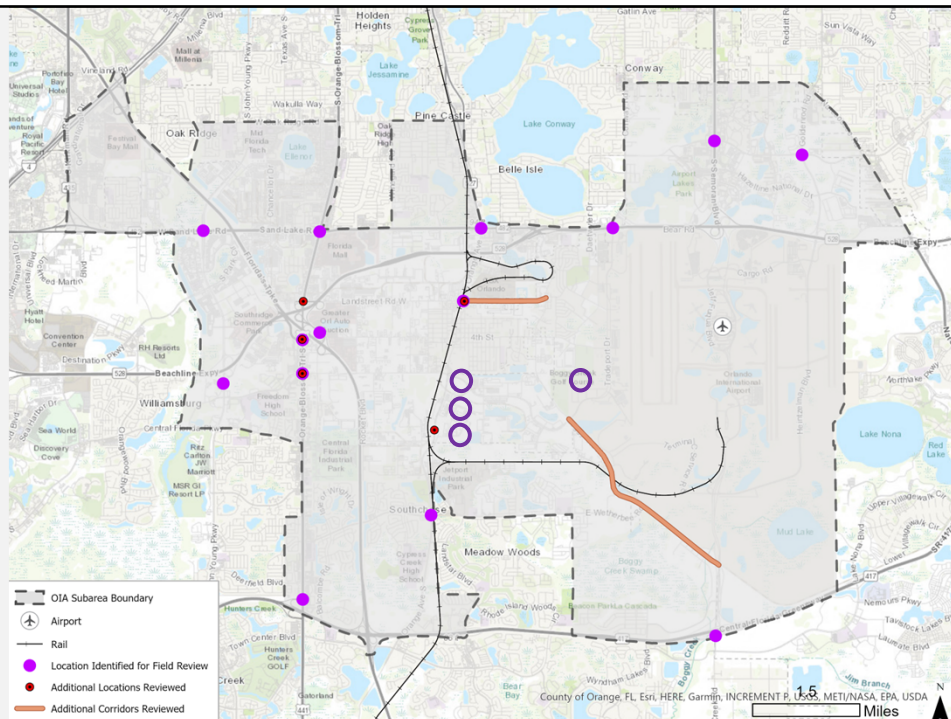
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Field Visit

- **Collect traffic operations data**
- **Assess geometric conditions**
- **Evaluate access management**
- **Gather freight facility information**

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Field Visit Locations

13 **Intersections for Field Review**

5 **Intersections Visited**

2 **Corridors Visited**

OIA Subarea Boundary
Airport
Rail
Location Identified for Field Review
Additional Locations Reviewed
Additional Corridors Reviewed

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Site 1: Orange Avenue and Landstreet Road

Observations
- o Large consignment of UPS vehicles observed in the WB direction at the time of observation (9:30 am).
- o Over 50 UPS trucks observed.
- o Sidewalk and handrail damaged at the SW corner of the intersection.

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Site 1: Orange Avenue and Landstreet Road

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Site 2: Orange Blossom Trail and Landstreet Road

Observations
- Overall heavy truck traffic at intersection.
- WB direction traffic queued up beyond 528 ramps. 80-85% of this traffic was observed to be truck traffic.
- Heavy traffic in the SBL direction.
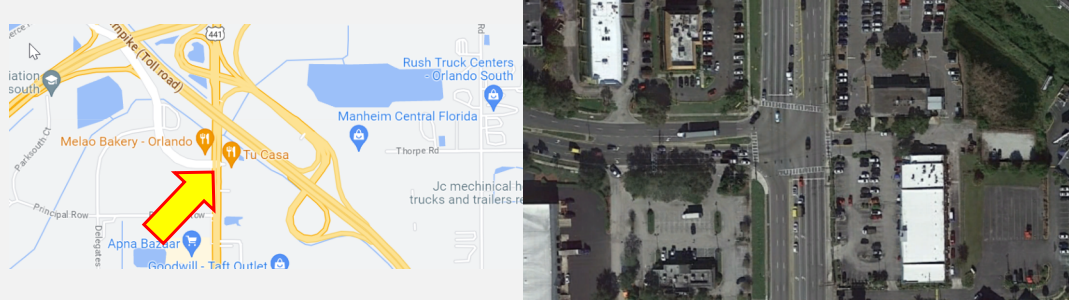- Damaged pavement at intersection in WB direction.

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Site 2: Orange Blossom Trail and Landstreet Road
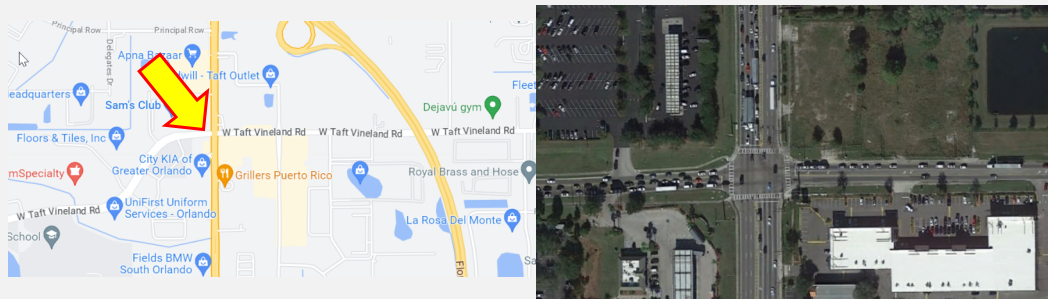

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Site 3: Orange Blossom Trail and Consulate Drive

Observations
- No major concerns. One truck that was observed turning SBR onto Consulate Drive and needed to make an immediate left turn had some issues.
- Newly built warehouses on the West side.
- Damaged EB pavement.

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Site 4: Orange Blossom Trail and Taft Vineland

Observations
- WBT/WBR heavy truck traffic, as well as the corresponding SBL movement which spills over the existing storage lane onto the mainline.
- Truck parked in the median of the WB approach.
- Taft Vineland east of OBT has many freight related businesses
- Explore options to relieve the WB approach.
- New warehouses on Taft/Vineland under construction and almost ready to open will add more traffic.
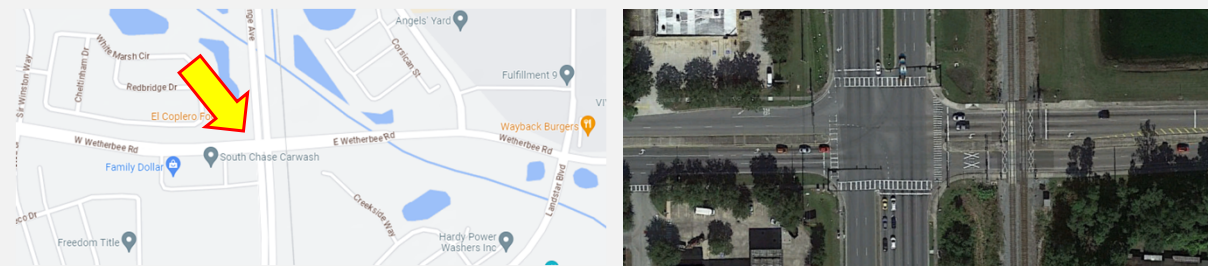
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Site 4: Orange Blossom Trail and Taft Vineland

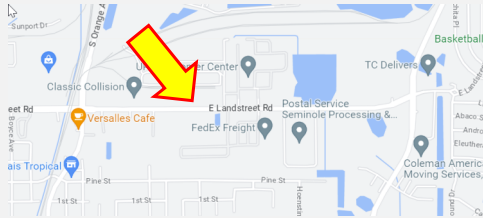

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Site 5: Orange Ave and Weatherbee Road

Observations:
- Damaged pavement in the WB direction.

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Site 6: Landstreet Road between Orange Avenue and Boggy Creek Road

Observations:
- There is a PRO (Police Resource Officer) at this location everyday from 8:00 am to 10:00 am assisting UPS and FedEx.
- There is no back up on the east west section when the PRO stops the traffic.
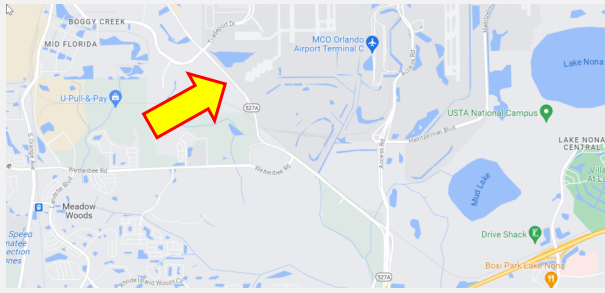- During peak holidays, the PRO is present at the location from 7:00 am to 11:00 am.

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Site 6: Landstreet Road between Orange Avenue and Boggy Creek Road

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Site 7: Boggy Creek road between Tradeport Drive and Access Road

Observations:
- Many Distribution Centers alongside Boggy Creek south side, but not much truck activity was noticed in this area.
- There are residential neighborhoods in the vicinity
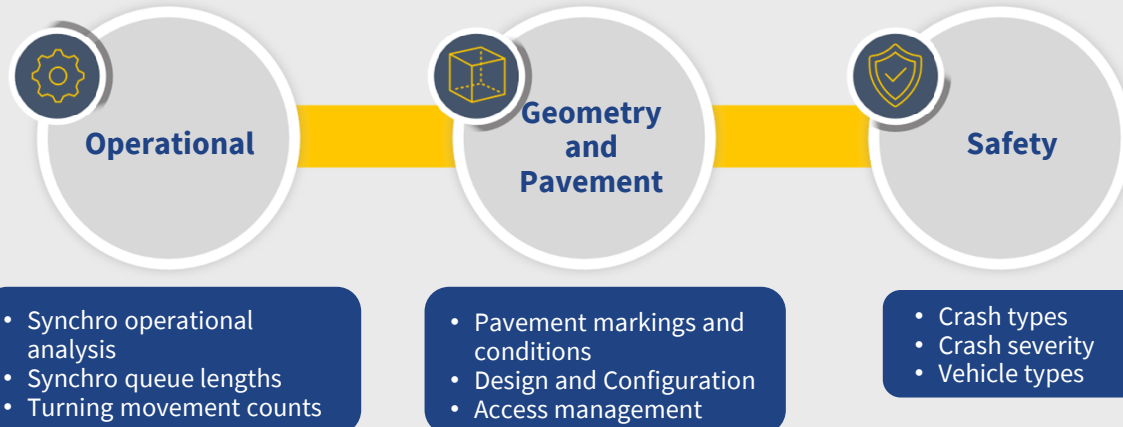
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4) Needs Assessment

- **Define & identify a list of transportation improvements needs**

- **Gather additional data to further understand study area analysis**

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Analysis Approach

Operational

Geometry and Pavement

Safety

- Synchro operational analysis
- Synchro queue lengths
- Turning movement counts

- Pavement markings and conditions
- Design and Configuration
- Access management

- Crash types
- Crash severity
- Vehicle types

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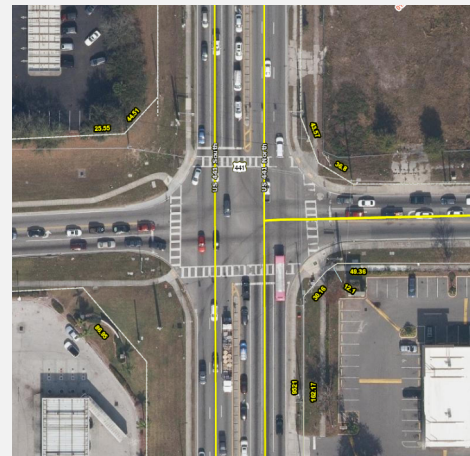## Example: Taft Vineland Road & S Orange Blossom Trail

Operational
- Intersection operates at LOS E in the AM and PM
- V/C ratio is >1 for southbound left turn during AM peak, and V/C ratio is >1 for eastbound left turn, eastbound thru and westbound thru during PM peak.
- 95th percentile queue is longer for the eastbound and westbound left-turn lanes during AM and PM.

Safety
- All Crashes: Front to Rear (Rear End) (38%), Angle (32%)
- Truck Crashes: Front to Rear (Rear End) (36%), Sideswipe, Same Direction (30%)

Geometry and Pavement
- Faded crosswalk markings
- Missing detectable warnings at pedestrian ramps
- NW corner has concrete shoulder

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Recommendations

- **Address the safety & mobility needs of the study area corridors**
- **Identify low-cost operational improvements**
- **Determine longer-term capacity improvements**

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# Example: Taft Vineland Road & S Orange Blossom Trail

Operational
- Add an additional southbound left-turn lane (dual SBL)
- Add additional receiving lanes
- Retime signals

Safety
- Review signal all-red time to accommodate truck traffic.
- Perform access management study
- Remove TWLTL (East) and construct median openings at selected unsignalized intersections

Geometric and Pavement
- Assess updating faded markings and crosswalks
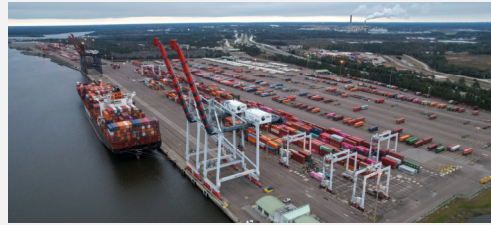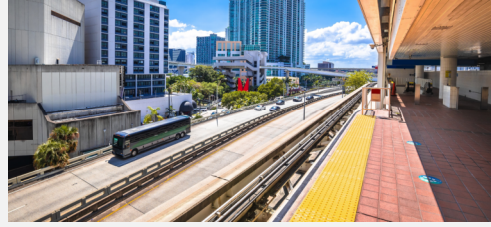- Assess detectable warnings at pedestrian ramps for ADA compliance
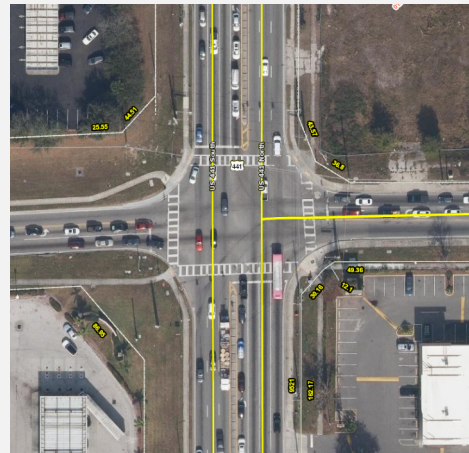
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Applicability

- **Identify issues and provide recommendations at local scale**
- **Support local agencies for funding opportunities**
- **Foster working relationships with local partners**
- **Apply same model to transit, rail, etc.**

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Thank You!

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