Rybinski ENGINEERING

Southern New Castle County / Townsend Monitoring

June 2022

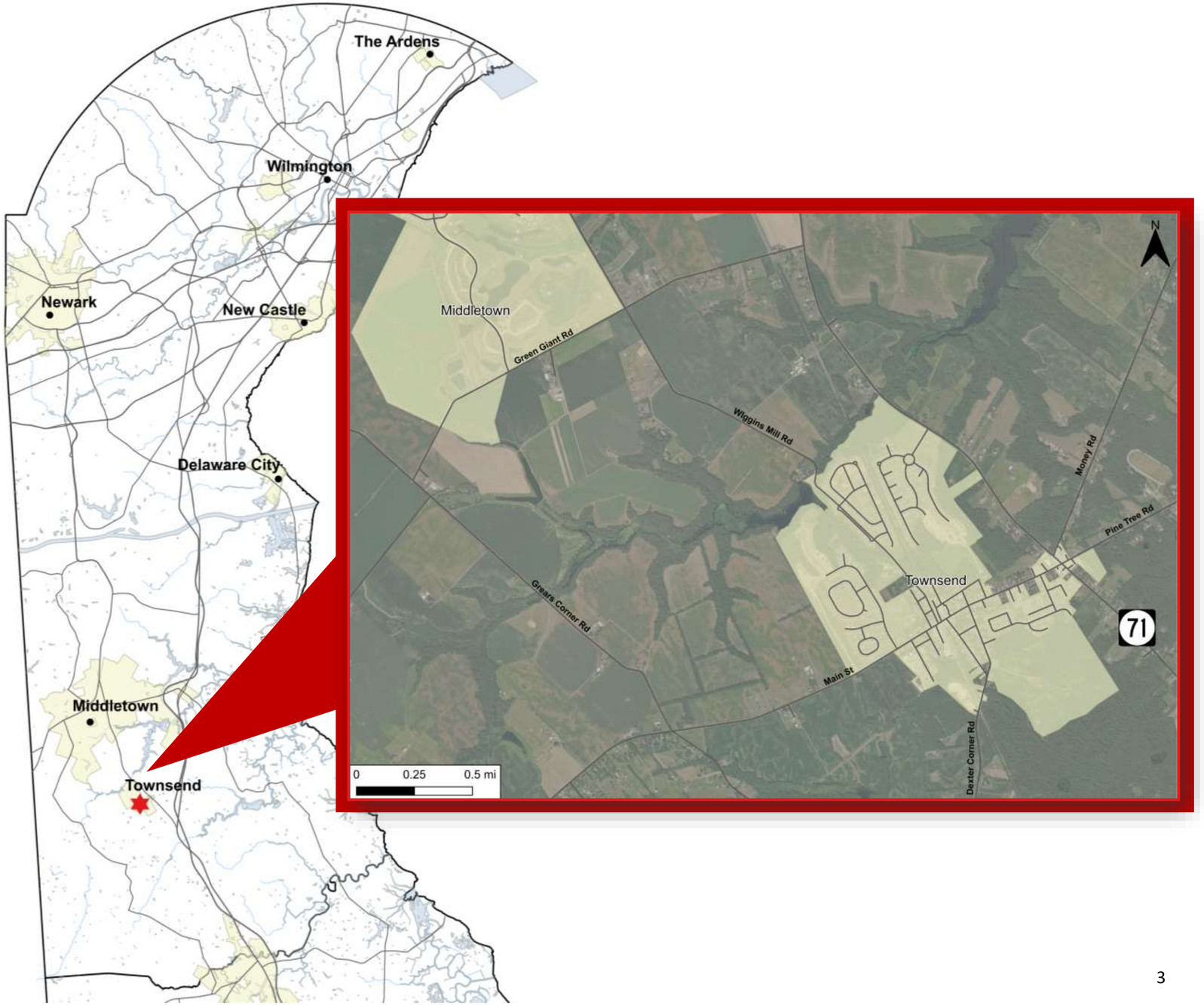
Outline

1. Overview
2. Volume analysis
3. Travel time analysis
4. Crash analysis
5. Next steps

Overview

The 2019 Southern New Castle County (SNCC) Master Plan included “Recommendation 3: Monitoring of Traffic in the Townsend Area”.

- Focus on SR 71 / Pine Tree Road
- Multimodal needs and opportunities
- Truck traffic
- Tracking traffic and travel conditions in parallel with growth and development



Status Update: Project Activities in Townsend Area

Since the Southern New Castle County (SNCC) Master Plan Transportation Element was adopted by WILMAPCO Council in September 2020, the following has occurred:

- Walkable community workshop (completed July 2021)
- Added SNCC Master Plan project recommendations into the WILMAPCO Regional Transportation Plan update (for adoption March 2023)
- Begin recommendation #3 from SNCC Master Plan: Transportation monitoring in and around Townsend

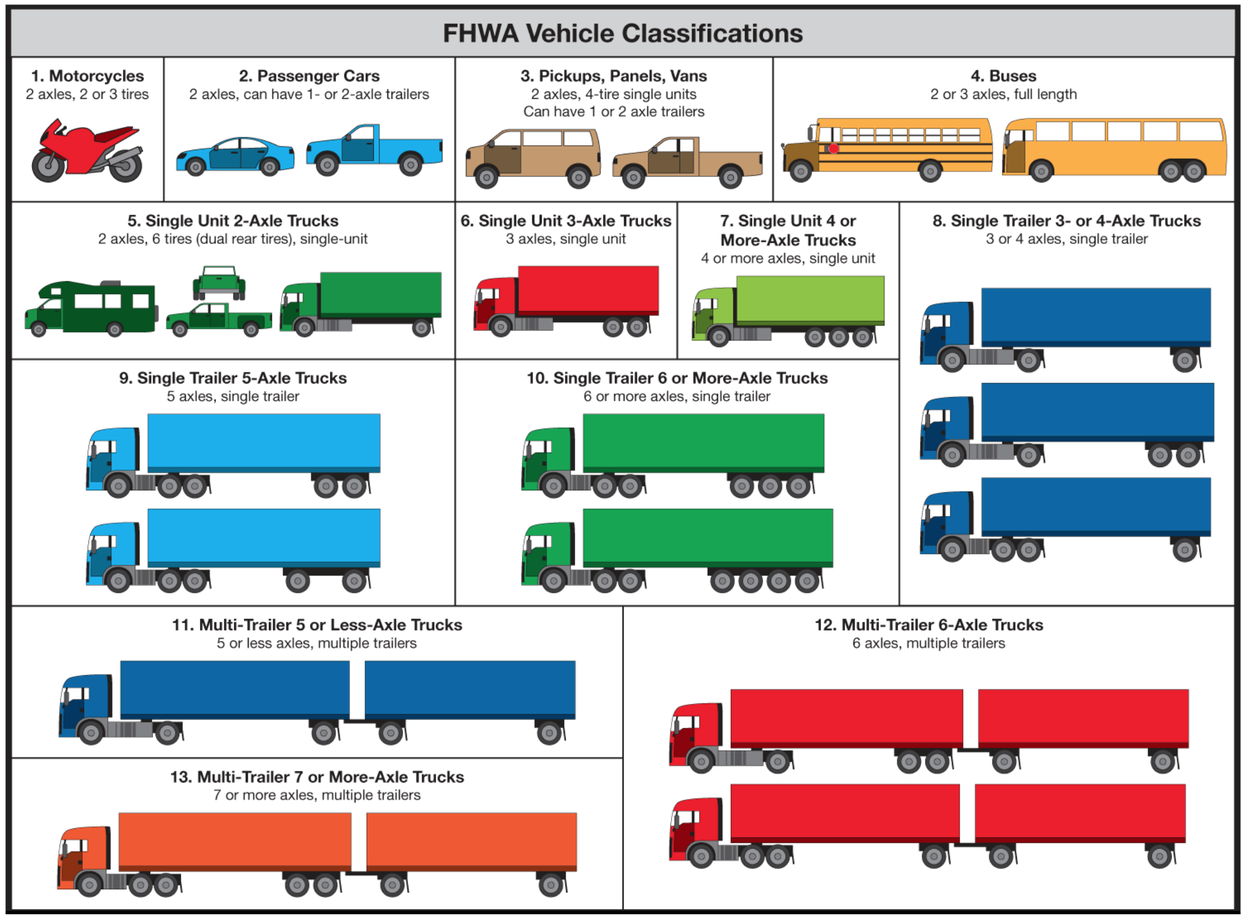
Volume analysis – key terms

- **Evaluated overall Average Annual Daily Traffic (AADT)**

- **Evaluated truck percentages using vehicle classification data**

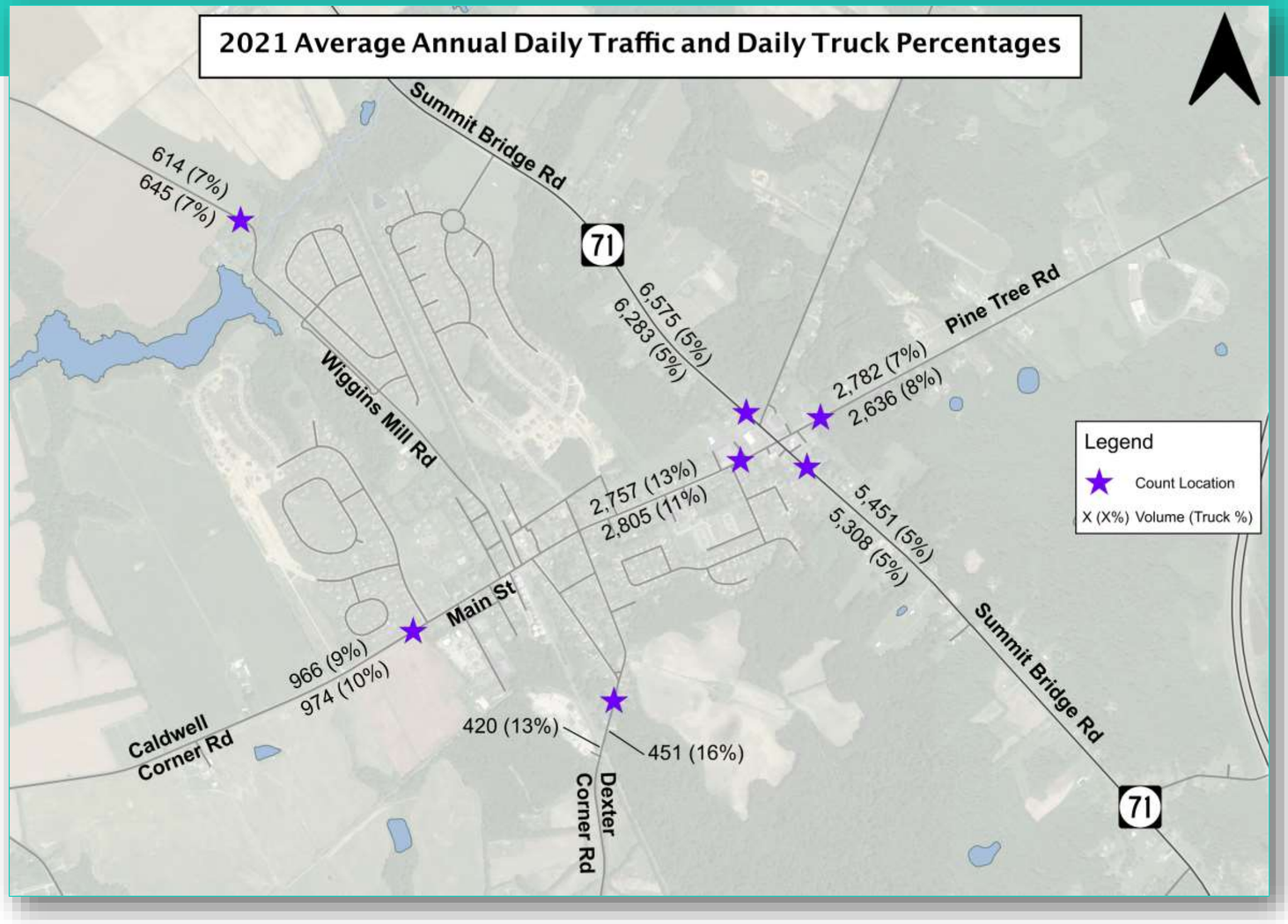
Bin #	Length	Approximate FHWA Classes
1	0-25ft	1 - 3
2	25-49ft	4 - 7
3	49-256ft	8 - 13

Trucks



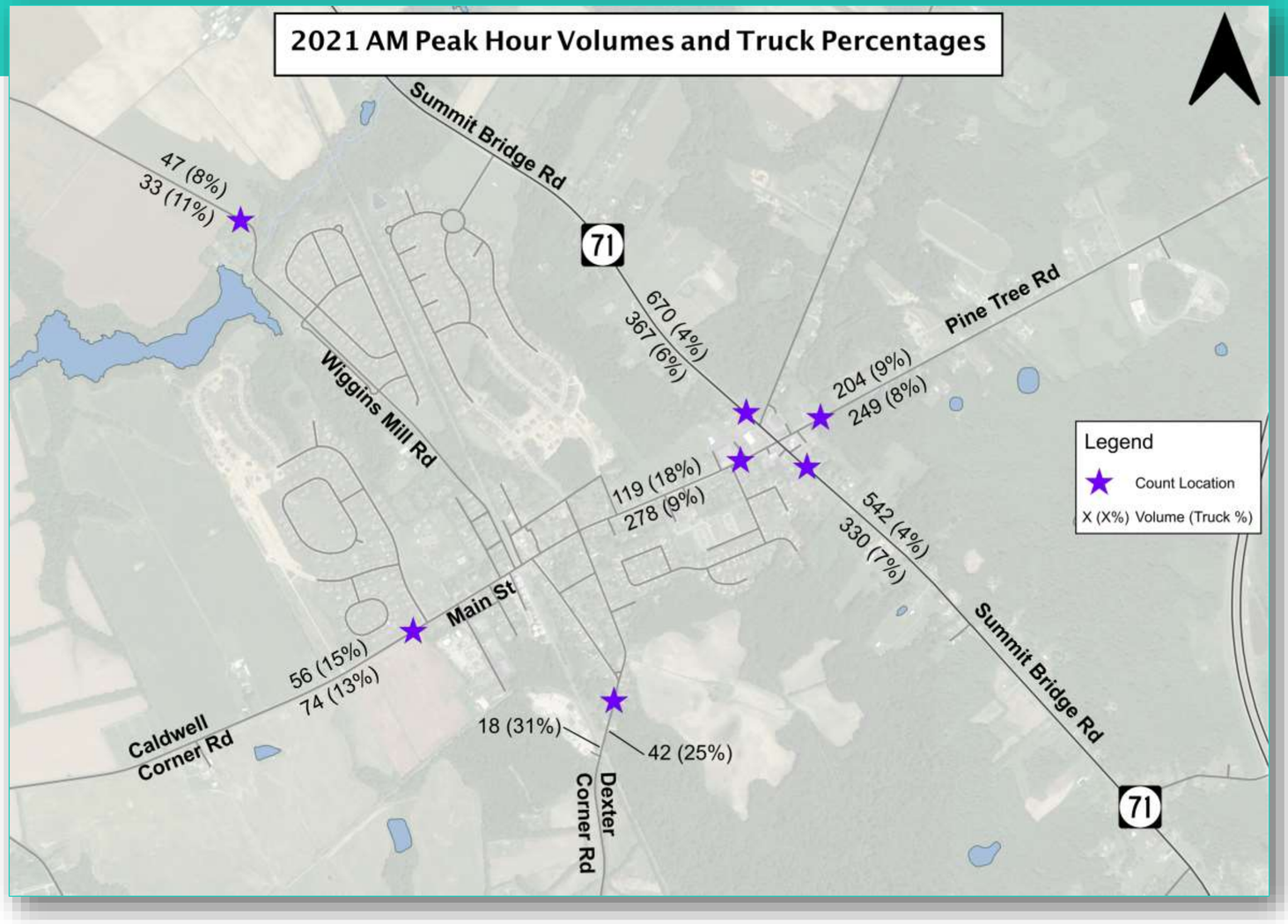
Volume analysis

- **Area AADTs do not exceed 10,000**
  - AADTs are highest on SR 71 north of Main St/Pine Tree Rd
- **Truck percentages exceed 10% west of SR 71**



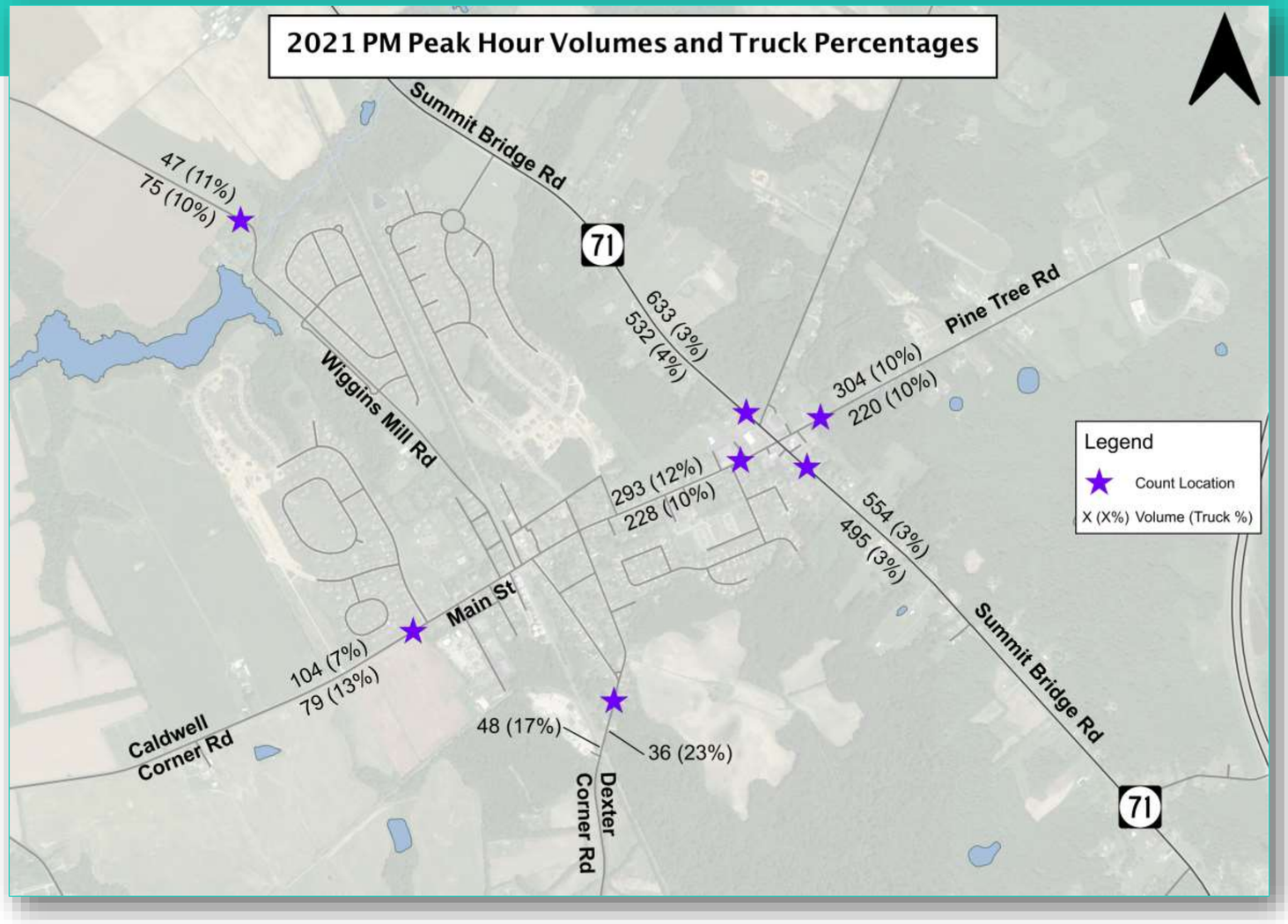
Volume analysis
AM Peak

- **AM peak volumes do not exceed 1,000**
  - AADTs are highest on SR 71 north of Main St/Pine Tree Rd
  - AM peak volumes are overall lower than PM peak volumes
- **Truck percentages are slightly higher in the AM peak as compared to the PM peak**



Volume analysis
PM Peak

- **PM peak volumes do not exceed 1,000**
  - AADTs are highest on SR 71 north of Main St/Pine Tree Rd
  - PM peak volumes are overall higher than AM peak volumes
- **Truck percentages are slightly lower in the PM peak as compared to the AM peak**

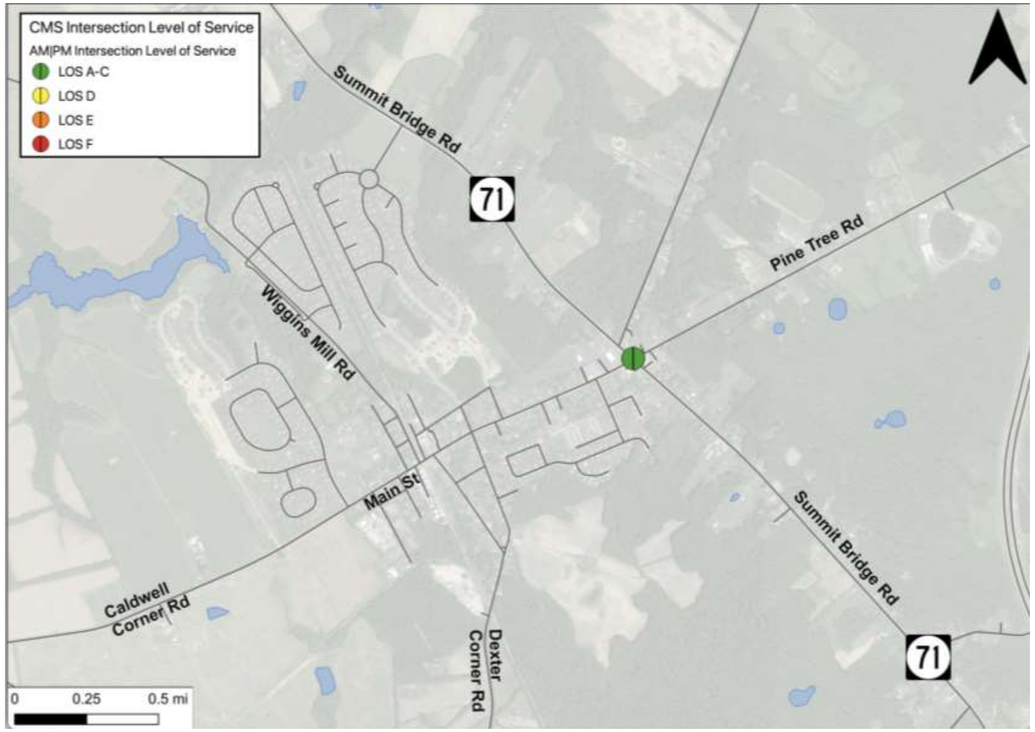


Level of Service (LOS)

At the intersection of SR 71 and Pine Tree Rd:

- **LOS A in the AM and PM peak**

  (based on a 2021 count)



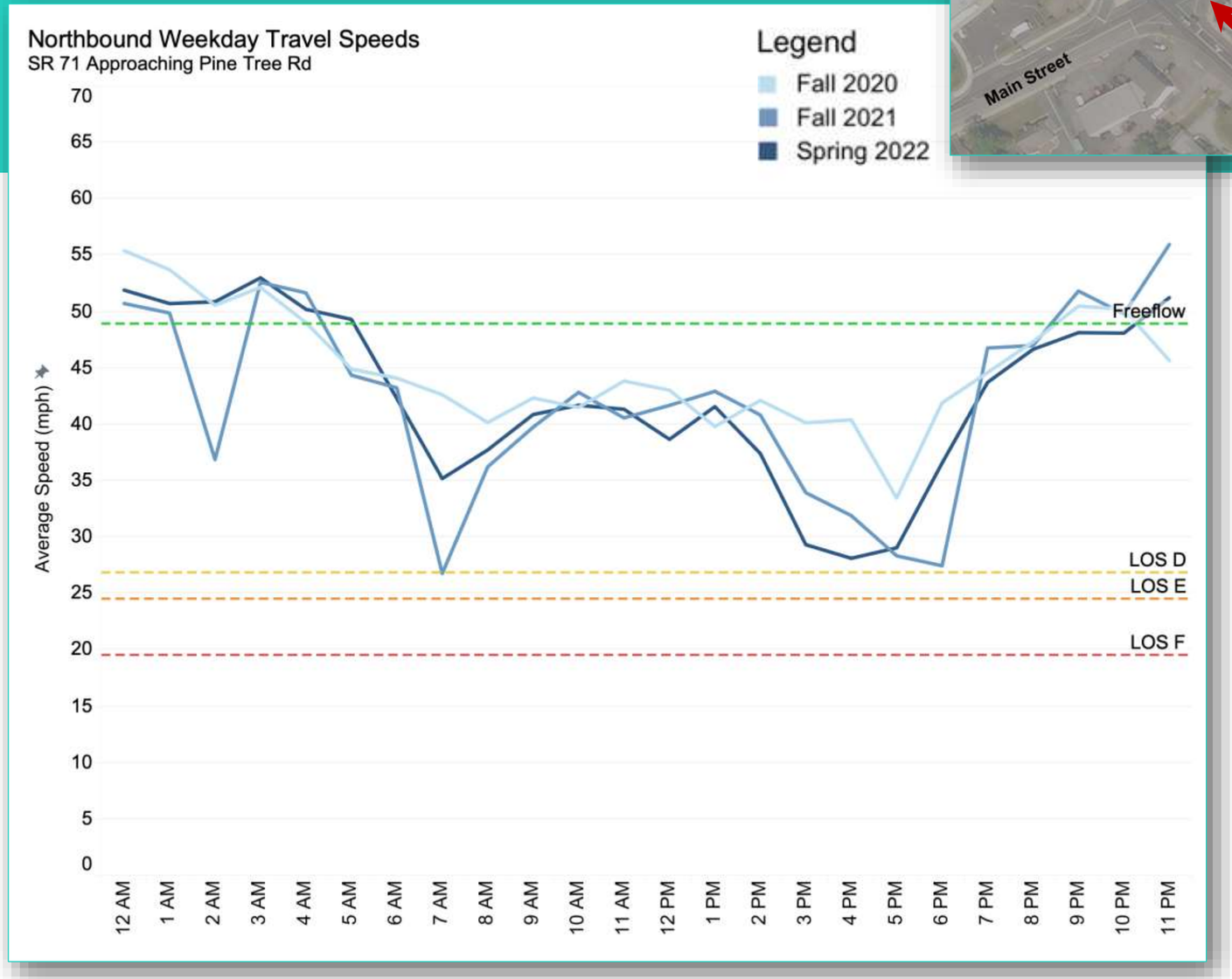
- LOS was derived from critical movement summation (CMS) analysis
- This LOS is volume-based, indicating how well the given lane configuration and signal phasing can process traffic demand
- LOS is graded on a scale of A-F

Volume-based intersection LOS	
A	Less than 1,000 veh/hr
B	1,000-1,150 veh/hr
C	1,151-1,300 veh/hr
D	1,301-1,450 veh/hr
E	1,451-1,600 veh/hr
F	More than 1,600 veh/hr

Congestion likely; potential candidate for improvement

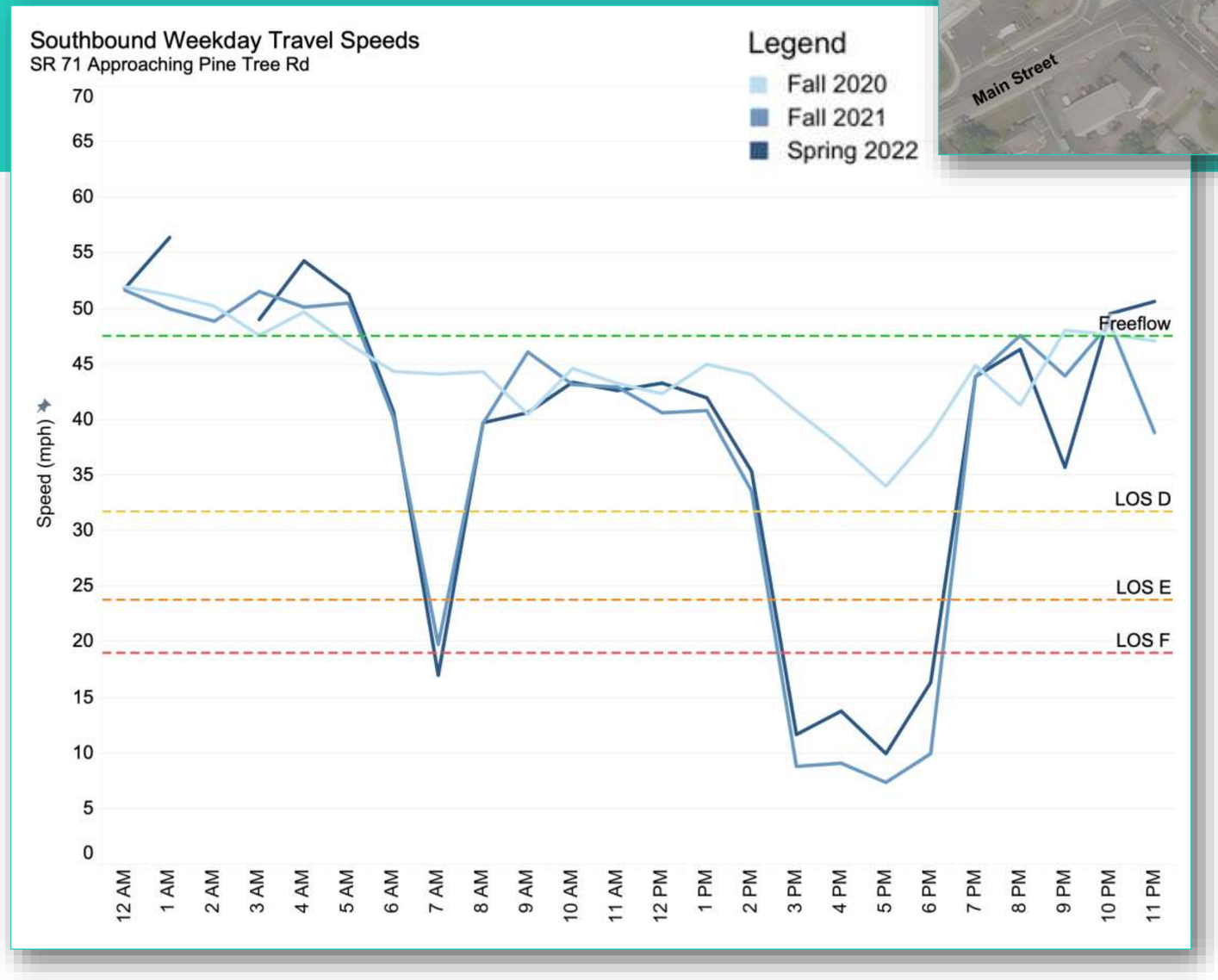
Travel time analysis *Northbound*

- **Northbound travel speeds on SR 71 approaching Pine Tree Rd have been consistent 2020-2022**
- **Speeds drop in the middle of the day but do not drop below LOS D**



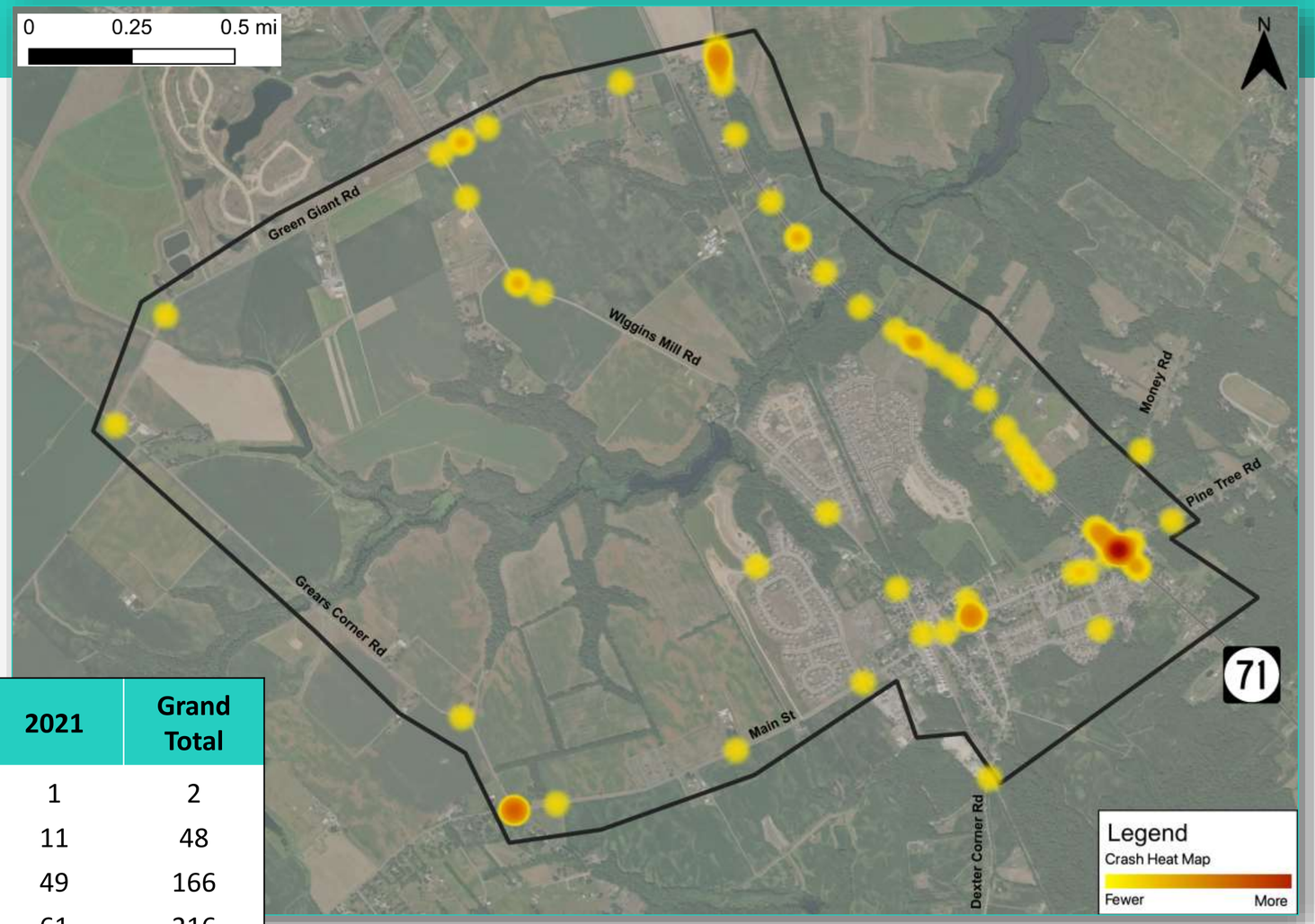
Travel time analysis *Southbound*

- **Southbound travel speeds on SR 71 approaching Pine Tree Rd have been consistent 2021-2022**
  - Travel speeds in 2020 are higher, likely due to fewer drivers on the road during COVID stay-at-home orders
- **Travel speeds decrease sharply at 7 AM, reaching LOS E for one hour**
- **Travel speeds in the PM peak from 3 PM-7PM drop to 10-20 MPH, falling to LOS F**



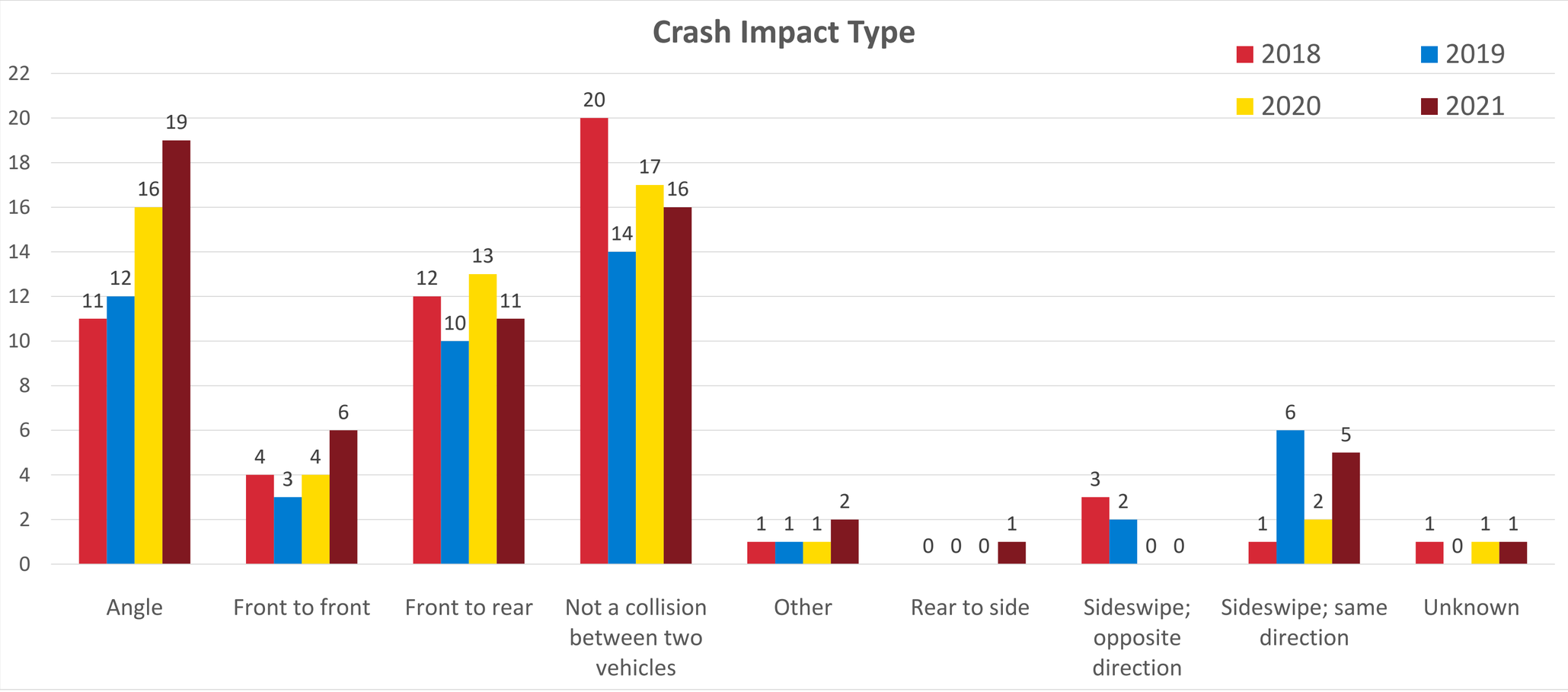
Crash analysis

- **A heatmap of 2018-2021 crash data reveal most crashes occur at intersections:**
  - SR 71 at Pine Tree Rd
  - Main St at Grears Corner Rd
  - SR 71 at Green Giant Rd
  - Main St at Dexter Corner Rd
  - Wiggins Mill Rd at Green Giant Rd



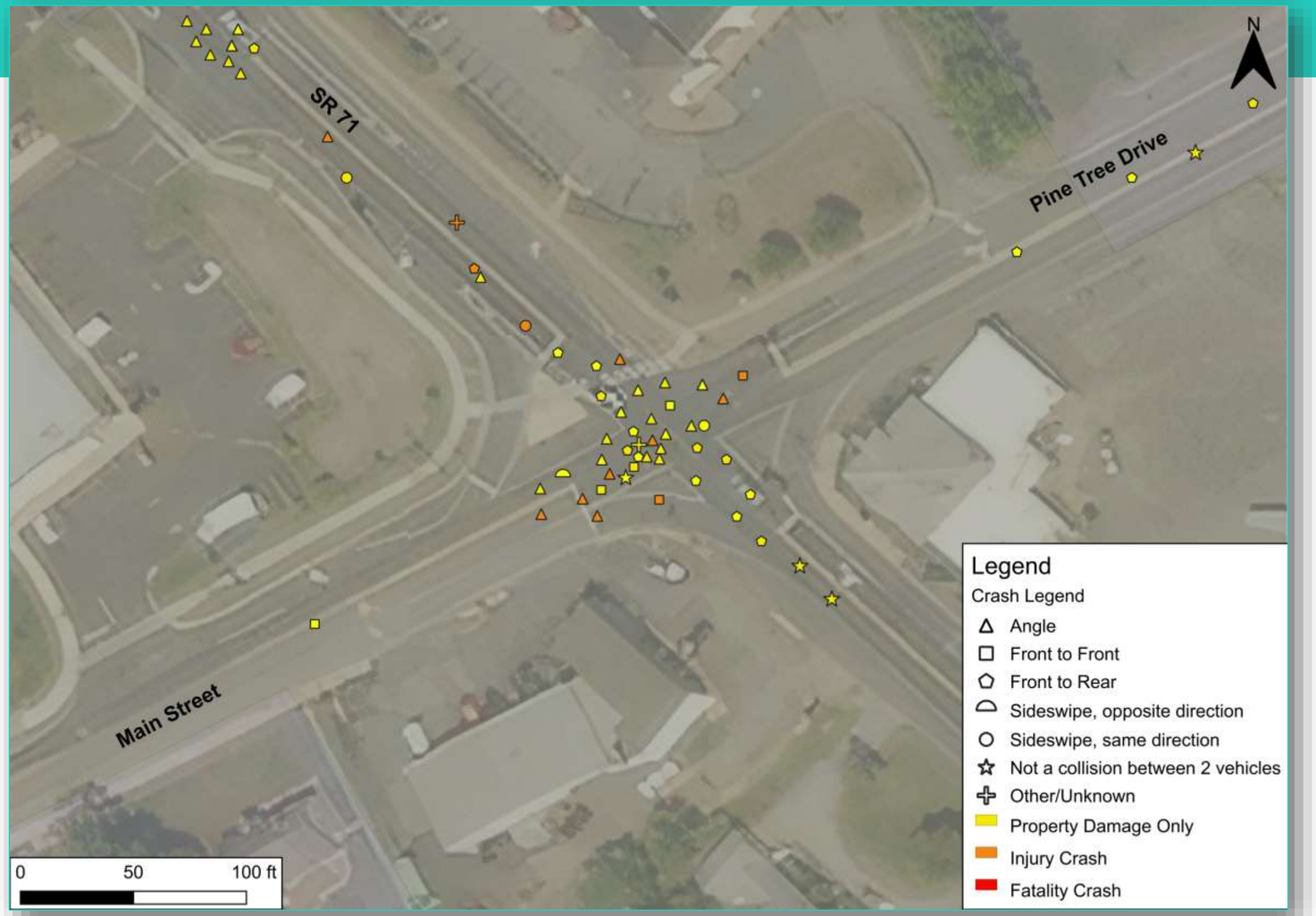
Crash Classification	2018	2019	2020	2021	Grand Total
Fatality Crash	1	0	0	1	2
Personal Injury Crash	10	10	17	11	48
Property Damage Only	42	38	37	49	166
Grand Total	53	48	54	61	216

Crash analysis



Crash analysis

- **Roughly half of the crashes at SR 71 at Pine Tree Rd were angled crashes**
  - There is a noticeable cluster of angled crashes at the Dollar General driveway just north of the intersection
- **Another 30% of the crashes are front-to-rear impacts**



Analysis Summary

1. Southbound travel times during peak periods is congested.

2. Traffic volumes do not appear to be a concern.

3. Crashes are increasing.

Looking west on Pine Tree Road at the intersection with SR 71.

Next Steps

1. Annual evaluation to monitor trends

2. Publish onto the project website

3. Customize as needed, based on feedback