

# Southern New Castle County / Townsend Monitoring



## 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 "Objective 3.2, Strategy 3: Monitoring traffic within the Town of Townsend".

- 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:

- Included SNCC Master Plan project recommendations into the WILMAPCO Regional Transportation Plan update (adopted March 2023)
- Continued Strategy #3 from SNCC Master Plan: Transportation monitoring in and around Townsend
- DelDOT bicycle and pedestrian mobility planning study within Townsend (ongoing)
- DelDOT Townsend Area Safe Routes to Schools concept design (FY24)



#### Volume Analysis – Key Terms

- Evaluated overall Average Daily Traffic (ADT)
- Evaluated truck percentages using vehicle classification data

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





### Volume Analysis

- Area ADTs do not exceed 13,000
  - ADTs are highest on SR 71 north of Money Rd
- Truck percentages do not exceed 10%
  - Truck percentages are highest on Dexter Corner Rd (9%)
  - Truck percentages are lower than 2021
- Area ADTs have decreased an average of 4% from 2021 to 2023



Volumes shown include both directions of the roadway



# Volume Analysis

- AM peak hour volumes do not exceed 900 vehicles
  - Peak hour volumes are highest on SR 71 north of Main St/Pine Tree Rd
  - AM peak hour volumes overall are lower than PM peak hour volumes
- 2023 AM peak hour volumes are on average 7% less than 2021 volumes



Volumes shown include both directions of the roadway



#### Volume Analysis PM Peak

- PM peak hour volumes do not exceed 1,200
  - Peak hour volumes are highest on SR 71 north of Main St/Pine Tree Rd
  - PM peak hour volumes are overall higher than AM peak hour volumes
- 2023 PM peak hour volumes are on average 3% greater than 2021 volumes



Volumes shown include both directions of the roadway



### 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 2022 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 I		
А	Less than 1,000 veh/hr	
В	1,000-1,150 veh/hr	
С	1,151-1,300 veh/hr	
D	1,301-1,450 veh/hr	Congestion likely:
E	1,451-1,600 veh/hr	potential candidate
F	More than 1,600 veh/hr	for improvement



#### Travel Time Analysis Northbound

- Northbound travel speeds on SR 71 ٠ approaching Pine Tree Rd have been consistent 2020-2022
- Speeds drop during the AM and PM • peak periods, but do not reach LOS D



LOS thresholds developed using Highway Capacity Manual 6<sup>th</sup> Edition Methodology



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#### Travel Time Analysis Southbound

- Southbound travel speeds on SR 71 ٠ approaching Pine Tree Rd have been consistent 2021-2022
  - Travel speeds in 2020 were higher, likely ٠ due to fewer drivers on the road during COVID stay-at-home orders
- Speeds decrease sharply at 7 AM, ٠ though do not reach LOS D
  - In the AM Peak, Fall 2022 speeds were higher than Spring 2022 and Fall 2021
- Travel speeds in the PM peak, from ٠ 3 PM-7 PM, drop to 10-15 MPH, resulting in LOS F



LOS thresholds developed using Highway Capacity Manual 6<sup>th</sup> Edition Methodology



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# Crash Analysis 2018 - 2022

- A heatmap of 2018-2022 crash data reveals 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

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Crash Classification	2018	2019	2020	2021	2022	Grand Total
Fatality Crash	1	0	0	1	0	2
Personal Injury Crash	10	10	17	11	7	55
Property Damage Only	42	38	37	49	25	191
Grand Total	53	48	54	61	32	248





# Crash Analysis 2018 - 2022



# Crash Analysis 2018 - 2022

- 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
- 30% of the crashes are front-torear impacts





# Analysis Summary

- 1. Southbound travel times during peak periods are congested.
- 2. Traffic volumes do not appear to be a concern.
- 3. Crashes increased from 2018 to 2021 and then reduced almost in half in 2022.



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)

