

# Old County Road Corridor Study

Maryland/Delaware State Line to Glasgow Avenue



# Presentation Overview

- Corridor Overview
- Corridor Crash Summary
- Segment and Intersection Overviews
  - Old County Road: State Line to the western side of the curve west of Lyric Drive
  - Old County Road: Curve west of Lyric Drive
  - Old County Road at Frazer Road
  - Old County Road: Farmington Ave to Bar Dr
  - Old County Road at Glasgow Avenue
- Improvements/Recommendations
- Questions

# Old County Road Corridor

## Corridor Overview

- 2.6-mile corridor
- Two-lane roadway, no shoulders
- Numerous unsignalized intersections and driveway access points along Old County Road
- No dedicated left-turn lanes along Old County Road
- Stop-controlled intersections at Frazer Road and Glasgow Avenue
- No pedestrian facilities west of Aetna Station 10 Driveway
- No existing lighting along Old County Road
- 35 – 40 MPH posted speed limit
- 2019 AADT: 2,313 – 3,204

# Old County Road Corridor

## Corridor Overview

- Maryland State line to Lyric Drive classified as a minor collector
- Lyric Drive to Glasgow Avenue classified as a major collector
- Proposed Harmony Senior Living Facility is projected to increase traffic 12% during the peak hours
- The roadway segment west of Frazer has a crash rate of 2.01 for total crashes (compared to 4.69 – the 2021 Statewide crash rate on Urban Major Collectors for all crashes) and a crash rate of 0.4 for fatal/injury crashes (compared to 1.12 – the 2021 Statewide crash rate for Injury and Fatal crashes)
- The roadway segment east of Frazer has a crash rate of 2.89 for total crashes and a crash rate of 0.83 for fatal/injury crashes (including the most recent fatal)



# Old County Road Corridor

## Crash Summary

1/1/2005 – 9/1/2021: 174 crashes

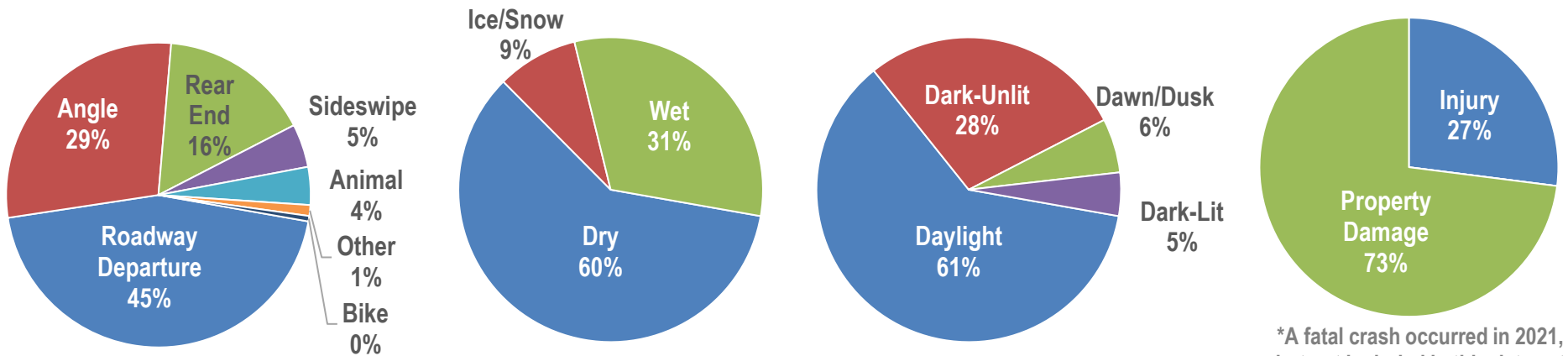
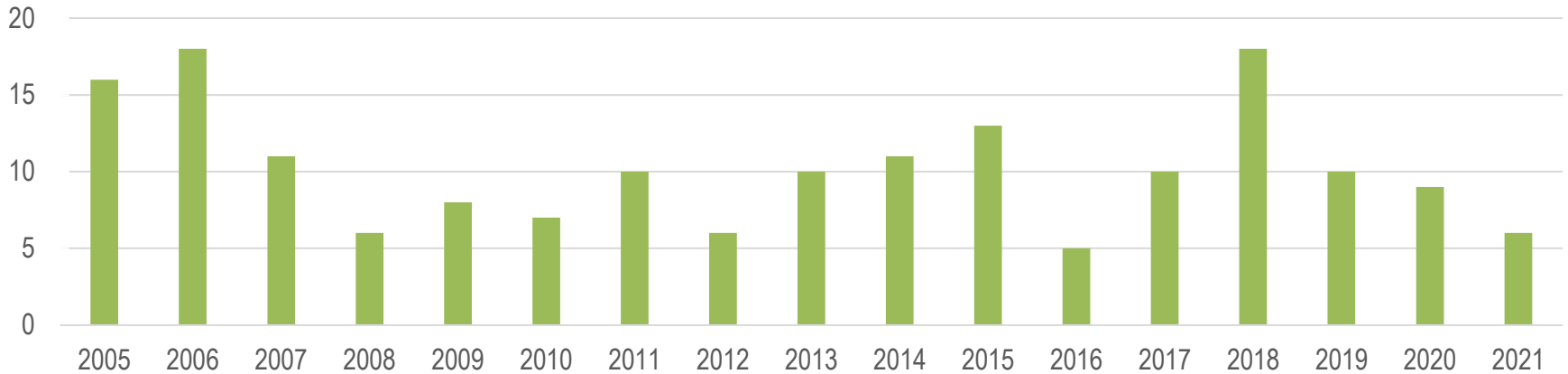


# Old County Road Corridor

## Crash Summary

1/1/2005 – 9/1/2021: 174 crashes

Old County Road Corridor Crashes by Year



\*A fatal crash occurred in 2021, but not included in this data set

# Old County Road: State Line to West of Curve

## Existing Conditions

- Two-lane roadway with no shoulders
- EB lane width – 10 feet; WB lane width – 8 feet
- No lighting or pedestrian accommodations present
- 35 MPH posted speed limit



# Old County Road: State Line to West of Curve

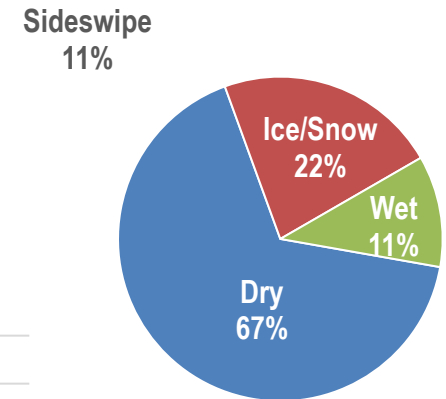
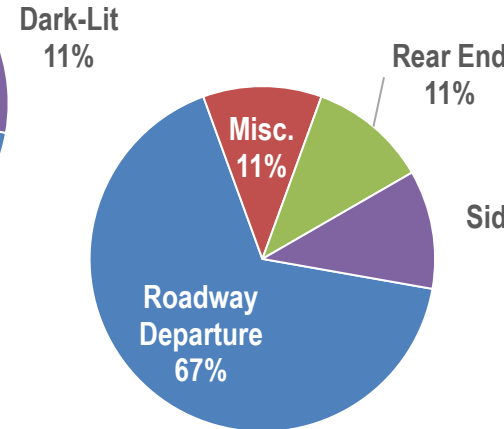
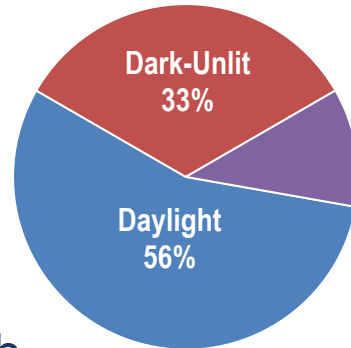
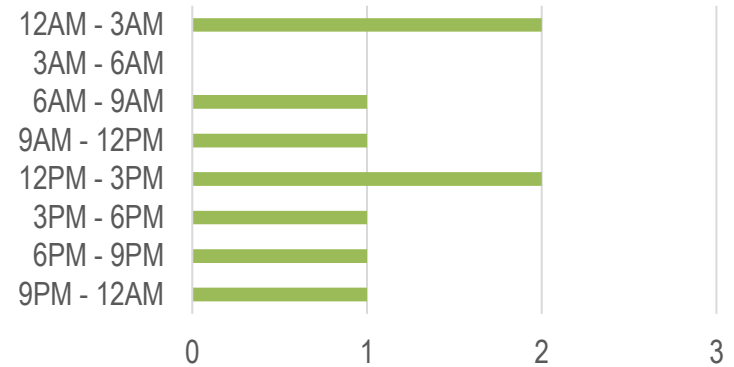
## Crash Summary

1/1/2005 – 9/1/2021:

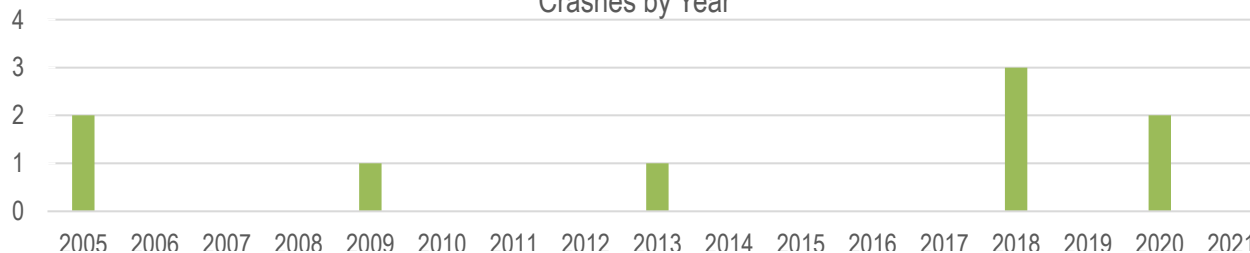
**9 crashes**

- 6 roadway departure crashes
  - 2 struck trees (1 involving alcohol)
  - 2 rollovers
  - 1 struck utility pole
  - 1 unknown strike
- 1 rear end crash
- 1 vehicle / ATV crash
- 1 opposite direction sideswipe crash

Time of Day Crashes



Crashes by Year

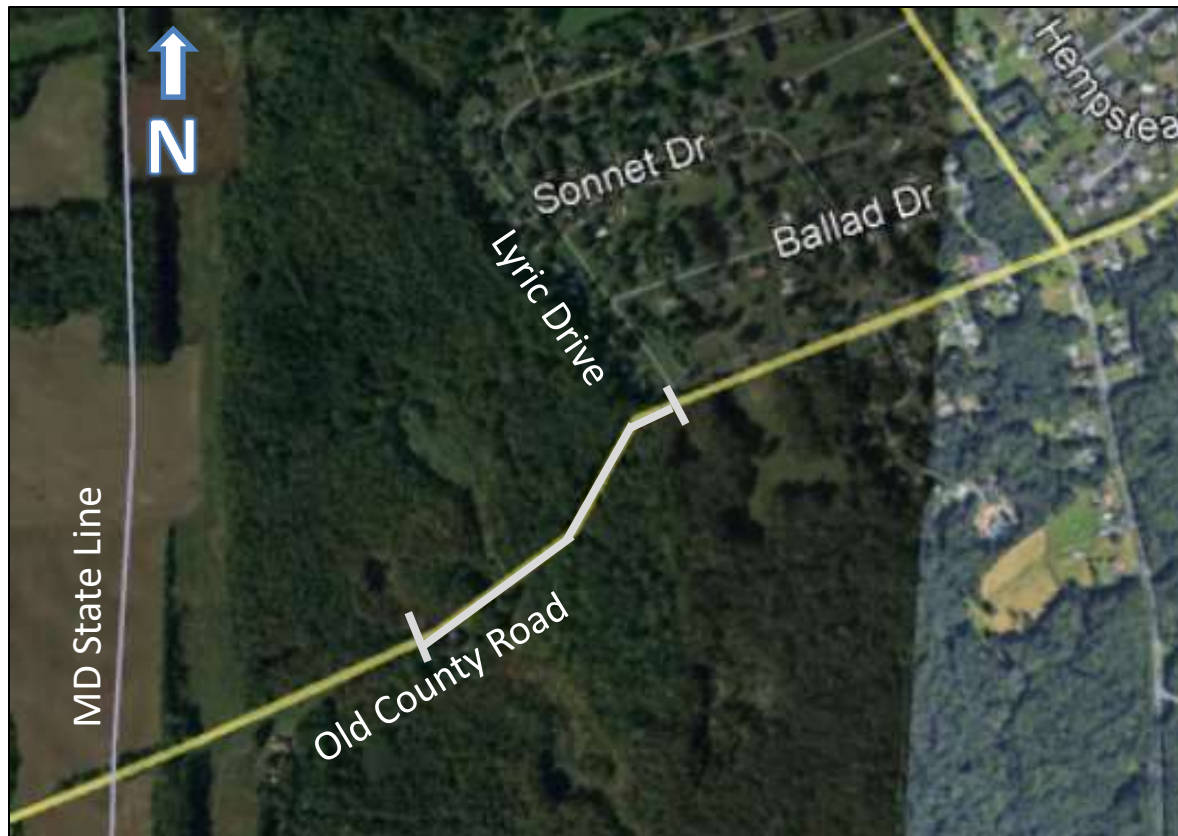




# Old County Road: Curve west of Lyric Drive

## Existing Conditions

- Two-lane roadway with no shoulders
- EB lane width varies from 9.5 – 11 feet
- WB lane width varies from 8 – 11 feet
- No lighting or pedestrian accommodations present
- 35 MPH posted speed limit



# Old County Road: Curve west of Lyric Drive

Existing Conditions

Old County Road  
Westbound Approach



Old County Road  
Eastbound Approach

# Old County Road: Curve west of Lyric Drive

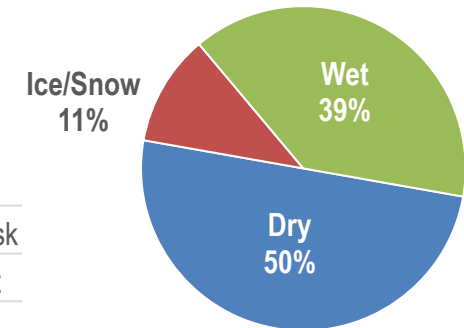
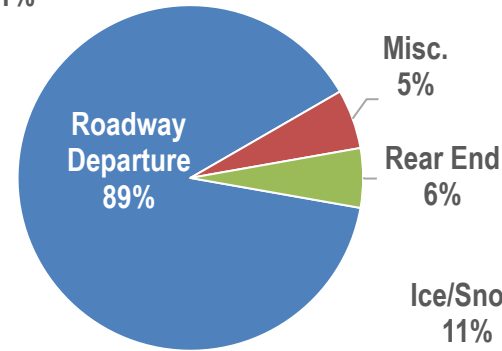
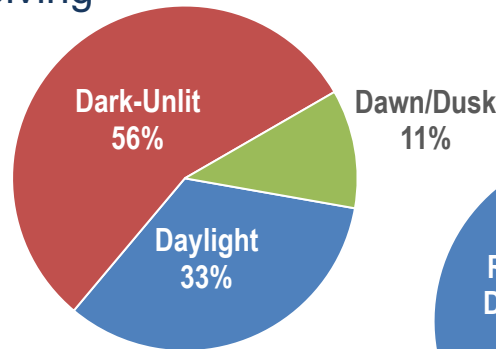
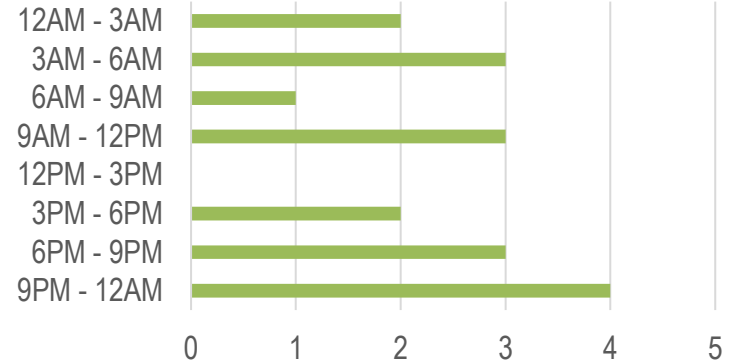
## Crash Summary

1/1/2005 – 9/1/2021:

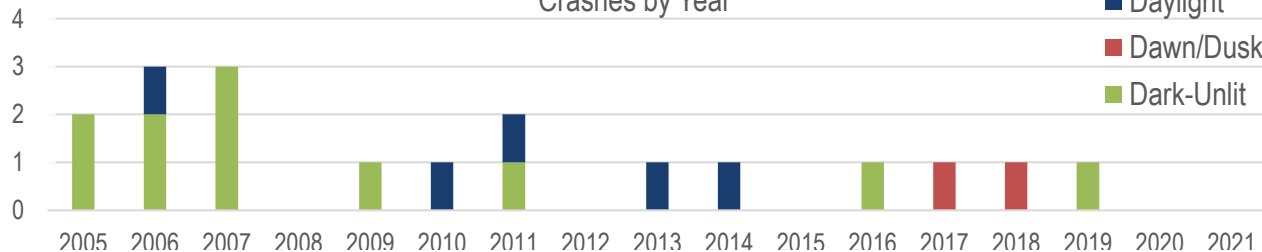
18 crashes

- 16 roadway departure crashes
  - 7 struck trees (1 involving alcohol)
  - 6 struck utility poles
  - 2 rollovers
  - 1 struck guardrail
- 1 rear end crash
- 1 crash involving a motorcycle avoiding a vehicle

Time of Day Crashes



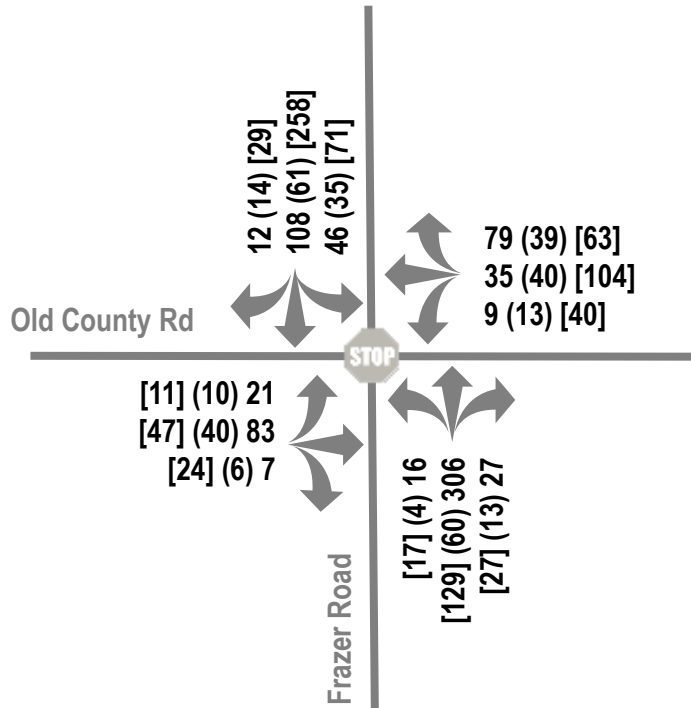
Crashes by Year



# Old County Road at Frazer Road

## Existing Conditions

- All-way stop controlled intersection (installed 2003)
- Single lane approaches with no shoulders in all directions
- Intersection does not meet lighting warrants
- Traffic count conducted on Thursday January 9, 2020



AM: 7:00 – 8:00 AM  
(MID): 11:30 AM – 12:30 PM  
[PM]: 4:30 – 5:30 PM





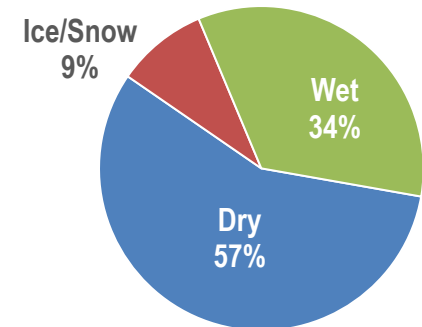
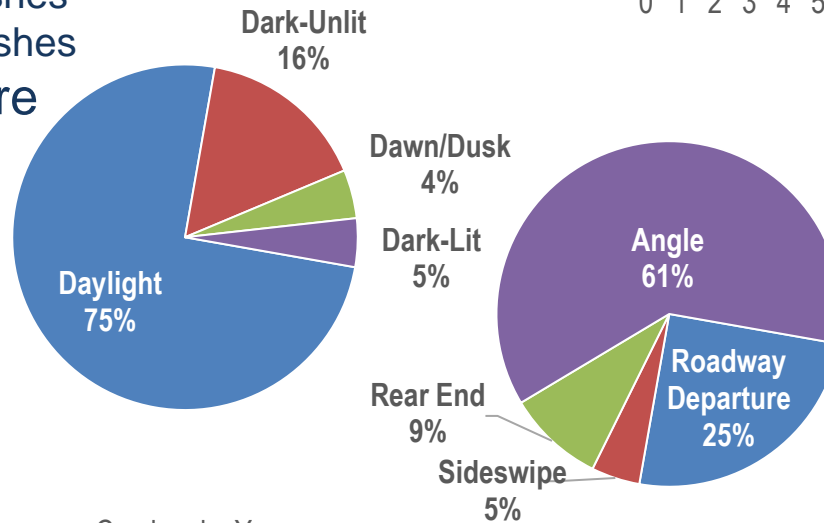
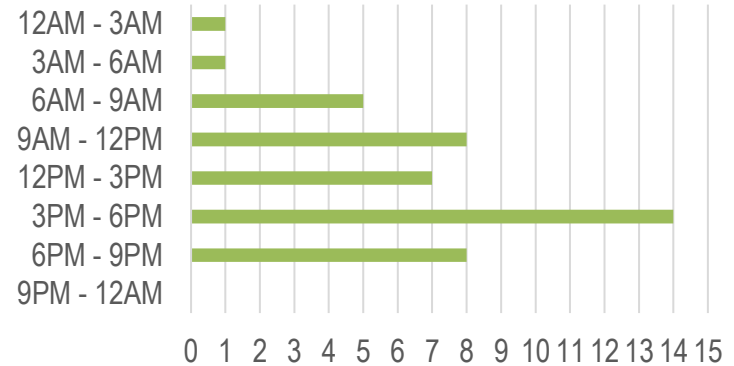
# Old County Road at Frazer Road

## Crash Summary

**1/1/2005 – 9/1/2021: 44 crashes**

- 27 angle crashes
  - 8 NB / WB angle crashes
  - 7 angle crashes with unknown directions
  - 6 NB / EB angle crashes
  - 6 SB / WB angle crashes
- 11 roadway departure crashes
  - 6 into ditch
  - 4 struck utility poles
  - 1 struck tree
- 4 rear end crashes
- 2 opposite direction sideswipe crashes

Time of Day Crashes



Crashes by Year



# Old County Road at Frazer Road

## Traffic Signal Warrant Analysis

- No signal warrants are met
- Capacity and delay remains consistent with AWSC (Level of Service A/B)
- Installation of unwarranted signal likely to increase speeding and crash frequency/severity

\* Note: Reduced volume thresholds are used when the 85<sup>th</sup> percentile speed on the major approach is greater than 40 MPH. A speed study was not conducted; however, the warrants were checked with reduced volume thresholds and are shown in the chart.

DE MUTCD Warrant	Criteria			No. of Hours Meets Criteria (Warrants 1, 2, 4)		Warrant Criteria Met?
	Major Street Volume (VPH)	Minor Street Volume (VPH)	No. of Hours Required	Actual Conditions (Warrant 3)		
<b>1 – Eight-Hour Vehicular Volume</b>	<i>(Any of the three conditions must be met)</i>					
Cond. A – Min. Vehicular Volume	350	105	8	3	No	No
Cond. B – Interruption of Cont. Traffic	525	53	8	0	No	
Cond. C – Combination of Conditions <ul style="list-style-type: none"> <li>80% of Condition A</li> <li>80% of Condition B</li> </ul>	280 420	84 43	8 8	3 3	No	
<b>2 – Four-Hour Vehicular Volume</b>	(See Figure 4C-1 or 4C-2)		4	3		No
<b>3 – Peak Hour</b>	<i>(Either of the two conditions must be met)</i>					
Condition A	Delay $\geq$ 4 Veh.-Hrs. Approach Volume $\geq$ 100 vph Entering Volume $\geq$ 800 vph		1	0	No	N/A
Condition B	(See Figure 4C-3 or 4C-4)		1	0	No	
<b>4 – Pedestrian Volume</b>	<i>(Both of the two conditions must be met)</i>					
Condition A	(See Figure 4C-5 or 4C-6)		4	0	No	No
Condition B	(See Figure 4C-7 or 4C-8)		1	0	No	
<b>5 – School Crossing</b>	(Refer to DE MUTCD Section 4C.06 for Criteria)			-		N/A
<b>6 – Coordinated Signal System</b>	(Refer to DE MUTCD Section 4C.07 for Criteria)			-		N/A
<b>7 – Crash Experience</b>	(Refer to DE MUTCD Section 4C.08 for Criteria)			-		No
<b>Alternative 7 – Crash Experience</b>	(Refer to MUTCD Interim Approval, IA-19 for Criteria)			-		No
<b>8 – Roadway Network</b>	(Refer to DE MUTCD Section 4C.09 for Criteria)			-		N/A
<b>9 – Intersection Near a Grade Crossing</b>	(Refer to DE MUTCD Section 4C.10 for Criteria)			-		N/A

# Old County Road: Farmington Ave to Bar Dr

## Existing Conditions

- Two-lane roadway with no shoulders
- EB / WB lane widths – 10.5 feet
- No lighting or pedestrian accommodations present
- 40 MPH posted speed limit



# Old County Road: Farmington Ave to Bar Dr

Existing Conditions

Old County Road  
Westbound Approach



Old County Road  
Eastbound Approach



# Old County Road: Farmington Ave to Bar Dr

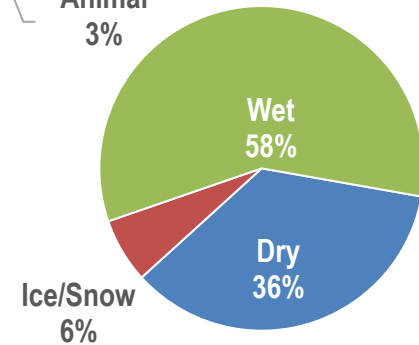
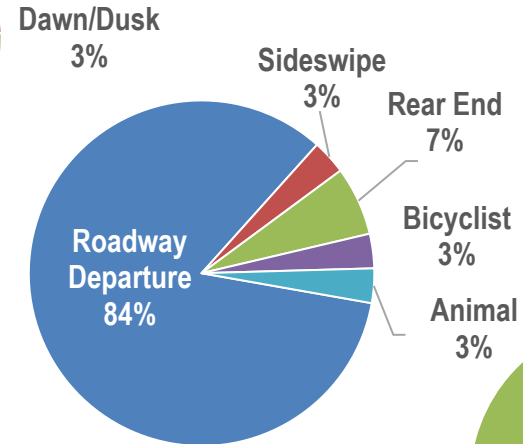
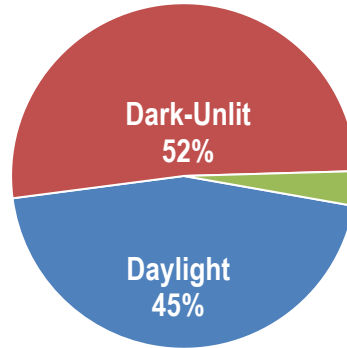
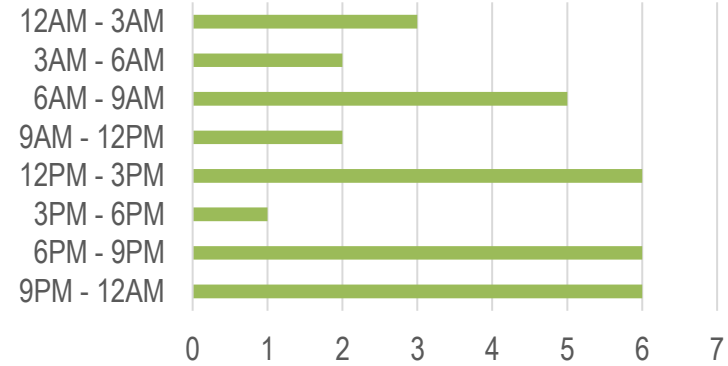
## Crash Summary

**1/1/2005 – 9/1/2021:**

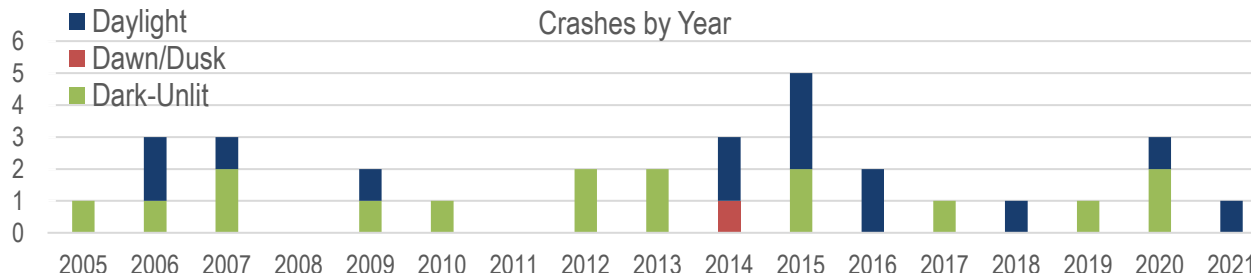
**31 crashes\***

- 26 roadway departure crashes
  - 9 struck trees (1 involving alcohol)
  - 5 struck mailboxes (1 involving alcohol)
  - 5 struck utility poles
  - 3 struck miscellaneous objects (1 involving alcohol)
  - 2 struck signs
  - 2 into ditch
- 2 rear end crashes
- 1 crash involving a bicyclist
- 1 same direction sideswipe crash
- 1 crash involving a deer

Time of Day Crashes



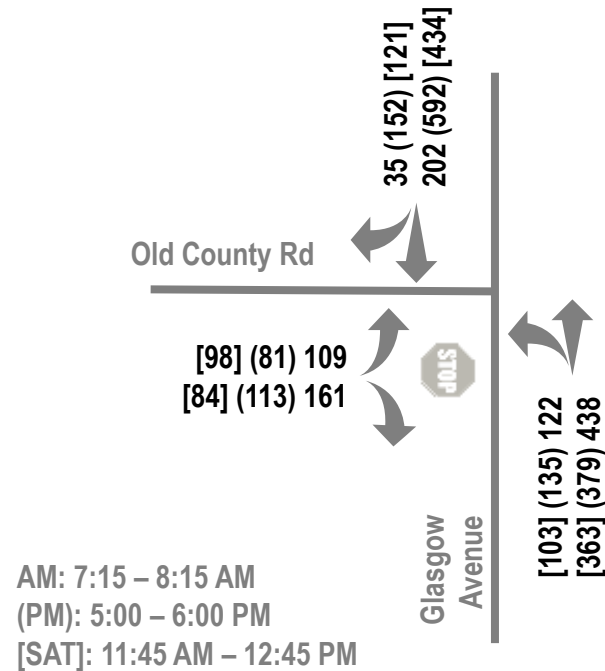
\*Does not include recent fatal crash



# Old County Road at Glasgow Avenue

## Existing Conditions

- Old County Road is stop-controlled
- Dedicated right and left turns off Glasgow Avenue
- Shoulders present along Glasgow Avenue
- Multi-use path located on the south side of Old County Road
- Traffic counts conducted on Tuesday April 21, 2015 & Saturday April 18, 2015
- CTP Project and WILMAPCO efforts recommend a roundabout



# Old County Road at Glasgow Avenue

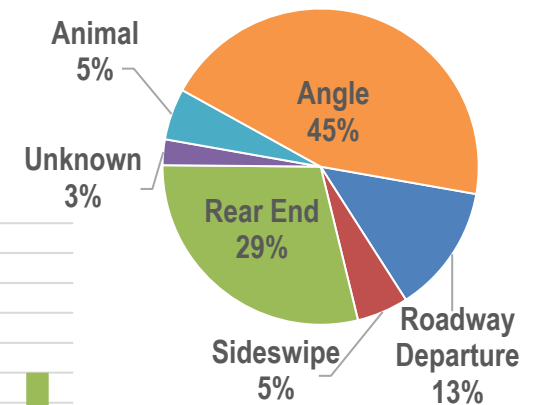
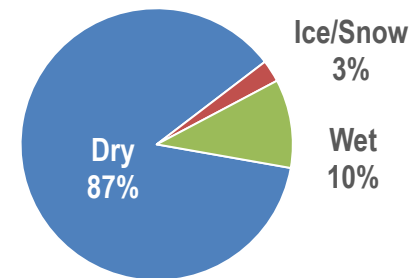
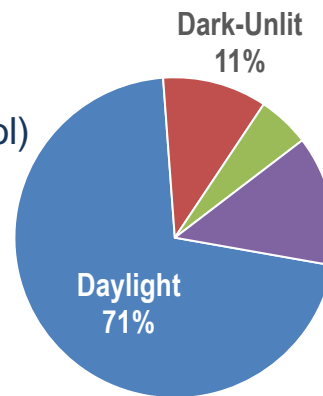
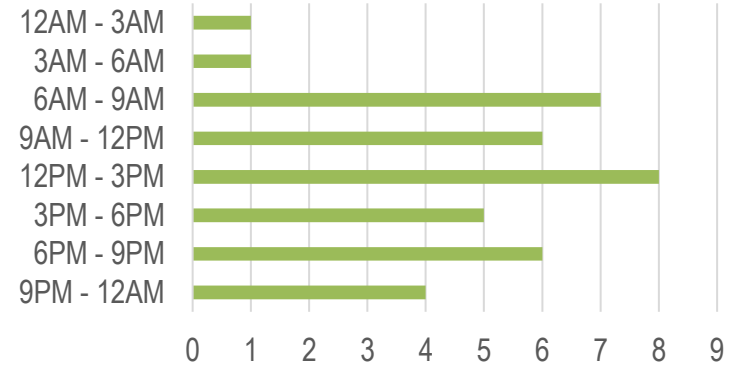
## Crash Summary

**1/1/2005 – 9/1/2021:**

**38 crashes**

- 17 angle crashes
  - 13 EB L / SB T angle crashes (1 involving alcohol)
  - 3 EB L / NB T angle crashes
  - 1 unknown angle crash
- 11 EBR rear end crashes
- 5 roadway departure crashes
  - 2 struck trees (1 involving alcohol)
  - 2 struck signs
  - 1 into ditch involving alcohol
- 2 crashes involving deer
- 2 opposite direction sideswipe crashes
- 1 unknown crash

Time of Day Crashes



Crashes by Year



# Old County Road at Glasgow Avenue

## Traffic Control Analysis

	Two-Way Stop Controlled (Existing) AM / PM	All-Way Stop Controlled AM / PM	Roundabout* AM / PM
EB Delay (LOS)	28.8 sec (D) / 76.6 sec (F)	13.9 sec (B) / 13.7 sec (B)	7.7 sec (A) / 11.7 sec (B)
EB Queue Length 95 <sup>th</sup>	122 feet / 184 feet	50 feet / 18 feet	20 feet / 40 feet
NBL Delay (LOS)	8.0 sec (A) / 9.5 sec (A)	11.0 sec (B) / 12.1 sec (B)	12.6 sec (B) / 10.6 sec (B)
NBL Queue Length 95 <sup>th</sup>	8 feet / 14 feet	18 feet / 22 feet	80 feet / 60 feet
NBT Delay (LOS)	-	25.4 sec (D) / 23.2 sec (C)	12.6 sec (B) / 10.6 sec (B)
NBT Queue Length 95 <sup>th</sup>	-	142 feet / 116 feet	80 feet / 60 feet
SBT Delay (LOS)	-	12.9 sec (B) / 85.7 sec (F)	6.4 sec (A) / 24.8 sec (C)
SBT Queue Length 95 <sup>th</sup>	-	36 feet / 380 feet	20 feet / 220 feet
Intersection Delay (LOS)	8.2 sec (A) / 11.1 sec (B)	18.0 sec (C) / 45.0 sec (E)	10.0 sec (A) / 18.0 sec (C)

\*CTP Project and WILMAPCO efforts recommend a roundabout



# Old County Road Corridor

## Recent Improvements

*Installed April 21, 2021*

- Old County Road Corridor
  - Installed edge lines along Old County Road between the Maryland State Line and Glasgow Avenue
- Frazer Road Intersection
  - Installed “STOP” pavement markings on all approaches
  - Installed “STOP AHEAD” pavement markings on the northbound and southbound approaches
  - Upgraded existing 36 x 36 inches STOP and STOP AHEAD signs to 48 x 48 inches STOP and STOP AHEAD signs on all approaches

\*No crashes have occurred at the Frazer Road intersection since improvements were installed

Old County Road at Frazer Road  
Westbound Approach



Old County Road at Frazer Road  
Eastbound Approach



# Old County Road Corridor

## Recommendations

- **Curve west of Lyric Drive Roadway Segment**
  - Trim the trees & bushes throughout the curve to improve eastbound and westbound visibility (*coordination occurred Oct. 4*)
  - Install 10” edge lines throughout the curve (*completed by Oct. 13*)
  - Install “SLOW” & arrow pavements markings on the eastbound and westbound approaches to the curves (*completed by Oct. 22*)
- **Frazer Road Intersection**
  - Install Spin Alerts on the existing STOP signs on all approaches (*completed by Oct. 12*)
  - Trim the trees & bushes on the northeast corner of the intersection to improve southbound and westbound sight distance (*coordination occurred Oct. 4*)



# Old County Road Corridor

## Recommendations

- Farmington Avenue to Bar Drive Roadway Segment
  - Trim the trees & bushes throughout the curve to improve eastbound and westbound visibility (*coordination occurred Oct. 4*)
  - Install 10” edge lines throughout the curve (*completed by Oct. 13*)
  - Install “SLOW” & arrow pavements markings on the eastbound and westbound approaches to the curves (*completed by Oct. 22*)
  - Coordinate with the Guardrail Committee on improvements along the curve (*Committee meeting occurred Oct. 21*)
- Glasgow Avenue Intersection
  - Coordinate with the CTP and WILMAPCO efforts to design and install a single-lane roundabout to reduce angle crashes and improve safety at the intersection



# Old County Road Corridor

## Questions

Thank you for your time and interest in safety on Delaware's roadways.

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[Peter.Haag@delaware.gov](mailto:Peter.Haag@delaware.gov)  
(302) 659-4084

To Report a Road Condition: <https://deldot.gov/Traffic/ReportRoadCondition/index.shtml>  
Transportation Management Center: 302-659-4600 or #77