

# Auxiliary Lane Spreadsheet Updates



October 29, 2019  
DeIDOT Development Summit

# Presentation Outline

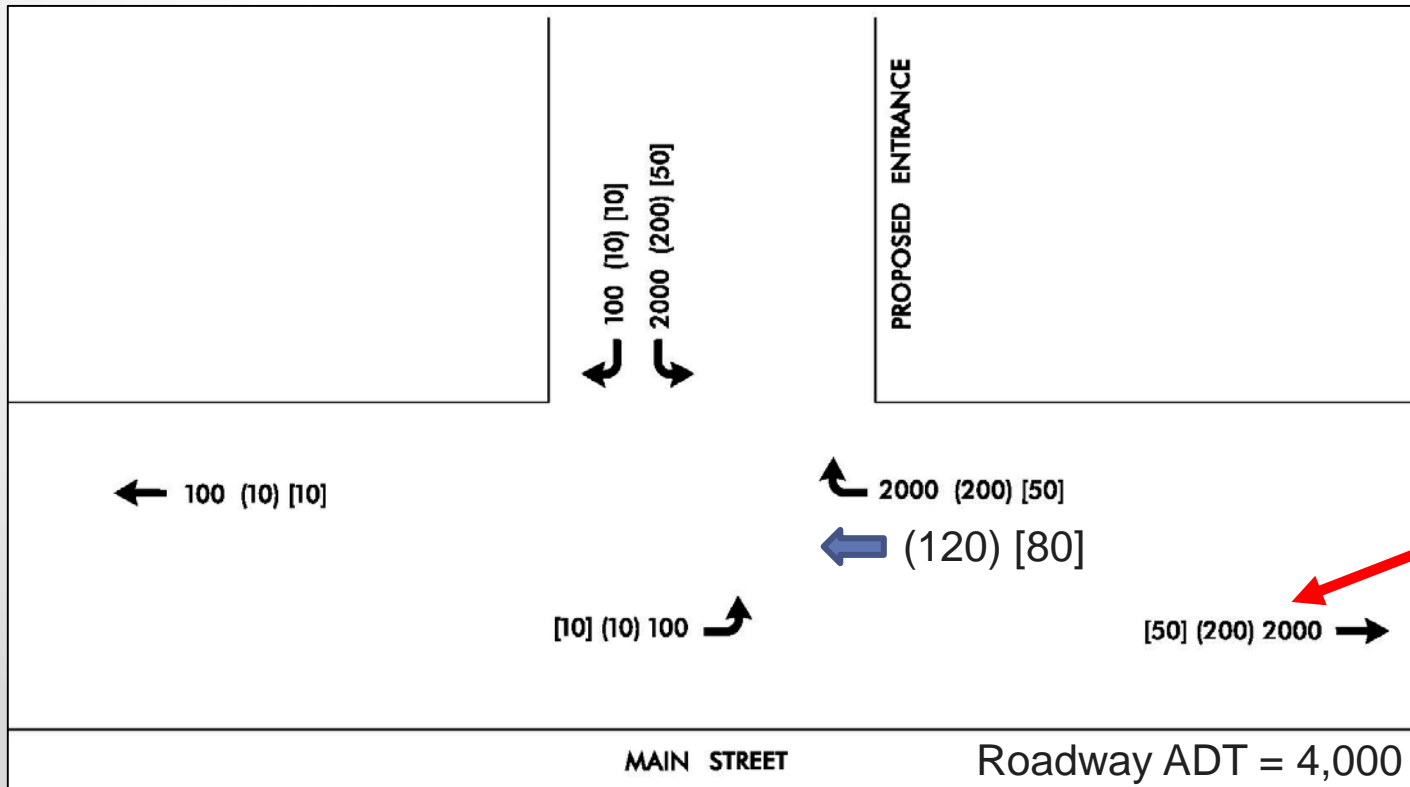
- Development Coordination Manual
  - Updates to Section 5.2.9 – Auxiliary Lanes
- New Spreadsheet Layout
- Example
- Questions

# Development Coordination Manual

- Section 5.2.9 Updates
  - Application of Methodology
    - ADT
  - Right Turn Channelization
  - Bypass Lane Warrants Table

# Development Coordination Manual

- Updated Application of ADT – Left Turn Lane Approach



[PM](AM)ADT  
[50](200)2000

# Development Coordination Manual

Roadway ADT + Site ADT

- Updated Application of ADT – Left Turn Lane Approach

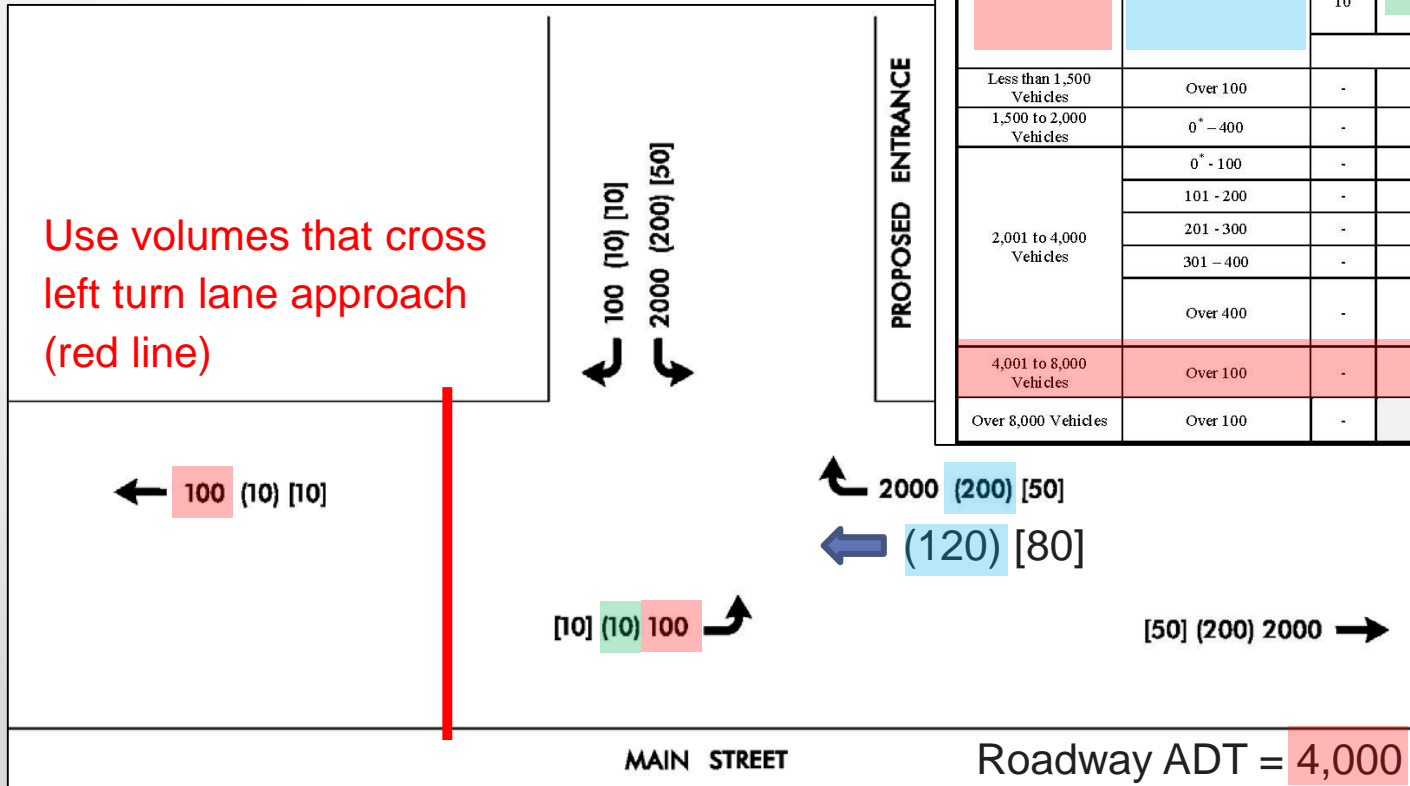


Figure 3- Bypass Lane Warrants

Projected 10-year Roadway AADT	Projected 10-Year Opposing Volume (vph)	Left-Turning Vehicles (vph)					
		Less than 10	10-14	15-20	21-30	31-40	Over 40
		Storage Length (feet)					
Less than 1,500 Vehicles	Over 100	-	-	-	50	50	50
1,500 to 2,000 Vehicles	0* - 400	-	-	50	50	50	50
2,001 to 4,000 Vehicles	0* - 100	-	50	50	50	50	See Left-Turn Lane Warrants
	101 - 200	-	50	50	50	50	
	201 - 300	-	50	50	50		
	301 - 400	-	50	50	50		
	Over 400	-	75	75			
4,001 to 8,000 Vehicles	Over 100	-	75				
Over 8,000 Vehicles	Over 100	-					

Bypass Lane Warranted

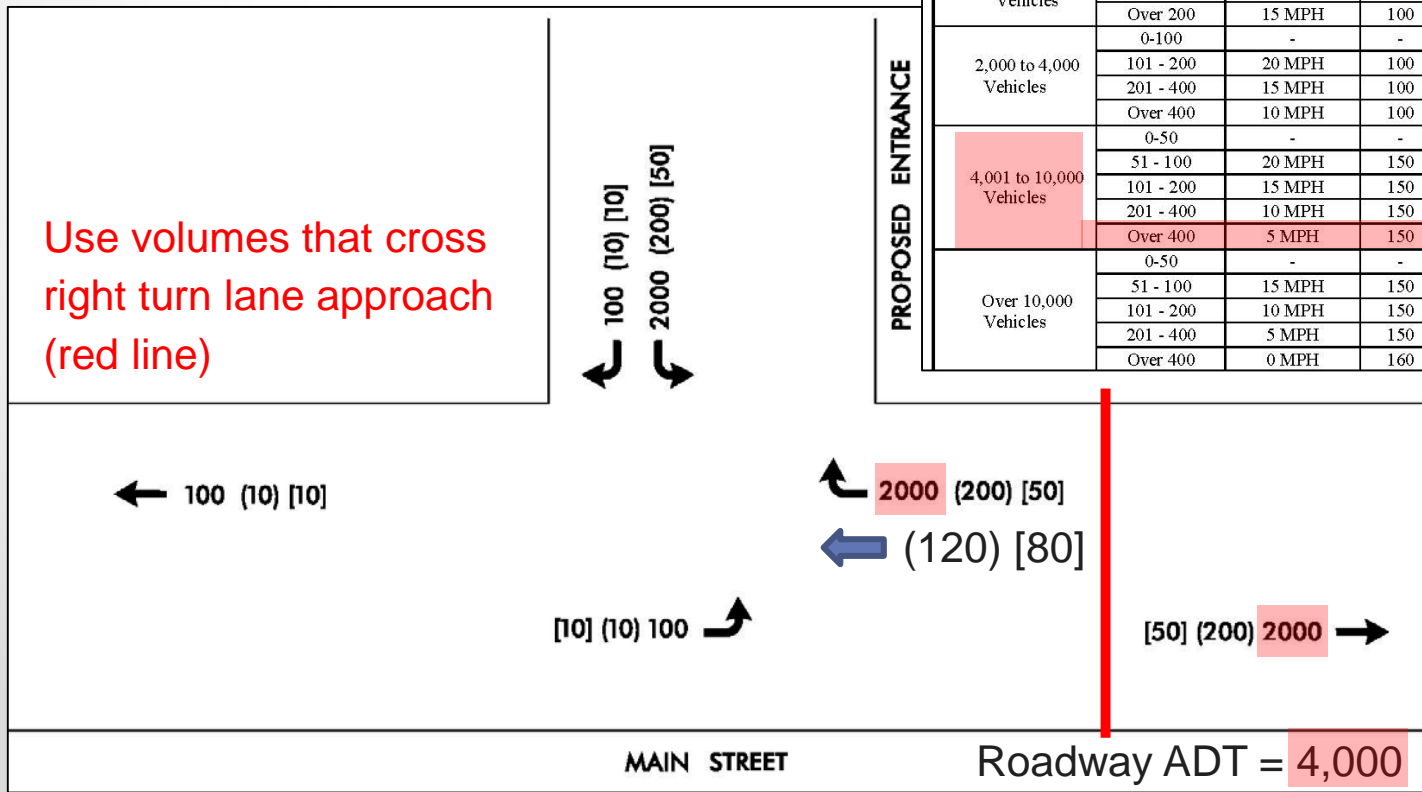
# Development Coordination Manual

Roadway ADT + Site ADT

- Updated Application of ADT – Right Turn Lane Approach

Figure 1- Right Turn Lane Warrants (R<50')

Projected 10-Year Roadway ADT	Right-turn ADT	Assumed Speed Change on Through Lane	Highway Posted Speed					
			25 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH
			Deceleration Length					
Less Than 2,000 Vehicles	0-100	-	-	-	-	-	-	-
	101 - 200	20 MPH	100	100	150	160	195	240
	Over 200	15 MPH	100	125	160	195	240	290
2,000 to 4,000 Vehicles	0-100	-	-	-	-	-	-	-
	101 - 200	20 MPH	100	100	150	160	195	240
	201 - 400	15 MPH	100	125	160	195	240	290
4,001 to 10,000 Vehicles	0-50	-	-	-	-	-	-	-
	51 - 100	20 MPH	150	150	150	160	195	240
	101 - 200	15 MPH	150	150	160	195	240	290
Over 10,000 Vehicles	201 - 400	10 MPH	150	160	195	240	290	340
	Over 400	5 MPH	150	195	240	290	340	400
	0-50	-	-	-	-	-	-	-
Over 10,000 Vehicles	51 - 100	15 MPH	150	150	160	195	240	290
	101 - 200	10 MPH	150	160	195	240	290	340
	201 - 400	5 MPH	150	195	240	290	340	400
	Over 400	0 MPH	160	240	290	340	400	460



Right Turn Lane Warranted

# Development Coordination Manual

- Right Turn Channelization

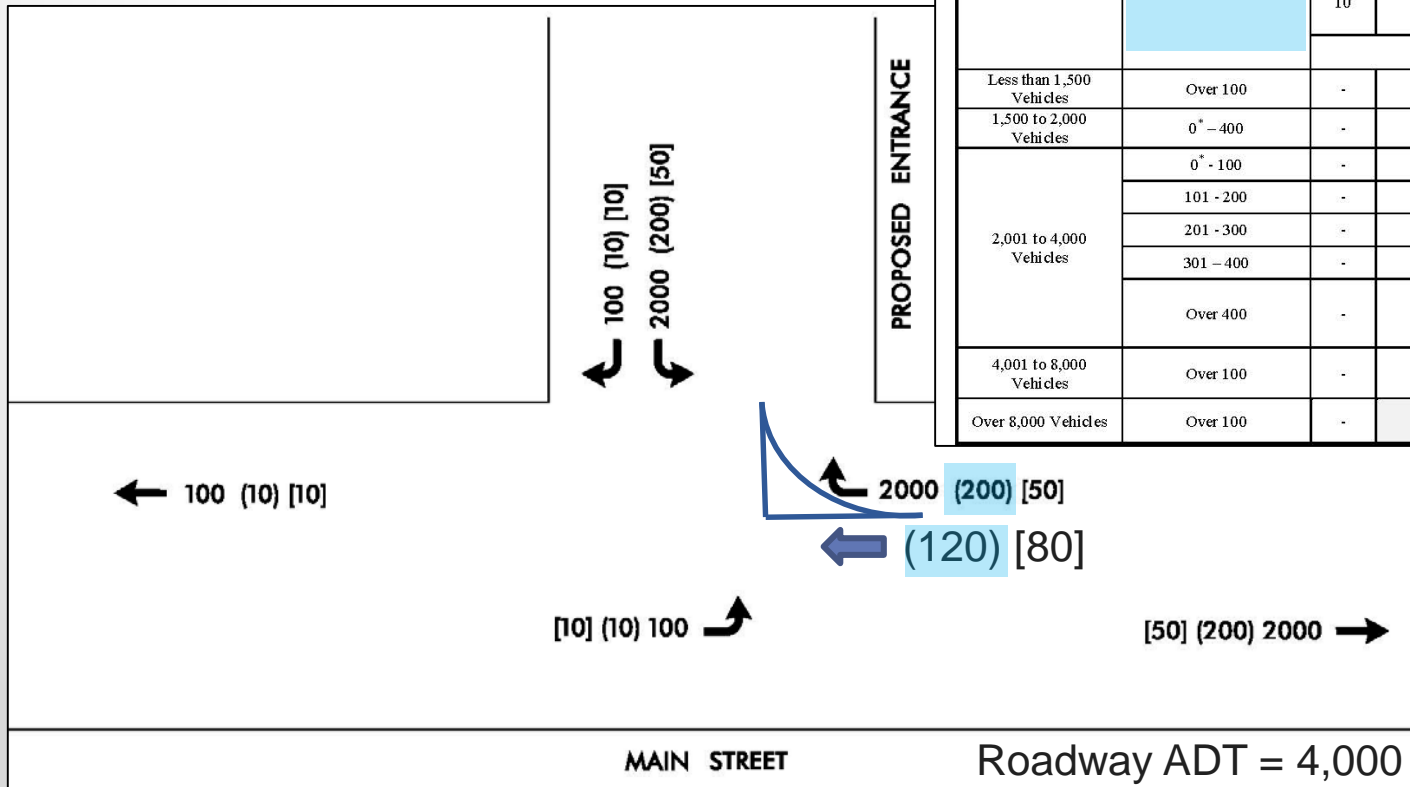


Figure 3- Bypass Lane Warrants

Projected 10-year Roadway AADT	Projected 10-Year Opposing Volume (vph)	Left-Turning Vehicles (vph)					
		Less than 10	10-14	15-20	21-30	31-40	Over 40
		Storage Length (feet)					
Less than 1,500 Vehicles	Over 100	-	-	-	50	50	50
1,500 to 2,000 Vehicles	0* - 400	-	-	50	50	50	See Left-Turn Lane Warrants
2,001 to 4,000 Vehicles	0* - 100	-	50	50	50	50	
	101 - 200	-	50	50	50	50	
	201 - 300	-	50	50	50		
	301 - 400	-	50	50	50		
	Over 400	-	75	75			
4,001 to 8,000 Vehicles	Over 100	-	75				
Over 8,000 Vehicles	Over 100	-					

# Development Coordination Manual

- Bypass Lane Warrants Table

Figure 5.2.9.2-a Bypass Lane Warrants

Projected 10-year Roadway AADT	Projected 10-Year Opposing Volume (vph)	Left-Turning Vehicles (vph)					
		Less than 10	10-14	15-20	21-30	31-40	Over 40
		Storage Length (feet)					
Less than 1,500 Vehicles	Over 100	-	-	-	50	50	50
1,500 to 2,000 Vehicles	0* - 400	-	-	50	50	50	See Left-Turn Lane Warrants
2,001 to 4,000 Vehicles	0* - 100	-	50	50	50	50	
	101 - 200	-	50	50	50	50	
	201 - 300	-	50	50	50		
	301 - 400	-	50	50	50		
	Over 400	-	75	75			
4,001 to 8,000 Vehicles	Over 100	-	75				
Over 8,000 Vehicles	Over 100	-					

See Left-Turn Lane Warrants - \*



# Development Coordination Manual

- Bypass Lane Warrants Table

- \* Left turn lane, (having the recommended queue storage length shown in the table for 50 vph), will be warranted on roadways for any combination of conditions that include; left-turning vehicle volume  $\geq 15$  vph and a projected 10 yr roadway AADT  $> 4,000$  and  $\leq 8,000$ .
- Left turn lane, (having the recommended queue storage length shown in the table for 50 vph), will be warranted on roadways for any combination of conditions that include; left-turning vehicle volume  $\geq 10$  vph and a projected 10 yr roadway AADT  $> 8,000$ .

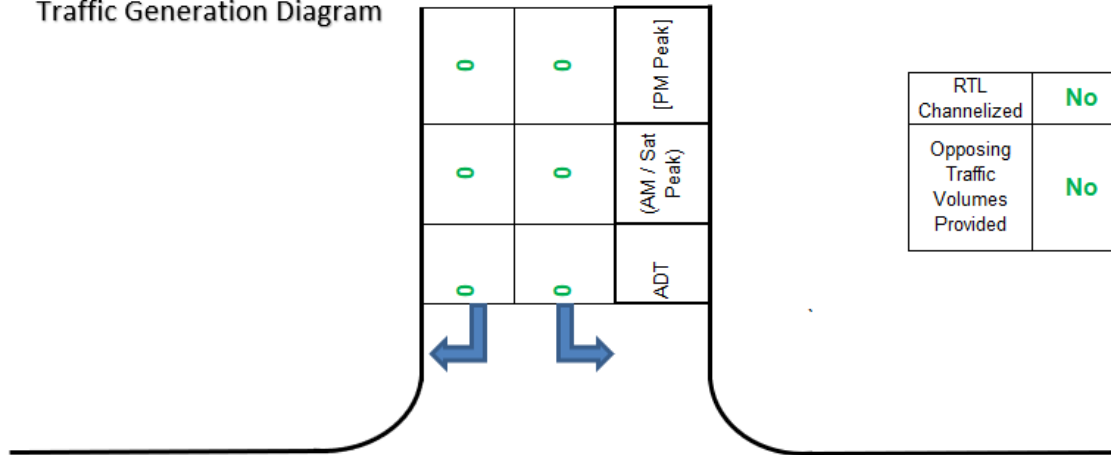
Figure 5.2.9.2-a Bypass Lane Warrants

Projected 10-year Roadway AADT	Projected 10-Year Opposing Volume (vph)	Left-Turning Vehicles (vph)					
		Less than 10	10-14	15-20	21-30	31-40	Over 40
		Storage Length (feet)					
Less than 1,500 Vehicles	Over 100	-	-	-	50	50	50
1,500 to 2,000 Vehicles	0' - 400	-	-	50	50	50	See Left-Turn Lane Warrants
2,001 to 4,000 Vehicles	0' - 100	-	50	50	50	50	
	101 - 200	-	50	50	50	50	
	201 - 300	-	50	50	50		
	301 - 400	-	50	50	50		
	Over 400	-	75	75			
4,001 to 8,000 Vehicles	<del>Over 100</del>	-	75				
Over 8,000 Vehicles	<del>Over 100</del>	-					

# New Spreadsheet Layout

Tab 1

Traffic Generation Diagram



RTL Channelized	No		
Opposing Traffic Volumes Provided	No	Opposing based on [AM / Sat] / (PM)	

[PM Peak]	(AM / Sat Peak)	ADT			
0	0	0			

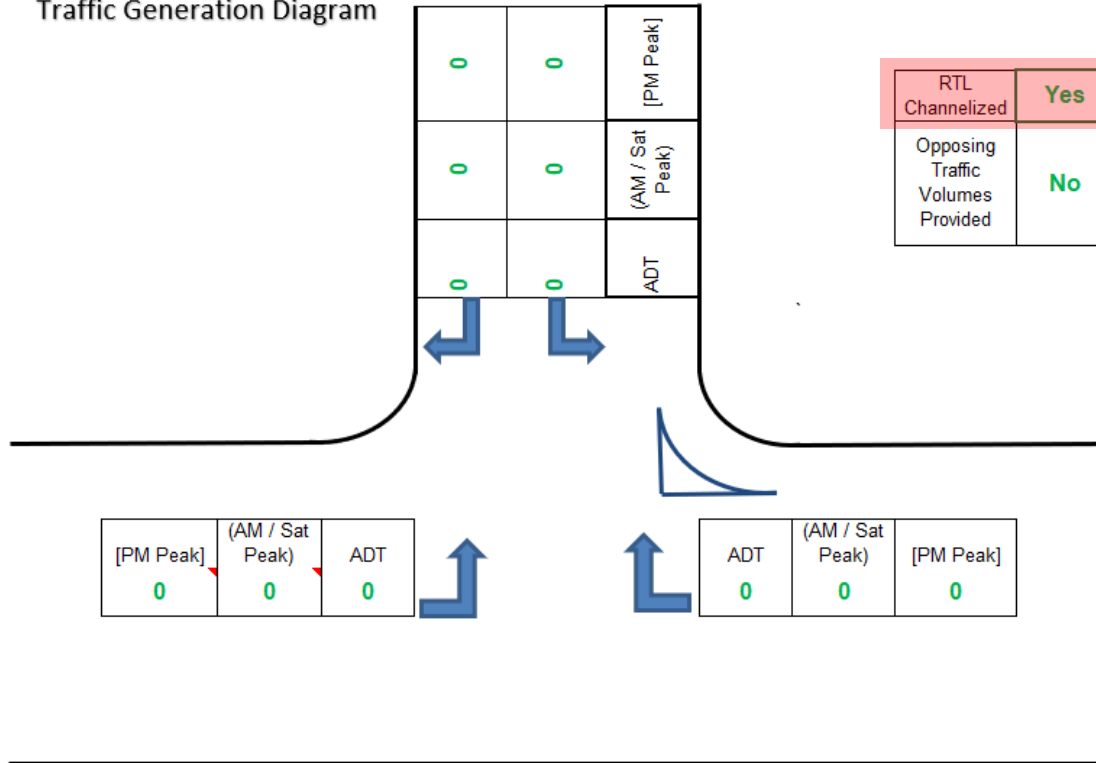
			ADT	(AM / Sat Peak)	[PM Peak]
			0	0	0

Roadway AADT From DeIDOT Traffic Summary:	0
Committed Development AADT:	0

# New Spreadsheet Layout

Tab 1

Traffic Generation Diagram

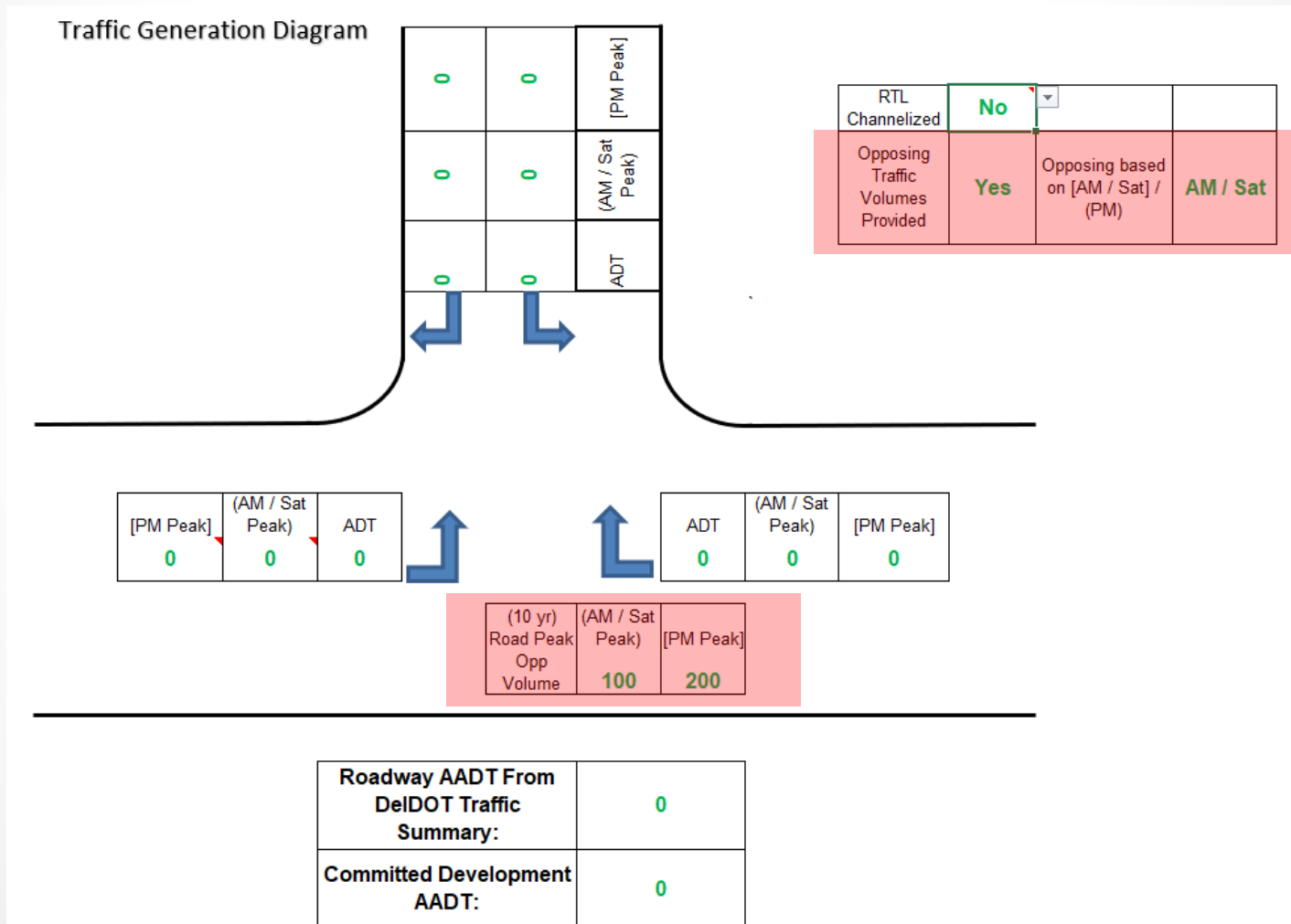


RTL Channelized	Yes	Reduction if Channelized	100%
Opposing Traffic Volumes Provided	No	Opposing based on [AM / Sat] / (PM)	

Roadway AADT From DelDOT Traffic Summary:	0
Committed Development AADT:	0

# New Spreadsheet Layout

Tab 1



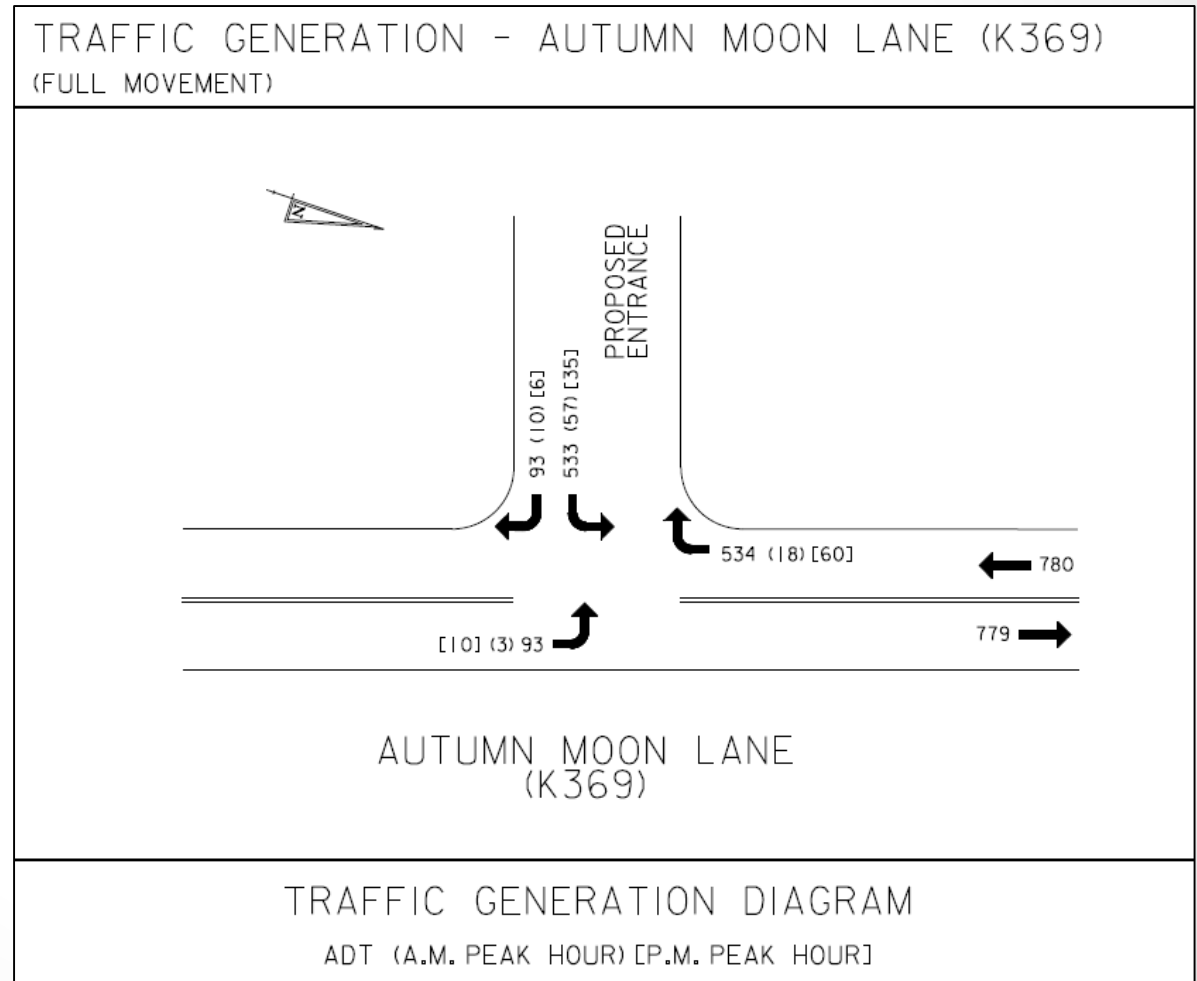
# New Spreadsheet Layout

Tab 2

DeIDOT Auxiliary Lane Worksheet										<table border="1"> <tr> <td>Manually Update Cell</td> <td>XX</td> </tr> <tr> <td>Auto-Calculated Cells</td> <td>XX</td> </tr> </table>		Manually Update Cell	XX	Auto-Calculated Cells	XX
Manually Update Cell	XX														
Auto-Calculated Cells	XX														
Name of Project		AAA		Date of Submittal		MM/DD/YYYY									
Maintenance Road No. (i.e. K234A)		(County)XXX		Road Name		XX									
Signalized / Unsignalized				Posted Speed Limit											
Roadway ADT (From DeIDOT Traffic Manual)				Traffic Pattern Group											
Left Approach Site ADT	Committed Development ADT	Total Left Approach ADT	0	Right Approach Site ADT	Committed Development ADT	Total Right Approach ADT	0								
Total Number of Through Lanes (Does Not Include Turn Lanes)				Number of intersection legs											
Roadway Functional Classification				Calculation for (specify leg)											
Left-Approach Projected 10 yr Roadway ADT + Total Site + Committed Development ADT				Right-Approach Projected 10 yr Roadway ADT + Total Site + Committed Development ADT											
K Factor				D Factor											
Left Turn Information				Right Turn Information											
Left Turn VPH				Right Turn ADT		0-50									
Left Turn Approach Grade				Right Turn Approach Grade											
Heavy Vehicle %				Effective Radius of Entrance											
10 Yr Opposing Vol. (Manual Input - Veh/hr)		100		Right Turn Length											
10 Yr Opposing Volume (Manual Input)		100 Veh/hr		<p>Select if Signalized / Unsignalized &amp; Select Right Turn Approach grade</p>											

# Example

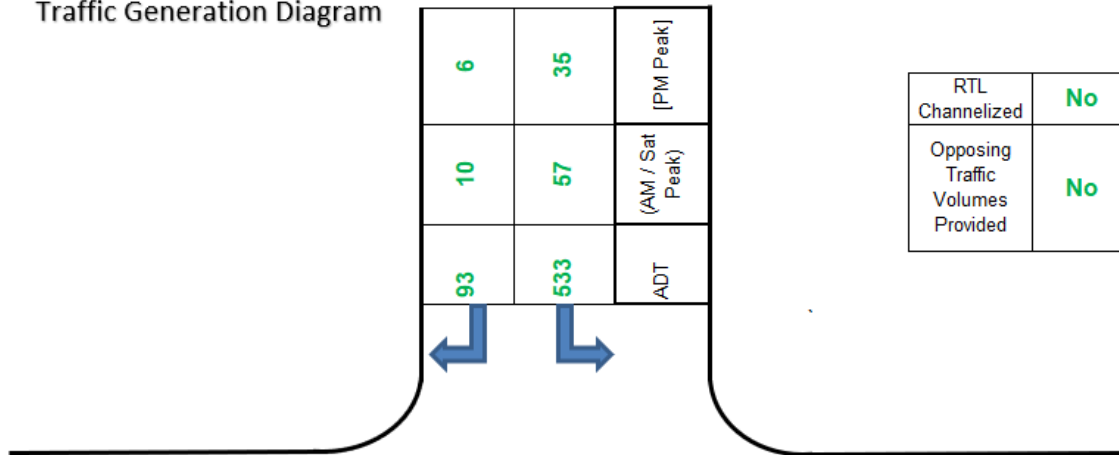
- Roadway  
AADT: 1,344
- TPG: 7
- Posted Speed  
Limit: 50 mph
- Functional  
Classification:  
Local



# Example

Tab 1

Traffic Generation Diagram



Roadway AADT From DeIDOT Traffic Summary:	1344
Committed Development AADT:	0





# Questions?

