



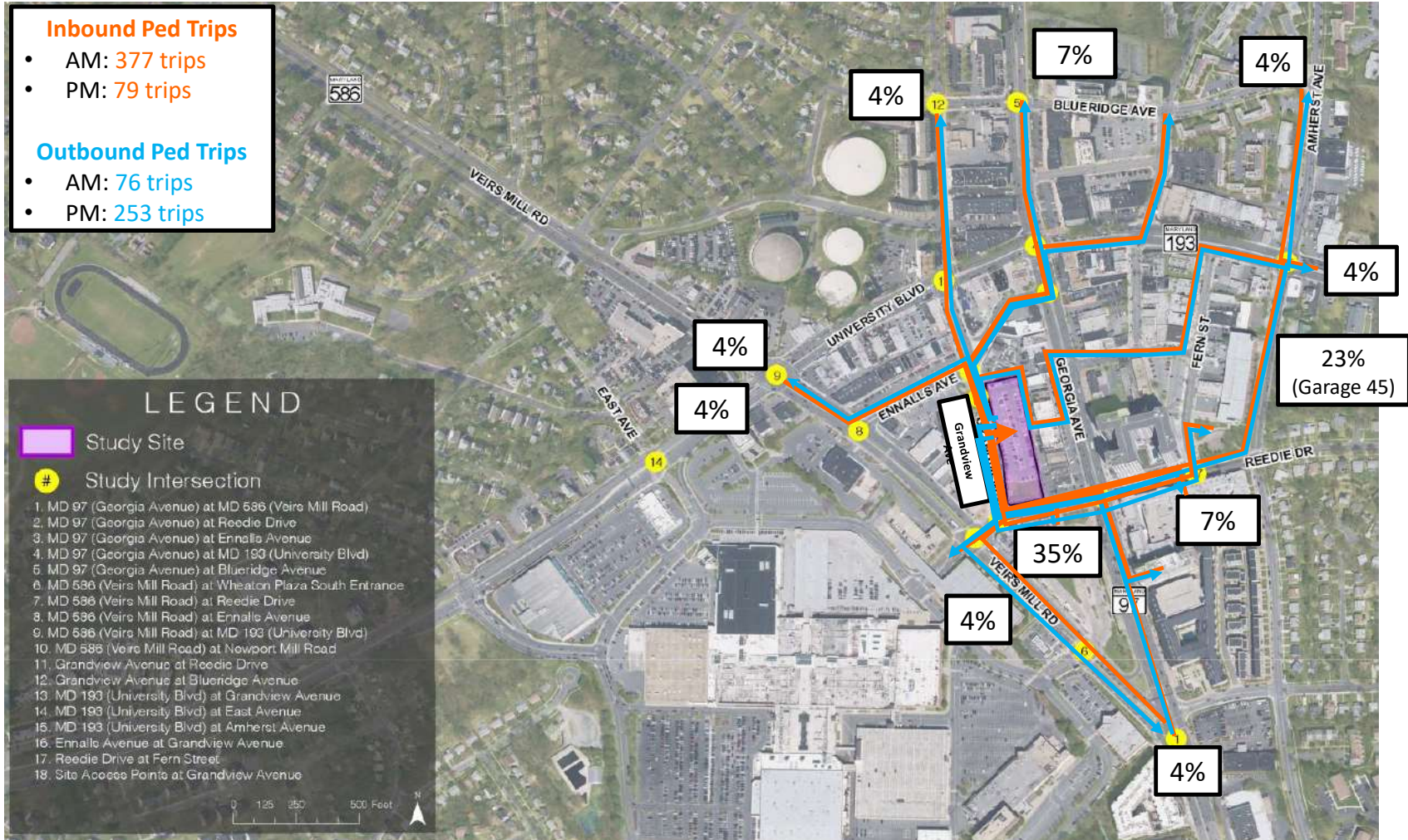
# Wheaton Triangle Reedie Drive Closure Impacts

February 11, 2020

# Montgomery County Department of Transportation Wheaton Redevelopment



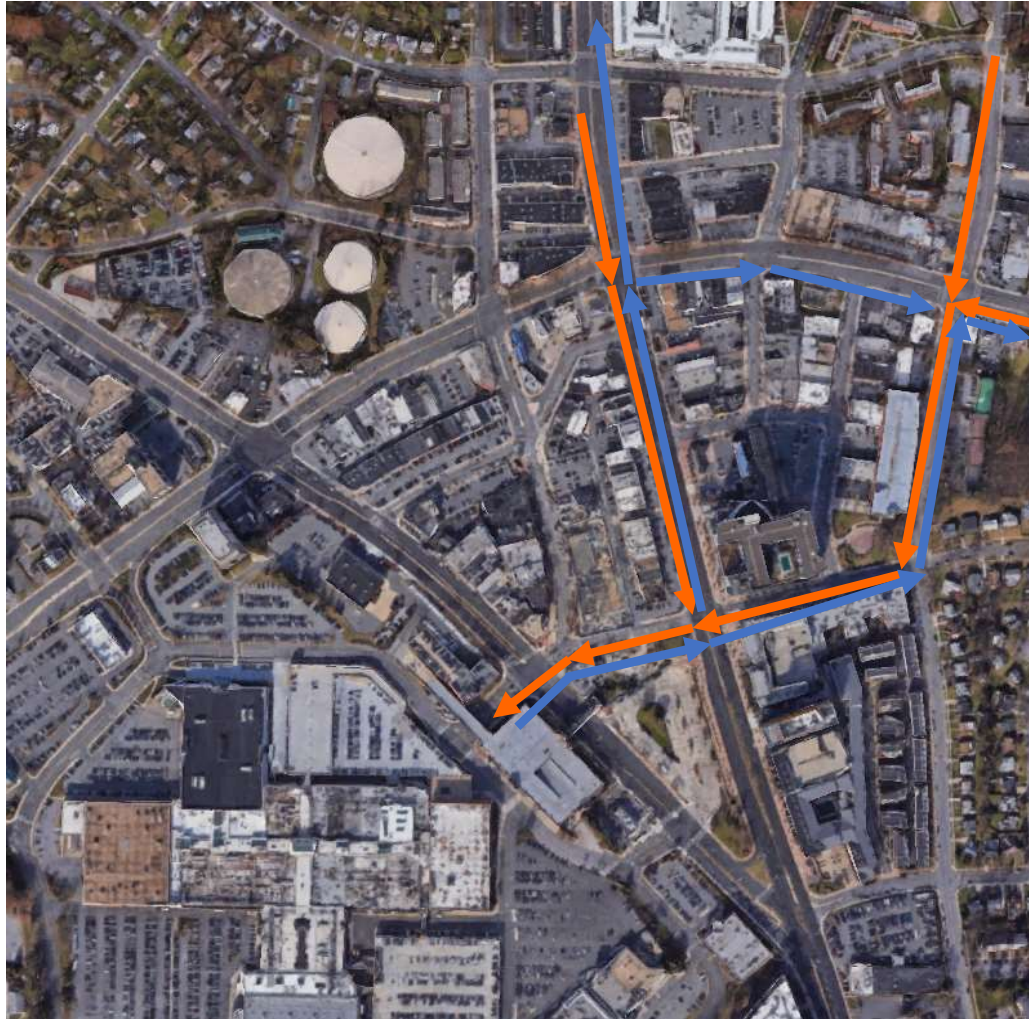
# Pedestrian Flows – Inbound and Outbound





## Vehicle Flows – Inbound and Outbound

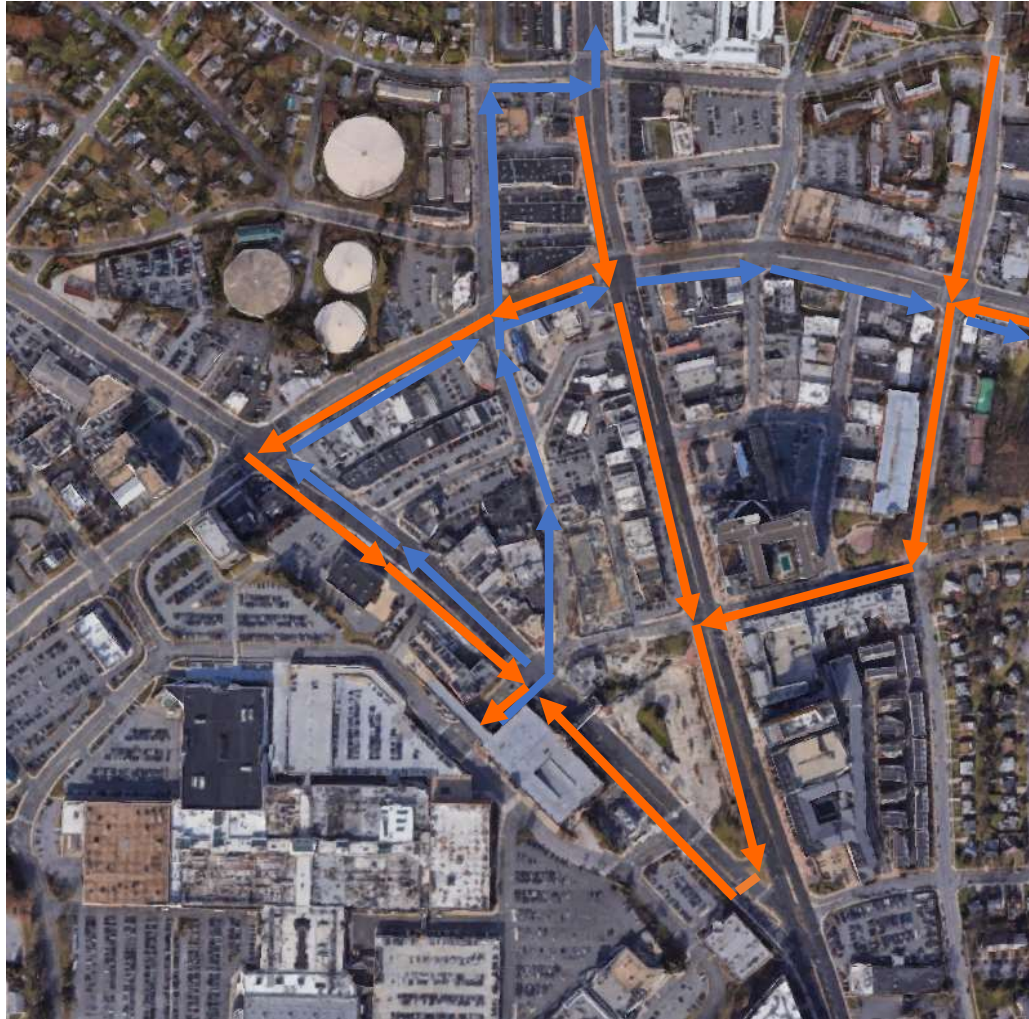
The majority of existing  
Reedie Drive traffic is  
accessing the Wheaton  
Mall



Reedie Drive Open

## Vehicle Flows – Inbound and Outbound

The majority of existing  
Reedie Drive traffic is  
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Mall

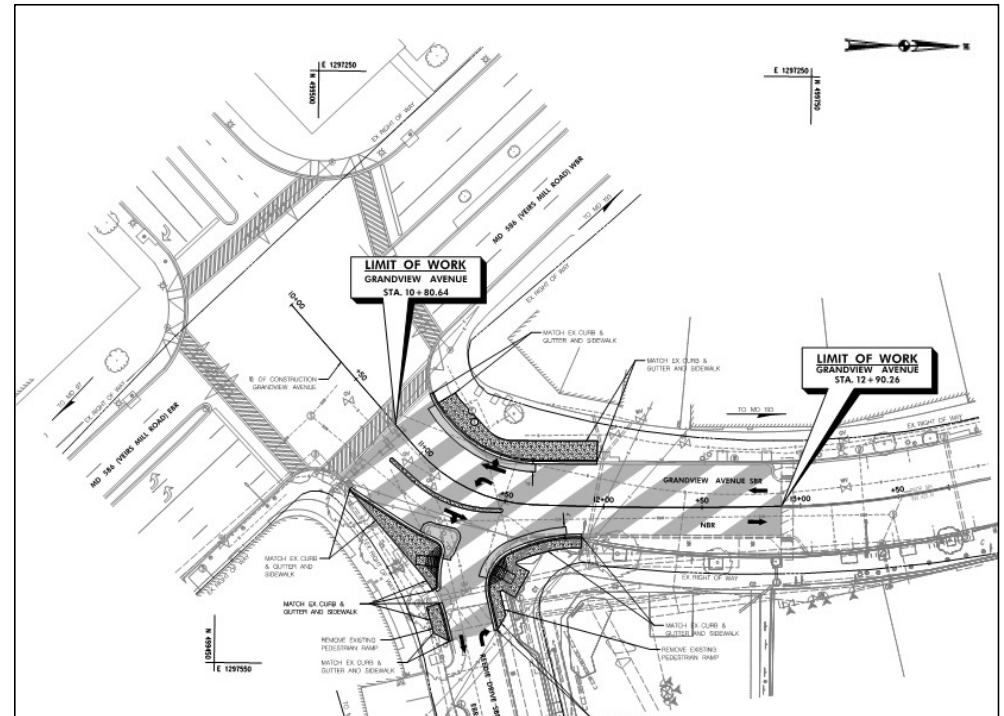


Reedie Drive Closed

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## Reedie Drive at Grandview Avenue Improvements

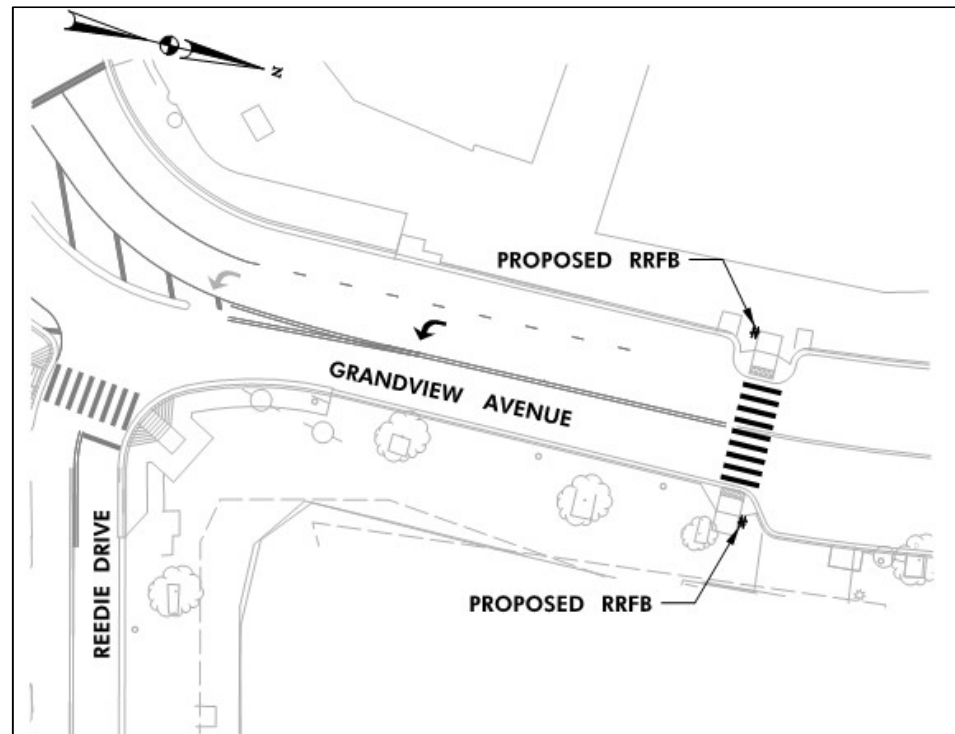
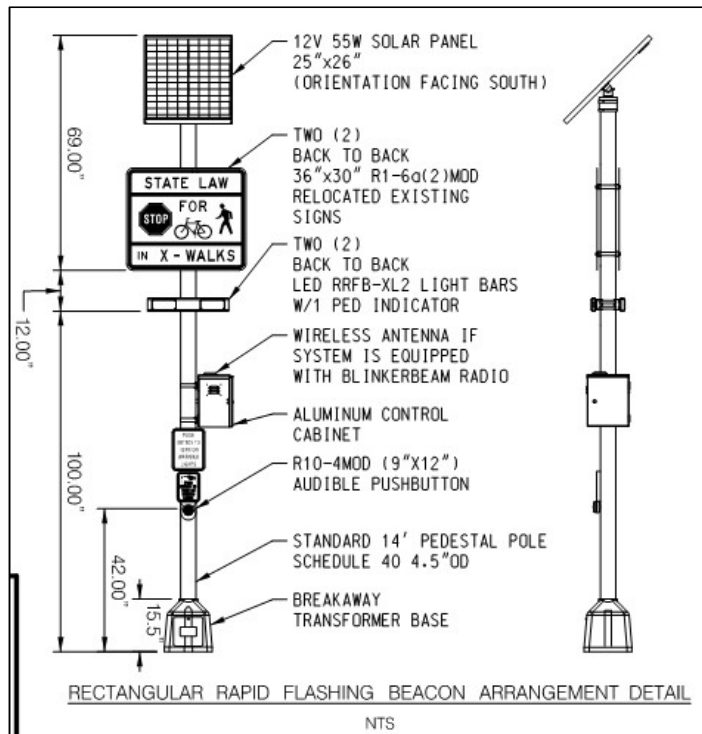
- Realign Grandview Avenue as the main street at Reedie Drive, removing the existing stop sign on Grandview Avenue
- Restripe the Grandview Avenue approach at MD 586 from the existing three lanes to two lanes (one left turn lane and one shared through/right turn lane)
- Install midblock crosswalk on Grandview Avenue and install Rectangular Rapid Flashing Beacon (RRFB) and associated signing at midblock crosswalk





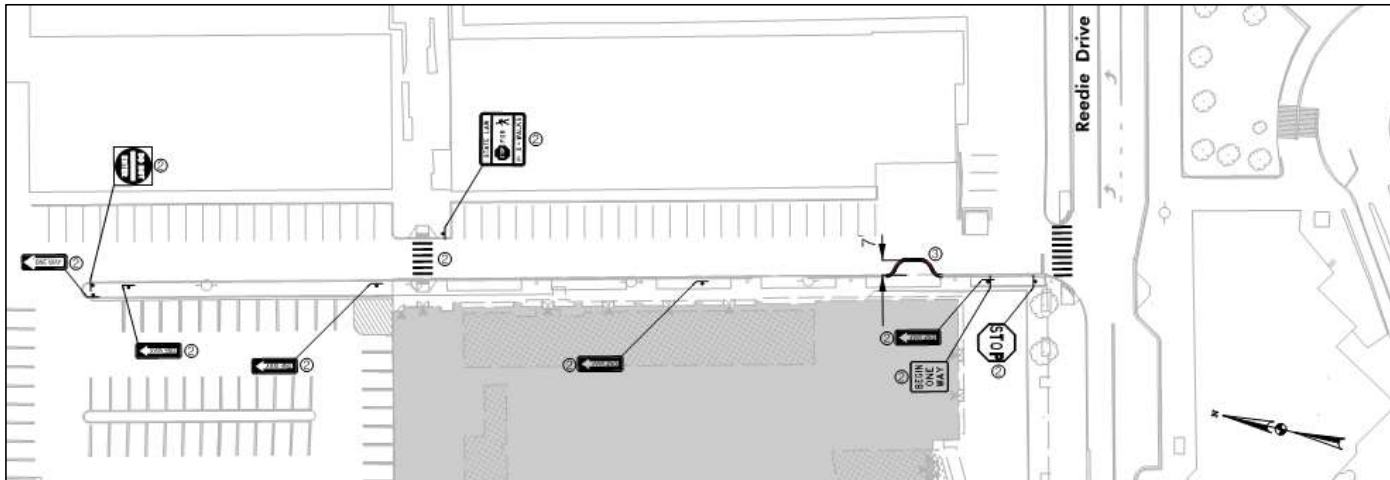
# Montgomery County Department of Transportation Wheaton Redevelopment

## Grandview Avenue Proposed RRFB Improvement



# Montgomery County Department of Transportation Wheaton Redevelopment

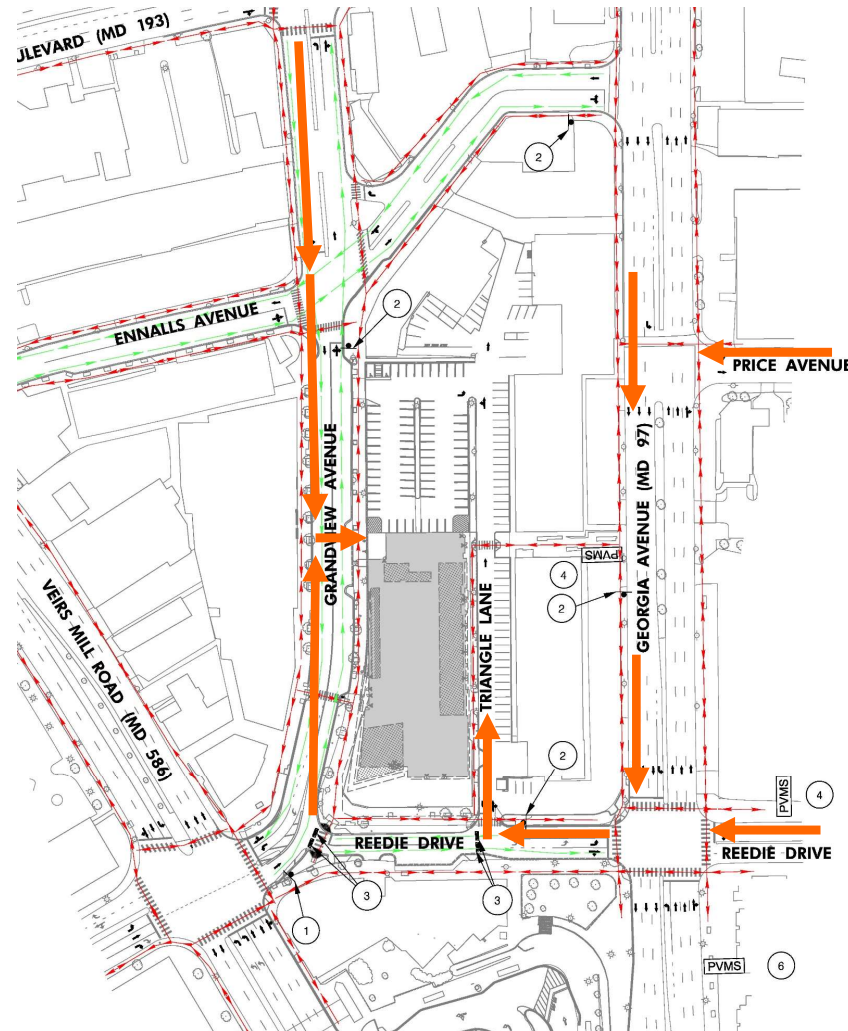
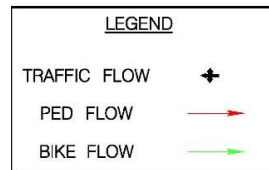
## *Triangle Lane Improvements*



- Install signing and pavement markings needed to maintain one-way traffic on Triangle Lane
- Construct a bump out to emphasize one-way traffic on Triangle Lane



# Vehicle Access to Triangle Plaza for Reedie Drive Closures



SIGN SCHEDULE		
NO.	SIGN PANEL	QUANTITY
1		GM-1 36" x 42" 1 EA
2		GM-2 36" x 42" 2 EA
3		R11-2 4 EA TYPE III BARRICADE
4		2 EA
5		2 EA
6		1 EA

PVMS NO.4 MESSAGES

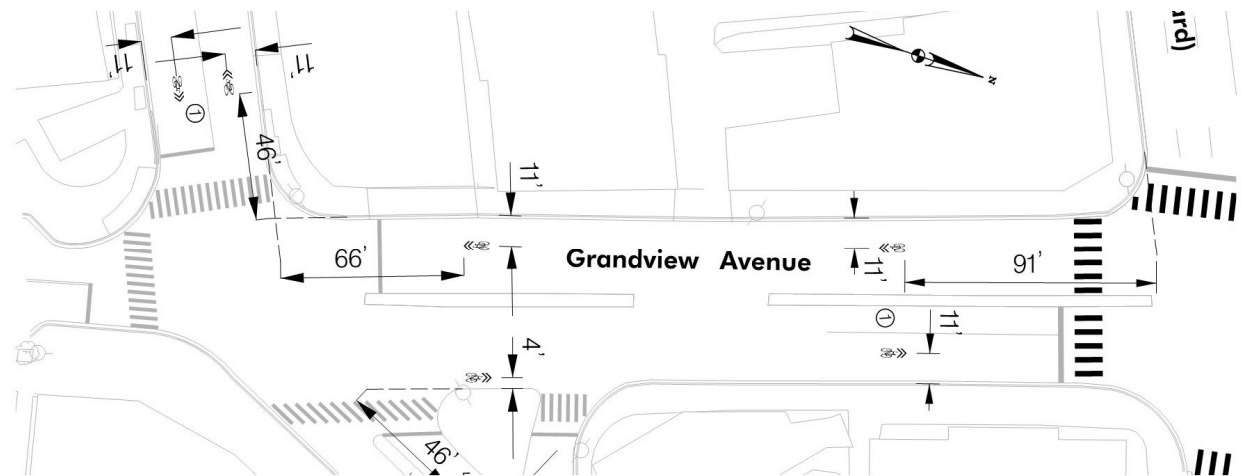
DURING CLOSURE	
DISPLAY 1	
DISPLAY 2	

# Montgomery County Department of Transportation Wheaton Redevelopment

## Grandview Avenue Improvements

### Recommended Improvements:

- Install shared lane markings on Grandview Avenue between Ennalls Avenue and MD 586 (Veirs Mill Road)

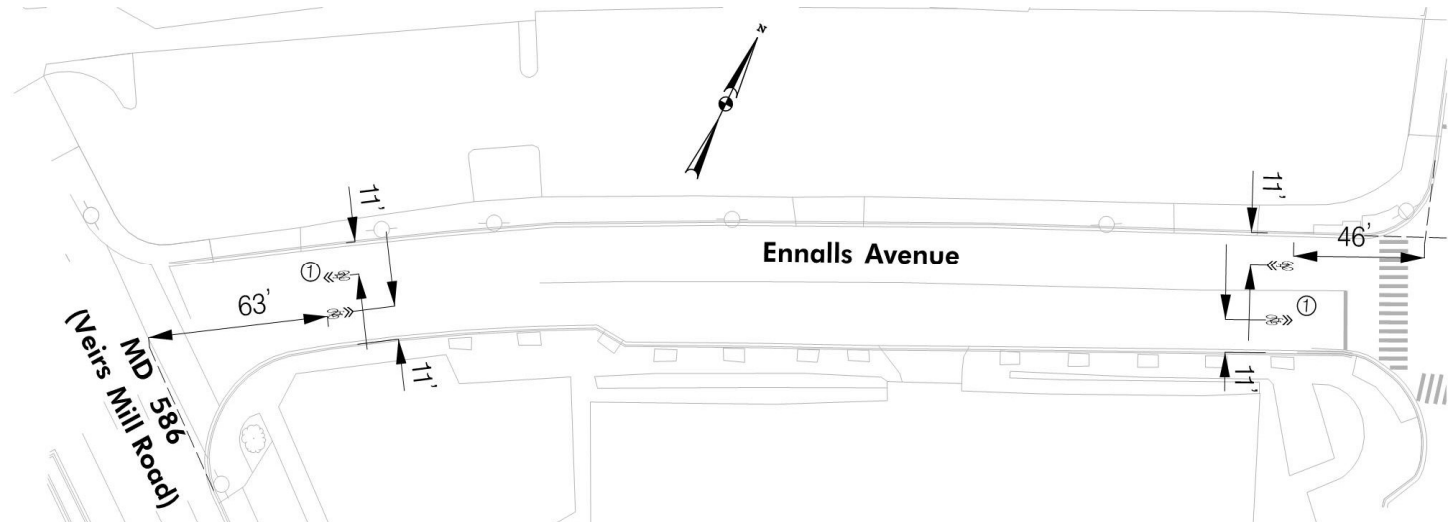


# Montgomery County Department of Transportation Wheaton Redevelopment

## Ennalls Avenue Improvements

### Recommended Improvements:

- Install shared lane markings on Ennalls Avenue between MD 586 (Veirs Mill Road) and MD 97 (Georgia Avenue)



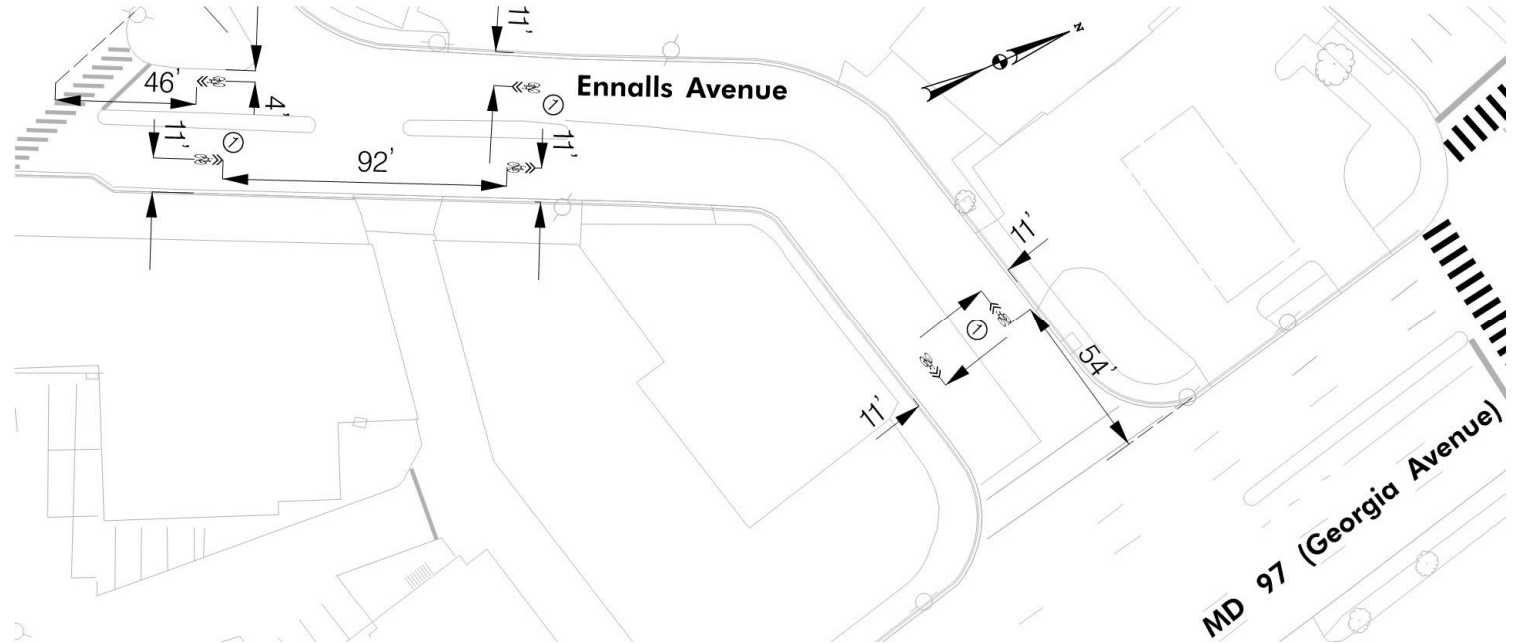


# Montgomery County Department of Transportation Wheaton Redevelopment

## *Ennalls Avenue Improvements*

### Recommended Improvements:

- Install shared lane markings on Ennalls Avenue between MD 586 (Veirs Mill Road) and MD 97 (Georgia Avenue)



# Areawide Traffic Impacts of Reedie Drive Closure

Overall Intersection LOS Comparison: 2018 Build, 2018 Build with Reedie Drive Closure, and 2018 Reedie Drive Closure with Intersection Improvements						
Intersection	AM LOS: 2018 Build	AM LOS: 2018 Build with Reedie Closure	AM LOS: 2018 Reedie Closure with Imp.	PM LOS: 2018 Build	PM LOS: 2018 Build with Reedie Closure	PM LOS: 2018 Reedie Closure with Imp.
MD 97 at MD 586	B	C	B	C	C	C
MD 97 at Reedie Drive	B	C	C	B	B	B
MD 97 at Ennalls Ave*	B	B	B	B	B	B
MD 97 at MD 193	C	C	C	C	C	C
MD 97 at Blueridge Ave	B	B	B	C	C	C
MD 586 at Metro Bus Loop	B	B	B	C	C	C
MD 586 at Reedie Drive (future Grandview Drive)	B	B	B	C	D	C
MD 586 at Ennalls Ave*	B	B	B	B	C	B
MD 586 at MD 193	E	E	E	E	D	D
MD 596 at Newport Mill Rd	C	C	C	B	B	B
Grandview Ave at Reedie Drive*	A	A	A	B	A	A
Grandview Ave at Blueridge Ave*	A	A	A	C	C	D
MD 193 at Grandview Ave	B	B	B	C	D	C
MD 193 at East Ave	A	B	B	B	B	B
MD 193 at Amherst Ave	B	B	B	C	C	C
Grandview Ave at Ennalls Ave*	A	B	B	D	E	E
Reedie Drive at Fern St	A	A	A	B	B	B
Grandview Ave at Site Driveway	B	B	B	B	B	B

# Areawide Traffic Impacts of Reddie Drive Closure

## Critical Intersection Movements

Turning Movement LOS/Delay Comparison: 2018 Build, 2018 Build with Reddie Closure, and 2018 Reddie Closure with Intersection Improvements						
Turning Movement	AM LOS/Delay (s): 2018 Build	AM LOS/Delay (s): 2018 Build with Reddie Closure	AM LOS: 2018 Reddie Closure w/ Improvements	PM LOS/Delay (s): 2018 Build	PM LOS/Delay (s): 2018 Build with Reddie Closure	PM LOS: 2018 Reddie Closure w/ Improvements
<b>MD 97 at Reddie Drive:</b> WB Left	E (75)	F (>150) or F (89)	E (68)	D (53)	F (83)	E (69)
<b>MD 97 at MD 193:</b> SB Left	N/A	N/A	N/A	F (84)	F (100)	F (85)
<b>MD 586 at Reddie Drive:</b> EB Left	N/A	N/A	N/A	D (54)	F (>150) or E (57)	E (59)
<b>Grandview Ave at Ennalls Ave:</b> NB Thru/Left/Right	N/A	N/A	N/A	E (36)	F (64)	F (64)

\*Note: Cells with two LOS and delay values reflect what the operations would be with and without optimized signal splits.

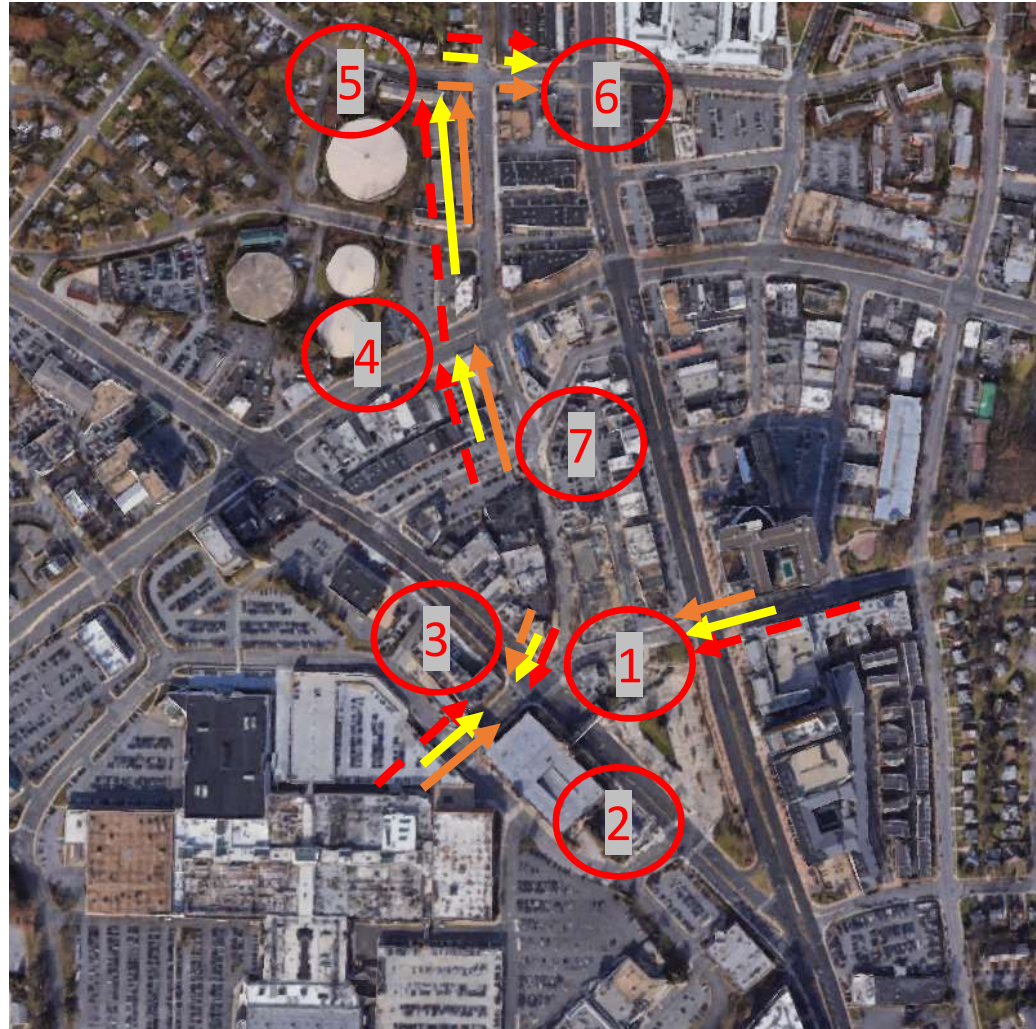


# Areawide Traffic Impacts of Reedie Drive Closure

## Critical Intersection Movements

95 <sup>th</sup> Percentile Queue Comparison – Critical Movements: 2018 Build, 2018 Build with Reedie Closure, and 2018 Reedie Closure with Intersection Improvements						
Turning Movement	AM Queue (ft)/Storage (ft): 2018 Build AM	AM Queue (ft)/Storage (ft): 2018 Build with Reedie Closure	AM Queue (ft)/Storage (ft): 2018 Reedie Closure w/Imp.	PM Queue (ft)/Storage (ft): 2018 Build PM	PM Queue (ft)/Storage (ft): 2018 Build with Reedie Closure	PM Queue (ft)/Storage (ft): 2018 Reedie Closure w/Imp.
MD 97 at Reedie Drive: WB Left	225/175	225+/175	250/300	225/175	225+/175	250/300
MD 97 at Reedie Drive: EB Thru/Right	N/A	N/A	N/A	325/320	N/A (Improvement from 2018 Build)	N/A (Improvement from 2018 Build)
MD 586 at Metro Access/Mall Entrance: WB Thru	N/A	N/A	N/A	300/264	350+/264	325/264
MD 586 at Reedie Drive: WB Reedie Drive Left	N/A	N/A	N/A	150+/55	125/600	100/600
MD 193 at Grandview Avenue: NB Thru/Right	N/A	N/A	N/A	350/250	350+/250	250/250
Grandview Avenue at Blueridge Avenue: NB Right	N/A	N/A	N/A	375/600	750+/600	525/600
MD 97 at Blueridge Avenue: EB Left	N/A	N/A	N/A	275+/250	275+/250	275+/250

# Anticipated Vehicle Queue Lengths



# Improvement on next page

Existing - Queue Length  
Reedie Drive Closed - Queue Length  
With Improvements - Queue Length

———— Normal  
- - - - Significant Issues

# Planned Operational Improvements

- 1
- 2
- 3
- 4
- 5
- 6
- 7

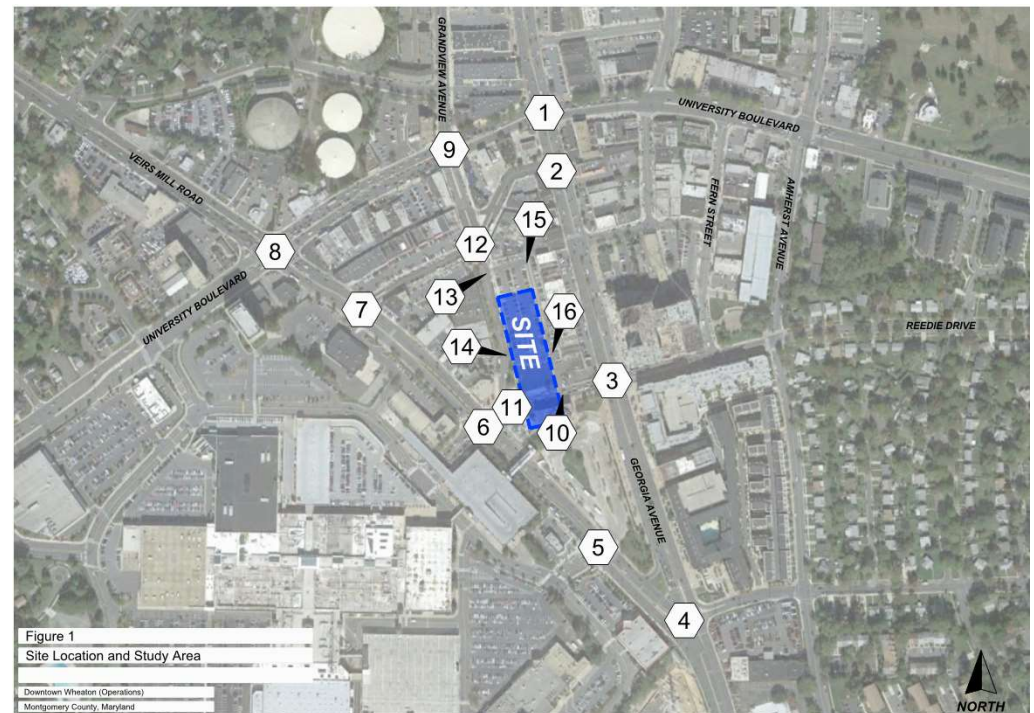
Critical Intersection	Improvement	Extent of Traffic Mitigation
MD 97 at Reedie Drive	Split Phase signal on Reedie Drive approaches; convert westbound thru/right lane to westbound thru/right/left lane	Full Mitigation
MD 586 at Metro Access/Mall Entrance	Install raised curb along westbound MD 586 approach to Mall entrance to prevent weaving	Partial Mitigation
MD 586 at Reedie Drive (future Grandview Drive)	Provide protected-permissive left turn phasing for Reedie Drive/Grandview Avenue and Mall entrance approaches	Full Mitigation
MD 193 at Grandview Avenue	Install additional northbound thru lane on Grandview Avenue at MD 193, with additional receiving lane on the north leg	Full Mitigation
Grandview Avenue at Blueridge Avenue	Install additional eastbound left turn lane on Blueridge at MD 97	Partial Mitigation
MD 97 at Blueridge Avenue	Install additional eastbound left turn lane on Blueridge at MD 97	Partial Mitigation
Grandview Ave at Ennalls Ave	Install additional northbound thru lane on Grandview Avenue at MD 193, with additional receiving lane on the north leg	Full Mitigation
Additional Intersection	Improvement	Extent of Traffic Mitigation
MD 97 at Ennalls Avenue	Prohibit eastbound Ennalls Avenue left turns onto northbound MD 97	Full Mitigation (addresses safety concern)



# Montgomery County Department of Transportation Wheaton Redevelopment

## 2015 Traffic Study - Project Scope

- Traffic Impact Study conducted in April 2015
- Proposed site includes office building and ground floor retail
  - 265,000 SF of Office
  - 12,000 SF of Retail
- Existing traffic counts conducted in January 2015



# Montgomery County Department of Transportation Wheaton Redevelopment

## 2015 Study Results

- Results at signalized intersections similar for the future condition scenario
- Follow-Up study conducted in November 2015
  - Pedestrian Initiative Timings implemented
  - Adjustments made to improve future LOS at:
    - MD 97 at MD 193
    - Grandview Ave at MD 193

Overall Level of Service Summary				
Intersection	Peak Hour	Existing 2015	Future	Updated Future
MD 586 at MD 193	AM	E	E	E
	PM	E	F	E
Grandview Ave at MD 193	AM	B	C	C
	PM	B	C	D
MD 97 at MD 193	AM	D	D	D
	PM	D	E	D
MD 586 at Reddie Dr	AM	D	D	C
	PM	D	D	C
MD 97 at Reddie Dr	AM	B	A	B
	PM	C	C	C

# Montgomery County Department of Transportation Wheaton Redevelopment

## 2017 Study Capacity Results

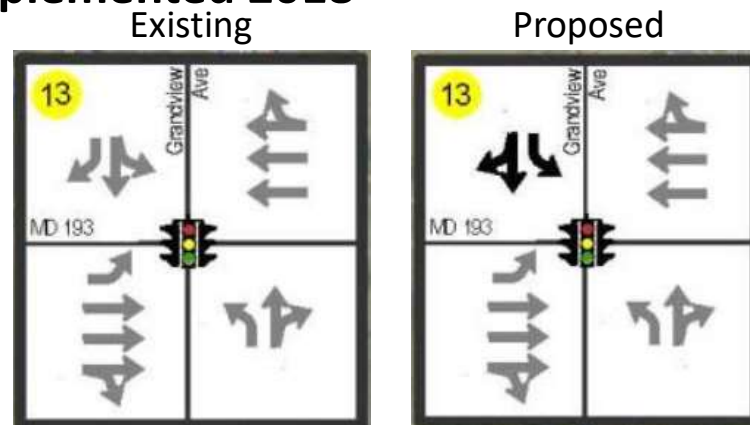
- New Traffic Impact Study conducted due to change in proposed development
  - 308,200 SF of Office
  - 11,800 SF of Retail
- Updated counts conducted in 2017 at all intersections except:
  - MD 97 at MD 193
  - MD 586 at Reddie Drive
- Future analysis assumed realignment of Grandview Avenue at Reddie Drive intersection

Updated Overall Level of Service Summary			
Intersection	Peak Hour	Existing 2017	Future 2018
MD 586 at MD 193	AM	E	E
	PM	D	E
Grandview Ave at MD 193	AM	B	B
	PM	B	C
MD 97 at MD 193	AM	C	C
	PM	C	C
MD 586 at Reddie Dr	AM	B	B
	PM	C	C
MD 97 at Reddie Dr	AM	B	B
	PM	B	B

# Montgomery County Department of Transportation Wheaton Redevelopment

## 2017 Study Recommendations

- Exclusive/permissive left turn phasing for:
  - Reddie Drive/Grandview Avenue at MD 586; **Requires Reconstruction of Traffic Signal**
  - Grandview Avenue at MD 193; **Implemented 2018**
- Restripe the southbound approach of Grandview Avenue at MD 193 to a left and a shared through-right; **Implemented 2018**

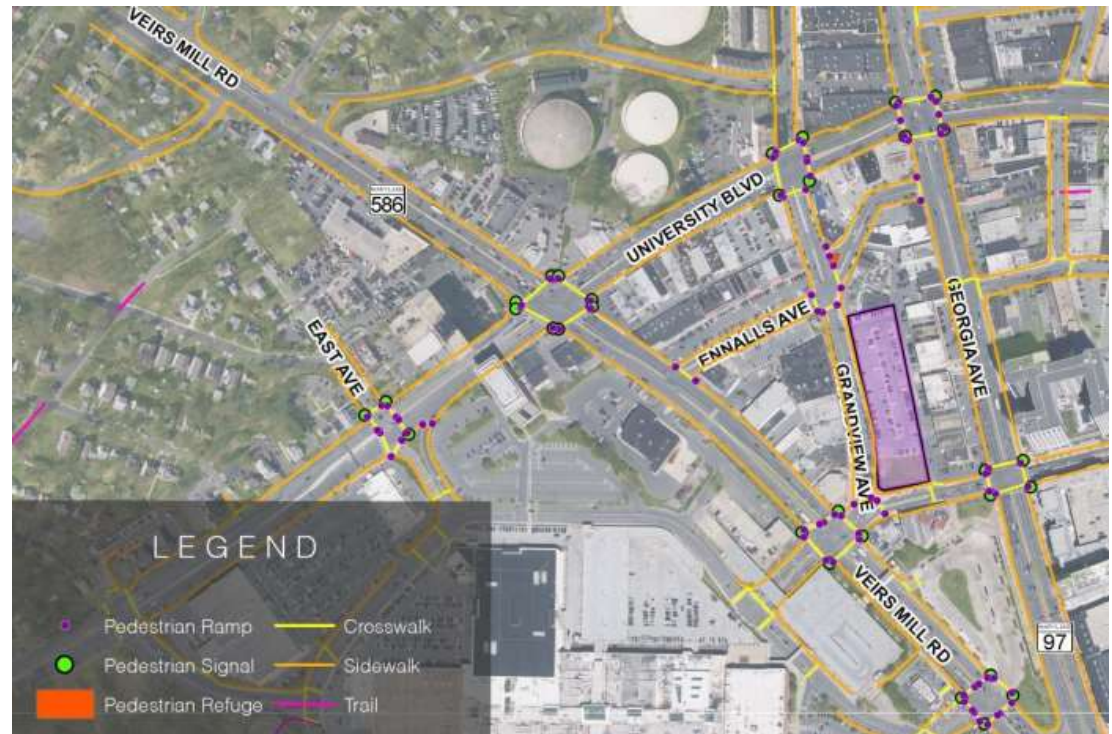




# Montgomery County Department of Transportation Wheaton Redevelopment

## Existing Ped/Bike Connectivity

- Sidewalk is available on both sides of each roadway within the study area
- Each study intersection has sidewalk ramps at each corner
- No bike facilities are provided within the study area



# **Reedie Drive Closure Outcomes**

The closure of Reedie Drive will likely:

- Impact operations at some nearby intersections, as additional volumes will reduce operational efficiency; and
- Impact motor vehicle access to Triangle Lane.

# Reedie Drive Recommendations

- Move forward with HHS Building opening, as designed;
- Allow Reedie Drive to remain open;
- Study and monitor the “Triangle’s” operational and access impacts for 90 days;
- Close Reedie Drive eastbound between Grandview Avenue and Triangle Lane and reverse one-way travel direction on Triangle Lane to proceed southbound and study and monitor operational and access impacts for adjusted conditions;
- If operations permit, consider a full closure of Reedie Drive between Grandview Avenue and Triangle Lane.