

# Dulles Corridor Special Study Transportation Analysis

Presented to:

Route 28 Station – South Study Group

Presented by:

Fairfax County Department of Transportation

September 5, 2012

# Presentation Outline

- Sunrise Valley Drive/Frying Pan Road Intersection Improvement(s)
- Through vs. Local Traffic – Select Intersections
- Trip Reductions/TDM Discussion

# Sunrise Valley Drive/Frying Pan Road Intersection Improvements

# Results of 1<sup>st</sup> Mitigation with Working Group Scenario

## Sunrise Valley Drive at Frying Pan Road

2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/320 seconds**
- Evening LOS/Delay: **F/300 seconds**

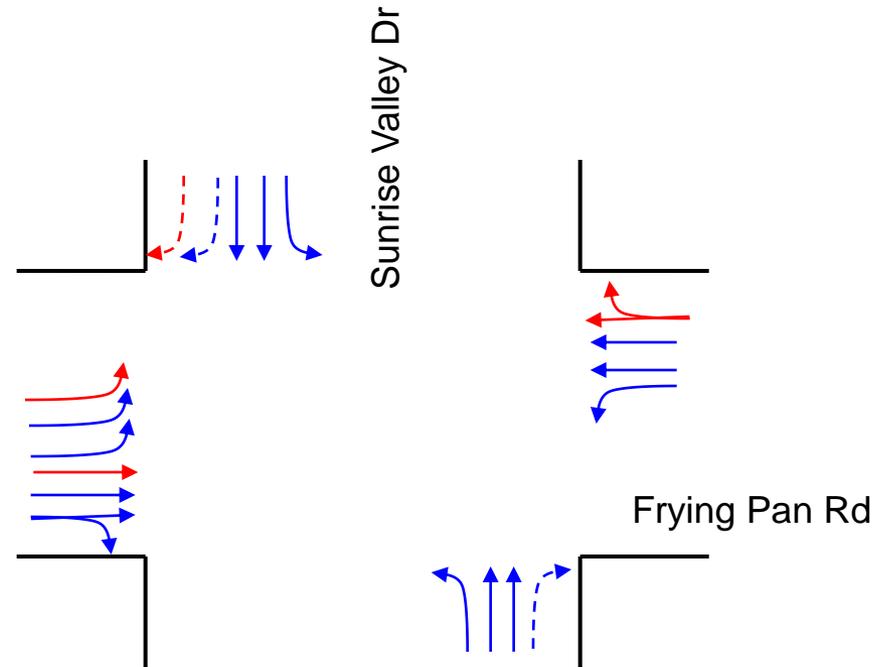
1<sup>st</sup> Mitigation Added:

- Add 2<sup>nd</sup> SB left turn lane
- Add a WB thru/right lane
- Add a 3<sup>rd</sup> EB left turn lane
- Add a 3<sup>rd</sup> EB thru lane

1<sup>st</sup> Result - 2030 Traffic Conditions with Scenario E:

- Morning LOS/Delay: **B/15 seconds**
- Evening LOS/Delay: **F/450 seconds**

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn

# Results of 2<sup>nd</sup> Mitigation with Working Group Scenario

## Sunrise Valley Drive at Frying Pan Road

2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/320 seconds**
- Evening LOS/Delay: **F/300 seconds**

1<sup>st</sup> Result - 2030 Traffic Conditions with Scenario E:

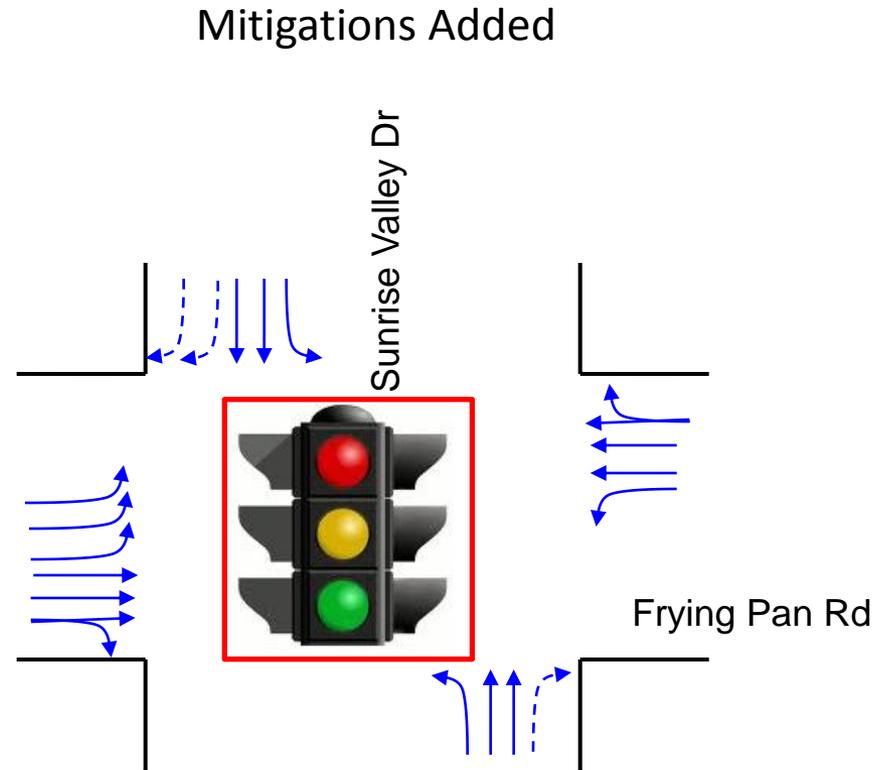
- Morning LOS/Delay: **B/15 seconds**
- Evening LOS/Delay: **F/450 seconds**

2<sup>nd</sup> Mitigation Added:

- Optimize Signal Timing

2<sup>nd</sup> Result - 2030 Traffic Conditions with Scenario E:

- Morning LOS/Delay: **B/15 seconds**
- Evening LOS/Delay: **F/310 seconds**



- Note 1: Red Improvement Added
- Note 2: Lane Configuration

# Results of 3<sup>rd</sup> Mitigation with Working Group Scenario

## Sunrise Valley Drive at Frying Pan Road

2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/320 seconds**
- Evening LOS/Delay: **F/300 seconds**

1<sup>st</sup> Result - 2030 Traffic Conditions with Scenario E:

- Morning LOS/Delay: **B/15 seconds**
- Evening LOS/Delay: **F/450 seconds**

2<sup>nd</sup> Result - 2030 Traffic Conditions with Scenario E:

- Morning LOS/Delay: **B/15 seconds**
- Evening LOS/Delay: **F/310 seconds**

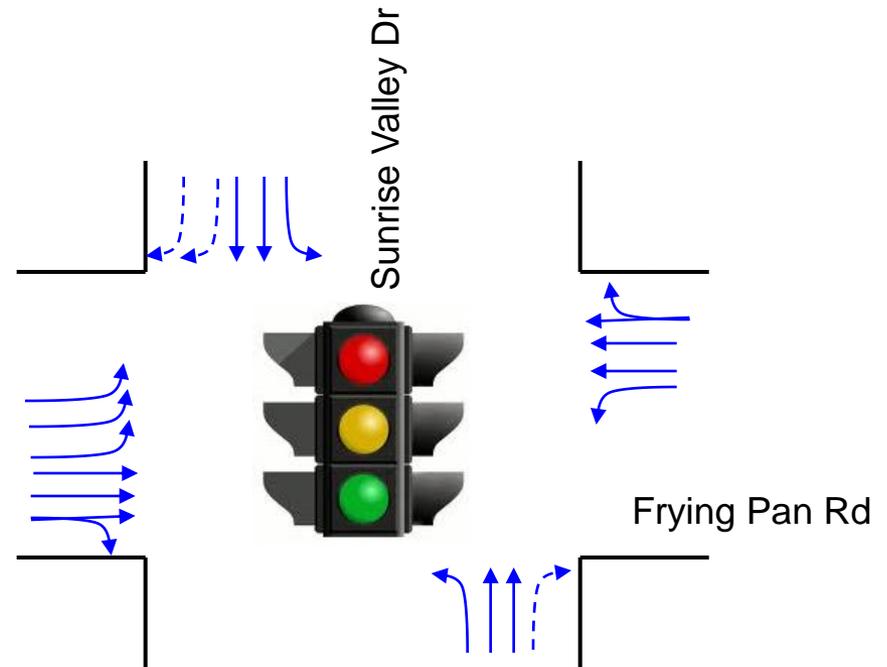
3<sup>rd</sup> Mitigation Added:

- River Birch Extension

2<sup>nd</sup> Result - 2030 Traffic Conditions with Scenario E:

- Morning LOS/Delay: **n/a**
- Evening LOS/Delay: **E/63 seconds**

### Mitigations Added



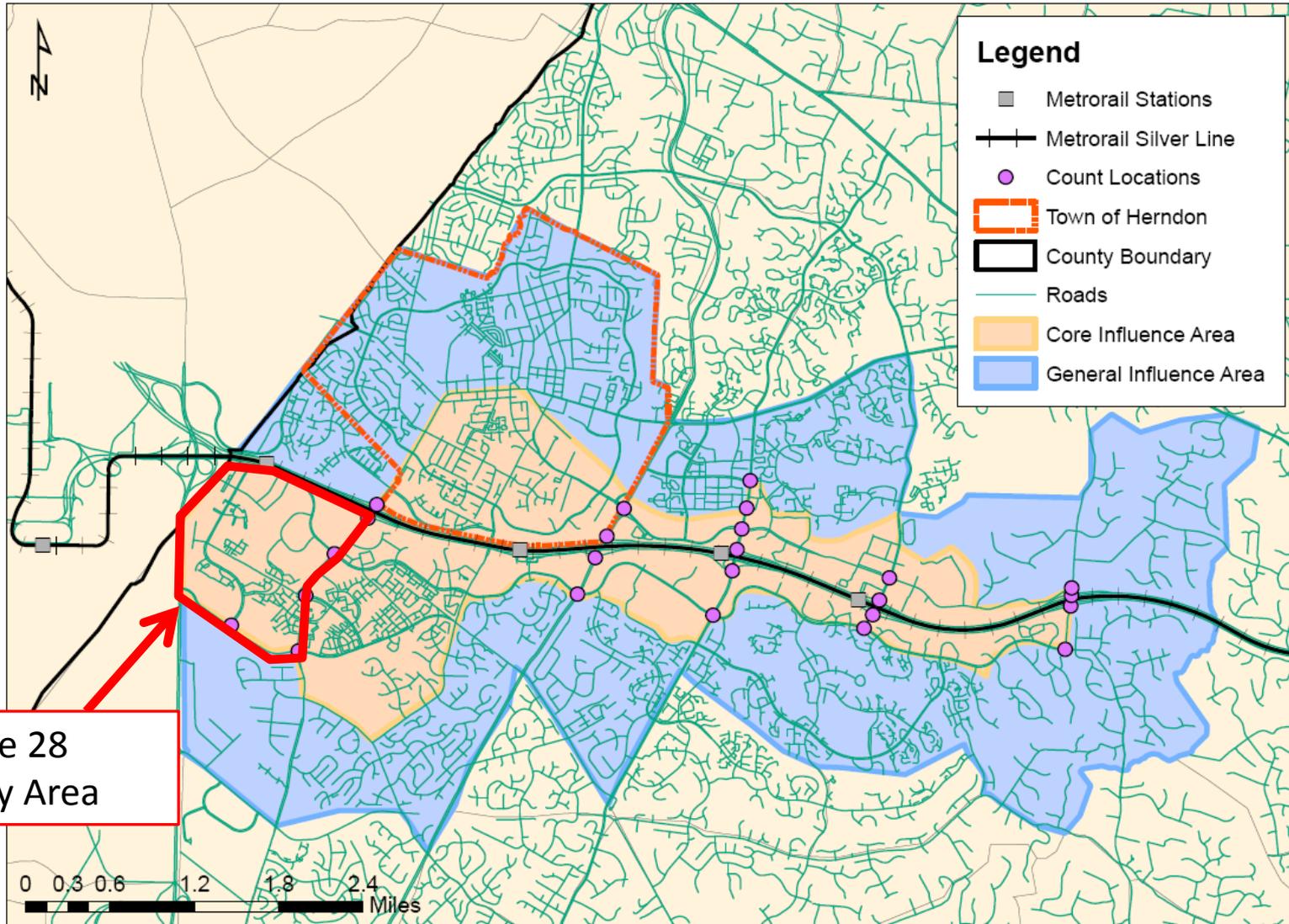
Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn

# River Birch Extension to Frying Pan Road



# Transportation Study Area



# Through vs. Local Traffic

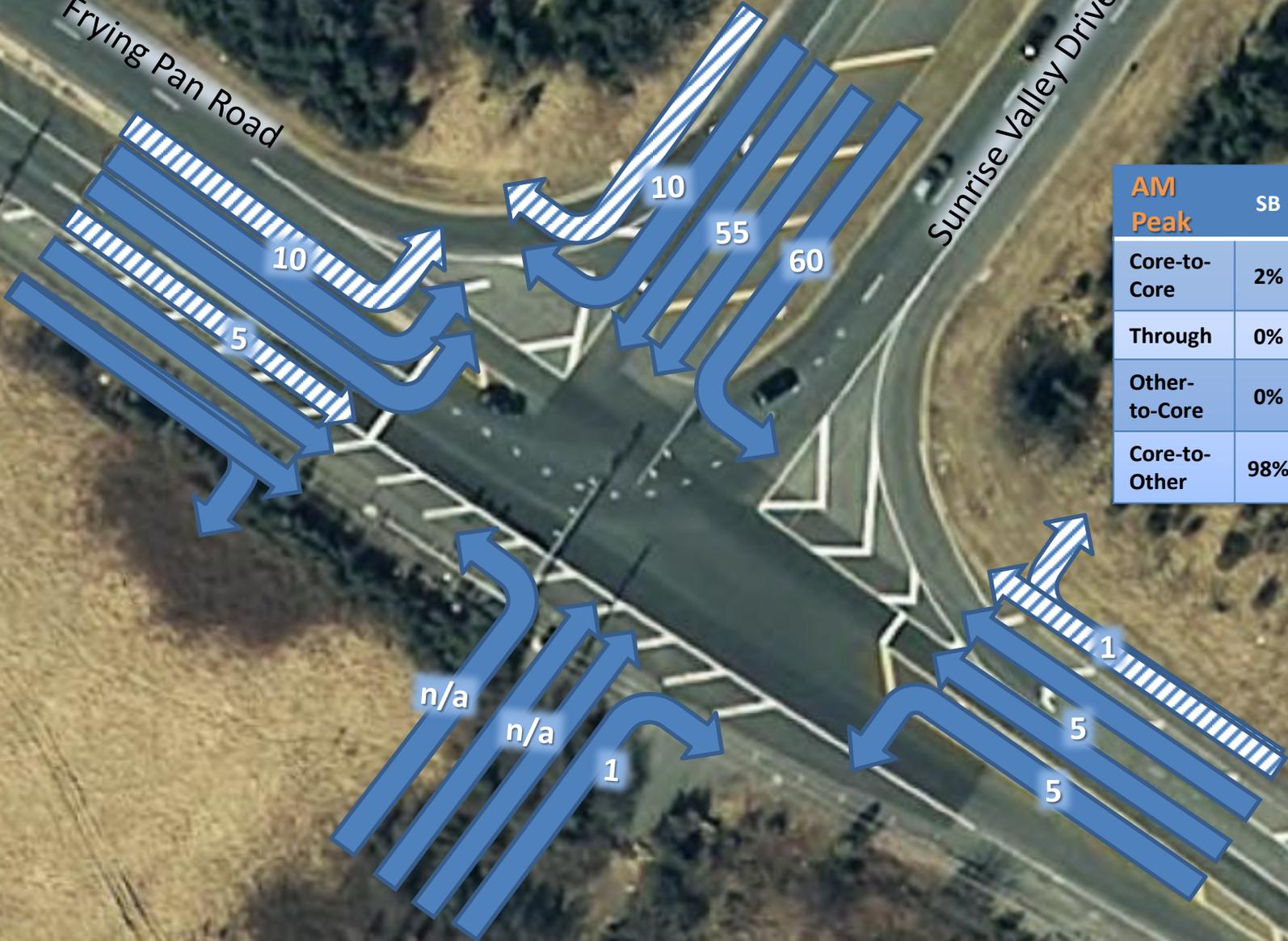
Sunrise Valley Drive & Frying Pan Road

# AM PEAK

Frying Pan Road

Sunrise Valley Drive

AM Peak	SB	EB
Core-to-Core	2%	1%
Through	0%	21%
Other-to-Core	0%	75%
Core-to-Other	98%	3%

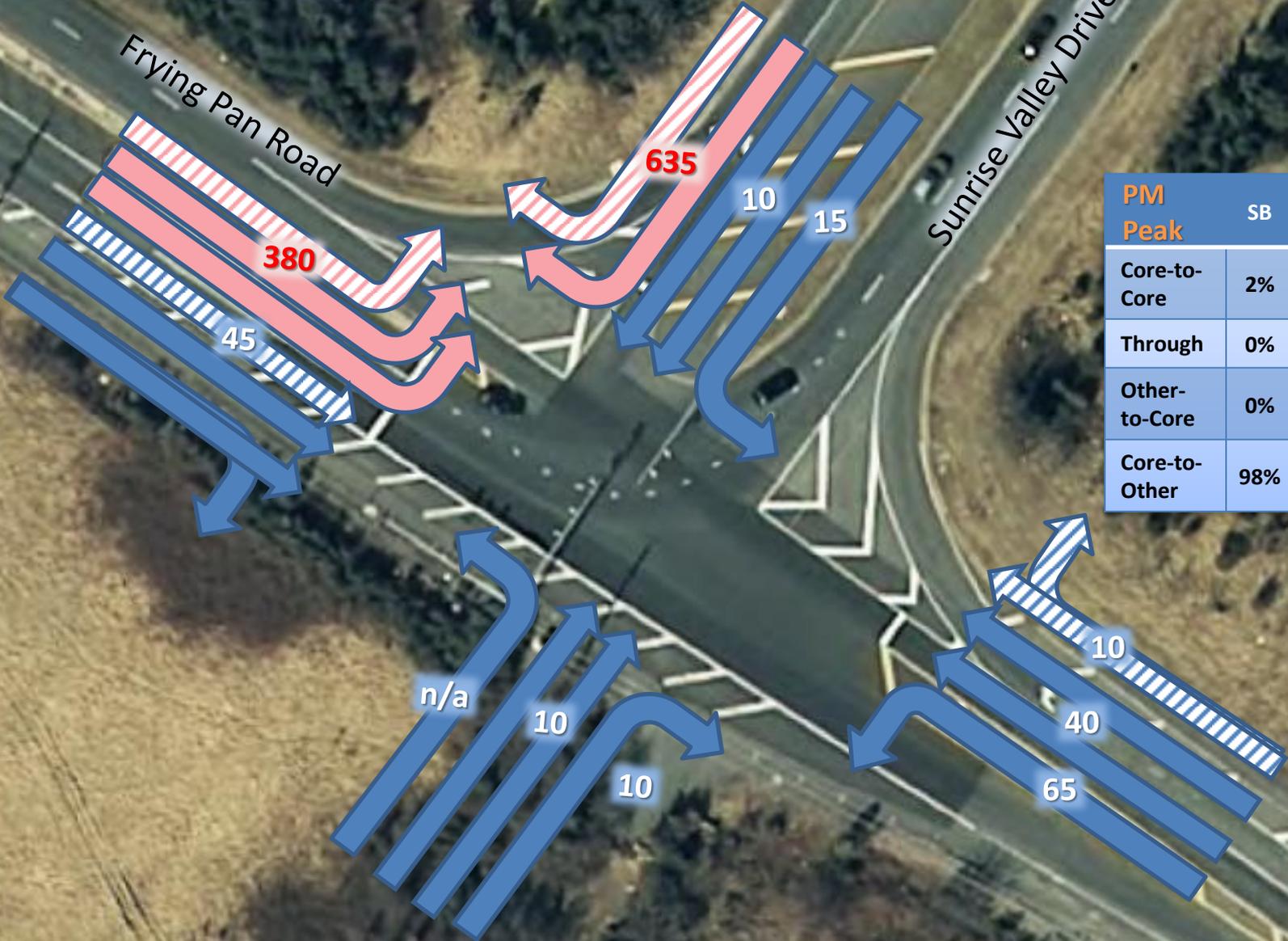


# PM PEAK

Frying Pan Road

Sunrise Valley Drive

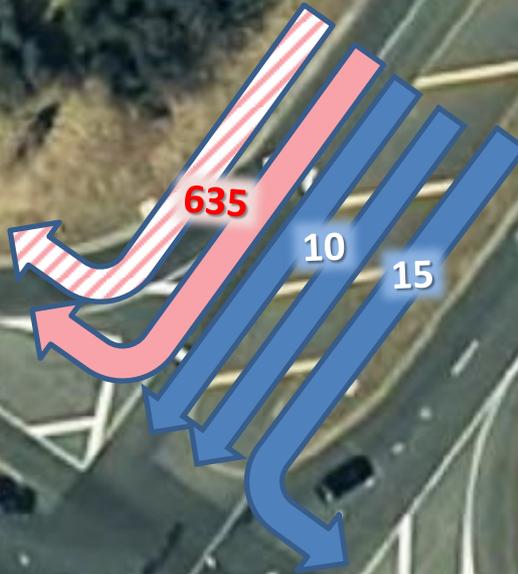
PM Peak	SB	EB
Core-to-Core	2%	3%
Through	0%	30%
Other-to-Core	0%	56%
Core-to-Other	98%	11%



# PM PEAK

Frying Pan Road

Sunrise Valley Drive



South Bound	AM Peak	PM Peak
Core-to-Core	2%	2%
Through	0%	0%
Other-to-Core	0%	0%
Core-to-Other	98%	98%

# PM PEAK

Frying Pan Road

Sunrise Valley Drive

380

45

East Bound	AM Peak	PM Peak
Core-to-Core	1%	3%
Through	21%	30%
Other-to-Core	75%	56%
Core-to-Other	3%	11%

Centerville Road & Sunrise Valley Drive

# AM PEAK



AM Peak	NB	SB	EB	WB
Core-to-Core	22%	8%	33%	25%
Through	9%	8%	0%	3%
Other-to-Core	59%	77%	1%	47%
Core-to-Other	10%	7%	66%	25%

# PM PEAK



60

65

1

45

280

75

50

20

640

55

220

# PM PEAK

North Bound	AM Peak	PM Peak
Core-to-Core	22%	34%
Through	9%	6%
Other-to-Core	59%	40%
Core-to-Other	10%	20%

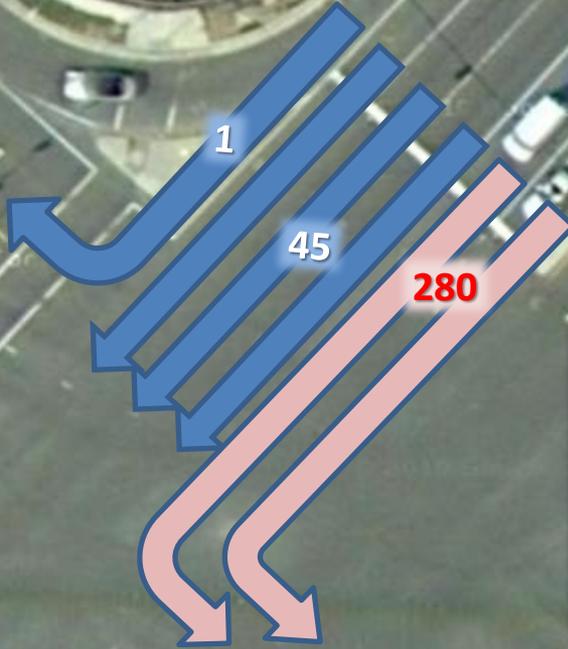
Centerville Road

Sunrise Valley Drive



-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# PM PEAK

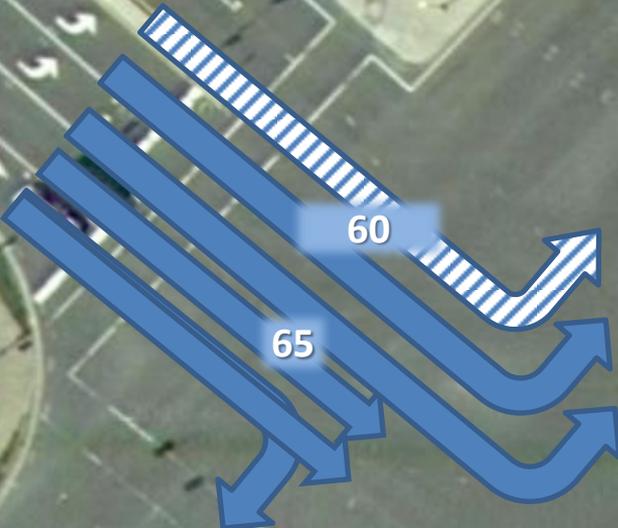


South Bound	AM Peak	PM Peak
Core-to-Core	5%	8%
Through	3%	8%
Other-to-Core	90%	77%
Core-to-Other	2%	7%

-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# PM PEAK

East Bound	AM Peak	PM Peak
Core-to-Core	33%	25%
Through	0%	0%
Other-to-Core	1%	1%
Core-to-Other	66%	74%



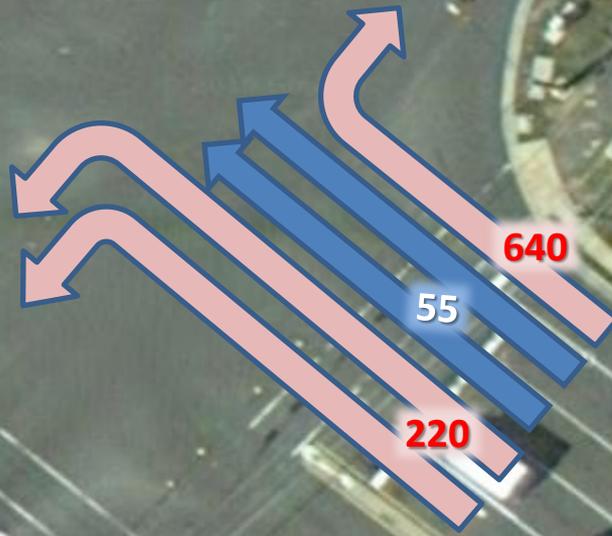
Centerville Road

Sunrise Valley Drive

-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# PM PEAK

West Bound	AM Peak	PM Peak
Core-to-Core	25%	29%
Through	3%	1%
Other-to-Core	47%	29%
Core-to-Other	25%	41%



Centerville Road

Sunrise Valley Drive

-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# Rock Hill Road Bridge

**AM PEAK**

Peak Direction

AM Peak	NB	SB
Core-to-Core	0%	0%
Through	23%	2%
Other-to-Core	0%	98%
Core-to-Other	77%	0%

Bridge Note:  
Volumes will probably increase to 1,000 vehicles in the peak direction and 500-1,000 vehicles in the off-peak direction

Peak Hour Vehicle Volumes

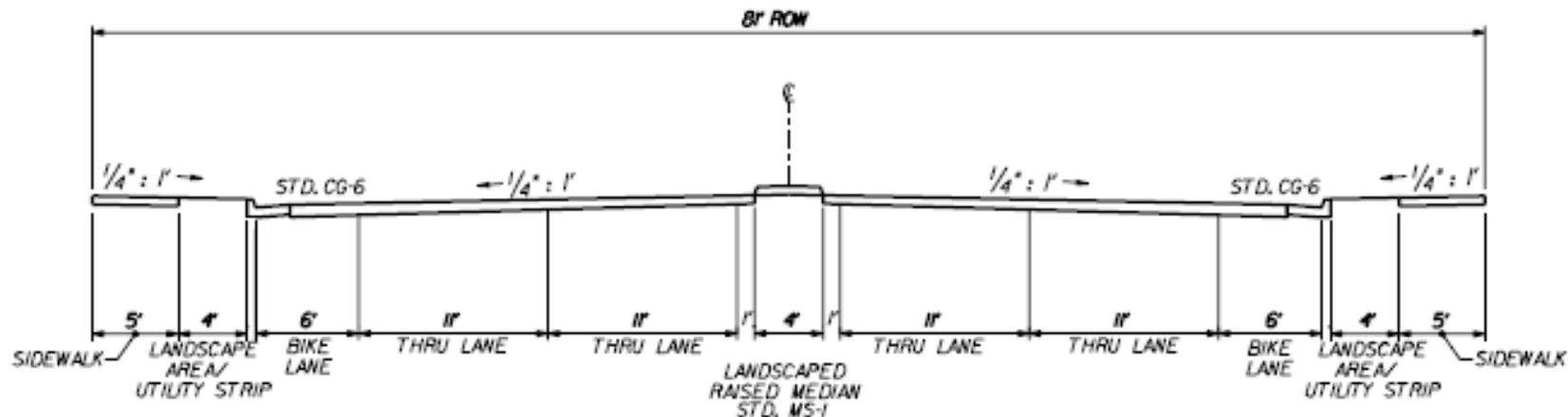
# PM PEAK

Peak Direction

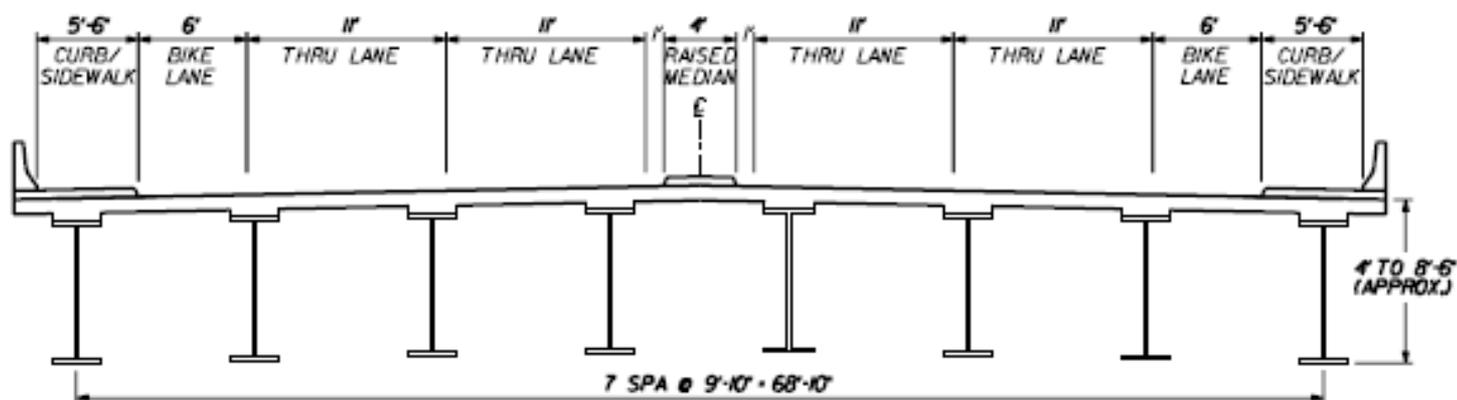
PM Peak	NB	SB
Core-to-Core	0%	0%
Through	3%	19%
Other-to-Core	0%	81%
Core-to-Other	97%	0%

Bridge Note:  
Volumes will probably increase to 1,000 vehicles in the peak direction and 500-1,000 vehicles in the off-peak direction

Peak Hour Vehicle Volumes



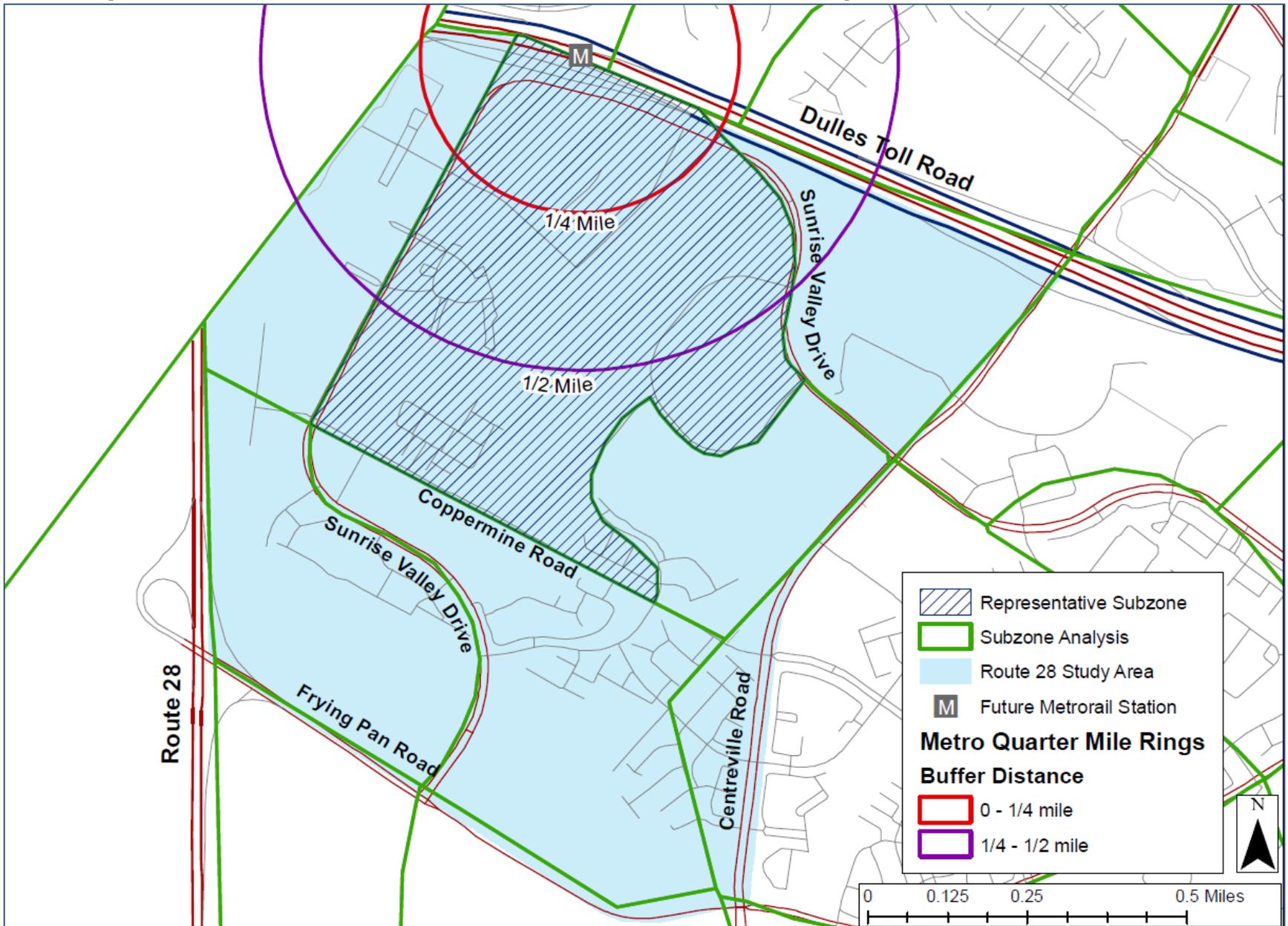
*Proposed Roadway Typical Section*



*Proposed Bridge Typical Section*

# Trip Reductions/TDM Discussion

# Representative Zone – Trip Reductions



# Trip Reductions Goals

Development		TOD Locations		Non-TOD Locations (More than 1/2 Mile from Metrorail Station)
		0 to 1/4 mile from Metrorail Station	1/4 to 1/2 Mile from Metrorail Station	
Office	Baseline	30%	25%	20%
	TDM Goal	45%-35%	40%-30%	35-25%
Residential	Baseline	30%	25%	15%-10%
	TDM Goal	45%-35%	40%-30%	25%-15%

# TDM Enhancements

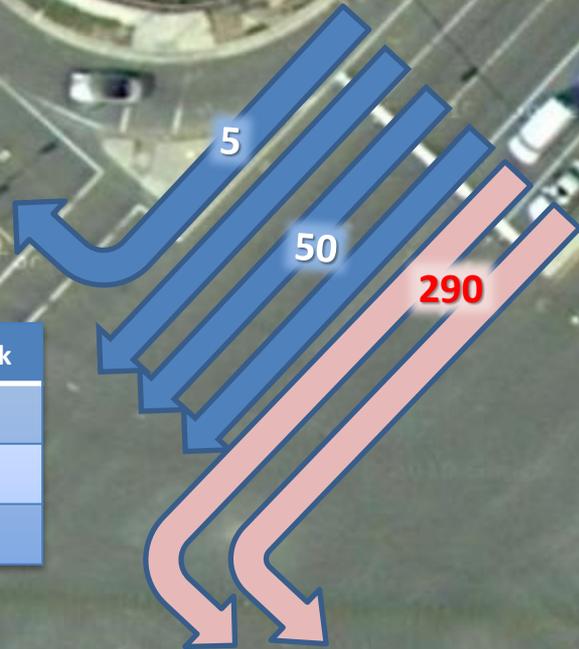
- Employer participation mandatory for new development for the following:
  - Vanpool, Carpool, Transit, Preferential Parking for Vanpools, Telecommuting, Alternative Work Schedules
- TDM can sometimes be more effectively implemented on the employment side than residential side

General Discussion/Questions/  
Work Group Input

# AM PEAK

South Bound	AM Peak	PM Peak
Core-to-Core	5%	8%
Through	3%	8%
Other-to-Core	82%	69%

South Bound LEFT	AM Peak	PM Peak
Core-to-Core	0%	2%
Through	1%	4%
Other-to-Core	94%	87%



Centerville Road

Sunrise Valley Drive

-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# AM PEAK

Centerville Road

Sunrise Valley Drive

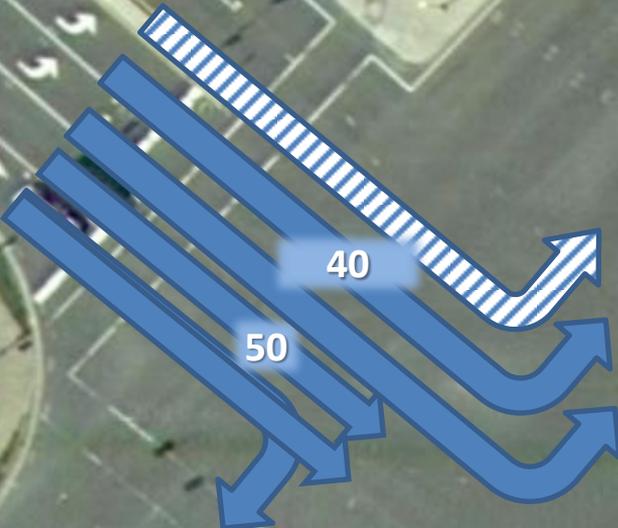


-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# AM PEAK

Centerville Road

Sunrise Valley Drive

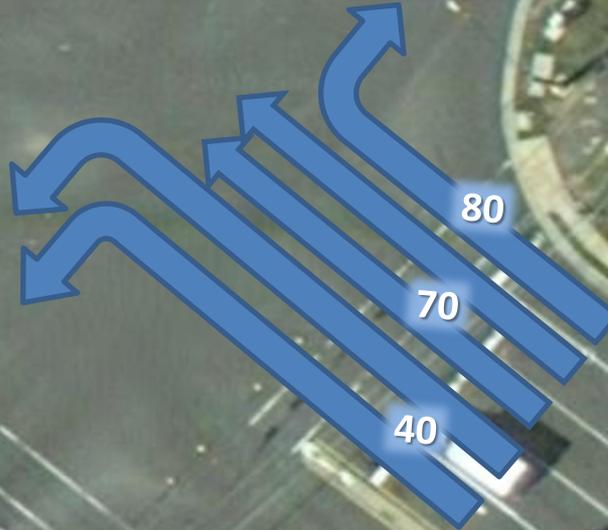


-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# AM PEAK

West Bound RIGHT	AM Peak	PM Peak
Core-to-Core	0%	0%
Through	12%	5%
Core-to-Other	83%	86%

West Bound Through	AM Peak	PM Peak
Core-to-Core	25%	29%
Through	3%	1%
Other-to-Core	22%	36%



Centerville Road

Sunrise Valley Drive

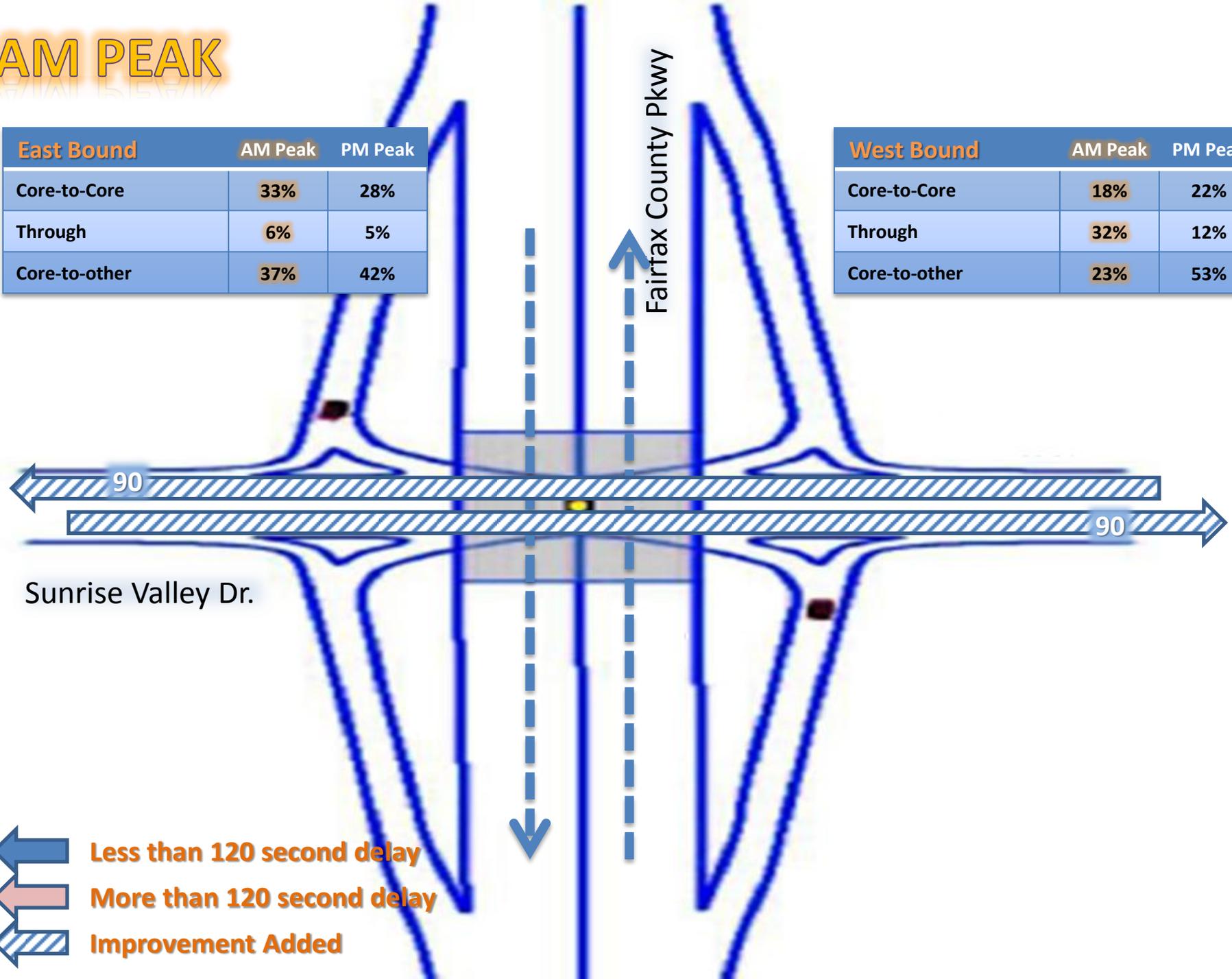
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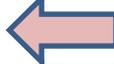
Fairfax County Parkway & Sunrise Valley Drive

# AM PEAK

East Bound	AM Peak	PM Peak
Core-to-Core	33%	28%
Through	6%	5%
Core-to-other	37%	42%

West Bound	AM Peak	PM Peak
Core-to-Core	18%	22%
Through	32%	12%
Core-to-other	23%	53%

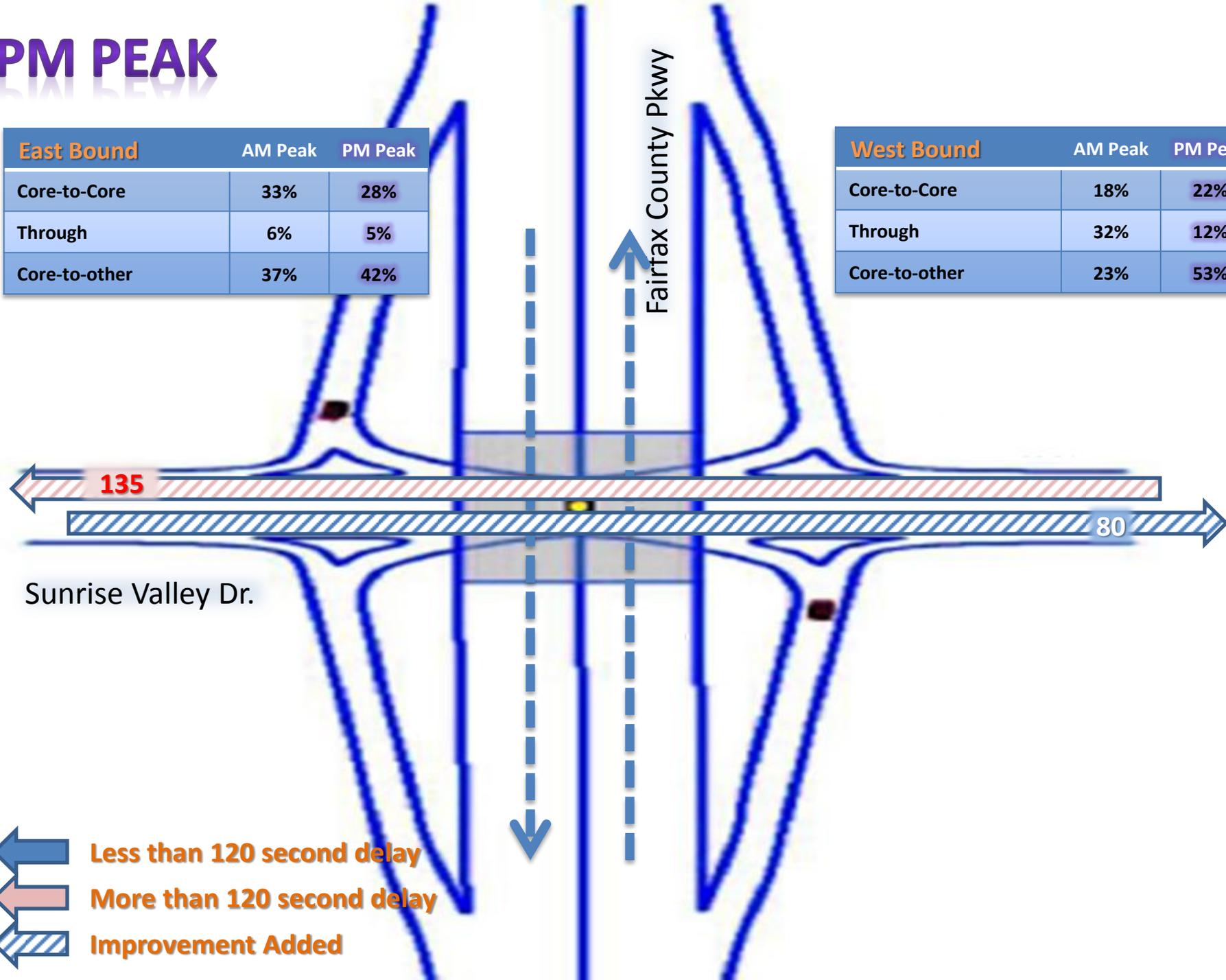


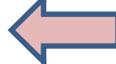
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# PM PEAK

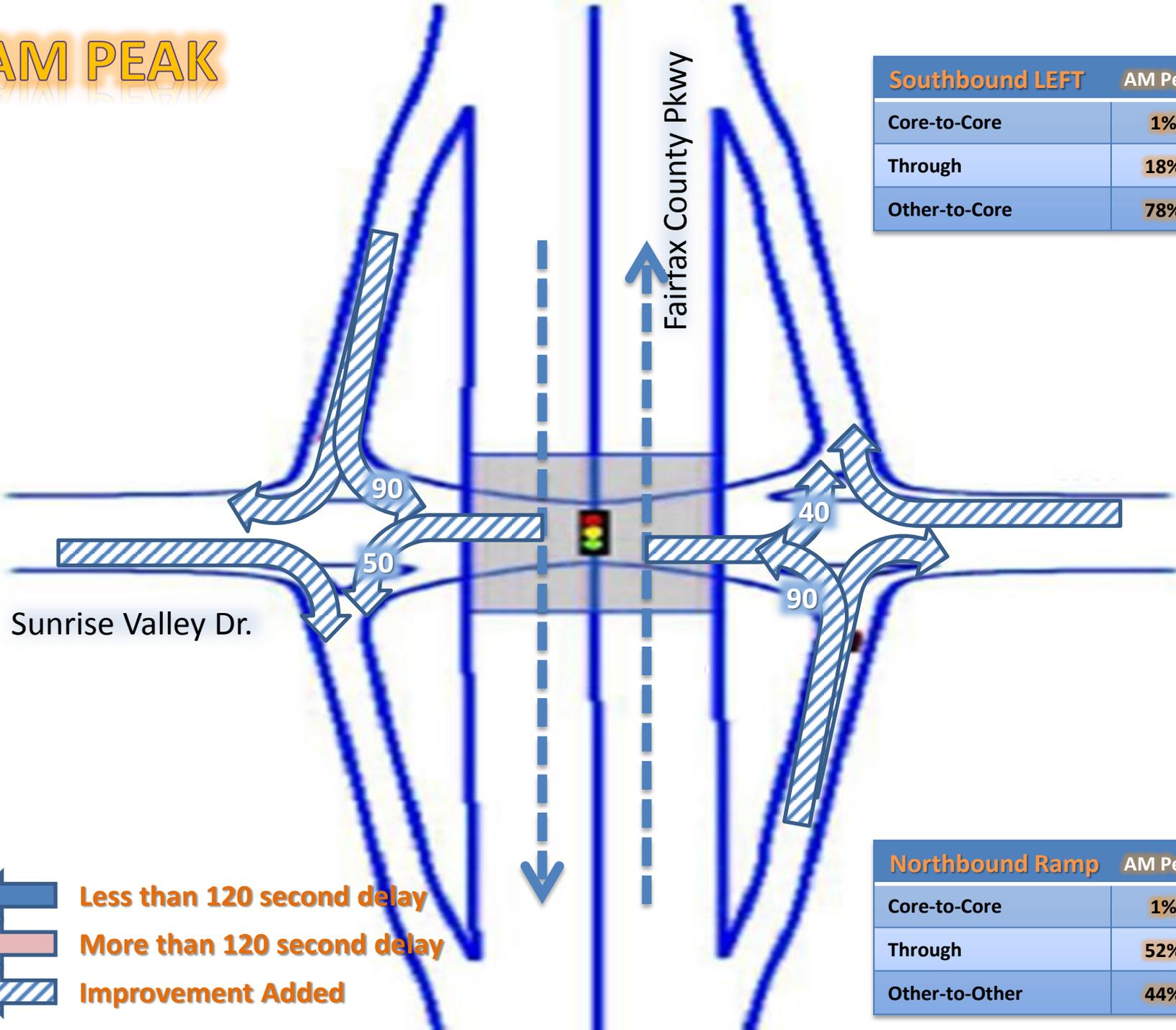
East Bound	AM Peak	PM Peak
Core-to-Core	33%	28%
Through	6%	5%
Core-to-other	37%	42%

West Bound	AM Peak	PM Peak
Core-to-Core	18%	22%
Through	32%	12%
Core-to-other	23%	53%



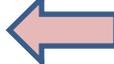
-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

# AM PEAK



Southbound LEFT	AM Peak	PM Peak
Core-to-Core	1%	1%
Through	18%	77%
Other-to-Core	78%	15%

Northbound Ramp	AM Peak	PM Peak
Core-to-Core	1%	1%
Through	52%	60%
Other-to-Other	44%	35%

-  Less than 120 second delay
-  More than 120 second delay
-  Improvement Added

