

Maryland Avenue 4-to-3 Lane Conversion Trial

Open House

November 19, 2019

Presentation Overview

- Lane reductions in Ramsey County
 - Core transportation principles
 - 2020 study and evaluation
 - Benefits and trade-offs
- Maryland Avenue 4-to-3 Lane Conversion Trial
 - Background
 - Trial implementation
 - Analysis
 - Remaining schedule



Ramsey County

Core Transportation Principles*

- Ensuring **equitable access** to people of all abilities to use the County transportation network
- Ensuring **safety** for all when using the County transportation network
- Implementing an integrated and fully **interconnected transportation system** utilizing a variety of modes
- Aligning all transportation **principles and policies** with comprehensive planning
- Incorporating **sensitivity to environment** and context in all transportation planning
- Incorporating **meaningful engagement** with communities

* from Ramsey County's All Abilities Transportation Network Policy



Ramsey County Lane Reduction Study and Evaluation

An evaluation of undivided four-lane roads in the county to determine whether a lane reduction would have a positive impact is expected to be completed in 2020. Criteria to be considered:



Average daily traffic



Right-of-way



Traffic speed



Transit and freight operations



Number of pedestrians



Driveways and intersections



Bicycle access



Parking



Road width



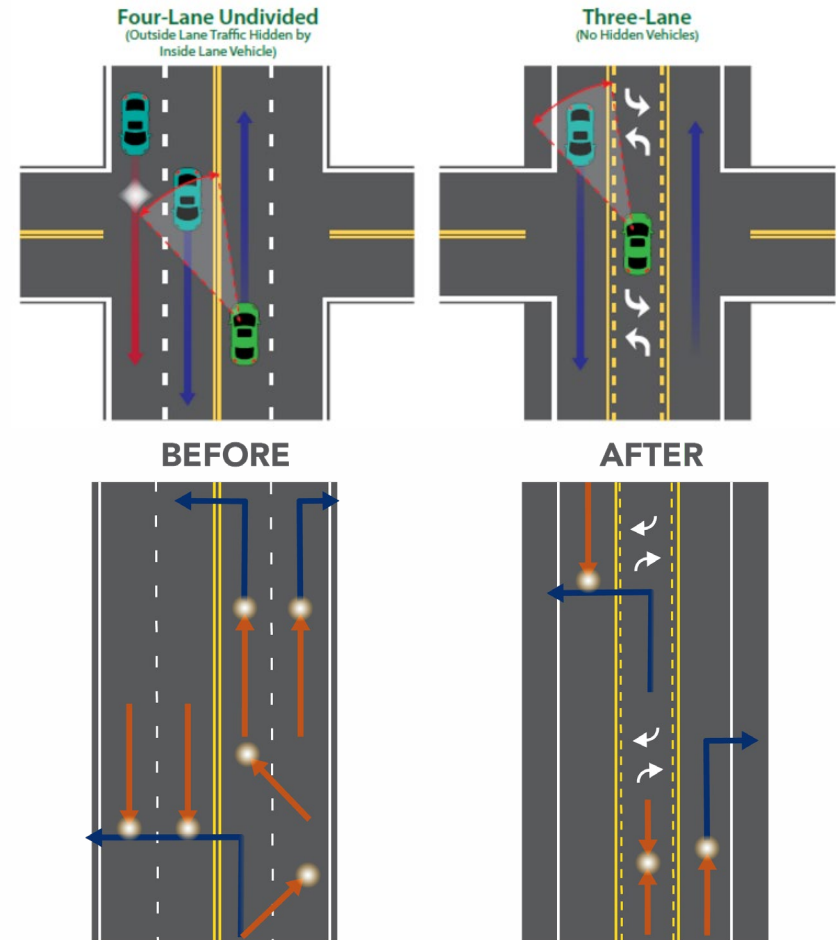
4-to-3 Lane Conversions: Benefits and Trade-offs

Benefits

- Safer and easier crossings for pedestrians
- Reduced vehicle speed
- Left turns separated from through traffic
- Reduced crash severity

Trade-offs

- Increased travel time
- Longer lines of vehicles at traffic lights
- Fewer gaps between vehicles: difficult for vehicles to cross or make left turns



Maryland Avenue 4-to-3 Lane Conversion Trial



Background

- 2017** Three-lane trial from Payne Avenue to Johnson Parkway
- 2018** Three-lane road permanently installed
- 2019** Study of three-lane road between Arkwright Street and Payne Avenue

What changes were expected during the three-lane trial?



Improved safety

- Decreased vehicle speeds
- Decreased injury crashes
- Decreased rear-end/sideswipe crashes
- Increased pedestrians crossing



Impacts to vehicle movements

- Increased travel time/delay/back ups during rush hour
- Fewer gaps between vehicles
- Potential increased use of nearby streets

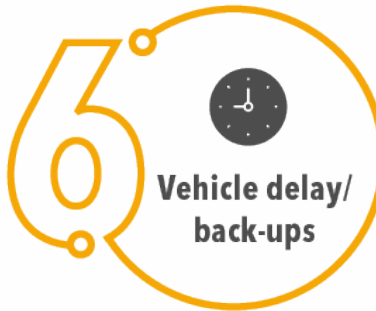
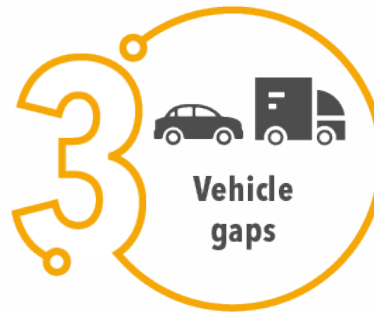


Improved quality of life

- Improved driver/pedestrian comfort



How is the three-lane trial being evaluated?



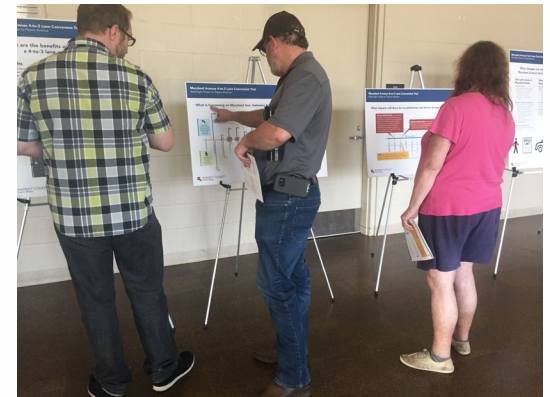
Community Feedback

Positive

- Improved pedestrian and motorist safety
- Enhanced pedestrian crossing helps protect pedestrians and prevents motorists from driving down center left-turn lane
- Would like to see 3-lane permanently implemented on Maryland Avenue and other 4-lane undivided roads

Challenges

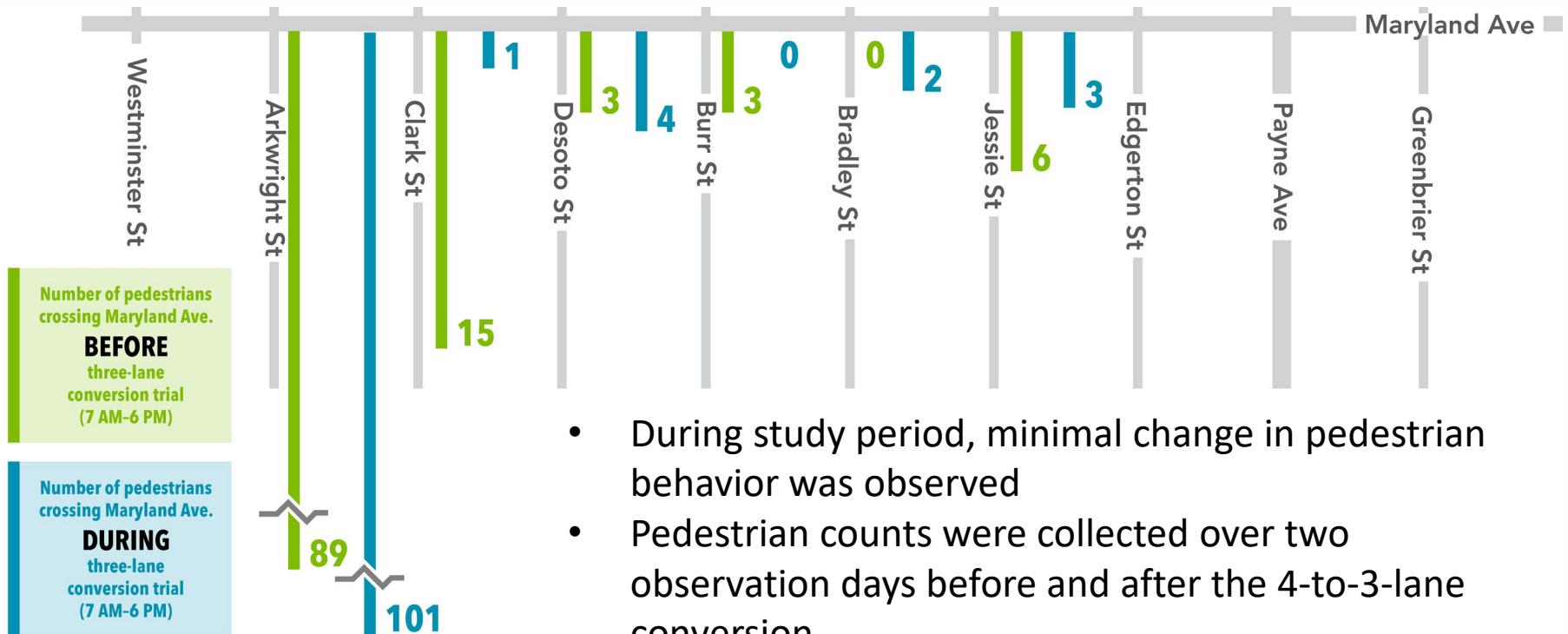
- Increased delay and backups, especially during morning/afternoon rush hours
- Illegal use of center two-way left-turn lane
- Fewer gaps in traffic



Photos from open house and walking tour (July 2019)

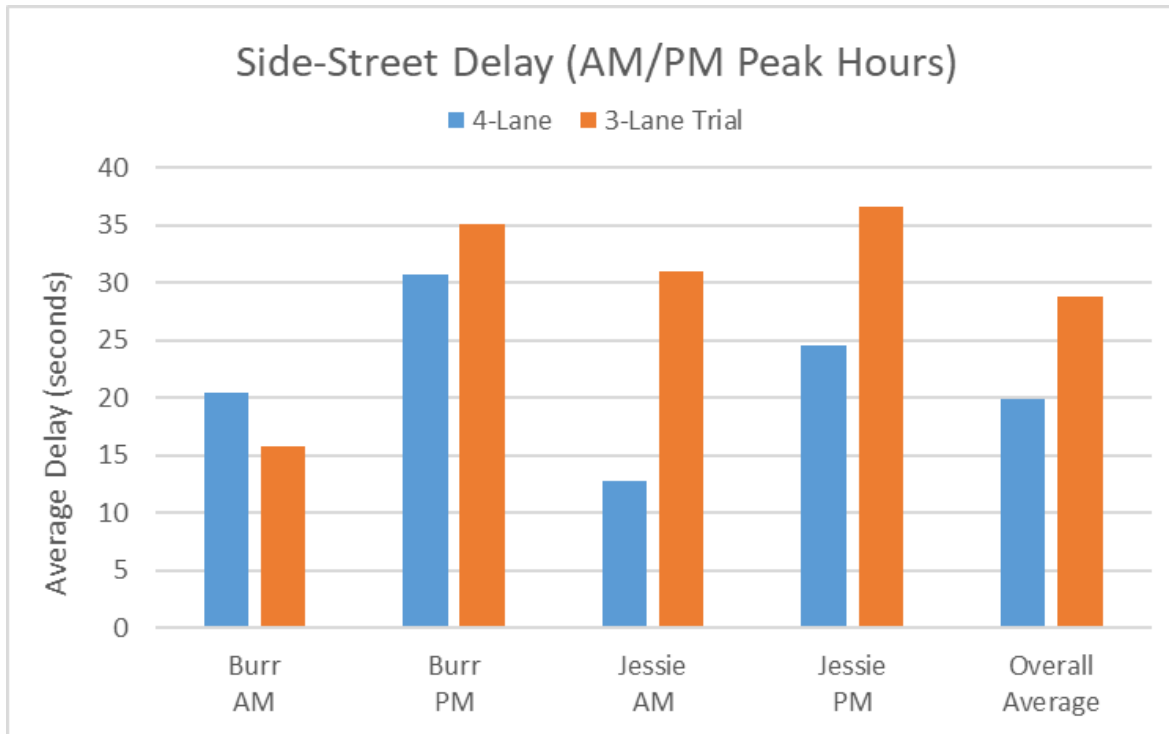


Pedestrian Crossings



- During study period, minimal change in pedestrian behavior was observed
- Pedestrian counts were collected over two observation days before and after the 4-to-3-lane conversion
- Pedestrian crossings at Clark Street were down. Pedestrians are encouraged to cross at either Arkwright Street or Desoto Street (away from the eastbound merge at Clark Street)

Vehicle Gaps

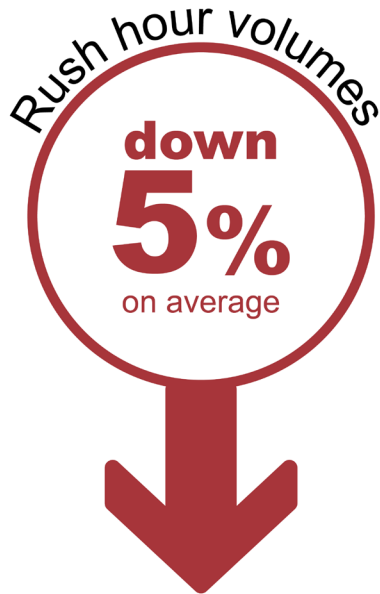


- As expected, vehicle gaps are down, resulting in an increase in side-street delay
- However, side-street delay increases average approximately 10 seconds



Traffic Volumes

MARYLAND AVE



Traffic volumes
down approximately
100 vehicles per
rush hour

NEARBY PARALLEL STREETS

(Geranium/Rose/
Hawthorne/Brainerd)

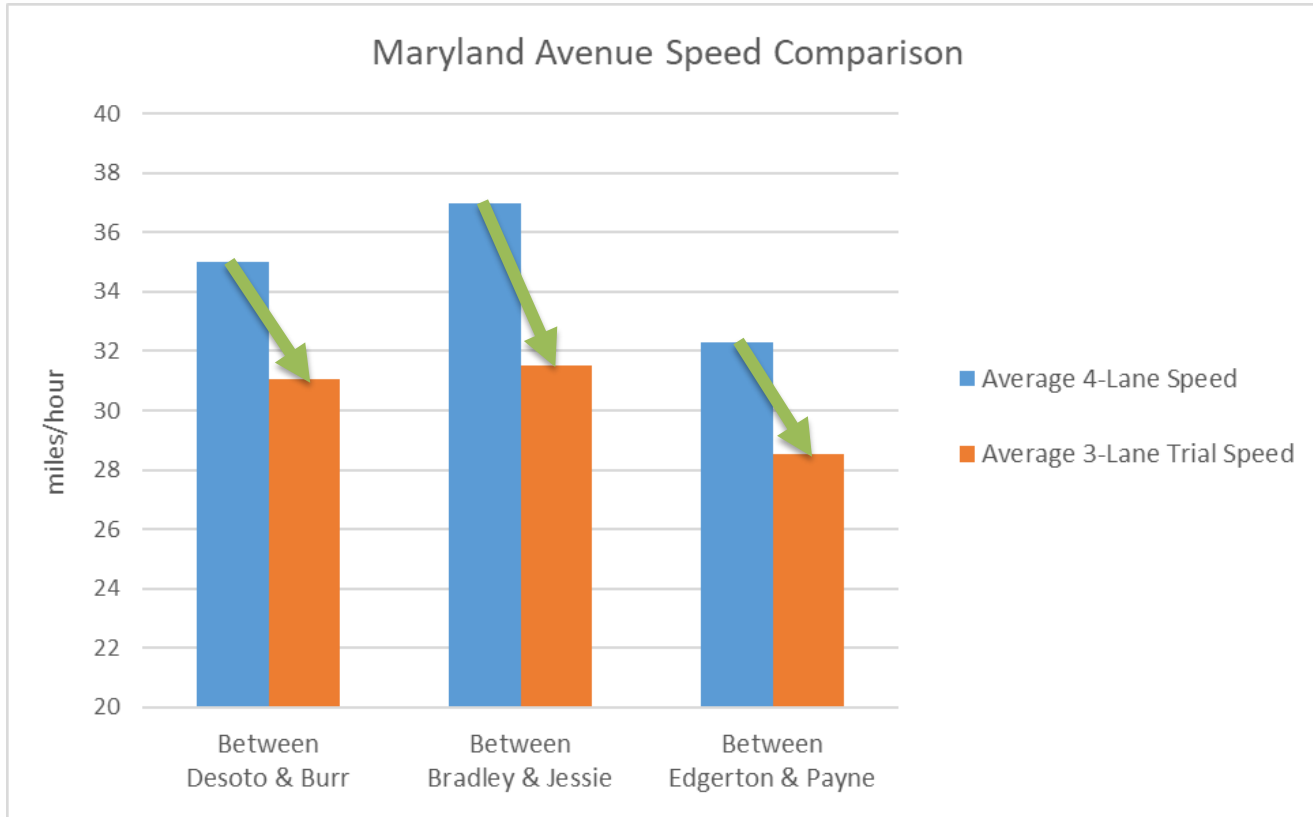


OTHER PARALLEL STREETS

(Case/Arlington/
Cayuga/Wheelock)

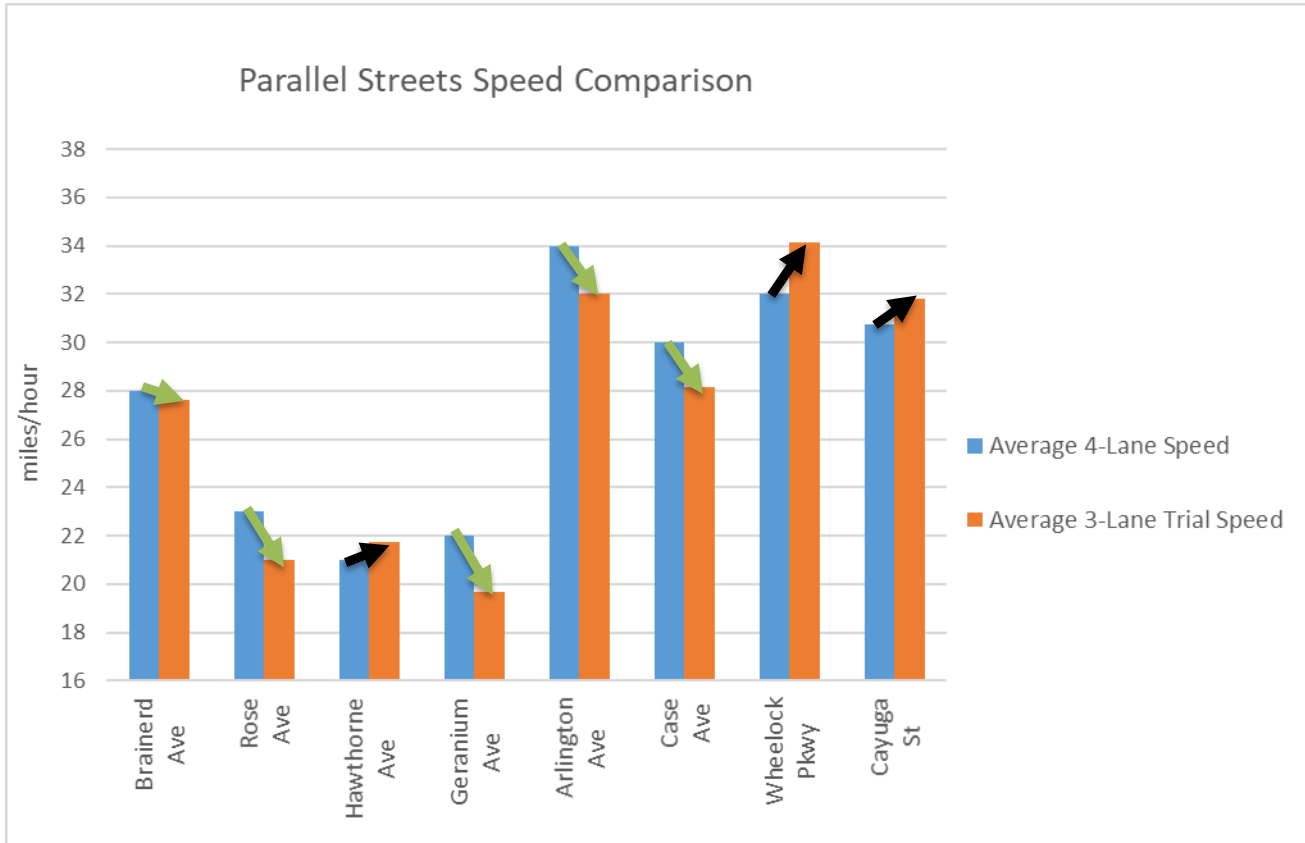


Vehicle Speeds – Maryland Avenue



- Maryland Avenue average speeds have declined 4-6 mph

Vehicle Speeds – Parallel Streets



- No observed speed increase on nearby parallel streets
- Overall, no consistent pattern of speed change on parallel streets

Vehicle Delay/Backups

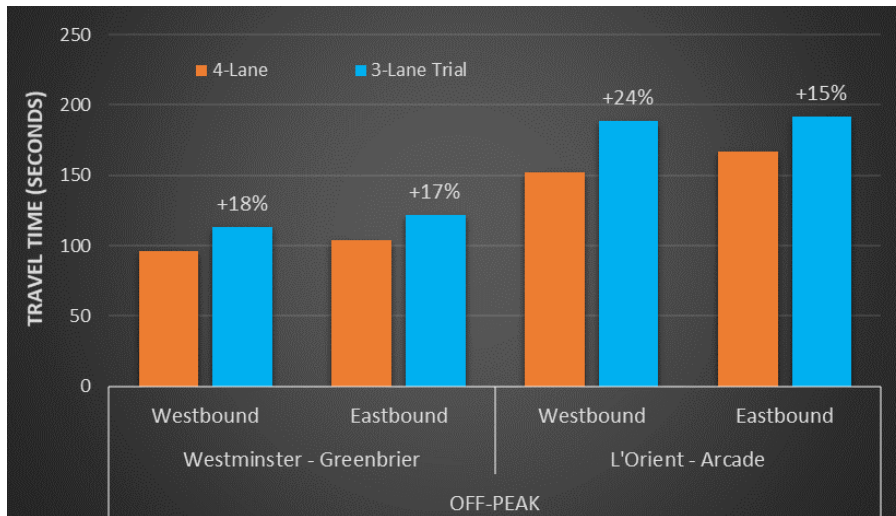
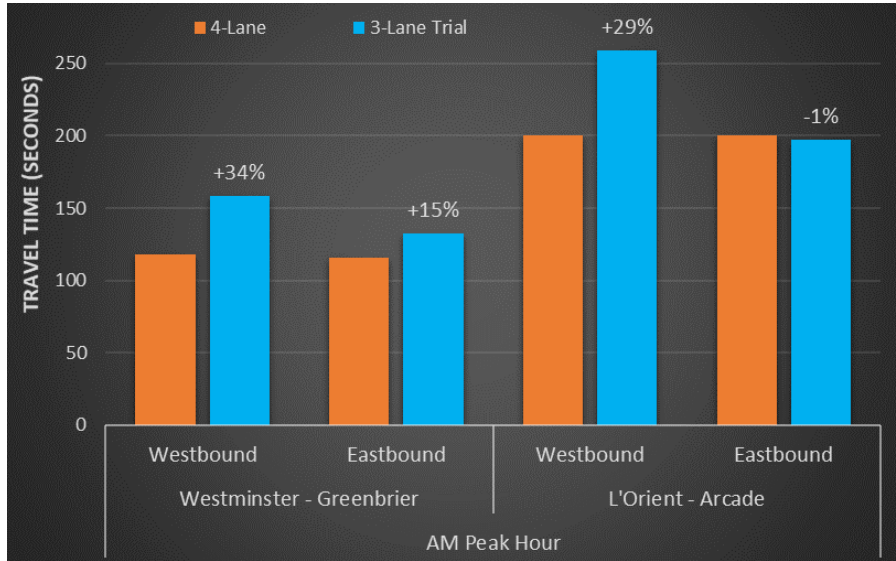
| | Eastbound | | | | | |
|--------------|-------------------------|----------------------------|------------------|-------------------------|----------------------------|------------------|
| | 4-Lane | | | 3-Lane Trial | | |
| | Average Travel Time (s) | Average Travel Speed (mph) | Level of Service | Average Travel Time (s) | Average Travel Speed (mph) | Level of Service |
| AM Peak Hour | 115 | 23 | B | 132 | 20 | B |
| Off-Peak | 104 | 26 | A | 122 | 22 | B |
| PM Peak Hour | 148 | 18 | C | 180 | 15 | C |

| | Westbound | | | | | |
|--------------|-------------------------|----------------------------|------------------|-------------------------|----------------------------|------------------|
| | 4-Lane | | | 3-Lane Trial | | |
| | Average Travel Time (s) | Average Travel Speed (mph) | Level of Service | Average Travel Time (s) | Average Travel Speed (mph) | Level of Service |
| AM Peak Hour | 118 | 23 | B | 158 | 17 | C |
| Off-Peak | 96 | 28 | A | 114 | 24 | B |
| PM Peak Hour | 121 | 22 | B | 122 | 22 | B |

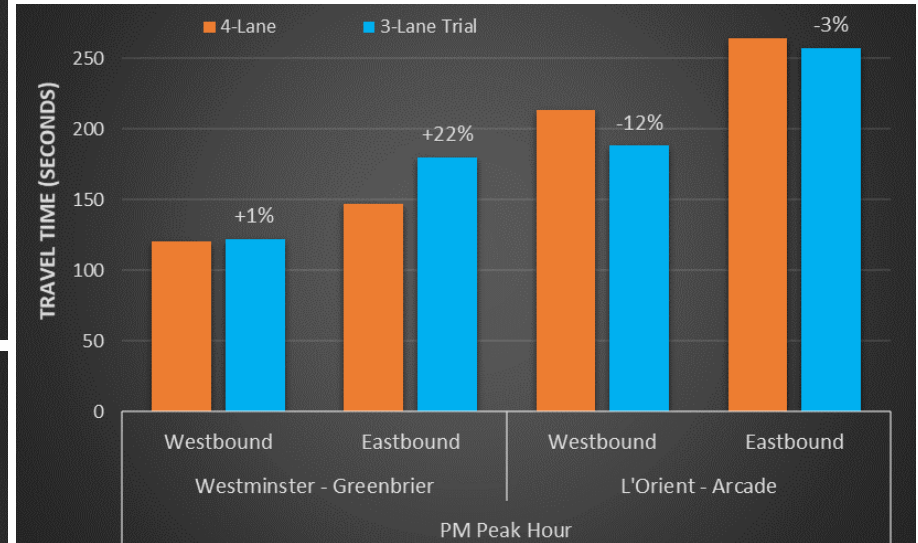
- As expected, vehicle delay is up during the AM/PM rush hours
- However, rush hour delay is still well within acceptable standards for an urban setting



Travel Time



- As expected, travel time is up slightly ($\leq 40s$) during the AM/PM rush hours from Westminster to Greenbrier



- Travel time increases are lower during off-peak periods ($\leq 20s$) from Westminster to Greenbrier

Crash Experience

**SEPTEMBER 2019
CRASHES**

6 documented crashes along
the study corridor

CRASH TYPE

 **4** Rear-end

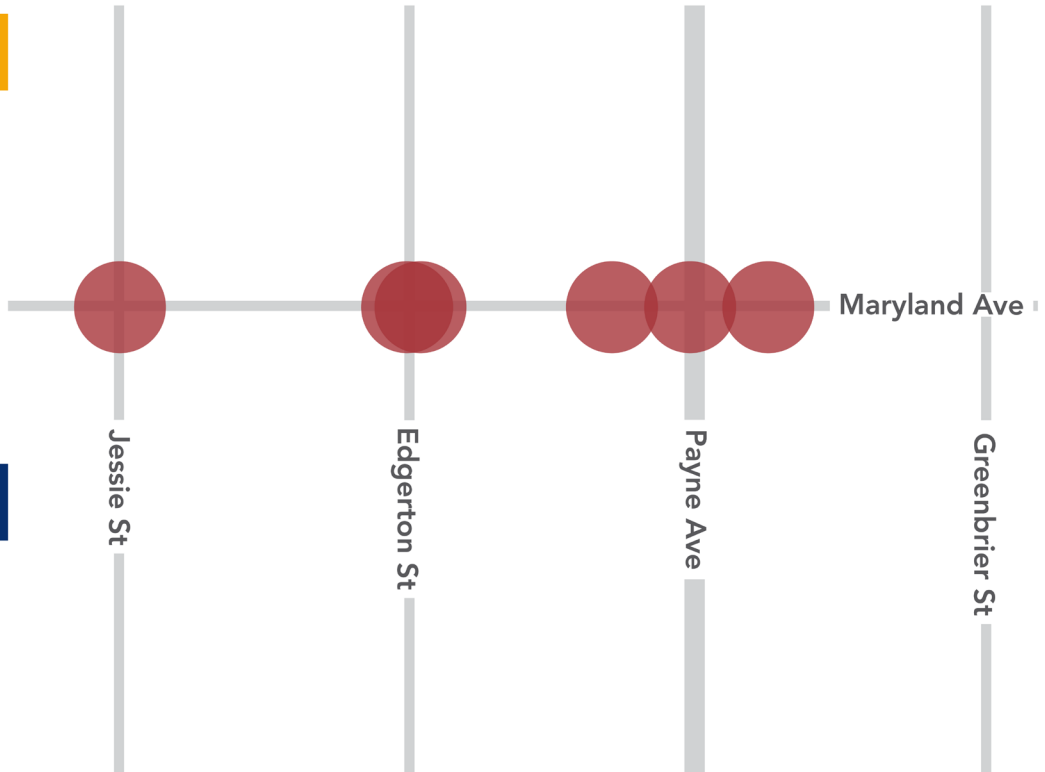
 **1** Left-turn

 **1** Head-on

CRASH SEVERITY

 **4** Property
damage only

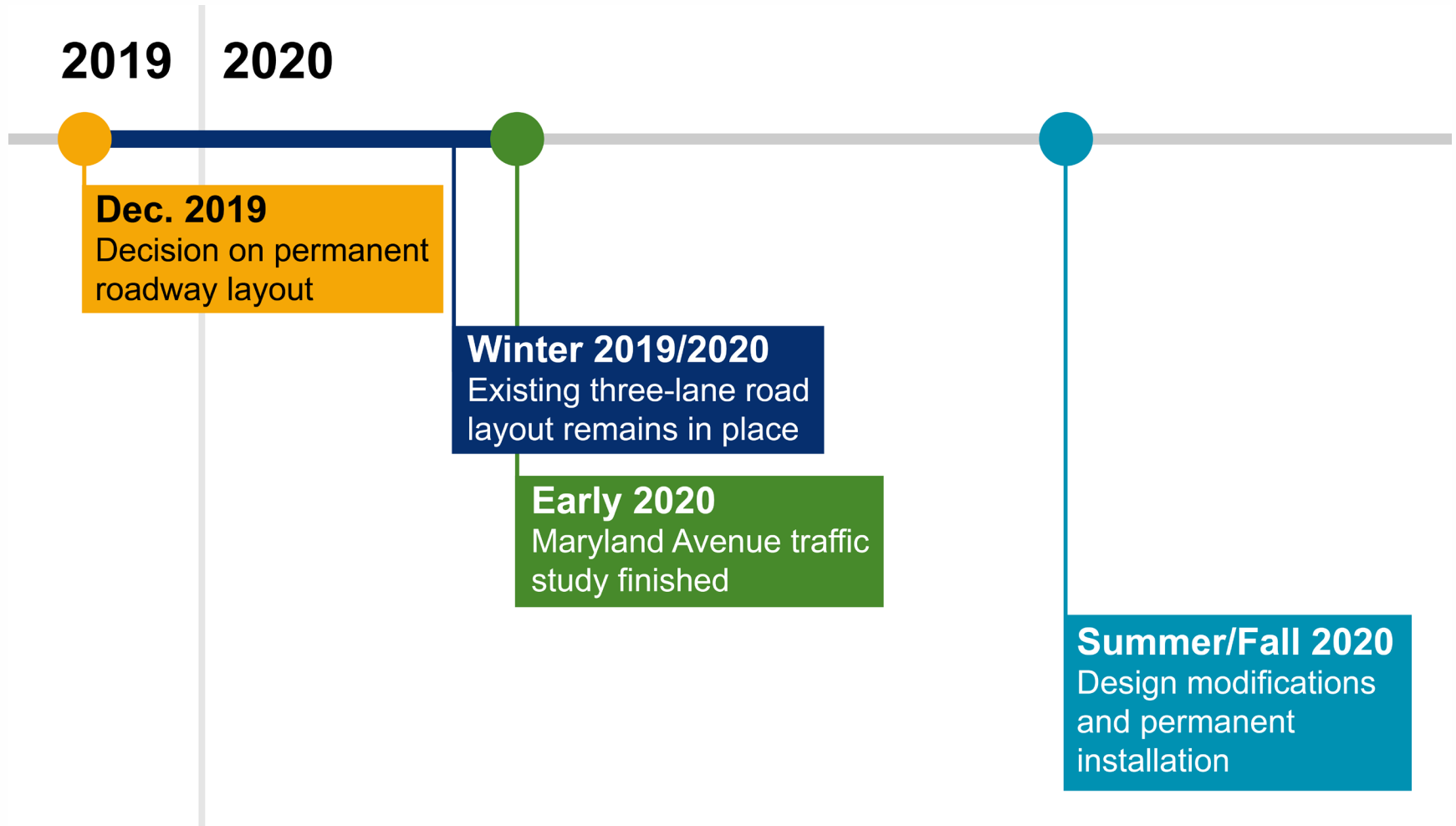
 **2** Possible injury



Note: More crash data will be gathered at the end of the three-lane trial period



Remaining Schedule



Thank you!

For more information:

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