

SUMMARY OF TRAFFIC MODELING FOR CENTRAL AVE FROM BETHANY HOME RD TO DUNLAP AVE

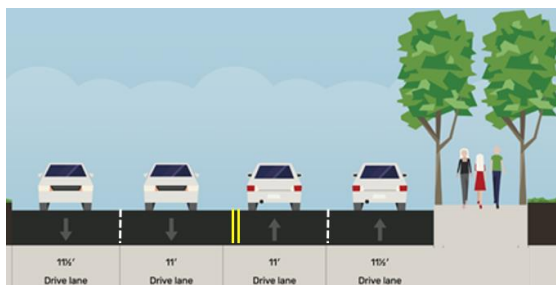
OVERVIEW

As part of the Street Transportation Department (Streets)'s implementation of the City's Complete Streets Policy, all pavement projects are reviewed for potential striping modifications to support all road users. Central Avenue, from Bethany Home Road to the Arizona Canal, is part of a pavement maintenance project. Additionally, Streets has received numerous requests from the community to consider a change to the striping configuration of Central Avenue to include bicycle lanes.

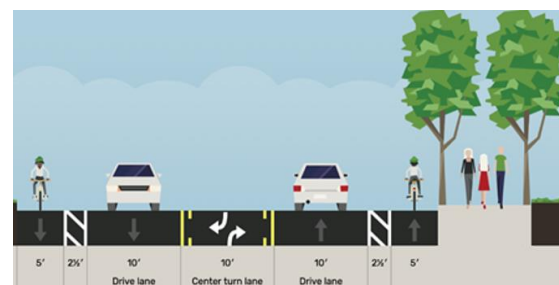
The pavement maintenance project does require the street to be restriped regardless of any potential changes to the configuration. Where any changes to a street are considered, such as changes in the number of lanes or impacts to existing on-street parking, Streets conducts a public outreach process and invites the public to ask questions and provide feedback.

Central Avenue is an arterial roadway with a unique street cross-section that consists of two directional general-purpose traffic lanes with no center two-way left turn lane, except at the intersections with arterial roadways and at one collector street, Maryland Avenue. The majority of this roadway section also includes the Murphy Bridle Path, which is renowned for its use by people walking, biking, and jogging.

The purpose of this traffic analysis summary is to compare the resulting estimated changes to vehicular traffic delay of the proposed lane configurations at the arterial street intersections, as well as at Maryland Avenue. This analysis uses the Synchro software model, which is adapted from the nationally recognized Highway Capacity Manual. The Highway Capacity Manual has been developed over decades of research and is a fundamental tool for professional traffic engineers.



Existing Lanes



Proposed Changes

MODELING METHODOLOGY

Traffic counts: Counts were performed in February 2021 at all of the intersections except Dunlap Ave. These counts were taken during the current pandemic. Maricopa Association of Governments data indicates that regional traffic was back to before pandemic levels in February

2021. This does not take into account specific locations or whether local schools were back in class, in hybrid, or online only. The counts for Dunlap Avenue were performed in March of 2018. These counts were used to create traffic models simulating traffic flow and delay for the existing and proposed layouts of the street.

SUMMARY

- During AM peak hours (7:00 am to 8:00 am), the difference in the average additional delay for all vehicles entering the traffic signals along this corridor ranges from 1 to 3 seconds. The southbound movement in the AM peak ranges from an additional 2 to 7 seconds. The highest increase in delay is for the southbound direction at the Bethany Home Road and Central Avenue intersection.
- During PM peak hours (4:45 pm to 5:45 pm), the difference in average delay for all vehicles entering the traffic signals along this corridor ranges from 1 to 8 seconds. The northbound movement in the PM peak ranges from 2 to 35 seconds. The highest increase in delay is for the northbound direction at the Glendale Avenue and Central Avenue intersection.

TURNING TIME CHANGES

Average changes in delay at the intersection approaches were modeled using traffic counts performed in 2021 and 2018. The averages were rounded to the nearest whole number in the following table:

Key

Decreased delay over 20 seconds	Decreased delay of 11 to 20 seconds	Decreased delay up to 10 seconds	No change in delay	Increased delay up to 10 seconds	Increased delay of 11 to 20 seconds	Increased delay over 20 seconds	Movement not possible
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Bethany Home Road & Central Avenue

	AM Peak (7–8 AM)	PM Peak (4:45–5:45 PM)
Eastbound Left turn	-1	4
Eastbound	-2	6
Eastbound Right turn		
Westbound Left turn	-3	6
Westbound	-1	11
Westbound Right turn		
Northbound Left turn	1	-6
Northbound	8	29
Northbound Left turn		



Southbound Left turn	7	3
Southbound	7	-4
Southbound Right turn		

Maryland Avenue & Central Avenue

	AM Peak (7–8 AM)	PM Peak (4:45–5:45 PM)
Eastbound Left turn	-1	1
Eastbound	3	1
Eastbound Right turn		
Westbound Left turn	-8	0
Westbound	2	1
Westbound Right turn		
Northbound Left turn	7	-1
Northbound	7	0
Northbound Left turn		
Southbound Left turn	-1	0
Southbound	1	1
Southbound Right turn		

Glendale Avenue & Central Avenue

	AM Peak (7–8 AM)	PM Peak (4:45–5:45 PM)
Eastbound Left turn	3	1
Eastbound	8	1
Eastbound Right turn		
Westbound Left turn	1	1
Westbound	4	5
Westbound Right turn		
Northbound Left turn	-10	3
Northbound	-5	35
Northbound Left turn		
Southbound Left turn	-7	22
Southbound	7	6
Southbound Right turn		



Northern Avenue & Central Avenue

	AM Peak (7–8 AM)	PM Peak (4:45–5:45 PM)
Eastbound Left turn	3	1
Eastbound	5	4
Eastbound Right turn		
Westbound Left turn	4	3
Westbound	2	4
Westbound Right turn		
Northbound Left turn	-1	-3
Northbound	-1	10
Northbound Left turn		
Southbound Left turn	-4	-2
Southbound	6	4
Southbound Right turn		

Dunlap Avenue & Central Avenue

	AM Peak (7–8 AM)	PM Peak (4:45–5:45 PM)
Eastbound Left turn	-5	-10
Eastbound	-11	-14
Eastbound Right turn		
Westbound Left turn	2	-3
Westbound	-3	-4
Westbound Right turn		
Northbound Left turn	4	2
Northbound	1	1
Northbound Left turn		
Southbound Left turn	3	15
Southbound	2	7
Southbound Right turn		