

Lagging Left Turn



Project Citizen Students
-Mesa High School-

Definition of a Leading Left Turn

- **Leading Left Turn Sequence:** A sequence where left turns are given a green arrow just before oncoming straight-ahead traffic has a circular green. The left turn phase ends with a yellow arrow, and immediately after it becomes a red arrow, the oncoming traffic gets a circular green.

Leading Sequence



Green
Arrow



Yellow
Arrow



Red
Arrow

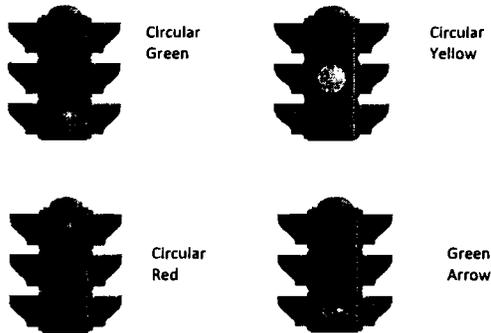


Circular
Green

Definition of a Lagging Left Turn

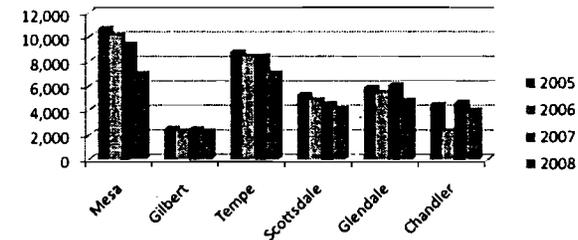
- **Lagging Left Turn Sequence:** A sequence where the oncoming traffic has a circular green just before the left turn traffic gets a green arrow. The oncoming movement ends with a circular yellow, then circular red. Then the left turn traffic is given a green arrow.

Lagging Sequence



Problem

- The following is a list of problems with the Leading Left Turn system that is implemented in Mesa.
 - When compared to other cities, like Tucson, Gilbert, and Scottsdale, in the State of Arizona, Mesa has the highest crash rate. (other than Phoenix)



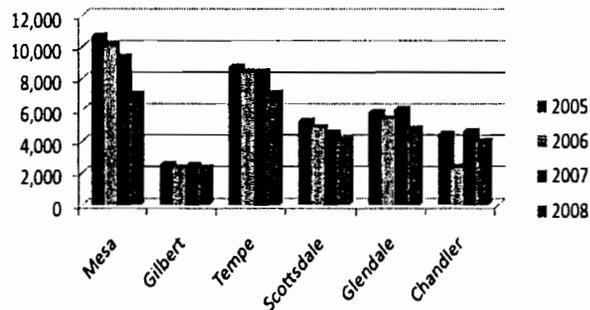
Problems (cont.)

- The following is a list of problems with the Leading Left Turn system that is implemented in Mesa.
 - Left Turn Collision Risk is greater than a Lagging Left System.*
 - More Back-Logging Traffic*
 - More Red-Light Runners
- Having this type of Traffic System keeps the City of Mesa out of sync with Gilbert.
 - It is difficult for travelers between both cities to adjust to the change of the road. *

*Back-Logging Traffic

- Back-Logging Traffic is the traffic that remains idling in a turning lane after a light sequence has been completed.
- Back-Logging Traffic is at its maximum rate during the peak hours of the morning and evening. (also known as *Rush Hour*)

*Left Turn Collision Risk



- This represents the City of Tucson before and after they implemented the Lagging Left System.

Alternative Policies

- On March 2nd, 2004, the Gilbert Town Council agreed to implement Lagging Left Turn Arrows. The plan was enacted on April 13th, 2004 when a contract was approved with Olsson Associates
- Physical Conversion of the lights began in late September of that year and was completed approximately three weeks later.
- Information Courtesy of Gilbert Town Council Meeting Record on Tuesday October 5th, 2004.

Cost of Gilbert's Policy

- Debbie Whapham, the Traffic Safety Assistant for Gilbert, stated in an E-Mail to our group that the cost of the Lagging Left Policy was "Primarily town staff time. In other words, really no additional cost other than staff setting lagging lefts."
- On April 13th, 2004, Olsson Associate's contract was approved by the town and the budget that was approved was for \$57,625.

Our Policy

- We know that once Public Policies are made and implemented, they affect people.
- Our Policy calls for a change to the busiest Traffic Intersections in Mesa from Leading to Lagging Left Turn Arrows
- We are taking into consideration some of the most important factors in creating our policy.

Potential Benefits of Lagging Lefts

- Fewer Red-Light Runners
- Drivers would reach destinations in City Faster
- Car Insurance rates would be reduced
- Reduce fatalities of Drivers in accidents
- Greenhouse Emissions reduction

Disadvantages of Lagging Lefts

- Change of Traffic lights system potentially may raise accidents in city immediately after installation
- May take time to see the benefits.
- May take time to see the insurance reduction.
- Yellow Trap*

*Yellow Trap

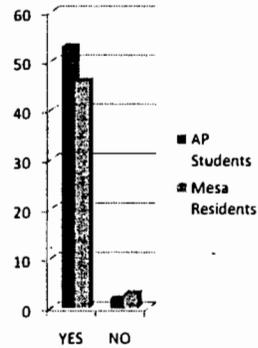
- This was brought to our attention from a Mr. Sarath Joshua, with the Maricopa Association of Government (MAG).
- In our defense, this only occurs with Protected/Permissive Traffic Systems. (Basha)
- The "Yellow Trap" is when sensors in the streets notice a difference between lanes turning left.

Solutions

- We suggest posting signs at intersections where a lagging left system is implemented to warn drivers about the change.
- Also by sending notices to the community via newsprint, radio, and the web (Mesa's Website)

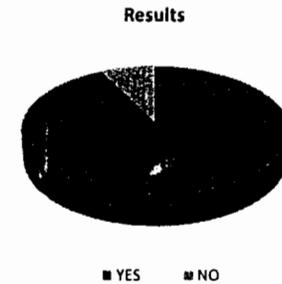
Resident Polls

- Our group conducted two different polls asking AP Students and Mesa Residents if they think a change to the traffic light sequence in Mesa is beneficial
- All of the participants in these polls have licenses and know about the rules of the road.
- We don't want to base our presentation on the opinion of the general public, but on facts.
- An opposer of the Lagging Left System, Sarah Joshua, believes that "The decision of where lagging or leading should be implemented is a traffic engineering decision that takes into account many factors—it should not be one made by asking the general public or the City Council."
- Our argument is this,....
 - We have had advice from experts in their field from Tucson, Mesa, and Gilbert.
 - Also from specialists like Paul Basha, George C. Runger.



Survey Data

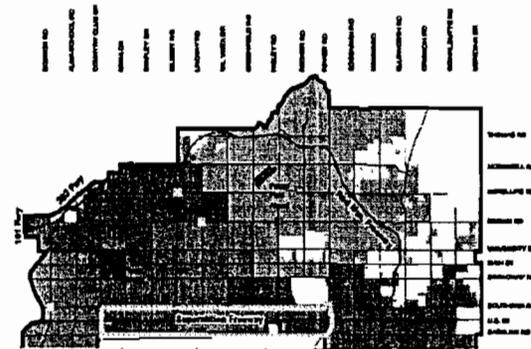
- We conducted another questionnaire to the citizens of Mesa.
- Requirements:
 - Has traveled between both Mesa and Gilbert
 - Resident of Mesa
 - Possess a Valid Driver's License



Action Plan

- Our group's Action Plan recommends a 6 month trial run of the lagging left turn arrows within the outlined portion of the map that will follow this slide. These lights run from Country Club Road east to Power Road on both Southern and Baseline Road.

Action Plan Map Layout



Action Plan (cont.)

- After the Trial run is completed and, should the results be in favor of the lagging left turn lights, our group recommends a citywide installation at all major intersections of the lights
- Our group understands that these lights cannot be installed at certain intersections because they wouldn't be as effective as the leading left turn lights.

Special Thanks to...

- **Arizona Department of Transportation**
- **Specialists**
 - Natalie Carrick, P.E. Olsson Associates
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 - Michael Hicks, ITS Manager
- **Mesa**
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 - Sgt. Schweitzer, Mesa Police Department
- **Maricopa Association of Government (MAG)**
 - Eric Anderson
 - Dennis Smith



And...

Mesa City Council
Transportation & Infrastructure Committee
Nikki Rosales
Miranda Culver

*Thank You for allowing us to present to you
and for giving your time in making our
presentation possible!!!*