

Traffic Calming on South Arch Street (17th to Roosevelt)

Dr. John Landosky, City of Little Rock BikePed Coordinator

Introduction

Residents of Arch Street have expressed concern about cut through traffic volumes and speeds on Arch Street between 17th and Roosevelt. The following considers potential interventions.

Existing Conditions

Arch Street from 17th to Roosevelt is a nine block, ~3.2K lin. ft., Residential street with shopfronts at Arch and 23rd. The street is 35 ft. wide typically with no center line and unrestricted street parking on both sides (Fig. 1). LRPD and CLR Traffic Engineering have recently done traffic studies in this corridor; CLR's study shows no compelling evidence of systematic speeding.



Figure 1. Especially without parked cars present, Arch Street is straight, level, and wide, which may promote speeding.¹

Arch in the Street Grid

Streets have dual, competing functions of efficiently moving people and accessing properties.² One block east of S. Arch St. is Broadway, a parallel-running Principal Arterial and State Highway. Broadway's primary purpose is to move people; as a residential street, Arch St.'s purpose is to access properties. However, Arch's location within the street grid may encourage cut-through traffic.

South of Roosevelt, Arch St. becomes a Principal Arterial and State Highway. Southbound vehicular traffic must shift one block west from Broadway to Arch to continue south; northbound vehicular traffic must shift one block east from Arch to Broadway to continue north. Most traffic shifts on Roosevelt, as intended (Fig. 2, yellow), but some may cut-through on Arch St.(Fig. 2, red).



Figure 2. The street grid layout may encourage cut-through traffic; more study is needed.

Traffic Calming

If the design of the street grid were the source of dangerous behavior, it may be through redesign of the street grid that behavior can be better managed. Traffic calming is a suite of interventions that decrease vehicular speeds. More evidence is needed to determine traffic patterns and appropriate interventions.

Traffic calming can (US DOT):³

- Address chronic disease
- Improve equity
- Increase physical activity
- Improve safety (Fig. 3)
- Reduce motor vehicle-related injuries and fatalities
- Reduce transportation's contribution to air pollution

There are several potential traffic calming measures that could be part of a suite of interventions, including:⁴

- Posting a 25 mph speed limit (CLR will do)
- Speed humps (a.k.a. speed "bumps")
- Raised crosswalks
- Curb extensions
- Neighborhood traffic circles
- Pinchpoints / Neckdowns

However, for a cut-through corridor, there may be no single intervention more effective than creating a Neighborhood Greenway.

Neighborhood Greenway

A neighborhood greenway, or bicycle boulevard, is a street that is accessible to all traffic modes, but vehicular traffic volumes are reduced by physically preventing cut-through traffic. By creating a neighborhood greenway, property owners could access their homes and driveways and continue to park on either side of the street, but no vehicle could drive all the way from 17th to Roosevelt on Arch Street.

Efficacy: Why would this intervention be particularly effective? If the street grid is encouraging use of Arch St as a Principal Arterial (Fig. 2), this intervention would **directly** address that problem by preventing this use of Arch Street. This would not prevent other traffic calming measures to be implemented as well.

Cost: Some traffic calming measures would be expensive to implement. Neighborhood greenways can be inexpensive to implement depending on the types of barriers used.

Pop-Up: A Pop-Up event may be particularly useful when considering a neighborhood greenway:

- 1) Residents can determine if traffic calming benefits outweigh any costs of how properties are accessed before more permanent infrastructure installed.
- 2) Pop-Up structures creating a bike boulevard may be more straightforward than some other interventions like speed humps.



Figure 3. Vehicles on Arch St. may range in speed from 20-40mph. Differences in the consequences of striking a pedestrian between these speeds are dramatic and higher speeds preferentially blind drivers to street peripheries where children tend to play. Learn more by taking a Friendly Driver course www.littlerock.gov/FriendlyDriver.

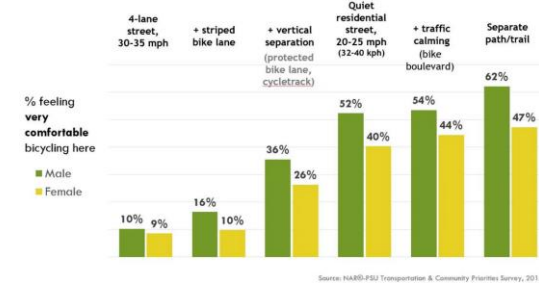


Figure 4. Neighborhood greenways are more effective than conventional or protected bike lanes to encourage cycling.

Timing: The timing of this Pop-Up would be particularly relevant. The City of Little Rock is about to create a new Master Bicycle and Pedestrian Plan. Neighborhood greenways are inexpensive and effective ways to quickly establish a bicycle network (Fig. 4). This pop-up event could help determine if neighborhood greenways should be part of the City's approach to a bicycle network.

Other Neighborhood Benefits:⁵

- 1) Community Health: Bigazzi (2014) showed a demonstrable decrease in air pollution in neighborhood greenways due to decreased traffic volumes.
- 2) Improved home values: Liu and Shi (2017) found increased home values along bike boulevards.

References

1. <https://usa.streetsblog.org/2015/05/27/compelling-evidence-that-wider-lanes-make-city-streets-more-dangerous/>
2. <https://www.littlerock.gov/media/3889/master-street-plan-3-26-2018.pdf>, pg. 7
3. <https://www.transportation.gov/mission/health/Traffic-Calming-to-Slow-Vehicle-Speeds>
4. <https://nacto.org/publication/urban-bikeway-design-guide/bicycle-boulevards/speed-management/>
5. <https://jenniferdill.net/2019/06/27/a-case-for-bike-boulevards/>

Disclaimer

Part of my responsibility as the City's BikePed Coordinator is to inform City staff and the public about design options that promote pedestrian, bicycle, and neighborhood safety. I am not stating that these or any traffic calming measures are necessary or appropriate in this corridor nor are any specific measure approved for implementation by the City. An intervention like a neighborhood greenway should be evidence-based and promoted by the residents of the street on which benefits and possibly costs would occur. The City uses an evidence-based approach to maximize safety and fairly prioritize resource allocation.