

**RESEARCH PROBLEM STATEMENT**

<b>DATE:</b> 09/06/2019	<b>PROJECT AREA:</b> Construction/Special Projects
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**TITLE:** Implementing Zipper Merge in Work Zones on Arkansas Roadways

**PROBLEM STATEMENT:**

The zipper merge is a form of late merging that directs drivers to use both lanes of vehicle traffic until the merge point, and then alternately merge as the lane tapers. This merging style has been shown to help alleviate traffic delays in work zone lane closures by fully utilizing the road’s capacity. This can provide the benefit of better flow management, decreased queue length, and safety improvements. These benefits have been studied and observed in Arkansas. The next step is outreach and implementation.

Despite its proven effectiveness, there has been limited implementation of zipper merge in Arkansas. It has rarely been used in construction zones. When there has been an attempt to utilize zipper merge, the results were limited due to a lack of compliance from drivers. Other states that have studied and implemented zipper merge have undertaken vigorous public information campaigns, so it is likely a similar program needs to be undertaken in Arkansas for zipper merge to have a chance at succeeding.

- OBJECTIVES:**
- Based on a literature review and studies that have already been conducted in Arkansas, determine what existing work zones in Arkansas are good candidates for implementing zipper merge.
  - Review zipper merge public outreach campaigns used in other states as well as public information campaigns used in Arkansas for other transportation related issues. Conduct outreach, especially targeting the areas surrounding the selected zipper merge testing sites. This may include signs, videos, social media/print/TV campaigns, and face-to-face public engagements.
  - Report on observed outcomes from test sites. Survey public to determine the effectiveness of the various outreach efforts.

**FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:**

Expand the outreach campaigns that are shown to be most effective. Expand the use of zipper merge where most potentially beneficial.

ROI: Although it is difficult to determine the full cost of work zone congestion, there is a potential for major savings based on existing data if even just a small amount of the congestion could be eliminated. The American Transportation Research Institute reports that congestion in Arkansas costs the trucking industry \$809,745,356 annually in additional operational costs. A 2015 study found that traffic congestion in Benton and Washington counties was costing \$103 million annually. The US DOT reports that work zones account for 10% of congestion.

**Estimated Project Duration:** 24 Months

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Standing Subcommittee  
Ranking

Advisory Council  
Ranking

Statement Combined with  
Statement Number(s)