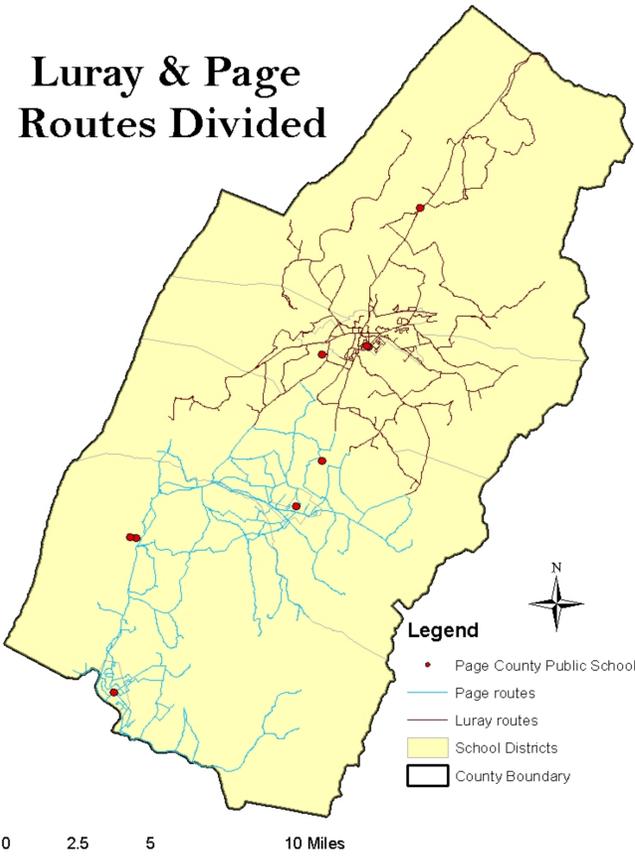


# PROJECT: Bus Solutions



## Luray & Page Routes Divided



### ANALYSIS

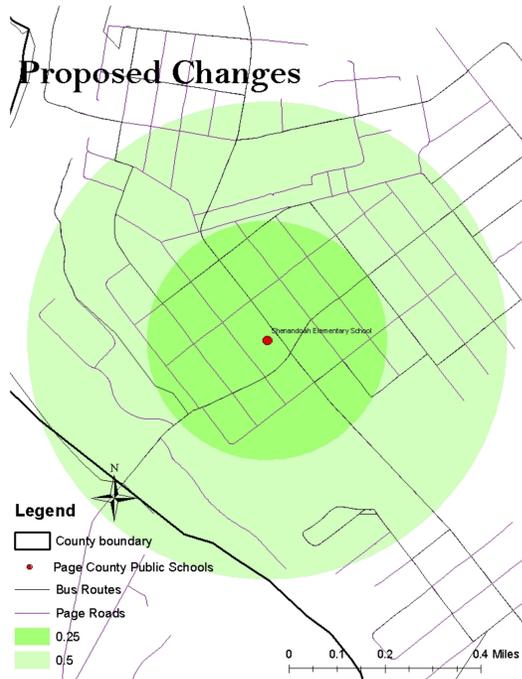
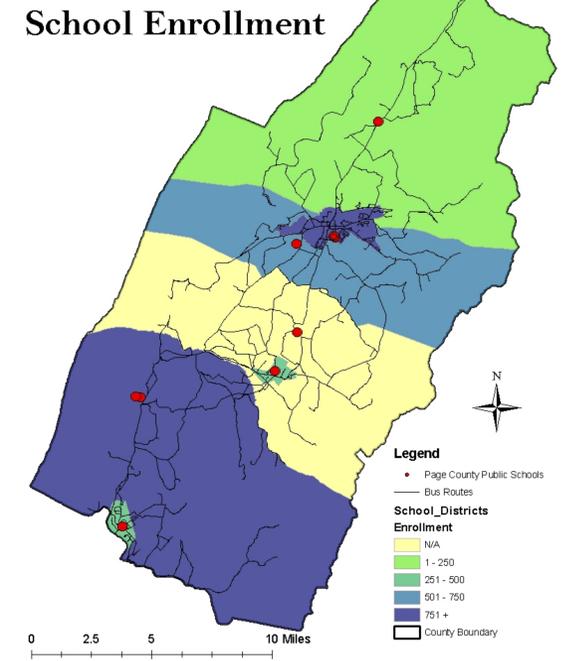
In my project, I analyzed the correlation between the enrollment of the school districts and the number bus routes going to that district, and also the number of schools in each. From this analysis, I found that the Shenandoah District has 1102 enrolled students and 15 bus routes, while the Luray Town District only has 965 students and 17 bus routes, each district possessing two schools each.

### INTRODUCTION

The goal of my project was to analyze the ratio between the county school's bus routes and the enrollment of the schools in each district. I was looking to see if the enrollment of each school district correlated appropriately with the number of bus routes to each district. If that was not true, my goal was to find a way to solve that problem. With the proposed budget cuts, I was looking for ways to make school transportation more efficient.

### DATA COLLECTION

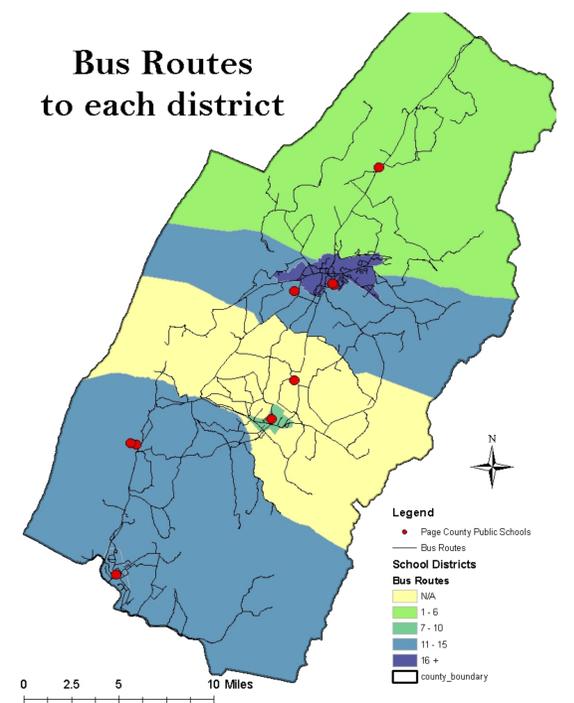
Mr. Richard Thompson, the Director of Support Services for Page County Public Schools, provided me a list of all of the bus routes. I used Network Analyst to plot each bus route on the map. Enrollment data was obtained from public information provided by the School Board.



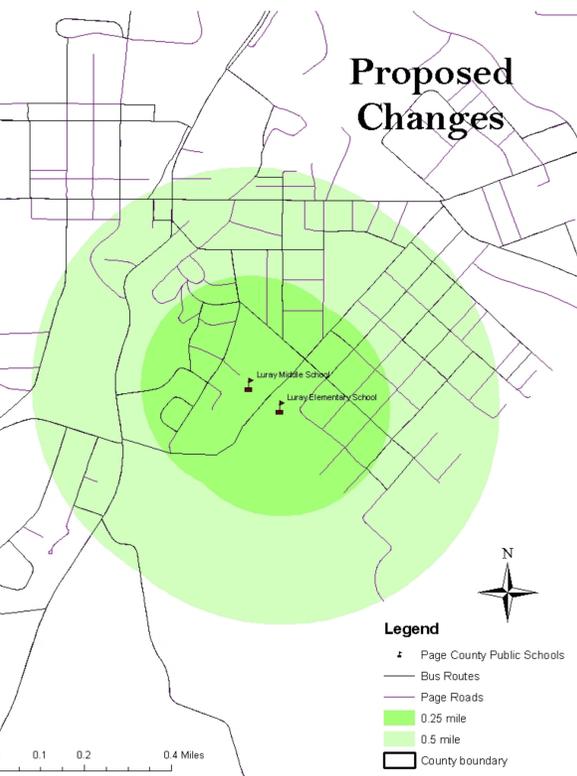
### HYPOTHESIS

Going into the project, I thought that the number of buses going to each school district would not match the number of enrollment of that district. I found that my hypothesis was true.

The first step in completing my project was using Network Analyst to create all of the bus routes. After I created all of the routes, I put a map together showing the schools districts, schools, and bus routes of the county. I then symbolized the school districts by school enrollment, number of bus routes, and number of schools; each in a separate map. After the maps were completed I looked for patterns in my data.



## Proposed Changes

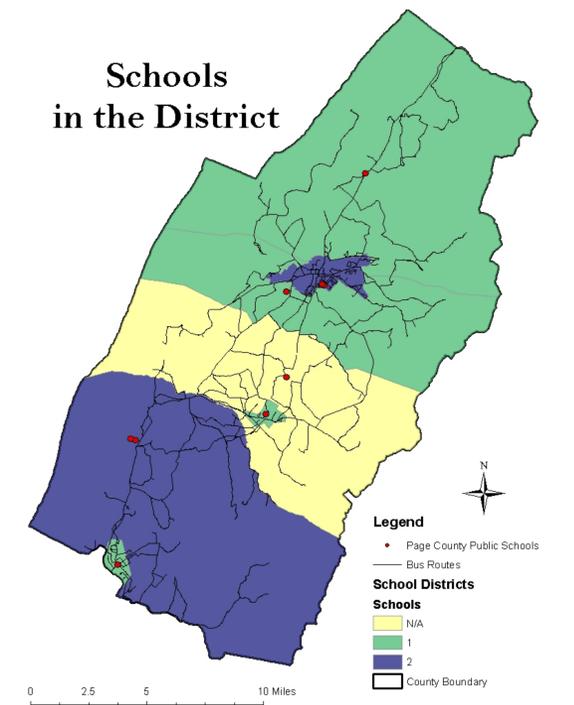


### RESULTS

I saw that the correlation between school enrollment and the number of bus routes to those schools were somewhat uneven. Finding this, I created a new map showing Luray Middle and Luray Elementary School and another map showing Shenandoah Elementary School. Since these schools have more bus routes than what should match their enrollments, I created a map proposing a route change. I made two .25 and .5 mile buffers around the schools. I did this because the children in at least one of these buffer zones should be able to walk to school or have an alternate route of transportation. This change could possibly reduce the number of students on each bus, by allowing the school district to combine several routes.

Name	# of Bus Routes	Enrollment
Luray Town District	17	965
-Luray Elementary	17	600
-Luray Middle	17	365
Luray District	15	554
-Luray High	15	554
Springfield District	6	204
Springfield Elementary	6	204

Name	# of Bus Routes	Enrollment
Shenandoah Town	11	440
-Shenandoah Elementary	11	440
Stanley Town	9	484
-Stanley Elementary	9	484
Shenandoah District	15	1102
-Page County Middle	15	467
-Page County High	15	635



Cara Stombeck  
Luray High School

SOURCES  
Mr. Richard Thompson - list of bus routes  
Page County School Board - school information