



The Transportation Information Management System

A Program of Computer-Assisted School Bus Routing and Scheduling

Generating Transportation Efficiencies in North Carolina's Public Schools

Sugarloaf Elementary School Transportation Efficiency Case Study Henderson County, NC August 2009

The Henderson County Schools (NC) transportation office began using Run Optimization at the end of the 2008-2009 school year in an effort to develop more efficient bus runs and routes for 2009-2010.

The displayed map shows the path of morning bus runs for Sugarloaf Elementary School. While the area and number of students served each year have not change dramatically, the use of Run Optimization has allowed TIMS Staff to reduce a number of key variables related to student transportation.

TIMS Staff decreased the Sugarloaf bus fleet from four buses to three buses. Last year, four buses each performed two AM runs and two PM runs each day. By analyzing student transportation data through Run Optimization, Henderson County determined the same number of students and geography could be served by just three buses, each performing two AM runs and two PM runs.

In addition to reducing the Sugarloaf bus fleet by 25%, the number of daily miles has been reduced from 171.4 miles last year to 164.6 miles for 2009-2010. Likewise, the total minutes of driving time decreased from 568 minutes to 510 minutes per day. These daily savings calculate to reductions of 1,229.4 miles and 174 hours of driving time over the course of the 180 day school year.

Student service, for the most part, is unaffected by these changes. While the average ride time increased from 36 minutes to 39 minutes, the average for students with the longest rides has been reduced from 59 minutes last year to 51 minutes this year.

2008-2009		
Bus#	Total Daily Miles	Total Daily Minutes
145	33.54	115
202	46.89	154
396	44.08	137
384	46.89	162
Total	171.4	568
Driver Hours		9.47
Avg. Ride Time	36 min	
AM Longest	52min	
PM Longest	48min	
Total Longest	70min	
Avg. Longest 5%	58.8min	
2009-2010		
Bus#	Total Daily Miles	Total Daily Minutes
202	52.98	167
223	52.64	158
227	58.95	185
Total	164.57	510
Driver Hours		8.50
Avg. Ride Time	39min	
AM Longest	46min	
PM Longest	47min	
Total Longest	52min	
Avg. Longest 5%	51.4min	
SAVINGS:		
	Daily	Annual
Miles	6.83	1229.4
Driver Minutes	58	10440
Driver Hours	0.97	174

