



The Transportation Information Management System

A Program of Computer-Assisted School Bus Routing and Scheduling

Generating Transportation Efficiencies in North Carolina's Public Schools

Watauga County Schools 2009-2010 Transportation Efficiency Study

The Watauga County Schools (NC) transportation office began examining the efficiency of bus routes in compliance with North Carolina guidelines regarding pupil transportation. Anticipating a reduction in transportation funding, transportation supervisor Toni Floyd reviewed the proximity of stops to one another as well as the amount of travel on side roads that occurred during the 2008-2009 school year.

Complying with North Carolina laws and policies, Watauga County eliminated a substantial amount of travel on a number of side roads where, safety permitting, students are able to walk to and from home to a corner stop just off the main road. Additionally, several bus stops within close proximity were moved to a minimum distance of 0.2 miles from one another, where applicable, reducing the amount of unique stops made each day.

By analyzing potential bus loads in TIMS and using a clever system of transfers in accordance with staggered bell times, Floyd was able to reduce a

number of buses from several schools, while significantly reducing daily mileage and driving hours across the county.

The chart below displays the savings made by implementing these changes at one school, Green Valley Elementary. The changes reduced the Green Valley bus fleet from six buses to five buses, eliminating 35.8 miles and 2.1 hours of driving time each day at this single school. These daily reductions calculate to 6,444 miles and 378 driving hours over the 180 day school year at Green Valley Elementary alone.

After implementing similar changes at all schools throughout Watauga County, preliminary estimates show daily reductions of 466.9 miles and 4.6 hours of driving time after eliminating unnecessary travel on side roads.

These county-wide reductions yield savings of an estimated 84,042 miles and 828 hours of driving time for the entire 2009-2010 school year.

Green Valley Elementary School								
2008-2009		2009-2010		Savings				
Daily Totals		Daily Totals		Daily Savings		Annual Savings		
Miles	Driving Hours	Miles	Driving Hours	Miles	Driving Hours	Miles	Driving Hours	
335.8	19.4	300	17.2	35.8	2.1	6,444	378	
Watauga County - All Schools								
2008-2009		2009-2010		Savings				
Daily Totals		Daily Totals		Daily Savings		Annual Savings		
Miles	Driving Hours	Miles	Driving Hours	Miles	Driving Hours	Miles	Driving Hours	
3236.4	170.1	2769.5	165.5	466.9	4.6	84,042	828	