

Metro Nashville

Traffic Signal Timing Optimization

ITSTN

September 29, 2011



Project Overview

- American Recovery and Reinvestment Act
- Traffic Signal Timing and Phasing Policy
- Signal timing plans
 - 8 Networks
 - Over 300 traffic signal intersections
- Data collection
- Modeling – SYNCHRO
- Field implementation
- Before and after studies



Yellow, All-Red, & FDW Updates

- New ITE recommendations for yellow and all-red
- New MUTCD rules for flashing don't walk times
 - New 3.5 feet per second speed
 - Alternate calculation for handicapped
- Increased times make improved MOEs a challenge
- Generally forced cycle lengths higher



Team

- Atkins
- R.G. Phillips Consulting
- Booker Engineering
- All Traffic Data Services
- Gerry de Camp



Networks

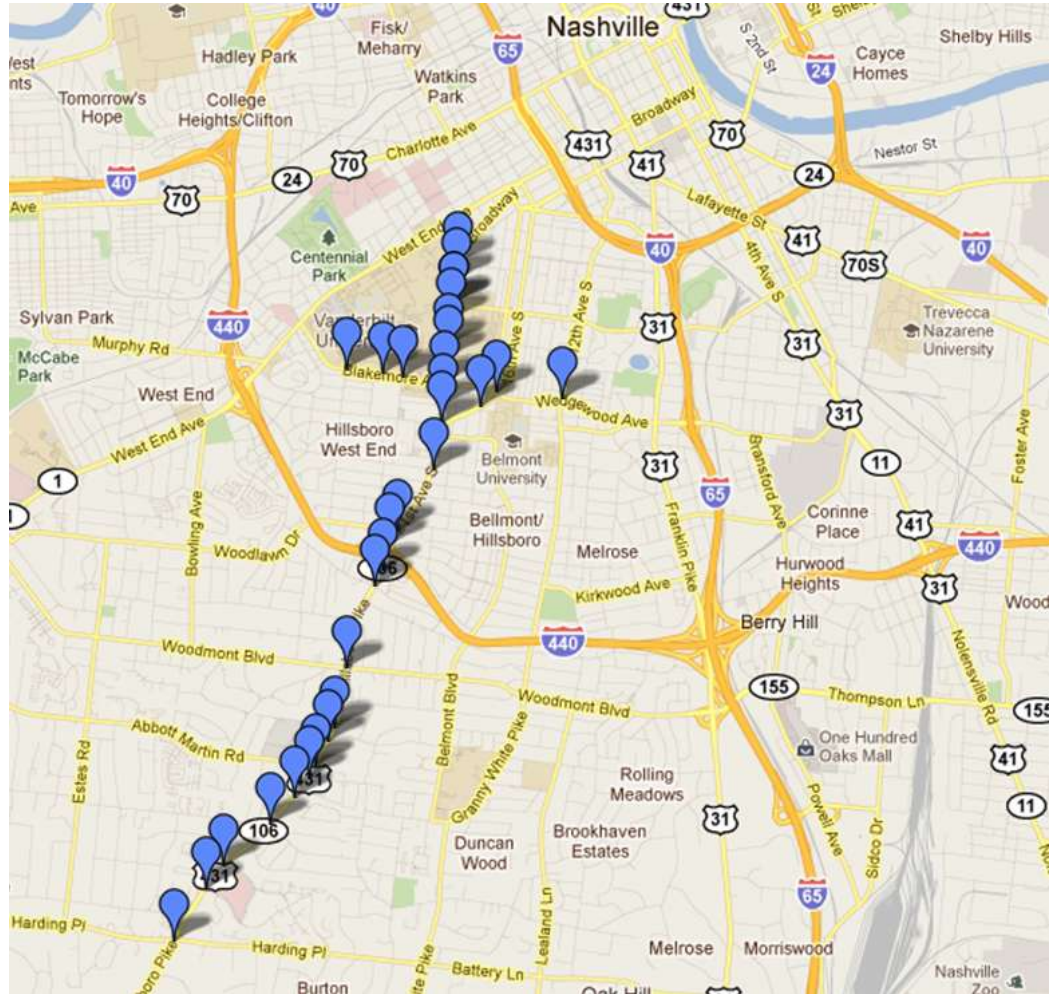
- Group 1 – Gallatin Pike
- Group 2 – Nolensville Pike/Harding Place
- Group 3 – Murfreesboro Pike
- Group 4 – Bell Road/Hickory Hollow Parkway
- Group 5 – 21st Avenue South/Hillsboro Pike
- Group 6 – West End Avenue/Harding Road
- Group 7 – Lebanon Pike/Old Hickory Boulevard/
Donelson Pike
- Group 8 – Charlotte Pike/White Bridge Road



21st Avenue South/Hillsboro Pike

ATKINS

- Atkins – 30 Signals

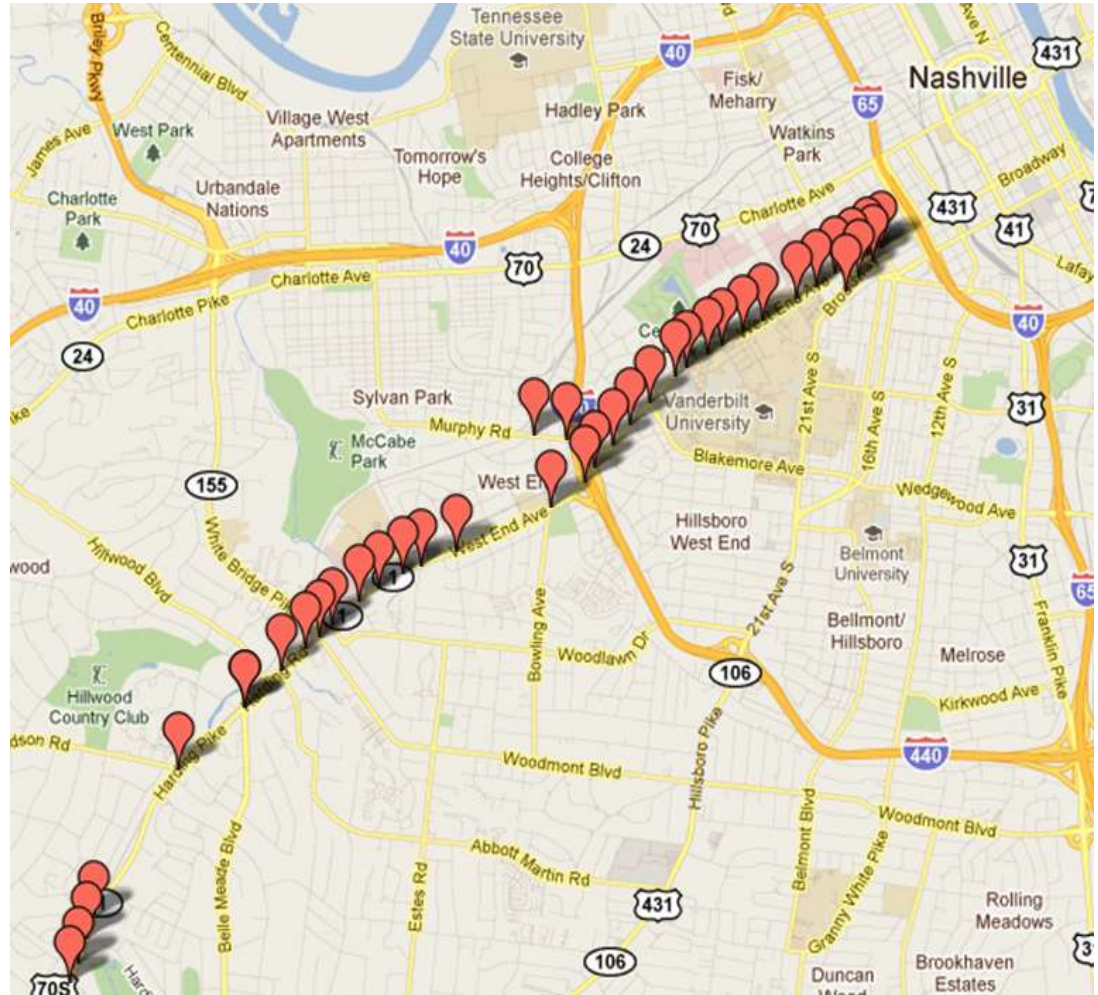




West End Avenue/Harding Road

ATKINS

- Atkins – 38 Signals





Data Collection

	Notes/Direction
Lane Settings	Street Name
	Speed Limits (mph)
	Lane Assignments
	Lane Widths (ft)
	Distance from Ped Push button to curb
	Approach Grade (%)
	Storage Bay Length
Volume Settings	Right Turn on Red
	Adjacent Bus Stops
Timing/ Phasing Settings	Adjacent Parking
	Signal Heads
	Vehicle Detection
	Pedestrian Heads
Miscellaneous Information	Pedestrian Push Buttons
	Signing/Restrictions/School Zone



Field Implementation

- Teams of 2 to 6
 - Implemented zones with smaller teams
 - Implemented networks with larger teams
- Ranged the areas around Vanderbilt on bikes
- Fine-tuned in the field





Field Implementation

- Not too many blow ups



Thank you!
Questions?