

# Signal Timing Briefs

October 2014 - T14-11a

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

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## Bowles Avenue: C-470 West Ramp to Grant Ranch Boulevard

The Denver Regional Council of Governments leads multijurisdictional partnerships to achieve optimal signal timing and coordination on area roadways. Adjustments to signal timing are key to ensuring the smoothest possible flow for drivers, saving time and money. Signal timing also minimizes greenhouse gas emissions and other pollutant emissions, preserving and enhancing air quality.

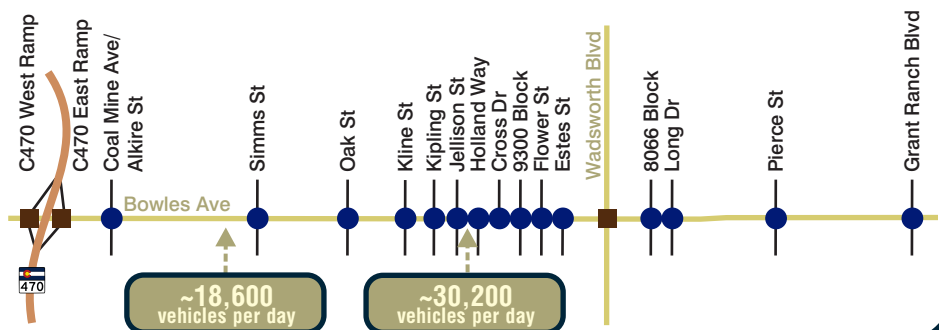


### Project Description

Jefferson County is installing signal system and equipment upgrades. This project implemented timing and coordination plans for 18 signals on Bowles Avenue.

Bowles Avenue is a principal arterial roadway in the Metro Vision Regional Transportation Plan and travels east-west in the southwestern portion of the Denver metro area, providing access to C-470 and the City of Littleton. Land use along the roadway in the project area is a mixture of residential and commercial property.

### Bowles Avenue



### Project Achievements

#### Performance Measures

Vehicle hours of travel  
Fuel consumption  
Time and fuel costs  
Total greenhouse gas emissions  
Total criteria pollutant emissions

#### Daily Benefits

423 hours reduction  
212 gallons decrease  
\$9,900 savings  
4,381 pounds reduction  
51 pounds reduction

### Project Partners' Signals

- Jefferson County
- CDOT

# Bowles Avenue: C-470 West Ramp to Grant Ranch Boulevard

## Timing Revision Weekday:

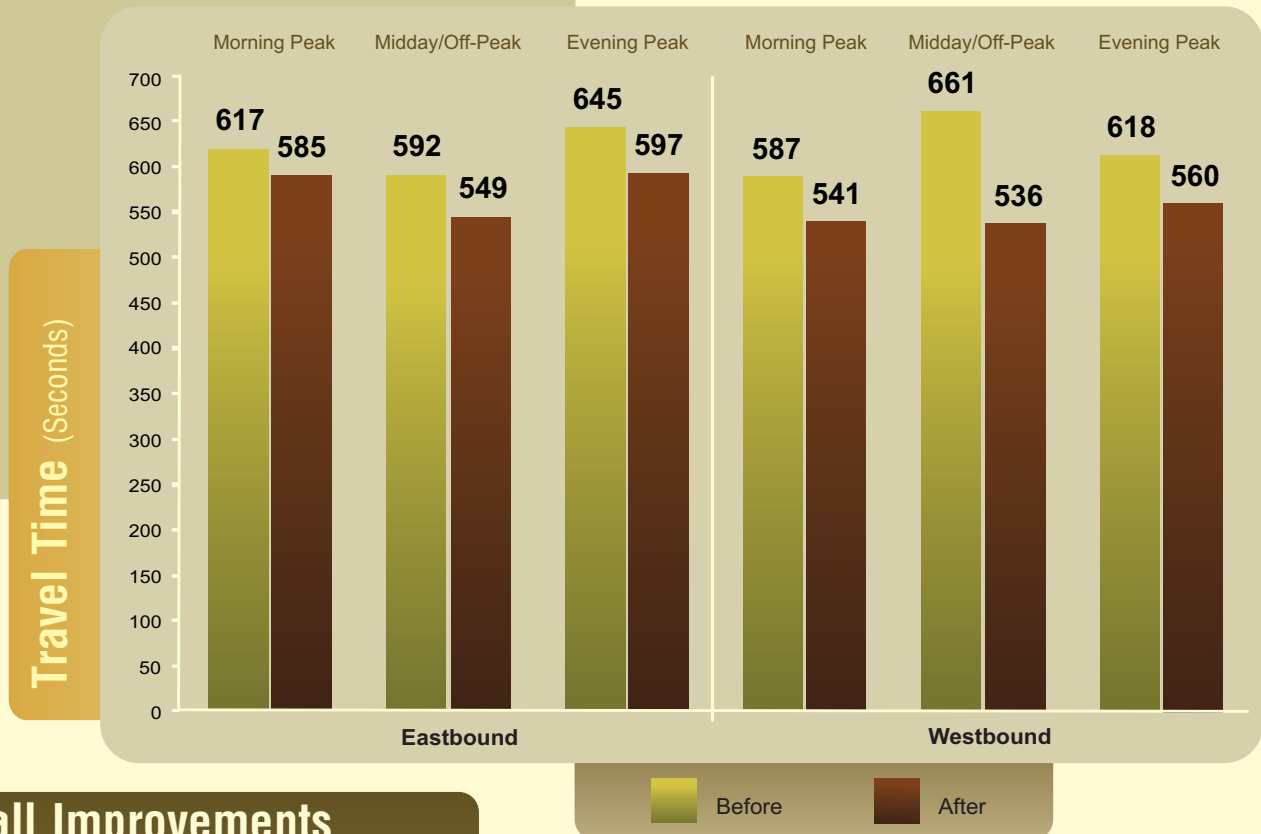
		Morning Peak		Midday/Off-Peak		Evening Peak	
		Before	After	Before	After	Before	After
Time Period	C-470 West Ramp to Pierce St	6:30 - 9:00 a.m. (no change)		11:30 a.m.- 4:00 p.m. <sup>1,2</sup>		4:00 - 7:00 p.m. <sup>2</sup>	
	Grant Ranch Blvd	6:00 - 8:30 a.m.	6:30 - 9:00 a.m.	8:30 a.m.- 3:00 p.m.	9:00 a.m.- 3:30 p.m.	3:00 - 7:00 p.m.	3:30 - 7:00 p.m.
Cycle Length (seconds)	C-470 West Ramp to Pierce St	100 (no change)		100 (no change)		120 (no change)	
	Grant Ranch Blvd	100 (no change)		90 (no change)		120 (no change)	
Other Timing Parameters		--	Revised	--	Revised	--	Revised

### Travel Time Improvements (5.1 miles end to end)

Improvements were obtained during all periods in both directions.

<sup>1</sup> An additional plan operated from 9:00 to 11:30 am with a 90-second cycle length.

<sup>2</sup> The transition from mid-day to evening timing plans was at 3:30 pm for Wadsworth Boulevard.



### Overall Improvements

The value to motorists, in terms of weekday time and fuel savings, is calculated to be approximately \$9,900 daily or about \$2.5 million annually. An additional benefit of the project is improved reliability of signal operations, thanks to equipment upgrades. These upgrades allow traffic signal malfunctions to be quickly detected and reported. This results in less stopping and delays for the traveling public.

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