

Signal Timing Briefs

October 2014 - T14-11b

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

We make life better!

Kipling Parkway: Bowles Avenue to C-470 South Ramp

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.

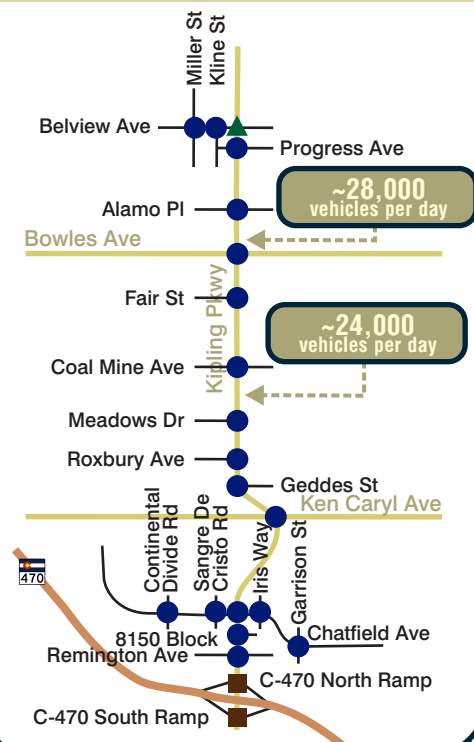


Project Description

Jefferson County is installing signal system and equipment upgrades on Kipling Parkway. This project implemented timing and coordination plans for 15 signals on Kipling Parkway with cross-coordination for two signals on Belleview Avenue and four signals on Chatfield Avenue.

Kipling Parkway is a principal arterial roadway in the Metro Vision Regional Transportation Plan and travels north-south in the southwestern portion of the Denver metro area, providing access to the City of Lakewood and C-470. Land use along the roadway in the project area is a mixture of residential and commercial property.

Kipling Parkway



Project Achievements

Performance Measures

Daily Benefits

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

339 hours reduction
 167 gallons decrease
 \$7,950 savings
 3,497 pounds reduction
 42 pounds reduction

Project Partners' Signals

- Jefferson County
- CDOT
- ▲ City of Lakewood

Kipling Parkway: Bowles Avenue to C-470 South Ramp

Timing Revision Weekday:

		Morning Peak		Midday/Off-Peak		Evening Peak	
		Before	After	Before	After	Before	After
Time Period	Belleview Ave to Bowles Ave	6:00 - 9:00 a.m. ¹ (no change)		9:00 a.m.- 4:00 p.m. ²	9:00 a.m.- 3:30 p.m.	4:00 - 7:00 p.m. ²	3:30 - 7:00 p.m.
	Fair St to C-470 South ramp	6:00 - 9:00 a.m. ¹ (no change)		9:00 a.m.- 4:00 p.m. ³	9:00 a.m.- 3:30 p.m.	4:00 a.m.- 7:00 p.m. ³	3:30 - 7:00 p.m.
Cycle Length (seconds)	Belleview Ave to Bowles Ave	100	100	90/100 ⁴	100	120	120
	Fair St to C-470 South ramp	50/100 ⁵		75	90	60/120 ⁶	
Other Timing Parameters		--	Revised	--	Revised	--	Revised

Travel Time Improvements (1.5 miles end to end)

Improvements were obtained during all periods in both directions.

¹ The timing plan at Belleview Avenue operated from 6:00 to 9:00 am.

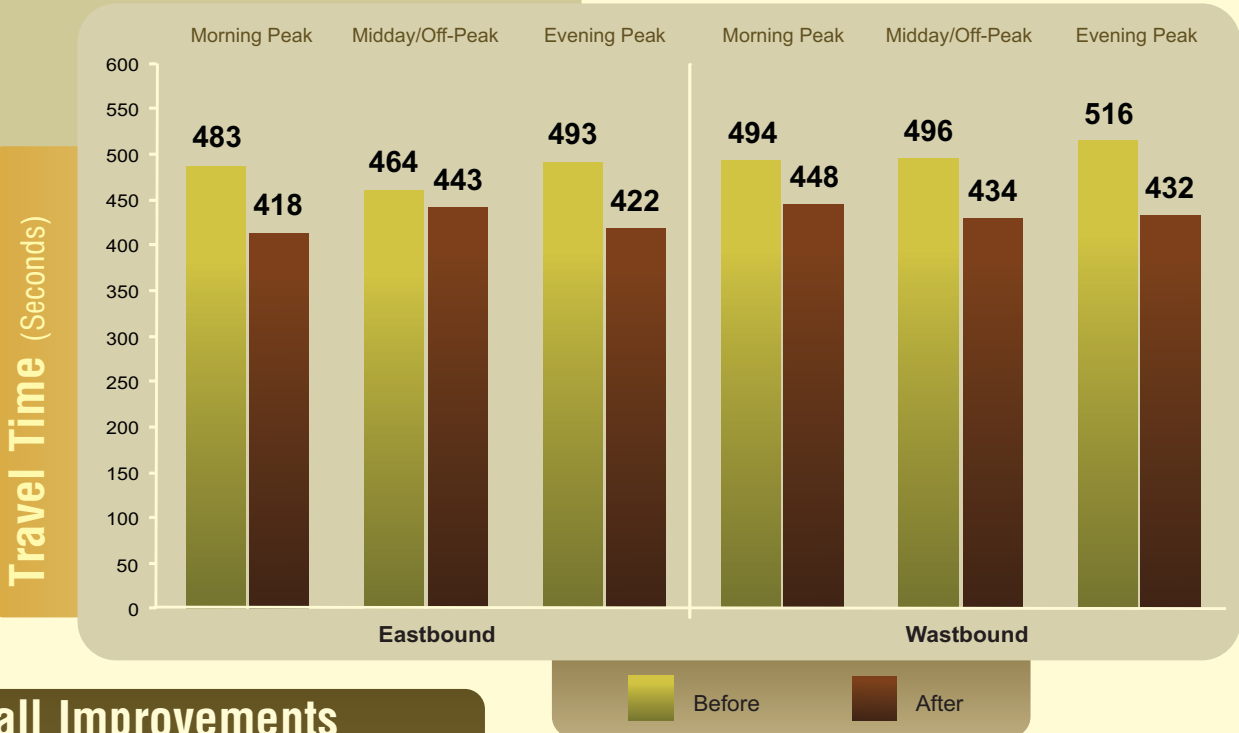
² The transition from mid-day to evening timing plans was at 3:00 pm for Belleview Avenue.

³ The transition from mid-day to evening timing plans was at 3:30 pm for the C-470 ramps.

⁴ A 90-second cycle length operated from 9:00 to 11:30 am from Progress Avenue to Bowles Avenue.

⁵ Fair Street operated with a 50-second cycle length.

⁶ Fair Street operated with a 60-second cycle length.



Overall Improvements

The value to motorists, in terms of weekday time and fuel savings, is calculated to be approximately \$7,950 daily or about \$2.0 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.