

Signal Timing Briefs

July 2015 - T15-7

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

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South Broadway: Highlands Ranch Parkway to Iliff Avenue

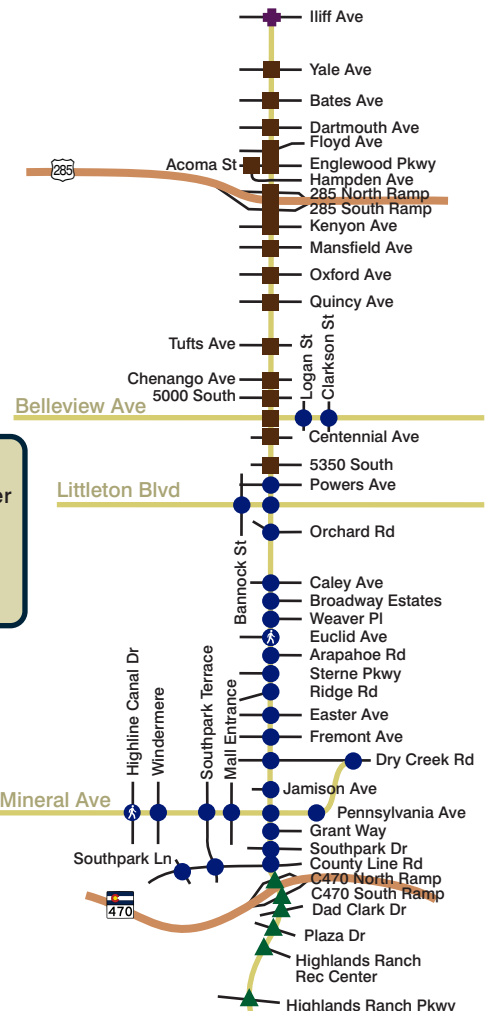
The Denver Regional Council of Governments leads multijurisdictional partnerships to achieve optimal signal timing and coordination on area roadways. Adjustments to signal timing are key to ensuring the smoothest possible flow for drivers, saving time and money. Signal timing also minimizes greenhouse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

Project Description

The cities of Littleton and Englewood installed signal system upgrades. This project implemented timing and coordination plans for 42 signals on South Broadway, providing cross-coordination for one signal on Englewood Parkway, two signals on Bellevue Avenue, one signal on Littleton Boulevard, six signals on Mineral Avenue, and two signals on County Line Road.

Broadway is a Principal Arterial roadway in the Metro Vision Regional Transportation Plan in the center of the region providing access to C-470, Hampden Avenue, and downtown Denver. Land use along the roadway in the project area is a mix of commercial and residential.

South Broadway



Project Partners' Signals

- City and County of Denver
- ▲ Douglas County
- City of Englewood
- City of Littleton
- Pedestrian-only signal

Project Achievements

Performance Measures

Daily Benefits

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

1,855 hours reduction
 731 gallons decreased
 \$43,300 savings
 15,182 pounds reduction
 178 pounds reduction

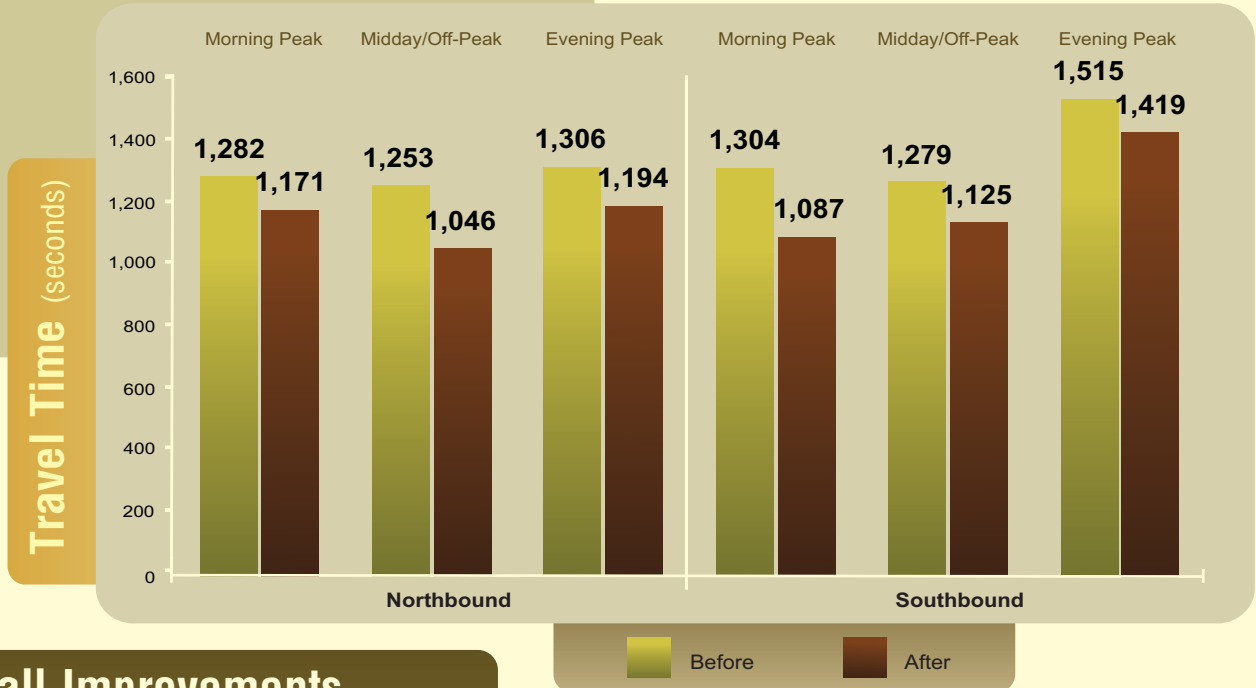
South Broadway: Highlands Ranch Parkway to Iliff Avenue

Timing Revision Weekday

		Morning Peak		Midday/Off-Peak		Evening Peak	
		Before	After	Before	After	Before	After
Time Period	Iliff Ave	5:00-10:00 a.m.		10:00 a.m.-2:00 p.m.		2:00 - 7:00 p.m.	
	Yale to 5000 South	6:30-9:00 a.m.	6:30-9:30 a.m.	9:00 a.m.-3:30 p.m.	9:30 a.m.-3:00 p.m.	3:30 - 6:30 p.m.	3:00 - 7:00 p.m.
	Bellevue to 5350 South	6:30-9:00 a.m.		9:00 a.m.-3:00 p.m.		3:00 - 6:00 p.m.	
	Powers to Highlands Ranch Rec. Center	6:30-9:00 a.m.		10:00 a.m.-3:00 p.m.		3:00 - 7:00 p.m.	
	Highlands Ranch Pkwy	6:00-8:30 a.m.	6:00-9:00 a.m.	8:30 a.m.-4:00 p.m.	9:00 a.m.-3:00 p.m.	4:00 - 6:30 p.m.	
Cycle Length (seconds)	Iliff Ave	100		90		100	
	Yale to 5000 South			100			
	Bellevue to 5350 South	120	120	90	100	120	120
	Powers to Highlands Ranch Rec. Center			100			
	Highlands Ranch Pkwy	106		110			
Other Timing Parameters		--	Revised	--	Revised	--	Revised

Travel Time Improvements (8.7 miles end to end)

Improvements were obtained during all periods in both directions.



Overall Improvements

The value to motorists, in terms of weekday time and fuel savings, is calculated to be approximately \$43,300 daily, or about \$10.83 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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