

Signal Timing Briefs

May 2014 - T14-6

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

We make life better!

Federal Boulevard: Interstate 76 to 120th 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.

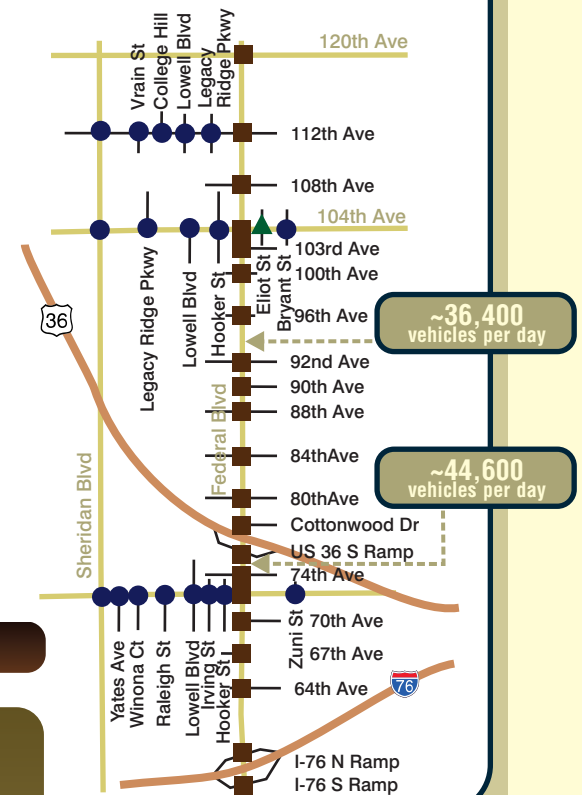
Project Description

This project retimed 21 signals on Federal Boulevard and 19 additional signals to cross-coordinate impacted corridors, including: five signals on 112th Avenue, six signals on 104th Avenue, and eight signals on 72nd Avenue.

Federal Boulevard is a principal arterial roadway in the Metro Vision Regional Transportation Plan that travels north-south in the north Denver metro area and provides access to US 36 and I-76. Land use along the roadway in the project area is a mixture of commercial and residential property.



Federal Boulevard



Project Achievements

Performance Measures

Daily Benefits

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

1,244 hours reduction
 665 gallons decrease
 \$29,350 savings
 13,781 pounds reduction
 167 pounds reduction

Project Partners' Signals

- CDOT
- City of Westminster
- ▲ City of Federal Heights

Federal Boulevard: Interstate 76 to 120th Avenue

Timing Revision:

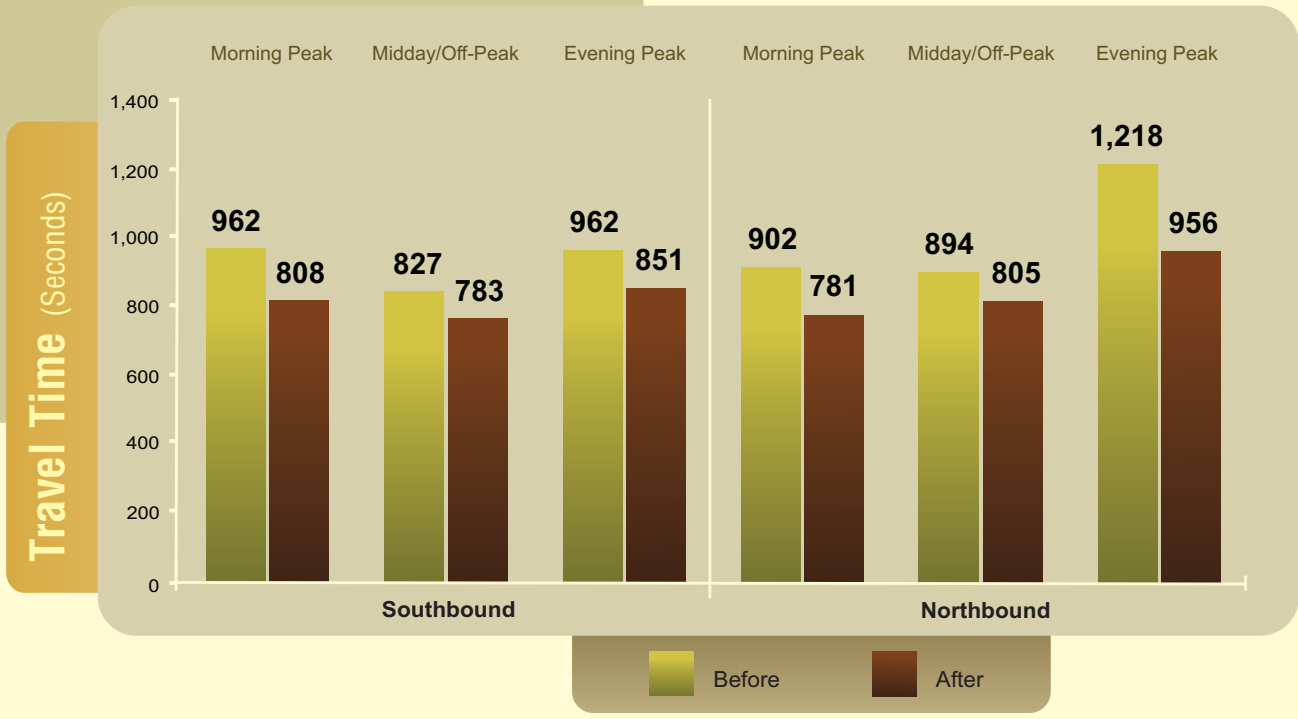
Time Period	Morning Peak		Midday/Off-Peak		Evening Peak	
	Before	After	Before	After	Before	After
	Cycle Length (seconds)	110/120 ¹	120	90/100 ²	100	100/120 ¹
Other Timing Parameters	--	Revised	--	Revised	--	Revised

¹ The traffic signals at both I-76 ramps and at 120th Avenue operated with a 120-second cycle.

² The traffic signals at 103rd, 104th, 108th, and 112th Avenues as well as the traffic signals along 104th Avenue operated with 90-second cycles.

Travel Time Improvements (8 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 \$29,350 daily or about \$7.3 million annually.