

Signal Timing Briefs

April 2015 - T15-5b

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

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Plum Creek Parkway: I-25 Ramps to Gilbert Street

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.

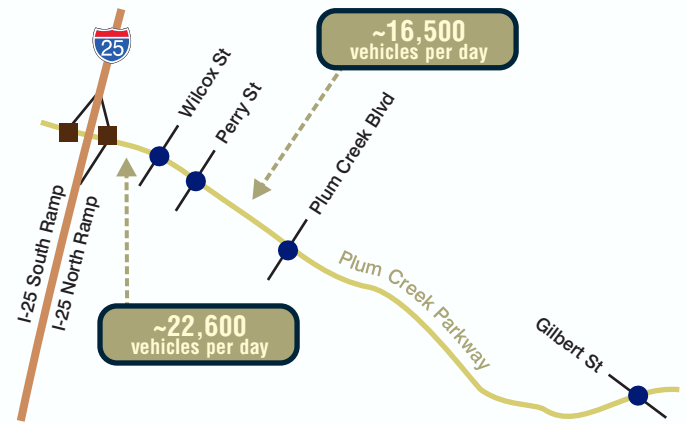


Project Description

The Town of Castle Rock installed traffic signal and communications equipment upgrades on Plum Creek Parkway. This project implemented timing and coordination plans for six signals on Plum Creek Parkway. Development of the timing and coordination plans was completed using the services of a consultant Muller Engineering Company, Inc.

Plum Creek Parkway is a principal arterial roadway in the Metro Vision Regional Transportation Plan in the Town of Castle Rock, providing access to I-25. Land use along the roadway in the project area is a mix of commercial and residential.

Plum Creek Parkway



Project Achievements

Performance Measures

Daily Benefits

Vehicle hours of travel	112 hours reduction
Fuel consumption	70 gallons decrease
Time and fuel costs	\$2,700 savings
Total greenhouse gas emissions	1,480 pounds reduction
Total criteria pollutant emissions	15 pounds reduction

Project Partners' Signals

- Town of Castle Rock
- CDOT

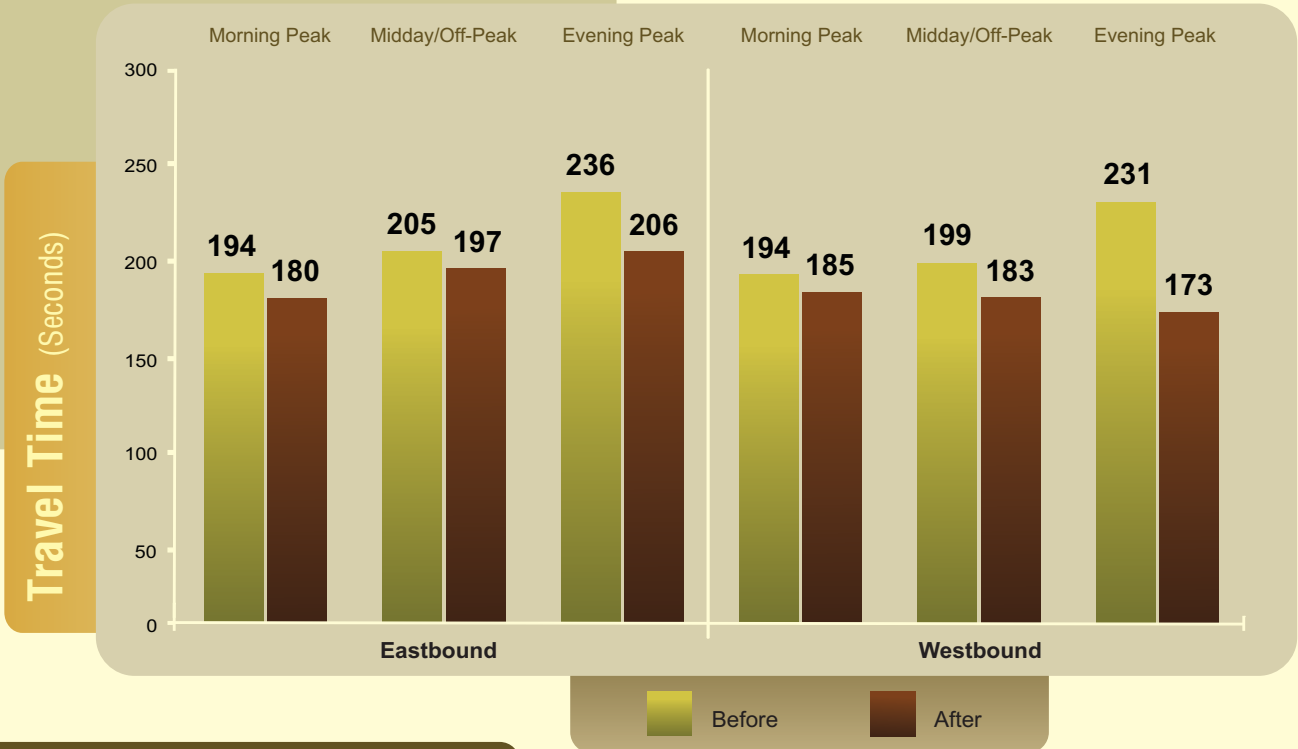
Plum Creek Parkway: I-25 Ramps to Gilbert Street

Timing Revision Weekday:

Time Period	Plum Creek Pkwy I-25 to Gilbert St	Morning Peak		Midday/Off-Peak		Evening Peak	
		Before	After	Before	After	Before	After
		6:00 - 9:00 a.m. (No change)		9:00 a.m. - 3:30 p.m.	9:00 a.m. - 3:00 p.m.	3:30 - 7:00 p.m.	3:00 - 7:00 p.m.
Cycle Length (seconds)	I-25 SB Ramp & I-25 NB Ramp	90	90	90	90	90	100
	Wilcox St to Plum Creek Blvd	80		80		80	
	Gilbert St	Free (No change)		Free (No change)		Free (No change)	
Other Timing Parameters		--	Revised	--	Revised	--	Revised

Travel Time Improvements (1.5 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 \$2,700 daily or about \$680,000 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.