

# Signal Timing Briefs

May 2014 - T14-9

Mobility

DRCOG

DENVER REGIONAL COUNCIL OF GOVERNMENTS

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## Colfax Avenue: Logan Street to Dayton 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 City and County of Denver installed signal equipment upgrades on Colfax Avenue. This project implemented timing and coordination plans for 36 signals on Colfax Avenue with cross-coordination for 23 signals on York Street, Josephine Street and Monaco Parkway.

Colfax Avenue is a major regional arterial roadway in the Metro Vision Regional Transportation Plan and travels east-west in the central Denver metro area, providing access to I-25 west of the project and the City of Aurora to the east. Land use along the roadway in the project area is a mixture of residential and commercial property.

### Project Achievements

#### Performance Measures

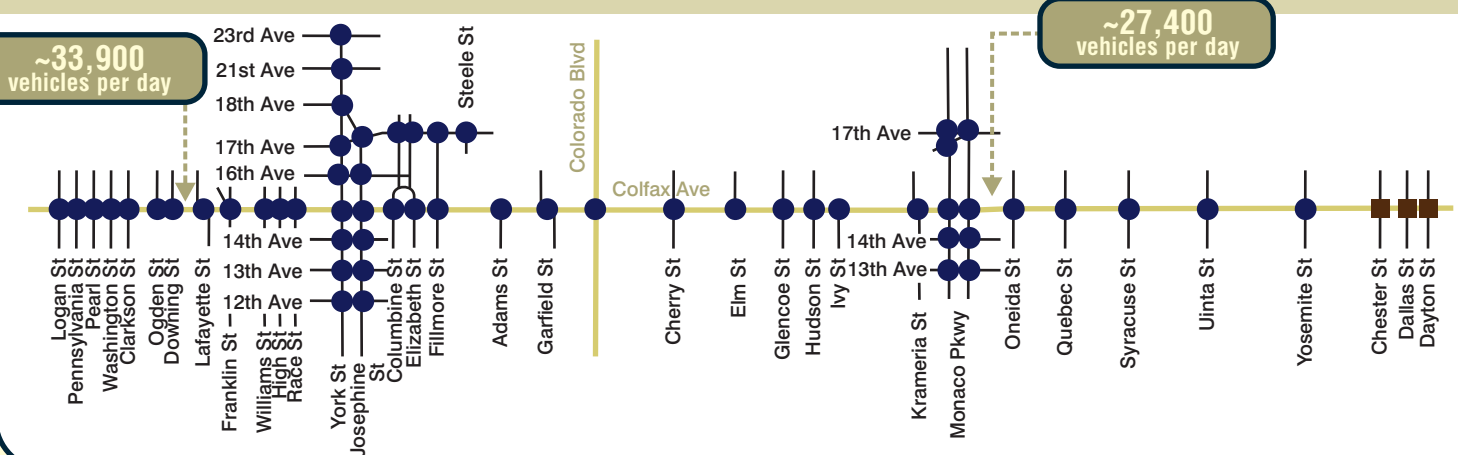
Vehicle hours of travel  
 Fuel consumption  
 Time and fuel costs  
 Total greenhouse gas emissions  
 Total criteria pollutant emissions

#### Daily Benefits

847 hours reduction  
 465 gallons decrease  
 \$20,000 savings  
 9,683 pounds reduction  
 105 pounds reduction



## Colfax Avenue



### Project Partners' Signals

● City and County of Denver ■ City of Aurora

# Colfax Avenue: Logan Street to Dayton Street

## Timing Revision Weekday:

| Time Period                  | Cycle Length (seconds)      | Morning Peak           |                                 | Midday/Off-Peak        |                     | Evening Peak           |                               |
|------------------------------|-----------------------------|------------------------|---------------------------------|------------------------|---------------------|------------------------|-------------------------------|
|                              |                             | Before                 | After                           | Before                 | After               | Before                 | After                         |
|                              |                             | Logan St to Adams St   | 5:00-9:00 a.m.                  | 5:00-10:00 a.m.        | 9:00 a.m.-3:00 p.m. | 10:00 a.m.-3:00 p.m.   | 3:00 - 8:00 p.m. <sup>1</sup> |
| Garfield St to Yosemite St   | 6:00-9:00 a.m. <sup>1</sup> | 5:00-9:00 a.m.         | 9:00 a.m.-3:00 p.m. (No change) |                        |                     |                        |                               |
| Chester St to Dayton St      |                             | 75/90/110 <sup>2</sup> | 90/120 <sup>3</sup>             | 75/90/110 <sup>2</sup> |                     | 75/90/110 <sup>2</sup> |                               |
| Logan St to Adams St         |                             | 110                    |                                 | 120                    |                     | 120                    |                               |
| Garfield St to Colorado Blvd |                             | 100                    | 110                             | 45/60 <sup>5</sup>     | 90/120 <sup>4</sup> | 100                    |                               |
| Cherry St to Ivy St          |                             | 100/110 <sup>1</sup>   |                                 | 90                     |                     | 100/120 <sup>1</sup>   |                               |
| Krameria St to Quebec St     |                             | 100 (No change)        |                                 | 90                     | 100                 | 100 (No change)        |                               |
| Syracuse St to Yosemite St   |                             |                        |                                 | 90 (No change)         |                     |                        |                               |
| Chester St to Dayton St      |                             | --                     | Revised                         | --                     | Revised             | --                     | Revised                       |

<sup>1</sup> Quebec Street operated with a 110-second cycle from 6:00 to 10:00 a.m. and a 120-second cycle from 2:00 to 8:00 p.m.

<sup>2</sup> The cycle lengths for Logan Street and Franklin Street were 90 seconds and 110 second, respectively.

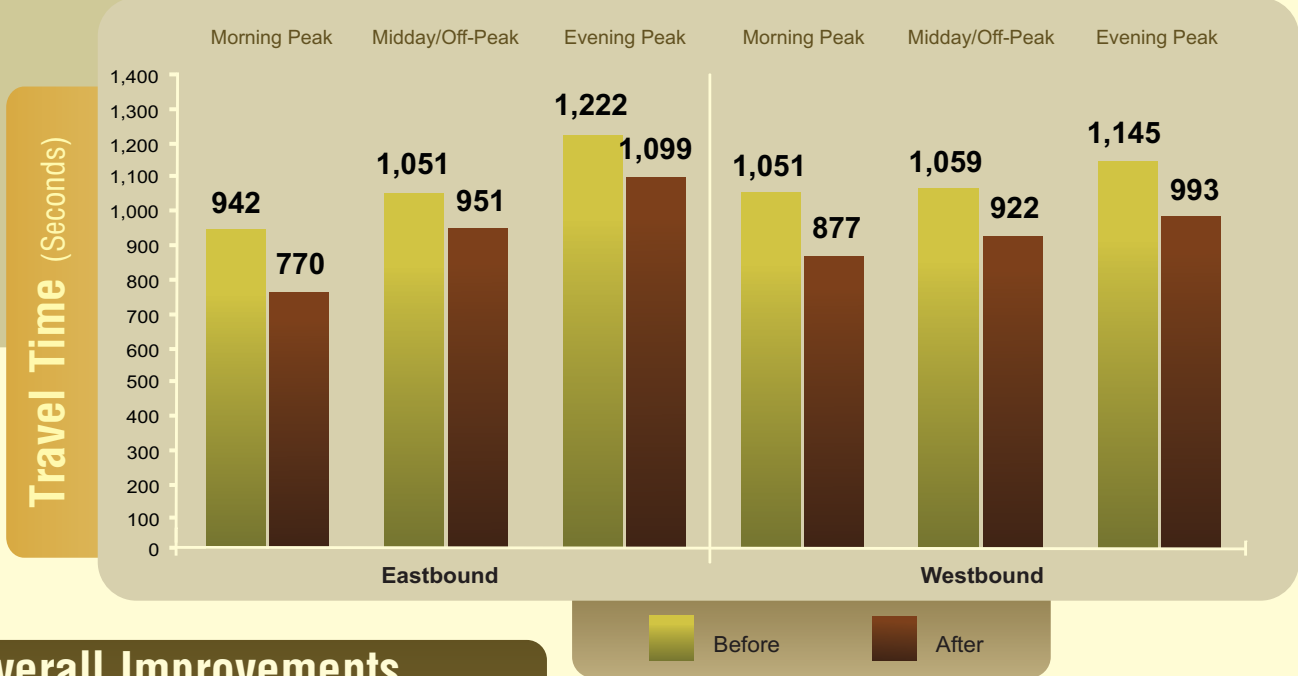
<sup>3</sup> Franklin Street operates with a 120-second cycle length.

<sup>4</sup> Franklin Street, Garfield Street, Colorado Boulevard, Monaco Parkway, Oneida Street, and Quebec Street operate with a 120-second cycle length.

<sup>5</sup> Glencoe Street and Hudson Street operated with a 60-second cycle length.

### Travel Time Improvements (5.7 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 \$20,000 daily or about \$5.0 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.