

Mission Possible: More green, less red

The green light giveth while the red light taketh away. That's been the reality of traffic signal intersection control since Henry Ford's assembly line manufacturing process resulted in a pandemic of motorcars for transportation.

It remains so today. For every second that cars heading in one direction have a green light, cars in another direction are seeing red. When driving, red is no one's favorite color.

As Loveland has grown, there are more cars on the road and more places to visit. Along with this, there are more vehicles on intersecting streets seeking to cross or enter main streets. Traffic signals have been adjusted accordingly, giving cross streets more time but at the expense of main streets.

Our 34th President Dwight D. Eisenhower is probably flattered that his street is Loveland's most popular. Eisenhower Boulevard—U.S. 34—is Loveland's Main Street, taking motorists to the Interstate and the mountains, to schools and churches, to businesses and plenty of shopping.

The growth in cross street traffic means more interruptions for that main street and sometimes infuriating waits for the cross-streeters. But more green for the cross-streeters means more red for Main Street.

The intersection of Madison and Eisenhower is a fine example, especially for those southbound Madison Avenue travelers seeking to turn left onto Loveland's busiest presidential roadway. What can be done? More green for Madison means more red for Ike; ouch.

Aha! A Continuous Flow Intersection (CFI). What the Dickens is a CFI? It's an intersection design even stranger than those roundabouts that have been sprouting up all over.

Most motorists have had to sit at a long red light while just a few cars are turning left on a green arrow. And most motorists have also sat in the left-turn lane for more than one complete traffic cycle because the left-turn arrow didn't stay green long enough.

This is the situation at some intersections in Loveland, with Madison and Eisenhower perhaps the prime example. The challenge is to increase left-turn and through-traffic flow at Madison without increasing red-light time on Eisenhower.

Current situation

With the current intersection arrangement, through-traffic gets a green light only after the left-turn turns red. Eisenhower traffic must wait until both the left-turn and through green phases on Madison are completed.

simultaneously, which then shortens the red-light time for the cross traffic.

Here's how

How does this work? Is it complicated? That depends on the point-of-view. For a bird flying over the intersection, it's definitely an unusual sight.

But from the Lefty's driver's seat, it's the normal procedure... mostly:

- Pull into the left lane
- wait for the green arrow
- drive forward and then turn left
- and at the same time, all the Throughs and other Lefties are moving.

The only real difference for the Lefties is where they stop; not at the intersection but before it.

Check it out

Diagramming how all this works on a single, flat news page is a challenge, but take a look at the illustrations and explanations provided here. And for a more animated look, view a 5-minute video featured at www.cityofloveland.org.

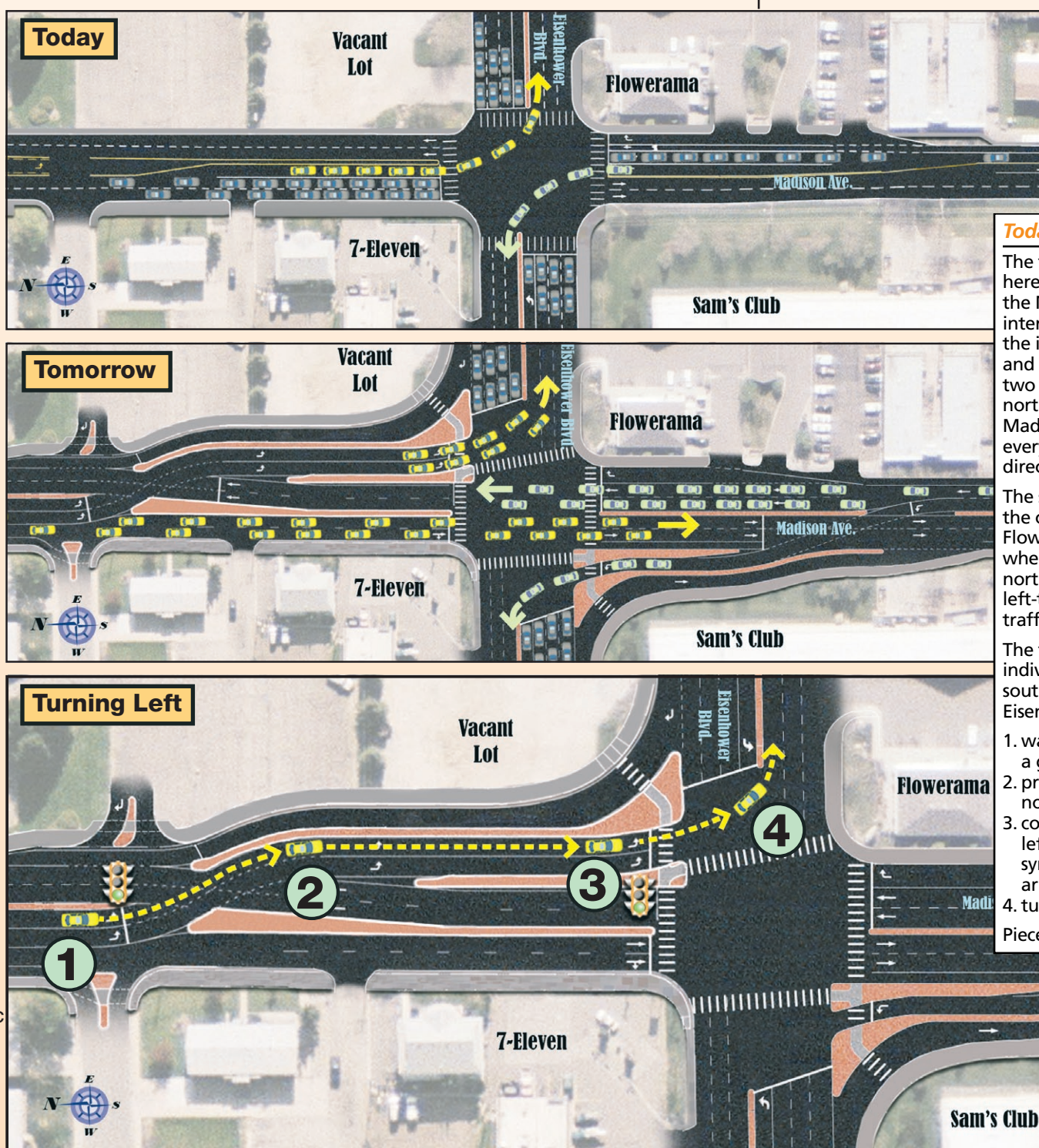
Green-light math is enlightening

Let's do the numbers. A Continuous Flow Intersection (CFI) gets more cars moving.

It's very simple. With a conventional intersection, while the two opposing lanes are making their left turns with the green arrow, all the other cars in all four directions have a red light.

Here's the math using intersection options at Madison and Eisenhower:

- Current conventional: There are a total of 14 traffic lanes in all directions. When the two Madison left-turn lanes are moving, all the other traffic is at a standstill - 86 percent (12 of 14 not moving).
- Expanded conventional: Using double left-turn lanes in both directions, the numbers are a bit better, with about 76 percent at a standstill (13 of 17 not moving).
- Continuous Flow Intersection: Because both left-turn and through-traffic are moving simultaneously, the numbers improve significantly; only 44 percent are waiting for a green light (8 of 18 not moving).



Today and tomorrow

The three graphics shown here provide overviews of the Madison/Eisenhower intersection. The first shows the intersection as it is today, and indicates that when the two left-turn lanes on both northbound and southbound Madison have green arrows, everyone else in all four directions waits at red lights.

The second graphic indicates the completed Continuous Flow Intersection design, where traffic on Madison—northbound and southbound left-turners and through-traffic—move simultaneously.

The third graphic focuses on an individual car turning left from southbound Madison onto Eisenhower. The motorist:

1. waits in the left-turn lane for a green arrow,
2. proceeds across the northbound lanes,
3. continues in the southbound left-turn lane and receives a synchronized second green arrow at the intersection,
4. turns left onto Eisenhower.

Piece of cake!

By normal standards, a CFI accomplishes the impossible; traffic flow is increased on Madison while wait time on Eisenhower is decreased.

What's the catch? Why hasn't this been done before?

There's no catch. Traffic flow increases, it won't cost more than a conventional intersection improvement and safety isn't compromised. It simply requires drivers to get into the left lane a bit sooner.

And it has been done before, but not widely... yet. CFI's exist in Salt Lake City, Saint Louis and Colorado Springs, plus many in Mexico where the low construction cost makes them far more feasible than other options.

View a 5-minute video at www.cityofloveland.org

Utah CFI Survey

Motorists in Salt Lake City were surveyed regarding a continuous Flow Intersection (CFI) constructed there. Below are some survey results and comments received.

Improved traffic flow - 83%
Easy to drive - 81%
Feels safe - 78%

"Everything seems easy to follow. I like this intersection."

"I think it's terrific!... Traffic flows through the area have really improved."

"Congratulations on a job well done."

"Works great."

"I think it is great. Most people are afraid of change. It will take some time, but people will learn to appreciate it."

"Cars are flowing beautifully."

CFI Open Houses Presentation, meet with staff

7-9 pm, Oct. 6
9-11 am, Oct. 7

at Police and Courts Bldg.,
810 E. 10th St.