Why Signal Synchronization is Needed

Traffic Signal Synchronization is an engineering technique of matching traffic signal green lights at successive intersections to maximize passage of motorists along a corridor.

Traffic signal synchronization allows for minimal stopping which helps reduce travel times. **Cars use less gas** because stop and go travel and idling at red lights is reduced. **Vehicle emissions are reduced** because cars run more efficiently.

"Based on the improvements made, synchronizing signals provided greater traffic flow, with a countywide average of 13 percent time savings, 15 percent faster speeds, and 31 percent fewer stops."

– Orange County Transportation Authority
2018 Long-Range Transportation Plan

Additional Information

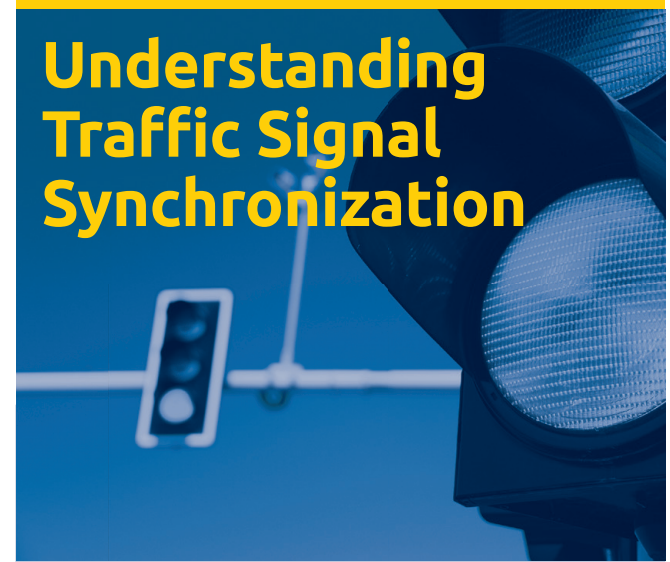
This brochure is designed to provide some basic knowledge of how traffic signal synchronization works in our community. If you have additional questions, you may contact the Laguna Niguel Public Works Department.

Contact Us for More Information

City of Laguna Niguel
Public Works Department
30111 Crown Valley Parkway
Laguna Niguel, CA 92677
949-362-4337

City of Laguna Niguel
Department of
Public Works

Understanding Traffic Signal Synchronization



- How does traffic signal synchronization work?
- Why do we need traffic signal synchronization?
- How are synchronization projects funded?

This brochure is designed to answer these questions and more.

Countywide Signal Synchronization Benefits

13%
Reduction in travel time

14%
Improvement in travel speed

19%
Better travel experience with reduced travel times, stops, and delays allows more time off the roadway

52 million
Less gallons of fuel consumed

885 million
Pounds in greenhouse gas reductions

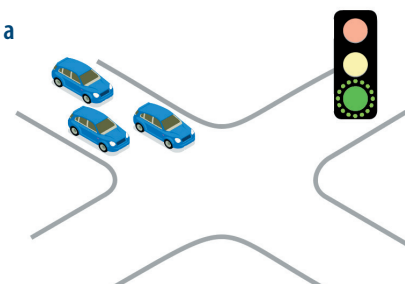
Source: OCTA Signal Synchronization Analysis

How it Works

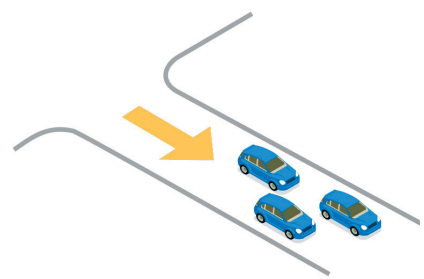
Traffic signal synchronization works by calculating the arrival time for a group of vehicles at each intersection traveling at a specified speed. The traffic signals are strategically timed to turn green as the group of vehicles arrive at each intersection.

For the traffic signals to be synchronized, a group of signals must all be set to run on the same cycle length (the amount of time it takes for the signal to go from green to yellow to red, and back to green again).

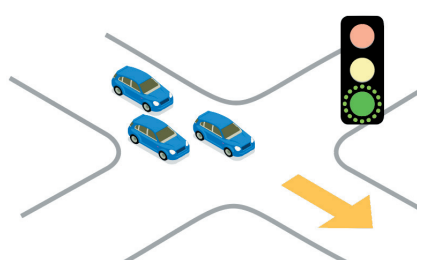
A group of cars receives a green light and leaves the intersection



The group proceeds, traveling near the speed limit towards the next signal



The next signal is timed to turn green just before the group arrives



Most Commonly Asked Questions

What is the Green Band?

The green band is a roughly 30 second window where motorists would see green lights along a corridor. Travel faster than the green band and you rush to a red light. The green band is typically set around the posted speed limit.

What is the best way to get through the most signals without stopping?

Keep your speed at or slightly below the speed limit and you will have a far better chance of arriving at intersections with a green light. If you drive too slow or too fast, you will be outside the green band and will see more red lights.

Why don't I make it through all the lights even if I drive the speed limit?

Crossing other major roadways can make it difficult to provide a green light at every signal. Other challenges to coordination include unevenly spaced signals, freeway crossings, variations in left-turn volumes, and travel through other cities.

Which traffic signals are coordinated?

Generally, major roadways are designed to carry high traffic volumes over longer distances and are good candidates for a coordinated system. In Laguna Niguel, this includes Alicia Parkway, Crown Valley Parkway, Niguel Road, La Paz Road, Moulton Parkway/Golden Lantern and Pacific Park Drive.

What time of day are signals coordinated?

This can vary depending on the street and other traffic factors, but generally signals are coordinated on weekdays in the morning and afternoon rush hour. Coordination may also serve mid-day on weekdays and Saturdays.

How do traffic signal coordination projects get funded?

OC Go, also known as Measure M, is a 30-year half-cent sales tax for transportation improvements in Orange County through 2041. The City pursues funding from Orange County Transportation Authority (OCTA) through OC Go competitive grant programs to implement the majority of the signal coordination projects.