CITY OF MISSION VIEJO
TRAFFIC SIGNALS AND COORDINATION
43 Miles of Arterial Streets

The majority of our traffic signals are located along these higher volume streets.
How much traffic are we managing?

Major Streets
6-8 lane facilities are designed to accommodate 45,000 Average Daily Traffic
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**Major Streets**
6-8 lane facilities are designed to accommodate 45,000 Average Daily Traffic

**Primary Streets**
4-lane facilities are designed to accommodate 30,000 Average Daily Traffic

**Critical Intersection at Two High-Volume Arterials**
Traffic volumes on many of our streets are at the expected maximum, and some segments exceed their designed capacity by 20% to 50%.

**Major Streets**

- **45,000 Average Daily Traffic**
  - Alicia Pkwy: 29,000 - 64,000 ADT
  - Oso Pkwy: 40,000 - 58,000 ADT
  - Crown Valley Pkwy: 40,000 - 61,000 ADT

**Primary Streets**

- **30,000 Average Daily Traffic**
  - La Paz Rd: 8,000 - 38,000 ADT
  - Marguerite Pkwy: 15,000 - 34,000 ADT
Traffic volumes on many of our streets are at the expected maximum, and some segments exceed their designed capacity by 20% to 50%.

**Major Streets**
45,000 Average Daily Traffic

- Alicia Pkwy: 29,000 - 64,000 ADT
- Oso Pkwy: 40,000 - 58,000 ADT
- Crown Valley Pkwy: 40,000 - 61,000 ADT

**Primary Streets**
30,000 Average Daily Traffic

- Beach Blvd: 26,000 – 83,000 ADT
- Bake Pkwy: 19,000 – 67,000 ADT
- Jamboree Rd: 21,000 – 94,000 ADT
- El Toro Rd: 9,000 – 54,000 ADT
- La Paz Rd: 8,000 - 38,000 ADT
- Marguerite Pkwy: 15,000 - 34,000 ADT
The City operates 115 traffic signals. They are all “actuated”, which means they respond to the traffic demands.
Actuated signals adjust to the traffic demands measured by “loops” in the pavement or other detection devices such as camera imaging.

The signal timing is adjusted based on this data measured at the intersection and on the approaches.
The traffic signal “cycle” length is the maximum timing at an intersection.

90 sec or 1.5 min
120 sec or 2.0 min
150 sec or 2.5 min
Normal “actuated” traffic signal operation will adjust to the traffic demands so . . .

Come on, stay green . . .

It could stay **green** if the “cycle” still has timing left on the main street and the side street demands were low in number or recent arrivals.

**All Right!**
Normal “actuated” traffic signal operation will adjust to the traffic demands so . . .

Come on, stay green . . .

The light could change to red if the cycle length has finished on the main street and there are the side street or even left-turn demands.

Drat!
TRAFFIC SIGNAL COORDINATION
What is Traffic Signal Coordination?

“Synchronize” the timing of a series of adjacent signals to optimize the movement of traffic “platoons” or groups of vehicles.
TRUE or FALSE?
If the signals are coordinated, you drive the speed limit and you will get all green lights.
It could be true if all of our streets were:

- One-way street systems or two-way with few/no left turns
- Evenly spaced signals
- High through-traffic demand in one direction
- No heavy cross-traffic
- Narrow streets so pedestrians’ walk time is equal to vehicular traffic.
TRUE or FALSE?
If the signals are coordinated, it would eliminate congestion on our streets.
Traffic signal coordination does not eliminate congestion. It is a tool to better manage and help facilitate the traffic during these peak demands.
TRUE or FALSE?
If the signals are coordinated, traffic signals will be more responsive to traffic demands.
Traffic signal coordination is a group effort. The local signal is not permitted to be “responsive” to the demands at the individual intersection. The Central Traffic Signal Master timing will hold the heaviest or critical movements longer and make the other movements (such as left turns and side street traffic) wait.
TRUE or FALSE?
The City of Mission Viejo coordinates traffic signals.
Traffic Signal Coordination in Mission Viejo is NOT A MYTH

We coordinate segments of:
Alicia Parkway
Crown Valley Parkway
Jeronimo Road
Los Alisos Boulevard
Marguerite Parkway
Oso Parkway
Santa Margarita Parkway
Trabuco Road

The timing is implemented Monday through Friday 6 am and 10 pm and certain periods on weekends with adjustments for directional travel based on time of day.
COORDINATION REQUIRES COMMUNICATION

We are able to reach all 115 traffic signals through a City-owned 33-mile network of traffic signal interconnect (wire and fiber).

It has been in operation since 1993-1996.
The Central Traffic Signal Master Controller uses the interconnect to communicate with the traffic signals so we can monitor their status and/or remotely control the signals.

COORDINATION REQUIRES A TRAFFIC SIGNAL MASTER CONTROLLER

It is currently located in City Hall and has been in operation since 2009.
So what is next to help accommodate our traffic and reduce congestion?
Traffic signal coordination requires review, updates, and monitoring.
CAPACITY IMPROVEMENTS

Alicia Parkway widened to add one more lane—completed in 2008

La Paz Road widening anticipated to start in 2017-18.

Oso Parkway widening from 6 to 8 lanes was completed in 2015.

Oso and Marguerite Intersection improvements—construction completed in 2012

Crown Valley widening from 6 lanes to 8 lanes (with dual left turns)—construction completed in 2009
INCIDENT MANAGEMENT

Replacements and updates to our signal system, including the reconnection of our closed circuit TV cameras and completion of a direct communication link with Caltrans, was completed in 2006.

Citywide installation of emergency vehicle pre-emption (EVP) devices in cooperation with Orange County Fire Authority (OCFA) along key corridors. This does not help traffic signal coordination but assists in reducing emergency response times through congested corridors –construction was completed in 2015.

Watch for Community View--an internet and MVTV source for local and regional traffic advisories.