



## Frequently Asked Questions (FAQs): RAMP SIGNALING

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#### Q. What is Ramp Signaling?

**A.** Ramp Signals are traffic signals on entrance ramps along freeways and interstates, such as I-95. Ramp Signals are essential traffic management tools designed to mitigate congestion on freeways and help reduce crashes. The signals change from red to green (no yellow) much faster than a regular traffic light. It has the purpose of breaking vehicle platoons and regulating the rate at which vehicles enter the highway to reduce disruptions caused by traffic merging at the entrances. Ramp Signals are currently used at several entrance points of Interstate 95 (I-95) in Miami-Dade County and are expanding to Broward and Palm Beach Counties.

#### Q. Why are Ramp Signals being installed along I-95?

**A.** Ramp Signals have proven to be an effective traffic management technique in several metropolitan areas around the country. They have shown improvements in speeds on the mainline, reduced travel times, and decreased number of incidents. With traffic volumes projected to increase in South Florida, efficient management of our transportation system is vital to the movement of people and goods throughout the region. The Florida Department of Transportation (FDOT) is expanding the Ramp Signal System to reduce traffic congestion during weekday rush-hour periods along I-95. Ramp Signals are a cost-effective alternative to traditional widen-only projects and provide motorists with a more efficient commute.

#### Q. Where will the new signals be located?

**A.** Ramp Signals will be installed at entrance ramps along I-95 within Broward and Palm Beach counties from Hallandale Beach Boulevard to south of Linton Blvd.

1. The first activation phase occurred in January 2022, with four ramps.
2. The second group of ramps is being activated in a phased approach from April to July 2024. This group includes ramps at the following interchanges: Copans Rd, Glades Road Yamato Rd/Spanish River Blvd, and Congress Ave.
3. The third group of activations is expected to occur in late 2024.

As construction projects are completed, more ramp activations will be scheduled.

#### Q. When will Ramp Signals be used?

**A.** Ramp Signals are monitored and controlled by the FDOT Traffic Management Center (TMC). They operate at different hours according to real-time traffic conditions. The signals are activated to prevent ramp traffic from disrupting the mainline, particularly during peak hours (morning and afternoon peak commute hours). The signals may also be activated during incidents or special events.

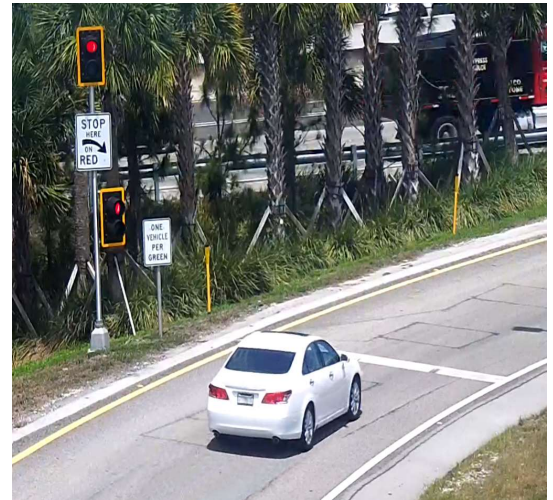
#### Q. How do I know when a new ramp signal will start operating?

A. At least two weeks before activation, portable traffic message boards will be positioned at the back of the on-ramp alerting drivers about the start of the ramp signal operation. Other outreach initiatives, such as social media posts, may also be used. The first few weeks are called the adaptation period. Since drivers are not used to the signal on their route, a bit of confusion is normal and there may be longer queues along the ramps. As drivers become accustomed to the signals and adapt their travel patterns, the operation improves significantly.

#### Q. How do Ramp Signals operate?

A. Each on-ramp is clearly marked with specific directions and advanced warning signs with flashing beacons to let drivers know if the ramp signals are turned on. Whenever you find a signalized on-ramp, remember to follow these three basic steps:

1. **When the signal is red**, pull up to the marked white line on the pavement next to the "Stop Here on Red" sign to activate the ramp signal light.
2. **When the signal light turns green**, one or two vehicles, as indicated by the signage on the ramp, should proceed and merge onto the interstate.
3. **Remain patient**: A short wait on the ramp will help reduce travel times and improve the overall commute along the mainline.
4. If you see a solid green indication the signal is either starting or ending the operation. You may proceed while the signal is green.



#### Q. What to do if there are two lanes of ramp signals?

A. Most ramp signals will have one metered lane, but ramps with high traffic may have two metered lanes. On a dual-lane ramp signal, the two signal poles will alternate the green light to release one vehicle at a time. Always follow the signal closest to your lane if there are two metered lanes.

- If you are in the **right** lane, follow the **right** signal.
- If you are in the **left** lane, follow the **left** signal.

#### Q. What to do if an emergency vehicle is approaching the ramp signal?

A. As in any other situation, move over to allow the passage of emergency vehicles in a safe place. The ramp will likely have enough space on the sides for vehicles to move over for an oncoming emergency vehicle.

#### Q. What to do if I'm waiting at the front and the signal does not turn green?

A. The stop bar is equipped with sensors on the pavement and the signal will only turn green when a vehicle is activating the sensor. If the vehicle stops too far from the stop bar or off the center of the lane, the sensor won't be activated and the ramp signal won't turn green. Try moving closer to the stop bar and the center of the lane. Even though the TMC monitors the signals daily, the sensor can sometimes malfunction, just like regular actuated traffic signals. If you believe that's the case, please report the issue on the [FDOT customer service portal](#) and provide the location and time of the issue. We will verify and address the problem.

#### Q. What happens to those who don't obey the ramp signals?

A. Ramp signals are official traffic control devices and are treated and enforced just like any other intersection traffic light. Motorists who don't comply to a traffic control device are subject to penalties and fines according to the applicable Florida Statutes.

#### Q. Why are some ramp signals slower than others? Why do they change from time to time?

A. The red-green cycle varies based on the level of freeway congestion and on-ramp volumes. This is called a traffic-responsive operation. The green light is typically on for 2 seconds, and the red light may vary anywhere from 2 seconds to 13 seconds. Ramp Signals work according to "real-time" traffic conditions, and cycle times will be adjusted to control traffic at that moment. More congestion requires vehicles to be released at a slower rate, and less congestion on the mainline will typically speed up the red-green cycle. If there's no congestion on or downstream of the ramp, no metering is needed and the signal will be off.

**Q. How do Ramp Signals located at highway on-ramps improve traffic flow?**

**A.** Generally, many cars try to merge onto the highway all at once. Drivers on the mainline slow down to let the cars enter, and these slower speeds quickly cause backups on the mainline of the highway. If cars enter the highway in a spaced, controlled manner, they merge more easily and with less disruption to mainline traffic. A short wait on the ramp allows drivers to increase their average highway speed and shorten their highway travel times. By regulating the flow of traffic entering the highway during peak traffic hours, the overall flow of traffic on the highways will be smoother. This managed flow means that I-95 can accommodate more vehicles per hour on the highway, reducing travel times and increasing safety.

**Q. Can Ramp Signals save the commuter time and/or money?**

**A.** Excessive traffic congestion is often associated with costs from factors such as loss of time, pollution, and safety. Over the years, every ramp signaling project in the United States has been subjected to extensive "before and after" tests. In Miami-Dade County, information gathered by FDOT revealed that the Ramp Signal System increased average travel speeds by 6 mph during the afternoon rush-hour period.

**Q. Do Ramp Signals make the interstate safer?**

**A.** Studies conducted throughout the United States have offered conclusive evidence that highway crashes are reduced where Ramp Signal Systems are in use. The Minnesota Department of Transportation conducted a study of highway conditions with all 430 ramp signals in the Minneapolis/St. Paul metro area turned off for six weeks in the fall of 2000. With the ramp signals turned off, there was a 26% increase in crashes: rear-end crashes were up by almost 15%, "run off the road" crashes increased by 60%, and sideswipe crashes were up 200%. Research shows that most highway crashes occur during stop-and-go traffic conditions by inattentive drivers. Ramp Signals provide a smoother flow of traffic, which minimizes this condition.

**Q. Will congestion continue to increase at the locations where Ramp Signals are supposed to improve traffic?**

**A.** Traffic congestion will continue to be a problem due to the growing number of motorists in South Florida. Ramp Signals help reduce the type of congestion known as "bottlenecking." When ramp traffic enters the highway and then shifts from lane to lane it creates a slowing pattern behind that entrance zone, which leads to an accordion effect on the mainline and increases congestion. Ramp Signals reduce this type of congestion by ensuring that vehicles enter the highway in a spaced and steady manner, separating groups of merging vehicles that create disruptions on the mainline, and ensuring there are enough gaps available for each car to merge.

**Q. What about the impact of Ramp Signals along neighboring city streets?**

**A.** During times of heavy traffic, there is a potential for vehicles on the ramp to back up to the feeder roads. To mitigate this, traffic sensors are placed at the back of each ramp to prompt the ramp signals to speed up the red-green cycle to avoid back-ups onto the cross-street. If the traffic backup persists, the ramp might automatically turn off to allow the queue to clear. Additionally, FDOT staff at the Transportation Management Center (TMC) monitor the system visually via Closed Circuit Television cameras and can adjust red-green cycle times if necessary. FDOT staff will work with the Broward County Traffic Engineering Division, who operate the arterial traffic signals throughout the County, to coordinate operations and minimize spillbacks on cross streets.

**Q. With concerns about energy usage and air quality, why make traffic stop and wait along the on-ramps?**

**A.** While vehicles entering the on-ramp may use more fuel to accelerate after stopping for the ramp signal, the increased travel speeds on the highway make up for it. Many more vehicles travel on the Interstate than on the ramp. In addition, you will benefit from less congestion down the road resulting from the other ramps metering. In terms of air quality, environmental experts have concluded that the Ramp Signal System slightly reduces the quantities of nitrous oxide, carbon monoxide, and reactive hydrocarbons - the pollutants in smog.



For more information please visit the FDOT District 4 website at [www.d4fdot.com](http://www.d4fdot.com) or contact Ryan Drendel, P.E., TSM&O Freeway Engineer, at (954) 847-2689 or via email at [Ryan.Drendel@dot.state.fl.us](mailto:Ryan.Drendel@dot.state.fl.us).