

## **QUESTIONS RELATED TO TRAFFIC SIGNALS**

### **My community feels that a traffic signal is needed at a particular intersection. What is the process to get a traffic signal installed?**

Initially, an engineering study must be performed for conditions at the intersection to determine whether installation of a traffic signal is justified. The study may take into consideration data such as traffic volumes, pedestrian levels, vehicular delay and crash experience.

The Manual on Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Administration, lists different warrants that may be considered in determining the justification for traffic signal installation. The MUTCD is beneficial in that it establishes uniform standards for the installation and maintenance of traffic control devices observed by governments at local, county, state and federal levels. However, meeting MUTCD warrant criteria in and of itself does not necessarily indicate that traffic signal installation will be justified. Rather, remedial measures such as geometric improvements to the intersection (i.e. construction of an exclusive right-turn lane at the minor-street approach) may result in significant reductions in delay, thereby precluding the need for traffic signal control.

The ultimate decision regarding traffic signal installation will take into account several factors including the results of the data and warrant reviews, the potential for implementation of other remedial measures and field conditions such as queue lengths, potential sight-distance restrictions and the locations of other traffic signals on the main roadway.

### **Will the County install a traffic signal to reduce the number of accidents?**

The implementation of traffic signal control at an intersection will not necessarily reduce the total number and/or severity of crashes at that location. Traffic signal control may be effective in reducing the number of certain types of crashes, such as right-angle collisions. However, traffic signal control may also result in an increase in other types of crashes, such as rear-end collisions. For that reason, crash experience is just one of several factors considered in determining justification for traffic signal installation. When considering crash experience, the types of crashes and circumstances under which crashes occur are also taken into consideration.

**The subdivision on the other side of the road has a traffic signal at their entrance and they have fewer units than our subdivision, yet we were refused a traffic signal. Why?**

There may be a variety of reasons contributing to the justification of traffic signal installation at that location which may not apply to your location. Even though they may have fewer units, they may have a higher number of left-turning vehicles at their driveway. Left-turning motorists on a minor-street approach to an intersection may often endure significantly longer delays than right-turning motorists at the same approach. Other factors may include the spacing of intersections. The spacing between that intersection and the closest signalized intersection may meet established standards, whereas the spacing between your driveway and the nearest intersection may not meet those standards. Standards for spacing between signalized intersections have been established to promote favorable traffic progression along the major roads. Other considerations which may differ between the two locations include potential sight-distance restrictions or intersection geometrics.

**The traffic signal at a particular location does not have a left-turn arrow. Under what conditions are left-turn arrows installed?**

A left-turn arrow designates protected left-turn phasing for the intersection. This type of phasing facilitates left-turning traffic movements and usually improves intersection safety for left-turning vehicles. The disadvantage of left-turn phasing is that green time otherwise available for other phases of the cycle becomes diminished, resulting in a reduction of intersection capacity. For that reason, criteria have been established to determine justification for protected left-turn phasing at the intersections. While these criteria are not established per the MUTCD, they are predicated on considerable research, and are employed by numerous governmental entities.

Warrants for protected left-turn phasing at signalized intersections include traffic volumes, delay and crash experience as well as queue lengths and the number of failed cycles; that is, the number of cycles during which the queue for left-turn movements doesn't clear the intersection. Just as when considering the installation of a traffic signal, remedial measures should be considered.

## **QUESTIONS RELATED TO TRAFFIC SIGNAGE**

**Cars speed up and down my street. Will the County install STOP signs on my street to slow traffic?**

It is a common misperception that the installation of STOP signs will help to slow traffic. While the installation of STOP signs may decrease the speed of traffic immediately in

advance of and just beyond the intersection, studies have shown that motorists often drive at higher speeds between these unwarranted STOP signs than they otherwise would have, in order to make up the additional delay caused by those STOP signs. In addition, it has been found that the installation of unwarranted STOP signs results in increased disregard for all such signs, including those STOP signs that are warranted.

### **Rather than to control speeding, will the County install all-way STOP signs at the intersection to improve safety?**

For the reasons stated above, the installation of unwarranted STOP signs can actually result in more dangerous conditions than would have otherwise existed. Motorists and pedestrians tend to exercise greater caution at intersections, where they've come to expect activity on the cross street, than they do at mid-block locations. Since unwarranted STOP signs may result in increased mid-block travel speeds (where drivers may pay less attention), overall safety decreases. As also noted above, the installation of unwarranted STOP signs can breed disregard for STOP signs in general. For that reason, some motorists will not stop at STOP signs or will slow down without stopping, resulting in decreased safety at intersections, as well as at mid-block locations.

### **When does the County install multi-way STOPS signs at intersections?**

While not a panacea for all safety problems, STOP signs are useful traffic control devices to enhance safety for motorists, cyclists and pedestrians, when their installation is warranted. Just as for the installation of traffic signals, the MUTCD provides a set of warrants that should be met prior to considering the installation of multiway STOP sign control. These warrants consider factors such as the total vehicular volume entering the intersection as well as the vehicular and pedestrian volumes on the minor street, crash experience and average vehicular delay to minor-street traffic. Additionally, the installation of multiway STOP signs at locations where traffic signals are urgently warranted may be used as an interim measure while the traffic signal is being designed and installed.

### **Will the County install Speed Limit Signs posting a lower speed than the existing signs post in order to control speeders on our street?**

Posted speed limits are generally predicated on the 85<sup>th</sup> percentile speed for a road, that is, the speed at or below which 85 percent of drivers travel. An exception to this precept may be the existence of certain design or field conditions that may affect the safe travel speed of a road, such as horizontal or vertical curvature of the road, which may limit sight distance.

The posting of arbitrarily low speed limits will neither encourage the speeding driver to slow down, nor will it increase safety. Just as is the case with unwarranted STOP signs,

in most cases motorists tend to pay little attention to speed regulations which they consider unreasonable. Research has found that some drivers that observe the current speed limit will reduce their speed in accordance with the new restriction, other drivers will continue to operate their vehicles at speeds appropriate for roadway and traffic conditions, and other drivers will continue to exceed the speed limit to the degree that they did before the limits were reduced. Thus, the posting of unsubstantiated low speed limits can actually lead to crashes as the increased speed differential will disrupt uniform traffic flow and increase crash potential between the faster and the slower drivers. Also, when traffic is traveling at different speeds, the number of gaps (breaks in traffic) to permit safe crossing is reduced. Pedestrians also have greater difficulty in judging the speed of approaching vehicles.

### **Will the County install speed bumps on our street?**

Broward County does not install speed bumps on any roads. Speed bumps are semicircular undulations in roadway pavement, usually three to six inches in height and one to three feet in length, that cause most vehicles to slow down significantly when traversed. Broward County may install speed humps on roadways located **within unincorporated areas**, but only after the completion of an engineering study demonstrating their potential effectiveness.

Speed humps can be rounded or flat-topped. A round speed hump may resemble an elongated speed bump whereas a flat-topped speed hump (also referred to as a speed table) will have short ramps at the approach and departure, with flat tops between the ramps. Speed humps usually have a maximum height of four inches with lengths ranging from 12 to 22 feet. The longer speed humps are usually flat-topped. These designs allow a vehicle to traverse the device at approximately 20 Miles Per Hour without causing a significant level of discomfort. Beyond that speed, the level of discomfort notably increases. Research has found that when drivers encounter speed bumps, they accelerate more quickly and to higher speeds between devices than when they encounter speed humps. Municipalities are responsible for the installation of speed humps within their own areas, although Broward County will provide signing and marking as appropriate, if we have an agreement to do so.

There are drawbacks to speed humps. They can result in increased fuel consumption, vehicle emissions, noise levels and emergency response times. For these reasons, a study must be performed to demonstrate that speed humps would serve as an effective speed control measure prior to their installation.

## **Will the County install “Children at Play” signs?**

Broward County does not install “Children at Play” signs. The MUTCD discourages the use of such signs for several reasons. The purpose of Warning signs is to state a necessary and clear message calling the motorist’s attention to unusual or unexpected conditions. Most residential streets have families with children living on them. If “Children at Play” signs were installed on some streets, it could imply that if no such signs were present on other streets, children are not playing there and it is acceptable to drive less cautiously. Specific Warning signs are available for installation near schools or playgrounds for use where clearly justified.

The “Children at Play” may be interpreted by some people that it is acceptable for children to play in the street. This interpretation would provide parents and children a false sense of security, causing parents to not monitor their children as closely as they would otherwise. Obviously, children should not be encouraged to play in the roadway.

Installation of one “Children at Play” sign will also lead to a proliferation of such signs throughout the town. Since nearly every block has children living on it, there would have to be signs on each one. The effect of too many signs is that they become ineffective. The proliferation of signs breeds disrespect, not only for the specific signs, but for all signs.