



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

All-Way STOP Control

Why can't more all-way stops be installed in our neighborhood?

Can an all-way stop be installed to reduce speeding?

Where can all-way stop control be used ?



Why can't more all-way stopss be installed in our neighborhood?

In accordance with state law, the city is required to follow the Federal Manual on Uniform Traffic Control Devices (MUTCD) for the installation and application of all traffic control devices including all-way stop control (AWSC). To provide for effective and uniform applications, the MUTCD recommends that the decision to install AWSC be based on an engineering study that considers multiple factors (see below).

When stop signs are installed at unwarranted locations, they can increase crash potential by encouraging mid-block speeding and motorist disrespect for stop signs that leads to poor and erratic compliance behavior. Unwarranted stop signs unnecessarily increase delay, motor vehicle operating costs and emissions, and the use of AWSC at intersections with substantially differing approach volumes can reduce the effectiveness of AWSC for all roadway users.

Can an all-way stop be installed to reduce speeding?

The MUTCD states that stop signs should not be used for speed control. Many studies have shown that installations of unwarranted stop signs are not an effective means of controlling speeds. Although motorists must slow down to comply with the stop sign, they often increase their speed quickly to make up for lost time and top-end speeding is actually increased at mid-block locations.

Where can AWSC be used?

The MUTCD recommends the engineering study conducted for AWSC installations analyze factors contained in the five AWSC warrants listed below and detailed in the MUTCD at the link at the bottom of the page.

- Warrant A. Crash Experience
- Warrant B. Sight Distance
- Warrant C. Transition to traffic signal control or to yield control at a circular intersection
- Warrant D. Eight-Hour volume (vehicles, pedestrians, & bicycles)
- Warrant E. Other factors that include the need to control left-turn conflicts, control the intersection of two similar residential neighborhood collector streets, and/or control vehicular conflicts with pedestrians and bicyclists.

The MUTCD further notes that warrants are not a substitute for engineering judgement, and that the fact a warrant is met or not met is not conclusive justification to install or not install AWSC.

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Back to School Safety (Page 1 of 2)

Where can I get information on the Safe Routes To School Program?

What are some good back to school safety tips?

How do I get a school crossing guard in my neighborhood?



Where can I get information on the Safe Routes To School Program?

Safe Routes to School (SRTS) is an international program to encourage safe walking and bicycling to and from schools. SRTS is based on six principles: education, encouragement, engagement, engineering, evaluation, and equity.”

You can visit the Clark County School District website for useful SRTS information and educational resources at: <https://engage.ccsd.net/saferoutestoschool/>. You can also visit the city of Las Vegas’ Suggested Routes To School website at:

<https://www.lasvegasnevada.gov/Residents/Parking-Transportation/Parking/Suggested-Routes-To-School>.



The city of Las Vegas maintains an inventory of school-related traffic control devices within two miles of elementary and middle schools. This information allows parents to plan routes that use sidewalks and cross as few streets as possible.

What are some good back to school safety tips?

Drivers are urged to slow down and watch out for children near schools, playgrounds, and intersections. Parents are encouraged to teach their children to look both ways before crossing a street and to watch for vehicles making left and right turns. Pedestrians should take off headphones and not talk on cell phones when crossing streets.

If you spot a problem, call the city of Las Vegas Traffic Hotline at (702) 229-6331.

Additional tips for motorists and passengers:

1. Drive the posted speed limit and obey traffic signals and signs. Slow down at intersections.
2. Watch for school zones along streets adjacent to schools, and school crossing zones along streets near schools.
3. Don’t be distracted. Wait until your car is parked to talk, text, or adjust the radio.
4. Don’t drive while under the influence of drugs or alcohol.
5. Share the road with bicyclists. Give bicyclists a minimum of 3 feet of clearance and change lanes to the left when possible.
6. Always yield to pedestrians who are crossing the street. Anywhere two public streets intersect, a legal crosswalk exists. There does not have to be crosswalk markings.
7. If being picked up or dropped off, always enter and exit the vehicle on the passenger side. Even in a reduced speed zone, cars are passing on the driver’s side, and it is safest to enter and exit curbside.
8. Don’t get on and off buses until the driver tells you it is safe to do so.



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Back to School Safety (Page 2 of 2)

Additional tips for pedestrians:

1. Always walk on sidewalks or pathways and be attentive to motorists.
2. Cross where motorists expect to see you - anywhere two streets intersect or in marked mid-block crosswalks. This is where you have the right of way.
3. Make eye contact with drivers before crossing in front of them. Do not assume that because you can see the driver, the driver can see you.
4. Keep looking as you cross the street, never think because one driver has stopped for you that all other drivers also will.
5. Never run out into a street for a ball, a pet, or any other reason.
6. Never cross or enter the street from between two parked vehicles.
7. Put all your belongings in a backpack or bag so you are not tempted to “dart” out to grab something that has gotten away from you.
8. Wear bright or white clothing to help drivers see you, and if dressed in dark clothing, assume that drivers cannot see you.



Additional tips for bicyclists:

1. Wear helmets and reflective clothing.
2. Install reflectors on bicycles.
3. Obey the same rules of the road as motorists.
4. Ride in the same direction with traffic, not against traffic.
5. Do not ride bikes on sidewalks.
6. Always dismount and walk your bike across a crosswalk, marked or not.

How do I get a school crossing guard in my neighborhood?

New crossing guard requests are accepted through the CCSD Engagement Unit – SRTS program at (702) 799-0303 or <http://engage.ccsd.net>, or through the city of Las Vegas Public Works Department at (702) 229-2106 or https://cityoflasvegas.formstack.com/forms/crossing_guard_request_form. For crossing guard issues or to report missing services, please contact All City Management Services (ACMS) - “The Crossing Guard Company” at (702) 675-3135 or toll-free at (800) 540-9290. At this time, crossing guards are only provided for elementary schools.

Helpful crossing guards are critical to school safety and are always in demand. Anyone interested in working as a crossing guard is encouraged to apply online at <https://thecrossingguardcompany.com/>. Applicants must be at least 18 years old, pass an agility and balance test, and complete fingerprinting and drug and alcohol screening. The pay is \$16 per hour, and crossing guards work one hour in the morning and one hour in the afternoon.

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CHILDREN AT PLAY Signs

Does the city of Las Vegas install children at play signs?

Can I install a children at play sign myself?

Can I request a lower speed limit on my residential street?



The city of Las Vegas often receives requests to install signs warning drivers of the possible presence of children at play on or near the street in residential areas. While this is an admirable concern, studies published by the Transportation Research Board have not found any evidence that these types of signs reduce motor vehicle speeds or crash rates. The presence of children can be expected in residential areas, and studies show that devices attempting to warn motorists of expected conditions or conditions that are not always present fail to achieve the desired safety benefits.

Does the city of Las Vegas install children at play signs?

Children at play and similar signs are not recognized by the State of Nevada or the Federal Highway Administration as official traffic control devices. The city does not install these kinds of signs on Las Vegas streets.

False Sense of Security: Children at play signs tend to create a false sense of security for parents and children who believe the signs provide an added degree of protection when motorists, particularly local ones, actually pay little attention to them. The use of the Children at play and similar signs such as slow – entering residential area are also inappropriate in suggesting that playing in or beside the roadway is acceptable.

Many also believe such signs may help reduce speeds. As noted above, there is no evidence that these signs prevent crashes or reduce the speed of vehicles. If problems with speeding exist, a request for a Neighborhood Transportation Management Program study should be submitted to the city, or it should be brought to the attention of the Las Vegas Metropolitan Police Department, the agency responsible for vehicle code enforcement in the city of Las Vegas, by calling 311.

Addressing the Safety of Young Children: Unnecessary signs can confuse and distract motorists and foster disrespect for all signs. Where a need does exist, such as school zones and pedestrian crossings, signs are posted in accordance with the federal Manual on Uniform Traffic Control Devices (MUTCD). Also vital is the need to educate children about the dangers associated with playing on or near the street, and to strongly discourage that behavior. Neighborhood parks (lasvegasnevada.gov/residents/parks-facilities) are provided throughout the city where children can play safely with proper supervision. Safe playgrounds are also often provided at nearby schools.

Can I install a CHILDREN AT PLAY sign myself?

Nevada Revised Statute 484B.313 prohibits private citizens from installing any sign or device that resembles or imitates a traffic control device on or for a public roadway. The City may remove such devices without notice.

Can I request a lower speed limit on my residential street?

The speed limit on a residential street (whether posted or not) is 25 miles per hour per LVMC 11.16.060. Arbitrarily setting lower speed limits based on requests would not be in conformance with the MUTCD and could be considered a “speed trap.”

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TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Commercial Vehicles

What is considered a commercial vehicle?

Why are trucks driving on my street when it is posted no trucks, and can they be completely banned?

Can you park commercial vehicles in a residential area?

Who regulates oversize and overweight commercial vehicles?



What is considered a Commercial Vehicle?

A commercial vehicle “means a motor vehicle or combination of motor vehicle and trailer maintained or used primarily for the furtherance of a commercial enterprise” (LVMC 11.02.070). Simply put, any vehicle that is not primarily used for personal use is considered a commercial vehicle. Commercial vehicles include buses, delivery trucks, and service vehicles, but are not necessarily defined by vehicle type, number of wheels, or size.

Why are trucks driving on my street when it is posted no trucks, and can they be completely banned?

Streets posted with the no trucks or no commercial vehicle signs (as shown above right) only prohibit commercial vehicles from using that street as a cut-through route. Commercial vehicles can use the street if it is the shortest route from a non-posted street to the delivery/pickup location. If all commercial vehicles were banned, then you could not get your mail or packages delivered or even have your garbage picked up. The city of Las Vegas evaluates and posts no trucks restrictions on a case-by-case basis.

Can you park a commercial vehicle in a residential area?

Yes and no. Per LVMC 11.52.305, a commercial vehicle can be parked in front of residential property “from which or to which goods or passengers are being picked up or delivered, but only for that period of time during which goods or passengers are being expeditiously loaded or unloaded” or when such vehicle is “being used in conjunction with the performance of service, repair, construction or similar essential use within the immediate neighborhood.” You cannot park a commercial vehicle, recreational vehicle(RV), or trailer on any street adjacent to a residence district, public school or park for overnight storage or visiting. A residential district is defined in LVMC 11.52.305 as “territory contiguous to a street, not comprising a business district, in which the parcels abutting such street for a distance of 300 feet or more” are mainly occupied for residential use. The city does issue permits for exceptions to allow limited RV parking in residential areas. More information can be found at: <https://www.lasvegasnevada.gov/parking>.

Who regulates oversized and overweight commercial vehicles?

Vehicles that are oversized and overweight are regulated by the Nevada Department of Transportation. These vehicles are required to get special permits to operate on public roads. More information on this issue can be found by calling 1-800-552-2127 or at <http://www.nevadadot.com/business/trucker/>.

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Crosswalks

Is it true that crosswalks exist whether marked or not?

When does the city mark crosswalks?

Why aren't all crosswalks marked?



Is it true that crosswalks exist whether marked or not?

Crosswalks are both marked and unmarked. Nevada Revised Statute (NRS) 484A.065 defines a crosswalk as:

"1. That part of a highway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traveled portions of highways; or 2. Any portion of a highway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface." (NRS 484A.095 defines any public road as a highway.)

Accordingly, a legal crosswalk exists at all public street intersections whether marked or unmarked. However, the only way a crosswalk can exist at a mid-block location is if it is marked. The city of Las Vegas uses "high-visibility" crosswalks that utilize a bar pattern as shown in the photo above.

When does the city mark crosswalks?

Crosswalks markings are used to show pedestrians and drivers preferred crossing locations and are just one tool to direct pedestrians safely across a street. The city of Las Vegas, like a lot of municipalities, installs crosswalks at signalized intersections in urban and suburban locations where pedestrian crossing activity can be expected. Crosswalks are also installed at school crossings and at some uncontrolled pedestrian crossings of collector and arterial streets based on an engineering study. Uncontrolled crossings occur where sidewalks or designated walkways intersect a street at a location where no traffic control (i.e., traffic signal or stop sign) is in place for motorists on that street. Crosswalks are generally *not* installed on local residential streets since pedestrians should be anticipated along the entirety of the street.

Why aren't all crosswalks on major streets marked?

On higher volume and higher speed multi-lane streets, research has found that crosswalks markings alone are insufficient to facilitate safe pedestrian crossings. Crosswalks alone can increase the frequency of "multiple-threat" pedestrian crashes on multi-lane streets. A multiple-threat crash involves a motorist yielding in the near lane to a pedestrian to permit them to cross, and an oncoming non-yielding motorist (in the same direction) striking the pedestrian as he or she emerges from crossing in front of the yielding vehicle. Under these conditions, more substantial crossing improvements (e.g., median refuge and overhead beacons) are needed to provide for safe pedestrian crossings.

The city conducts engineering studies to determine where uncontrolled pedestrian crossing improvements on collector and arterial streets are needed and justified. The city utilizes research-based nationally recognized best practice guidance to determine where crosswalks and the more substantial improvements are appropriate. This includes FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations that is available at <https://highways.dot.gov/safety/pedestrian-bicyclist/step/resources>. Factors considered include a number of street conditions (i.e., number of lanes, speed limit, daily traffic volumes, and existence of raised median) as well as pedestrian crossing volumes.

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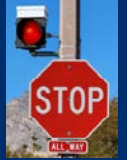
TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Flashing Beacons

What are the different types of flashing beacons and how are they used?

Why aren't flashing beacons used more?

Why are there flashing beacons on some stop signs and not others?



What are the different types of flashing beacons and how are they used?

As defined in the Manual on Uniform Traffic Control Devices, a flashing beacon is a traffic signal with one or more signal sections that operates in a flashing mode. It can provide traffic control when used as an intersection control beacon, or it can provide a warning function when used in other applications. Beacon applications consist of the following.

1. **Intersection Control Beacons** consist of one or more flashing circular yellow or flashing circular red indications facing each approach to an intersection. Flashing yellow indications face major street approaches that are uncontrolled and flashing red indications face approaches under Stop sign control.
2. **Warning Beacons** incorporate one or more flashing circular yellow indications for the following purposes:
 - a. Supplemental emphasis to signs or object markers for obstructions in or near the roadway;
 - b. Supplemental emphasis to warning signs;
 - c. Emphasis for uncontrolled crosswalks (see Pedestrian Crossing Beacons Fact Sheet);
 - d. Supplemental emphasis to certain regulatory signs; and
 - e. In conjunction with a regulatory or warning sign that includes the phrase "When Flashing" to indicate when the regulation is in effect or when the warning sign condition is present.
3. **Speed Limit Sign Beacons** incorporate one or more flashing circular yellow indications to provide supplemental emphasis. It may be used to indicate when the displayed speed limit is in effect.
4. **Stop Sign Beacons** incorporate one or more flashing circular red indications that are mounted next to the sign. They can supplement "Do Not Enter" and "Wrong Way" signs as well as Stop signs.



Why aren't flashing beacons used more?

For traffic control devices to be effective, they must command the attention and respect of motorists. Immediately after seeing a flashing beacon, motorists should consistently see an unusual condition which requires special attention. If the device seems arbitrary or unnecessary, motorists will quickly learn to ignore it. This can result in a disregard for all beacons, even those that are truly needed. However, if you believe a safety or operational issue exists that warrants the installation of a flashing beacon, please report it at <https://seeclickfix.com/las-vegas>. An engineering study will be conducted, and a beacon or other mitigation will be implemented if justified.

Why are there flashing beacons on some stop signs and not others?

The city utilizes stop sign beacons as one useful tool to provide supplemental emphasis where there is a demonstrated need (e.g., background distraction or wide approach). Other tools include oversize stop signs and the placement of supplemental stop signs in the median on the left-side of the approach. As described above, overuse of stop sign beacons needs to be avoided so their effectiveness is not diminished where they are truly needed.

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Left-Turn Signal Controls and Displays (Page 1 of 3)

What are the different types of signalized left-turn controls and displays?

Why can I only turn left on a green arrow at some intersections?

Why does the green arrow get displayed at so many different times?

Why do some intersections have flashing yellow left-turn arrows and others don't?

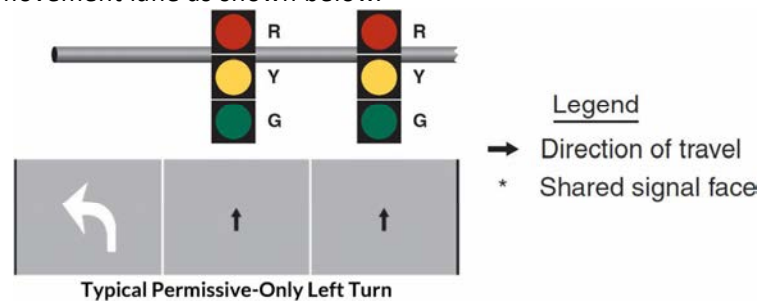


What are the different types of signalized left-turn controls and displays?

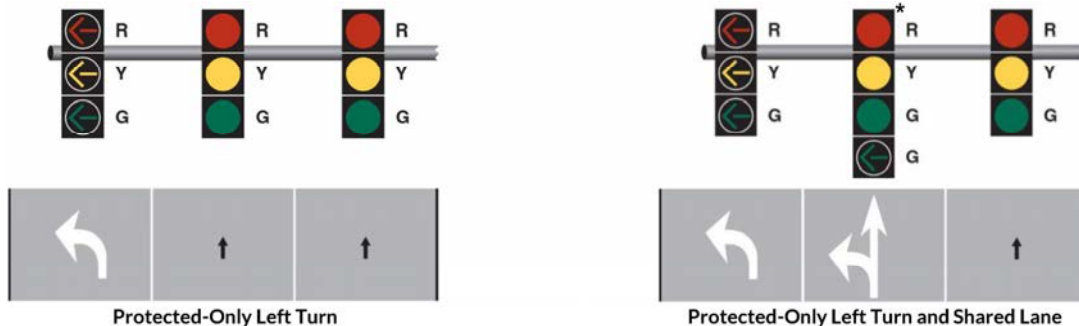
Where permitted, left-turn movements at intersections under traffic signal control are executed under one of three control modes: permissive-only, protected-only or protected/permissive. A time-of-day combination of protected/permissive and protected-only modes may also be utilized.

The permissive-only mode allows left-turn movements to be made when a circular green indication is displayed. Under the permissive-only mode the left-turning motorist must yield to oncoming traffic and/or pedestrians. The circular green indication is typically displayed over the adjacent through movement lane as shown below.

The permissive-only mode is typically used where turn volumes and/or opposing through volumes are relatively low, where speeds are relatively low, where there is only one or two opposing through lanes, and where left-turning motorists have adequate visibility of oncoming traffic to turn safely. Advantages of the permissive-only mode include reduced intersection delay and stops.



The protected-only mode only allows left-turn movements to be made when a green left arrow indication is displayed. The green left arrow is followed by a yellow arrow and a red arrow or red ball indication. The left-turn display is typically placed directly in front of the left-turning vehicle and an exclusive left-turn lane. The protected green arrow phase may either precede or follow the circular green phase for the through movement. If a protected-only left-turn is allowed from a shared left-turn/through lane concurrent with the through movement, the signal display over that lane will include a circular green indication in addition to the green left arrow indication.



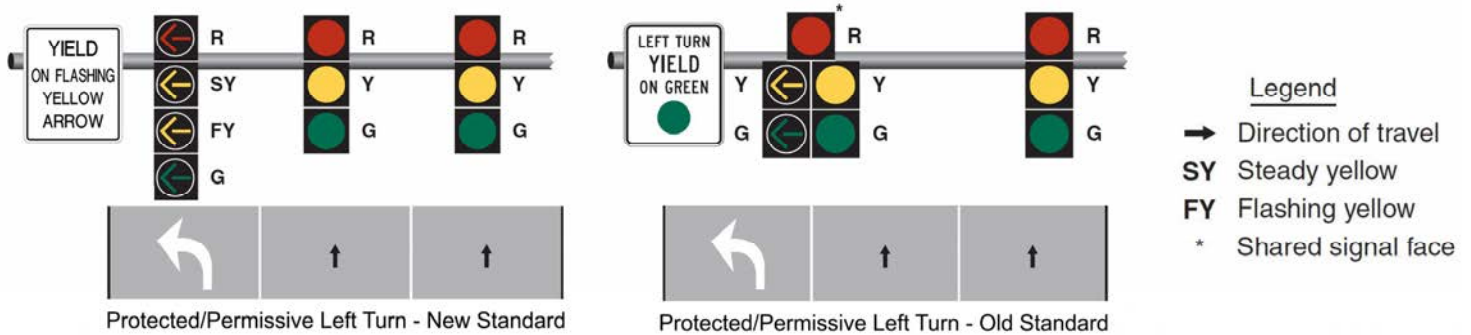
The protected-only mode is typically used where turn volumes and/or opposing through volumes are relatively high, where speeds are relatively high, where there are two or more turn lanes, where there are two or more opposing through lanes, and where left-turning motorists have *inadequate* visibility of oncoming traffic to turn safely. The protected-only mode reduces the potential for conflicts and crashes between left-turning vehicles and opposing traffic, and between left-turning vehicles and pedestrians.



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Left-Turn Signal Controls and Displays (Page 2 of 3)

The protected/permissive mode incorporates both the permissive and protected modes. The protected mode may either follow or precede the permissive mode. The current standard for implementing the protected/permissive mode is with a four-section signal display that includes a flashing yellow arrow for the permissive mode, and a steady green arrow for the protected mode. The four-section signal display is positioned directly in front of the left-turning motorist and an exclusive left-turn lane. The previous standard for the protected/permissive mode, which some intersections are still utilizing, was a five-section “dog-house” display that incorporated a circular green for the permissive mode.



The protected/permissive mode is typically used where it is determined that permissive left-turns can be made safely, but where there is also the need to provide a protected mode to adequately serve left-turn demands. In some cases, the protected/permissive mode may be limited to certain times of the day when permissive left-turns are determined to be safe, and the protected-only mode is instituted during other periods. Relative to the permissive-only mode, the protected/permissive mode can reduce crash potential, increase left-turn capacity, and reduce left-turn delay. Relative to the protected-only mode, the protected/permissive mode can reduce both left-turn delay and overall intersection delay by allowing permissive left-turns when they are safe to execute.

Why can I only turn left on a green arrow at some intersections?

Intersection approaches operate under the protected-only left-turn mode where it has been determined that permissive mode left-turns are not safe to execute. This is often the case on higher volume six-lane streets with speed limits of 45 mph or more. It is also the case where there are multiple turn lanes, and where left-turning motorists have inadequate visibility of oncoming traffic to turn safely. In some cases, a protected-only mode may be implemented at certain times of the day when permissive left-turns are not considered safe. This is typically during higher volume periods. As traffic demands increase and more permissive mode left-turn movements occur during the yellow change interval, the potential for crashes can increase.



Why does the green arrow get displayed at so many different times?

As previously noted, protected green arrow indications may precede the circular green (lead phasing) or follow it (lag phasing). Where both opposing left-turns have leading arrow phases the sequence is known as dual-leading left-turn phasing, and if both have lagging arrows it is dual-lagging left-turn phasing. Where one is leading and one is lagging it is lead/lag left-turn phasing. In the case of lead/lag left-turn phasing, the green arrow left-turn phases are concurrent with adjacent through phases. This can also occur with dual-leading and dual-lagging left-turn phasing when one of the left-turn phases is omitted due to lack of demand, or when one left-turn phase is longer than the other. The different sequences of left-turn phases are shown graphically on the following page.

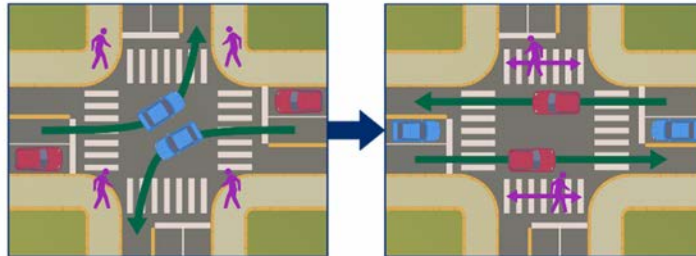
The type of left-turn phasing sequence implemented is based on several considerations and can vary by time of day. Considerations include the volume of left-turning and opposing through traffic, coordination with other traffic signals, queuing impacts of both left-turn and through movements, and intersection geometry and efficiency factors.



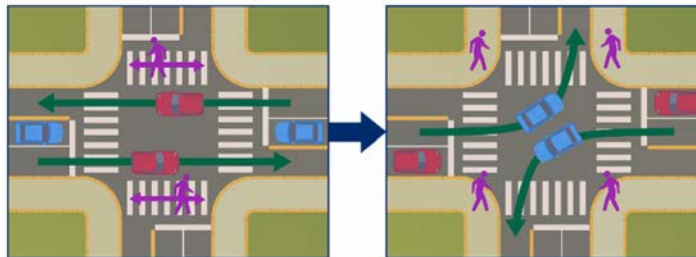
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Left-Turn Signal Controls and Displays (Page 3 of 3)

Dual-Leading
Left Turns:



Dual-Lagging
Left Turns:



Lead/Lag
Left Turns:



Why do some intersections have flashing yellow left-turn arrow and others don't?

Flashing yellow left-turn arrows are absent on intersection approaches that operate in protected-only and permissive-only modes, and on approaches using the previous standard for the protected/permissive mode. As previously noted, the current standard for implementing the protected/permissive mode is with a four-section signal display that includes a flashing yellow arrow for the permissive mode. The previous standard for the protected/permissive mode is a five-section “dog-house” display that incorporates a circular green for the permissive mode.

Most but not all dog-house displays have been upgraded to the current standard. Conversions continue as existing equipment is replaced and reconstructed, and as funding permits. A national study conducted for the Federal Highway Administration demonstrated that the new flashing yellow arrow standard for the protected/permissive left-turn mode reduces crash potential, increases capacity, and provides greater traffic management flexibility.

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Parking Restrictions (Page 1 of 2)

What are some common parking restrictions and where are they defined?

What do all the painted curb marking colors mean?

Can I get a handicap parking sign in front of my house to stop people from parking there?

Can I get a parking prohibition posted on my residential street?

I see people parking illegally in my neighborhood. How do I report that?

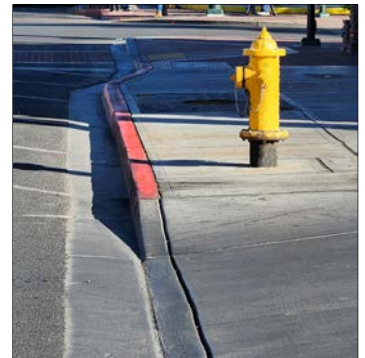
How can I get information on a variety of parking-related questions?



What are common parking restrictions in residential areas and where are they defined?

Common parking restrictions are listed below. Additional restrictions and details are defined in Chapter 11.52 – STOPPING, STANDING OR PARKING of the Las Vegas Municipal Code (LVMC) (see Section 11.52.130).

- Within 15 feet of a fire hydrant where parallel parking is permitted
- Within 20 feet of a fire hydrant in areas without parallel parking
- In front of someone else's driveway or within 5 feet of it
- Within 15 feet of an intersection
- Within 20 feet of a marked crosswalk
- Within 30 feet of any official traffic control signal or device



What do all the painted curb marking colors mean in terms of parking restrictions?

Restrictions associated with painted curb colors are defined in LVMC 11.52.030 and are summarized below.

- Red generally indicates no stopping, standing or parking, whether or not the vehicle is attended and whether or not the engine or motor is running, subject to certain exceptions defined in LVMC 11.52.030.
- Yellow indicates a commercial loading/unloading zone for passengers and freight.
- White indicates time-limited or other limited parking as described in the LVMC 11.44.020, 11.55.030, 11.44.040, and 11.52.270, and in accordance with accompanying signing.
- Gray indicates previous parking restrictions have been removed.





TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Parking Restrictions (Page 2 of 2)

Can I get a handicap parking sign in front of my house to stop people from parking there?

If a street is a public right-of-way, it is not appropriate to reserve a space for a specific residence. As a policy, the city will not install handicap signs and markings on residential streets as a way to reserve space in front of a single-family house. If the Public Works Department determines that a handicap spot is appropriate on a public street, it must be installed at a neutral location in accordance with Federal Accessibility Guidelines with accessible sidewalk ramps, and be available for anyone with appropriate credentials to use.



Can I get a parking prohibition posted on my residential street?

Parking prohibitions are not posted on public residential streets based on resident preferences. However, if a safety or operation issue exists due to on-street parking, a parking prohibition or other mitigating measure will be implemented. If you believe a safety or operational issue exists, please report it at <https://seeclifix.com/las-vegas>. An engineering study will be conducted, and a parking prohibition posted if justified.

I see people parking illegally in my neighborhood. How do I report that?

Please contact Parking Services at (702) 229-4700 for enforcement. You can also send an online request to Parking Services at this <https://seeclifix.com/las-vegas>, where you can include a photo of the issue.

How can I get information on a variety of parking-related questions?

Please visit the Parking Services website for information and FAQ on a variety of parking-related topics, including those listed below.

- Parking forms and permits
- PSA Videos related to parking
- Locations of EV charging stations
- How to "Pay by Plate"
- Removal of vehicle immobilization devices (vehicle "barnacles" and "boots")
- Citation appeals process and installment payment plans
- How new parking meters work (Flowbird and ParkWhiz payment options)
- First Friday parking and Food Truck parking
- Downtown Parking Apps



**Boot
(being replaced by Barnacle)**



Barnacle



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January 2024 update



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Pavement Markings (Page 1 of 3)

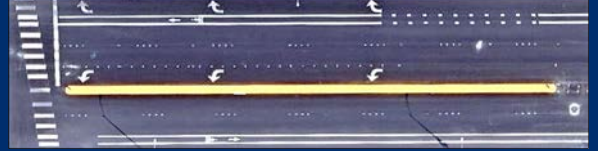
What do the different markings mean?

Which lines can I cross, and which can I not?

Do I always have to stop at crosswalks?

Why are lines marked with buttons instead of being painted?

What are those blue reflectors in the street for?



What do the different markings mean?

Pavement markings, or striping, are used to guide motorists to where they are supposed to drive. Yellow is used to indicate opposing traffic is to your left and white is used to indicate traffic in the same direction or markings that are normally driven over, like crosswalks and lane arrows. The city of Las Vegas adheres to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition, in determining what markings to use.

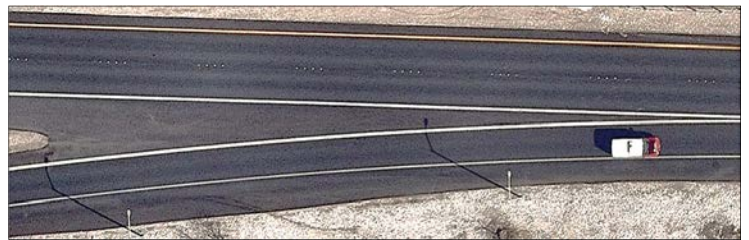
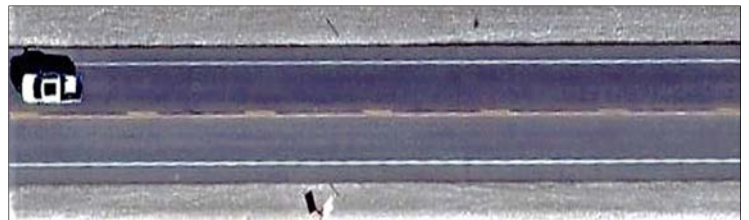
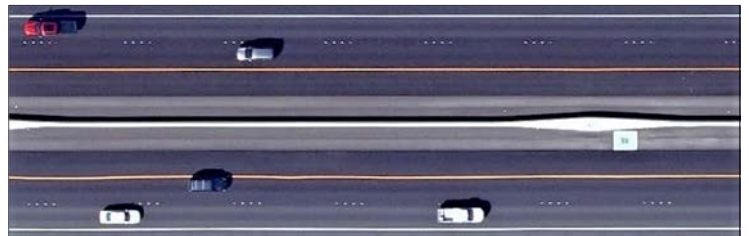
Which lines can I cross, and which can I not?

Single broken lines: You may pass other vehicles or change lanes if you can do so safely and not interfere with other traffic.

Solid line with broken line: If you are on the side with the solid line, you may not pass other vehicles or cross the line except to make a left turn into a driveway. If you are on the side of the broken line, you may pass if it is safe to do so and your passing maneuver will not interfere with other traffic.

Single solid lines: Crossing a single solid lane line is permitted but discouraged. Single solid lane lines are typically used to mark the edge of the roadway, to form channelizing islands or gores where traffic traveling in the same direction is permitted on both sides, for marking storage lane lines for left and right turn lanes, and for special use lanes such as bike or High Occupancy Vehicles.

Double solid lines: You may not pass or change lanes. You may not cross the lines except when turning left to enter or leave the roadway (e.g., to or from a driveway).

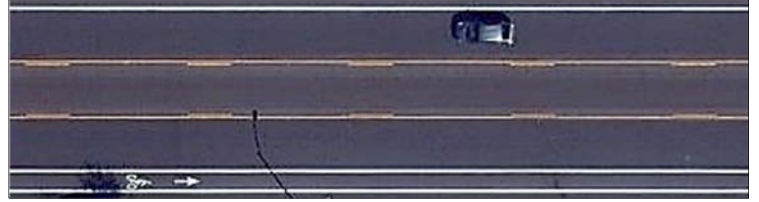




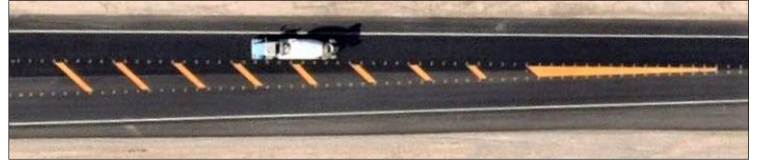
TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Pavement Markings (Page 2 of 3)

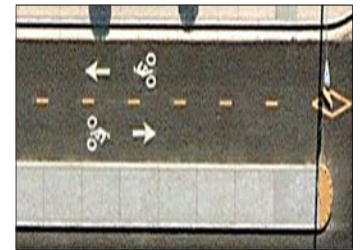
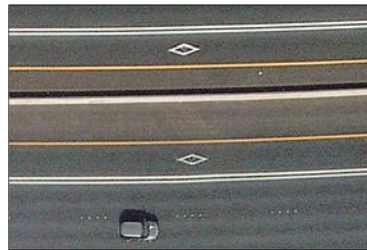
Center turn lanes: Center two-way left turn lanes are marked with a solid line to the outside and a broken line to the inside. A left-turn may not be made from any other lane when a center turn lane is provided. Passing is not allowed in a center turn lane.



Yellow or white diagonal stripes: Wide angled lines are used to mark areas of the roadway where motorists are not allowed to drive.



Lane Symbols: Symbols are used to designate special lanes such as high occupancy vehicle lanes (diamond symbol), bus lanes, and bike lanes (bike symbol). You may not enter or use these lanes unless your vehicle complies with the occupancy or other requirements of the accompanying regulatory signs for the times the special conditions are in effect.



Arrows: Arrows indicate which lanes must be used to make certain movements. For example, in this illustration you must use the right lane to turn right and the middle lane to go straight. You should be in the proper lane before reaching the solid line which separates the lanes.



Do I always have to stop at crosswalks?

Stop lines and Crosswalks: When approaching an intersection controlled by a stop sign or traffic signal, you must stop at the marked stop line if there is one. If not, you must stop before entering the marked crosswalk if there is one, which may be two white parallel lines or multiple white longitudinal bars. If there is no crosswalk, you must stop at the point nearest the intersection where you have a view of approaching cross street traffic.





TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Pavement Markings (Page 3 of 3)

YIELD lines: At locations where stopping is not always required, YIELD or “shark teeth” lines are used to inform the driver of where they are required to stop or yield to other traffic and/or pedestrians. Typical locations where yield lines are used include pedestrian crosswalks at mid-block locations and across right-turn lanes separated by corner channelizing islands.



Why are lines marked with buttons instead of being painted?

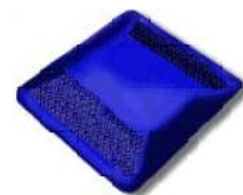
The city of Las Vegas commonly uses raised pavement markers (RPMs) to delineate lane lines, centerlines, and storage lane lines. RPMs come in two versions: retroreflective and ceramic. They are used by the city



because of their effectiveness and durability. Local asphalt pavements require a high oil content to withstand the extreme hot weather during summer months. That high oil content causes painted markings to blacken quickly with oil tracked from the pavement. As a result, painted markings can lose effectiveness in a short period of time unlike RPMs that can last for years. RPMs also produce an audible warning that a motorist is crossing a lane line or centerline, which can be a safety benefit on major streets. However, RPMs are not used in residential neighborhoods because that same audible characteristic can be a noise nuisance. Also, RPMs are not used to mark crosswalks, stop bars, bike lane lines or legends (arrows, ONLY, etc.) because they can pose a tripping hazard, cycling hazard, or accessibility issue.

What are those blue reflectors in the street for?

To assist the Fire Department, blue retroreflective raised pavement markers are used to identify locations of fire hydrants.



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TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

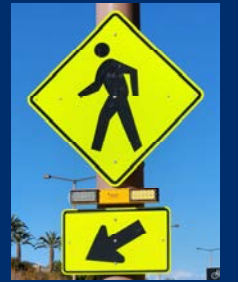
Pedestrian Crossing Beacons (Page 1 of 2)

What is a Pedestrian Hybrid Beacon?

What are those strobe-like beacons that are installed on some pedestrian signs?

How does the city determine where to install pedestrian crossing beacons and the type to install?

Are there other measures used to improve pedestrian crossings on major streets?



What is a Pedestrian Hybrid Beacon?

A Pedestrian Hybrid Beacon (PHB) is a special type of beacon used to warn and control traffic to assist pedestrians in crossing a street or highway at an uncontrolled location, in conjunction with crosswalk markings and other traffic control devices. Uncontrolled crossings occur where sidewalks or designated walkways intersect a street at a location where no traffic control (i.e., traffic signal or STOP sign) is in place for motorists on that street.

PHBs, which have also been referred to as **H**igh-intensity **A**ctivated cross**W**alk beacons (HAWKs), have been found highly effective in improving pedestrian safety by getting motorists to stop and yield to pedestrians. PHBs are push button activated. The displays motorists and pedestrians see at a PHB are illustrated here to the right.

The Manual on Uniform Traffic Control Devices (MUTCD) has guidance criteria on when a PHB should be considered based on major-street traffic volumes, roadway speeds, crossing distances, pedestrian volumes, and walking speeds.









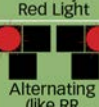

If installed within a coordinated traffic signal system, the PHB should be coordinated with adjacent traffic signals to reduce crash potential. This often requires pedestrians to wait for their time to cross due to signal coordination considerations.

A PHB can be installed at a stop-controlled intersection, but this usually requires that stop-controlled minor street approaches be limited to right-turn movements. Since a PHB is not designed to provide minor street displays, minor street through and left-turn movements can pose conflicts.

What are those strobe-like beacons that are installed on some pedestrian signs?

A Rectangular Rapid Flash Beacon (RRFB) incorporates a special high-frequency yellow flash sequence to enhance attention-getting effectiveness to provide supplemental emphasis to warning signs for marked crosswalks. RRFBs can be used for both post-mounted and overhead-mounted pedestrian crossing signs, school crossing signs, and trail crossing signs. They can also be used in conjunction with advance warning signs for crosswalks.

PHB Sequence

	MOTORISTS		PEDESTRIANS	
	See This:	Do This:	See This:	Do This:
1	 Dark	Proceed with Caution Normally dark until activated		Push the Button to Cross
2	 Flashing Yellow Light	Slow Down Pedestrian has activated the push button		Wait
3	 Steady Yellow Light	Prepare to Stop		Continue Waiting
4	 Steady Red Light	Stop and Remain Stopped Pedestrian in crosswalk		Start Crossing When all vehicles are stopped
5	 Alternating (like RR crossing)	Stop Proceed with caution if clear		Continue Crossing Countdown indicates time left to finish crossing



Overhead PHB



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Pedestrian Crossing Beacons (Page 2 of 2)

RRFBs, which have replaced circular yellow flashers for new crosswalk applications in the city, are pedestrian-actuated by push button. A side-mounted flashing light aimed toward pedestrians is incorporated to provide confirmation they are in operation.

Research has found that RRFBs can produce motorist-yielding rates as high as 98 percent. RRFBs are particularly effective at multi-lane crossings with speed limits less than 40 mph. Unlike PHBs, RRFBs cannot be coordinated with adjacent signals, but they are less expensive to install.

How does the city determine where to install pedestrian crossing beacons and the type?

The city conducts engineering studies to determine where uncontrolled pedestrian crossing improvements on collector and arterial streets are needed and justified. The City utilizes research-based nationally recognized guidance to determine where crosswalks and beacon installations are needed and appropriate. This includes FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations that is available at <https://highways.dot.gov/safety/pedestrian-bicyclist/step/resources>, as well as the MUTCD. Factors considered include a number of street conditions (i.e., number of lanes, speed limit, daily traffic volumes, and existence of a raised median) as well as pedestrian crossing volumes. PHBs are typically more appropriate than RRFBs on multi-lane streets with a posted speed limit at or above 40 mph and traffic volumes greater than 15,000 vehicles per day. The city evaluates locations upon request (a request can be submitted at <https://seeclixfix.com/las-vegas>). If found to be justified, the city prefers to install beacons that have hard-wired power vs. solar power due to maintenance considerations. However, hard-wired power improvements can affect installation times and cost.

For new developments, the city requires that developers prepare a pedestrian circulation plan that identifies pedestrian crossing improvements that may be needed to accommodate walk trips between the development and nearby attractions (e.g., schools, parks, and retail areas). The needed pedestrian crossing improvements can then be required as part of that development.

Are there other measures used to improve pedestrian crossings on major streets?

Beacon installations are just one tool the city uses to facilitate safe pedestrian crossings. Beacons are installed with other traffic control measures that may include the following:

- High-visibility crosswalk and warning signs*
- Advance "Yield/Stop Here To/For Pedestrian" signs and Yield/Stop lines**
- Median Refuge and/or addition lighting
- Curb extensions and/or parking restrictions
- Road diet treatments

* Always included per current standards.

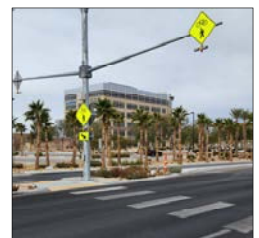
** Always included per current standards except at roundabouts



Overhead RRFB



Advance Yield Line & Sign



Median Refuge

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TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Roundabouts (Page 1 of 2)

What are roundabouts?

How do roundabouts work for motorists, pedestrians and bicyclists?

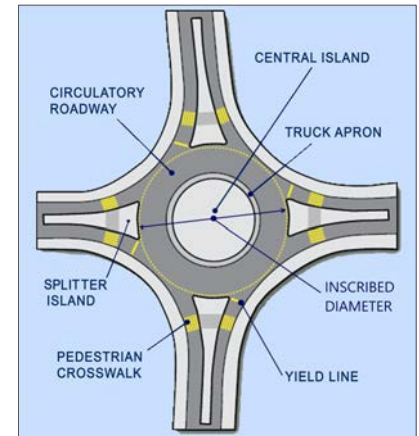
What are the benefits and advantages of roundabouts?



What are Roundabouts?

Roundabouts are one-way circular intersections in which traffic flows counterclockwise around a center island without stop signs or signals. Vehicles entering a roundabout yield the right-of-way to traffic already circulating in the roundabout. The “yield at entry” and smaller size distinguish modern roundabouts from older traffic circles and rotary intersections seen in Europe and the eastern United States, and facilitate safer and more efficient operations by eliminating weaving and reducing speeds.

Mini-roundabouts are a special subset of roundabouts with an inscribed diameter of less than 90 feet that are designed to fit in a constrained site. The smaller diameter is facilitated by a fully traversable central island to accommodate large vehicles.



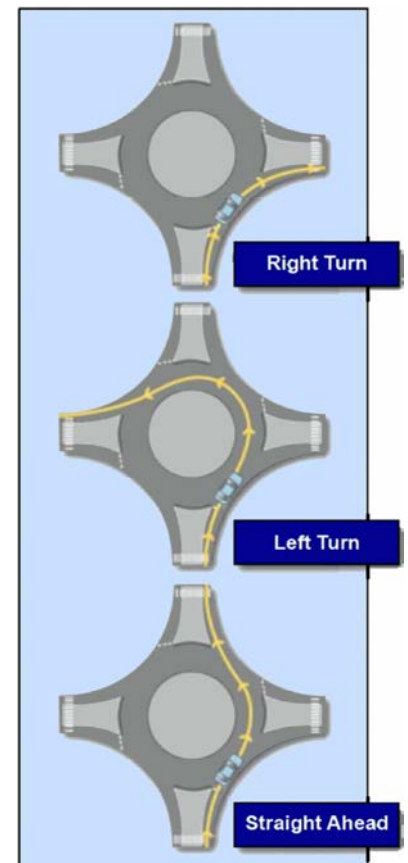
How do roundabouts work for motorists, pedestrians and bicyclists?

Motorists: Driving through a roundabout may be unfamiliar to some motorists, but it is a relatively easy task that uses many of the same skills as making a right-turn out of a driveway, as described below.

1. Upon approaching a roundabout, slow down and yield to pedestrians and bicyclists.
2. Motorists circulating in the roundabout have the right-of-way. Yield to vehicles on your left and enter the roundabout when there is an adequate gap in circulating traffic.
3. Do not enter the roundabout when an emergency vehicle is approaching from any direction.
4. Proceed through the roundabout counterclockwise to the right of the center island. Do not stop for vehicles waiting to enter the roundabout, as motorists within the roundabout have the right-of-way.
5. Use your turn signal to indicate your exit.
6. When approaching a multi-lane roundabout, select the appropriate lane for your intended turn or through movement based on lane use signing and markings on the approach.
7. Do not overtake other vehicles or bicyclists within a roundabout.
8. Never travel next to large commercial trucks or other large vehicles within a multi-lane roundabout as large vehicles may need extra lanes to maneuver through the roundabout.

Pedestrians:

1. Walk the perimeter of the roundabout – never cross to the central island.
2. Use designated crosswalks while watching and listening for vehicles. Even though pedestrians have the right-of-way, be sure that motorists have recognized your presence and right to cross.
3. Use the splitter island between vehicular entries and exits for refuge.





TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Roundabouts (Page 2 of 2)

Bicyclists: Bicyclists have two options while traveling through a roundabout:

1. *Ride like a car* through the roundabout by claiming the entire travel lane on the approach to the roundabout and through the circulatory roadway. Do this by riding near the center of the lane as a car would. Obey the same driving rules as a car.
2. *Walk like a pedestrian* around the roundabout. Dismount and exit the approach lane at a bicycle ramp if one exists, or at the pedestrian crosswalk ramp. Enter the sidewalk and walk your bicycle like a pedestrian.

What are the benefits and advantages of roundabouts?

Improved Safety: Roundabouts have been found to be significantly safer than signalized intersections. They greatly reduce the potential for severe high-speed crashes involving right-angle, rear-end, left-turn and head-on collisions. Studies have found that roundabouts produce:

- up to a 90 percent reduction in fatalities.¹
- a 76 percent reduction in injury crashes.²
- a 30-40 percent reduction in pedestrian crashes.²
- 75 percent fewer conflict points than conventional intersections.

Reduced Delay and Queuing: Traditional traffic signals usually stop two or more directions of traffic at one time. At roundabouts, all directions of traffic are often kept open and safely flowing. A study of three intersection conversions in Nevada, Kansas, and Maryland found roundabouts reduced delays by 13-23 percent.³

Reduced Operational Costs: Roundabouts have been estimated to reduce electrical and maintenance costs by an average of \$5,000 annually.

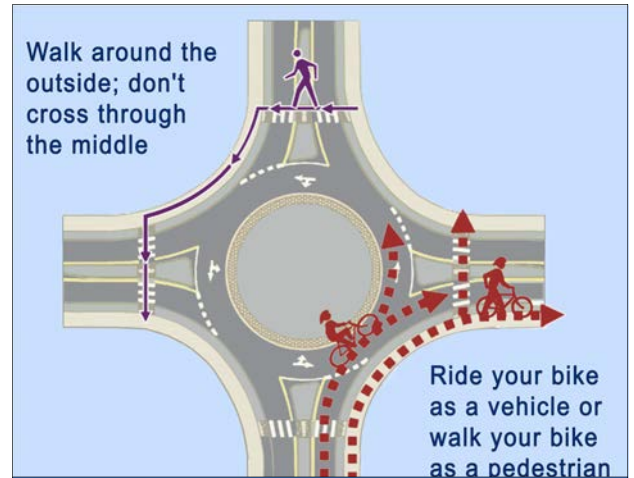
More environmentally-friendly: Because roundabouts reduce vehicle stops and delays, they also reduce vehicle emissions, noise, and fuel consumption.

Aesthetics: The center island of roundabouts provides an opportunity for unique community gateways and landscape/aesthetic improvements that can enhance and define a corridor or area in a positive way.

¹ Persaud, B.N., R.A. Retting, P.E. Gardner and D. Lord. "Safety Effect of Roundabout Conversions in the United States: Empirical Bayes Observational Before-After Study." Transportation Research Record 1751 (2001):1-8.

² NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington D.C., 2007.

³ Retting, R.A., G. Luttrell, E.R. Russell. "Public Opinion and Traffic Flow Impacts of Newly Installed Modern Roundabouts in the United States." ITE Journal, September 2002:30-37.



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TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

School Bus Stops

How are school bus routes and bus stops determined?

Why aren't school bus stops signed and marked?

How should my child get to the bus stop when it's across the street?

How do I get a school crossing zone or crosswalk near a school bus stop?



How are school bus routes and bus stops determined?

School bus routes are established by the Clark County School District (CCSD) within fiscal limitations and bus availability to provide seating capacity for high school students (two to a seat), and for middle school and elementary school students (three to a seat). School bus stops, or "pick-up" points, are established by the CCSD according to site and traffic conditions, and in consideration of adjacent property owners. For more information on this issue, visit the CCSD Transportation website at <https://transportation.ccsd.net>, or contact them at (702) 799-8100.



Why aren't school bus stops signed and marked?

School bus stop locations can and do change. A location can change throughout the school year and from year to year. When buses come to a stop they should be at locations where they are visible to motorists for several hundred feet, so the motorist would actually see the bus long before they would see any signs or markings at the bus stop location. If you believe that the school bus is not readily visible to approaching motorists at a particular school bus stop, please contact us at (702) 229-6331 with the location and direction of travel.

How should my child get to the bus stop when it's across the street?

If you or your child is uncomfortable crossing the street to get to the school bus stop, your child should wait for the school bus on the side of the street opposite of the school bus stop. Once the school bus arrives, activates its red flashers, extends its stop paddles, and traffic is directed to come to a stop, your child should then look both ways to make sure traffic has stopped and then cross the street to get to the school bus.

How do I get a school crossing zone or crosswalk near a school bus stop?

The city of Las Vegas does not install school crossing zones for bus stop locations. School crossing zones are established for students walking to and from school where they need to cross a street at an uncontrolled location, as provided for by State law (NRS 484B.060). The installation of a signed and marked crosswalk can be considered at locations near school bus stops, if justified based on an engineering study. If you believe a signed and marked crosswalk is needed at a particular location, please contact us as indicated in the box below.

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January 2024 update



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

School Zones (Page 1 of 2)

Why are some school zones 15 mph and others 25 mph?

How are school zones signed and when are they in effect? Also, why are some school zones signed differently than others, and why do some have flashers while others do not?

Are there other school zone requirements besides reduced speed limits?

Why are some school signs yellow and others yellow-green?



Why are some school zones 15 mph and others 25 mph?

Streets that are adjacent to schools and provide school access (i.e., not fenced or blocked off) are considered school zones. These streets typically have curbside drop-off/pick-up operations, and concentrations of students walking and biking to school. School crossing zones are locations not adjacent to the school site where school-aged pedestrians need to cross the street at uncontrolled locations. State Law [Nevada Revised Statute (NRS) 484B.363] establishes school zones at 15 miles per hour and school crossing zones at 25 miles per hour.

How are school zones signed and when are they in effect? Also, why are some school zones signed differently than others, and why do some have flashers while others do not?

Signs for all school zones and school crossing zones are provided in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Each zone is marked with a school zone sign (newer signs will have “ahead” below the sign). If a speed reduction is required, a school speed limit 15 or school speed limit 25 is posted, and at the end of each zone, an end school zone is posted along with a speed limit sign if needed. At each uncontrolled crosswalk, school crossings signs will be posted (newer signs will have a downward arrow).



OR



*Indicates a school zone or
school crossing zone*



OR



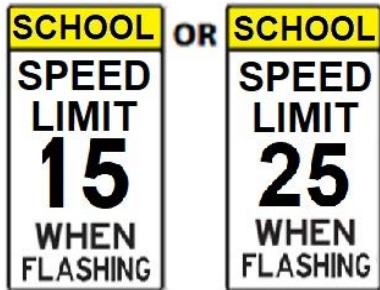
Indicates where a school crossing or crosswalk exists

School zones and school crossing zones, and their associated reduced speed limits, are in effect during the times indicated by signs and/or flashing beacons, or “When Children Are Present”. Those times are determined by the city traffic engineer in consultation with the principal of the school and the agency responsible for speed limit enforcement – typically the Las Vegas Metropolitan Police Department (LVMPD).



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

School Zones (Page 2 of 2)



*School zone or school crossing zone is only in effect when
flashers are operating*



*School zone or school crossing zone is in effect during school
hours when children are present in the school zone or school
crossing zone*

Flashing beacon installations are typically installed on busier streets with higher speed limits, and overhead beacons are installed on multi-lane streets. The city works with the Clark County School District to have beacons installed with the construction of new schools. Beacons are being installed at school zones and school crossing zones for older schools as funding permits.



Are there other school zone requirements besides reduced speed limits?

Motorists shall not make a U-turn in a school zone or school crossing zone when it is in effect.

Motorists shall not overtake and pass another vehicle traveling in the same direction in a school zone or school crossing zone when it is in effect.

If while violating these restrictions or reduced speed limits in a school zone or school crossing zone, a driver is also the proximate cause of a collision with a pedestrian or a person riding a bicycle, an electric bicycle or an electric scooter, the driver is subject to additional penalties set forth in subsection 4 or NRS 484B.653.

Why are some school signs yellow and others yellow-green?

A recent change in the MUTCD allows for the use of more visible Fluorescent Yellow-Green (FYG) colored signs. The city has adopted this newer FYG color as our standard. Older yellow signs are being changed to the new FYG color when they need replacing. Both colors are proper and legal.

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TRANSPORTATION ENGINEERING DIVISION

FACT SHEETS

Speed Humps

What is a speed hump and why are they used on some streets?

What are typical effects of speed humps?

What are some concerns with the use of speed humps?



What is a speed hump and why are they used on some streets?

Speed humps are physical traffic calming treatments used on public two-lane local residential streets and minor collectors to reduce speeding and cut-through traffic, improve safety and create more user-friendly neighborhood streets for pedestrians and bicyclists.

They consist of raised areas of pavement 12 to 14 feet in length and approximately 3 inches high with a parabolic profile. They include longitudinal slots (cushion design) that accommodate the wide wheelbase of emergency vehicles, allowing them to pass through with minimal impact to their speed. They are typically spaced 200 to 500 feet apart and have special markings and warning signs in advance of each hump.



Speed humps themselves are considered roadway design features, and not traffic control devices governed by the Manual on Uniform Traffic Control Devices (MUTCD). However, speed hump installations do have traffic control devices associated with them (i.e., signs and pavement markings).

The application of speed humps is governed by the city's Neighborhood Transportation Management Program (NTMP) available at <https://www.lasvegasnevada.gov/Residents/Parking-Transportation/Transportation-Engineering>. Speed humps are just one NTMP measure the city uses to address concerns related to speeding, cut-through traffic and unsafe conditions for pedestrians and bicyclists on neighborhood streets. A request for an NTMP study, including one for speed hump installations, requires a petition signed by at least 10 residents along the street(s) in question stating their agreement with the request.

What are typical effects of speed humps?

Speed humps have been found to have the following traffic calming effects:

- Average speed reductions of 20 to 25 percent between humps.
- Typical volume reductions of 20 percent.
- Average crash rate reductions of 13 to 45 percent.
- No significant impact on non-emergency access (for cushion design).

What are some concerns with the use of speed humps?

Concerns include the following:

- Objections to aesthetics of hump and associated signs and pavement markings.
- Increased noise at hump due to vehicle rocking and acceleration/deceleration.
- Possible negative effects on property values.
- Ongoing maintenance cost of humps and associated signs and pavement markings.

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Speed Limits

How are speed limits determined?

Can I get the speed limit in my neighborhood lowered below 25 mph?

Why aren't more speed limit signs posted?



How are speed limits determined?

As described in the Manual on Uniform Traffic Control Devices (MUTCD), speed limits are established either *statutorily* – a maximum speed limit applicable to a particular class of road as established by State law; or as *speed zones* – a speed limit set by the city based on an engineering study.

Engineering studies to establish speed limits consider the following factors in accordance with traffic engineering practices:

- Roadway environment (e.g., roadside development, frequency of driveways and intersections, functional classification, transit use and number of stops, parking, and pedestrian and bicycle facilities and activity);
- Roadway characteristics (e.g., lane widths, shoulders, longitudinal grade, alignment curvature, median type, and sight distance);
- Geographic context (e.g., urban or suburban area) and multi-modal trip generation (i.e., non-motorized);
- Crash experience;
- Speed distribution of free-flowing traffic (e.g., 50th-percentile and 85th-percentile speeds¹); and
- Review of past studies that may reveal trends in operating speeds.

The city uses USLIMITS2, a web-based expert system tool available through the FHWA to assist in setting reasonable, safe, and consistent speed limits.

Can I get the speed limit in my neighborhood lowered below 25 mph?

The setting of speed limits in the city of Las Vegas is governed by Chapter 11.16 of the Municipal Code. The prima facie speed limit is 25 mph on all streets and highways unless a different speed limit is posted as set forth in Chapter 11.16. Generally, speed limits below 25 mph are limited to school zones, the grounds of City parks, and certain intersection crossings. It is important that speed zone speed limits be based on an engineering study so they are safe, reasonable, and enforceable. Artificially low speed limits can lead to poor compliance and greater speed variations, which can create more conflicts and passing maneuvers that can increase crash frequency.

Why aren't more speed limit signs posted?

As required by the MUTCD, speed limit signs are posted at jurisdictional boundaries and where speed limits change. As recommended in the nationally recognized Traffic Control Devices Handbook published by the Institute of Transportation Engineers, speed limit signs are also posted beyond a point where significant numbers of motorists may enter the roadway (i.e., major interchanges, intersections, and traffic generators), and at periodic intervals to remind motorists of the speed limit. This criterion typically results in the posting of speed limits approximately every one-half mile in the city. Speed limit signs are not normally posted in residential subdivisions, but a 25-mph limit may be posted at entrances to subdivisions.

¹ The 85th-percentile speed is the speed that 85 percent of traffic is traveling at or below.

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Temporary Traffic Control for Work Zones

Why is temporary traffic control (TTC) for work zones necessary?

Why is there a TTC set up and no one is working?

A sign for TTC needs to be picked up. How do I get it removed?

How can I find out how long a work zone TTC setup will be in place?

My vehicle was damaged by a traffic device/sign. Who do I contact?



Why is temporary traffic control (TTC) for work zones necessary?

Temporary traffic control setups for work zones are a temporary inconvenience but are necessary to accommodate construction of safer and improved roads, construction of adjacent properties, and maintenance of existing facilities within the public right-of-way. TTC plans are designed to safely move the public (pedestrians and cyclists as well as motorists) around work zones and to protect the workers within work zones.

Why is there TTC set up and no one is working?

There are a number of reasons a TTC setup may be in place when no one is working. These include:

1. Project improvements and interim construction conditions (i.e., large open trench) could require that the TTC be in place on a 24-hour basis as well as during the actual work shift.
2. Project improvements may include concrete surfaces that require curing before they can be driven on. A common example of this are utility adjustments that include installation of new concrete collars for manholes and utility valve covers.
3. A traffic control subcontractor typically establishes a TTC setup prior to the prime contractor starting work. Occasionally there are short delays between completion of TTC setups and initiation of construction work.



There is a TTC sign that needs to be picked up - How do I get it removed?

Contacting the traffic control company directly typically results in the fastest response. Most traffic control devices have the name of the company they belong to on the device. Alternatively, or if that doesn't work, you can contact Seeing Orange by visiting <https://www.seeingorangenv.com> or the city of Las Vegas (see below).

How can I find out how long a work zone TTC setup will be in place?

Contact Seeing Orange at <https://www.seeingorangenv.com> or the agency responsible for the project.

My vehicle was damaged by a traffic device/sign. Who do I contact?

Please contact and file a non-emergency incident report with the Las Vegas Metropolitan Police Department at <https://www.lvmpd.com/en-us/RecordsFingerprintBureau/Pages/FileAReportOnline.aspx> or 702-828-3111. You may also contact the traffic control company and/or the contractor performing the work.

Also, pursuant to NRS 484E.070, you must complete a SR-1 "Report of Traffic Crash" with the Nevada Department of Motor Vehicles within 10 days after a crash that occurred in the State of Nevada and was NOT investigated at the scene by law enforcement. The SR-1 form is available at the LVMPD website and at <https://dmv.nv.gov/dmvforms.htm>.

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TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Traffic Signal Operations

Do emergency vehicles automatically get a green light?

What should I do when I see a dark traffic signal or signal displays that are bagged?

How do traffic signals detect traffic?



Do emergency vehicles automatically get a green light?

Traffic signals in the City of Las Vegas are equipped with Emergency Vehicle Preemption (EVP) that allows an emergency vehicle to change the traffic signal to green for the direction it is traveling. This is done by the emission of a coded strobe light from the emergency vehicle. The traffic signal detects the coded flash and interrupts normal signal operation to give the approaching emergency vehicle a green indication. Once the emergency vehicle has passed through the intersection, the traffic signal transitions back to normal operations. EVP reduces emergency vehicle delay and greatly reduces the possibility of a crash with other intersection traffic. Only official government fire and police vehicles have EVP emitting devices. Private ambulances and citizens are not allowed to have the devices.



What should I do when I see a dark traffic signal or signal displays that are bagged?

In accordance with Nevada state law (NRS 484B.250) you must treat the dark traffic signal as an all-way stop intersection. You must come to a complete stop, and can then proceed cautiously, yielding to vehicles which have previously completed a stop or are within the intersection.

When a traffic signal is not in operation, such as just before it is placed in service, the signal faces are covered (i.e., bagged) to indicate that it is not in service. In this event, you should obey other traffic control devices (e.g., stop signs) in effect at the intersection, or the directions of flaggers or traffic control officers.



How do traffic signals know when a car arrives?

Traffic signals use various methods of detection to know when vehicles are approaching or waiting at the intersection. Detection methods include in-pavement loops of wire, video, and radar. In-pavement loops are the most reliable but can require pavement cuts and lane closures for installation and maintenance. Unlike in-pavement loops, video and radar detection can be adjusted for changing conditions. Radar is generally insensitive to inclement weather and provides the most reliable direct measurement of speed. Video image detection can distinguish between different types of motor vehicles, pedestrians, and bicyclists. The City considers site-specific detection needs and the strengths and weaknesses of various detection technologies when selecting the appropriate technology to use and may use more than one technology at a given location.



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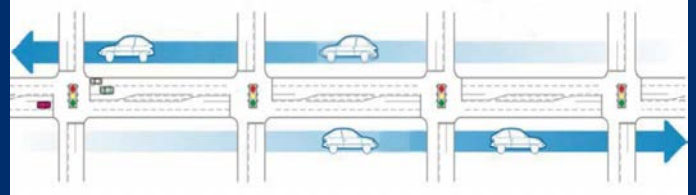
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Traffic Signal Timing (Page 1 of 3)

How are traffic signals timed, and are they coordinated with each other?

Who is responsible for traffic signal timing?

Why do I have to wait so long for a green light when there's no cross traffic, and how do I report a signal timing problem?



How are traffic signals timed, and are they coordinated with each other?

Most traffic signals along major arterial streets are coordinated with other nearby signals. There are several competing factors and considerations that go into the timing and coordination of traffic signals that make it a much more complicated task than one might assume. First let's define a few terms.

The time it takes a traffic signal to serve all the conflicting traffic movements at an intersection is called the **cycle length**. In other words, the cycle length is the length of time required for the signal indication for a given traffic movement to go from the onset of green to yellow, then to red, and then back to green again.

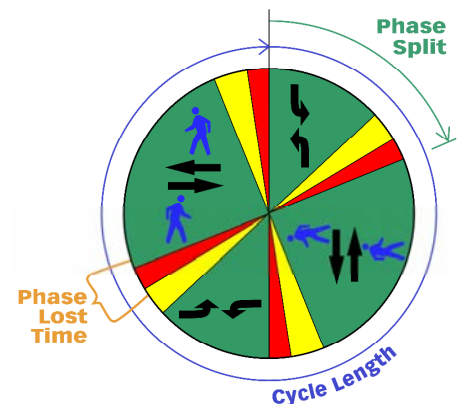
Each individual green indication for a traffic movement at a signalized intersection is a **phase**. The simplest of intersections may have two phases, one for each street, but many intersections have additional phases for left-turn movements. Traffic signal phases also include **pedestrian phases**, which typically run concurrent with vehicular phases, but can require less time or more time than the concurrent vehicular phase. The length of a phase, including its terminating yellow and all-red intervals is also called the **phase split**.

Traffic signals allocate the signal's cycle length to green phases serving the various conflicting traffic movements at the intersection, but unfortunately, not all of the cycle length can be allocated to green time. Each phase ends with a yellow change interval to warn drivers of the upcoming change in right-of-way, and there is a short all-red clearance interval to make sure traffic can clear before the next phase. The yellow and all-red intervals are needed to safely transition between phases, but they do take away effective green time. Furthermore, traffic does require time to get going, which is called start-up lost time. The total time lost to the clearance interval plus initial start-up is called **phase lost time** and is generally 4 to 6 seconds per phase.

Lost Time vs. Additional Phases: A signal with two phases, one for each street, will have 8 to 12 seconds of lost time per cycle. However, many intersections require additional phases for left-turn movements. If left-turns on both streets require separate left-turn phases, the lost time per cycle doubles to 16 to 24 seconds for the four phases being served. Separate left-turn phases are often needed for safety and capacity reasons, but their inclusion does have the adverse effect of increasing lost time. This needs to be balanced against the benefits of adding the additional phases.

Cycle Length Capacity and Delay Considerations: The percentage of the signal cycle that can be allocated as green time depends on the cycle length, since lost time per phase stays the same regardless of the cycle length. This means capacity can be increased by increasing the cycle length. Unfortunately, increasing the cycle length also increases motorists' delay, and the length of traffic queues that can create movement blockages and safety issues. So, the selection of an appropriate cycle length needs to balance higher capacity (good) vs. higher delays and queuing (bad), among other factors.

Pedestrian Phasing, Cycle Lengths, and Phase Splits: Another factor that affects the cycle length needed is the time it takes pedestrians to cross a wide arterial street. Required pedestrian phase lengths are often longer



Traffic Signal Cycle Diagram



TRANSPORTATION ENGINEERING DIVISION FACT SHEETS

Traffic Signal Timing (Page 2 of 3)

than what is needed for the vehicular phase they run concurrent with. Once required pedestrian phases are accounted for, the remainder of the cycle length must be sufficient to adequately serve other vehicular movements. On our many six-lane arterial streets, the minimum cycle length needed to accommodate both pedestrians and vehicular demands is typically 120 seconds or more.

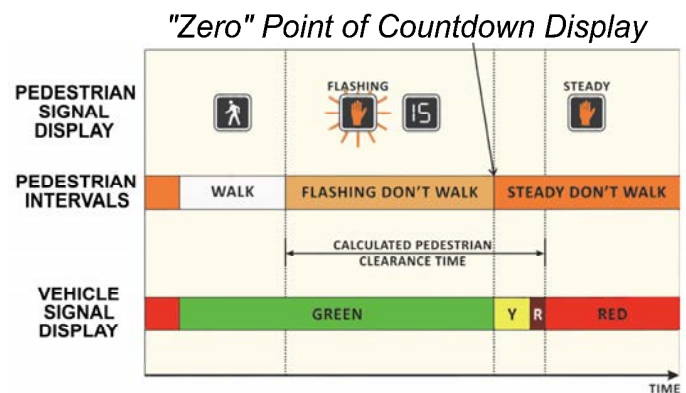
If the phase split isn't dictated by pedestrian crossing time, the amount of green time allocated is generally based on the amount of traffic per lane that the phase serves. Traffic counts are collected on a regular basis to efficiently allocate green time to competing traffic signal phases. Non-coordinated phases have vehicle detection to end the phase early if traffic is not present.

Signal Coordination: Tightly spaced groups of vehicles departing from an intersection at the onset of green are called **platoons**. Traffic signals along major arterial streets are coordinated with each other so platoons of traffic moving from one intersection to another arrive on or near the onset of a green indication as much as possible. This is also called **signal progression** and has been found to reduce crash rates as well as motorist stops and delays. For signals to be coordinated they must run on the same **system cycle length**, or a multiple thereof. This means that the longest minimum cycle length needed within a group of signals along a corridor or in a coordinated grid, must be used as the system cycle length for coordination purposes.

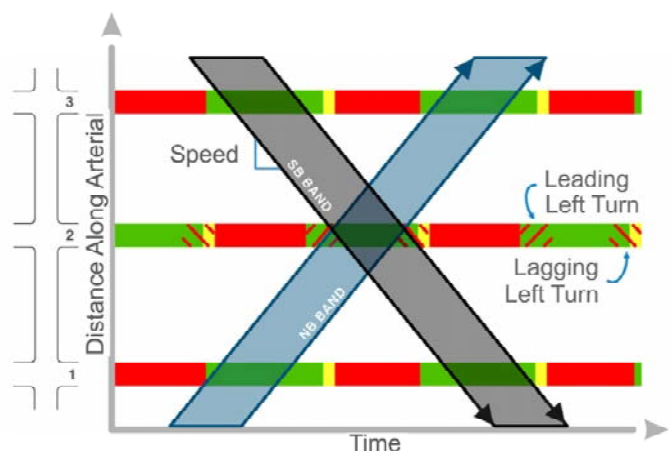
A system cycle length that effectively provides for two-way signal progression also needs to be close to a multiple of the average travel time between major signalized intersections along the corridor or within the coordinated grid. Many of Las Vegas' signals are located on a grid of streets at approximately ½-mile intervals. Effective system cycle lengths in Las Vegas are typically 120 to 180 seconds in length.

Selecting Signal Offsets: Signal coordination **offsets** define the time relationships between coordinated phases of individual signals. Offsets are based on a master clock reference and are expressed in seconds or as a percent of cycle. Selecting offsets that "line up" green lights to provide a wide **green band** of signal progression in one direction is relatively easy. The task becomes much more challenging when the opposite direction is considered. Fairly good two-way signal progression can usually be achieved along a corridor as long as signals are evenly spaced, and the appropriate resonant cycle length relative to travel times is utilized. **Time-space diagrams** are used to develop effective coordinated timing plans, including strategic use of lead-lag left-turn phasing to provide wider green bands.

The signal coordination challenge is further complicated by cross street coordination considerations. Cross streets may not have the same ideal system cycle length, and trade-offs between different corridors in the coordinated grid become a complex balancing act. Computer modeling and Automated Traffic Signal Performance Measures (ATSPMs) are utilized to develop and regularly update grid-wide coordinated signal timing plans for Las Vegas' arterial streets.



Concurrent Pedestrian and Vehicle Phases
(Source: FHWA Traffic Signal Timing Manual, 2nd Ed.)



Time-Space Diagram
(Source: FHWA Traffic Signal Timing Manual, 2nd Ed.)



TRANSPORTATION ENGINEERING DIVISION

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Traffic Signal Timing (Page 3 of 3)

So, to summarize, developing and maintaining coordinated traffic signal timing plans is a complicated task that must consider and balance a number of factors that include:

- Determining the number of signal phases needed while considering lost time impacts.
- Selection of a cycle length that balances capacity needs and delay considerations.
- Selection of a cycle length that provides both adequate pedestrian crossing times and vehicular capacity.
- Selection of a cycle length that facilitates coordination with other traffic signals.
- Setting phase offsets that provide efficient two-way coordination with other traffic signals along the street.
- Setting cycle lengths and phase offsets that provide efficient coordination on a grid of streets.

Who is responsible for traffic signal timing?

The City is a member agency of the **Regional Transportation Commission of Southern Nevada (RTC)**, which is a regional entity that oversees public transportation, traffic management, roadway design and construction funding, transportation planning and regional planning efforts. RTC includes the **Freeway & Arterial System of Transportation (FAST)**, which is responsible for the day to day timing of traffic signals in the City of Las Vegas, as well as other member agencies (e.g., Clark County, City of North Las Vegas, and City of Henderson).

The City works collaboratively with RTC-FAST staff to ensure efficient signal timing is implemented and maintained on City streets. RTC-FAST, as a regional entity, is also able to effectively coordinate signals across jurisdictional boundaries where disruptive coordination breaks might otherwise occur.

Why do I have to wait so long for a green light when there is no cross traffic, and how do I report a signal timing problem?

Relative to uncoordinated operations, coordinated signal timing along Las Vegas' grid of major arterial streets often increases delays on minor side street approaches that are not part of the coordinated grid. However, overall system stops and delays are greatly reduced by signal coordination, and once a motorist turns from a minor side street to travel on the major street, they experience those benefits. There are a couple of reasons you may not observe cross traffic while you are waiting at a red signal indication:

- As noted previously, pedestrian phases often need to be longer than the vehicular phases they run concurrent with. Motorists sometimes have to wait for a conflicting pedestrian phase to finish while there is little vehicular traffic moving at the intersection. You may not see a pedestrian because they may have already crossed at a faster than average pace, or they may have decided not to cross after pressing the pedestrian signal button.
- Major street traffic platoons do arrive at different times during coordinated green phases, particularly those in opposite directions. There may be periods of light traffic on the major street in between the arrival of traffic platoons, but they are not long enough to serve minor street phases (and concurrent pedestrian phases) while reliably returning to the major street to serve arriving traffic platoons.

If you see a signal timing problem you can report it to RTC-FAST through Seeing Orange at <https://www.seeingorangenv.com/>, or to the City of Las Vegas at <https://seeclifix.com/las-vegas>. Be as detailed as possible, and include the intersection, direction of travel, time of day, and date or day of the week.

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Traffic Signals (Page 1 of 2)

What's required to get a traffic signal installed?

Are there any disadvantages to traffic signals? And do a certain number of crashes need to happen before a traffic signal is installed?

If an intersection has signal poles installed why can't arms and displays be added to make it operational?

How much does a traffic signal cost and how long does it take to get one installed?



What's required to get a traffic signal installed?

In accordance with state law, the city is required to follow the Federal Manual on Uniform Traffic Control Devices (MUTCD) for the installation and application of all traffic control devices including traffic signals. The MUTCD states that: *"An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at that location."*

The MUTCD further notes that: *"The safe and efficient movement of all road users is the primary consideration in the engineering study to determine whether to install a traffic control signal or to install some other type of control or roadway configuration."* If installed at an inappropriate location, a traffic signal can adversely impact both safety and operational efficiencies. An engineering study determining the appropriateness of a traffic signal needs to include an analysis of applicable factors contained in nine traffic signal warrants of the MUTCD. The nine warrants consider vehicular and pedestrian volumes, traffic delays, the intersection's physical configuration (i.e., number of lanes), vehicular speeds, crash history, school crossings, signal coordination, and street network considerations.



The satisfaction of one or more signal warrants does not in itself require the installation of a traffic signal. The engineering study also needs to consider alternatives to signal control that are outlined in the MUTCD (including roundabout control) and determine that a traffic signal will improve the overall safety and/or operation of the intersection.

Upon request and in the course of routine street monitoring and maintenance, the City staff will review the appropriateness of signal control for a given intersection. A preliminary review will first be performed, followed by a more detailed engineering study where appropriate.

Are there any disadvantages to traffic signals? And do a certain number of crashes need to happen before a traffic signal is installed?

As noted in the MUTCD, improper and unjustified traffic signal control can result in increased crash frequencies, increased delay, excessive disobedience of signal indications, and problematic traffic diversions as motorists try to avoid the signal.



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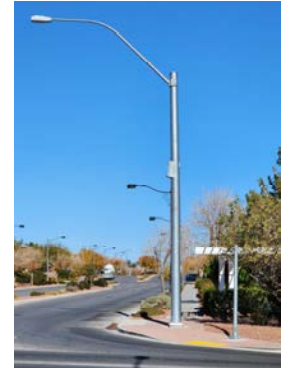
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Traffic Signals (Page 2 of 2)

Crash history is considered when evaluating the appropriateness of a traffic signal. However, crash frequencies, particularly some types, will sometimes increase where stop sign control is replaced with traffic signal control, even where one or more signal warrants are met. This is particularly true where major street traffic flows are significantly higher than minor street traffic demands, and the signal installation needs to interrupt those heavy flows to serve the minor street.

If an intersection has signal poles installed, why can't arms and displays be added to make it operational?

As a condition of development, the city requires that developers install traffic signal pole shafts and underground improvements (i.e., conduits and pull boxes) at major intersections where a traffic signal may be warranted and justified in the future. This is done to limit how much of the intersection must be torn up and reconstructed if a future traffic signal needs to be installed. This greatly reduces construction delays for the traveling public and reduces future traffic signal installation costs. However, a proposed traffic signal still needs to be justified based on an engineering study before it is installed.



How much does a traffic signal cost and how long does it take to get one installed?

A typical traffic signal can cost \$400,000 to more than \$1 million to construct depending on the size and complexity of the intersection, the degree of existing signal infrastructure in place (i.e., developer installed poles and undergrounds) and difficulties of construction at the intersection in question.

Once an intersection is approved for a traffic signal, it typically takes 12 to 18 months for it to be designed and constructed. First, funding for the signal must be identified and secured, which is highly variable depending on the degree of need and priorities, the availability of funding, and opportunities for including the signal as part of another project.

The actual design of a signal typically takes two to six months depending on whether it is designed in-house by city staff or contracted out to a consulting engineering firm. This includes establishment of proper survey control for the improvements and mapping research and documentation to ensure that improvements are within public rights-of-way and easements.

In some cases, the signal installation may become part of a planned arterial project that encompasses the intersection, or part of a project that includes improvements at multiple intersections for economies of scale. In that event, the installation schedule is subject to the design and construction schedule of the larger project.

The bidding process and construction of a traffic signal typically takes six months to a year. Much of this time is for the ordering of materials, which can take two to four months. Field construction activities can often be limited to 60 calendar days or less. However, if the traffic signal is part of a larger project with other improvements at the intersection (e.g., underground storm drain structures), the duration of construction can be significantly longer.

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FACT SHEETS

Traffic Signs

What do the different shapes of traffic signs mean?

What do the different colors of traffic signs mean?

Why can't different shapes and colors be used?



What do the different shapes of traffic signs mean?

In accordance with state law the city is required to follow the Federal Manual on Uniform Traffic Control Devices (MUTCD) for the installation and application of traffic control devices including traffic signs. The MUTCD specifies what shapes can be used for certain kinds of signs. The following is a general list of what each shape means:

Shape	Meaning	Shape	Meaning
Octagon	Stop	Triangle	Yield
Circle	Advance Train Crossing	Pennant	No Passing
Cross buck	Train Crossing	Diamond	Warning
Pentagon	School or County Road	Rectangle	Regulatory, Guide or Warning
Trapezoid	Recreation/Cultural or National Forest Road	Shield	Highway Route

What do the different colors of traffic signs mean?

Per the MUTCD, the different colors mean the following:

Background Color	Meaning	Background Color	Meaning
Red	Restrictive or Prohibited	White	Regulatory
Orange	Construction	Yellow	Warning
Brown	Recreational or Cultural	Fluorescent Yellow-Green	School, pedestrian, or cyclist
Green	Guide or Informational	Blue	Motorist services

Why can't different shapes and colors be used?

The MUTCD specifies uniform shapes and colors for good reason. The use of consistent shapes and colors allows motorists, pedestrians, and bicyclists to instantly understand the meaning of many signs without being able to read the sign legend. For example, only STOP signs are octagonal in shape with a red background, only a school sign is yellow/ fluorescent yellow green with a pentagon shape (like a schoolhouse), and only a warning sign is diamond shaped with either a yellow or orange background.

The purpose of the MUTCD is to establish uniform national criteria for the use of traffic control devices that meet the needs and expectancy of road users on all streets, highways, pedestrian and bicycle facilities, and site roadways open to public travel. This promotes safety, inclusion, and mobility for all users.



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