

Chapter 5: Signs, Pavement Markings and Signals



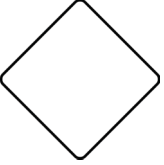

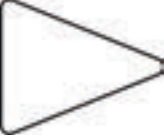






Did you know that . . . ?

- In 1915, the first stop sign was used in Detroit.
- In 1917, Michigan painted the first center line on a state highway, the Marquette-to-Negaunee Road.
- In 1920, the first four-way traffic signal with red, yellow and green lights was used at Woodward Avenue and Fort Street in Detroit.

Traffic signs




A traffic sign's shape gives you a clue as to its meaning and purpose. Learn to recognize these nine basic shapes and what they mean.

<p>Octagon</p>  <p>STOP</p>	<p>Triangle</p>  <p>YIELD</p>	<p>Diamond</p>  <p>WARNING</p>
<p>Pentagon</p>  <p>SCHOOL</p>	<p>Pennant</p>  <p>WARNING/NO PASSING</p>	<p>Horizontal Rectangle</p>  <p>DIRECTIONS</p>
<p>Vertical Rectangle</p>  <p>LAW</p>	<p>Round</p>  <p>RAILROAD CROSSING</p>	<p>Crossbuck</p>  <p>RAILROAD CROSSING</p>

What Every Driver Must Know








Route markers




Federal, state, and county road systems

Interstate freeway sign 	U.S. highway sign 
State highway sign 	County route marker 

Traffic sign colors

A traffic sign's color also carries meaning. Knowing the colors of basic traffic signs will make you a more informed driver.

	Red: Stop/prohibited/forbidden
	Blue: Service/hospitality
	Green: Directions/guidance
	Yellow: Caution/general warning
	Orange: Caution for construction or maintenance
	Black: Regulatory/legally allowed or prohibited
	White: Regulatory/legally allowed or prohibited

	Brown: Recreation/cultural interest
	Fluorescent yellow-green: School, pedestrian or bicycle caution
	Fluorescent pink: Incident/emergency/unplanned event

Regulatory signs

Regulatory signs tell you about specific laws. These signs regulate the speed and movement of traffic. They are usually rectangular and have a color pattern of white and black, red, white and black, or red and white.



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In 1912, William B. Bachman, Wolverine Auto Club of Michigan tour chairman, made plans for the group to travel 271 miles to the second annual Indianapolis Memorial Day Race. Problems arose when the confetti that was tossed onto the roads by the lead car to mark the route was blown around by the wind. The 35 cars following the wind-tossed paper trails ended up all over northern Indiana and southern Michigan. By 1920, Mr. Bachman had painted colored bands on 2,000 miles of utility poles to designate road routes to solve the confetti problem, developing the precursor to a national system of uniform road signage.

What Every Driver Must Know

Traffic sign challenge

Can you identify the following signs? Think about the sign's shape and colors. (Answers are on the next page.)



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What Every Driver Must Know

Traffic sign challenge answers

1. Incident Ahead. An emergency or other unplanned event has disrupted traffic. These warning and guide signs will assist you in driving around or through the affected area.
2. Gas Pump. Indicates the location of gas stations.
3. Exit. Indicates where the exit from the freeway is located.
4. Bridge Ices Before Road. Cautions that a bridge can be icy, even if roads are clear.
5. One Way. Traffic flow is the same direction in all lanes.
6. Speed Limit 55. Regulates that the legal speed limit on a stretch of road is 55 mph.
7. National Forest. Informs you about the location of a national park.
8. School Children Present. School children are in the area. Drive carefully and obey directions given by a school crossing guard.
9. Flint/Saginaw. Informs you of the direction to take to reach a location, in this case the cities of Flint and Saginaw.
10. Wheelchair Symbol. Services and accommodations for people with disabilities are available.
11. State Route Marker. State highway M-32.
12. Parking Permitted. One-hour parking is allowed between the hours of 9 a.m. and 7 p.m.
13. Stop sign. Come to a complete stop and yield to traffic and pedestrians before proceeding.
14. Yield. Yield the right of way. Slow down and let vehicles crossing your path go by.
15. No Turn On Red. Prohibits turning on a red light.
16. No Right Turn. Right turns are prohibited.
17. No U Turn. U-turns are prohibited.
18. Right Turn Lanes. Regulates which lanes allow right turns.
19. Center Lane Left Turn Only. Regulates that the center lane of traffic is designated for left turns only.
20. Do Not Pass. Prohibits passing.
21. Pass With Care. This sign follows the Do Not Pass sign. It is on the right side of the road and marks the end of a no-passing zone. Pass when it is safe to do so.
22. Median Ahead. Indicates that a divided roadway begins ahead.
23. Do Not Enter. You are not allowed to enter areas where this sign is posted.
24. Authorized Vehicles Only. Only law enforcement, emergency or maintenance vehicles may legally use the emergency crossover. Never drive across the median or emergency crossover of a freeway. To change directions, drive to the next exit, get off and re-enter the freeway in the other direction.
25. Wrong Way. You have entered a lane of oncoming traffic. Get out the safest and quickest way possible.
26. No Trucks Allowed. Trucks are not allowed to drive in areas where this sign is posted.
27. RR Crossbuck. A railroad crossing consisting of two train tracks is ahead.
28. Rest Area. Indicates accommodations that have restrooms for the public.
29. School Crossing. A school crossing for children is ahead. Drive carefully and obey directions given by a school crossing guard.
30. Slow-Moving Vehicle. The orange triangle is mounted on the back of vehicles that do not move faster than 25 mph, such as Amish buggies,



What Every Driver Must Know

farm combines, and other large agricultural and industrial vehicles. Drive with caution around them.

31. Right Turn Ahead. The road turns to the right.
32. Road Curves Ahead. The road curves sharply to the right and then to the left.
33. Sharp Curve Ahead, Limit Speed. A sharp curve is ahead; limit your speed to 35 mph.
34. RR. A railroad crossing is ahead.
35. Watch for Bicyclists. Bicyclists may be in the area; drive carefully.
36. Watch for Pedestrians. Pedestrians may be in the area, drive carefully.
37. Obstacle in Roadway. A traffic island or obstruction is ahead. Drive to either side.
38. Maximum Height Allowed. The maximum clearance under a bridge or other structure is 12 feet, 6 inches.
39. Exit 25 mph. The speed to exit should not exceed 25 mph.
40. No Passing Zone. Located on the left side of the roadway, this yellow pennant cautions you to refrain from passing because conditions make passing hazardous.
41. Intersection Ahead. A road intersects your road; watch for cross traffic.
42. Side Road Ahead. A side road intersects with your road from the right; watch for traffic.
43. Roundabout Ahead. A roundabout is ahead.
44. Road Work Ahead. This orange sign indicates that construction or maintenance crews are working in the area; drive with care.
45. Stop Ahead. A stop sign is posted ahead.
46. Yield Ahead. A yield sign is posted ahead.
47. Merging Traffic. Traffic merges from the right.
48. Lane Ends Merge Left. The right lane is ending; merge left. Yield right of way to traffic in the left lane.
49. Divided Highway Ends. The divided highway is ending and will turn into two lanes of traffic.
50. Two-Way Traffic. Two-way traffic begins; keep to the right.
51. Hill. A steep down slope is ahead. All vehicles, especially large trucks, should take precautions to make sure their brakes are working properly and gear down if necessary.
52. Slippery When Wet. Road conditions become slippery in bad weather; drive carefully.
53. Merge Left. The right lane is ending; merge left. Yield the right of way to traffic in the left lane.
54. Bicyclists and Pedestrians. A bicycle and pedestrian crossing is near; drive carefully.

Pavement markings

Pavement markings are white or yellow and warn, regulate and inform drivers.

White lines

White lines separate traffic lanes moving in the same direction.

Broken white lines

On roads that have more than one lane moving in one direction, broken white lines separate traffic lanes. Do not straddle the broken white lines or cross the double yellow line. See Figure 5.1.

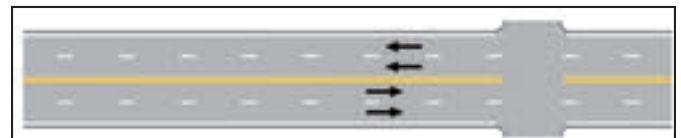


Figure 5.1.

What Every Driver Must Know

Solid white lines

Solid white lines mark the right edge of the road. Often called fog lines, these lines help you stay on the road at night or in bad weather. It is illegal to cross solid white lines when passing. Solid white lines also are used to separate lanes of traffic moving in the same direction. Do not cross a solid white line. These white lines may designate sharp curves, freeway acceleration and deceleration lanes, and other parts of the road where lane changes are considered dangerous. See Figure 5.2.

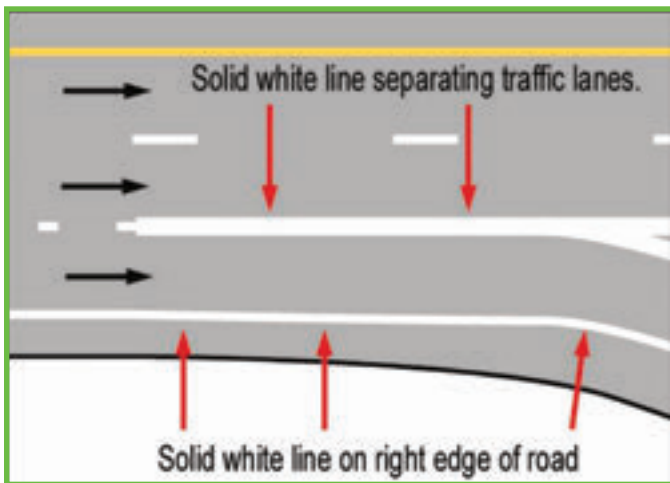


Figure 5.2.

Double solid white lines

A double solid white line is used to show a travel path where driving in the same direction is permitted on both sides of the line but crossing the line is prohibited. See Figure 5.3.

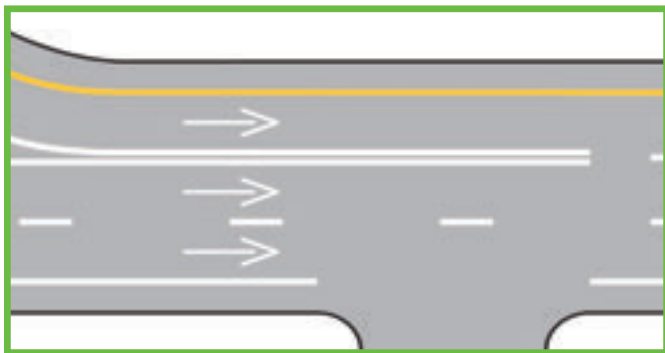


Figure 5.3.

Lines to help separate and protect

Traffic conditions can be quite diverse. Buses and trucks have specific speed limit restrictions, mopeds and bicycles have restraints as to which roads they may use, and allowances must be made for pedestrians in all cases. Certain line markings have the job of ensuring that vehicles, bicycles and pedestrians share the road safely.

Crosswalk lines

Solid white lines mark many pedestrian crosswalks. They are painted all the way across the pavement. Crosswalks are also indicated by white stripes placed on the road in the direction of traffic. Crosswalks are placed at intersections and sometimes between intersections. Stop your vehicle behind the crosswalk line. See Figure 5.4.

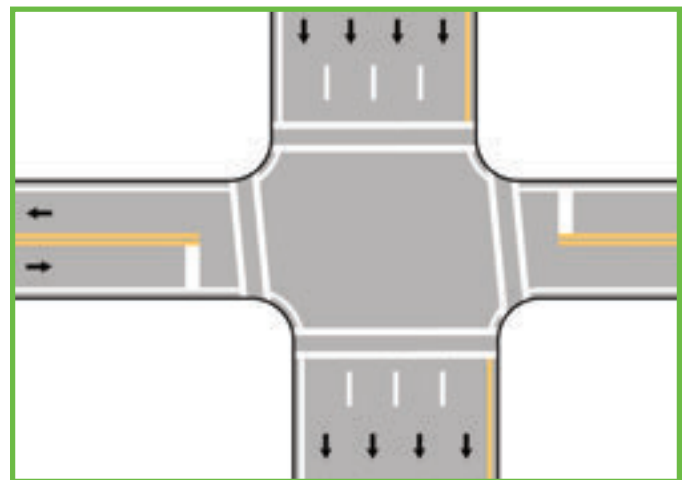


Figure 5.4.

Stop lines

Stop lines are wide white lines painted across a traffic lane that mark where you must stop your vehicle at intersections. This keeps the vehicle out of the way of pedestrians and cross traffic. If there are no stop lines or crosswalks, stop the vehicle before entering the intersection. Whether or not there is a stop line, make sure you are able to see traffic from all directions before proceeding. Can you identify the stop lines in Figure 5.4?

What Every Driver Must Know

Directional arrows

Directional arrows are wide white arrows painted down the center of the traffic lane. For example, in Figure 5.5, only right turns are permitted in the lane farthest to the right. The next lane permits either right turns or straight travel through the intersection. It is illegal to make a right turn from the remaining two lanes. Always check for traffic and pedestrians before proceeding or completing your turn.



Figure 5.5

Bicycle lanes

A bicycle lane is labeled with special pavement markings and signs and is reserved **exclusively for bicyclists**. A green bicycle lane indicates a potential point of conflict between cars and bicycles, usually intersections and driveways. Watch for bicyclists and take extra care when turning at green bicycle lanes. It is illegal to use these lanes for driving, passing, making right turns, parking, or as a pull-over to wait for someone or make a delivery.

Sharrows

Sharrows or shared lane markings alert road users about the proper lane positioning and traffic flow to ensure safety. If you see a sharrow, watch for bicyclists and give them the space, courtesy and respect they deserve as legal road users.



Yellow lines

Yellow lines separate traffic lanes moving in opposite directions. They include solid, broken and center-lane lines.



Broken yellow lines

A single broken yellow line usually marks the center line of a two-way roadway where a vehicle may pass if it is safe to do so.

Solid yellow lines

If a solid yellow line is on your side of the center line, do not cross it to pass. See Figure 5.6. On a four-lane divided roadway or a one-way road, a solid yellow line usually marks the left edge of the pavement. A double solid yellow line down the middle of a two-lane roadway means that passing is not allowed for vehicles traveling in either direction. There are some situations in which crossing a double yellow line is permitted, such as when turning into a driveway, onto a crossroad, or accessing a parking spot.

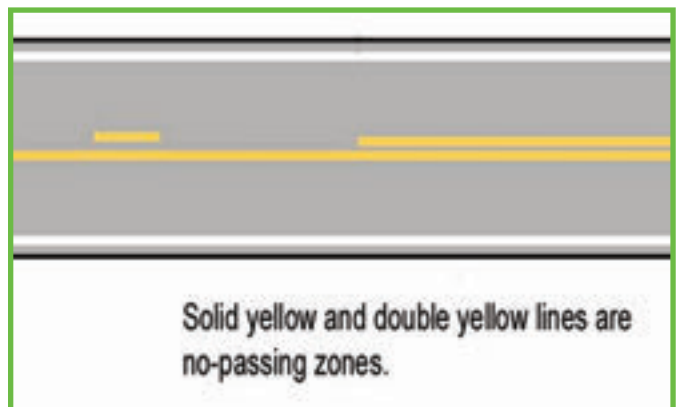


Figure 5.6.

What Every Driver Must Know

Left turn only center lane

A left turn only center lane helps traffic flow smoothly by providing a designated lane for left turns. Each outside edge of the left turn only center lane is marked with a solid yellow line with broken yellow lines on the inside edges. See Figure 5.7.

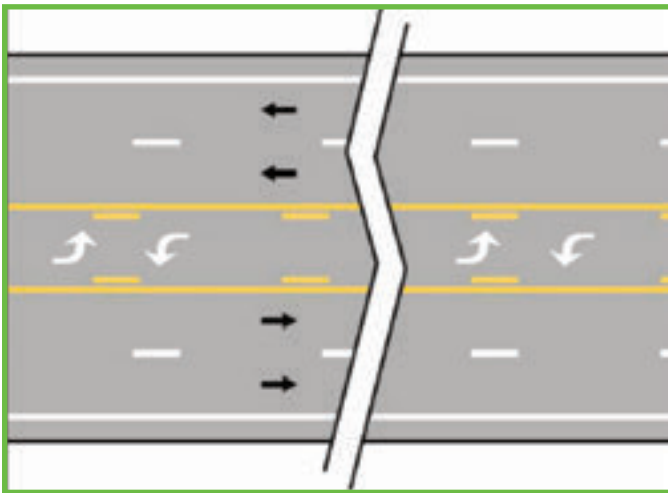


Figure 5.7. Left turns must be made from within the left-turn-only center lane and may be made from either direction. Using this lane to pass other vehicles or as a merge lane is illegal and dangerous.

Michigan Lefts

What is a Michigan Left? Michigan Lefts, also known as indirect left turns, are a type of turn that have been part of Michigan's road system since the late 1960s. Intersections that have Michigan Lefts do not allow traditional left-turn movements. Instead,

to turn left, a person must drive straight through the intersection, or turn right, then make a U-turn at a median crossover.

Are Michigan Lefts one lane or two? A single-lane Michigan Left is designed for one vehicle to turn at a time. While some crossovers may appear to be wide enough to fit multiple passenger vehicles side-by-side, that extra room is actually there to accommodate larger vehicles, like tractor trailers and recreational vehicles, that need a wider turning radius.

A multi-lane Michigan Left is designed for two vehicles to turn at a time. Pavement markings, such as arrows, ONLY lettering, and white solid lines, indicate that both lanes may be used to turn. An unmarked median crossover should always be treated as a single-lane crossover.

How to drive a Michigan Left: See Figure 5.8. Highway A traffic is prohibited from making a direct left turn onto Highway B at the intersection. Instead, drivers must continue past the intersection and turn left into the median crossover. When traffic clears, the driver will make a left turn onto Highway A and continue straight or move to the far-right lane and turn right onto Highway B.

Highway B traffic is prohibited from making a direct left turn onto Highway A at the intersection. Instead, drivers must turn right onto Highway A, move to the far-left lane and turn left into the median crossover. When traffic clears, the driver will make a left turn onto Highway A and continue straight.

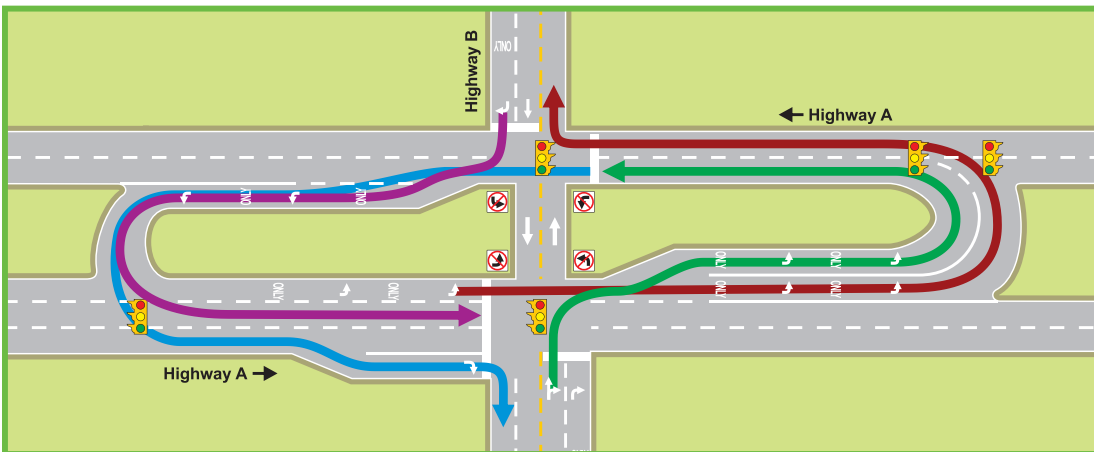


Figure 5.8. When drivers are prohibited from making a left turn at an intersection, they must circumvent the intersection and use the appropriate media crossover to complete their turn.

What Every Driver Must Know

Yield lines

Yield lines are typically found at roundabout intersections and mid-block crosswalks to help regulate the flow of traffic. When yielding to traffic or pedestrians, make sure to stop behind the yield lines. There are two types of yield lines.

White triangular symbols

White triangles painted across a traffic lane indicate you should be ready to stop and yield to pedestrians. See Figure 5.9.

Dashed white lines

Dashed white lines painted across a traffic lane in a roundabout indicate that you should yield to traffic. See Figure 5.10.

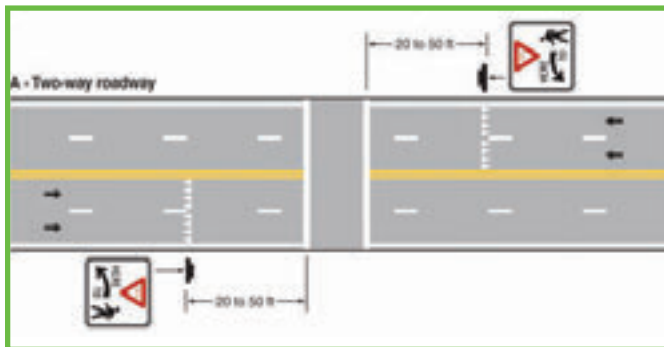


Figure 5.9. The white triangles indicate where to stop to yield to pedestrians. The accompanying sign reminds you to be prepared to yield for pedestrians.

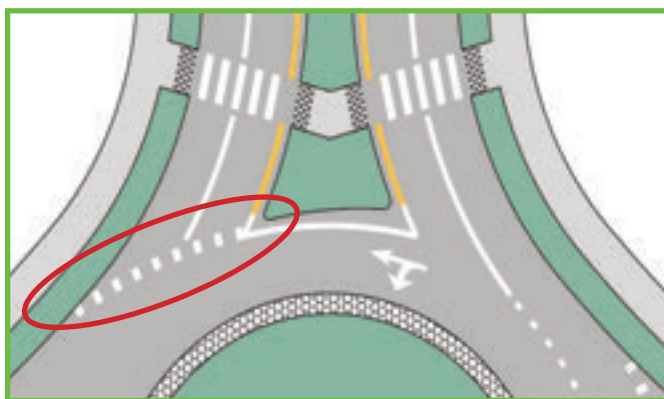


Figure 5.10. The dashed lines indicate where you should slow and yield to traffic in the roundabout.

Manual on Uniform Traffic Control Devices, Sect. 3C.01, Dec. 2009

Traffic signals

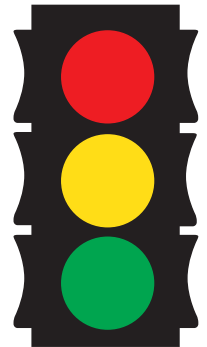
Traffic signals regulate the flow of traffic. It is illegal to drive across public or private property, such as a store parking lot, to avoid a traffic-control device. Combinations of traffic signals, signs, pavement markings and other traffic-control devices can be found at intersections and railroad crossings, in school zones, and at highway construction and maintenance operations.

Red light means stop. It is at the top of a traffic signal in Michigan. Stop your vehicle behind the crosswalk or stop line.

Yellow light means the signal is about to turn red. **You are required to stop on a yellow light.** If you cannot stop safely, do not speed up but drive cautiously through the intersection.

Green light means proceed with caution after checking for pedestrians and vehicles.

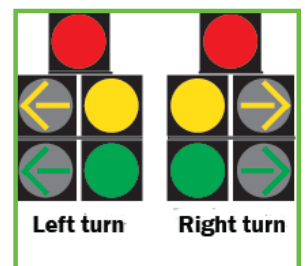
If a traffic signal is not working, and there are no law enforcement officers or other traffic signal devices present to control the flow of traffic, come to a complete stop and yield to vehicles already at the intersection. Yield to vehicles on your right if you both reach the intersection at the same time.



The 5-section-head signal

The 5-section-head signal or "doghouse signal" controls left or right turns at intersections. This type of signal has red, green and yellow lights along with a yellow and a green turn arrow.

When the green arrow is lit, turning drivers have a "protected turn," meaning all oncoming or conflicting traffic is stopped. When the green light is lit, you may complete your turn when oncoming traffic has cleared.



What Every Driver Must Know

When either the yellow light or yellow arrow is lit, the signal is about to change to red and you must stop if you haven't already entered the intersection or cannot safely stop. If you have already entered the intersection, complete your turn with caution after making sure traffic is clear.

When the red light is activated, you must come to a complete stop. Check for cross traffic and pedestrians before proceeding when the light turns green or when turning right on red.

Flashing red light

A flashing red light means come to a full stop. Proceed when the road is clear.



Flashing yellow light

A flashing yellow light means proceed carefully through the intersection. Scan across traffic in both directions.



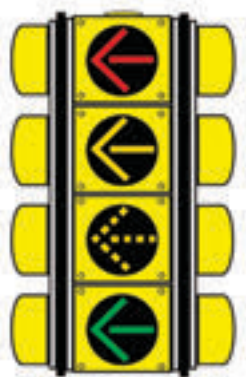
Steady green arrow

A steady green arrow means that traffic coming toward you is stopped and you may proceed with caution in the direction of the arrow. Yield the right of way to pedestrians in the intersection.



Flashing yellow arrow left-turn signal head

Research from the Federal Highway Administration shows that by reconfiguring the signal arrows used for left turns, traffic moves more efficiently through intersections and the chances for crashes are reduced. The flashing yellow arrow left-turn signal head uses four separate lenses to manage traffic.



A solid red arrow means you must stop. You cannot turn until the signal changes.

A solid yellow arrow warns you that the left turn signal is about to change to red. If you are approaching the intersection, you must stop. However, if you are already within the intersection and there is no conflicting traffic present, you may complete your left turn.

A flashing yellow arrow allows you to turn left when the oncoming traffic, which has a green light, is clear. Be sure that there is an adequate gap in the traffic and that there are no pedestrians or bicyclists crossing before making your turn.

A solid green arrow indicates that oncoming traffic is stopped and you may turn left. Proceed with caution, always check for and yield to people in the crosswalk. At intersections with vehicle-detection cameras or in-pavement sensors, this sequence may be skipped if there are no left-turning vehicles present.

Pedestrian signals

Pedestrian signals are used to control the movement of people at specific crossing points along the road or at an intersection. Some pedestrian signals may have audible or visual countdowns indicating how much time is left before the signal changes.

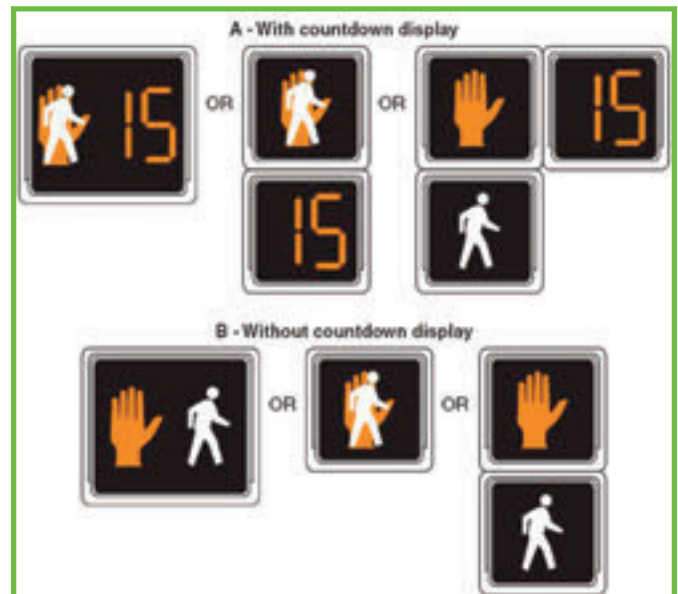


Figure 5.11. Samples of crosswalk displays.

The white symbol of a walking person or the word "WALK" indicate that traffic must yield and

pedestrians may cross. The signal will begin flashing when the time to cross safely is nearing its end. Any pedestrians in the crosswalk at that time should complete their crossing. The words "DONT WALK" or the red upraised hand means do not cross the roadway. If you are a driver, always yield to pedestrians.

Pedestrian Hybrid Beacon

A Pedestrian Hybrid Beacon is a crossing device that alerts drivers to the presence of pedestrians. There are six steps to the signal sequence.

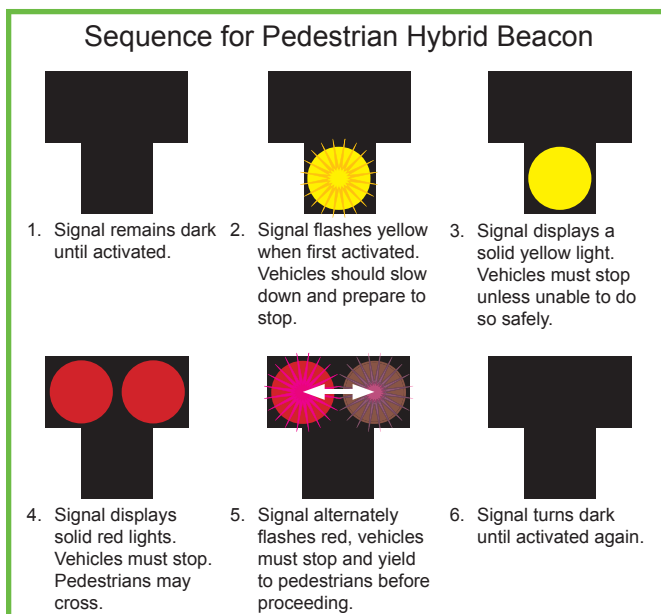


Figure 5.12. The Pedestrian Hybrid Beacon.

What Every Driver Must Know

Notes