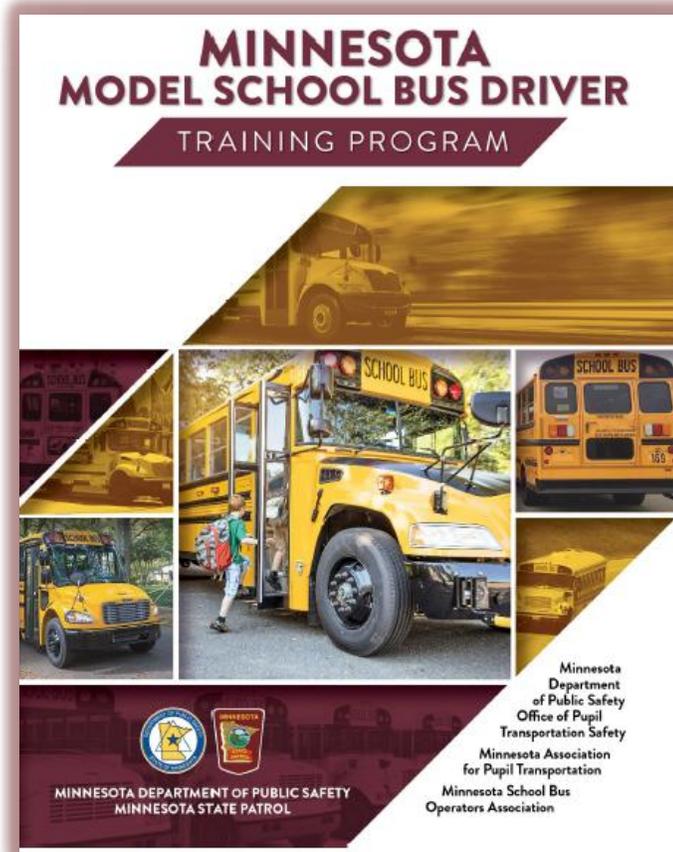


# Vision – CDL Theory Class

All Information in this presentation can be found in the Minnesota Model School Bus Driver Training Program Manual



# Driving Skills

“School bus drivers are entrusted to them the lives and safety of students and others on the roadway. The driver must learn the basic skills and procedures to safely operate a school bus. Once learned, these skills and procedures should be practiced to develop proficiency. By developing proficiency in skills and procedures, the driver can devote more attention to the ever-changing traffic conditions enabling the driver to operate the bus with the highest degree of safety.”



**Important Reminder:**  
Approximately 5,500 people are killed each year on U.S. roadways and an estimated 448,000 are injured in motor vehicle crashes involving distracted driving (NHTSA Traffic Safety Facts: Distracted Driving).

# Starting Procedure

The starting procedure should become a routine. Utilize the Safe Start Procedure as referenced in the Minnesota CDL Manual. Different engines (diesel, gasoline, propane) require different procedures.

Be sure you have identified the engine type before attempting to start the vehicle. If equipped with hydraulic brakes, depress the brake before starting the engine to check the electric brake assist motor.



## *Diesel Engine*

1. Ensure the parking brake is set.
2. Depress the clutch if the vehicle is equipped with a manual transmission.
3. Shift to the neutral/park position.
4. Turn ignition on, wait for glow plug light to go out or the system self-diagnostics check to complete.
5. Start engine.
6. After the engine starts, let idle for 1 to 2 minutes to stabilize oil pressure. After such time, raise the engine speed between 1200-1500 rpm's via a manual throttle control actuator, or by an electronic control button. This promotes winter battery charging and expedites engine warm-up time. During this time, keep lights and interior heaters off, to refrain from drawing too much electrical load. Additionally, monitor engine fast idle for 3 to 5 minutes for possible engine runaway, and wait for air pressure, if equipped, to build between 90 to 120 psi.

# Starting Procedure

## ***Gasoline Engine***

1. Ensure the parking brake is set.
2. Depress clutch if vehicle is equipped with a manual transmission.
3. Shift to neutral/park position.
4. Turn the key to the on position and wait for gauges to cycle and self-diagnostics to complete.
  - 5. Start engine.
  - 6. Wait for air pressure – if equipped – to build between 90 to 120 psi.

## ***Propane Engine***

1. Ensure the parking brake is set.
2. Depress the clutch if vehicle is so equipped with a manual transmission.
3. Shift to neutral/park position.
4. Start engine.
5. Engage starter.
6. Let engine idle for a short period (3 to 5 minutes).
7. Wait for air pressure, (if equipped) to build between 90 to 120 psi.

**\*\*\*Note: Never race (>1500 rpm's) a cold engine during the initial start or warm-up period.**



**\*\*\*Note: NONE of our Vision Busses or Vans are manual Transmission**

# Steering and Turning

You must be able to assume the proper steering position and make all turns correctly and smoothly.

learn the procedures necessary to initiate and complete the turn correctly.

If confronted with an unusual turn or maneuver, you should do so with extreme caution.

To avoid a possible crash, you should remember that evasive steering maneuvers may be safer than trying to stop.

**\*\*\*All drivers must communicate effectively with other traffic by utilizing the proper signaling techniques.**



# Steering and Turning

## Steering Position

1. Hold the steering wheel firmly with both hands. Without a firm grip, the steering wheel could jerk away from your hands, if you hit an obstruction on the road.
2. Assume a 10 & 2, 9 & 3, or 8 & 4 hand position.
3. Hands should be on the rim of the steering wheel, not on the cross bar.



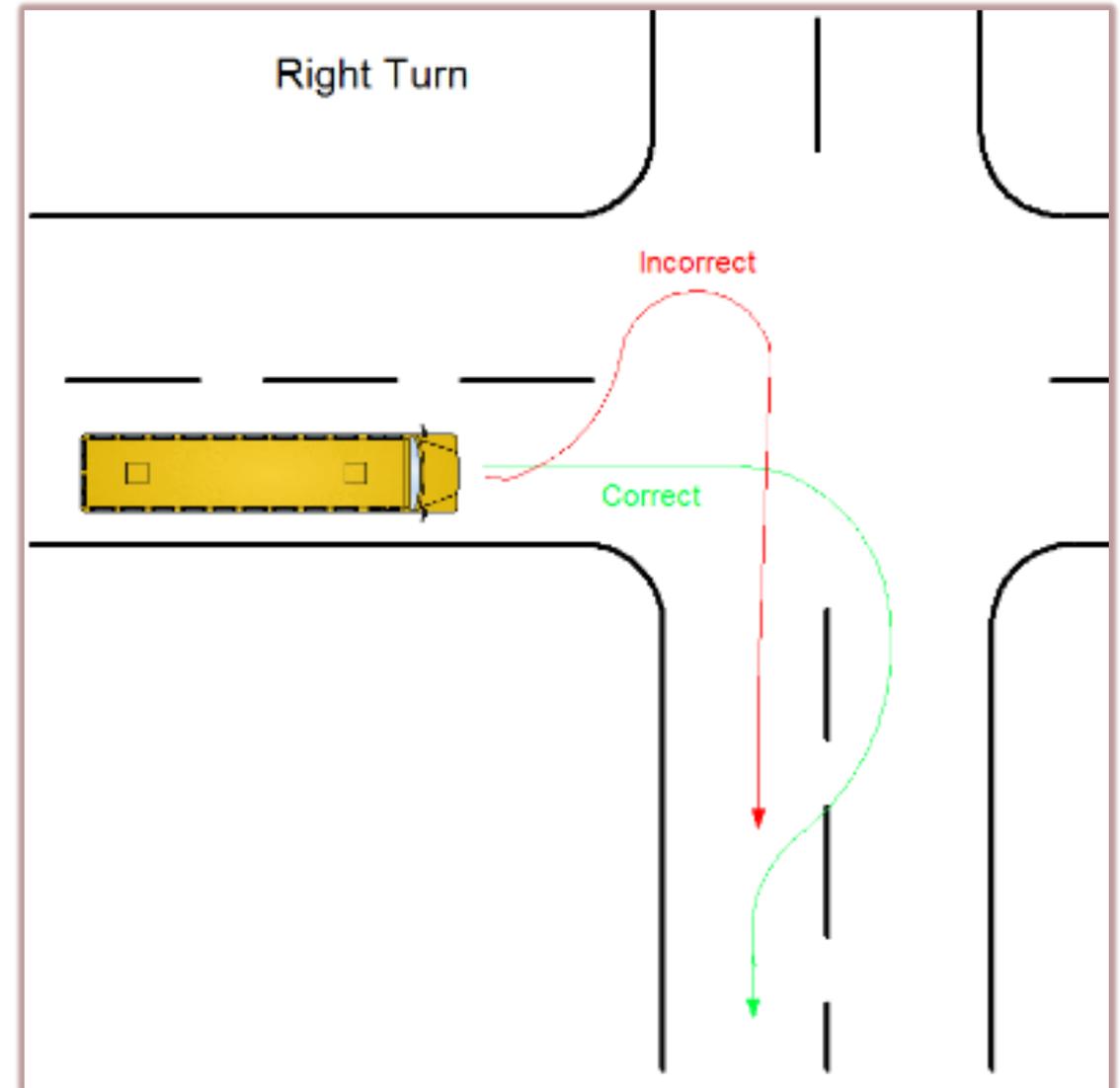
## Push pull or hand-over-hand steering

1. Use whichever technique feels comfortable and is safe.

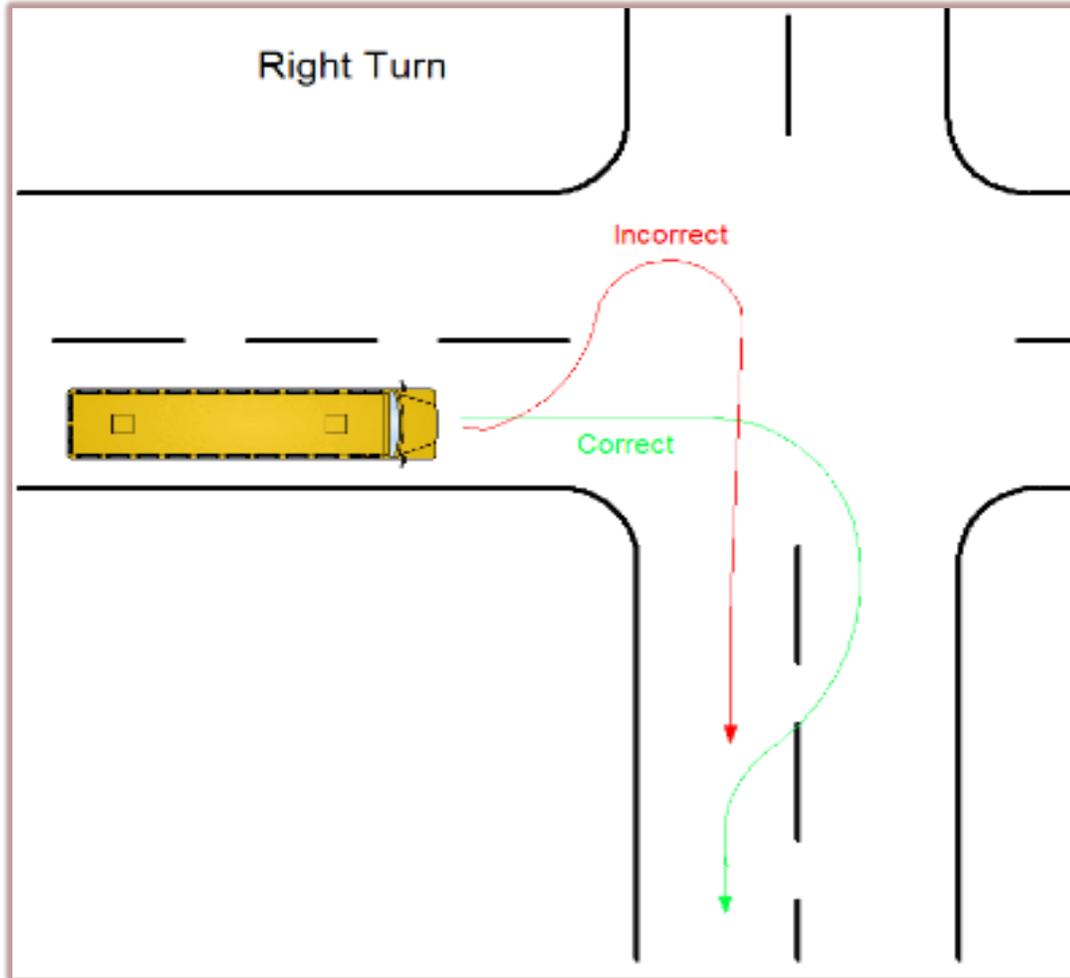
\*\*\*DO NOT use a palming technique.

# Right Turns

1. Signal your intention to initiate a turn.
2. Check for traffic and pedestrians in all directions.
3. Check your mirrors.
4. Move your head and body (rock & roll method) to view around blind spots created by the body, mirrors, or moldings of the bus.
5. Reduce your speed (manual transmission, downshift to proper gear for turn), turn slowly, giving yourself and others more time to avoid any possible traffic conflicts. A quick turn could also result in the passengers/cargo in your bus to fall/shift.
6. Properly position the bus within your lane.
7. Check for traffic and pedestrians again in all directions. Ensure you have enough room to initiate and complete the turn without presenting a danger to you and other motorists.



# Right Turns



8. Initiate the turn.

9. A wide turn may be required in certain situations – narrow streets/lanes, but not all. Remain centered within your lane, do not encroach into another parallel/adjacent lane prior to your turn. This may miscommunicate to other drivers that you are turning left, and a crash could result.

10. After you begin your turn, it is permissible for the vehicles front end to briefly enter an oncoming lane (Figure 6), or parallel lane – of the road you are turning onto. However, complete your right turn as close as practical to the right-hand edge or curb of the roadway.

11. Turn the steering wheel smoothly.

12. Check the left mirror for tail swing.

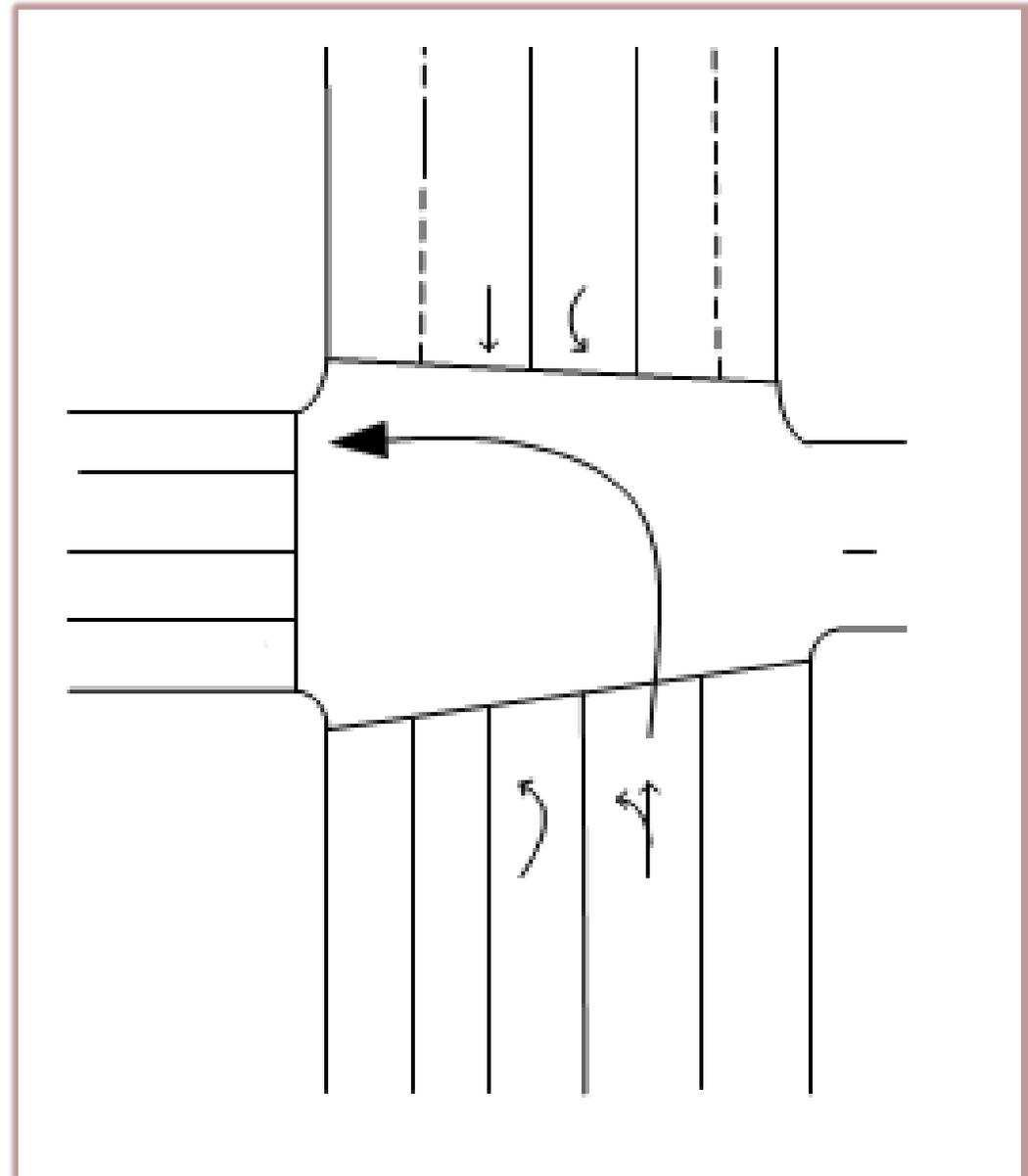
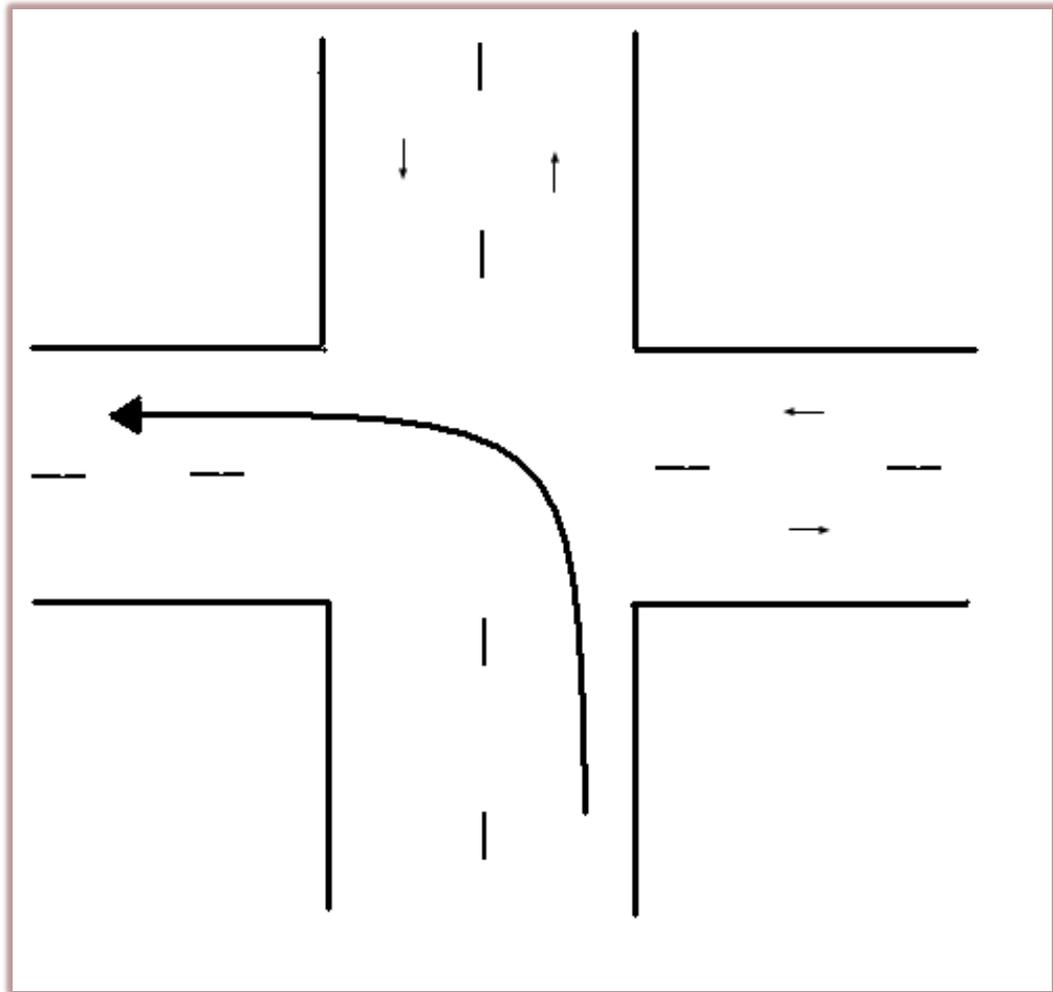
13. Enter the right most lanes available.

14. Steer wheels back into a neutral position, but do not let the steering wheel freely spin back to the neutral position. Check the turn signal for cancellation.

# Left Turns

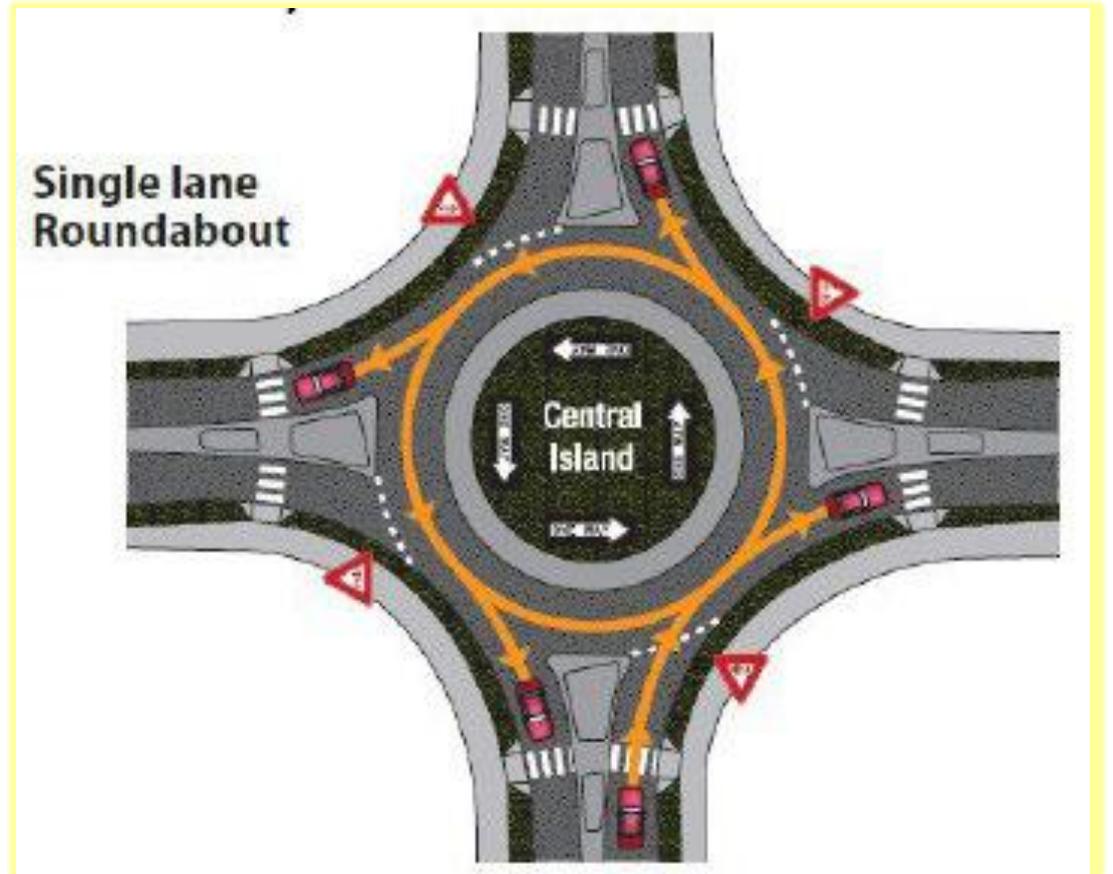
1. Check traffic in all directions.
2. Move your head and body (rock & roll method) to view around blind spots created by the body, mirrors, or moldings of the bus.
3. Give proper left turn signal.
4. Check mirrors.
5. Reduce speed (manual transmission, downshift to proper gear for turn).
6. Position bus in the proper lane – move into the left most lane, or as close as practical to the left-hand curb or centerline.
7. Keep front wheels straight if waiting to turn.
8. Do not enter the intersection until it is safe to do so and only when you can complete your turn safely and expediently.
9. Check traffic again in all directions.
10. Make sure you have reached the center of the intersection before you start the left turn. Turning too soon may result in the left side of your vehicle striking another vehicle due to off-tracking.
11. Execute turn.
12. Turn the steering wheel smoothly.
13. Check your right mirror for tail swing.
14. Check your left mirror while turning.
15. Turn into the appropriate lane.
16. Check signal for cancellation.
17. If two turn lanes are present and it is permissible, use the right-most turn lane. This method also allows you to see other motorist to your left.

# Left Turns

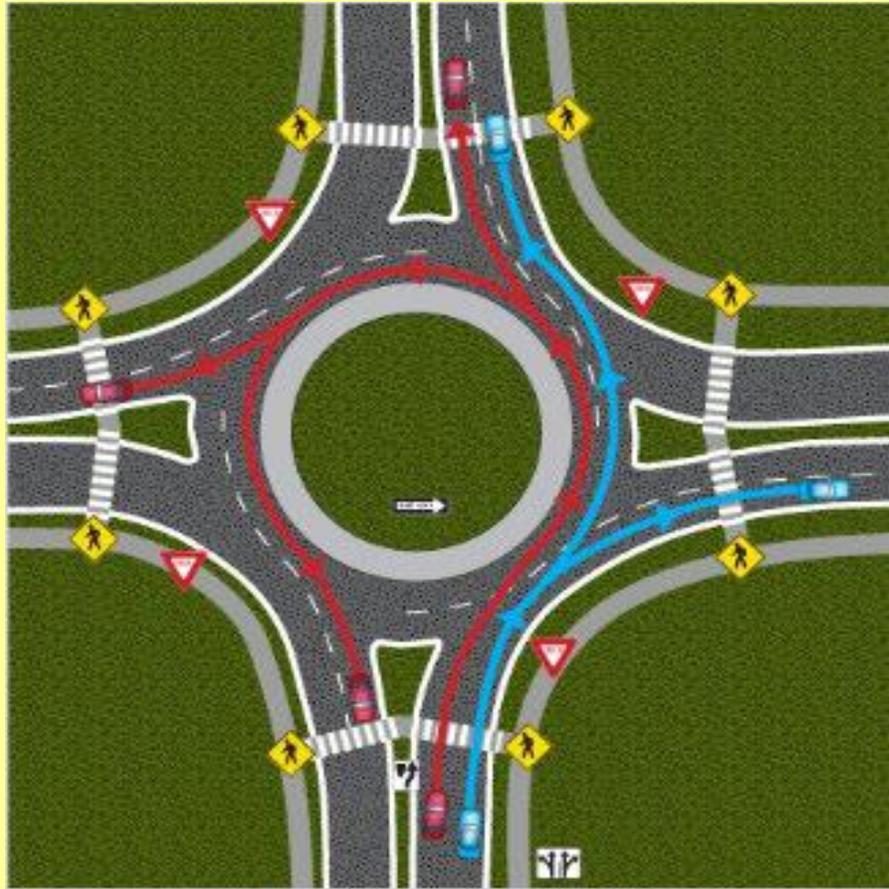


# Roundabouts

**Roundabouts** Are designed to allow low speed entry and low speed circulating traffic with yield control at all entries. A single-lane approach to a roundabout is the simplest type of approach consisting of only one-lane. Truck aprons are often included on single-lane entries to allow off-tracking of turning trucks or to allow oversized/overweight vehicles to navigate the intersection.



# Roundabouts



Two Lane Roundabout

1. Slow down as you approach the roundabout.
2. For multi-lane roundabouts – as with any intersection – move into the appropriate lane as you approach the intersection.
3. Yield to pedestrians and bicyclists crossing the roadway.
4. Watch for signs or pavement markings that require or prohibit certain movements.
5. When entering a roundabout, yield to vehicles already in the roundabout. Do not cross into the roundabout until all traffic from the left has cleared.
6. After entering the roundabout, drive in a counter-clockwise direction until you reach your exit.
7. Do not stop, pass, or change lanes within a roundabout.
8. If an emergency vehicle approaches, exit the roundabout immediately and then pull over.

# Stopping and Parking

Driver trainees must demonstrate proficiency in safely bring the vehicle to a stop as well as utilizing the proper techniques for performing parking maneuvers.

## **Stopping Procedures – Manual Transmissions**

### A. Stopping in low gear at speeds below 10 mph

1. Release accelerator and gradually apply brakes.
2. Depress the clutch and reduce brake pressure slightly just before coming to a stop.
3. Shift into neutral, release clutch and remove foot from pedal.

### B. Stopping from cruising gear

1. Release accelerator and apply the brakes. The amount of brake pressure required to stop the vehicle is dependent on the speed, load, roadway conditions, and how quickly you need to stop. Controlled brake pressure is best for a smooth, safe stop.
2. As proper speed is reached for the desired gear range, downshift to the lower gear required.
3. As the bus continues to slow, select subsequent lower gear.



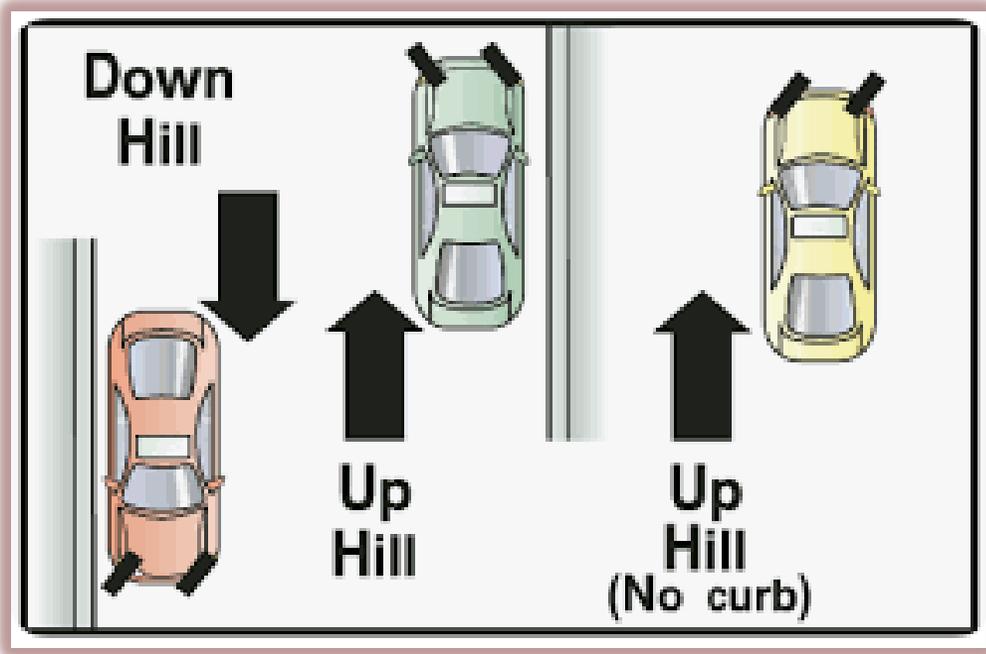
# Stopping and Parking

## Stopping Procedures – Automatic Transmissions

1. Release the accelerator and gradually apply the brakes. The amount of brake pressure required to stop the vehicle safely will depend on the speed, load, roadway conditions, and how quickly you need to stop.
2. Increase brake pedal pressure slightly just before coming to a stop.
3. Shift into neutral or park.
4. Set the parking brake.



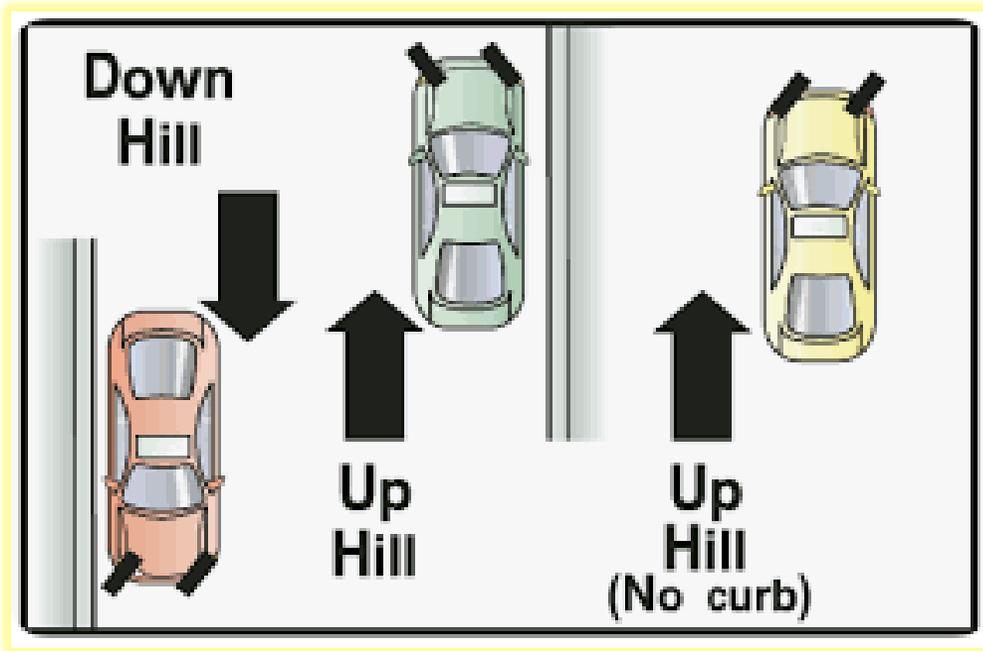
# Stopping and Parking



## Parking Procedures – Manual Transmissions

1. Shift into the proper gear.
2. Low gear on level or upgrade.
3. Reverse gear on downgrade.
4. Turn wheels in the proper direction for roadway conditions.
5. Left when facing uphill where there is a curb.
6. Right at all other times.
7. Set parking brake.
8. Turn off ignition and remove key.

# Stopping and Parking



## Parking Procedures – Automatic Transmissions

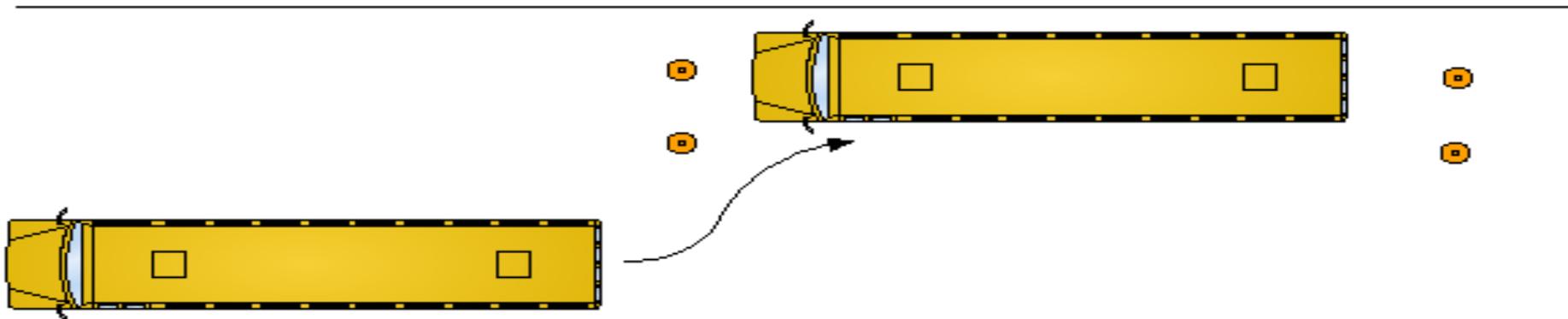
1. Shift into neutral or park.
2. Turn wheels proper direction for the roadway conditions.
3. **Left when facing uphill where there is a curb.**
4. **Right at all other times.**
5. Set parking brake.
6. Turn off ignition and remove key.

# Stopping and Parking

## Parallel Parking — Blind Side

Driver-trainees must demonstrate proficiency in proper techniques for performing parallel parking blind side positions-maneuvers to appropriate criteria/acceptable tolerances.

Parallel Parking Blind Side



The dots signify cones placed at 4 feet and 8 feet from the curb respectively.

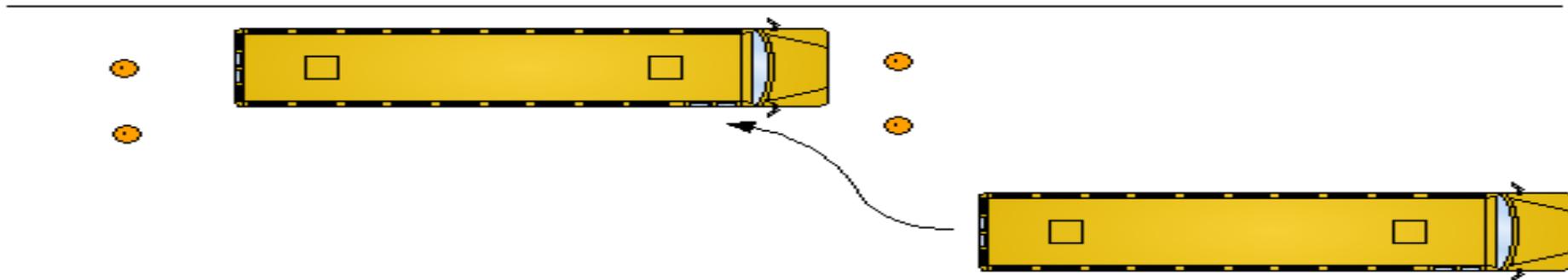
For length, measure the bus length and add 15 feet.

# Stopping and Parking

## Parallel Parking Sight Side

Driver-trainees must demonstrate proficiency in proper techniques for performing parallel parking sight side positions-maneuvers to appropriate criteria/acceptable tolerances.

Parallel Parking Sight Side



The dots signify cones placed at 4 feet and 8 feet from the curb respectively.

For length, measure the bus length and add 15 feet.

# Backing Safely

Backing is always a dangerous maneuver since visibility is limited behind your vehicle. Avoid backing unless **ABSOLUTELY** necessary.

If backing is necessary in a loading zone or near pedestrians, the driver should get assistance if possible.

## Pro Tip:

When parking, attempt to park to pull forward when you leave.

This adult would be able to see the area behind the bus and must be able to communicate with the driver. **The school bus driver is the ultimate responsible party in all situations.**

# Backing Safely

When backing is required at a pupil loading location, the pupil shall be loaded prior to performing the backing maneuver.

When backing is required at a pupil unloading location, the backing maneuver shall be performed prior to unloading of the pupil at the location.

No pupils may be outside the bus when it is backing.

**\*\*\*Minnesota Rule 7470.1000 prohibits backing on school property if it can be avoided**

If necessary to run a bus backwards, the driver should have adequate visibility to determine if any moving vehicles are within 500 feet in either direction, when on roadways.



# Backing Safely

***If backing is necessary, follow these safety rules:***

1. Start in the proper position: Place the vehicle in the best position to allow you to back safely. This position will depend on the type of backing to be completed.
2. Open the driver side window: Opening the window allows you to listen for indications of any hazards (i.e. vehicle horn sounding, voice warning, and alerts of immediate danger).
3. Check your path: Look at your line of travel before you begin. Exit and walk around the vehicle. Check the clearance on the sides, overhead, and near the path your vehicle will take. Make sure there is sufficient space to back into.
4. Use mirrors on both sides: Check the outside mirrors on both sides frequently. Exit the vehicle and check your path if you are unsure.
5. Honk the horn: Honk the horn twice to alert those outside the bus before beginning your backup maneuver.
6. Active the four-way flashers.

# Backing Safely

## *Safety rules continued:*

7. Check mirrors again and throughout the backing procedure.
8. Back slowly: Always back as slowly as possible and use the lowest reverse gear. You can more easily correct any steering errors, and stop more quickly, if necessary.
9. Back and turn toward the driver's side: When possible, back to the driver's side as you can see better from that side. Backing toward the right side is very dangerous, as you can't see as well. If you back and turn toward the driver's side, you can watch the rear of your vehicle, by looking out the side window. Use driver side backing, even if it means going around the block to put your vehicle in this position. The added safety is paramount.
10. Use a helper when you can: There are blind spots you can't see which is why a helper is important. The helper should stand near the back of your vehicle where you can see them. Before backing, work out a set of hand signals that you both understand, including a signal for "stop."
11. Only back up as far as necessary: Backing up further than required increases the risk of striking something or someone.

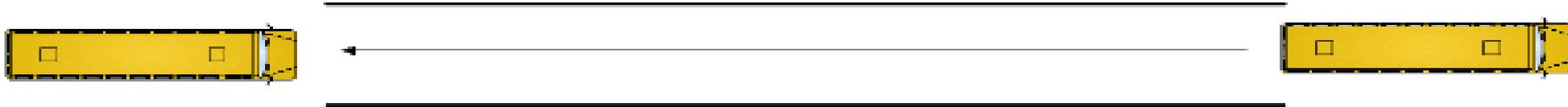
# Backing Safely

## **Straight Line Backing**

Driver trainees must demonstrate proficiency in proper techniques for performing various straight line backing maneuvers to appropriate criteria/acceptable tolerances.

Straight Backing

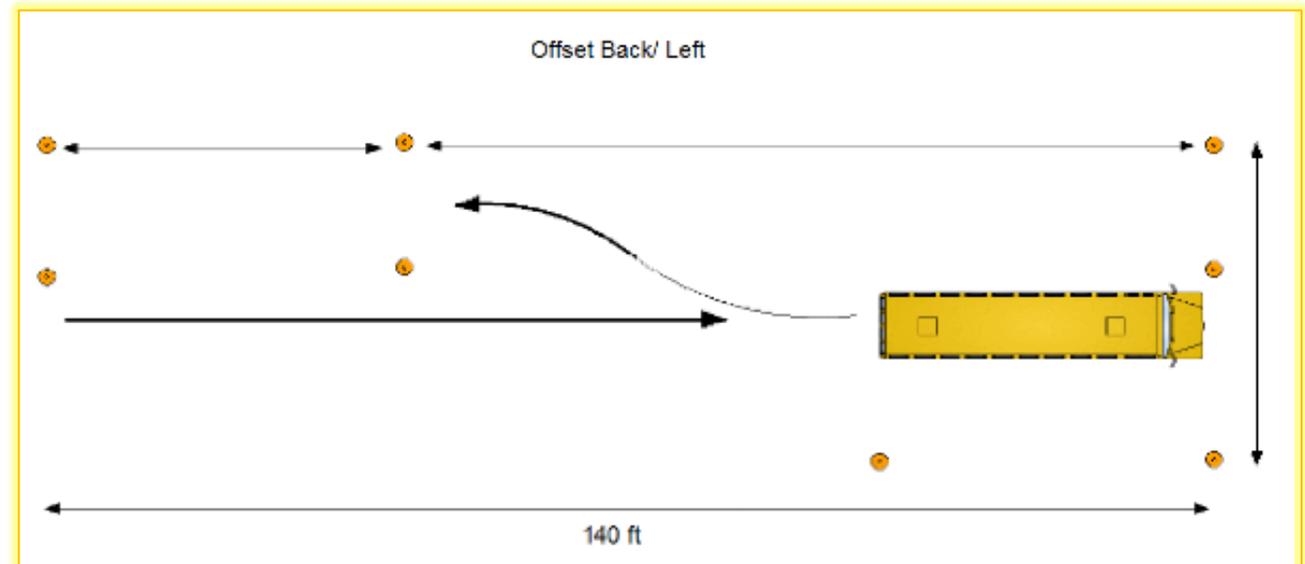
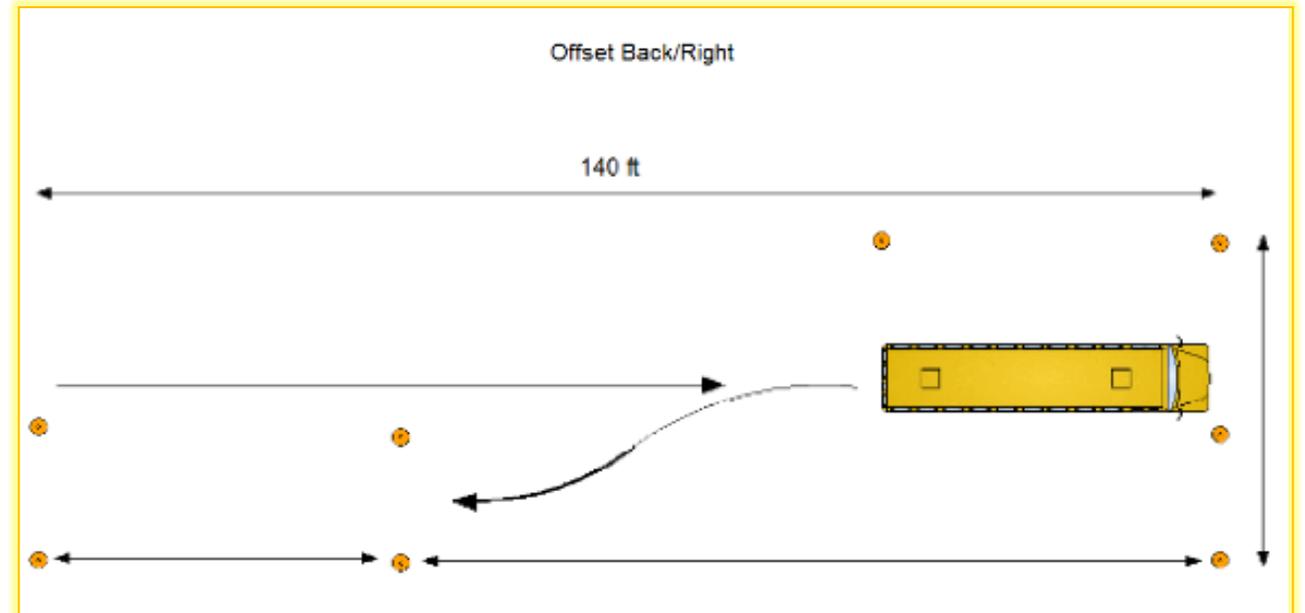
100 ft



# Backing Safely

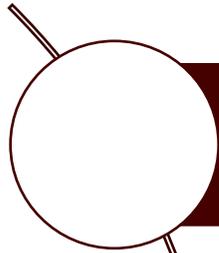
**Off-Set Backing (must be 15 feet longer than the length of the bus)**

Driver-trainees must demonstrate performing off-set backing maneuvers to appropriate criteria/acceptable tolerances.

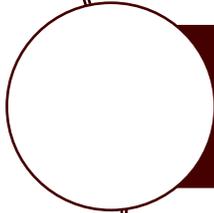


# Right-Of-Way and Yielding

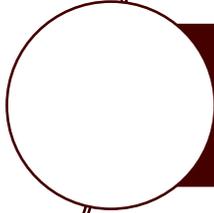
Right-of-way and yielding laws help traffic flow smoothly and safely. They are based on courtesy and common sense. Violation of these laws is a leading cause of traffic crashes.



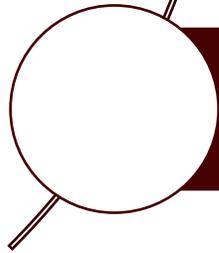
When two vehicles reach an intersection at the same time, and there is no traffic light or signal, the driver of the vehicle on the left must yield to the vehicle on the right.



When two vehicles reach an intersection at the same time, and all-way stop signs or flashing red traffic lights control the intersection, the driver on the left must yield right of way to the driver on the right.



A driver who wishes to make a left turn must yield to vehicles approaching from the opposite direction when these vehicles are in the intersection or are near enough to pose the risk of a crash.



Left turn yields on flashing yellow arrow. Drivers are allowed to turn left after yielding to all oncoming traffic and to any pedestrians in the crosswalk. Oncoming traffic has a green light. Drivers must wait for a safe gap in oncoming traffic before turning.

# Right-Of-Way and Yielding

When a green arrow signal indicates that a vehicle may enter an intersection to make a left turn, the driver must yield to other vehicles or pedestrians already within the intersection. After yielding, the driver may continue in the direction of the arrow.

When two vehicles approach an uncontrolled "T" intersection, the driver of the vehicle that is turning must yield to all cross traffic.

When approaching a public road from a private road or driveway, you must stop and yield to pedestrians and traffic.

Drivers in the right lane of traffic must yield right of way to transit and metro mobility buses attempting to merge from a bus stop or shoulder.

When a funeral procession identifies itself through use of headlights or hazard warning lights, you must yield to the entire procession.



# Right-Of-Way and Yielding

When an emergency vehicle, such as an ambulance, fire truck, or police car, displaying flashing red lights and/or sounding a siren approaches your vehicle on a two-way road, you must pull to the right and stop. If you are traveling on a one-way road, you must pull to whichever side is nearest and stop. If you are within an intersection, proceed through it before stopping. Remain stopped until all emergency vehicles have passed. A law enforcement officer with probable cause to believe a driver has violated this law may arrest the driver within four hours of the violation.

You are not required to stop if the approaching emergency vehicle is separated from your lane of traffic by a physical barrier such as a fence, wall, or median strip.



# Right-Of-Way and Yielding

## Passing Parked Emergency/Service Vehicles – MN Statute 169.18 subd 11

Parked Emergency Vehicle(s) – When approaching and before passing an authorized emergency vehicle with its emergency lights activated that is parked or otherwise stopped on or next to a street or highway having two lanes in the same direction, the driver of a vehicle shall safely move the vehicle to the lane farthest away from the emergency vehicle, if it is possible to do so.



# Right-Of-Way and Yielding



Service Vehicle(s) – When approaching and before passing a freeway service patrol vehicle, road maintenance vehicle, utility company vehicle, or construction vehicle with its warning lights activated that is parked or otherwise stopped on or next to a street or highway having two lanes in the same direction, the driver of a vehicle shall safely move the vehicle to the lane farthest away from the parked or stopped vehicle, if it is possible to do so.

\*\*\*If you are unable to move over, you must slow down and maintain your lane. Encroaching into another motorist's lane is not acceptable and it places unnecessary risk to you, your passengers, and other motorists

# Passing

If passing is absolutely necessary, think of the safety of the students on the bus first. If you need to exceed the speed limit in order to pass, you should not be passing.

Improper passing is dangerous and can lead to a crash. Use extra caution when passing at night, when visibility is poor, and when the road is slippery.

In locations where passing is permitted on two-lane roads with traffic moving in both directions, you may pass on the left side of vehicles ahead of you. You should not exceed the speed limit to complete a pass.



# Passing



When you are preparing to pass, you must make sure there is a safe distance between your vehicle and oncoming traffic. You must also look behind you to determine whether other drivers are preparing to pass you. When another driver is trying to pass you, stay in your own lane and do not increase speed.

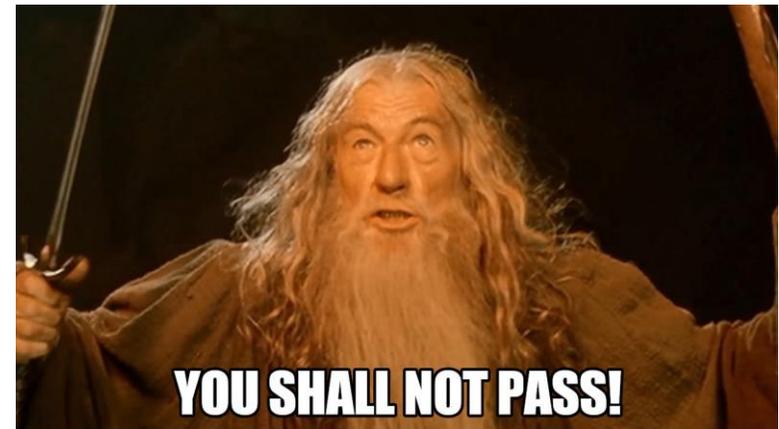
Use your left turn signal before moving into the left lane to pass. Use your right turn signal after passing and before returning to the right lane. Return to the right lane when you can see the entire vehicle you have just passed in your rearview mirror. When passing another vehicle, you must return to the right side of the road before coming within 100 feet of an oncoming vehicle.

# Passing

**Do not attempt to pass another vehicle in locations where a “No Passing Zone” sign is posted or where there is a solid yellow line on your side of the center line. Double solid yellow lines mean passing is not allowed by vehicles traveling in either direction.**

## Do not pass:

- A. On a curve or hill where you cannot clearly see the road ahead for at least 700 feet.
- B. Within 100 feet of an intersection, underpass, tunnel, or railroad crossing.
- C. When you are about to meet a vehicle coming toward you from the opposite direction



**1** Managing the space around your vehicle



**2** Managing your speed



**3** Maintaining awareness of other road users



**4** Information gathering



# Defensive Driving

A defensive driver is one who makes allowances for the lack of skill and knowledge on the part of another driver. Defensive drivers recognize they have no control over the unpredictable actions of other drivers and pedestrians, nor weather and road conditions. In response, defensive drivers develop a plan of action against all real and potential hazards—MN Statute 169.14 subdivision 1. Defensive drivers relinquish their right-of-way and allow for alternate plans to avoid a collision. They are careful to avoid the crash pitfalls created by weather, hazards in the road, pedestrians and other drivers.

**5**

Effective use of your mirrors



**6**

Using good communication, including signals



**7**

Expecting the unexpected



**8**

Staying alert and aware



**9**

Abiding by traffic rules and laws



**10**

Making allowances for the mistakes of others

