CHAPTER 5

APPLYING YOUR DRIVING SKILLS

Now that we've covered a lot of the basics, it's time to learn how your knowledge of driving applies to different scenarios and environments. In addition, you will also learn techniques for driving in unexpected situations, such as bad weather and emergencies.

5.1 INTERSECTIONS

Intersections are any place where traffic merges or crosses. They include: cross streets, side streets, driveways, parking lots, and roadways open to public travel.

Step 1: Before you enter an intersection, look ahead to identify the type of intersection and any traffic control devices (signs, traffic signals, and pavement markings).

Step 2: Scan the intersection before proceeding to ensure the path is clear through the intersection.

Step 3: Look left, right, and left again for approaching vehicles and pedestrians. Never assume another driver will share space with you or give you space.

Beware of the "false" turn signal. Do not turn just because an approaching vehicle has a turn signal on. The driver may plan to turn beyond you or has forgotten to turn the signal off from a prior turn. This is particularly true of motorcycles; their signals often do not cancel by themselves. Wait until the other driver starts to turn and then proceed if it is safe to do so.

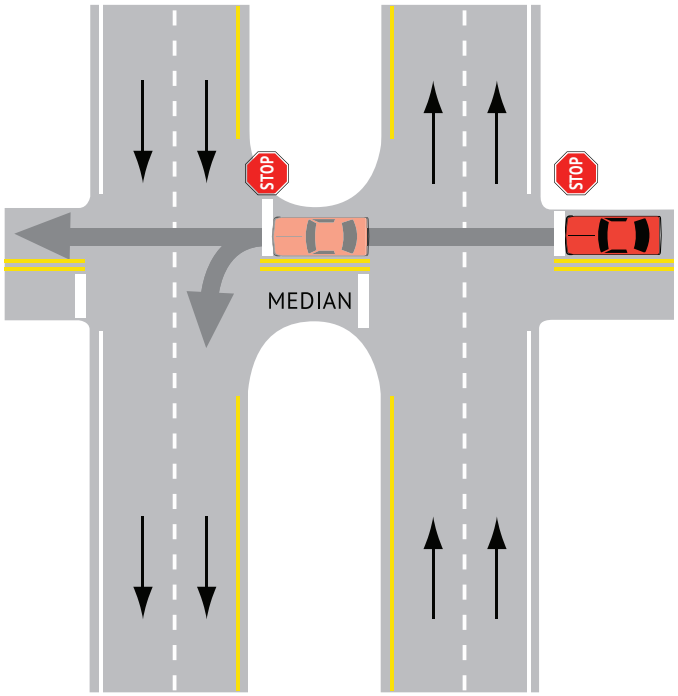


Figure 5.1: Crossing or turning left onto a rural four-lane road

CROSSING OR TURNING LEFT ONTO A RURAL FOUR-LANE ROAD

(See figure 5.1) Do not try to cross both directions of traffic at one time to avoid stopping in the median. Safely cross this intersection by taking the following steps:

1. Stop at the stop sign, look left and proceed into the median when safe to do so.
2. Remain stopped in the median. Look right. Cross or turn left when it is safe to do so.

Drivers must be aware that traffic is moving very fast in this environment. Caution and concentration are very important. Be aware that longer vehicles, such as semis, may not be able to stop in the median if the median is narrow.

5.2 INTERSTATE AND HIGHWAY DRIVING

ON-RAMPS

On-ramps are used to enter an interstate or highway and contain three segments. *(See figure 5.2)*

1. **Entrance area:** This stretch gives you time to scan the roadway and evaluate how much space you have to enter and what speed is needed.
2. **Acceleration and merge area:** Use this area to bring your vehicle up to the speed of traffic and merge when safe to do so. Do not completely stop on the ramp unless absolutely necessary.
3. **Travel portion of interstate:** Traffic already on an interstate or highway should move over, slow down, or speed up to allow ramp traffic to enter.

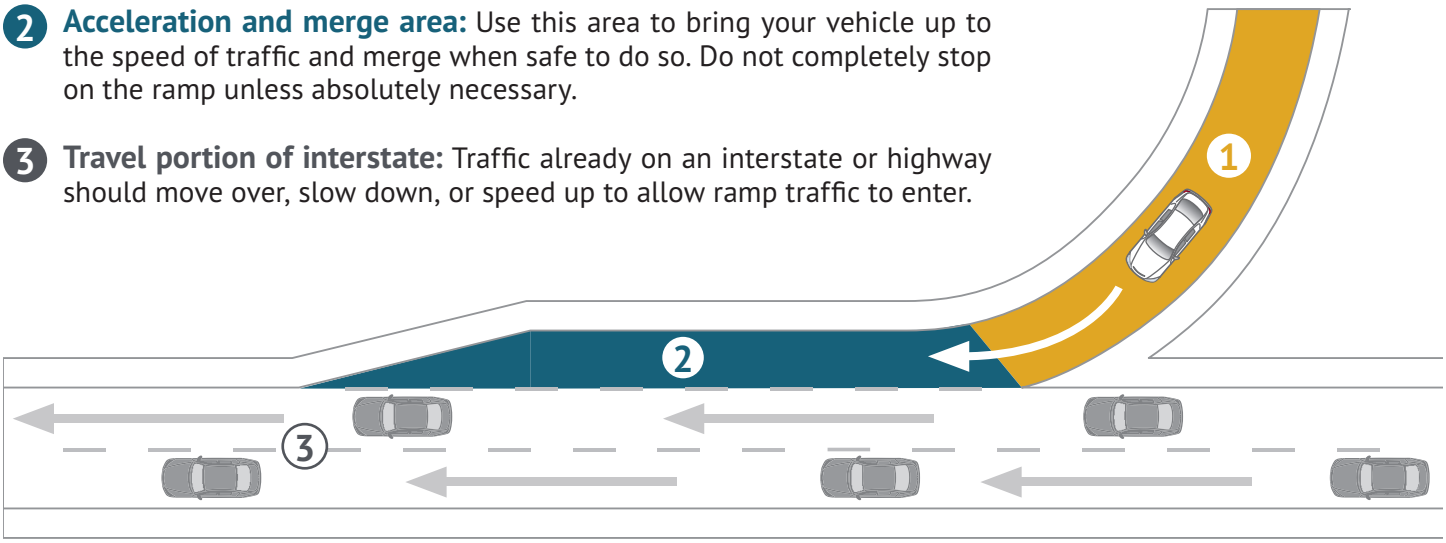
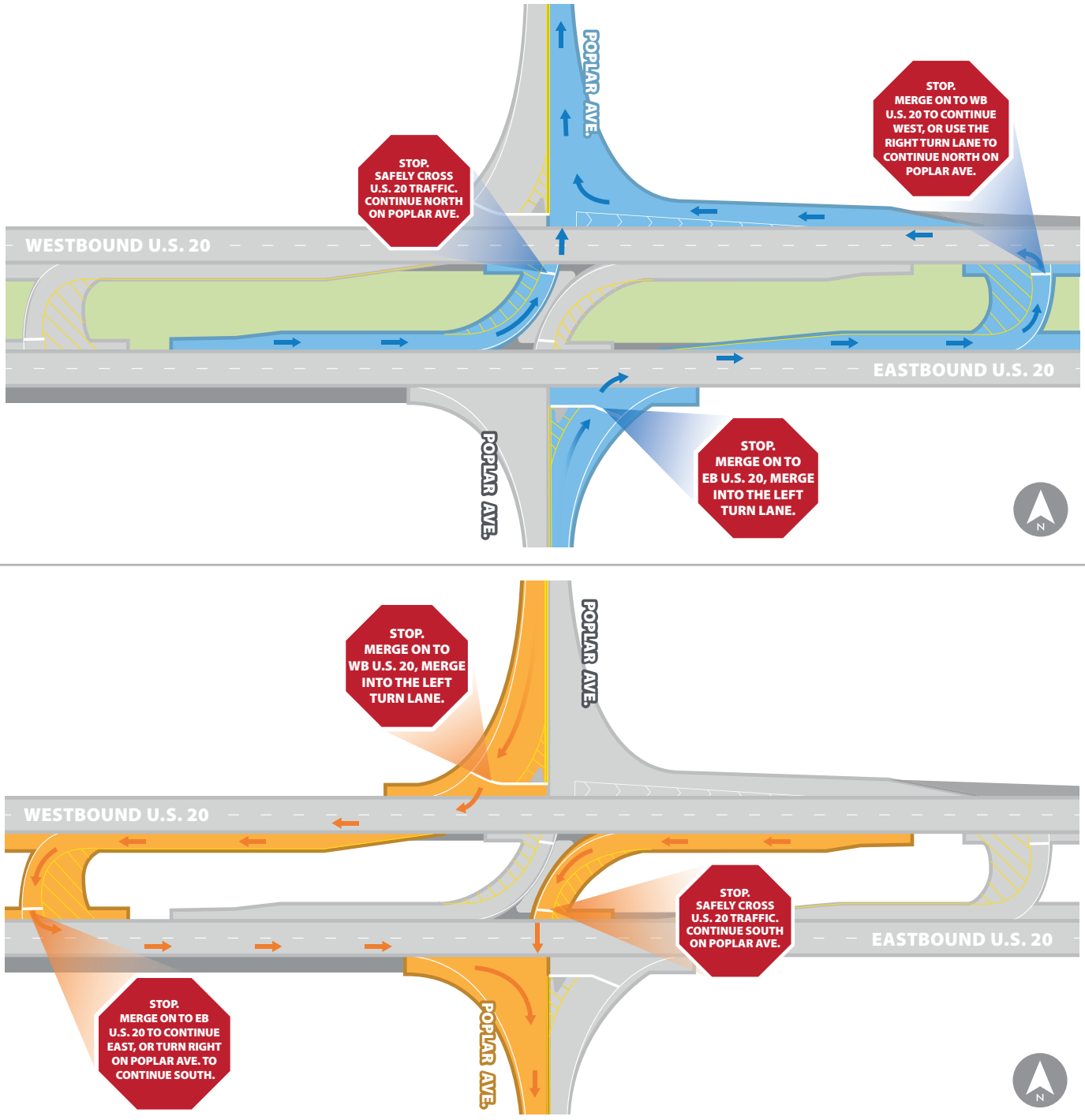


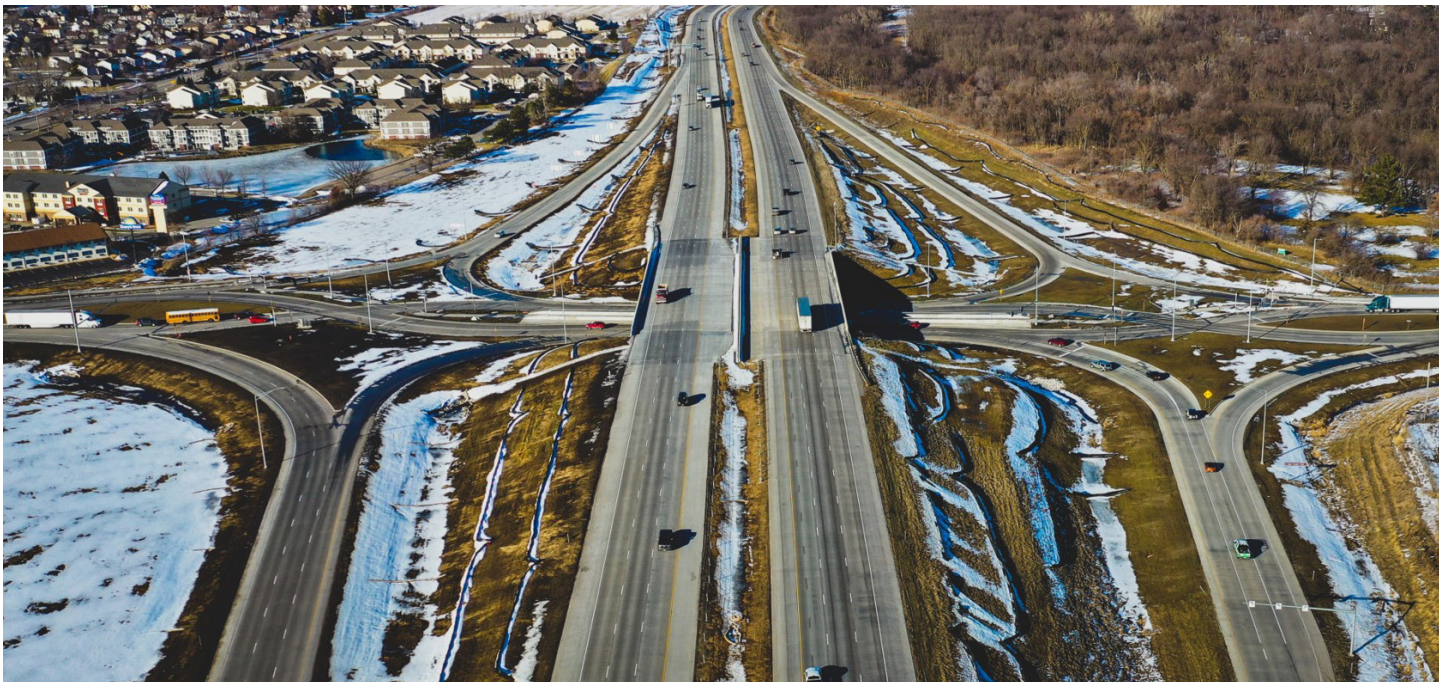
Figure 5.2: On-ramp segments

5.3 REDUCED-CONFLICT INTERSECTION

Reduced-conflict intersections are designed to reduce the number of conflict points where vehicles can crash into each other. Drivers on the side road wanting to turn left or cross the four-lane highway will turn right onto the highway, merge into the left lane and then make a U-turn at a designated median opening. Reduced-conflict intersections improve safety because drivers are only concerned with one direction of traffic on the highway at a time. You don't need to wait for a gap in both directions to cross the major road. (See figure 5.3)

Figure 5.3: Reduced-conflict interchange
(Example shows the reduced-conflict interchange at U.S. 20 and Poplar Ave. in Webster County)

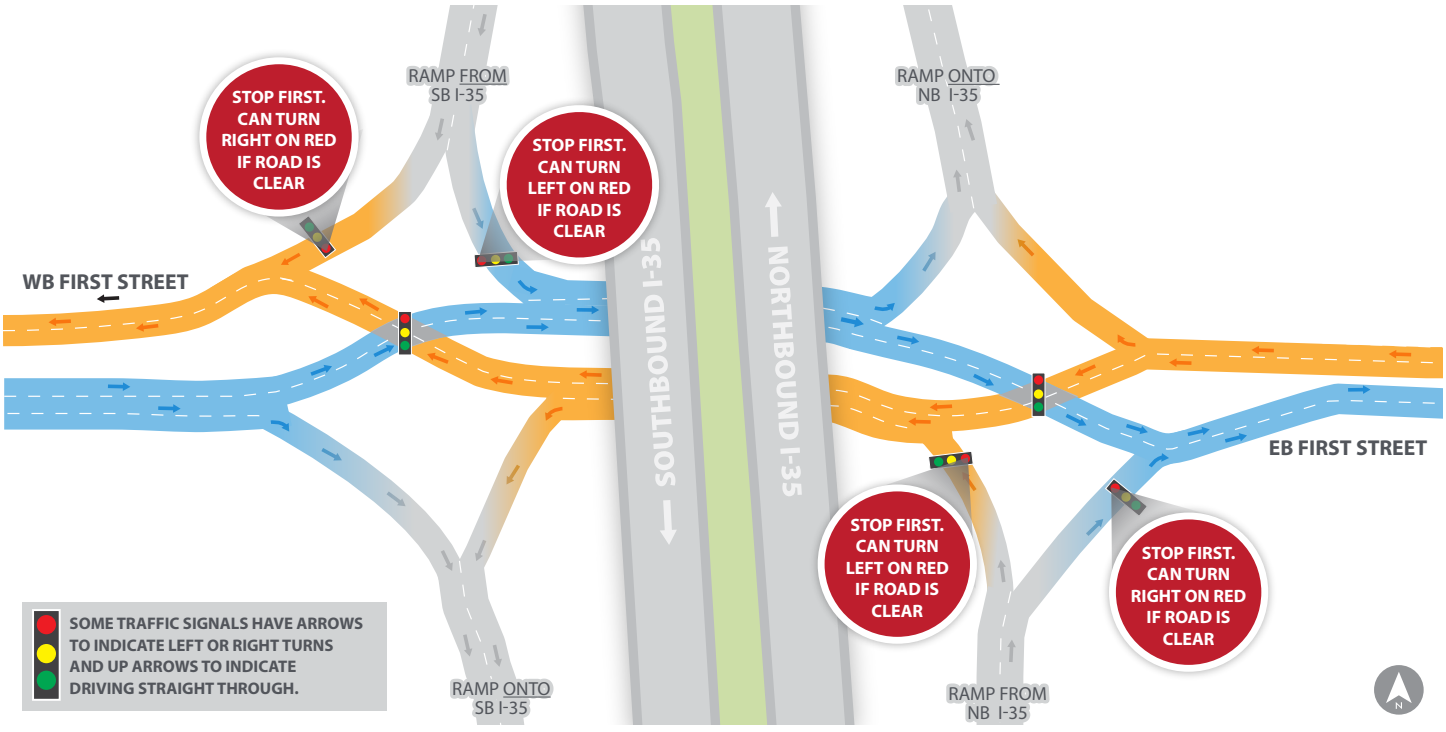




5.4 DIVERGING DIAMOND INTERCHANGE

This type of interchange is used at the intersection of two high-volume traffic roads. The unique design is unusual because it directs drivers on the opposite side of the road briefly before diverging back into the correct direction. A diverging diamond interchange maximizes efficiency by requiring traffic to spend less time at a traditional traffic light controlled intersection. *(See figure 5.4)*

Figure 5.4: Diverging diamond interchange
(Example shows the I-35 and First Street diverging diamond interchange in Ankeny.)



5.5 ROUNDABOUTS

Roundabouts are intersections that direct traffic in a counterclockwise direction around a center island. They have no stop signs or traffic signals. Yield signs, directional signs, and pavement markings guide traffic through the intersection. Traffic generally continues to move, but at a slower speed that reduces traffic backup encountered at traditional intersections controlled by stop signs or traffic signal.

SINGLE-LANE ROUNDABOUT

(see figure 5.5)

Motorists

Approach: Slow down to the posted advisory speed and yield to anyone in the crosswalk.

Enter: As you approach the yield line markings, yield to vehicles in the roundabout. Wait for a gap in traffic, then merge into traffic in the roundabout in a counterclockwise direction.

Proceed: Continue through the roundabout until you reach your street. Avoid stopping in the roundabout.

Exit: Signal, then exit the roundabout to your right. Yield to anyone in the crosswalk.

Pedestrians

Approach: At the crosswalk, look left.

Cross: Cross to the raised splitter island. Look right. Finish crossing to the opposite sidewalk.

Cyclists

Generally, cyclists should walk their bicycles across the crosswalk using the same rules as pedestrians. Experienced cyclists may navigate roundabouts like motorists. Do not hug the curb. Bicyclists using the roundabout should follow the same rules as motorists. Ride in the middle of the lane to prevent vehicles from passing. Yield to anyone in the crosswalks.

MULTI-LANE ROUNDABOUT

(see figure 5.6)

Do

- As you approach the roundabout, and in advance of the yield line, select the appropriate lane according to the lane control signs and pavement markings.
- When entering the roundabout, yield to all traffic already in the roundabout.
- After passing the street before your exit, signal for a right turn, then exit.
- Be aware of traffic in the other lane.

Don't

- Do not change lanes in the roundabout.
- Do not pass or drive beside trucks or buses. They may straddle lanes or may not see you.
- Do not drive in the outside lane farther than allowed. This decreases the efficiency of the roundabout and creates a hazard to vehicles legally exiting from the inside lane.

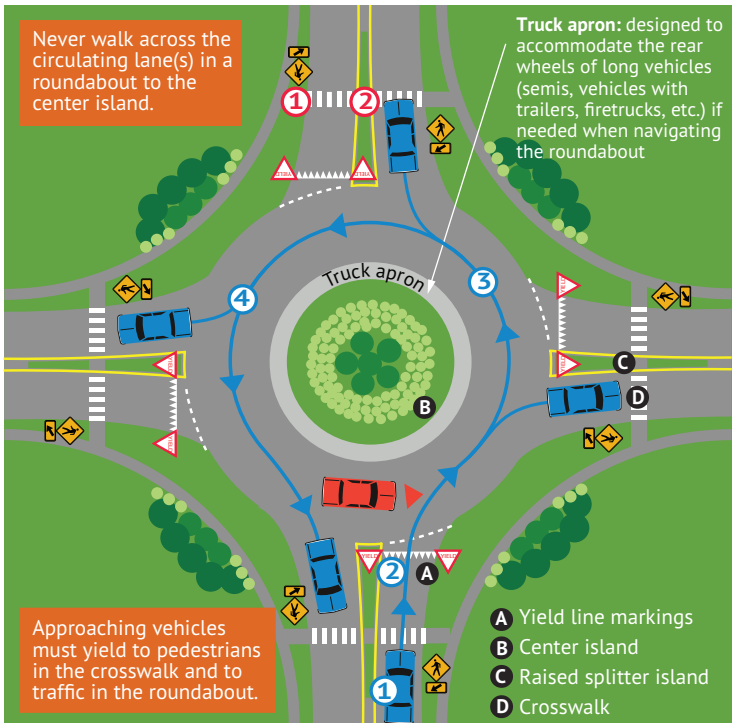


Figure 5.5: Single-lane roundabout

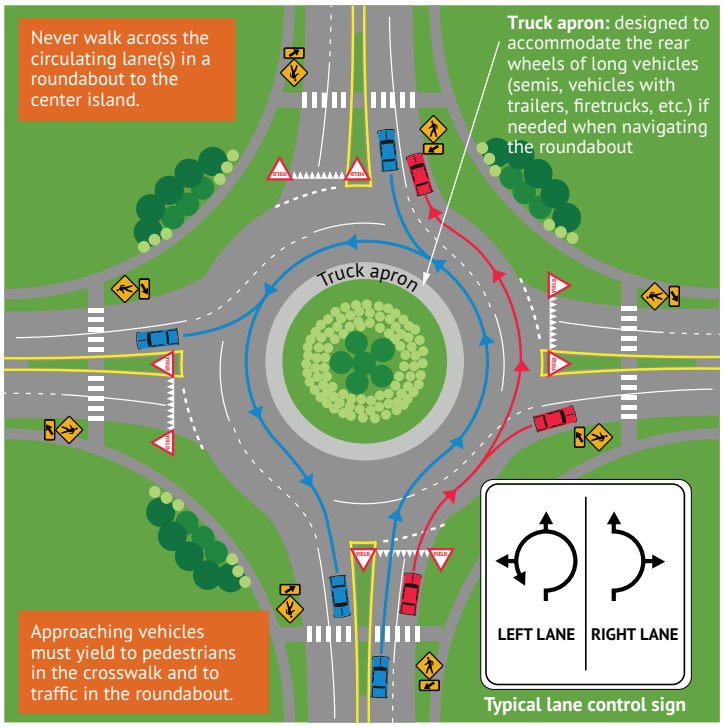


Figure 5.6: Multi-lane roundabout

5.6 RURAL/GRAVEL ROAD DRIVING

Some road conditions and driving hazards are unique to rural gravel and dirt roads when compared to paved roads. Be aware and adjust for the following.

REDUCED TRACTION

Driving on loose gravel is harder than driving on pavement because your tires don't have the traction needed to give you stable control. Slow down, avoid sudden turning, accelerate and brake slowly, and increase your following distance.

RESTRICTED VISIBILITY

Trees, cornfields, buildings, hills, and dust can block a driver's view of oncoming vehicles, or vehicles entering from the side. Identify blind spots to better anticipate and be prepared for potential dangers.

UNCONTROLLED INTERSECTIONS

Uncontrolled intersections are more common on gravel roads. They are not controlled by yield or stop signs. All drivers should use caution, slow down, and be prepared to stop for oncoming traffic. Remember, you can't always rely on dust clouds to determine if crossing vehicles are approaching.

AT AN UNCONTROLLED INTERSECTION, THE VEHICLE ON THE LEFT SHOULD YIELD. NEVER ASSUME THE INTERSECTION IS CLEAR, OR THAT THE OTHER VEHICLE WILL STOP.

SOFT SHOULDERS

Shoulders on rural roads are typically soft and less compact than the center of the roadway. Shoulders with loose gravel/debris make vehicles more difficult to control and will pull your vehicle toward the ditch. Always slow down when encountering another vehicle or anytime you're driving near or on the shoulder of a gravel road.

DUST

Use low beam headlights to make your vehicle more visible to others during extremely dusty conditions.

ENCOUNTERING ONCOMING VEHICLES

Rural gravel roadways are narrower and do not contain lane markings. Slow down and proceed with caution, moving as far to the right as safe to do so. Multiple vehicles create dust clouds and reduced visibility.

NARROW BRIDGES

Drivers should use caution when approaching narrow bridges. Many bridges on rural gravel roads are narrower than the roadway and can only accommodate one vehicle at a time. Be prepared to stop for oncoming traffic.

STEEP HILLS AND CURVES

Before reaching the crest of a hill or before entering a curve, slow down, move to the right side of the road and watch for oncoming vehicles. Hills and curves on rural roads are often steeper and sharper than on highways.

RAILROAD CROSSINGS

Always slow down, look both ways, and be prepared to stop for a train before crossing the tracks. Unlike most railroad crossings on major roads, there are typically no red flashing lights, warning bells, crossing gates or pavement markings at rural road railroad crossings.

LARGE AND/OR SLOW-MOVING VEHICLES

It is common to encounter slow-moving and large vehicles such as farm equipment, ATV/UTVs, bicycles, horse drawn vehicles, and road maintenance equipment on rural roads. It is important to identify these vehicles early and slow down when approaching.

Large farm equipment may make wide turns at unmarked entrances. Some farm equipment is wider than the road itself. Proceed with extreme caution when attempting to pass. They may not see your vehicle and a turn-signal may be difficult to detect.

5.7 NIGHT DRIVING

Keep the following in mind when driving in the dark.

- To compensate for reduced visibility, lower your speed and increase your following distance.
- Glare from oncoming headlights makes it difficult to see. Looking toward the right side of the road and adjusting the rearview mirror can help to reduce headlight glare.
- Headlights should be turned on before the sun goes down to make the car more visible.
- High beams should only be used when other drivers won't see them, such as isolated roadways with little traffic.
- If you are blinded by another vehicle's headlights, slow down and watch the white stripe at the right edge of the pavement. The bright light may make you feel somewhat blinded, but the feeling quickly disappears.

5.8 DEER AND OTHER ANIMALS

Be on the lookout for animals while driving, especially at sunrise and sunset. **If an animal is encountered, and there isn't time to stop, don't swerve or veer as this will likely result in a more severe crash.** If you hit a deer or other animal, follow standard crash protocol *(see section 5.15 on page 63)*.

One of the leading causes of crashes on Iowa roadways is wildlife, typically with deer. October, November and May are the peak months for deer collisions; however, they can occur at any time of the year. Deer travel in groups, so always look for more animals if one is seen.

5.9 SHARING THE ROAD WITH LARGE TRUCKS

In crashes involving large trucks, the occupants of a car – usually the driver – sustain 78 percent of fatalities. In order to keep yourself and your passengers safe, use extra caution when driving around large trucks and buses. Sharing the road with larger vehicles can be dangerous if you are not aware of their limitations.

WATCH BLIND SPOTS – THE "NO-ZONES"

Large trucks have blind spots, or "no-zones," around the front, back, and sides of the vehicle. These "no-zones" make it difficult for truck drivers to see. Avoid being caught in a truck's "no-zone". If you can't see the truck driver in the truck's mirror, the truck driver can't see you. *(See figure 5.7)*

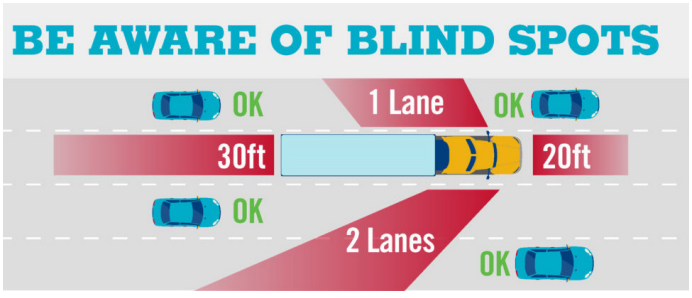


Figure 5.7: Semi "no-zones"
Graphic courtesy of FMCSA, sharetheroadsafely.gov

AVOID EMERGENCY BRAKING SITUATIONS

Trucks and buses take much longer to stop in comparison to cars. When passing, look for the front of the truck in your rearview mirror before pulling in front, and avoid pulling out in front of trucks, creating an emergency braking situation.

BE CAREFUL OF TRUCKS MAKING WIDE RIGHT TURNS

Truck drivers sometimes need to swing widely to the left in order to safely negotiate a right turn. They can't see cars directly behind or beside them. Cutting in between the truck and the curb increase the possibility of a crash. So pay attention to truck signals, and give them lots of room to maneuver.

5.10 SHARING THE ROAD WITH MOTORCYCLES

- Respect the vehicle space of a motorcycle and its position in traffic.
- Intersections are the most likely places for car/motorcycle collisions to occur. Make sure you see the motorcycle and know its speed before you start to turn or enter an intersection.
- Turn signals do not automatically shut off on a motorcycle and riders occasionally forget to cancel them after a turn is completed. Make sure you know what the rider is going to do BEFORE you move into the motorcycle's path.
- When driving behind a motorcycle, allow at least a 3-4 second following distance. This provides the cyclist enough room to maneuver or stop in an emergency. When the road is wet or slippery, stay further behind. With only two wheels in contact with the pavement, motorcycles may be very unstable when trying to stop quickly.
- When passing a motorcycle, allow a full lane for the motorcycle; never crowd into the same lane as the cycle.
- Watch for the unexpected and give motorcyclists their share of the road.

5.11 SHARING THE ROAD WITH BICYCLISTS AND PEDESTRIANS

Scan the street for wheels and feet

Be especially careful to look for pedestrians, bicyclists, skaters, and people using wheelchairs or low-speed micromobility devices before turning at intersections and driveways.

Yield to pedestrians

Pay attention to the pedestrian signal and give the right-of-way to people walking, biking, skating, or on a wheelchair or low-speed micromobility device.

Use caution when passing stopped vehicles

Never pass another vehicle that has stopped or is slowing down for a pedestrian. Remember, you might not be able to see the pedestrian when you approach a stopped vehicle, so be aware.

Watch for bikes

People riding bicycles have the right to be on the road and are often prohibited from riding on sidewalks, so respect their right to be there.

Passing safely

When passing bicyclists, you must completely change lanes, giving the bicyclist the entire lane like you would with any other vehicle. Do not return to the right until you can see the bicyclist(s) in your rearview mirror.

Visibility

Look for bicyclists at night and watch for their reflectors or lights.

Check blind spots

Watch for bicyclists coming from behind, especially before turning right.

5.12 CLOSED VEHICLES ON A HOT DAY

NEVER leave children, elderly persons, dependent persons, or pets in an enclosed vehicle alone.

Depending on the temperature and humidity, the inside of a vehicle can soar above 160 degrees in less than 10 minutes. Even on a mild, 78 degree day, the inside of a parked vehicle can reach 100 degrees in minutes.

Long exposure to extreme heat may lead to a heat stroke or death. If you see someone suffering from symptoms of heat stroke, call 911 and seek medical attention immediately. In Iowa it is legal for you to break a vehicle's window in order to provide medical attention to a person or animal trapped inside.

5.13 INCLEMENT WEATHER DRIVING

The best way to prepare for inclement weather driving is to avoid getting caught by surprise. Do your research before you go so you can determine if you need to adjust or postpone your trip. Visit 511ia.org or download the free Iowa 511 app to view traveler information such as weather-related road conditions 24/7. 511 also provides images from dash-mounted snowplow cameras and live-feed traffic cameras so you can get a first hand look at conditions without ever stepping foot outside. *(See figure 5.8)*

IF YOU MUST DRIVE IN INCLEMENT WEATHER, SLOW DOWN AND INCREASE YOUR FOLLOWING DISTANCE, GIVING YOU MORE TIME TO STOP. DO NOT USE CRUISE CONTROL DURING INCLEMENT WEATHER.

Ensure your vehicle is prepared for any inclement weather by following routine maintenance *(see page 23 for vehicle maintenance)*. It's also a good idea to keep a vehicle emergency kit with you at all times, especially during winter. *(See figure 5.9)*

Figure 5.8: 511 for inclement weather

Figure 5.9: winter survival kit

WET/SLIPPERY ROADS

Be cautious when driving before, during, and after precipitation. Precipitation may cause reduced vision, alter the driving habits of others, and change the friction between your vehicle and the road. Practice the following:

- Turn on the wipers as soon as the windshield becomes wet.
- Turn on the low-beam headlights; this helps others see you.
- Drive slower than normal and increase your following distance to five or six seconds.
- Be more cautious and slow down on curves and when approaching intersections.
- Turn the defroster on to keep windows from fogging over.

DO NOT USE CRUISE CONTROL IN WET OR SLIPPERY CONDITIONS.

If you must make adjustments while driving, make sure the road ahead is clear before looking down at the dashboard — and look away for only a second or two.

HYDROPLANING

Hydroplaning occurs as a result of water on the road that is deeper than the tire tread. This layer of water reduces friction with the tires and can result in the loss of control. If you can see deep water on the road, reflections on the pavement, or if the car ahead leaves no tracks on the water, your car could hydroplane. Slow down.

FLOODED ROADWAYS

Almost half of all flash flood deaths happen in vehicles. Moving water is extremely powerful and very easy to underestimate. As little as 6 inches of water may sweep away a vehicle, including SUVs and pickups.

- Never drive through a flooded road or bridge. The road surface beneath the water could be entirely washed out. Turn around and find a different route.
- Do not stay in a flooded vehicle. If your vehicle is stalled in floodwater, abandon the vehicle and move to higher ground.
- If your car is swept into the water and submerged, remain calm. Wait for the vehicle to fill with water. Once the vehicle is full, the doors are easier to open. Hold your breath and swim to the surface.

FOG

- Use low-beam lights or fog lights if your vehicle has them. Don't use high beams — they reflect off the fog, causing glare and reduced visibility.
- Slow down until your speed matches your ability to see.
- If needed, get off the road and find a safe place to park.

TORNADOES

The National Weather Service issues a tornado "watch" when a severe thunderstorm may possibly produce tornado-like conditions. This only means that a tornado is possible. If a warning is issued, a tornado is imminent and all persons should seek shelter immediately. Television broadcasts, weather radios, and outdoor sirens may alert the public an active tornado is in the area.

- If you're driving during a tornado, the best course of action is to find a sturdy building to seek shelter.
- If you are unable to make it to a shelter, pull over, duck down below the windows in the vehicle, keep your seat belt fastened, and cover your head with your hands or an object such as a blanket or cushion.
- As an alternative, if you can safely exit your vehicle, take cover in a low lying ditch or ravine while covering your head with your hands or another object.
- Stay away from bridges and overpasses.

Figure 5.10: Ice forms on bridges first due to circulating air both above and below the road surface.

ICE AND SNOW

- Make sure your ENTIRE vehicle is clear of snow and ice before driving, this includes windows, headlights, turn signals, and taillights.
- Beware of black ice. When the temperature drops, moisture may turn to ice on the road's surface. Often this ice is called black ice because it's hardly visible and often catches drivers by surprise. Black ice can occur anywhere, but is common on bridges and overpasses, where moisture freezes quickly due to circulating air both above and below the road surface. Because of this, bridges and overpasses may be slippery even when other road surfaces are not. *(See figure 5.10)*
- When starting to drive from a stopped position, keep the wheels straight ahead and accelerate gently to avoid spinning the tires.
- Decrease your speed to make up for a loss of traction.
- Do not use cruise control in icy or snowy conditions.
- Begin slowing down long before anticipating a stop at an intersection or turn. Brake only when traveling in a straight line. Stopping distances can be 10 times greater in ice and snow.
- Stay far behind the vehicle ahead so you will not need to come to a sudden stop, which can cause skidding.

Sharing the road with snowplows

If you're driving during the winter in Iowa, chances are you'll be sharing the road with a snowplow at some point.

- **Use caution when approaching a snowplow.** Snowplows typically operate at 25-35 mph. Many drivers fail to realize this and hit them from behind.
- **Never pass on the shoulder side of a plow.** Plows will move snow to the shoulders.
- **Give them room to work.** Snowplows have large blind spots, and may kick up a cloud of snow around them, making it difficult for you to see and them to see you. It's best to stay back and be patient until you can safely pass.
- **Allow plenty of room when passing.** Plow blades may be sticking out further than the width of the plow vehicle.

Stranded in the snow

Here are some tips if you become stranded in the snow.

- If possible, pull your vehicle onto the shoulder and remain inside to avoid getting hit by other vehicles.
- Call 911 for emergency assistance. To help guide emergency crews to your location, look for exit numbers, mileposts, crossroads, or landmarks.
- **The safest location is to remain inside your vehicle with your seat belt on.** Your vehicle is the shelter you may need to survive and allows you to be found by rescue personnel.

5.14 EQUIPMENT FAILURE EMERGENCIES

No matter how careful you are, at some point, you may find yourself in an emergency. If you are prepared, you may be able to prevent any serious outcomes.

FLAT TIRE

If your tire suddenly goes flat:

- Hold the steering wheel tightly and keep the vehicle going straight.
- Slow down gradually. Take your foot off the gas pedal and use the brakes lightly.
- Do not stop on the road if at all possible. Pull off the road to a safe place.

If a front tire blows, the emergency may be more serious. A front tire blowout will jerk the car violently towards the side of the car with the flat. Be careful not to overcorrect when steering after a front tire blowout. Try to straighten the car out, then gradually move to the right shoulder of the roadway as soon as possible.

LIGHTS

If your headlights suddenly go out:

- Try the headlight switch a few times.
- Try turning on your high beams.
- Turn on the emergency flashers, turn signals, or fog lights if the headlights do not come back on when you try the headlight switch.
- Pull off the road as soon as possible.

ENGINE STALLS

If the engine stalls while driving:

- Keep a strong grip on the steering wheel. The steering wheel will be difficult to turn, but you can turn it.
- Pull off the roadway. The brakes will still work, but you will have to push very hard on the brake pedal.

STUCK GAS PEDAL

If the motor does not slow down, or speeds up when you take your foot off the accelerator:

- Keep your eyes on the road.
- Quickly shift to neutral.
- Pull off the road when safe to do so.
- Turn off the engine after stopping.

STEERING LOCK SYSTEMS

Many vehicles are equipped with steering lock systems intended to prevent theft. Never remove the key or allow passengers to touch the key while driving. If the key is removed, the steering wheel will lock. This may cause loss of control of the vehicle and could result in a crash.

BRAKE FAILURE

If your brakes stop working:

- Pump the brake pedal several times. This will often build up enough brake pressure to allow you to stop.
- If that does not work, use the parking brake. Pull on the parking brake handle slowly so you do not lock the rear wheels and cause a skid. Be ready to release the brake if the vehicle starts to skid.
- If that does not work, start shifting to lower gears and look for a safe place to slow to a stop. Make sure your car is off the roadway. Do not drive without brakes.

5.15 INVOLVEMENT IN A CRASH

Being involved in a crash, no matter how minor, can be frightening. The main goal of assessing any crash is to ensure all drivers and passengers are safe. Use the following as a guide for what to do in a crash.

STEP 1: STEER IT-CLEAR IT

If possible, ensure your vehicle is out of the path of traffic, is turned off, and no longer moving.

STEP 2: CONTACT LAW ENFORCEMENT

Contact law enforcement to report the crash by calling 911. Be sure to describe as many details as possible including possible injuries and location of the crash.

It is state law to report a crash to the police involving injury or death to another person, or property damage of more than $1,500. Failure to do so within 72 hours of the incident will result in the loss of your driving privileges and further penalties.

STEP 3: PROVIDE LAW ENFORCEMENT WITH INSURANCE AND CONTACT INFORMATION

Be ready to provide a law enforcement officer with:

- Vehicle insurance information
- Vehicle registration
- Driver's license

STEP 4: REPORT TO INSURANCE

Refer to your liability coverage to assess what expenses will need to be paid and what you are eligible to receive. If you are considered at fault in a crash involving another driver, you will need to discuss what expenses you will have to cover for them as well.

5.16 LAW ENFORCEMENT INTERACTIONS

You may interact with law enforcement for a variety of reasons including a traffic stop. When engaging with a law enforcement officer, remain calm and follow instructions.

If you have autism and/or are deaf or hard of hearing, you may choose to have an indicator added to your license or ID. This type of indicator is printed on your license/ID and will also be visible in the database used by law enforcement to lookup a driver's information during a traffic stop. This helps the officer be better prepared to interact with you.

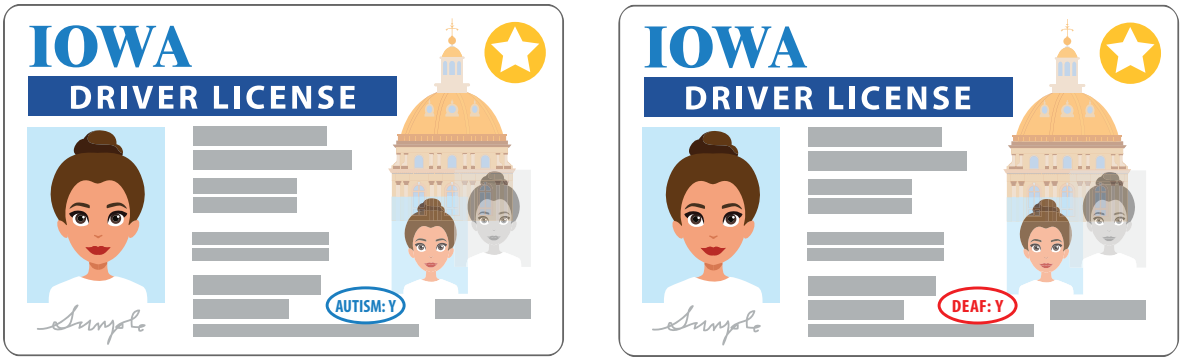


Figure 5.11: Autism spectrum indicator and deaf or hard of hearing indicator

TRAFFIC STOP

If you see an official law enforcement vehicle signaling you to stop, carefully pull over to a clear area when it is safe. Do not stop in the travel lane. On busy streets or highways, it may be safest to pull over into a parking lot or on a less busy side street. Turn off your vehicle, keep your hands visible (recommended on the steering wheel), remain calm, and follow the officer's instructions.

The officer may ask the driver or passengers to identify themselves (name, date of birth, etc.) and provide license or ID, proof of insurance, and vehicle registration. Keep these items conveniently located in one spot inside the vehicle, and wait for the officer to ask for the items before reaching for them.

Should you receive a traffic ticket, politely accept a ticket. Signing a traffic ticket does not mean you are admitting guilt, it just affirms you have received it.