

# Farm Equipment and Rural Road Safety Fact Sheet

HS19-002A (09-19)

**T**exas rural roads span more than 426,000 miles of open spaces and rows of cotton, corn, and grain fields. These roads are home to workers and families who produce the state's agricultural bounty in an occupation ranked one of the most dangerous in the country. Each day in the United States, about 100 farm workers sustain a lost-work-time injury. The National Institute for Occupational Safety and Health (NIOSH) reports 417 farmers and farm workers died in 2016 from work-related injuries, a rate of 21.4 deaths per 100,000 workers. Transportation incidents, including tractor rollovers, lead the cause of death.

While only 19 percent of Americans live outside urban areas, the U.S. Department of Transportation (USDOT) estimates that 55 percent of highway deaths happen on rural roads. With Texas farms and ranches covering more than 130 million acres and employing every seventh working Texan, farm equipment operators and motorists must work together to help make the state's roadways safer during planting and harvest seasons, and throughout the year.

## Keep Alert: Slow-Moving Vehicles

Many rural roads have narrow, dusty, dark, and unmarked lanes populated by slow-moving equipment like tractors and combines. NIOSH estimates 15,000 collisions across America involve agriculture-related equipment each year with about 50 tractor-operator deaths from collisions with motor vehicles or trains.



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Watch for slow-moving vehicles and reduce speed immediately. A driver traveling 55 miles per hour who is a football field's length behind a vehicle going 25 miles an hour closes the distance in five seconds. Rear-ending farm equipment is one of the most common types of farm vehicle roadway accidents.

## Pass with Care: Oversized Equipment and Loads

Slow-moving farm equipment can be longer and wider than it looks. The operator may be unable to move over to allow drivers to pass. Drivers should pass farm equipment only when there is plenty of room to get around and ahead. Head-on collisions with oncoming traffic while attempting to pass farm equipment on rural roads can be deadly.

Farmers should plan travel to avoid high traffic times, busy roads, bad weather, and times before daylight or after dark. More than 70 percent of all

farm-vehicle collisions happen between 3 p.m. and 6 p.m. on roads with posted speeds over 50 miles per hour, meaning visibility and line-of-sight is a major factor. Equipment operators should consider using an escort vehicle to warn oncoming drivers when moving over-sized equipment on roads, especially after dark.

## Visibility Matters: Safety Emblems, Lights, and Flashers

The slow moving vehicle (SMV) emblem, a bright red and orange triangle, must appear clearly on the rear of all equipment and machinery traveling less than 25 miles an hour. When towing a trailer or other equipment that blocks the SMV emblem, attach another SMV emblem at the rear of the towed equipment. The fluorescent material is visible in daylight, and the reflective border shines when lit by headlights at night. It must be mounted in the center rear of the vehicle with the point up at least two feet and not more than six feet above the ground.

In addition to the required SMV emblem, farm equipment operators should use warning flashers, signal lights and hand gestures to signal to drivers their

location and intentions at least 100 feet before turns or speed changes. Tractors must have two forward-facing headlights and a red taillight on at all times during operation. This taillight must be mounted on the far left side of the tractor and visible for 500 feet under normal conditions.

The use of reflective marking tape and reflectors on equipment edges helps other drivers see the farm equipment on dusty or dark rural roadways. All towed equipment must have two rear-mounted red reflectors placed at the far left and right.

Farm tractors operated on public roads must also have white or amber flashers mounted on the front, and red or amber flashers mounted on the rear. These lights must be on when operating the vehicle. On some tractor designs, there are one or two amber flashing lights located on top of the cab that signals approaching vehicles in both directions.

## Arrive Alive: Safe Driving Practices

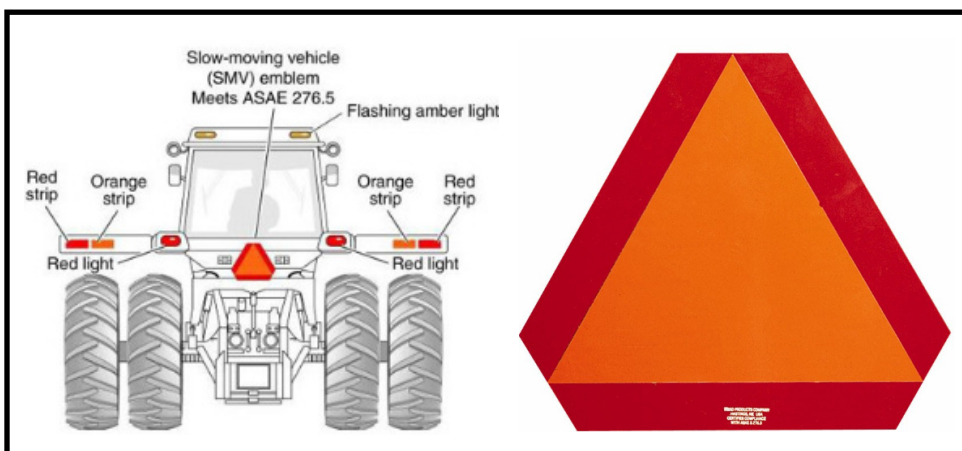
State law does not require a license to drive farm equipment, but operators must obey all traffic laws, traffic lights and signs, and safe driving practices.

## Farmer Struck by Truck and Killed on Public Roadway

About midday on a Friday in September, a 63-year-old farmer transporting five round hay bales on a flatbed wagon, left the field and turned onto a public highway heading north. The highway ahead of the farmer and his tractor curved slightly to the left and then down a gentle slope. On the right side of the road was a steep embankment; on the left was a small drainage ditch with an upward sloping bank.

The tractor lacked a rollover protection structure, seatbelt, slow-moving vehicle (SMV) emblem, power take-off guard, wheel weights, and front-end weights.

The farmer drove northward on a warm, sunny, clear day at an estimated speed of 10-14 miles per hour. He headed down the slope when a log truck pulling a chipper drove over the hill behind him. The truck driver saw the rear of the wagon. A car approached in the southbound lane. The truck driver chose to avoid a head-on collision and instead struck the rear of the hay-loaded wagon at an estimated speed of 55 miles per hour. The impact forced the wagon off its frame and into the rear tires and fenders of the tractor. The tractor jackknifed, rolled to its side, slid northward in the southbound lane, and turned over, coming to rest upside down, partly on each side of the road. The farmer was thrown from the tractor and landed on the road. He sustained massive head injuries. The coroner pronounced the victim dead at the scene.



Texas requires seatbelts for most vehicles. However, state seatbelt laws do not apply to farm vehicles under 48,000 pounds. Regardless, statistics from the USDOT show twice as many deaths happen on rural roads than on urban highways, most due to passengers or operators not wearing seatbelts.

### Maintenance and Inspection

The first aspect of safe farm equipment operation on rural roads is making sure the vehicles are safe to drive. The average age of tractors operating in the United States is 25.7 years, according to NIOSH. Therefore, many tractors and other farm equipment in use lack advanced steering, braking, and shifting systems that make driving safer.

Before operating a tractor or other farm equipment:

- lock brake pedals together;
- adjust the seat to safely reach the steering wheel, pedals, and gear shifts;
- adjust mirrors;
- test lights and flashers;

- check tire pressure and bolts on wheels; and
- add weights, if needed, especially if pulling or hauling a load.

### Drive in the Right-Hand Lane

Drive slow-moving farm equipment and vehicles in the right-hand lane as close to the road's edge as is safe. Do not drive half on the road, half on the shoulder, which can result in rollovers. Driving on uneven road surfaces with the left wheels on the pavement and the right wheels on rough, loose shoulders, can cause erratic steering, uneven braking, and loss of control. To let cars pass, slow down, pull over when safe, and stop. Do not encourage or signal to drivers to pass.

### Caution Turning Left

Pay special attention when making left-hand turns into fields, driveways, or side roads. Most tractor-motor vehicle collisions happen when a farm equipment operator pulls right to make a wide left-hand turn. The driver following the tractor may assume the farm equipment

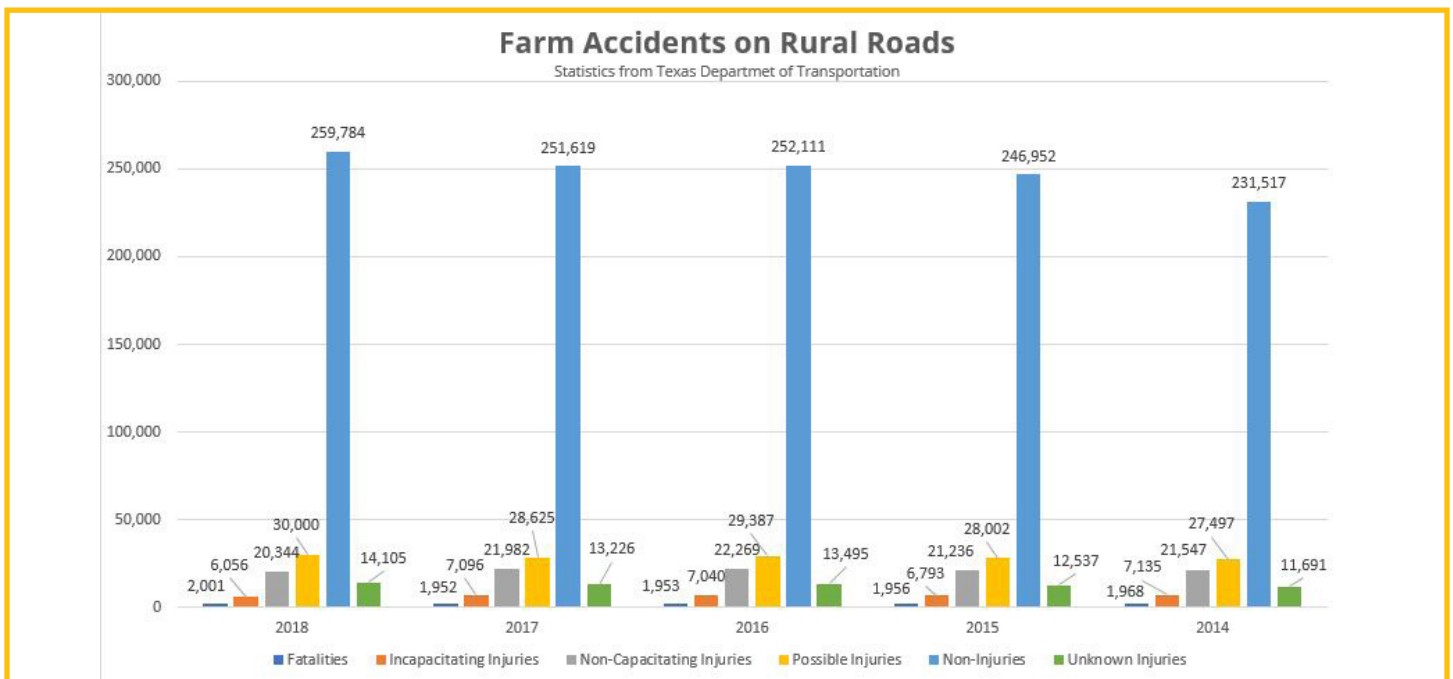
operator is pulling over to allow them to pass, but this can lead to the tractor turning into the path of the passing vehicle.

### Towing Machinery and Implements

Farmers often use highways to tow large machinery and equipment from one field to another. Towed machinery presents other risks for farm equipment operators and drivers. Before towing machinery on highways, make sure the tractor is large enough to handle the load, and machinery is securely attached to the drawbar or three-point hitch system. Safety chains should be attached from the equipment to the tractor to keep the equipment from veering away if it unhitches from the drawbar.

### Front-end Loaders

If possible, do not travel on roads with a loaded front-end loader. The extra weight affects the operator's ability to see obstructions and steer and brake safely. If a farm equipment operator must carry a load with a front-end loader, make sure the tractor is balanced correctly





using rear counterweights and wider front wheel spacing. Drive slowly and travel with the bucket low to the ground to lower the equipment's center of gravity and make it more stable. Slow down while making turns and avoid steep inclines or shoulders.

### **Young Farm Equipment Operators**

Farmers with more than ten employees may not hire children under 16 years old to operate tractors with greater than 20 horsepower. The exception is for children at least 14 years old who attend an approved Tractor and Machinery Certification Training Program. According to the Occupational Safety and Health Administration (OSHA), more than 90 percent of all farms are family-operated and employ fewer than 11 employees. Since a driver's license is not required, children on small farms routinely operate farm equipment in fields and on highways.

Children often lack the maturity and experience to recognize dangerous situations on public roads with other drivers and lack the size and strength to safely reach the brakes, clutch, and steering while sitting in the tractor seat.

### **No Extra Riders**

Almost 80 percent of farm children routinely ride on tractors with family members and often on public highways. Except for tractors equipped with an instructor seat, tractors are designed for one operator and no riders. Because tractors do not have safety devices, like seatbelts, extra riders can fall off and get hurt by tractor wheels or towed equipment. Data from Texas A&M AgriLife Extension reports that about 90 percent

## **A Guide to Moving Farm Equipment and Agricultural Products in Texas**

The Texas Department of Motor Vehicles (TxDMV)-Motor Carrier Division (MCD) offers the required oversize/overweight permits and motor registration for all Texas farmers and dealers of agricultural equipment and farm implements. Listed below are the oversize/overweight permits required by TxDMV as of June 2019. More information is available by contacting TxDMV-MCD at 512-465-3000 or [www.txdmv.gov/publications-tac/cat\\_view/188-all-publications](http://www.txdmv.gov/publications-tac/cat_view/188-all-publications).

All vehicles and loads over Texas legal size and weight limits must get an oversize/overweight permit from the TxDMV.

- Legal Width - 8 feet, 6 inches
- Legal Height - 14 feet
- Legal Length - Varies based on vehicles
- Legal Gross Weight - 80,000 pounds

### **Width and Length Exceptions**

Texas Transportation Code includes two exceptions for farm tractors and agriculture equipment. A permit is not required if the vehicle used to haul the tractor or equipment is being moved by the owner of the item, an agent, or owner's employee, and:

- The equipment is a harvesting machine, and the overall vehicle or vehicle combination transporting it is no longer than 75 feet if traveling on Interstate highways, or 81 feet, 6 inches, excluding the truck or tractor, if traveling in a county with a population less than 300,000 and not on Interstate highways.
- The vehicle is over width only and is delivering to a new owner, moving to or from a mechanic for repair or maintenance, or moving during agricultural operations. The vehicle may not travel more than 50 miles on Interstate highways.

### **Agricultural Permits (Annual)-Contact TXDMV for Latest Fees**

These permits are issued for transporting agricultural equipment designed and adapted for use as farm equipment, machinery, or tools for tilling soil. Also includes feed trucks, in-tow fertilizer or chemical spreaders, self-propelled machinery designed or adapted to apply plant food materials, or agricultural chemicals, but not designed or adapted for the sole purpose of transporting materials or chemicals.

- Size Limits - 16 feet wide, 16 feet high, 110 feet overall length.
- Weight Limit - 254,300 pounds. (May not exceed maximum permissible weights.)
- Operating Authority - Texas Motor Carrier Registration, if applicable.

of all tractor-related deaths are children under the age of 15. These accidents can be avoided by not allowing extra riders on tractors, especially children.

### Conclusion

With nearly a quarter-of-a-million farms and ranches covering 130.2 million acres in Texas -- the most of any state in the nation -- reasonable care and caution can ensure drivers and farmers reach their destinations safely and avoid needless injuries and fatalities.



*Safety Violations Hotline*

**1-800-452-9595**

[safetyhotline@tdi.texas.gov](mailto:safetyhotline@tdi.texas.gov)

The Texas Department of Insurance,  
Division of Workers' Compensation  
(DWC)

E-mail [resourcecenter@tdi.texas.gov](mailto:resourcecenter@tdi.texas.gov)  
or call 1-800-687-7080 for more  
information.

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### Agricultural Permits (Annual)-Contact TXDMV for Latest Fees (Continued)

- Fees-Contact TXDMV for latest permit fees plus the Highway Maintenance Fee (HMF) determined by the gross weight.
- Route Restrictions - Travel is allowed on all state-maintained roadways. May not travel on load-restricted roads or bridges when over the posted size or weight limits.

### General Permit (Single-Trip)-Contact TXDMV for Latest Fees

These permits are issued for the transport of loads that cannot be reasonably dismantled.

- Width, Height, Length, and Weight Limits - Unlimited.
- Operating Authority - Texas Motor Carrier Registration, if applicable.
- If over gross legal weight, an additional HMF will be charged.
- Route Restrictions - Travel is allowed on all state-maintained roadways. (May not exceed 16 feet wide on Interstate highways. May not travel on load-restricted roads or bridges when over posted size limit.)
- Vehicles or loads more than 20 feet wide, 18 feet 11 inches high, 125 feet long, or 200,000 pounds must follow route inspection guidelines. Visit the TxDMV website for more information, [www.TxDmv.gov](http://www.TxDmv.gov).

### Cylindrical Bales of Hay Permit-Contact TXDMV for Latest Fees

These permits are issued to carry round bales of hay only.

- Size Limits - 12 feet wide, 14 feet high, legal length. (Up to two bales may be loaded side by side, total width may not exceed 12 feet).
- Weight Limit - See TXDMV Permissible Weight Table (<https://www.txdmv.gov/component/k2/item/2123-permissible-weight-table>).
- Operating Authority - Texas Motor Carrier Registration, if applicable.
- Route Restrictions - Travel is allowed on all state-maintained roadways. May not travel on load-restricted roads or bridges when over the posted size or weight limits.