Truck and Trailer Safety

How much do you weigh?

- Expectations and regulations vary by truck & trailer weight
  
  - 2 broad categories that include most landscapers:
    - GVW or GVWR 26,001 lbs or more (must follow CMV Rules if in Intrastate Commerce.) (Recent Change HB 2455)
    - GVW or GCWR 10,001 lbs or more (must follow CMV Rules if in Interstate Commerce.)

  *****Intrastate means stays within Arizona*****

GVW and GVWR less than 26,001 lbs

- Gross vehicle weight includes vehicle, trailer and load
- Subject to A.R.S. (Arizona Revised Statutes) Codes
- Refer to sheet with statues 28-929 which talks about trailer requirements

Lights needed on a trailer per ARS Title 28

Light Trucks with or without trailers (under GVW and GVWR 26,001 lbs)

- Can be pulled over if they look ‘unsafe’ and other A.R.S. Violations
- For example:
  - Broken tail lights
  - Blinkers don’t work
  - Something else related to safety of driver and other vehicles on the roadway (ex. Debris falling onto road / loose load)

Vehicles weighing over 26,001 lbs

- These vehicles can be pulled over at any time without obvious reasons for a safety inspection
- Subject to adopted Federal regulations NOT just Arizona Title 28 Statutes
- Need all of the same lights, reflectors, and other safety features as the light vehicles plus:
  - Trailer brakes need to be operating
  - Emergency brake needs to be connected properly
  - No bare or unattached wires may be visible
  - Driver needs medical certificate from approved physician (see FMCSA website for list)
More on Medical Card

- Needs to be kept on file in company office.
- Driver receives a wallet card to carry, 2<sup>nd</sup> violation of not possessing a medical certificate on a non-CDL vehicle will place the driver out of service until he possesses a valid Medical Certificate.
- Officers can verify medical card information when they run a driver's license if the driver possesses a current CDL.

Pre-Trip Checks

- This is for safety and liability.
- It’s not required on vehicles with GCWR 26,000 lbs or less, but it is still a good idea to implement for a company’s maintenance program.
- Before driving a motor vehicle, the driver shall:
  - (a) Be satisfied that the motor vehicle is in safe operating condition;
  - (b) Review the last driver vehicle inspection report; and
  - (c) Sign the report, only if defects or deficiencies were noted by the driver who prepared the report, to acknowledge that the driver has reviewed it and that there is a certification that the required repairs have been performed. The signature requirement does not apply to listed defects on a towed unit which is no longer part of the vehicle combination.

Pre-Trip Checks

- Check and tighten bolts
- Check hoses for cracks and leaks
- Check things that hold fluids for leaks
- Check tires for pressure and worn tread
- Check hitch, coupler and chains

Vehicle combinations over 26,001 lbs

- May require a CDL (commercial driver’s license) in most situations
- See Flow Chart in your packet
- Medical Certificate for CDL driver must be submitted to MVD
- Must Follow all FMCSR and State laws
Common Problems that get trucks/trailers pulled over

- Cargo not properly secured—explain what needs to be covered and how
- Chains and breakaway not hooked up properly
- Trailers come unhooked—by that time it’s too late

Questions

Contact Officer Livingston - clivingston@azdps.gov
Safety & Tools

Why do we care about safety?

• Average of 197 landscapers died from on-the-job injuries annually (2003-2006 data below)
  o Most of these fatalities were transportation related
• Considered a high-risk industry
• Landscapers make up 0.8% of US workforce, make up 3.5% of total occupational fatalities
• Most, if not all occupational fatalities are preventable with the appropriate training and PPE

<table>
<thead>
<tr>
<th>Activity</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using/Operating Tools or Machinery</td>
<td>355</td>
</tr>
<tr>
<td>(during trimming or removing trees)</td>
<td>328</td>
</tr>
<tr>
<td>Vehicle or Transportation Operations</td>
<td>241</td>
</tr>
<tr>
<td>Constructing, Repairing, Cleaning</td>
<td>215</td>
</tr>
<tr>
<td>Physical Activity, n.e.c.</td>
<td>40</td>
</tr>
<tr>
<td>Other Activities</td>
<td>40</td>
</tr>
</tbody>
</table>

Objectives

• Safety standards
  o ANSI
  o OSHA
• Personal Protective Equipment
  o Head protection
  o Hearing protection
  o Hand and Foot protection
  o Back protection
  o Chemical protection
  o Visibility protection
    • Day vs night protection
  o Lung protection
• Worksite Safety
  o BIU U Dig
  o Perimeter inspection
  o Trenching
  o Digging/planting
  o Tree trimming (power lines)
  o Irrigation Landscape maintenance
• Equipment Safety
  o Chainsaw
  o Line trimmer
  o Hedge shears
  o Mower
• Truck & trailer safety
• Tools
  o Purchase
  o Usage
  o Care

The Grimm Truth: Landscaping can be dangerous

• Landscaper Crushed Between Backhoe and Truck - New Jersey FACE Report #02-NJ-158, (December 3, 2002).
• Grader Operator Run Over by Rear Tire While Jumpstarting Grader - Michigan FACE Report #01MI056.
• Landscaper Dies when Struck by Front End Loader in Massachusetts - Massachusetts FACE Report #95-MA-016-01, (August 29, 1997).
• Landscape Laborer Dies when Truck Mounts Overlap - Colorado FACE Report #95CO094.
• Landscaper Dies When Struck By Bucket of a Caterpillar Skid Steer Loader in Minnesota - Minnesota FACE Report #94-MN-051-F (September 22, 1994).
• Forklift Operator Killed When Forks Collide with Tree - Colorado FACE Report #94CO084.
• Landscape Laborer Dies When Pulled Into a Brush Chipper - Alabama - NIOSH FACE Report #99AL011.
• Landscape Laborer Dies When Pulled Into a Brush Chipper - Washington - NIOSH FACE Report #99WA003.
• Groundsman Killed by Falling Tree Section During Tree Trimming Work in New Jersey - New Jersey FACE Report #00-NJ-087-P1, (May 23, 2001).

Arizona Statics

In 2013-2014, 6 Landscape professionals lost their lives on the job.

This is 6 too many.

Potential Workplace Hazards

• Electrocution
• Chemical exposure
• Lifting injuries
• Struck by
• Heat stress
• Cuts & hand injuries
• Eye injuries
• Skin damage
• Equipment accidents
• Slips & trips
• Vehicular accidents
• Cuts & amputations
• Hearing loss
Outdoor Hazards

**Physical Hazards**
- Extreme temperatures
- Extreme sun exposure
- Noise

**Biological Hazards**
- Poisonous plants
- Poisonous insects and spiders (bee attacks)
- Snakes
- Other wildlife (bobcats)
- Vector-borne diseases

Occupation Safety & Health Administration (OSHA)

- Government agency created in 1970 to assure safe and healthful working conditions for working men and women
- Set and enforce standards for industries
- Provide training, outreach, education and assistance

OSHA

**Worker rights**
- Be trained in a language you understand
- Work on machines that are safe
- Be provided required safety gear, such as gloves or a harness and lifeline for falls
- Be protected from toxic chemicals
- Request an OSHA inspection, and speak to the inspector
- Report an injury or illness, and get copies of your medical records
- See copies of the workplace injury and illness log
- Review records of work-related injuries and illnesses
- Get copies of test results done to find hazards in the workplace

**Employer responsibilities**
- Provide a workplace free from recognized hazards and comply with OSHA standards
- Provide training required by OSHA standards
- Keep records of injuries and illnesses
- Provide medical exams when required by OSHA standards and provide workers access to their exposure and medical records
- Not discriminate against workers who exercise their rights under OSHA (Section 11(c))
- Post OSHA citations and abatement verification notices
- Provide and pay for personal protective equipment

Personal Protective Equipment

**Examples of PPE:**
- Eye (safety goggles, glasses)
- Face (safety shields)
- Head (hard hat)
- Feet (safety shoes)
- Hands and arms (gloves)
- Hearing (earplugs, muffs)
- Respiratory (respirators)

Head Protection

- Working beneath a co-worker who is handling tools or materials on a ladder
- Working beneath or near a scaffold or overhead platform where materials or tools are being used
- Working in areas where others are performing tasks on a roof, elevated floor
- Other overhead area
  - working beneath conveyors
  - working near tractors or similar equipment that transport soil, rocks or gravel
  - working in a trench or other excavation
  - working inside a confined space (such as a tank or utility vault) with overhead access
Hard Hats

- Protects you from falling objects
- Protects your head in case of a fall or bumps into machinery, ductwork and the like
- Protects you from electrical shocks and burns if it’s a non-conductive hat
- It is a neat place to put stickers and decals, especially first aid trained or safety committee member

Hard Hats

- **DO CLEAN** using a mild soap and water solution
- **DO STORE** out of the direct sun (not on the back dash of your car) and out of areas with high heat (not in the car trunk) while you’re off the job
- **DO INSPECT** your hard hat shell and suspension for damage and deterioration every day before use, as well as after any event that may affect its integrity, such as being struck by a falling object or crushed
- **DO REPLACE** your hard hat shell or suspension when it shows any signs of damage or deterioration

Hard Hats

- **DO NOT PAINT** your hard hat- this can degrade the strength of the hard hat shell, making it easier to break
- **DO NOT USE SOLVENTS** to clean your hard hat- can degrade the strength of the hard hat shell
- **DO NOT ALTER OR MODIFY** your hard hat. Drilling holes and/or inserting screws in your hard hat so you can add attachments can weaken the shell of your hard hat, and can also allow electrical current to pass through.
- **DO NOT WEAR YOUR HARD HAT BACKWARDS** unless specifically approved by the hard hat manufacturer and your employer
- **DO NOT WEAR A BALL CAP OR TOBOGGAN BENEATH YOUR HARD HAT**- this could interfere with the suspension and shell, which work together to reduce the force of an impact
  - Cold weather liners approved by the hard hat manufacturer are available.

Helmet System

- Face guard
- Hearing protection
- Head protection
- Look for safety rating

Protective Eyewear

- **Causes of Eye and Face Injuries**
  - Splashes from harmful liquid chemicals such as acids or cleaning solutions
  - Flying debris, chips and dust from grinding and windy conditions
  - Flying projectiles from objects colliding, falling or being dumped
  - Loose straps, cords or banding that breaks or snaps under extreme tension
  - Extreme heat and light radiation from exposure to flames, welding or torches

Protective Eyewear

- **Safety Goggles**
  - Directly vented- Protects against flying particulates, but NOT chemical hazards
  - Indirectly vented/ Non-vented- Protects against flying particulates & chemical splash hazards

American National Standards Institute (ANSI)- Oversees the creation, promulgation and use of thousands of ‘norms’ and guidelines that directly impact businesses. Z87.1 is the standard for eye protection.
**Protective Eyewear**

- **Safety Glasses with Side Shields**
  - Provide protection against airborne particles and flying projectiles. Safety glasses are made of impact resistant material and many are available with UV protection &/or tinted lenses.

- **Prescription Safety Glasses**
  - Standard prescription glasses are not made to protect you from eye hazards. To be protected, wear safety glasses that fit over top of your prescription (below left) or have Prescription Safety Glasses made for you (below right).

- **Face Shields**
  - Protect the face from grinding debris, flying projectiles, radiant heat, and chemical splashes. Face shields should be used in conjunction with eye protection to be fully protected.

- **Check pesticide labels**
  - Some chemicals require face protection when mixing or handling.

**Hearing Protection**

- **Protection should be used when noise exceeds 85 decibels**
- Hearing protectors should tightly seal with the ear canals or against the side of the head.
- Follow manufacturer instructions on all devices.
- Use clean hands to insert ear plugs.
- Know if you are using reusable or disposable ear plugs.
  - Maintain according to manufacturer’s instructions.
- Check for wear and tear.
- Never share ear plugs!
- Hearing protectors must be worn 100% of the time when working in noisy environments.

**Noise Decibels**

<table>
<thead>
<tr>
<th>Noise</th>
<th>Decibels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational voices</td>
<td>60</td>
</tr>
<tr>
<td>Idling tractor</td>
<td>80</td>
</tr>
<tr>
<td>Conveyor</td>
<td>80</td>
</tr>
<tr>
<td>Diesel truck</td>
<td>90-95</td>
</tr>
<tr>
<td>Power lawn mower</td>
<td>90-95</td>
</tr>
<tr>
<td>One leaf blower</td>
<td>90-100</td>
</tr>
<tr>
<td>Power tools</td>
<td>100</td>
</tr>
<tr>
<td>Chain saws</td>
<td>110</td>
</tr>
</tbody>
</table>

**Hearing Protection**

- **Ear Plugs**
  - Inserted into the ear to block the ear canal.
  - Available in pre-molded or moldable.
  - Can be reusable or disposable.

- **Canal Caps**
  - Two ear plugs held over the ends of the ear canal by a rigid headband.

- **Ear Muffs**
  - Consist of a material that decreases the intensity of sound.
  - Fit around the ear and are held together with a headband.
  - Best for intermittent noise because they can be easily removed.

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**Hand Protection**

- **Choosing the right glove for the job is important**
  - Example: Choosing a cotton glove to work with chemicals is a bad choice.

- **Some situations are not appropriate for gloves such as working with moving machinery**

**Glove Type**

<table>
<thead>
<tr>
<th>Glove Type</th>
<th>Level of Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal mesh/ Kevlar</td>
<td>Prevents cuts from sharp objects like blades, cutter bars</td>
</tr>
<tr>
<td>Leather</td>
<td>Handling stones or wood chips, sparks, moderate heat</td>
</tr>
<tr>
<td>Cotton fabric</td>
<td>Dirt, splinters and abrasion; not for working with sharp materials</td>
</tr>
<tr>
<td>Rubber, vinyl neoprene</td>
<td>Protects from chemical being used or handled</td>
</tr>
</tbody>
</table>
Leg Protection

• Long pants
  o Protects legs during most landscaping activities

• Chainsaw chaps
  o Protects legs from injury when using tools such as chainsaws

Foot Protection

• Safety shoes should be impact resistant with steel toes
• Safety-toe shoes are non-conductive and prevent your feet from completing a circuit
• Shoes with good tread provide traction on slippery surfaces

Visibility

• Always wear visible clothing to ensure that you’re noticeable when on the job site
• Be sure to use reflective, brightly colored vests so that you are visible to drivers
• If working within 15 feet of the traveled way, a warning sign should be placed on the shoulder of the road
• When working in the summer sun, OSHA advises employees to wear loose-fitting long-sleeved shirts and long pants to protect from ultraviolet radiation
• Ensure clothing isn’t too baggy when working around machinery like wood chippers, as it can get caught
• OSHA regulations require workers to wear Class Two or Three ANSI/ISEA 107-2004 personal protective safety apparel

PPE When Using Pesticides

• Check your label for required PPE
• Different PPE may be required for mixing/loading than application

  • Gloves
  • Long pants/long sleeves
  • Eye protection
  • Shoes + socks

Respiratory Protection

• Activities that may require respiratory PPE
  o Handling and applying pesticides
  o Working around heavy dust in greenhouses
  o Working around mold
  o Spraying paint
  o Using solvents or other chemical irritants
  o Working around allergens
  o Working around dust such as with cut-off saws & grinders
Types of Respirators

• Three types of respirators for normal work activity:
  1. Particulate respirator
     • Use a filter to trap solid particles like dust or mold
  2. Gas/vapor respirator
     • Use a cartridge to absorb gases and vapors
  3. Combination respirator
     • Have a filter for particles and a cartridge for gas and vapor

Selecting a Respirator

• Particulate respirators
  o Type 95 = 95% efficient; appropriate for most dust, mold, or mist
  o Type 97 = 97% efficient; higher level of protection
  o Type 100 or HEPA = 99.7% efficient; used with highly toxic substances

• Gas/Vapor respirators
  o White = Acid gas
  o Black = Organic vapors
  o Green = Ammonia gas
  o Yellow = Acid gas and organic vapor
  o Olive Green = Multi-gas combinations

Dust Masks

This “dust mask” is not approved for respiratory protection.

Respiratory Protection Program

• Your employer should have a written Respiratory Protection Program
• It includes:
  o When a respirator is required
  o Medical evaluations needed
  o How to select a respirator
  o How to use respirators
• Review your employer’s RPP

Training

• Employees required to use PPE must be trained to know at least the following:
  • When PPE is necessary
  • What type of PPE is necessary
  • How to properly put on, take off, adjust, and wear PPE
  • Limitations of the PPE
  • Proper care, maintenance, useful life and disposal of PPE

Before An Employee or Tool Hits The Job Site
Soil Preparation & Grading

Potential hazards:
- Equipment accidents
- Slips & trips on uneven terrain
- Vehicular accidents
- Cut & amputations
- Hearing loss

What do you see here? Any room for improvement?

Excellent use of safety equipment!

Irrigation Hazards

Potential Hazards:
- Glue and primer hazards
- Amputation
- Electrocution

So how can you protect yourself from these on the job hazards?
So how can you protect yourself from these on the job hazards?

**Planting Hazards**
- Lifting-related injuries
- Cuts and hand injuries
- Vehicle accidents
- Slips, trips and falls
- Heat stress

Get help lifting/
Get help lifting/
Lift safely/
Stret
Drink enough water/
Pay attention to body signals
Rest breaks
Wear gloves/Inspect tools and equipment before use
Keep job site clean

**Hardscape Construction**
- Cuts & amputations
- Lifting-related injuries
- Hearing loss
- Struck by
- Slips & trips

Follow SOP’s/Wear personal protective equipment
Keep job site clean
Call for utility locates
Use protective systems/Train

**Cut-off Saw Safety Video**
https://www.youtube.com/watch?v=7h-HVSoUsQg

**Silica Dust Safety Video**
https://www.youtube.com/watch?time_continue=46&v=kQmLYQjIR2A
So how can you protect yourself from these on the job hazards?

- Vehicle accidents
- Falls
- Bees & other critters
- Eye injury
- Hearing loss
- Ergonomics
- Chemical exposure
- Cuts, amputations, hand injuries
- Landscape Maintenance Hazards
  - Keep clear of rotating mower & brush-cutting blades
  - Read and obey pesticide label & SDS
  - Wear PPE when using power equipment
- Figs
- Frequent breaks in the shade and hydration is key when working in the heat
- Hedge Trimmer Safety
  - Safety video on hedge trimmer safety
- Line Trimmer Safety
  - Safety video on line trimmer safety
- Tree Care Hazards
  - Primary hazards:
    - Struck by
    - Cuts and amputations
    - Eye & ear damage
    - Electrocution
    - Slips, trips and falls
  - Video on tree care hazards
Tree Care Hazards

- Use proper tree tie-in
- Wear safety goggles
- Use PPE (e.g., hard hat)/know drop zone
- Comply with the 10-foot power line clearance rule
- Use proper tree care
- Pruning near power lines

Pruning Near Power Lines

From the SRP website:

- Your trees and overhead power lines
- You should never attempt to trim trees near power lines or hire a tree-trimming contractor to work within 10 feet of an energized power line. Arizona law places restrictions on this work to protect public safety.

Chainsaw Safety

from the SRP website:

- Chainsaw Safety
- From the SRP website:

Mower Safety

- Conduct a pre-mowing inspection of the lawn and remove any debris, rocks, limbs, or other items that could become a projectile. Look for concealed hazards such as holes.
- Keep hands and feet away from moving blades.
- Fill the tank with gas before beginning work— to avoid having to fill the tank later when it is hot.
- Replace loud or faulty mufflers
- Shut off the engine before unclogging, servicing, or adjusting the mower and before removing the grass bag
- For added protection, remove the ignition wire before working on the machine
- Inspect mower to verify all guards and safety devices are in place and operating properly
- Before starting the engine, make sure the transmission is out of gear and the mower blade clutch is disengaged.
- If you hit a large rock or stump, shut off the mower and inspect the blades and shaft. Replace damaged blades.
- Never leave a running lawn mower unattended. Before leaving the seat, park the mower on a flat area, disengage the mower blades, and remove the ignition key.
Riding Mower Safety

- Never allow extra riders on the lawn mower.
- Slow down when turning and when working on slopes. Mow up and down slopes rather than across them.
- Always look behind you before backing.

https://www.youtube.com/watch?v=CaooqW0GJkc

Walk Behind Mowers

- Wear sturdy shoes with good traction. Never wear open-toed shoes around walk-behind mowers.
- Do not bypass the safety device that stops the blade when the operator releases his/her grip on the handle.
- Mow across slopes rather than up and down slopes (although it depends on your mower and slope grade).
- Work slowly and patiently when mowing tall grass or tough weeds. Forcing the mower may cause repeated clogs and engine stalls.
- Never leave a running mower unattended. If you stop momentarily, cut the throttle to idle and make sure the mower will not roll away.

Store Fuel Properly!

https://simplifiedsafety.com/blog/does-your-gas-can-meet-osha-requirements/

How to select, use and maintain landscape and garden equipment

- Purpose
- Match tool to the size of the job
- Storage space
- Consult local experts
- Shop around
- Look for: Quality workmanship, materials
  - Weight of tool
  - ‘Promotional’ or ‘Professional’

Buy the Best!
Don’t buy what you do not need, rent instead
What tool do you need for the task?

Use

• Tools should be strong enough to accomplish the job for which they are designed
• Most tools break if used improperly
• Know tool’s limits and use within those limits
• SAFETY always comes first

SAFETY

Maintenance

• Develop good habits - Repetition
• Clean and lubricate regularly
• Sharpen blades daily
• Storage

Proper Maintenance and Repair

• Remove and control rust
• Sharpen nicked or dulled cutting edges
• Renew roughened and aged handles
• Repair cracked handles

In Review

Storage

• Site should be convenient or accessible to work
• Site should be indoors, out of sun, rain and snow
• If outdoors, protected by overhang or cover
• Tools should be organized, hung on a wall
• Organize tools by category
Safety Review

• Follow instructions in the user's manual for lubricating and changing accessories
• Keep all people not involved with the work at a safe distance from the work area
• Avoid accidental starting
• Maintain tools with care; keep them sharp and clean for best performance

General Safety

• Be sure to keep good footing and maintain good balance when operating power tools
• Wear proper apparel for the task - loose clothing, ties, or jewelry can become caught in moving parts
• Remove all damaged tools from use and tag them: “Do Not Use”

A Big Thanks To:

The following ALCA members for their contribution in the creation of this class material!

DTR Landscape Development
Ditch Witch
Bob Franchetto, Horizon
Scott Cosgrove
Tony Acosta

Chainsaw Fails

https://www.youtube.com/watch?v=8yqYy4K9v9c